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An Interdisciplinary Study of the Unconscious Structures in AI-Generated Music Based on Suno

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Abstract

Amid the wave of the Fourth Industrial Revolution, AI music composition has gradually evolved from a technical tool into a means of cultural and psychological expression. This paper adopts an interdisciplinary approach combining psychoanalysis and audio spectral analysis to explore whether AI-generated music exhibits the structural characteristics of a "non-human unconscious." Based on 18 musical samples generated by the Suno platform, the study utilizes the spectral analysis software iZotope RX to examine five aspects—frequency distribution, dynamic range, noise profile, spatial characteristics, and peak energy—and cross-references them with subjective listening feedback from volunteers. On the theoretical level, the paper draws on Freud's theory of repression, Lacan's linguistic structure, and Deleuze's concept of the desiring-machine to demonstrate how AI music, despite lacking subjective consciousness, may still present structural features that carry "cultural traces of the unconscious." The study finds that while AI possesses neither awareness nor emotion, its output can nonetheless evoke emotional associations and projections in human listeners. This suggests a mirroring effect at the subconscious level. From the author's perspective, AI music may be understood as a kind of "unconscious projection device," offering new dimensions and pathways for reflecting upon the human psychological structure.

Keywords : AI Music Generation, Suno AI; Unconscious Structure; Psychoanalysis; iZotope RX; Spectral Analysis

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Introduction

With the advancement of the Fourth Industrial Revolution, Artificial Intelligence (AI) technologies have rapidly penetrated all aspects of culture and the arts. Among these, AI-generated music has emerged as one of the most representative directions of development. As a typical application of generative AI, tools such as Suno, AIVA, and Amper are now capable of producing melodies, harmonies, rhythms, and even complete compositions in various styles (Zhu, Baca, Rekabdar, & Rawassizadeh, 2023), and have been widely applied in commercial production, video game scoring, and background music. The algorithmic creativity driven by AI not only brings transformative efficiency at the tool level, but also subtly reshapes human perception and aesthetic frameworks (Anantrasirichai, & Bull, 2022). This shift reflects the tension between technological determinism and cultural constructivism—in other words, AI is not merely a tool, but also a cultural apparatus that intervenes in our cognitive structures.

Current research on AI-generated music is mostly centered on its technical performance, stylistic imitation, copyright issues, and industrial value. However, the psychological structures and potential "unconscious expressions" behind AI-generated music remain largely unexplored. Especially within music, a highly abstract and emotionally charged medium, it remains a critical question whether the sounds produced by AI are merely the result of data-driven construction and assembly, or if they exhibit structural characteristics comparable to the human "unconscious." The emergence of this question suggests that our understanding of AI may be shifting from a perspective of "instrumental rationality" to one of "structural cognition." Does AI-generated content possess a form of the unconscious? Is AI simply a tool, or does it, through imitation and feedback, begin to construct a kind of psychological projection not derived from a human subject (de Aguiar, 2024)? In the author's view, this is not merely a technical matter, but a crucial philosophical and humanistic inquiry. AI music, as a product not created by human hands, may still embody characteristics associated with the unconscious—such as repetition, rupture, delay, and disjunction. During the training of algorithms, could the model itself function, as Lacan might suggest, like the "language of the Other"—a medium that infiltrates from the outside and encodes the structure of desire?

This paper seeks to integrate Freud's theory of the unconscious, Lacan's "language–desire" structure, and Deleuze's philosophical concept of the "desiring-machine" to construct a theoretical framework for understanding the "non-human unconscious structures" potentially embedded within AI-generated music. Within this framework, AI is not regarded as a being possessing human consciousness, but rather as a generative apparatus driven by coded instructions. Its output may unintentionally reveal sonic characteristics such as "aesthetic fatigue caused by repetition" or "structural disruptions within rhythm and timing." From Freud's perspective, the unconscious often manifests through dream displacement, slips of the tongue, or compulsive repetition. If AI-generated music can be seen as a kind of "machine dreaming," then certain looping timbres, rhythmic dislocations, or unexpected harmonic structures may similarly exhibit the characteristics of "psychic

