Linguistic Frontiers • 8(2) • 2025
DOI: 10.2478/lf-2025-0016

Linguistic **Frontiers**

The Sound Apparatus in Open World Games: Musical Resonance in The Witcher 3 and Red Dead Redemption 2

Original Study

Silvestro Pizzati,
Università degli studi di Torino, silvestro.pizzati@edu.unito.it
Letizia Tito,
Università degli studi di Torino, letizia.tito@edu.unito.it[1]

Received: 24 December 2024; Accepted: 29 August 2025

Abstract: This study examines the role of soundscapes in open-world video games, with a focus on The Witcher 3 and Red Dead Redemption 2. It explores how dynamic music and adaptive audio systems serve as bridges between players and game world, fostering immersion and emotional engagement. Employing frameworks from semiotics, game studies, and cultural theory, the research discusses key concepts such as Karen Collin's "participatory supplemental connotations". Hartmut Rosa's "resonance", and Jean-Jacques Nattiez's tripartite model and the dichotomy between memory and monument drawn by Jacoviello. Through an analysis of The Witcher 3's Slavic-inspired soundscape and Red Dead Redemption 2's nostalgic Western motifs, the paper illustrates how game music functions both as a cultural document and an interactive monument. The paper examines how adaptive musical cues, ambient soundscapes, and diegetic shifts support exploratory play, emotional resonance, and contextual storytelling in vast, dynamic virtual environments. The study positions game music not as a passive backdrop but as an interactive structure of signs, emotions, and narrative strategies.

Keywords: The Witcher 3, Red Dead Redemption 2, Resonance, Ludomusicological Semiotic

INTRODUCTION

The videogame is a syncretic text because it merges at least three planes of expression: the verbal, the iconic, and the sonic. It presupposes a model reader willing to commit themselves, their time, and their skills in order to build multiplanar and multimodal connections, while expecting to receive cues on the interpretative possibilities of the text. In doing so, the player integrates their own affordances into a symbiotic relationship, exploiting complex isotopies that acquire a systemic character within a coherent system. The soundscape of videogames acts as a dynamic and essential bridge between the player and their in-game avatar. Music and sound cues play a crucial role in integrating the player into a fully immersive blend of the material and virtual worlds. The musical loop triggers what is known as endogenous arousal (Collins; 2008), while communicative sound effects serve as exogenous attentional cues, modulating arousal levels as needed. In narrative-driven games, music often loops repeatedly within specific areas, which can lead to habituation where the player may become unaware of its presence. Despite this, the music continues to affect the player, maintaining arousal even when it fades from conscious awareness. This interaction establishes two distinct semiotic domains: one focused on the creation and composition of the game music, and the other on the player's actions during gameplay. For instance, a game composer might strategically use a brief musical cue to

1 This paper was conceived through equal collaboration between the two authors. Tito L. developed paragraphs 1.1 to 1.5, while the abstract, introduction and the respective second sections were authored by Pizzati S.

manipulate player attention, creating a heightened state of arousal at critical moments. This can increase both the difficulty of the level and the satisfaction of overcoming it. When a game designer promises a plausible and coherent world, the player agrees to follow a set of rules, and it implies the coherence of the sounds as well of that world. In this contract, music plays a key role, guiding the player on how to act, react, and feel within the game. Game music files can be listened to like any other music, but they acquire true significance and potential only once they are involved in the experience of playing, and in abstract ways treated as a Cybertext (Aaseth; 1997) when becoming part of the text of the game. (We know that cybertext is an ergodic artefact characterized by efforts and processes of non-necessary discovery, and that music files themselves don't occur with any of these elements, but our goal is to articulate the concept by overlapping it with the one supported by Aarseth in a musical key, as a metonymy of an agency meaning).

1.1 A THEORETICAL EXPLORATION

The dynamic exchange proven by the interaction between the game sound and music, direct, indirect and environmental (Hawreliak, 2019: 63), aligns with Hartmut Rosa's theory of *resonance* (2016), which emphasizes the reciprocal relationship between individuals and their surroundings. Rosa's framework identifies three dimensions—*materiality*, *relationality*, and *temporality*—that illuminate the role of music in video games. Materiality refers to the sensory engagement that physically connects the player to the game world, as exemplified by sound effects mimicking real-world phenomena or adaptive audio systems responding to the player's actions (ibid, pp. 41–43). Relationality emerges in the emotional connections players form with characters, environments, or narratives, facilitated by musical motifs that evoke empathy and a sense of belonging (*idem*, 55–57). Finally, temporality is evident in how music shapes the perception of time, using dynamic shifts to mark transitions or meaningful moments in the game's narrative, embedding the player in a cohesive temporal experience (*ideam,* 83–85).

