Video Game Music: A Connection Beyond the Controller

by Zach Nicely

David lightly grasps the controller of his Nintendo 64 as he leans back in his leather gaming chair. His character casually explores the depths of the Shadow Temple, when something catches his attention. The environment changes, and suddenly something does not seem right. David moves to the edge of his seat and leans forward, locking his gaze on the television screen and strengthening his grip on the controller. The music has changed and he cannot only hear it, he can feel it. Pressing the "A" button, he draws his sword and scans the environment for the enemy of which the music warns. Holding his index finger steady over "Z," he rotates his character until he finds a Stalfos moving side-to-side, preparing to attack. David locks on to the target and engages the warrior skeleton in combat. The quick pace of the music raises his adrenaline and keeps him alert, anticipating every move the enemy makes until its defeat. After the Stalfos dissolves into flames, the music returns to that slow, eerie theme. David notices his heart pounding louder and faster than usual, and his hands are covered in sweat. He leans back in his chair, wipes his hands on his jeans, and returns to the calm state of his body before this encounter.

All players experience this situation while playing any kind of game: the player finds himself completely wrapped up in the moment, not realizing the physical reactions he has to the game. Why does this happen? The things that occur in a video game obviously are not real, so how can someone react to these things as though they are? Multiple factors contribute to this, but the biggest reason for such occurrences is the music. Music connects with people physically and

psychologically, and game developers use this to their advantage. Developers use music as a tool to add to the video game experience and make the player feel a stronger connection with the game.

The goal of video game designers when making a game is to make an experience that the player will get drawn into. Video, audio, gameplay, and other aspects of the game contribute to this immersion by making the game seem realistic. The player must understand the pictures on the screen and the sounds must make sense with what happens as they would in real life. Along with the normal audio, designers use music to create this realistic experience. Music, however, is not a part of our natural environment. No one walks down the street to his or her own soundtrack, so what makes this such an important part of the video game experience? The answer is this: music can cause listeners to experience emotions such as anxiety and sorrow, along with physical reactions attributed with these emotions such as perspiration and changes in blood pressure.

These biological connections that people share with music have been known about and used for centuries. The study of the relationship between music and the human body has been traced back to the ancient Assyrians and the ancient Greeks. The Greeks even paid musicians to play music for Olympic athletes to improve their performance (Cervellin and Lippi). Since then, numerous scientists have performed experiments on the way music affects people. Such experiments have been very popular in medicine, as music is often used to calm patients and reduce anxiety. For instance, in 1918 two scientists by the names of Hyde and Scalapino conducted a technology-based experiment, which reported that minor tones increased one's pulse rate and decreased blood pressure while stirring music increased both pulse and blood pressure (Cervellin and Lippi). This is a general example of the biological power of music. Since the

advent of video games in the late 1990s, certain scientists have given video game music their attention. Video game designers and composers consider results from studies such as these in order to make effective and entertaining soundtracks.

Game composers have been using music to enhance in-game events since the earliest games. Even though the tools that they used back then were primitive in comparison to those used in score recordings today, the music was still able to make video game experiences seem more real. Some early examples of this can be found in the game *Super Mario Brothers* (1985) for the Nintendo Entertainment System. When Mario jumps, his movement is accompanied by a swift rise in pitch, respective to his upward movement (Nintendo, 1985; Whalen). This adds an aural dimension to the visual description of the jumping action, adding to the players' understanding of the motion. In the game when Mario gets a mushroom, he grows in size and becomes Super Mario (Nintendo, 1985). When Super Mario jumps, the same ascending glissando plays an octave lower, mimicking the difference in size. This enhances the player's sense of the character's body in space (Whalen). Music in this game is also purposefully used when Mario "dies." The music played is a descending passage, reflecting Mario's ejection from playing field. Similar music plays at the end of a level to emulate its completion and to give the player a sense of accomplishment (Whalen). This game also provides an early example of atmosphere creation. When Mario goes to the underworld through a pipe, the light, peppy music modulates to the key of G minor and has a hollow, eerie feel (Whalen). Even though the key is G minor, the melody never resolves, which sounds incomplete to the listener. When people listen to a musical passage as it comes to an end, they anticipate the arrival of the tonic. When this does not happen, the music sounds incomplete to the human ear. The lack of tonal center portrays the disorientation that is experienced in underground spaces, while the tense, hasty passages

establish the enclosed claustrophobic space in the underworld (Whalen). Atmosphere is much more difficult to create with such limited technology as found in the 1980s, and as new technology arose, the atmospheric compositions increased in complexity.