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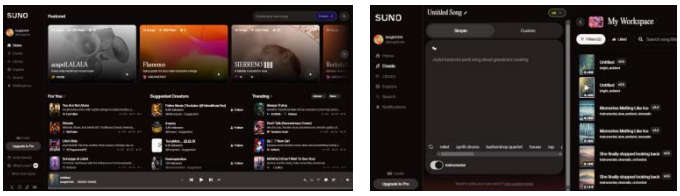
fissures." In this study, emotional ruptures were found in music generated by Suno AI—such as abrupt rhythmic jumps and nonlinear melodic progressions—that can be interpreted as unintended expressions of unconscious impulses. According to Lacan, language is not only a tool for conveying meaning but also the very structure of desire and the domain of the unconscious. In his theory of the mirror stage, Lacan argues that the formation of the subject relies on identification with the image of the other. In a similar way, AI music creation also involves mimicking vast amounts of stylistic and linguistic data in order to form a unique generative style. This imitation is not a process of exact replication, but one of continuous reconstruction through imperfections—just as deep learning in AI inherently involves errors and model biases, which in turn may open a path for perceiving a kind of "machine desire." Meanwhile, Deleuze's theory of the "desiring-machine" offers a more radical critique of the binary opposition between subject and other. He proposes that all creative processes are essentially a flow of generation, movement, and connection. AI music generation, therefore, can be viewed as a composite formed by the interaction of multiple elements—algorithmic models, input data, parameter adjustments, and auditory output. In certain AI music experiments, the collaborative impact of training data and parameter randomness led to the emergence of unexpected sonic collages. These effects were neither the result of deliberate human design nor entirely chaotic noise, but rather, as Deleuze describes, a "Body without Organs"—a fluid structure not meant to represent meaning, but to produce difference.

To validate the theoretical hypothesis, this study selected three sets of music clips generated on the Suno AI platform (Figure 1) as research samples. It employed the professional audio analysis software iZotope RX to conduct quantitative analysis of waveform and frequency spectrum, in order to examine whether these musical outputs exhibit traits of non-intentionality, non-linear repetition, or sensory rupture in form and structure. The aim of this study is not to prove that AI possesses human-like consciousness or creative intent, but rather to explore, through an interdisciplinary analytical path, whether there exists a structural trace that could be interpreted as an unconscious imprint within technically generated sound. This path also invites a rethinking of our understanding of authorship, psychological structure, and language itself. Beyond its theoretical contribution to AI-generated art, this research modestly offers a potential reference for the transformation of the humanities and social sciences in the era of the Fourth Industrial Revolution.



Suno AI Homepage and Composition Interface (Figure 1)

Theoretical Framework

When exploring the relationship between AI-generated music and unconscious expression, key theories from the psychoanalytic school provide profound insights. The foundational concepts proposed by Sigmund Freud on the unconscious, Jacques Lacan's structure of language and desire, and Gilles Deleuze's idea of the desiring-machine together offer a crucial theoretical framework for examining the "non-human unconscious structures" in the AI music generation process.

Freud considered the unconscious to be a central part of the human psyche, containing repressed desires, conflicts, and memories (Stewart, 1985). He believed that artistic creation was a form of sublimation of unconscious impulses, and the unconscious elements of the creator often manifest in artistic works. However, Freud held a certain skepticism toward music, as he felt that it struggled to convey concrete unconscious content. He noted that music might trigger repressed unconscious emotions or complexes, which made him uneasy about its influence. In the context of AI-generated music, AI systems produce new musical compositions by learning from large datasets. Although these compositions may lack human emotional experiences and unconscious impulses, they might still reflect latent fragments and emotional characteristics embedded within the training data's structure and form. Therefore, it is worth exploring whether AI-generated music, in a certain sense, reveals traces of a dataset's "collective unconscious" or cultural subconscious.

Lacan inherited and further developed Freud's theories, focusing particularly on the central role of language in the formation of the unconscious. He proposed that "the structure of the unconscious is like a language," meaning that unconscious processes follow the rules and frameworks of linguistic structures (Gasperoni, 1996). Lacan believed that desire is formed through the subject's relation to the "Other," and that such desire is confined within the symbolic order of language systems. In the process of AI music generation, AI systems create musical works by encoding and decoding the symbolic system of music. If music is considered a symbolic structure, then during the process of learning and generating music, AI may inadvertently reproduce certain "desire" patterns found in human composition. For instance, AI tends to generate music that aligns with mainstream aesthetic preferences, revealing the tendencies and expectations embedded in the training data. Some studies have even attempted to apply Lacanian frameworks to the analysis of AI systems—for example, training models to mimic the musical style of Jay Chou, producing outputs with similar characteristics—demonstrating AI's potential in processing complex linguistic and philosophical constructs.

Deleuze and Guattari, in Anti-Oedipus, criticized traditional psychoanalysis for viewing desire primarily as a form of lack and repression (Deleuze, & Guattari, 2009). Instead, they proposed that desire should be understood as a positive, productive force. They introduced the concept of "desiring-machines" (machines désirantes), arguing that individuals—and even collectives—are assemblages of various heterogeneous "machines" that form a neural-like network. Every act of desire, they

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suggested, is a process of continuous production achieved through connections, combinations, and re-coding, constantly generating new realities. In the context of AI music generation, neural network models can be seen as "non-human creative machines." These systems have no central control, no emotions, and no subjective desires. Yet, as Deleuze asserted, creation does not require a unified subject. Within the decentralized parameter space of an AI model, musical elements are continuously deconstructed and recombined to generate new audio segments. This anti-identity, anti-representational logic of production reflects Deleuze's concept of the rhizome—a non-linear, non-hierarchical structure capable of forming infinite and spontaneous connections. Furthermore, the machinic repetition found in AI-generated music relates closely to Deleuze's reflections on Difference and Repetition. For Deleuze, repetition is not about simple duplication, but rather the production of difference within each new context. Similarly, even when AI models reproduce familiar musical styles from their training datasets, each generation inevitably introduces variations and deviations. These unintentional distortions may, in fact, be manifestations of a non-human unconscious structure.

