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Sound in Video Games: How Sound Is an Important Aspect of the Virtual Experience

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Introduction

Sounds in video games have always had a profound impact on my experience throughout my many playthroughs over the years across a multitude of titles: From when I booted up my first video game, *Pokemon FireRed* in 2005, where the explosive sounds of any fire-based moves convinced me they did more damage than any other type of move despite having the same damage numbers. When I first experienced the famous Giraffe scene in *Naughty Dog's The Last of Us*, with its use of calm/slow music to emphasize the little beauties of life which was a great contrast to the fast-paced nature of the story which displayed the ugliness of humanity, made me cry my eyes out.

Video game sound has had some very humble/simple origins, due to the lack of complexity in the hardware back in the day. The original creators of *Pong* varied the pitch and duration of a single beep-type sound effect to simulate the sound effects of a ball being bounced off a player's paddle and hitting the wall (Scarratt, 2018). This was used in effect to create a feel of tangibility, that a player's actions had more impact than it really did. By the 80's, video game developers still had limitations in the sounds they could use, but were creative enough to use the various innate sounds a computer produced and altered it enough to create the various sound effects that are commonly associated with games like *Pac-Man* and *Donkey Kong*, and with enough effort were able to create music (Scarratt, 2018). All of these innovations with sound in video games are what elevates the medium of video games to something that can evoke emotions and impact the audience greatly.

This paper will take the form of an analysis, with video games as the medium/text that will be analysed. Although analysis is typically reserved for poems, books, short stories, or plays, video games are simply a form of conveying ideas and a form of text that is representative of the 21st century. Video games is a rare medium that has an interactive element, which can alter/enhance the experience an audience member can have, even if there were the same audio/visual components in a film or play. In most forms of media with an audio component, the analysis is done by a passive listener, one who is not interacting with the piece/having any form of impact on it as it is being played (Collins, 2008) . With forms of media that invite passive listening, it is easier for every potential audience member to have the same experience, with the meaning of the experience being relatively the same. This paper will analyse the usage of sound/music in video games and how the experience of the medium can be affected greatly by it.

According to Rod Munday, there are three main fields in which sound in video games interacts with the player and affects the experience (Munday, 2007): Environmental, how sound affects the perception of the player within the game world; Immersion: How sound affects the players attitude towards their own actions within the game; Diegetic, how sounds affects the story that takes place within the world. Although this is a very well-thought out guideline for analysing sound/music in video games, the medium has greatly changed since then. As evidenced by the history of sound innovation within the medium, there have been significant changes in how video game designers and composers have used sound to alter the experience of the players. His own definition of immersion and environment have fused into one by the standards of

modern day video games, where a majority of high-profile games aim to improve immersion by having hyper-realistic environments. Instead I will define the effect a player's attitude towards their own actions through sound will be defined as **impact**.

Environmental

While vision is typically regarded as the main way a person perceives the world based on the 5 basic senses, sound is just as important, as it enhances the vision of the world that one perceives. While graphical technology has vastly improved in the last 50 years, especially in the last 5, where hyper-realistic graphics have been advancing (Wilcox-Netepczuk, 2013), they are still not 100% accurate. Sounds in video games on the other hand, are the only sense that have the ability to be indistinguishable from the real version. All hyperrealistic uses of sound, particularly by high-budget video game companies, is done in an attempt to ensure the player does not experience schizophonia (Schafer, 1974), the brain's automatic attempt to distinguish real sounds and their fake/reproduced sounds, which can cause a break of immersion and enjoyment. That's not to say that the only sounds needed are hyper-realistic ones, but the versatility of sound is an important aspect in creating the environment.

The series "The Last of Us", is an amazing example in the usage of sounds to enrich the player's perception of the world. Although the game is set in a fictional world, it uses sounds found in real-life to enhance the experience. In the gameplay trailer for the 2nd game released at E3 in 2018, the player traverses an abandoned city overgrown and lost to nature. The setting of an abandoned city is most definitely foreign to the majority of the population, the usage of ambient noise such as the croaking of animals, running water, footsteps in the distance, rustling of plants, helps the player believe the environment to be believable. Throughout the game, the player encounters enemies called clickers, a form of zombies created through a mutated mushroom. Although these are entirely fictional enemies, the sounds they produce are not. They growl, sniff, and snarl like animals; scream when hurt and shout like humans. These all enhance the experience and create a sense of fear in the player through realism that the player can enjoy.