Consequently, two distinct semiotic domains are established: one centered on the creation and composition of the game music and the other on the player's actions during gameplay. For instance, a game composer might strategically employ a brief musical cue to capture player attention, heightening arousal at critical moments. Such techniques not only heighten the challenge of a level but also amplify the satisfaction of overcoming it. Within the "contract" promised by game designers to create a plausible and coherent world, music serves as a guide, shaping how the gamer acts, reacts, and feels. Rosa's notion of *resonance* further reinforces the idea that this guiding role depends on the balance between closure—music's defined, immersive qualities—and openness, its ability to adapt and respond to the player's actions (*idem,* 67). Although game music can be listened to independently as an artistic product, it acquires its full significance when considered as *cybertext*, deeply embedded in the game's narrative and interactive fabric.

1.2 PARTICIPATORY SUPPLEMENTAL CONNOTATIONS AND PERSONALIZATION

Karen Collins (2008) introduces several key concepts that redefine the role of music in video games, emphasizing the active role of the player in shaping the auditory experience. One such concept is *participatory supplemental connotations*, which underscores how players enrich game music with their own interpretations and affective input. In this framework, the player is not a passive listener but an active contributor, adding personalized layers of meaning to the music. This interaction creates a deeply immersive journey, where the music resonates with the player's unique emotive and psychological state, strengthening their connection with the game world (*idem,* 5).

Collins also explores how interactivity transforms game music into a collaborative process. Unlike static, pre-composed scores, dynamic audio evolves alongside the player's actions, making the soundtrack a living, responsive part of the game. This adaptive quality ensures that the music actively responds to gameplay, shaping the emotional and narrative contours of the player's journey. For example, the music dynamically adjusts based on in-game parameters, such as player health or environmental changes, fostering a greater sense of immersion (*idem,* 5–6, 89).

The advancement of technology in audio design further amplifies this compelling interplay. The integration of interactive and adaptive audio systems allows for more nuanced soundscapes, enabling players to trigger sound events based on their decisions and actions. This enhances the player's sense of agency, turning the auditory landscape into an extension of their control over the game (*idem,* 88–89). Additionally, Collins introduces the concept of *Kinosonic Synchrosis*, which refers to the precise synchronization of sound and image influenced by player input. This synchronization enhances the intense experience by aligning audio elements with visual cues, creating the illusion of movement in time and space. For example, the sound of footsteps may match the on-screen movement of a character, or the music's intensity may rise during a chase scene. By aligning auditory and visual elements, *Kinosonic Synchrosis* strengthens the player's sensory immersion and deepens the believability of the game world (*idem,* 132).

In contrast, non-diegetic sound exists outside the narrative world and is inaccessible to the characters. These sounds, such as background scores, are tools for enhancing the player's immersion, influencing their mood, and guiding their interpretation of in-game events. Such as a suspenseful non-diegetic score can signal an impending threat that the characters cannot yet perceive, heightening the player's anticipation. Similarly, triumphant music after a victory reinforces the player's sense of accomplishment, despite being inaudible to the in-game characters. These auditory layers help bridge the

narrative and the player's psychological experience, further enhancing emotional connection with the game.

Espen Aarseth's theory of "*shared authorship*" provides a compelling framework for understanding the dynamic interplay between the game creator and the player in the construction of meaning within video games. Central to this theory is the concept of *cybertext*, which Aarseth defines as a form of text that is configured and transformed by the user, thereby emphasizing the participatory nature of the medium. Unlike traditional narratives that are passively consumed, *ergodic texts*—a subset of cybertexts—demand that the reader or player participate in active labor to navigate and complete the narrative. The text is not constructed from the plane of expression, but from the perspective of signification that the text takes on for the one who plays it. This transforms the player from a passive recipient into an active participant, whose actions and decisions shape not only the unfolding story but also the emotional and experiential dimensions of the game. The notion of shared authorship arises because the player, through their choices and interactions, contributes to the creation of meaning, intertwining their agency with the intentions of the game's original creators. Aarseth highlights that this relationship politicizes the role of the reader-player, as their authorial functions—whether through configuring the narrative or expanding upon its possibilities—enter in a dialectical tension with the authorial intent of the game designer. This tension problematizes the very nature of the text, which ceases to be a fixed entity and instead becomes a fluid and negotiable medium shaped by dual authorship. As a substantial addition to his poiesis, Aarseth also introduces the concepts of Texton and Scripton, but we will not delve into their implications here due to the limited scope of an article of this kind, as they are not strictly relevant to the musical landscape and the role of music. (Which, although it is as an attractor and a dynamic string embedded in the code representing the text's interpretable potentialities and would therefore fall under the category of Scripton and the Texton along).