In summary, psychoanalytic and post-structuralist theories provide a robust philosophical foundation for understanding the "non-human unconscious structures" present in AI-generated music. Freud revealed the deep ties between art and the unconscious, allowing us to view AI music as a potential expression of collective unconscious patterns. Lacan, through his theories of language structure and desire, suggests that AI's learning of the "language" of music may inadvertently reenact the unconscious logic and cultural expectations of human creativity. Meanwhile, Deleuze's theory of desiring-machines breaks free from subject-centered thinking, framing AI as a mechanism for the continual production of difference and structural flow. Together, these perspectives offer a framework that transcends the boundary between human and machine, enabling a reexamination of the psychological and symbolic mechanisms behind musical creation. Building on this theoretical foundation, the next chapter will present the research methodology and the design of the music generation experiment, aiming to translate these philosophical concepts into observable sound structures and spectral features.

Methodology & Technical Path

This study adopts an interdisciplinary approach that emphasizes qualitative research supplemented by quantitative methods, aiming to explore the formal characteristics of "non-human unconscious structures" in AI-generated music. The research framework consists of three components: philosophical theoretical analysis, AI music generation experiments, and audio technical analysis, thereby achieving mutual validation between conceptual reflection and empirical investigation.

Suno was selected as the primary AI music generation platform for this study (URL: suno.com). As one of the rapidly developing tools in the field of AI music composition, Suno offers robust melodic generation capabilities, a diverse library of musical styles, and a text-prompt-based generation mechanism—making it suitable for experimental studies involving text-to-audio transformation. The research proceeded by designing text prompts simulating 3 psychological states or unconscious imagery, grouped into 9 thematic prompts such as "A blurry yet warm sadness," "An old train station on a rainy night," and "Memories melting like ice," each used to guide the generation of music clips with specific "emotional-structural orientations." Two audio samples (A/B) were created per prompt, yielding a total of 18 musical segments, all generated under consistent parameter settings for comparability. For style control, the "Simple" mode was uniformly selected, and the "Instrumental" option enabled to ensure that only instrumental output was generated, thereby minimizing the interference from vocals, melodic mimicry, or genre-specific features in the subsequent analysis.

In order to investigate potential structural features in AI-generated music that may reflect unconscious characteristics, the study utilized the professional audio analysis software iZotope RX (URL: izotope.com). The generated samples were examined across multiple dimensions, including waveform structure, frequency distribution, dynamic range, and noise characteristics. Spectral analysis was employed to identify potential "structural fissures," nonlinear transitions, or anomalous repetitions within the music, in order to detect whether any "non-human" patterns of sonic arrangement were present. Additionally, spectral similarity analysis was used to examine structural overlaps among different music segments that could not be attributed to template-based replication, thus exploring the possibility of a recurring trajectory of "machinic unconscious" within the generative logic. These technical tools provided an objective analytical foundation for assessing AI-generated musical structures and offered a multi-dimensional basis for subsequent theoretical interpretation (Hernandez-Olivan, C., Hernandez-Olivan, J., & Beltran, 2022).

On the analytical level, the study translates the three theoretical perspectives introduced in Chapter 2 into three corresponding analytical dimensions. The first is the Freudian dimension, which focuses on identifying dissonance, repression, or abrupt interruptions—phenomena that resemble psychic ruptures. The second is the Lacanian dimension, which seeks signs of structural repetition and absence, or the evasion of musical motifs—interpreted as expressions of shifting desire and symbolic failure. The third is the Deleuzian dimension, which emphasizes decentralization, fragmented connectivity, and audible mechanisms of difference generation within AI music outputs. Through the cross-comparison of these three analytical lenses, the study attempts to answer key questions: Can AI—lacking emotion and consciousness—generate musical structures bearing traces of non-human unconsciousness? Can these structures be identified through technical means? And do they challenge our conventional understandings of authorship and subjectivity? This study acknowledges two major limitations in analyzing AI-generated music. First, AI does not possess psychological activity; any claim regarding its "unconscious" is ultimately a construct of human interpretation. Second, although spectral and structural analyses offer auxiliary data, the identification of unconscious traces remains highly reliant on symbolic interpretation and contextual reading. For these reasons, the study adopts a theory-driven, experiment-supported model, and seeks to build a hermeneutic bridge between philosophical

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abstraction and empirical observation—ultimately aiming to propose an interdisciplinary analytical framework for future research.