On the other hand, when misused properly, sounds can break the immersion and immediately remind the player they truly are in a video game, which lowers tension and enjoyment. One such example is the JRPG *Xenoblade Chronicles 2*. JRPG's have not been known to be realistic, mostly known for their epic settings and unrealistic storylines, they can still cause immersion as the player can feel that they are part of a fantasy world and not a video game. *Xenoblade's* poor use of sound (among other things) regularly takes the player out of the experience with the constant repetition of battle lines. Battle lines are essentially what a character says when performing an action in combat ("That enemy got the point" is an example of a battle line of a character stabbing another). Although these are commonplace in most JRPGS, they tend to be spread out throughout the game and cycle through a few lines to avoid being repetitive, *Xenoblade* however, does not do this well. Every five seconds in combat the main character repeats the same line over and over, causing the player to be annoyed and realise they truly are in a video game and thus immersion is broken and enjoyment is lost.

While a visual representation of an overgrown city is easily distinguishable from a real one, the sounds in this scene: the rustling of the leaves; the animals in the distance; the running water, is what immerses the player and causes enjoyment.

Impact

I would define impact as the way in which sound effects in video games can affect a player's attitude towards it . Sound effects in video games are the sounds that are associated with a player's action or the game reacting to the player's action.

From early on in our lives we use sonic feedback to determine if something produced internally or externally (Rochat, 1995). Humans have a much stronger mental connection with internally produced sounds, sounds that are a result of an association between physical action and a sonic effect (Rochat, 1995). This means that Humans have a physical reaction and connection to self-produced sounds that is used to portray our bodies within our minds. This extends to video games, in that a player performing an action would perceive the sounds of the action as their own. Assuming there is minimal input delay, the player will receive instant sonic feedback when performing an action, which causes the sounds to be interpreted as their own rather than something external. This allows a player to self-insert themselves within a character and a world (Collins, 2013).

Using The Last of Us series again, it is an example of a game with excellent sonic feedback. Every action the player performs, there is always an associated sound effect with it. Walking produces footsteps that differ with the terrain, shooting a gun causes a loud bang to occur, slicing an enemy produces the sound of wind and flesh being cut. This instant feedback between actions and sounds allows the player to self-insert despite the playable characters having their own voice lines and personalities that differ with the player. This self-insertion due to feedback means that whenever something occurs onto the character (the character sustaining an injury or an emotional scene occurring), the player has a corresponding reaction to it.

If there is no sonic feedback or there is poor impact, the player cannot easily self-insert into a character. This can occur when there is too much of a visible delay between intent of the player and the actions performed within the game, causing the player to not care about the events within the game. For example, if the player experiences too much delay due to high-ping or hardware deficiencies in a shooter, when the gun doesn't fire immediately, they are in fact reminded that this is a game And when the time comes for an event to occur onto the player, such as an emotional scene wherein a character dies, the player feels no emotional attachment to the experience.

Visuals can inform the player that they are indeed performing an action, audio/sonic feedback is what allows the player to know that the action is their own and let them self-insert/immerse into the experience.

Diegetic

It is a common aspect of cognition that humans will interpret the smallest details in order by giving them background or stories that help them make sense of the situation they are in.

A story that is Diegetic is one that presents a narrative without the use of events or characters. All forms of media are able to tell a story using music that can enhance the narrative that they wish to present to the audience. Video games are no different with the constant shifts in background/theme music used to represent tones or attitudes players should have toward different aspects of the game.

An example of a game that uses music to present narrative extremely well is Persona 5. Every scene and location this game contains, has unique music that presents information to the player: From the smooth slow jazz, of "Beneath the Mask" which plays in the players home to indicate somewhere they can relax; To "Tokyo Daylight" with its much faster pace to indicate the bustling nature of Shibuya. While Persona 5 uses music to direct a player's feeling towards a location and evoke certain emotions, it also uses its vast array of music to present information about the narrative and characters: The first example being "Whims of Fate" an upbeat/playful piece that represents the gambling-nature the boss of this dungeon has in regards to their life; "When Mother was There" with its longer notes and slower beat representing the depressive/suicidal nature of the dungeon boss who feels guilty for their mother's death; "Gentle Madman" which repeats a constant increase of pitch that represents the kind intention of the dungeon boss, with the piece also having certain aspects that indicates to the player that this is indeed still a hostile area.

Although players are able to learn more information about a game by progressing, the music presents another way for the player to build expectations and provide meaning to the actions they perform.

Conclusion

This paper has analysed the three distinct ways in which sound/music can affect the virtual experience a player has in a video game. Due to the nature of music and sound, with its lack of absolute rules in regard interpretation, means my analysis is subjective to my own interpretation and feelings towards the game and the sounds it uses in the experience. The environmental and impact aspects in particular are subject to criticism and argument due to the differing senses of belief audience members may hold in regards to the sound effects the environment or playable character produces. For this reason, its important studies are conducted to provide an average and to analyze the outliers in how they interpret the sounds these games produce.

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