Building upon Aarseth's framework, Hanna Wirman introduces the concept of *co-creativity*[2] (2012) in videogames, further emphasizing the active role of the player. According to Wirman, the player does not merely contribute to the interpretation of the game's narrative but also plays a role in the production of the original media text itself. This idea suggests that each player, through their unique interactions and paths within the game, becomes a co-author who collaboratively shapes the text, ensuring that no two playthroughs are exactly alike.

1.3 SEMIOTIC PERSPECTIVES AND DYNAMIC SYSTEMS IN GAME MUSIC

Charles Sanders Peirce's semiotic theory (1990) does not find a real application towards the videoludic fields, since Peirce never dealt directly with the subject, but his precepts are still foundational for understanding how players interpret and engage with music in video games. His framework classifies signs into three categories: icons, indices, and symbols. To us, these categories are indispensable for analyzing how various elements of game music operate as signs to convey meaning to players and enhance their experience. Icons, which are signs resembling their objects, find application in video games through musical motifs that mimic real-world sounds or culturally familiar melodies. We can expand the meanings drawn by the author to our videoludic context by assuming that a particular sound replicates the sound of galloping horses, it will then immediately evoke an imagery of a chase or an adventurous journey. Indices, defined by their direct or causal connection to their objects, appear in game music that reacts dynamically to player actions or in-game events. A change in tempo or volume to signal impending danger exemplifies how such indices establish an immediate link between musical cues and the player's situation. Symbols, by contrast, derive their meanings from social or cultural conventions, as seen in thematic compositions associated with specific characters or locations. These recurring musical themes not only contribute to narrative development but also resonate deeply with players through repeated exposure and associative learning.

Peirce's emphasis on the contextual and interpretative nature of signs, including musical cues, is particularly significant in video games, where players' individual experiences and backgrounds shape their contributions. To illustrate, a recurring soundtrack signalling an imminent boss fight evolves into an index that players learn to associate with high-stakes combat, psychologically preparing them for the challenge. Moreover, Peirce's insight that the meanings of symbols grow and transform over time aligns with the dynamic nature of video games. As players progress, their relationship with musical themes evolves; a hero's leitmotif, initially a simple marker of presence, acquires richer emotional resonance as players experience the character's triumphs and defeats, thereby deepening its symbolic significance.

This theoretical understanding has practical applications for game developers and composers, who can create soundtracks that operate on multiple levels. The effective use of icons, indices, and symbols enhances immersion by enabling players to intuitively grasp the implications of musical cues, deepens narrative participation by employing music to foreshadow events or amplify responsive tension, and fosters personalization by designing adaptive soundtracks that respond to individual player behavior and choices. By integrating Peirce's semiotic principles, developers can craft audio experiences that not only support gameplay mechanics but also create profound affective and interpretative

2 The concept of co-authorship is not new in the semiotic perspective, of course, with authors such as U. Eco (1979) being among the main advocates of the collaboration in signification between text and user. We want here to refer exclusively to the studies produced in the field of the video game medium.

connections with players, enriching the overall gaming experience.

Following the same path traced with Peirce's semiotics, bent in its structure to suggest genealogical resonances with the relevancies within the universe of meaning in the semiotics of music and underlining the mechanisms through which musical elements function as signs to communicate meaning, let us examine Jean-Jacques Nattiez's tripartite model, in the videoludic fields ot expressly made explicit by him. The tripartite model comprises the *neutral* level, the *poiesis*, and the *esthesis* and offers a layered approach to understanding the production, contextualization, and reception of music. Under this view of Nattiez's model, the neutral level focuses on how players experience music within the game's context, where it functions as an integral part of gameplay and storytelling. In particular, the soundtrack of *The Witcher 3* provides a dynamic auditory backdrop, shifting to reflect combat intensity, environmental exploration, or moments of narrative tension, thereby immersing the player in the game's world. The *poietic level* explores the creative processes behind the music, where composers skillfully embed Slavic musical elements, such as the use of traditional instruments like the hurdy-gurdy and bagpipes, folk melodies and rhythmic structures. These elements reflect broader ethnomusicological traditions, aiming to enhance the authenticity and depth of the game's setting. The act to describe the player's role in creating the experience that will be played, a unique one, is called *Interactive Poiesis* (Hart 2017). It can produce signification that can combine within the signification from music and other game elements during the experience of gameplay. There are three methods of signification. The *Additive*, where the player-made significations join the multitude of other significations presented to the player during gameplay, so that the set of significations increases their number. The *Subtractive* is the results in player-made significations reducing the overall number of significations presented to the player. The last one is *Transformative*, and its result is the dynamic change of the player experience, where player significations can remove elements within the game, like, for example, turning off the music volume. The *esthetic level* delves into how this music is perceived by players, particularly within a Western Anglophone audience. For these players, the Slavic elements may appear exotic and distinctive, conveying a sense of cultural uniqueness while contributing to the game's allure and narrative richness. When the player absorbs the meaning of their contextual action and makes a precise interpretative decision, it becomes ingrained in their mind, becoming part of the very context within which further decisions are directed, forming a loop of semiosis shared between the medium and the player. *Post-Esthesis* influence plays a substantial role in re-incorporating both configurative and player signs into the text as significations that bear meanings.