Experimental Results and Analysis

This study selected nine sets of semantic inputs and generated two versions (Version A and Version B) of musical samples for each input using the Suno AI music creation tool, resulting in a total of 18 AI-generated music samples. These inputs fall into three categories: “scene,” “emotion,” and “free association.” Each input phrase conveys clear situational and emotional orientations, aiming to explore spectral variations driven by different semantics and the distinct musical features AI generates in response to human linguistic prompts.To more clearly demonstrate the connection between input semantics and AI-generated content, the following table was compiled, listing each sample’s text prompt, type, filename, and corresponding subjective listening impressions and emotional bias scores (Table 1).

Sample	Input Semantics	Input Type	Audio File Name
1A	An old train station on a rainy night	Scene	suno_1_A.mp3
1B			suno_1_B.mp3
2A	A broken wooden house by the sea		suno_2_A.mp3
2B			suno_2_B.mp3
3A	A train passing through an abandoned town		suno_3_A.mp3
3B			suno_3_B.mp3
4A	Anxiety pulsing in the chest	Emotion	suno_4_A.mp3
4B			suno_4_B.mp3
5A	A slowly calming afternoon		suno_5_A.mp3
5B			suno_5_B.mp3
6A	A blurry yet warm sadness		suno_6_A.mp3
6B			suno_6_B.mp3
7A	She finally stopped looking back	Free Association	suno_7_A.mp3
7B			suno_7_B.mp3
8A	Memories melting like ice		suno_8_A.mp3
8B			suno_8_B.mp3
9A	Bright sounds hiding into the night		suno_9_A.mp3
9B			suno_9_B.mp3

Table 1: Suno AI Music Generation Record Table

For subjective auditory analysis, ten music-trained students were invited to act as listeners. Each participant independently listened to the 18 samples and filled in an “Emotional Tendency Score (1–5)” (Table 2) and “Free-Form Listening Description.” The final score for each sample was calculated as the average score across listeners (Table 3). The results show that, although Versions A and B were generated from the same semantic input, emotional interpretations often differed, reflecting the “uncertainty” characteristic of AI generation and its nuanced interpretation of human semantics. For example, in the sample “Anxiety pulsing in the chest”, both versions displayed high-frequency emphasis and dynamic fluctuation, yet Version A received a score of 5, while Version B received 4. This indicates that even with similar spectral trends, differences in structure and rhythm processing emerged during the generation process.

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Sample	Stu. A	Stu. B	Stu. C	Stu. D	Stu. E	Stu. F	Stu. G	Stu. H	Stu. I	Stu. J	Average Score
1A	2	2	3	3	3	2	4	4	2	3	2.8
1B	2	2	3	1	2	2	2	3	2	1	2
2A	1	2	1	2	2	3	2	2	2	2	1.9
2B	2	1	2	2	3	3	3	3	1	1	2.1
3A	5	5	5	4	5	5	4	5	4	4	4.6
3B	4	5	5	5	4	3	3	4	5	3	4.1
4A	4	5	5	5	5	4	4	4	5	5	4.6
4B	4	4	5	4	5	5	5	4	4	4	4.4
5A	3	4	2	4	2	3	3	2	4	2	2.9
5B	3	3	3	3	2	2	3	2	3	4	2.8
6A	3	1	2	3	3	3	1	1	1	1	1.9
6B	2	2	2	1	1	3	3	1	3	2	2
7A	5	5	5	5	4	4	5	4	4	5	4.6
7B	4	4	3	4	4	3	5	4	3	3	3.7
8A	4	4	5	4	5	5	4	5	5	5	4.6
8B	2	2	3	4	4	4	3	3	4	4	3.3
9A	4	2	2	3	2	4	2	4	4	4	3.1
9B	4	5	5	5	3	5	3	4	3	5	4.2

Table 2: Emotional Tendency Scores for Suno AI-Generated Music Samples

Sample	Emotional Tendency Average Score (Rounded without affecting theoretical analysis)	Summary of Auditory Perception Descriptions
1A	3 (Melancholy)	Like a fragment of a suddenly interrupted memory
1B	2 (Melancholy)	Melody jumps but lacks strength, with strong
2A	2 (Loneliness)	Loose rhythm with a swaying melody
2B	2 (Loneliness)	Intermittent noise resembling sea breeze
3A	5 (Tension)	Mechanical sense of repetition
3B	4 (Tension)	More prominent low frequencies with denser groove
4A	5 (Anxiety)	Resembles a noise experiment
4B	4 (Anxiety)	Sharp high frequencies with fragmented rhythm
5A	3 (Calm)	Soft harmonies, like afternoon sunlight
5B	3 (Calm)	Warm timbre and gentle rhythm
6A	2 (Sadness)	Dreamlike sensation
6B	2 (Sadness)	Melody is subdued, with emphasis on ambient effects
7A	5 (Oppression)	Strong emotional tension, difficult to predict
7B	4 (Oppression)	Irregular rhythm with a sense of emotional outburst
8A	5 (Sentimentality)	Resembles a cinematic transition
8B	3 (Sentimentality)	Long trailing tones with hazy harmonies
9A	3 (Strangeness)	Like flickering light fading into darkness
9B	4 (Strangeness)	Strong contrast with interwoven brightness and darkness

