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# Music Creativity and Artificial Intelligence: The Human Element and an Exploration of Possibilities

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**Abstract**

Artificial Intelligence (AI) is widely recognized as a potential game-changer for music-making. However, the direction of these changes and the extent of their impact on the music field will depend on how musicians use AI, which partly hinges on their perceptions of AI and their willingness to engage with it. Debates are ongoing about AI's impact on creative fields, and we anticipate that musicians' views on these matters will significantly influence their readiness to incorporate AI into their work. We interviewed 43 participants who use technology in various roles across different music genres to gain insight into their experiences with and perspectives on AI. These interviews revealed a range of perceptions about the potential benefits and risks of using AI in musicians' creative processes, even among those already accustomed to technology. These perceptions did not always conflict; instead, they complemented one another, reflecting the core values and practices inherent in the diverse roles musicians play as composers, performers, and producers, as well as the different interpretations musicians may have of what constitutes creativity in music. A key finding was asymmetry in musicians' AI acceptance, where those who rejected AI for music creativity often accepted it for tasks typically performed by other creative professionals.

*Keywords*: artificial intelligence, music creativity, identity, music industry, future of work

## Introduction

Artificial Intelligence (AI) is disrupting the landscape of music creativity, reshaping how we compose, produce, and consume music. At the forefront of this transformation is AI's ability to analyze vast amounts of musical data, allowing it to identify patterns, trends, and correlations previously inaccessible to human creators. As AI models attempt to understand the underlying structures of music across genres and styles, they could potentially empower musicians with new

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tools for exploration and experimentation. Yet they also raise new risks, as well as fundamental questions, about what constitutes creativity and the impact of AI on music creativity more specifically.

AI has the potential to significantly impact music creativity in a number of complementary ways. It has the capacity to change how compositions can be made (e.g., assist composers and songwriters in generating novel melodic ideas or lyrics). AI-driven tools can offer real-time suggestions for melodies, chord progressions, and arrangements based on the user's input or preferences, serving as virtual collaborators that augment human creativity rather than replace it. Additionally, AI algorithms can analyze existing musical works to identify elements that resonate with audiences, helping creators tailor their compositions for maximum impact and engagement. However, AI tools can also generate new music with a text prompt, potentially displacing some current job opportunities for musicians and producing lower-quality music.

Moreover, it has been argued that AI is poised to democratize music-making by lowering barriers to entry and enabling broader participation in the creative process. With user-friendly AI platforms and applications, individuals with varying musical expertise can experiment with composition, production, and sound design, unleashing a wave of diverse voices and styles in the music industry. Yet these uses of AI also challenge traditional notions of authorship, craftsmanship, and artistic expression, as well as raising questions about the exploitation of artists whose work has been used to train AI algorithms.

Currently, debates are raging on the impact of using AI on artists' creativity and art production. Since we expect that musicians' opinions on these issues will greatly affect their willingness to use AI in their work, it is important to better understand musicians' perceptions of AI and its impact on creativity in music-making. These considerations motivated our interview

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study of musicians' technology experiences and willingness to engage with AI for music-making.

## Review of Literature

The relationship between artificial intelligence (AI) and creativity has been a growing area of study in recent years. Before reporting on key contributions from this literature that framed our study, though, we identify a few differing interpretations of what music creativity more generally may involve - as a musician's definition of this concept will likely impact their opinions of the impact of AI on it.

### Music Creativity

It may seem obvious that creativity is integral to music-making, yet it is interesting that musicians and scholars alike do not agree on a definition of *music creativity*. Some researchers characterize creativity as process-driven, involving specific steps or modes of thinking (Hickey & Webster, 2001; Johnson-Laird, 1987). Other researchers define creativity as product-driven by identifying the qualities of creative outcomes (Balkin, 1990; Csikszentmihalyi, 2014; Hickey, 2001). Others yet have argued that creativity can be both process- and product-driven (Clark, 1986; Nielsen, 2013), or that it essentially involves the generation of unique or novel ideas (Azzara, 2002; Biasutti, 2015).

Despite these various interpretations, there is agreement that creativity is essential to every aspect of music, from composition and performance to interpretation and production. It has even been argued that engaging in creative musical activities, such as composing, arranging, and improvising, promotes musical growth (Piazza & Talbot, 2021). Music technology can allow musicians to expand their creative and expressive capabilities if they have access to digital tools and guided instruction (Guerrero, 2024; Nielsen, 2013).

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**Artificial Intelligence and Creativity**

AI systems have advanced significantly, evolving from performing structured, rule-based tasks to more sophisticated, learning-based operations. Creativity, once regarded as an exclusively human trait, is now being examined in the context of AI's capacity to generate original ideas, art, and music. Machine learning (ML), a subset of AI, plays a crucial role in developing creative systems. ML models, especially those based on deep learning architectures, can learn patterns from extensive datasets, allowing them to generate new outputs in art, music, and literature. For example, generative adversarial networks (GANs) have been employed to create realistic images and artworks (Goodfellow et al., 2014). These GAN models are made up of a generator and a discriminator network, where the generator produces images, and the discriminator assesses their authenticity, thereby enabling the system to generate creative outputs that closely resemble those created by humans.

Additionally, natural language processing (NLP) models have shown the ability to generate coherent and creative texts and stories based on patterns learned from human language (Brown et al., 2020). The success of these NLP models has raised questions about whether creativity is an inherently human trait or if machines can genuinely be creative in their own right; human-imposed valuation of AI creativity may require considerable domain expertise and a valuable discovery beyond human intelligence (Boden, 1998).