Half of what music contributes to video games is what it adds to the atmosphere at different points in the game. This gives the player a more detailed understanding of their location and surroundings, which makes these places feel more realistic and draws the player into the game. In *The Legend of Zelda: Ocarina of Time* (1998), there are many distinct locations with various soundtracks that provide a unique atmosphere for each place. This was not possible in earlier games due to their technical limitations, and the music becomes a part of the character's surroundings and less of a distinct melody. For example, the music found in temples of this game is mostly composed of long chords with discontinuous musical sounds and varying amounts of metered percussion (Grasso). There are areas in the game with fewer enemies, where relaxed exploration takes place. The music of these locales provides a happier atmosphere with more prominent melodic lines that are characteristic of that specific location (Grasso). For instance, the music of Kokiri Forest has a clear melody on top of a rhythmic accompaniment. This upbeat melody is comprised of light major arpeggios that lead into three syncopated chromatic notes, which seem to slow down and drag the musical phrase for a second. The tension built up by this is then released into separated quarter notes descending, each with a quick little trill (Nintendo, 1998). This sets a happy, child-like mood, which is appropriate considering the inhabitants of the forest are all children.

Another scene, which calls for a different type of atmosphere, is that of the boss battle. Every game has some type of 'boss," which is a significantly more difficult enemy whose defeat marks a significant milestone in the game. The music in these battles is typically upbeat and has

much more going on in the harmony and melody than the music of smaller enemies. The music of the boss "King Dodongo" in *The Legend of Zelda: Ocarina of Time* is a perfect example of this. The melody is simply syncopated descending notes (Nintendo, 1998). This has little purpose other than building and prolonging tension. Under the melody, however, is a quick-paced rhythm on what sounds similar to a snare drum (Nintendo, 1998). This gives the music a more hurried feel, and combined with the chromatic tension in the melody, energizes the player and makes him or her more alert, preparing the player for combat as it did for David. Moments like these immerse the player into the game the most, because the task of defeating a boss requires more focus and the music is most intense during these battles. Games such as this have a balance between dangerous moments and safe moments and call for a variety of different atmospheres.

Some games are not structured like this and have one set tone throughout the game. In survival horror games, such as *Silent Hill* (1999), no safe state exists. The music is always eerie and never settles or moves on to a resolution (Team Silent, 1999; Whalen). This keeps the player on edge and simulates the terror created in the game. Aside from this, the video game developers use a different technique that has yet to be mentioned: silence. In the beginning of the game there is silence until zombies suddenly appear, initiating rhythmically intense music in a diminished or minor key. The silence in the first scene, rather than comforting the player because there is no imminent danger, makes the player feel uneasy and vigilant (Team Silent, 1999; Whalen). When used properly, the absence of music can be a powerful method of drawing the player into the game by creating an uneasy and unsure atmosphere. Although music contributes substantially to game atmosphere, it also plays a large role in other aspects of gameplay.