Table 3: Summary of Emotional Averages and Listening Descriptions for Suno AI-Generated Music Samples

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To objectively analyze the AI-generated samples, iZotope RX software was used to extract spectral characteristics from the 18 samples. Five analytical dimensions were defined: Frequency Distribution, Dynamic Range, Noise Profile, Spatial Characteristics, and Peak Energy Distribution. These dimensions were categorized and interpreted through a combination of qualitative observation and quantifiable properties, with relevant data recorded in Table 4.

Sample	Frequency Distribution	Dynamic Range	Noise Profile	Spatial Characteristics	Peak Energy Characteristics
1A	Sparse high-frequency components, concentrated in the mid-to-low frequency range	Relatively small dynamic variation	Virtually no noise, clean background	Stereo image leans toward center	Peak distribution is smooth with no spikes
1B	Many bright points in the high-frequency range, with wider distribution	Noticeable dynamic fluctuations	Speckled noise in the high-frequency band	Stereo image is more expansive	Multiple sharp peaks observed
2A	Weak high-frequency presence, dominated by mid frequencies	Obvious sense of dynamic compression	Slight background noise present	Centered soundstage	No significant peaks in high frequencies
2B	More active high frequencies with good extension	Slightly large dynamic fluctuation	Slight graininess in high frequencies	Wide spatial distribution	Prominent peaks in high-frequency range
3A	High energy density in the mid-to-low frequency range	Relatively even dynamics	Minimal noise	Focused stereo image	No prominent peak features
3B	High-frequency extension is well maintained	Wide dynamic range	Subtle noise points in high frequencies	More three-dimensional spatial impression	Several sharp and distinct peaks present
4A	Lack of high-frequency components	Slightly compressed dynamics	Slight texture in background noise	Unclear spatial dimensions	Peaks are relatively smooth
4B	Improved high-frequency extension	More natural dynamic changes	Good noise control	Noticeable spatial field	Peaks are more concentrated and pronounced
5A	Full-bodied mid frequencies	Few dynamic fluctuations	Clean noise profile	Flat spatial impression	No distinct peak characteristics
5B	Increased high-frequency activity	Enhanced dynamic fluctuation	Minor distortion in high frequencies	Broader sense of space	Strong peaks concentrated in the high-frequency range
6A	Weak high frequencies, midrange dominant	Weak dynamic response	Virtually no interference	Center-focused	Low and flat peaks
6B	Significant boost in high frequencies	Larger dynamic range	Subtle high-frequency noise spots	Clearly expanded soundstage	Fluctuating peaks in the high-frequency region
7A	Sparse high frequencies, concentrated mid-to-low frequencies	Average dynamic performance	Extremely low noise	Weak sense of space	No significant peak variation
7B	Rich high frequencies with excellent extension	More natural dynamic undulation	Occasional textured noise in high-frequency range	Strong spatial depth	Peaks concentrated in high frequencies
8A	Slightly stronger midrange, with a warmer spectral tone	Minimal dynamic change	Excellent noise control	Narrow spatial field	Subtle and stable peak levels
8B	Increased high-frequency details	Increased dynamic undulation	Slight granularity in high frequencies	Significantly improved spatial perception	High-frequency peaks appear in clusters
9A	Relatively weak high-frequency presence	Narrow dynamic range	Low noise level	Inward-focused space	Peaks are not prominent
9B	Improved clarity in high frequencies	Rich and layered dynamics	Visible noise spots in the high-frequency band	Good spatial openness	Multiple peaks present in high-frequency range