AI is often seen as a tool that can enhance human creativity, rather than replacing it. McCormack et al. (2019) explored the idea of AI as a collaborative partner, where human creators collaborate with AI models to improve their creative output. In music, for instance, AI-based tools enable users to generate compositions from a text prompt (Mitra & Zualkernan, 2025), which can then be modified and shaped by human input. Likewise, artists are employing

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AI systems to produce unique artwork by providing their input and curating AI-generated results (Cotton & Tartar, 2023).

Despite the progress made, significant challenges remain regarding AI creativity, particularly concerning the philosophical definition of creativity itself. Many argue that genuine creativity requires not only the generation of novel outputs but also an understanding of the cultural, emotional, and contextual significance of those outputs—something current AI lacks (Colton & Wiggins, 2012). Additionally, ethical concerns arise regarding the ownership of AI-generated works (Hemphill, 2024). As AI systems become increasingly autonomous in their creative outputs, questions about copyright, intellectual property, and the role of human creators in AI-assisted works are becoming more pressing.

## Theoretical Framework

The literature presents numerous definitions of identity; however, for this paper, we adopted Gee's (2000) definition of professional identity as the kind of musician one aspires to be. This definition underscores how a musician's values and aspirations shape many of their professional choices, including their adoption of AI tools. We used Gee's identity theory to gain insight into the factors that may influence various musicians' use of AI in their creative processes.

Professional identities often encompass multiple sub-identities that can coexist and interact with one another. For professional musicians, a significant sub-identity is whether they see themselves as a composer, performer, producer, audio engineer, or any mix of these roles. We hypothesized that these sub-identities could influence musicians' perspectives on creativity, particularly regarding how it manifests in their music-making. Consequently, we aimed to better

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understand how these sub-identities might shape musicians' views about creativity as well as the uses of AI in music-making.

It is also important to recognize that other sub-identities may coexist and contribute to a musician's professional identity, such as the music genres a musician identifies with and their official roles (e.g., orchestra member, music educator, university faculty, freelancer, entrepreneur/business owner).

## Research Design

The data reported in this article were collected in an interview study about musicians' perceptions of AI and its implications for the music field, supported by a grant from the National Science Foundation's "Future of Work at the Human-Technology Frontier" program (award #2222129). The following research questions guided our data collection and analysis:

*RQ1. What are musicians' beliefs about creativity in music, and how may these perceptions be affected by their professional sub-identities as composer, performer or production/audio engineer?*

*RQ2. What are musicians' perceptions of what counts as "creative" when using AI, and how may these perceptions be affected by their beliefs about creativity?*

*RQ3. What are musicians' perceptions about how AI may impact their creativity, and how may these perceptions be affected by their professional sub-identities as composer, performer or production/audio engineer?*

We chose a qualitative approach for this study because of our goal to describe and better understand an emerging phenomenon. Semi-structured customer discovery interviews (Constable, 2014) were appropriate, given that we collected and understood individual lived realities. For recruitment, we used purposive sampling, targeting the first group of musicians we

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knew were already engaged with music technology or AI. Then, we relied on snowball sampling through interviewee recommendations to increase our number of participants. In total, 123 interviewees were invited, and 43 completed their interviews.

We sought to interview representatives of different roles, music genres, genders, ages, years in the field, and music training. The participants frequently expressed multiple musical roles rather than just one. In order of frequency, our interviewees included instrumentalists (33), composers (19), university professors (19), K-12 teachers (19), performers (17), business owners or administrators (15), producers (14), songwriters (8), technology developers (9), audio engineers (7), vocalists (6), researchers (4), content creators (3), and other (4). The participants reported creating music for at least 22 different genres of music, and in most cases, they associated with multiple genres. Of those incorporating technology, the top genres included classical, rock, jazz, soundtrack, and commercial music. The 43 participants included 31 males, 11 females, and one non-binary person, with their education level including those with a bachelor's (39), master's (17), and doctorate (10). Most of their collective degrees were in music, with 24 of the degrees outside of music, including computer science, English, law, and business.

The one-hour interviews were conducted online via Zoom between January 2023 and August 2023. Almost all the interviews were conducted by the same two members of the research team (an expert in music and an expert in customer discovery interviews); four of the interviews had one substitute team member with similar expertise due to scheduling conflicts. The interview questions included a set of questions asked of every participant and different sets of follow-up questions based on their technology experiences and expressed identities.

For the data analysis, first, the entire research team read and reviewed a sample of 8 interviews (selected by the two main interviewers to represent a range of responses) to identify

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major themes or buckets, one of which was "creativity & AI." Coding involved two processes of lumping and then splitting (Saldaña, 2021), where lumping allowed the team to examine the major themes efficiently, and splitting involved a finer-grained analysis to provide a more nuanced understanding of themes.

More specifically, two team members created "stanzas" (units of text loosely based on a conversational turn but included follow-up utterances if they were focused on the same topic) and performed initial coding to identify and collect all the stanzas mentioning each theme. Another researcher then conducted a subsequent phase of coding on the stanzas coded under "creativity & AI," generating key themes related to each research question and creating a document that included representative quotes for each theme, with particular attention to including contrasting viewpoints whenever possible.

The thematic quotes document was later enhanced after re-reading the entire set of interview transcripts and then shared with the rest of the team. The full team reviewed and discussed the updated document, and the researcher who had initially created it revised it to capture the consensus generated by the discussion.

## Findings

We organized the findings by the research questions. To maintain anonymity while giving readers a sense of the participants' main music sub-identity, quotes are followed by a unique number associated with each interviewee, along with a letter indicating their primary sub-identity based on their main role - where "C" stands for composer/arranger, "P" for performer, and "E" for producer/audio engineer. It is important to note that this categorization does not fully capture the reality that many of our interviewees performed multiple functions and thus might

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associate with more than one of these categories (a limitation we revisit in the Discussion section).