Music appears in video games not only in the background, but also in an interactive way. This music is referred to as "procedural music." Procedural music (also referred to as procedural

audio) occurs when music evolves in real time in response to certain events within the game (Maranowski). Some can argue that all music can be considered procedural music, including atmospheric music since it is triggered by the player moving to a different area. The difference between this procedural audio and the audio of complete environments is that it is temporary and is triggered by actions of the characters themselves. This music is created using algorithms, which are rules and sequences that determine what music is played (Maranowski). Procedural music is created with various types of algorithms, the most common type being transformational algorithms. There are many transformational possibilities in game music, such as the altering of instrumental layers or changes in tempo (Collins). These algorithms can introduce complete changes in music or brand new melodies as well. They can signal for a triumphant musical line when the player does something right or positive. In Super Mario 64 (1996), when Mario earns a gold star, a major melody plays in a generally ascending direction, followed by a "cool" jazz lick (Nintendo, 1996). This gives the player a sense of accomplishment not provided by the visuals alone. Procedural music is also commonly used to alert the player to danger, such as when time is running out in Super Mario Brothers and the tempo increases (Nintendo, 1985; Collins). This "danger alert system" also activates when a player approaches an enemy in certain games. On the more advanced consoles, the music actually crossfades between the music already playing in the background. For instance, in *The Legend of Zelda: Ocarina of Time* (1998) the music of Hyrule Field will be consumed by tense battle music when Link approaches an enemy. This crossfading feature not only helps connect players with what is happening in the game, but also provides a cue for the enemies that could not yet be seen on the screen (Grasso). Procedural music helps emphasizes events that happen in the game, either leading the player to perceive them in a more realistic way or to assist the player's gameplay.

One problem found in video game music is the monotony created by looping tracks. When a gamer is stuck on a particular part of a game, his repeated failures will frustrate him. Eventually, the music in the background gets annoying and makes things worse for the player. Game designers are aware of this, and they use procedural music to avoid this problem. For instance, in *The Legend of Zelda: Ocarina of Time* the player spends a considerable amount of time in Hyrule Field. To avoid letting the theme become boring and obnoxious, a series of cues are chosen by a random number generator to play the theme back slightly different, which maintains interest and diversity (Collins). This is an example of how music is not only used to connect the player with the game, but is used to help solve technical issues.

The music of video games also serves the purpose of assisting with character identification. When certain characters enter the playing field, a musical line will be heard that only appears when that character is present. This concept of themes being assigned to specific characters is found in the operas of late-Romantic composer Richard Wagner. Wagner assigned "leitmotifs" to characters that the audience hears when that character appears on stage (Whalen). Video game composers have adopted this technique and used it when writing music for different scenarios in games. An example of this is used in *The Legend of Zelda: Ocarina of Time* (1998) for the character named Malon. Malon, a young girl who lives on a ranch with her father, is always singing her theme when the player character approaches her. The ranch shares the same theme, and that pretty, relaxed melody still appears even when Malon is not present. This melody actually uses the same crossfading technique mentioned earlier regarding minor enemies. The closer Link gets to her, the louder the melody gets and the more it takes over the music already in the background. The tune is also used to summon Link's horse, Epona, and is appropriately known as "Epona's Song" (Nintendo, 1998). The character Zelda, the princess of the in-game

land of Hyrule, also has a distinct theme that is played during scenes in which she is present. This tune, unlike Epona's song, is more wise and solemn, which reflects the wisdom that the young princess possesses (Nintendo, 1998). Needless to say, this game uses the character-identification technique, or leitmotif, quite generously. Another effect that these themes have on the player is the nostalgia created due to musical associations with different characters. In game series like *The Legend of Zelda* these tunes are reused in every game, and when players hear these melodies in a new game they remember the older games and their individual experiences playing them. Music assigned to specific characters, or any music within a game, can form a connection not only to the players' physical bodies, but their hearts.

      Music connects with people in a mysterious way, and the use of this connection in video games brings more to the video game experience than anything else could. In the beginning all composers had to work with was a soundboard with a few electronic instruments, and with that they still were capable of making effective, meaningful music. Technology has grown since then, and it has become even easier for composers to make powerful, memorable music. Video games in the present day are beginning to use live orchestration, so if three or four electronic tones were able to draw players into a game, one can only imagine the possibilities of what a live orchestra can create. Gamers cherish the music from their favorite games, including David, who sets down his controller and cheerily hums the Song of Time to himself as he walks away from the television.

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