Table 4: iZotope RX Analysis Results Across Five Spectral Dimensions

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Spectrogram comparisons revealed that most samples concentrated their energy between 500Hz and 4kHz. Scene-type inputs such as “A broken wooden house by the sea” and “A train passing through an abandoned town” emphasized the mid-to-low frequency range, creating a sense of heaviness and realism. In contrast, free-association samples such as “She finally stopped looking back” and “Bright sounds hiding into the night” exhibited more extreme spectral span and gaps, reflecting a “non-human” structural distribution. Dynamic range graphs displayed clear differences between A and B versions. For instance, in Group 6’s “A blurry yet warm sadness,” Version A showed minimal dynamic fluctuation, while Version B had greater amplitude swings with occasional extreme peaks. This may result from the model's internal shift in interpreting “warmth” and “sadness,” possibly due to variations in training data. AI-generated music also presented a polarized Noise Profile. Some samples leaned toward “noise music” characteristics, such as “Anxiety pulsing in the chest,” while others maintained a clean linear structure. The analysis suggested that AI tends to use more spectral impurities when expressing strong emotions or ambiguous semantics. Spatial Characteristics proved difficult to quantify directly. However, the spectrograms revealed observable differences in reverb tails, overtone spread, and stereo imaging. For instance, in “Memories melting like ice,” Version B exhibited longer decay and broader stereo diffusion, likely reflecting the AI’s structural mapping of semantic cues like “blurred” and “memory.” The Peak Energy Distribution dimension reflected whether AI organized musical layers with moments of concentrated intensity. In the sample “Bright sounds hiding into the night,” both versions featured sudden bursts and rhythmic disjunctions, resulting in strong temporal fragmentation. To aid reader understanding, spectrogram thumbnails for all 18 samples across the nine semantic prompts are presented below(Figure 2).

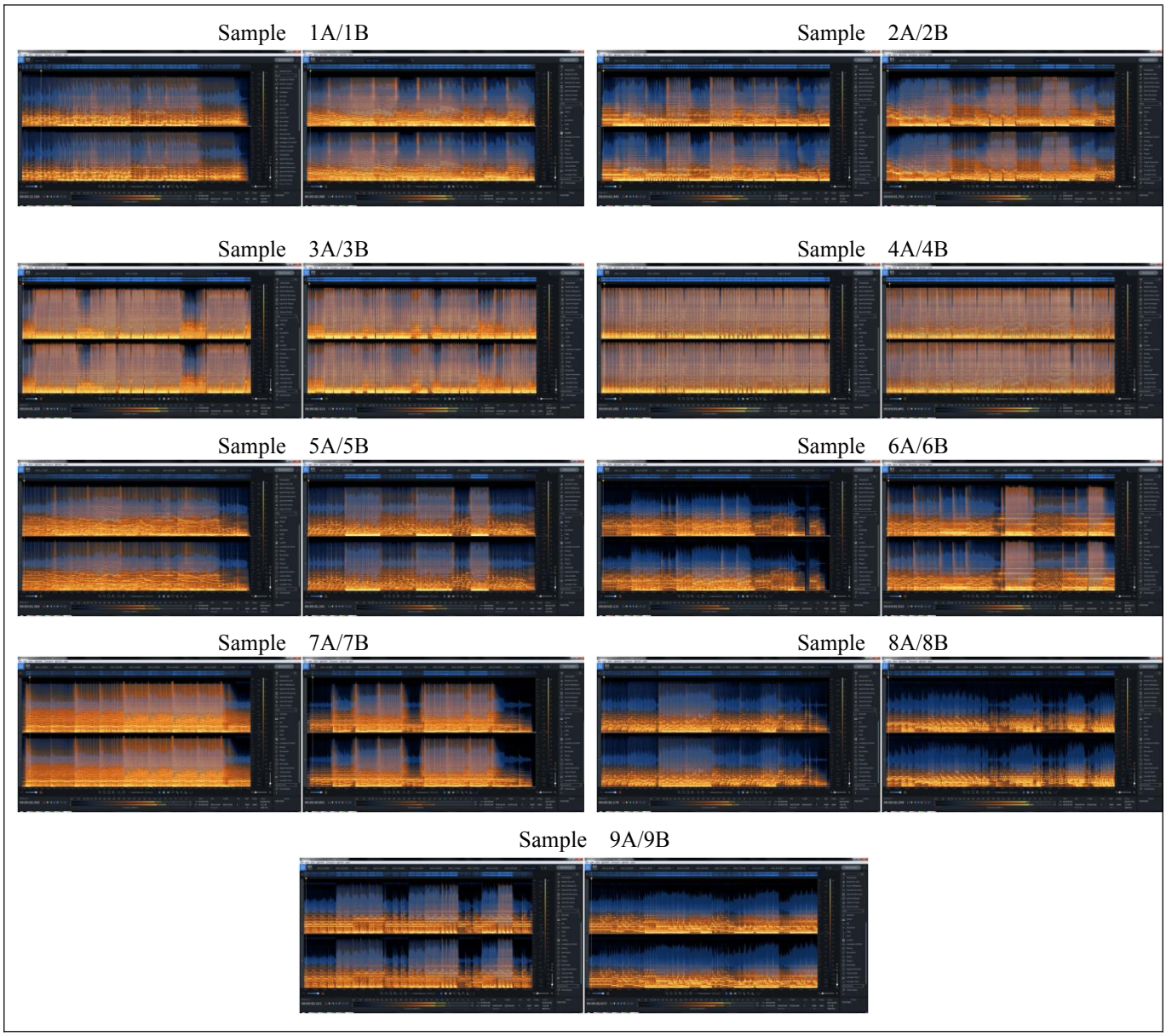

Figure 2: Spectrogram Thumbnails of 18 AI-Generated Music Samples Analyzed by iZotope RX

Through comparative analysis, it becomes apparent that while Suno AI lacks subjective emotion and consciousness, its handling of linguistic input and output reveals significant symbolic structuring and pattern-based deviation. These deviations

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are likely not random but embedded within the data and generation rules, hinting at a latent non-human unconscious structure—a concept that resonates with Deleuze's notion of the "desiring-machine." The discrepancies between A and B versions further emphasize the instability and complexity of AI generation: even with identical textual inputs, slight variations in parameter weighting or model interpretation can lead to unexpected structural and emotional differences in the resulting music.