Together, these two perspectives underline the broader cultural and interpretative significance of music in video games, accentuating how soundtracks are intricately woven into the fabric of gameplay and narrative. By combining the deliberate integration of cultural elements with the dynamic ways players interact with and interpret music, game soundtracks transcend their auditory function to become bridges between fictional worlds and real-world cultural contexts. This duality underscores the role of video game sound not only as a tool for enhancing immersion but also as a medium for storytelling and cultural exchange, encouraging immersion and creating a shared, globally resonant experience.

1.4 MUSIC AS DOCUMENT AND MONUMENT

Stefano Jacoviello (2022) introduces the dual role of music as both a *document* and a *monument*. As a document, music preserves cultural and historical elements, offering testimony of an era, movement, or event. In video games, this can manifest in soundtracks that draw from historical or cultural motifs to anchor the game world in authenticity. For example, a game set in medieval Europe might employ Gregorian chants or period-specific instruments, enriching the player's sense of historical immersion.

In its monumental role, music transcends mere documentation, becoming a medium for evoking remembrance and sentimental engagement. This duality aligns seamlessly with the dynamic and interactive nature of game audio. Open-world games, characterized by vast, non-linear environments, utilize music and sound design not just as a backdrop but as narrative and responsive guides. This statement is surely true for every videogame, due the implication of the emergent narrative which constitutes an integral dimension of any videogame reality grounded in freedom (Giuliana 2024, 186), but it is with the open-world genre—characterized by vast expanses of virtual environments freely explorable by the player, unconfined to explicitly predetermined paths—that musical accompaniment plays a fundamental role, both ludically and semiotically, in the interaction with the player. In these wide worlds, largely scattered with attractors, whether visual or auditory, music functions as an additional narrator: it tells the story of the place where the player's avatar is projected, while also serving as a valuable counterbalance to the inevitable tedium of "aimless wandering" to which the open-world genre is congenitally prone. By employing adaptive systems, the soundtrack takes on a monumental significance, resonating with players as they traverse the game world, like we'll see in the in the examples provided at the end of this paper.

Jacoviello poignantly observes that music steals time from Time, transforming temporal flow into a tangible, audible experience. This resonates with the concept of interactive, dynamic (Hawreliak 2019, 64) audio in games, where music evolves in real time, responding to player choices and environmental shifts. Leitmotifs, for example, evoke nostalgia or signal narrative progression, transforming the soundtrack into a temporal map that marks emotional and story-driven milestones.

1.5 INTEGRATING FRAMEWORKS: THE ALI MODEL AND FOUR WAYS OF HEARING

Isabella Van Elferen's ALI model (Affect, Literary, Interaction) provides a comprehensive framework for understanding musical immersion in games. Music fosters emotional involvement (*affect*), strengthens narrative involvement (*literary*), and bridges the player's actions with the soundtrack (*interaction*). Together, these dimensions deepen immersion, emphasizing the role of music as a dynamic and collaborative force.

Michiel Kamp, in his seminal work *Four Ways of Hearing Video Game Music* (2024), presents a detailed phenomenological framework for understanding how to respond to music in games. Kamp outlines four distinct ways of hearing: semiotic, ludic, aesthetic, and background. These modes are not static categories but are dynamically shaped by the interactive and context-sensitive nature of video games.

- **Semiotic hearing**: this mode involves perceiving music as a carrier of information. Musical cues serve as *signs* that communicate gameplay states or events, such as a rising tempo to signify impending danger or a triumphant fanfare signalling success. Kamp points out the temporal brevity of semiotic engagement, as these cues only require momentary attention to fulfil their communicative function. For instance, the tension-building score in *Left 4 Dead* exemplifies how music can act as a warning system for incoming threats (Kamp 2024, 144).
- **Ludic hearing**: ludic hearing stimulates players as active participants, where music becomes a medium for interaction. Kamp highlights this mode as a "playing-along" with the music, where rhythm and melody can guide or synchronize with player actions. This is evident in games such as *Proteus*, where the soundscape evolves in tandem with the player's movements, fostering an immersive, embodied connection between action and sound (*idem,* 124).
- **Aesthetic hearing**: Kamp's third category focuses on moments when music commands attention for its own sake, creating a pause in gameplay to allow for contemplation or emotional resonance. This mode aligns with classic philosophical notions of aesthetic arrest, where players are drawn to the intrinsic beauty of the music. The serene piano compositions in *Minecraft*, for example, often lead players to stop and reflect, connecting deeply with the game's tranquil atmosphere (*idem,* 68).
- **Background hearing**: finally, Kamp explores music that operates in the periphery of player awareness. Background music, often unnoticed but integral, creates an ambient layer that sustains immersion without direct engagement. Kamp describes this as a "subconscious influence", shaping the emotional and narrative tone of gameplay without demanding the player's active focus (*idem,* 29–31).

