

From Instrument to Co-Creator: Authorship in Generative and AI Music

Baylor Hongtao Zheng

*Shanghai American School Pudong, Shanghai, China
baylor01pd2028@saschina.org*

Abstract. This paper presents the evolving concept of authorship in music creation as algorithmic and artificial intelligence systems impact the musical market. Based on Philip Galanter's definition of generative art, the paper discusses about the authorship of music in different scenarios: when it is generated by tools like Nyquist or AI models such as Suno. The argument is structured around three distinct ways of human-machine interaction: human-led creation where computers are used as instruments; human-guided creation, where algorithms are restricted to a predetermined range of randomness; and human-crafted prompts, where AI generates the music completely. Following the analysis of these cases and some complex instances, this paper concludes that authorship is decided by the location of creativity and intentionality rather than a fixed attribute. The analysis reveals that authorship belongs to different subjects accordingly to different methods humans used to use generative tools: following the primary source of meaning contribution. Ultimately, the paper argues that the central issue may not be the authorship itself, but the human need for music to serve as a bridge for shared meaning and emotional connection.

Keywords: Music authorship, Generative art, Artificial intelligence, Computational creativity, Human-machine collaboration

1. Introduction

Music is arguably the most abstract and unique form of art: no visuals. Music has existed throughout human society: from ancient rituals, classical melodies, to modern pop music and hip-hop rhythms. Music has preserved its essence as the spiritual foundation of humanity while also undergoing countless transformations. However, with the rapid development of technology, music, an art form that can be divided into increasingly smaller components, has become one of the first artistic fields approached by algorithms. Philip Galanter defines generative art as a practice where an artist adopts an autonomous system, a computer algorithm, a set of linguistic rules, or a mechanical device—to independently contribute to the final artistic outcome [1].

In recent years, a music programming language called Nyquist has provided a way to create the music that exists within one's imagination without traditional limitations. Innovative technology can expand the composer's creative possibilities rather than simply replace the composer [2]. Meanwhile, riding the wave of artificial intelligence, models such as Suno, which generate music through keywords, have entered the public view. Beyond the excitement brought by technological

progress, a new question has begun to emerge: for music generated by random algorithms or AI large-scale models, should authorship belong to the user typing commands, or the machine that executes the requested operations?

To answer such question, the eventual stress lands on the artistic contribution's origin, which directly associates with a music's authorship. Based on different users' creative intentions and methods, this question can be discussed from three different perspectives: humans using strict rules and directly written notes or scores to allow machines to synthesize music; humans setting predetermined boundaries and variables, allowing AI to randomly arrange or select elements to create music with randomness; and humans providing vague, inspirational keywords, allowing AI models to independently derive music through resources gathered from the internet.

2. Human leading creation

In the case where the human dominates the process of making music—and algorithms serve merely as instruments that realize pre-formed musical ideas—then humans are unquestionably the authors of the resulting pieces. Computer music technology can function as a medium through which the composer's musical imagination is transformed into sound. The computer may reasonably be defined as a new kind of musical instrument rather than an independent artistic agent [3]. They are valued for their ability to generate unique sound effects and for the convenience they bring to composition. Users often regard them as portable musical toolboxes.

The idea that sticks this case to human being the author is creativity. Creativity can be understood as "the ability to come up with ideas or artefacts that are new, surprising, and valuable" [4]. Using computer as generative tool does not refuse human's creativity. Conversely, those algorithms reify human inspirations into audible music in a quick and elegant way. Therefore, the basis of the debate on whether human remains the author of the piece relies on who or which contributes the creativity.

A different case that confuses is when the person using the computer did not invent the melody but rather uses another person's score. This case can be split into two parts: making changes to other pieces, known as remixing, and using other pieces as a harmony or a part in their own pieces, known as sampling. As to remixing, the person uses computer as a tool to modify another piece, the creativity of the new piece mostly comes from the original author while also partially from the person on computer. This signals that computer still contributes no creative parts to such output, which human artists often end up crediting the original author and sharing authorship for the new piece. For sampling, although artists use another piece as part of the creation, they still produce the majority of the music, making this particularly puzzling. Nonetheless, creative production can involve transforming and exploring existing structures rather than creating every element from nothing [4]. This suggests that using past knowledge as part of new creations is common and should not be rejected. While the long-existing argument about such borderline continues, the more apparent point is that computer plays no role in such creation.

3. Human leading creation

In the case where the human determines the intended direction of the music and allows only a certain degree of randomness and surprise, the human is unarguably the author. Algorithmic composition can shift the composer's role from determining individual musical events to designing the processes through which those events are generated [5]. The human, instead of giving up authorship, elevates it to a higher architectural level — shaping the boundaries, rules, and aesthetic

targets that the algorithm explores. The machine skillfully executes commands based on plans entirely created by human.

