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The Soundtrack as an Emotional Operating System: How Game Music Shapes Player Feeling, Attention, and Choice

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Abstract. Game music does far more than fill silence; it shapes how players feel, pay attention, and make choices. This paper examines game music as an emotional operating system that guides bodily arousal, cognitive focus, and narrative interpretation during play. Drawing on the valence–arousal model of emotion, studies on horror audio progression, research on peaceful and powerful music, and work on energetic soundtracks, the paper argues that musical cues influence players through more than tempo or volume. Game music can raise tension, support immersion, increase risk-taking, or overload performance depending on how it interacts with genre, task demand, and player experience. The paper proposes a three-layer model of game music emotion: a bodily layer involving heart rate and tension, a cognitive layer involving attention and decision-making, and a narrative layer involving meaning and memory.

Keywords: game music, player emotion, immersion, adaptive audio, sound design

1. Introduction

A good game soundtrack is a polite liar. It tells the player, sitting safely in a chair with a snack nearby, that danger is close, victory is possible, or something terrible is breathing behind the next door. The screen may show only a corridor, a forest, or a boss arena, yet a single low note can make the player sit up straighter. This is the strange comedy of game music: it fools the body before the mind has time to file a complaint. The player knows it is fiction, but the pulse often behaves as if the dragon, ghost, or final boss has already entered the room.

This paper examines how game music influences player emotions. The topic matters because video games are now widely used as spaces for relaxation, mood repair, social connection, and emotional escape. A 2025 global report involving 24,216 players across 21 countries found that players commonly associate games with stress relief, mental stimulation, and positive social experiences [1]. A naturalistic Oxford study of PowerWash Simulator also found a small but measurable mood uplift during ordinary play, based on 67,328 game sessions from 8,695 players in 39 countries [2]. These findings suggest that games are emotional environments, not just rule systems. Music is one of the main forces that gives those environments their emotional temperature.

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2. Literature review and conceptual framework

2.1. Music, emotion and player experience

A starting point is the idea that emotions are not simple buttons. A game does not press "fear" or "joy" in the player's brain as if operating a vending machine. Emotion is closer to a moving coordinate, shaped by bodily arousal, cognitive appraisal, memory and context. The model of affect explains emotion through two core dimensions: valence, meaning pleasantness or unpleasantness, and arousal, meaning calmness or activation [3]. Game music works directly on this map. A soft village theme in Minecraft or Animal Crossing tends to create low arousal and positive valence. A distorted drone in a horror game creates high arousal and negative valence. A boss theme in Hades or Elden Ring may create high arousal with mixed valence: fear, excitement, and a strange desire to try again after losing.

2.2. From tempo to emotional content

Older discussions of game music often paid attention to obvious musical features such as tempo, volume and rhythm. Fast music was assumed to create excitement, while slow music was assumed to create calm. This is useful, but too blunt. Recent research has challenged this shortcut. Roberts et al. found that music labelled by emotional content, such as "peaceful" or "powerful," predicted player tension and risk-taking better than tempo alone [4]. Their study is of great importance because it shows that players respond to a complete musical character, not a single measurable parameter.

This point also helps explain why the same track may affect different players differently. A familiar battle theme can comfort an experienced player because it signals a known challenge. The same track can overwhelm a beginner because it signals danger without offering mastery. In this way, game music is filtered through memory and skill. The sound is shared, but the emotion is partly personal.

2.3. Immersion, performance and the problem of too much feeling

A common assumption in game design is that more immersion is always better. Music complicates that assumption. A study on energetic game music found that energetic music can increase subjective immersion, yet it may also reduce task performance when it intensifies the task too much [5]. This finding is valuable because it separates emotional involvement from effective play.

2.4. Adaptive music and emotional steering

The most distinctive feature of game music is interactivity. Unlike film music, game music must respond to uncertain player action. Adaptive background music can change according to game events, player state or system feedback. Recent work on adaptive background music in fighting games connected different instrument layers to different gameplay elements, allowing the music to respond dynamically to the match [6]. The system points toward a future where music does not simply accompany play. Instead, it participates in play.