These modes demonstrate the flexibility of game music as a tool for narrative, immersion, and engagement. As Kamp argues, the significance of these modes lies not just in the music's composition but in how players experience it within the temporal flow of gameplay. This resonates with Karen Collins' concepts of dynamic and adaptive audio, highlighting the interplay between pre-composed elements and real-time player input (Collins 2008).

2.1 THE WITCHER 3 – WILD HUNT

In the *Witcher 3—Wild Hunt*, the third game of the series made by CD Project Red inspired by the Polish writer Andrzej Sapkowski, the player controls a scholarly mutated monster hunter, Geralt of Rivia, as he searches for his missing adoptive daughter in a fantasy world ravaged by war, famine, political intrigues and ancient prophecies. Apart from the overall quality of the game, its soundtrack is one of the main contributions to the folkloristic identity given by the game directors and authors, a membrane through which all the game's aesthetics are filtered. In fact, it's impossible to talk about the Witcher series, and especially the Witcher 3, without taking into account the cultural landscape that brought it about. The composer, Marcin Przybylowicz, said in an interview with the "Game Music" magazine: "We as native Poles, somehow feel a kind of connection and approval for such folklore." (Stevens 2020, 540). According to him, game sounds contribute to the construction of that identity, as much as its book legacy and the East-Europe of the game's world. Game sound is usually meant to help the player interpret information from any of the elements through association with others / the other elements.

Collins coins the term *adaptive audio* (2008, 4) to refer to the dynamism of sound cues, whose precise function is to elicit timely player responses to those same stimuli, suggesting the progression of various game parameters, as well as the reaction speed required to adapt to them—symbolically specific to each game. Sound effects can indicate whether the player's character is near to death, when to jump over an obstacle, emphasize some action of the avatar and many other effects. Michiel Kamp assumes this kind of relationship with a "semiotic" listening. In explorative games such as The Witcher 3, and further Red Dead Redemption 2, though, the music helps the player to fall inside of the aesthetic of the game world. For example, when wandering inside a forest, a quite bucolic flute melody may follow the player's steps to sustain and improve the reality effects drawn by the visual cues of those high-quality graphic games. The game's sound acquires functional attributes, and it's meant to be directly receivable and prescriptive of context. It operates a tension between representational aesthetic and the functional requirements dictated by gameplay. The game, through action and music, communicates with the player, and the player communicates back to it. Video game music "not only drives player emotion, but it should also represent the emotions that the player ought to feel" (Somberg 2016, 12).

The game and the player resonate, creating unique relationship between the object and the subject: "[u]nlike the consumption of many other forms of media in which the audience is a more passive 'receiver' of a sound signal,

game players play an active role in the triggering of sound events in the game including dialogue, ambient sounds, sound effects, and even musical events" (Collins 2008, 3). This relationship provides separate semiotic domains, in accordance with the tripartition of Nattiez. The one centered on the creation of the game, and the one centered on the actions and perceptions of the player. Both of the semiotic domains include a Configurative and a Musical Signification, determining how the music will fit with all of the other game elements, and how effectively that music will denote meanings within the game. The player, each unique subject, brings in addition a set of personal signs and those will influence how the configurative and musical signification set by the author will influence the next action and sentimental consequences. The game world of The Witcher 3 is set in the province of *Temeria*, divided into six different macro-areas that the player can explore at will, and each map has at least one "Looping Exploration Theme": The small human settlement of *White Orchard* and its surrounds, the *Royal Palace* at the embattled *Temerian* capital of *Vizima*, the swamplands of *Velen*, the entire city of *Novigrad* and its surrounding countryside, the old Witcher citadel of *Kaer Morhen* and the fairy landscape of the wine court of *Toussant*. The entire soundtrack is composed of individual tracks, in both interactive and non-interactive sessions, dynamic and non-dynamic, the game phases so called in game cutscenes where the player has no impact on the storytelling and become a mere spectator of the scripted narrative scenes (here the use of the game music is very likely like the movie's passive interaction, so we won't take them in analysis). Travelling those world areas the subconscious influence acts as the real storyteller, almost no other plot cues are involved, except from the rare protagonist's contextual comments of surroundings and the diegetic sound issued from animals and monsters from far away. Music, in the vast and solitary game world, not only accompanies the player's thoughts as they emerge from the back-and-forth actions of the gameplay loop but also narrates, with pervasive strength, the mood of the situation, the underlying story of that specific environment, its peculiarities, its danger, its history, and its emotional impact. To maintain an iconic trace, in Peircean terms, every one of the interactive travelling music is composed in D Minor, to increase the blurred border between music, their dynamic change and the sound effects in the game. A nearby village, tranquil and not dangerous, may be suited with a flute, or the sounds of a lyre to express the mood of the situation, it's a functional attribute that meant to be directly recognizable as a *safe spot*, a trace to interpret and prescribe a context-appropriate response from the player's actions.