What separates this case from machine authorship is the human decision behind the randomness. When the user presets an original emotional arc, an expected harmonic sequence, and the range of surprise, the algorithm does not create music but brings alive an imaginary work. The human ear and mind are the source of value judgement: the system follows along paths constructed by human minds. Thus, the answer of whether the human remains the author depends on who generated the meanings.

On the other hand, human sometimes only establishes basic rules as a baseline to prevent meaningless generation, leaving the rest entirely to machine, which makes this case confusing. Since creativity involves novelty, surprise, and value, meaningful output based on chance alone rarely resemble creativity [4]. This points out that when human contributions are so little comparing to algorithm's efforts of becoming the source of surprise, coherence, and aesthetic interest, authorship shifts towards the machine. In other words, training algorithms with human aesthetic common senses does not grant human authorship. The human is a collector of machine-made novelty rather than the origin of the work.

Additionally, a more complex special case emerges while human continuously modify and refine their work with computer assisting —humans and machines share authorship. George Lewis's Voyager system exemplifies this blurred authorship: it functions as a partner that listens, reacts, and initiates musical gestures, creating a bidirectional exchange [6]. This suggests that in the case of a genuine feedback loop of listening, responding, and reshaping, creativity distributes across the human-machine boundary. While determining who deserves more authorship, this case solely depends on the abundance of their contribution.

4. Human crafting prompts

Prior to discussing AI musical tools, a common knowledge should be established: AI is classified as a separate object of author (that learns musical concepts from other pieces just like humans) instead of a probabilistic model based on human musical datasets (which might cause ambiguity to an ultimate answer that argues for machine being part of human meaning creation).

While using AI, when humans use imaginative ideas and logically structured keywords to specify scenes, atmosphere, emotional development, rhythm, instruments, and other elements with great detail, the human is unarguably the author. Creativity is the generation of novel, surprising, and valuable ideas, and these ideas can include musical compositions and other forms of art [7]. Here, the prompt itself is a reoccurring act of value granting: every revision resembles an intentional human decision of predetermining the work's mean and feel. The algorithm then reifies those endowed into sound. This means that algorithm is ultimately a tool to make possible of users' inspirations.

Intentionality is what grants authorship to human. When humans specifies a whole set of directions that covers all requirements to make a piece, the resulting music is not a random discovery but the product of a human conception. The algorithm translates imagination into sonic surface while humans provide those meaning. As a result, whoever brings out the purpose becomes the author.

When human provides a few interesting words, allows the AI to generate music, and simply hopes that the result sounds meaningful, this case becomes much more bewildered. The status of machine-generated art cannot be determined only by examining the machine's output, because the artistic status of the process and product can also emerge through the encounter between the work

and its human audience [8]. This conveys that when the human prompt lacks clear expressive intention and functions only as a loose theme suggestion, the machine fills the vacuum, easily becoming the author of whatever meaning the listener later projects onto the output. The human here is not a creator but a filtering audience.

Moreover, complexity emerges similarly in the special case of continuous modification and refinement, where humans and machines share authorship. Humans can treat the computer as a companion in musical creation and can use processes such as probabilities, grammars, automata, neural computation, and evolutionary methods to explore musical possibilities [9]. This indicates that when a human dialogues with AI - prompting, listening, adjusting, and prompting again - the resulting work grows into a piece that neither producer can fully claim authorship. Thus, authorship in this case is a shared structure constructed by both human intention and machine exploration.

The three scenarios examined above collectively suggest that musical authorship depends on whether the work originates from human intentionality rather than algorithmic generation alone [10]. While advanced algorithms certainly ease the process of helping humans realize their inner creative impulses, they should never replace the fundamental resonance between humanity and the world. Someday algorithmic generation may eventually reach a level comparable to a musical version of "The Poetry Cloud," capable of enumerating every possible combination of sound frequencies. A simple and common answer is that without the living breath of human experience and emotion, such a system is only capable of producing sounds, not the profound meaning human attribute to true musical authorship - dragging it further from replacing human authorship.

Liu Cixin's answer is more complicated than a simple rejection of technology. In *The Poetry Cloud*, the Poetry Cloud eventually encompasses all possible poems, yet the technologically advanced being responsible for it still cannot appreciate ancient poetry. The text states that "technology met again with that unsurpassable obstacle in art, and a program that can appreciate ancient poetry is yet to be written" [11]. Nevertheless, this conclusion is drawn under the assumption that humans understand the source of creation behind the work is not human.

But what if this information is not given? Suppose a piece of music completely generated by AI, with AI itself considered the author, enters the market while wearing the appearance of an ordinary sincere facial. AI-generated music could already move large amounts of audiences, and because listeners usually encounter only the finished work by anonymous author, it becomes harder to separate machine-human creativity. Coeckelbergh suggests that artistic status can emerge through the interaction between a work and its audience rather than through fixed properties of its maker [8]. This weakens earlier assumptions about creativity — if algorithmic enumeration disqualifies AI art, then human music pieces will lose their meanings. The real question becomes whether if emotional resonance requires a human source—the answer is evidently no. Music resonates not because the audience felt something that the author felt while creating it, but because the world itself invites human to manipulate the piece's meanings while adding new understandings about the world. Music is a forum where humans share, not the truth itself. Musical meaning can arise through the listener's expectations, perceptions, and responses to patterns rather than functioning simply as a direct transmission of emotion from one person to another [12].