## Musicians' Beliefs About Music Creativity (RQ1)

We found a general consensus among the participants that creativity is central to musicians' identities and can encompass the creation of various things, such as musical scores, arrangements, interpretations, and innovative solutions to problems, although not every outcome was necessarily viewed as "creative." Three key elements were identified by several participants as essential for defining creativity: producing something "novel," conveying ideas or emotions in a way that resonates with others, and approaching challenges in innovative ways. Participants also described their creative processes as ranging from spontaneous idea generation to following specific steps or strategies to inspire and refine their ideas into high-quality musical output. Additionally, the participants shared how creativity can manifest in different ways across music composition, performance, and production.

### *Perceptions About the Role of Novelty in Music Creativity*

Many participants associated "creativity" with generating something "novel," although interpretations of what counts as "novel" in music, as well as the importance of "novelty" in creativity, differed across the musicians we interviewed. In particular, we could see a tension between wanting to produce something original and recognizing the inevitable influence of other people in the field:

> [Creativity is] to create something out of something that didn't exist before. (14P)

> Personally, I feel like nobody should want to sound like anybody else. Everybody should have their own identity. (13P)

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> There is an argument out there that creativity can only be … the act of making something that's completely devoid of external influence, which is impossible [and] ultimately also can … lead to very stale writing and stale production when we just only ever work within our creative comfort zones. (1C)

Some participants recognized the influence even great musicians had on each other throughout history, as well as expressed their value in explicit collaborations:

> Bach composed music in the style of Vivaldi … Vivaldi composed things in the style of Bach, and lots of people have done that sort of thing. For a time that was considered like an honor. … Now, it is a very different thing. If you quote somebody's idea, it is not a point of flattery or a point of in homage to that person – it's grounds for a lawsuit. (11E)

> Collaboration can be almost like an implied idea, when you are referring to some other musical idea that you've come across … Or it can be an actual collaboration between people … You have to come up with a system to capture it … Creativity doesn't happen in the vacuum. (40E)

Other participants tried to articulate further what may count for "novelty," suggesting that it often comes from combining different fields and perspectives:

> To be a creative musician, it means to contribute something new. That could be synthesizing two things together that weren't related and creating something out of existing elements. (14P)

> The connections among different perspectives in the different fields and things like that – that's where creativity comes from. (16P)

### *Perceptions About the Role of "Impactful Expression" in Music Creativity*

Some participants associated creativity more with being able to express personal ideas or emotions in a way that connects with our humanity and uniqueness as individuals:

> To me, as a musician, the creativity comes from what flows out of your fingers. It's sit down and play something that's coming outta your heart, coming outta your soul. (20P)

> When we talk about creativity, I really think about the skills and the ability and the nuance and the openness to be a human being. (35E)

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Rather than looking inward, some participants pointed out the importance of taking into consideration their audience and producing something that resonated with and had an impact on others:

> Creative means to be able to synthesize a set of ideas and put them into a form … that's understandable or consumable or likable by an audience of some sort. That could be just your friends, could be just yourself. (33P)

> Most of the time we're talking about creativity from the perspective of there is something that needs to be expressed in a way that inspires people to marvel at the impact of that idea and the way it was presented … creativity is an approach to an idea that has to be obvious. The way the Mona Lisa is obvious, even though if you were to describe it, there's nothing fantastical about it. But when you see it, you just get it. (34E)

Other participants discussed the importance of looking inward and outward when creating music.

> For me [creativity] is about expressing emotions and expressing ideas through music. … when I'm writing my own music, it's written from a very personal perspective. So, a big part of it is that personal lens or that personal perspective and how you articulate that out in the world and how that resonates with other people (23P)

***Perceptions About the Role of "Unusual Problem Solving" in Music Creativity***

A number of participants pointed out the connection between creativity and solving the diverse problems they may encounter in their music-making in ways that are unique and clever:

> [Creativity] is the ability to solve complex problems in interesting ways, whether that's solving a problem relating to musical emotion, writing a song to get out that emotion or solving a problem relating to how to promote your upcoming gig or the record that you're trying to put out. (33P)

> I am really, really creative when it comes to solving problems. If you give me a problem, I will solve it – and I will do so in whatever way I can. (32E)

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This connection of creativity with problem-solving also led some interviewees to highlight the curiosity and "tinkering" mindset as important characteristics of creative musicians.

> I think, for me, a lot of creativity was like process-driven, where I was experimenting and hitting on the solution. (17E)

> Everybody I know who's curious in life, irrespective of whether they stay in music or not, reaches some incredible level of ability because they just can't stop themselves from tinkering. … I owe my career to tinkering. (19C)

***Perceptions About the Creative Process in Music***

One of our participants identified creativity in music as "being able to equally draw upon instinct and craft at any point in time (19C)", while another pointed to famous musicians to show that individuals may follow quite different creative processes in their music-making:

> Mozart – everything he wrote was the first time, and that was it. … Beethoven – as genius as he was – it took a few times, like a lot of things scratched out. (22P)

Indeed, the musicians we interviewed could be positioned at different points in a continuum between "instinct" (that is, relying mostly on their intuition) and having developed specific practices or processes to help them iteratively develop an idea into a refined music product, as suggested by the following quotes:

> Whenever I've been really creative, it doesn't feel like I did anything. It feels like I just … went into a trance and then woke up four hours later and there was a song. (37E)

> When I was studying composition, there was a lot of times where I was like: "oh, I wonder what would happen if," and I would just try it, and oh, that's really terrible and then I would try something else or some variant of it. (17E)

> For me, it's a sort of a layered process or experience. Initially, there's sort of this very high-level kind of abstraction of an idea … And from that first general impression, I think an idea is formed that becomes the thing that you are pursuing – it informs the end state. And everything that you do iteratively from that point forward is, is moving you in the direction of the end state. (40E)

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Interestingly, one musician stated, "I've never been a spontaneously creative person – where I really excel is development and refining (38P)," suggesting that some musicians may associate creativity more with working iteratively at developing an idea rather than using "intuition."