With its power, game music fills in contextual information that would otherwise need to be conveyed through invasive words. Of course, the player has the agency to decide not to play along with the music, but it will appear incongruent with the action, revealing the artifice of the game. *The Witcher 3—Wild Hunt* treats the enemy encounter through a binary approach, letting the NPCs play alongside the music, reserving additional layers of music depending on the type of enemy and their grade of danger. The player, in this example, is enticed to follow the music string to anticipate the enemy's next move and the most mortal attacks.

In order to maintain the Polish and Slavic culture the authors wish to portray, these main themes are played on the traditional instruments of the *Kemence*, a particular lyre, the *Baglama Saz*, a specific lute and the *Davul*, a knee-drum. All the overworld themes are slow, gentle and often melancholic, like the subtopic of the decadent as the narrative mood seeks to suggest. Along with the deep, gravelly, rich voice of the protagonist talking to himself, functioning as a diegetic narrator to provide clues and his thoughts directly to the player through a linear vocal channel commenting on some of the actions performed by the player, the music provides all the other non-vocal and pervasive information suggested by the para-ludic elements of the game.

A distinctive element of the entire soundtrack of *The Witcher 3* is the fluidity with which it dynamically shifts its tracks according to the on-screen needs, along with the inputs delivered by the player. The music transitions between the different loops are almost imperceptible and, also, the line between music and diegetic/non-diegetic sound effects are blurred. They change according to the player's input, the location and the encounters he walks in by. In fact, Geralt, the avatar controlled by the player, will sometimes encounter groups of husking musicians in the streets near some taverns. When this happens, music will immediately change dynamically, switching from a non-diegetic one, to a diegetic "adaptive" one. It's remarkable that these switches are the only source of diegetic score inside the game (and this occurrence will be also applied to the second case of study, *Red Dead Redemption* and its Saloons, the typical western local where the player can play some cards, drink some whisky and indulge in many others "felonious" things). Adaptive music is useful for communicating information to the player in regard to gameplay, but in this case, they also make the game world, and its inhabitants, seem more alive, coherent and freely explorable.

Another example of the power of the music and its relationship with the player is collected within the game's combat. When approached by enemies, Geralt will automatically assume a fighting stance and draw one of his two sword, "Silver for monster, Steel for Humans", as the original author of the book writes (Sapkowski 1993). There are also two distinct musical tracks, named in the same way and corresponding to the two enemy categories, which are heard when a combat encounter with that type of enemy is triggered. Both are characterized by very high vocal ranges, the Slavic language of the singer, and accompanying choirs, and feature a rhythm that is in total contrast with the calm and gentle musical tracks that instead accompany the exploratory phases of the open world. The musical transition occurs so quickly that it leaves the player fully aware of the imminent threat they have, whether voluntarily or not,

triggered. This transition depends on Geralt's proximity to the potential foes and is meant to inform the player of the incoming danger. The higher the pitch of the music, the more the player's reflexes are challenged. The senior audio programmer, Colin Walder, describes how the team worked to reflect Geralt's ability as an excellent swordsman, so skilled in battle that he is almost dancing. To improve the connection between the player and the game, and to enhance the specific resonance of the *Esthesis* (Let us hypothesize, perhaps unintentionally, assuming that game and sound designers have not the slightest idea of who Nattiez is, nor of what the term associated with him, *Esthesis*, is meant to signify), the team programmed the enemy to react to the battle music and join the on-screen sword ballet. They will attack according to the timing of the music, with the largest and most dangerous attacks synchronized to a singing cue, and smaller attacks responding to beats or bars. Once the player has learnt how to recognize them, the game's music will provide them with the instruments to anticipate future battle events and flow with the rhythm. The player has the agency to play along with the music, and they reinforce each other, following the resonance described by Rosa. The player brings a set of signs that correspond to them personally, and these personal signs (Eco 1979) strongly influence which of the configurative signs set by the authors during the initial composition the player will activate during gameplay. The activated configurative signs subsequently act on the initial musical signs, crystallizing a musical experience from the potential *poietic* to an *esthesis* that is unique for each player. The *relationality* element drawn by Rosa to underline the Resonance experience here shows one of its potentials, resulting in complex process of mediation between composer, the game and player activities. Resonance transforms an individual's perception and experience, leading to a sense of authenticity and meaning, resulting in a unique emotional engagement.