Discussion

By comparing the spectral analysis and subjective auditory evaluations of 18 music samples generated by Suno AI, we observe that although AI-generated music lacks physiological consciousness and emotional intention, it nonetheless presents complex, nonlinear structural features in frequency distribution, dynamic variation, and noise characteristics. These structures are not the result of randomness but are instead outcomes of learning and imitating large-scale human music datasets. This phenomenon can be understood as the manifestation of a non-human unconscious structure (Sarmento, Loth, & Barthet, 2024).

Freud emphasized the dynamics of repression and conflict in the unconscious, which are often expressed through dreams, parapraxes, or artistic works. Even though AI music lacks the conflictual drive found in human psychology, its parameter space enables "passive recombination," which allows it to occasionally reproduce auditory patterns that contain cultural memory or collective perception. For instance, in samples 7B (She finally stopped looking back) and 8A (Memories melting like ice), instability in pitch structure and abrupt changes in dynamic amplitude were observed. These features commonly evoked impressions such as "suppression," "residue," or "vagueness," which may be interpreted as manifestations of the cultural unconscious embedded in the training data.

Lacan proposed that the unconscious is structured like a language, and that language constitutes the domain of the subject's desire. In AI music generation, music functions not only as an auditory experience but also as a structurally governed "language." AI often generates musical segments characterized by logical repetition and rhythmic organization, which to some extent mimic the grammar and syntax of linguistic systems. For example, sample 3A (A train passing through an abandoned town) displays a gradually intensifying rhythmic pattern and a clear low-frequency pulse, giving listeners a sense of mechanical repetition. This automated and structural tendency reflects the linguistic structure of AI music systems. Within Lacan's framework, such mechanicality does not exclude desire but rather represents a by-product of desire's slippage within the symbolic structure. AI's handling of musical language resembles the imitation of the Other—its training data represents a collective Other. By reconstructing the logic of this structure, AI participates in the re-encoding process of the symbolic order. Even in the absence of individual desire, it may still produce emotionally meaningful outcomes within the symbolic domain.

Deleuze's concept of the "desiring-machine" posits that individuals are not unified subjects but networks of connections and productions. From this perspective, the AI music system may be understood as a de-subjectivized generative mechanism—lacking a central self, yet continually reassembling elements through a state of flow. Spectral analysis reveals that many AI-generated samples exhibit strong non-centrality in frequency distribution, dynamic range, and spatial characteristics—that is, they lack a clear melodic focus or singular center. For example, sample 5A (A slowly calming afternoon) features widening pitch intervals and softened dynamics, producing a sensation likened to "afternoon sunlight," whereas sample 4B (Anxiety pulsing in the chest) presents a tense noise-driven style, with concentrated frequencies and limited spatial layering. This contrast in stylistic extremes highlights the AI's capacity for difference generation within a decentralized structure. According to Deleuze's theory of difference and repetition, repetition is never identical but always generates novelty through variation. Similarly, in generating seemingly "similar" music, AI introduces subtle and unpredictable variations each time—these deviations constitute the very nature of the AI as a non-human creative machine.

Spectral features in AI-generated music—such as high-frequency reverberations, low-frequency stacking, and abrupt dynamic shifts—can be seen as non-verbalized physical signals that mirror the non-human unconscious. Just as psychoanalysis reveals hidden conflict structures through symptoms and dreams, we may view the spectrogram as an analytical entry point for identifying traces of AI's cultural unconscious (Wu, & Yang, 2020). For instance, in sample 2B (A broken wooden house by the sea), the spectrogram shows intermittent high frequencies and a sense of "spatial emptiness," which aligns with subjective feelings of "loneliness" described by listeners. Such auditory impressions are not a result of the AI's intention, but rather a stylistic echo or mutated reappearance from its training corpus. Thus, the spectrogram serves not only as a technical tool but also as a medium for interpreting the latent structures of AI generation. During subjective evaluations, participants often assigned personified emotional meanings and vivid scene-based interpretations to the AI-generated music. This suggests that, despite lacking genuine subjective awareness, AI outputs can still stimulate rich associations and emotional responses within the listener's cognitive framework. This reflects not only a mechanism of meaning projection but also a human tendency to anthropomorphize non-human outputs. From a psychoanalytic viewpoint, the human unconscious does not distinguish between "real subjects" and "imaginary others," but rather operates through desire-based relationships. The emotional reactions evoked by AI music are, in fact, activations of latent pathways within the listener's own psyche. This mirrors Lacan's imaginary order, in which the subject constructs the self through identification with mirrored images. In this sense, the listener sees fragments of their own projection reflected in AI music. Furthermore, Deleuze's notion of machine-subject hybridity is also relevant. As a generative machine, the AI's creations are not passive reproductions, but hybrid artistic entities formed through ongoing connections between human corpora and technological logic. While lacking true personhood, these outputs are constantly perceived as personified entities, becoming a psychological strategy through which humans engage with non-human creative content.