### *Perceptions About How Creativity Plays Out in Different Aspects of Music-Making*

Many of the musicians we interviewed recognized that creativity has a role in many stages of music making, as best captured by this quote:

> I would say being creative manifests in so many different ways … like in performing, when you're recording, when you're doing a project, or when you're teaching – just like that creative part of knowing how to improvise or compose. All those activities, teaching, playing, recording … it's definitely a pretty big part of the creative process, and being creative, it's essentially like making music more your own. (24P)

Yet, the participants also articulated how creativity may play out in different ways in music composition, music performance and music production - as reported in the three subsections below.

#### Composition or Arrangements

Music composition was often identified as a premiere example of how creativity may play out in music:

> My composer friends are literally taking a piece of blank paper and adding black dots that are actually some of the most beautiful melodies ever written. (22P)

> I live not just in the trying to create melody, I create lyrics and rhythm structures. That's a multimodal, multi-tiered cake, as it were. I'm trying to make the cake, which is the chord structure, I gotta put in a melody, which is the filling, and then the lyrics are the frosting. So that's a complicated thing. (28C)

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### Performance

Several of our participants also saw creativity having an important role in music performance by creating an impactful experience for the audience, whether it involved improvisation or interpretation of existing music:

> I'm not a songwriter – I'm a player and an arranger. To be creative I think means to play to the song, to play appropriately for what I think I can add to the song, and to bring a bit of my style and personality to that without overshadowing the song itself and the guy who's singing it, to be additive as opposed to drawing away attention to myself. (36P)

> There is a lot of things you have to do beyond the score. You might not be rearranging or recomposing or anything like that, but we need to make the music come to life. You have to be creative. (24P)

> There's a lot of flexibility within the arrangements for jamming or style and expression. … that kind of creativity is one of the things that makes the bands special and interesting for all of us to be playing in and getting a good response from people who are listening. (36P)

At the same time, it is important to note that some musicians pointed out that not all music performance may feel creative:

> In my career as a bass player, I would argue that there was basically no creativity … playing for pop musicians. … You are a hired mercenary, and you're not getting paid to be creative. You're getting paid to show up, and dress a certain way, and play the notes exactly like the producer wants you to play them. So, thankfully, I'm not in that environment anymore. (30P)

### Production or Audio Engineering

Music production may be the aspect of music making that most people may not associate with creativity, yet several of our participants pointed out the fallacy of this perception and argued to the contrary:

> I think that traditionally, we haven't really recognized production as akin to performance. And in the early days, the goal of recording was just to capture what a live performance

> was. But now I think there's no argument that it's a really kind of independent and creative process. … I think the production is almost more important than composition. ... If you analyze [pop music] in terms of chords and harmony and counterpoint and melody, it's not very interesting. But the production can be, I think, very sophisticated and very skillfully done. (6E)

> Instead of fighting against [Michael Jackson's] *Thriller*, I could just sample the beginning of 'Billy Jean' and put my own stuff over it. … Oh, this is all just raw material. … It just made possible this whole imaginative life that I have that I can't conceive of how I would do it any other way. (9E)

> Peter Gabriel, as soon as the Fairlight synthesizer and sampler came out, he started using it immediately. Are you gonna tell me that Peter Gabriel is less creative or less of a songwriter because he used them? No, he's more creative in some respects because he did that. (41E)

**Musicians' Perceptions of Whether AI-generated Products Are Creative (RQ2)**

The musicians we interviewed expressed different opinions about whether, and when, music created using AI could be considered "creative" or not. The following quotes are indicative of the range of responses we collected:

> Beethoven heard [music] in his head and wrote it down. And frankly, that's how I think music should be written. It shouldn't be a computer going, well, you should go to a C minor chord next. … I want someone to have written that symphony. (5C)

> I would argue that the creativity that is present is whatever it is that I, the composer, tell the AI to do. That is the creativity there. That is the intent. That's the human element. And I think even using these AI tools, and I have used some AI tools in my work already, I don't think that makes me even less creative. And frankly, some of them allow me to focus more on the creative side of things. (21E)

> I think people who spend a lot of time carefully crafting prompts and curating the results and then putting together things in interesting ways, I think they are doing creative work. Maybe they're able to create stuff in far less time, but that doesn't matter. (42E)

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One participant also pointed out that whether something is creative or not will depend on its audience and purpose:

> I think most people go to a show for a show. They want the lights, they want, you know, the costumes and stuff like that. They don't care if it's coming off of a hard drive because they're there for the experience. So, I guess it depends on what you're trying to portray to the audience and what the audience expects. (36P)

Some of our interviewees expressed hesitancy about the artistic quality of AI-generated music based on their perception that they lacked the "human element," which could be associated with beliefs about the importance of individual expression in creative music work identified in the findings for RQ1:

> I haven't dove into the music AI stuff because I still just really wanna make, I still want it to just be organically from me. (12P)