In terms of gameplay, *The Witcher 3* is essentially a variation on the typical role-playing mechanics codified in many other Western games, and so its visual and aesthetic is very close to a Celtic and Tolkienesque association. The game's unique soundtrack is therefore the most important factor in the construction of the game's supposed Slavic and Polish identity. As I mentioned before, The Witcher 3 is considered a monument to Polish and Slavic culture. The chief composer worked on the game's music with the Polish folk band Percival Schuttenbach, inspired by his work called *Slava Trilogy* (2012–2018), a series of recordings of re-arrangements of existing Polish folk songs and it's thanks to this peculiar soundscape that the game can carry such a unique cultural heritage. Percival Schuttenbach is also the name that the author of the books, Andrzej Sapkowski, gives to one of the secondary characters in *The Tower of the Swallow* (1997), as a tribute to his work in rediscovering and preserving Slavic musical traditions. The intermedial intersection born from the collaboration of the two composers demonstrates CD Projekt Red's dedication, as game designers, to nurturing and conveying their passion and love for their traditions and homeland. Through acts of mutual sharing, they aim to evoke the same reverence in the player-coauthor that they themselves feel.

2.2 RED DEAD REDEMPTION 2

A similar analysis can be also applied to *Red Dead Redemption 2*. Let's start with the *Neutral* layer. In the game the player impersonates an old outlaw, Arthur Morgan, in his ongoing struggle against a changing America, no longer "wild and west" as it once was, corrupted by new institutions and industrial technologies. The sentiment of liberty that defines the idea of the "Far West Fashion" is almost forgotten and Arthur, and the player, is affected by retrospective nostalgia described by Eco. This intense sense of nostalgia for a long-lost past is very well underlined by the entire aesthetic and its musical aura. The sense of realism sought by the creators, Rockstar Games, is so great that they do not resort to the sweetening "quick trip" proven by all the other exponents of the Open World genre so, in *Red Dead Redemption 2*, the player will spend dozens and dozens of hours navigating on horseback, or on foot, through immense desert valleys (taken straight from the imaginary Spaghetti Western genre). The player's only companion element is represented by dynamic ambient music. Just like the aesthetic, the music follows the steps of the Italian composer, Ennio Morricone, through his work on Leone's peculiar way of representing the idea of Far West in the so-called *Dollar Trilogy*. The composer's signature style includes the use of distorted electric guitars, the sound of the harmonica, the whistle as a musical instrument, the banjo and the acoustic guitar, all elements that can be founded in many of the background tracks of the game, such as *Tabletop* (Daniel Lanois 2018), *Mountain Banjo* (Rhiannon Giddens 2018), *American Venom* (Woody Jackson 2018), which is also the name of the final mission of the game, and many, many more.

As in *The Witcher 3* in the massive world of *Temeria*, in *Red Dead Redemption 2*, the player has the ability to navigate at will within the vast and vibrant game world inspired by the lower reaches of North America. Each area is characterized by its own musical "soundscape", its own timbres and instruments, united with each other by a non-invasive, delicate, melancholic and nostalgic style. The direct reference to the sounds of Morricone's work by the chief composer Woody Jackson can be perceived right from the game's opening moments, in a gameplay sequence on a snow-capped mountain that declares the dual inspiration to Sergio Leone's work and Quentin Tarantino's *The Hateful Eight* movie. Here, the Endogenous attention on fulfilling his task is drawn to explain the developers' characteristic stance on the game: "Our Wild West is not the amusement park of all other games, it is meditative, raw and unpleasant. There are no heroes and outlaws, no good and evil, just men, their horses and pointy hats", like in a Leone's film. (This is not a direct quotation of the game's authors' words, but rather a summary, cheerfully cast in the form of direct discourse

by the authors of the text, of what their creative *poiesis* and the artistic intentionality of the work's emotional approach clearly aim to convey to the player.) Ethics is as nuanced as its musical transitions between melodies and diegetic sounds. The game, in fact, intends to develop not only a ludic resonance with the player, but also a moral one. Among the various elements of the game, there is a dynamic indicator of Arthur's morality, determined by the player's ethical actions towards the game world and its narrative choices. Its implications are varied and layered, including the delivery of white or black horses depending on the indicated value, but one of the most interesting is present in the final sections of the game. Depending on the inclination between one of the two moral scales, in a specific narrative turn, one of the few sung melodies will surface. The name of the song is *Cruel World*, but it will come in two ways. They have the same text, the same score, but different execution, style and perceptive reception. The first version, song by the famous singer Willie Nelson, is compelling and country, meaning you maintained a good attitude doing the choices the game's designers supposed were positive; the second version, performed by Josh Homme, leader of the metal band Queens of the Stone Age, is melancholic and subdued, a reflex of the bad honor you kept with yours in-game avatar. The players won't really know the difference until they play the game a second time and makes other choices and attitudes.