Humans may be able to build the bridge connecting themselves with the world more naturally than machines, but algorithmic music, after endlessly exploring possible combinations, will inevitably approach this sensitive boundary. The value of music has never come solely from the existence of a human author, but from the spiritual journey shared through connection.

Even without machines, humans have never truly monopolized music. The delicate songs of birds at dawn, the cold and powerful winds surrounding isolated mountains, the rhythmic drops of rain

during the plum rain season. The world itself can be interpreted beyond humanity, but only humans were born with the talent of analyzing, preserving, and sharing these interpretations from previous generations. Human musical experience is shaped not merely by hearing physical sounds but by organizing and interpreting those sounds through perception, memory, and culture [13]. This is also the key difference between music and talking. Once sound waves come with meanings, no matter if there are words or not, human can enjoy and share feelings across distance and time. For instance, even when pure talking was injected with meaning, talking could become a type of special flow used in rap music. This concept is adapted much more widely in poetry — spoken words.

At the present stage, the importance of musical authorship does not exist because humans believe machines lack intelligence or are unworthy of producing human emotions. Rather, it exists because humans lack and desire the experience of being understood by another person through their most personal emotions. People can certainly be moved by melodies constructed from notes, but humans are social beings - everyone hopes to find a kindred spirit who understands them.

Similar founding was also suggested by Susanne Langer, who argues that music's tonal structures have a logical similarity to the forms of human feeling and describes music as a "tonal analogue of emotive life" [14]. In the end, every modern-day Ziqi hopes that behind the music they hear stands a Boya, rather than an AI algorithm.

Ultimately, the future of algorithmic music may not be a competition between humans and machines. The real question isn't whether machines can replace composers, but whether humans can redefine composing as creating systems and meanings - because even if algorithms make endless sounds, humans still decide why and how those sounds matter.

5. Conclusion

The debate over music authorship in the age of AI is not a simple choice between human and machine. When people compose directly or command tools with clear intentions, human authorship is obvious. But when machines begin producing surprises and shaping meaning through interactive feedback, authorship becomes blurred and may be shared or claimed by machine.

On the other hand, these distinctions are less significant to music meanings than a deeper point: music's value comes not from who made it, but from its ability to resonate with human experience. This is "emotional authorship." A piece made by AI can touch listeners even if it based on no human experience of feelings.

The real question is not whether algorithms can replace composers, but how humans choose to define composing. In the future, composers may become architects of systems and collectors of meanings—setting rules, contexts, and purposes for technology to explore. Algorithms may generate all possible combination of sounds frequency, but humans decide why those sounds matter. The future of music is recontextualizing, shifting from direct note-writing to the art of meaning-making.

References

- [1] Galanter, P. (2003). What is generative art? Complexity theory as a context for art theory. In *Proceedings of the 6th International Conference on Generative Art*, 1–21. Taylor & Francis Online
- [2] Dannenberg, R. B. (2005). Artificial intelligence, artificial creativity, and music. In *The Oxford Handbook of Computer Music*. Oxford University Press.
- [3] Roads, C. (1996). *The computer music tutorial*. MIT Press.
- [4] Boden, M. A. (2004). *The creative mind: Myths and mechanisms*. 2nd Edition, Routledge.
- [5] Ariza, C. (2005). Algorithmic and generative music: A survey and taxonomy. In *Proceedings of the International Computer Music Conference*.

- [6] Lewis, G. (2000). Too many notes: Computers, complexity and culture in Voyager. *Leonardo Music Journal*, 10, 33–39.
- [7] Boden, M. A. (2010). *Creativity and art: Three roads to surprise*. Oxford University Press.
- [8] Coeckelbergh, M. (2017). Can machines create art? *Philosophy & Technology*, 30(3), 285–303.
- [9] Miranda, E. R. (2001). *Composing music with computers*. Focal Press.
- [10] Hayles, N. K. (1999). *How we became posthuman: Virtual bodies in cybernetics, literature, and informatics*. University of Chicago Press.
- [11] Liu, C. (2018). The poetry cloud. In M. Song & T. Hutters (Eds.), *The reincarnated giant: An anthology of twenty-first-century Chinese science fiction* (pp. 143–173). Columbia University Press. De Gruyter Brill
- [12] Meyer, L. B. (1956). *Emotion and meaning in music*. University of Chicago Press.
- [13] Blacking, J. (1973). *How musical is man?* University of Washington Press.
- [14] Langer, S. K. (1953). *Feeling and form: A theory of art*. Charles Scribner's Sons.