> We're starting to see these automated programs that will generate music, AI-generated stuff. … if those tools are available, I would shy away from using it 'cause I would feel like …it's not me. This isn't really me writing this, even though I might be manipulating a few things. I'm not truly creating this from my head, my heart, like an original piece of music. (7C)

> My sense is that the human at the center of the creative work … might fade as an important thing for a little while, but I think we're gonna kind of demand it back after we're just sort of flooded with infinite, perfect AI content that's gonna seem kind of boring. (37E)

Other participants focused their evaluation more on issues related to originality and "novelty" – another key element identified in beliefs about creativity in the findings reported for RQ1:

> We have algorithms and AI systems that can compose tunes and write chord progressions, and they're actually pretty good. … for me, it is not very interesting music because it's all kind of derivative and based on pop music. (6E)

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> I feel like people might be worried about a homogenization. … if everyone's using AI, all the stuff they create is gonna start to sound the same, because it's all gonna be reproducing the same content. (21E)

**Musicians' Perceptions of AI's Impact on Creativity and Identity (RQ3)**

Numerous benefits and risks of using AI, identified by our interviewees, relate to specific aspects of music-making (i.e., music composition, performance, or production), although some considerations blend between these categories. Additionally, participants' perceptions are further influenced by whether a musician viewed the use of an AI tool to automate and replace human input or as an assistant, captured by this quote:

> I definitely see resistance toward anything where an auto-generated element is brought into the creative process. Personally, I'm curious to try stuff like that as long as it's something that I feel is aiding the creative process instead of … taking credit for the whole thing (1C)

Due to the rise in popularity of text-to-audio AI models, music composition is central to the debate about the AI's role in creativity. At the same time, the perception of what AI would replace versus assist with depends partly on the musicians' creative workflow. Several of the participants pointed out the complementary values of using AI and other digital tools to improve specific aspects of their music-making workflow, which included:

*(a) Saving time:*

> The speed at which [Cubase] lets me compose … even with my existing knowledge and the discipline and technique I've built up, it's just much faster for me to lay out something in Cubase using all of my sound libraries than it is for me to do everything in notation. (21E)

(b) *Sparking new ideas for composition:*

> Sometimes when I'm in a pinch or I just feel in the mood for it, I will have this picker wheel, randomly pick some random prompt, like modulate to a major, or have everything

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> be in groups of five or use poly chords or something just to spark an idea. … put down a loop or some kind of a repeated passage just to put something in the session, even if I do change it later. Having something is much easier to work with than empty projects. And so, yeah, all of these tools are things that I use from time to time to help spark my ideas. (21E)

> I have a couple of VSTs and access to samples that can really like, kind of automate the process of like getting inspired in the first place. And lots of things you can just, you can listen to it, you can find a loop and build from there. (1C)

(c) *Provide more options of sounds to choose from:*

> [A sample library] really gives me options and access to sounds that I wouldn't have on my own. Really, just having so many ways to build a composition – as the access is amazing. (12P)

> Being able to hear your compositions played so you can more easily refine them: Being able to hear all of my changes in real-time with a decently realistic sound … helps the composition process in so many ways (21E)

(d) *Allow for new approaches or processes:*

> I often compose based on what I'm able to play on the piano. So, it's dependent heavily on my piano skills and my skills as a performer. But when I'm composing using notation, I'm free from the restriction of what I'm able or not able to play, which can be both good and bad, because sometimes it's a lot easier to create, impossible to play, or even awkward to play pieces of music when I'm not playing anything myself. (21E)

The participants who had not used AI before but used other digital tools provided insight into how they thought a future AI system could improve their creative workflow:

> I wish that my tech skills could keep up with the ideas in my brain. If I had more time, if I was more efficient with my workflow, and could really get to the sounds that I hear in my head and get those into the program faster, then I would just be like, oh great, I finished that one, now I can go move to this next idea I have. Because that idea gave me another idea. (12P)

> People are looking at the possibility of human and computer co-creation where the machine does something, and you say, well, I don't like this, or I want it to be more like

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> that. And the system somehow adapts. And so, you end up with a guided composition. … I think that's maybe a good way to look at these AI systems, that if we can somehow make them controllable to where we can put our own creativity into them and interact with them to achieve interesting results. (43E)

> I wanna improvise. I wanna say, here's the theme, and I'm going for it. And there's like, you know, I'm reacting to the audience. So I would love for the software to be able to react with me in some way. (10P)

> A lot of people are sort of envisioning this world where amateurs and consumers become much, much more creative and able to produce things that they like and enjoy by having the assistance of AI systems in the same way that they might work with professional musicians. (6E)

The most identified benefit that cut across all participants was the recognition that the time saved by using AI tools may allow them to spend more time and attention on the creative aspects of their music-making:

> I personally would want technology to do all the things that I don't like doing, because I feel like my brain works faster than my mouth or hands ever could. And it would be great to just pass on those tasks to a machine that could actualize all of the creativity that I can never, even if I could clone myself and have 10 of me, I could never create everything I ever wanted to create. (3P)

> If there's a machine that could do what I wanted to do quicker, I would buy that machine today. (11E)

Some musicians shared a more neutral position, stating that they did not feel that AI would affect creativity in music any more than other tools have in the past:

> I don't think that [AI] really changes what it means to create. We as humans have been creating since we could – that's just part of who we are. And we're always gonna make any tool that we can develop, be something we can create with – that's just what we do. (41E)

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Not all the participants saw the potential benefits of technology, much less AI, in the creative process. Many shared their concerns over competition with current technologies and maintaining creative quality:

> There's so much music that's needed in TV and film … the downside is that, because of such a high volume is needed, the quality of the music has diminished to a certain extent. … anybody with access to these tools can produce a really high-end quality piece of music and not have really put in any sort of original work into it because they're really just compiling a bunch of loops together and then sending it off. (7C)