CONCLUSION

To render music a document, we must assign it a referential function; certain forms of discourse must point to a reality outside the closed element of the composition. The listener, in this case, is actively involved in recognizing otherness, the value of a clue embedded within a strategy aimed at transforming it into a potential witness that the musical discourse signifies. Musical semiosis depends on the negotiation of the interpretive grid of the textual signifier (Greimas 1984), a connotative taxonomy of a cultural nature that is constantly evolving. This taxonomy enables the detection of isotopies and the activation of additional semantic investments on the abstract structures of a plastic syntax. In conclusion, both games' soundtrack asserts Jacoviello's monumental function by recontextualizing the memory of the Slavic culture, and of a past Western fascination, actualizing the historical past towards a new media terrain that "not only serves the purpose of being able to remember, but demands to be remembered!" (Jacoviello 2022, 13). The use of this kind of music, of semiotic and ludic hearing, with those precise references to an existing, but almost forgotten, music, helps create nostalgia by being linked to both a time in the real world and a world that belongs, also, to the players, that they can imagine and dream of. A combination certainly not present in the original genre of the songs, but a potential embodied by the songs' development in the game and actuated by the symbiotic player-game gameplay. It is a sort of Index, in Peircean terms, a sign to a linked time and space with reflects the past and the present, a flow of info between the player and the game, through intellectual engagement, making choices based on the information game provides and the real outcome.

REFERENCES

Aarseth, E. J., 1997. Cybertext: Perspectives on ergodic literature. Johns Hopkins University Press. https://mimesisjournals.com/ojs/index.php/ec/article/view/2626

Collins, K., 2008. *Game sound: An introduction to the history, theory, and practice of video game music and sound design*. MIT Press.

Eco, U., 1979. *Lector in Fabula, La cooperazione interpretativa nei testi narrativi*. Bompiani, Milano

Elferen, I., 2016. Analysing Game Musical Immersion: The ALI Model. In M. Kamp, T. Summers, and M. Sweeney *Ludomusicology: Approaches to Video Game Music*. Indonesia: Equinox Publishing.

Giuliana, G.T., 2024. *Il Videogioco come linguaggio della realtà. Introduzione a una nuova prospettiva semiotica*, Aracne, Roma.

Greimas, A.J., 1991[1984], *Sémiotique figurative et sémiotique plastique" in Actes Sémiotiques- Documents*, Paris EHESS; Italian translation. "Semiotica figurative e semiotica plastica", in L. Corrain, M. Valenti, (eds.), 1991, pp. 33–51.

Hart, I. J. T., 2017. *Ludomusicological semiotics: Theory, implications and case studies* Doctoral thesis, University of Sydney, available at: https://ses.library.usyd.edu.au/handle/2123/17883

Hawreliak, J., 2019. *Multimodal Semiotics and Rhetoric in Videogames*, Routledge, NY

Jacoviello, S., 2022. *Memory of the Sound*. E|C, (36), 205–221. https://doi.org/10.1093/oso/9780197651216.001.0001

Kamp, M., 2024. *Four ways of hearing video game music* (Online ed.). Oxford Academic.

Nattiez, J.-J., 1990. *Music and discourse: Toward a semiology of music*. Princeton University Press.

Peirce, C. S., 1931–1958. *The Collected Papers of Charles Sanders Peirce* (Vols. 1–6). Harvard University Press.

Rosa, H., 2016. *Resonance: A sociology of our relationship to the world*. Polity Press.

Stevens, J., 2020. *Child of the Elder Blood:A Semiotics of Folklorism in the Soundtrack of The Witcher 3: Wild Hunt*. Faculty of Arts and Social Sciences, University of Stellenbosch, Western Cape, South Africa.

Wirman, H. E., 2012. *Co-creativity. In M. Wolf (Ed.), The Encyclopedia of Video Games*. Rovaniemi University of Lapland.

VIDEOGAMES

Booth, M., *Left for Dead*. Valve Corporation. Microsoft Windows, Xbox 360. 2008.

Sarwar, I., Hooker, P., *Red Dead Redemption 2*. Rockstar Games, Xbox One, PlayStation 4, Microsoft Windows,

e Google Stadia. 2018.
Tomaszkiewicz, K., *The Witcher 3 – Wild Hunt*. CD Project Red. Microsoft Windows, PlayStation 4, Xbox One, Nintendo Switch, PlayStation 5, Xbox Series. X/S 2015.

FILMS

Leone S *A Fistful of Dollars*. Italy. Unidis 1964.
Leone S *For a Few Dollars More*.Italy. PEA 1965.
Leone S *The Good, the Bad and the Ugly*. Italy. Produzioni Europee Associati. 1966.
Tarantino Q *The Hateful Eight*. USA. The Weinstein Company. 2015.