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2.5. Proposed three-layer model

Based on the literature above, this paper proposes a three-layer model of game music emotion. First, the bodily layer refers to physiological activation. Music can affect heart rate, tension, breathing and readiness for action. Horror studies using biofeedback show that sound-driven progression can influence players' heart rates and emotional arcs [7].

Second, the cognitive layer refers to attention, memory and decision-making. Music can direct the player toward danger, mark important objects, increase risk-taking or interfere with concentration. The finding that powerful music increases tension and risk-taking suggests that music changes not only how players feel but how they choose [4].

Third, the narrative layer refers to meaning. Music helps players understand what a moment means within the story. A repeated theme can turn a place into home. A distorted version of that theme can turn home into memory. The music does not merely accompany the story; it becomes part of the story's grammar.

3. Methodology and research design

This paper uses a qualitative-dominant mixed research design to examine how game music shapes player emotion. The aim is not to prove that one musical feature always creates one fixed emotion. Such a claim would be too mechanical and frankly too dull for a medium as unstable as games. Instead, the study treats game music as an interactive emotional system. It asks how musical cues guide bodily arousal, attention, decision-making, and narrative interpretation during play.

3.1. Research questions

The study has proposed the following research questions:

RQ1: How does game music influence players' emotional arousal and perceived mood during gameplay?RQ2: How do different musical qualities, including tempo, texture, harmony, repetition, and emotional labelling, affect immersion and risk-related behaviour?RQ3: How can adaptive music systems be designed to support emotional engagement without overwhelming attention or reducing performance?

3.2. Data analysis

The qualitative interview data would be analysed thematically. Possible themes may include perceived danger, confidence, frustration, comfort, curiosity, and loss of control. The goal is not to reduce player feeling to numbers alone. Numbers can show that arousal increased, but interviews can explain what that increase meant to the player. A racing-game player may experience high arousal as pleasure; a puzzle-game player may experience the same arousal as pressure.

4. Conclusion

This paper has argued that game music should be understood as an emotional operating system rather than as a decorative background layer. A soundtrack does not simply sit behind the screen. It helps decide how the player reads danger, safety, reward, memory, and choice. Through the concepts of valence and arousal, game music can be seen as a system that moves players across emotional states, sometimes gently and sometimes with the dramatic subtlety of a boss theme entering at full volume.

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The literature reviewed in this paper suggests three main findings. First, game music affects the body. Horror audio progression and high-arousal musical cues can influence heart rate, tension, breathing, and readiness for action. Second, game music affects cognition. It directs attention, marks important events, shapes memory, and may alter risk-taking behaviour. Third, game music affects narrative interpretation. A musical cue can tell the player that a place is home, that a character is no longer safe, or that an ordinary corridor has become suspicious.

The methodology proposed in this paper translates that theoretical argument into a research design. By comparing peaceful music, powerful music, and no music within the same gameplay level, the study could examine how musical conditions influence self-reported emotion, physiological arousal, behavioural performance, and risk-related choices. The simulated pilot figure further illustrates how such data may be organised, while clearly distinguishing expected patterns from collected results. This distinction matters because research design should be imaginative without pretending that hypothetical data are real findings.

For game designers, the central implication is simple but demanding: music should be designed as a system of emotional governance. It should not merely make a scene "more intense". It should know when to push, when to withdraw, when to mislead, and when to let the player breathe. Powerful music can deepen immersion, but it can also create cognitive pressure. Peaceful music can support calm attention, but it can also flatten urgency. Silence can weaken emotional framing, but it can also make a single later note feel enormous.

Future research should test the proposed model with larger samples, more genres, and more diverse players. It should also examine adaptive soundtracks that respond to player behaviour or physiological signals in real time. The goal is not to make games emotionally manipulative in a crude way.

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Author contribution

Yunzhe Ye: conceptualisation, literature review, research design, writing, figure planning, table construction, and final editing.

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