> We are setting ourselves up for, you know, driving towards mediocrity because everything's kind of referring back to the same data, ultimately. (40E)

Participants also shared some thoughts about the ethical uses of AI, ownership, and losing the human element in music:

> If you generate a thing and then you use that thing, did you compose it? Are, are you creatively responsible for it? Do you own the intellectual property to it? Are you a creative person if you come up with this thing? … Who owns the thing? Eventually, it's not really gonna matter, right? (26E)

> If it's I'm a creator, and I'm creating works that are getting put out and other people are making money off of, that's a problem to me. Like that, that's where the lines become more crossed. (41E)

> I look forward to seeing how we start to really value the brain and science development with, you know, neuroscience and how that ends up becoming the factor that saves humans from this potential downfall of like, lack of creativity and monochromatic culture. (12P)

## Discussion

### Key Commonalities and Differences in Defining Music Creativity

All participants emphasized the importance of creativity for musicians, regardless of their primary role, although their definitions of creativity varied and sometimes contradicted one

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another. Several participants emphasized "novelty" as an essential element of musical creativity, as proposed by some scholars (Azzara, 2002; Biasutti, 2015), although others struggled to define what qualifies as "novel," noting that any music is shaped by past masters to some extent. Some participants instead described creativity as primarily involving music-making that effectively expresses ideas or emotions, typically involving introspection to align their emotions with their music-making. Other participants described an iterative process to their creativity, which included steps specific to their workflow (Hickey & Webster, 2001; Johnson-Laird, 1987). A few participants pointed out the importance of freedom and personalization in music creativity, to the point that constraining their expression could be seen as detrimental to the overall process.

Most participants recognized that creativity may take more specific forms in music composition, performance, and production. Some were even more specific in identifying the ways they used their creativity to solve problems innovatively, whether the problem involved aligning with a specific emotion or working with a particular technology. However, since participants with different primary identities described examples of creative behaviors across music composition, performance, and production, and given the multiple functions many interviewees played, there was insufficient evidence to identify clear distinctions based on musicians' sub-identities alone.

This finding invites reflection on the theoretical framework guiding this study. Drawing on Gee's (2000) conception of professional identity as "the kind of musician one aspires to be," we hypothesized that sub-identities as composers, performers, or producers would yield distinct orientations toward creativity and, by extension, toward AI. The data suggest a more complex picture. Rather than functioning as discrete categories, these sub-identities appear to operate fluidly, with individual musicians drawing on multiple identities depending on context. This

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fluidity may itself be a defining feature of contemporary musicianship, particularly among technology-engaged musicians who frequently move between compositional, performative, and production-oriented tasks within a single project. Future research might explore whether musicians with more specialized roles, such as those working exclusively in orchestral performance or commercial jingle composition, exhibit more apparent identity-based distinctions in their conceptualizations of creativity.

**Perceived Tensions Between Generative AI and Creativity**

The musicians we interviewed held quite different views on whether and when AI-generated music could be considered "creative," views that were partly informed by their beliefs about what constituted creativity, as discussed in the previous section. Indeed, we uncovered a range of perceptions regarding the potential benefits and risks of incorporating AI into musicians' creative work, even among those who actively use technology in their music-making. These perceptions do not always oppose one another; rather, they often complement one another, reflecting the values and processes central to the diverse roles that musicians can play. Additionally, they raise complex issues surrounding intellectual property in the artistic realm that extend beyond AI use. Thus, it is important to identify these differing perceptions and positions and to understand their roots.

Participants' interpretations of "novelty" shaped their views on both intellectual property issues and expectations regarding acceptable creativity. Indeed, if a participant equated creativity with novelty, they were more likely to express concerns about the risk of inadvertently "copying" others' work through AI-generated content. Conversely, suppose the participant proposed that music creation draws on external influences to some extent. In that case, the boundaries of what is considered "novel," and thus copyrightable, become blurred, considering that drawing

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inspiration (consciously or unconsciously) from other musicians can be equated to incorporating AI-generated sounds or melodies that were built on other composers' work. This perspective also encourages a broader view of AI-generated content as simply another source of external influence and inspiration.

These findings resonate with and extend McCormack et al.'s (2019) framing of AI as a potential collaborative partner in creative work. Our participants' responses suggest that the collaboration metaphor is embraced selectively: musicians welcomed AI collaboration for tasks they perceived as peripheral to their core creative identity, whereas they resisted it for tasks they considered central. This selectivity aligns with Colton and Wiggins's (2012) argument that genuine creativity requires understanding the cultural, emotional, and contextual significance of outputs, a capacity our participants largely reserved for human creators. However, our data also reveal that participants' assessments of AI's creative capacity were not static; several expressed openness to revising their views as AI tools become more sophisticated and their output quality improves.

In contrast, participants whose primary goal was to express something through music and communicate it effectively to others were more likely to value their work based on how the audience received it, rather than on how "new" it was or whether it was "their own." Similarly, those who qualified creativity with problem-solving tended to view AI as merely another tool at their disposal and were primarily interested in evaluating how it would be used.

Given the importance placed on aesthetics in the arts, participants' evaluation of the quality of AI-generated music seemed to impact their perceptions about whether those products could be considered "creative" or not. Most participants shared concerns about the quality of music generated from AI tools. In sum, our data support the idea that a musician's conception of

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creativity influences their perception of AI's role in their work and their use of AI tools. However, the limitations of current tools, which affect the quality of AI-generated music, are another factor to consider, and one that will likely evolve rapidly as these technologies mature.