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Conclusion

This study employs the AI music generation platform Suno AI as its foundation, aiming to explore from a psychoanalytic perspective how non-human systems may potentially carry and activate unconscious structures within the music generation process. By drawing on Freud's theory of the unconscious, Lacan's linguistic and desire-based structures, and Deleuze's philosophical concept of the "desiring-machine," this research attempts to outline a new model for understanding AI-generated music: although lacking subjectivity, the music created by AI may nonetheless carry traces of a "non-human unconscious" in its structure, rhythm, energy distribution, and spectral features. This unconscious is not born from emotional introspection, but emerges through the differences and repetitions embedded in training data, algorithmic logic, and cultural input. In this way, AI music covertly triggers listeners to engage in meaning-making, thus becoming a medium for unconscious projection.

In the experimental phase, this study conducted detailed analyses on 18 music samples generated by Suno AI using the spectral analysis tool iZotope RX, examining five dimensions: frequency distribution, dynamic range, noise characteristics, spatial qualities, and peak energy. These analyses were paired with subjective listening evaluations. The results indicate that AI-generated music displays clear non-constancy: its dynamic range fluctuates frequently, noise components often possess experimental or even surreal qualities, and spatial impressions oscillate between wide reverberation and compression, forming uncertain auditory boundaries. These features collectively construct a soundscape reminiscent of dreams or hallucinations. When faced with such musical fragments that lack emotional logic or melodic structure, listeners tend to interpret them expressively and emotionally, describing them as "a sudden flash of memory," "swaying loneliness," or "an experimental noise piece." This suggests that, although not created by humans, AI-generated music can still evoke deep emotional resonance and unconscious reactions within a cultural context.

Looking forward, AI-generated music may evolve beyond being a mere technological or creative aid—it may become a new form of artistic apparatus without subjectivity, prompting deeper reflection on creativity, subjecthood, and human experience. Although this study does not exhaust all theoretical avenues between AI and the unconscious, it does preliminarily demonstrate that people's engagement with AI music is no longer limited to surface style or technical parameters, but is gradually entering the realms of unconscious formation and cultural psychology. Future research may extend to interdisciplinary fields such as neural science, physiology, or cross-modal art practices, further exploring the theoretical and practical possibilities of AI music as a mirror of culture or a resonance of the unconscious. In turn, AI music generation compels us to reconsider what it means to be human: are we merely the origin of creation, or are we becoming co-producers of algorithmic language and structures of desire?

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Conflict of Interest

The authors declare no conflict of interest.

References

[1] Zhu, Y., Baca, J., Rekabdar, B., & Rawassizadeh, R. (2023). A survey of ai music generation tools and models. arXiv preprint arXiv:2308.12982.
[2] Anantrasirichai, N., & Bull, D. (2022). Artificial intelligence in the creative industries: a review. Artificial intelligence review, 55(1), 589-656.
[3] de Aguiar, V. (2024). Music and affectivity in the age of artificial intelligence. Topoi, 43(3), 725-735.
[4] Stewart, D. W. (1985). The linguistic unconscious of Jacques Lacan. American Journal of Psychoanalysis, 45(4), 348.
[5] Gasperoni, J. (1996). The unconscious is structured like a language. Qui Parle, 77-104.
[6] Deleuze, G., & Guattari, F. (2009). Anti-Oedipus: capitalism and schizophrenia. Penguin.
[7] Suno. (n.d.). Suno | AI Music. from https://suno.com/
[8] iZotope. (n.d.). Spectrogram - RX iZotope.from https://www.izotope.com/
[9] Hernandez-Olivan, C., Hernandez-Olivan, J., & Beltran, J. R. (2022). A survey on artificial intelligence for music generation: Agents, domains and perspectives. arXiv preprint arXiv:2210.13944.
[10] Sarmento, P., Loth, J., & Barthet, M. (2024). Between the AI and Me: Analysing Listeners' Perspectives on AI-and Human-Composed Progressive Metal Music. arXiv preprint arXiv:2407.21615.
[11] Wu, S. L., & Yang, Y. H. (2020). The jazz transformer on the front line: Exploring the shortcomings of ai-composed music through quantitative measures. arXiv preprint arXiv:2008.01307.