**Perceptions About the Impact of AI on Music Creativity**

Participants were divided about whether using AI could enhance or stifle creativity in music-making. They collectively described a creative dichotomy in which AI could open the door to new possibilities previously inconceivable, while simultaneously contributing to the homogenization of music by generalizing from its dataset. However, some musicians suggested that the human element will always be valued, at least within the arts.

The participants described AI as acceptable when it enables musicians to engage more independently and affordably in their own creative work. Part of that affordability means using AI in certain aspects of music production that previously relied on hiring experts in other creative fields (e.g., album art, music videos, promotional materials). However, participants largely rejected the use of AI-generated content when it could replace another musician's job. For example, a composer disapproves of using AI to generate compositions that they could have composed themselves. Yet that same composer would not hesitate to use AI tools beyond their expertise to help market their music, rather than hiring graphic designers or videographers.

This pattern warrants careful examination, as it reveals a potential inconsistency in how musicians evaluate AI's role in creative industries. When AI displaces labor in domains outside a musician's primary expertise (e.g., graphic design, video production, or sound engineering), it is framed either as an efficiency gain or as a form of democratization. When it threatens to displace the musician's own labor, it is framed as a loss of authenticity or creativity. This asymmetry may reflect a form of professional boundary-drawing, in which musicians implicitly rank creative

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contributions by their proximity to their own practice. Alternatively, it may reflect a coherent, if unarticulated, logic: musicians may believe that their own work involves tacit knowledge, emotional investment, and contextual judgment that AI cannot replicate, while assuming that other creative fields are more susceptible to automation. Whether this assumption is warranted and whether practitioners in those other fields would share it remain open questions that future research might address through cross-disciplinary comparison.

Another illustrative example was a performer who expressed concern about AI reproducing performances in their personal style but considered it acceptable to use commercially available AI-powered tools to automatically produce high-quality recordings of their performances for posting on YouTube (rather than hiring a sound engineer or studio for that purpose). These examples suggest that musicians' acceptance of AI may depend less on principled opposition to automation than on whose labor is being automated a finding with significant implications for how the music industry navigates the integration of AI tools.

Participants acknowledged various ways in which AI could assist in music creation, depending on the musician's role or function. For composition, musicians discussed how AI could help generate new ideas or sounds that they could further develop and refine, and support lyric writing, among other tasks. For performance, it was suggested that specific AI tools could help them be more natural on stage, create immersive experiences for the audience, or overcome limitations in their performance spaces. In music production, the value of using AI to explore alternative avenues for generating samples or developing new workflows was recognized. At the same time, it is interesting to note that some of these examples were provided by musicians whose primary role was not always the same, probably due to the many hats many musicians may wear, depending on the nature and scope of the music production in question.

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Musicians generally expressed skepticism toward AI tools that might replace what they regard as their creative work, but were more inclined to accept AI as an "assistant" for that very work. For example, several participants reported using AI music-generation tools to create and explore new sounds for incorporation into their compositions or to produce pieces they could refine and personalize.

Another key finding is how AI tools will change musicians' relationships over time. For example, participants who considered their creativity process-driven understood how AI tools could enhance their workflow and overall productivity, particularly for generating musical ideas or automating specific tasks. They valued any function that AI could perform to help them "save time," enabling them to produce more, whether by completing particular tasks more quickly, allowing them to concentrate on the creative elements of their work without distractions, or helping them to capture their ideas more swiftly.

**Limitations**

Several limitations of this study should be acknowledged. First, our sample consisted of musicians who were already engaged with music technology, recruited through purposive and snowball sampling. This population may hold more favorable or nuanced views toward technology than musicians who avoid digital tools entirely. Consequently, our findings may not generalize to the broader population of musicians, particularly those working in acoustic or traditional genres where technology plays a minimal role.

Second, our data are based entirely on self-report from interviews. Participants' stated attitudes toward AI may not perfectly align with their actual behavior when adopting or resisting these tools. Social desirability bias may have led some participants to express more critical views of AI than they hold in practice, particularly given ongoing public debates about AI's impact on

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creative professions. Future research using observational methods or tracking actual tool adoption would complement these findings.

Third, as noted in the Findings section, our categorization of participants by a single primary sub-identity (composer, performer, or producer/engineer) does not fully capture the reality that many musicians simultaneously occupy multiple roles. This limitation constrained our ability to test the hypothesized relationship between sub-identity and perceptions of creativity and AI. A finer-grained measure of identity salience, or a larger sample that permits subgroup analysis, might yield clearer patterns.

Fourth, the interviews were conducted between January and August 2023, a period of rapid evolution in generative AI capabilities. Tools such as large language models and text-to-audio generators have advanced considerably since data collection concluded. Participants' views may have shifted in response to these developments, and more sophisticated alternatives may have already superseded the specific AI tools they referenced. This temporal limitation underscores the need for ongoing research to track how musicians' perceptions evolve alongside the technology.

Finally, while our sample was diverse in terms of genre, role, and experience level, it was less varied in geography (predominantly U.S.-based) and skewed toward participants with formal musical training. Musicians working in different cultural contexts or without access to formal education may hold different views about creativity and technology that this study did not capture.

**Directions for Future Research**

The findings and limitations of this study suggest several productive avenues for future inquiry. First, longitudinal research tracking the same musicians over time would illuminate how

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perceptions of AI shift as tools mature and become more integrated into standard workflows. Such research could examine whether initial resistance softens with exposure, whether concerns about homogenization prove warranted, and how musicians adapt their creative practices in response to AI capabilities.

Second, comparative studies across genres would clarify whether the patterns observed here, particularly the acceptance of AI as an assistant but not as a creator, hold across musical traditions with different relationships to technology, authorship, and improvisation. For instance, electronic dance music producers, who have long embraced technological mediation, may exhibit attitudes different from those of classical performers working within notated traditions.

Third, research examining actual AI adoption behavior, rather than stated attitudes, would provide valuable triangulation. Studies might track which AI tools musicians incorporate into their workflows, how they use them, and the outcomes, both in terms of creative output and professional sustainability.

Fourth, cross-disciplinary research comparing musicians' views with those of practitioners in other creative fields would clarify whether the patterns are specific to music or reflect broader dynamics in creative industries facing automation. It might also examine the asymmetry where musicians accept AI displacing other workers more than themselves. Lastly, intervention research on music education programs could help students engage critically with AI tools, exploring teaching methods for AI literacy, ethics, and adaptive creativity.

## Conclusion

This study documented musicians' beliefs about creativity in music, revealing varied interpretations—from novelty to emotional expression or problem-solving. Most valued freedom and personal touch. These ideas didn't align neatly with professional labels like composer or

performer, suggesting fluid identities, especially for tech-engaged musicians. On AI, opinions were mixed: some saw it as a creative tool, others worried about originality and IP. Those viewing creativity as problem-solving welcomed AI for efficiency but resisted it replacing unique skills. Overall, musicians preferred AI as an assistant over a creator, recognizing its support but wary of its role in replacing human contribution.

A key finding revealed asymmetry in musicians' AI acceptance: those rejecting AI for core creativity often accepted it for tasks by other professionals. This shows attitudes are influenced by professional identity and self-interest, not just ideals about creativity and authenticity. Recognizing this helps predict industry responses to AI. AI may also alter musicians' perception of time, thereby boosting productivity by streamlining workflows. Creativity-as-process musicians especially valued AI's ability to speed idea generation, automate tasks, and free resources for higher-order decisions. This study is among the first to empirically examine how musicians' views of creativity influence their AI acceptance, based on beliefs about novelty, expression, and problem-solving. Acceptance depends more on whether AI augments or replaces core tasks than on technological skill, affecting AI design, marketing, and use in creative workflows.

**Recommendations**

Based on these findings, we offer recommendations for three stakeholder groups. For technology developers, we recommend designing AI tools that preserve user agency and support iterative refinement rather than generating finished outputs from minimal input. Tools that allow musicians to guide, curate, and personalize AI-generated material—treating AI as a collaborator rather than a replacement—are more likely to gain acceptance among professional musicians.

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Interfaces should make the human's creative contribution visible and central, avoiding designs that obscure the user's role in the creative process.

For music educators at all levels, we recommend integrating critical engagement with AI into curricula. This might include hands-on experimentation with AI composition and production tools, ethical case studies examining intellectual property and labor displacement, guided reflection on students' own definitions of creativity and how AI challenges or supports them, and analysis of AI-generated music to develop evaluative criteria. Preparing the next generation of musicians to engage thoughtfully with AI will require not only technical skills but also the conceptual vocabulary to articulate what they value about human creativity and why.

We hope this article prompts musicians to reflect on their attitudes toward AI and to understand their reasons for acceptance or resistance, whether principled or self-protective. Recognizing which aspects of their creative process define their identity and where AI can enhance, rather than threaten, those values is key. They should consider how their views on AI in music compare with those in related fields. As AI and music evolve rapidly, the ongoing tensions between innovation, authenticity, democratization, and homogenization will grow. Success will depend on musicians clearly articulating their values, adapting practices, and mastering AI as a tool rather than fearing or uncritically accepting it. We hope this study fosters thoughtful engagement.

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Yu Jung Han is currently a postdoctoral associate in the Center for Learning in the Digital Age, with a faculty appointment starting July 2025. Her primary focus is facilitating lifelong attitudes, mindsets, and responsible engagement with emerging technologies, with a current emphasis on artificial intelligence. She highlights the importance of human-centered AI integration, drawing insights from real-world, interest-driven practices—such as online creative/fan fiction writing—where AI is meaningfully embedded. She applies these insights to guide AI integration in educational settings. Actively engaged in interdisciplinary research and grant projects spanning fields from second language acquisition to music education, she has published and delivered numerous presentations at regional, national, and international conferences.

**Rachel Roberts**
**Director, ESM Strategic Initiatives**
**Hamlin Family Director of the Institute for Music Leadership in Honor of James Doser**
**Associate Professor, Music Leadership**
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Rachel Roberts serves as the Director of Strategic Initiatives, as the Hamlin Family Director of the Institute for Music Leadership (IML), and as the Associate Professor of Music Leadership at the Eastman School of Music. In the strategic initiatives role, she works with the Eastman Dean to oversee strategic initiatives and planning. In the faculty role, Roberts teaches and leads Eastman's new online Master of Arts in Music Leadership degree program. In the IML role, she is responsible for overseeing all Institute activities and programs. Roberts has held leadership positions in a variety of organizations, including the Atlanta Symphony Orchestra where she served as its first Director of Strategic Planning Engagement. She arrived at the ASO after completing the League of American Orchestras' Orchestra Management Fellowship Program, having worked with orchestras in Aspen, Detroit, South Dakota, and Atlanta. Prior to returning to Eastman, Roberts served as the founder and director of the Entrepreneurial Musicianship Department at New England Conservatory, where she launched a wide variety of curricular and co-curricular programs. Roberts holds degree from Eastman (BM, flute performance) and the Harvard Graduate School of Education. She is currently nearing completion of a Doctorate in Education at the University of Rochester's Warner School of Education.

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