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Daniel J. Sottile

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Analysis of Interactive Audio in *Journey*

A Thesis for the Masters of Scoring for Film, Television, and Video Games at Berklee

College of Music in Valencia, Spain.

By

Daniel J. Sottile

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Introduction: *Journey* as Art, and How It Came to Be

The acclaimed film critic Rodger Ebert once said "I remain convinced that *in principle,* video games cannot be art. Perhaps it is foolish of me to say 'never,' because never, […] is a long, long time. Let me just say that no video gamer now living will survive long enough to experience the medium as an art form." [1] Ebert made this statement in 2010 based off of a TED talk at USC by Kelly Santiago, the co-founder and former president of thatgamecompany, in which she proposed that games "already ARE art" [2]. As if mocking Mr. Ebert, two years later the critically acclaimed score for the video game *Journey*, composed by Austin Wintory and published by thatgamecompany – yes, the very same, was nominated in 2012 for a Grammy Award for "Best Score Soundtrack For Visual Media category, alongside *The Adventures of Tintin - The Secret of the Unicorn*, *The Artist*, *The Dark Knight Rises*, *The Girl With the Dragon Tattoo* and *Hugo*. Such industry titans as John Williams, Hans Zimmer and Trent Reznor [were] among the composers nominated for the aforementioned projects." [3] Along with the fact that according to the PlayStation Blog the game *Journey* "officially [broke] PlayStation Network and PlayStation Store sales records, surpassing all first and third-party games to become the fastest-selling game ever released." [4]. Clearly both the success of the music and the game itself disproves Mr. Ebert's idea that games cannot be art. Of course, none

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[1] Roger Ebert, "Video games can never be art | Roger Ebert's Journal | Roger Ebert," RogerEbert.com, April 16, 2010, accessed June 24, 2017, http://www.rogerebert.com/rogers-journal/video-games-can-never-be-art.

[2] //

[3] Colin Moriarty, "Journey's Soundtrack Nominated for a Grammy," IGN, December 06, 2012, accessed June 24, 2017, http://www.ign.com/articles/2012/12/06/journeys-soundtrack-nominated-for-a-grammy.

[4] Jenova Chen, "Journey is PSN's Fastest-Selling Game, Soundtrack Coming Soon," PlayStation.Blog, March 29, 2012, accessed June 24, 2017, http://blog.us.playstation.com/2012/03/29/journey-is-psns-fastest-selling-game-soundtrack-coming-soon/.

of this success would have occurred if it were not for the fantastic work done by *Journey's* composer Austin Wintory.

Austin Wintory was born in 1984 and grew up in Denver, Colorado. Around 10 years old, he was introduced to composer Jerry Goldsmith and discovering his scores to *Patton* and *A Patch of* Blue and subsequently began piano lessons and composing afterwards. [5] After composing in high school for student orchestras, Austin went on to study at the New York University for his undergraduate degree and at the University of Southern California for his master's degree. [6] It was there in 2006 in which Austin met Jenova Chen, who would later co-found thatgamecompany. Chen at the time was working on his thesis project, *Flow*, and having Austin Wintory's name passed along to him, began collaborating with him and Nick Clarke on the first version of the game. [7] According to Austin, Chen had "an incredible way of processing information, seeing far beyond code and reaching into the emotional implications of things." The game *Flow* was later re-released a year later on the PlayStation Network after the project was picked up by Sony and developed by the newly formed thatgamecompany.

With collaborations come even more collaborations, and a few years later in 2009 after a few other projects, Chen met with Wintory again and discussed a game he wanted to make. He talked about a game that would "inspire feelings of loneliness in the player, but also a sense of poignancy, and a kind of stark beauty." [8] According to the Penny

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[5] "About." Austin Wintory. Accessed June 24, 2017. http://austinwintory.com/about/.
[6] //
[7] "IndieGames Podcast #23: Sleigh Ride." IndieGames.com - The Weblog IndieGames Podcast #23: Sleigh Ride. December 23, 2012. Accessed June 24, 2017. http://indiegames.com/2011/12/podcast_23_sleigh_ride.html.

[8] Kuchera, Ben. "Musical DNA: how Austin Wintory wrote the song that helped create Journey." The PA Report - Musical DNA: how Austin Wintory wrote the song that helped create Journey. March 2, 2012. Accessed June 24, 2017. https://web.archive.org/web/20120418102513/http://penny-arcade.com/report/editorial-article/musical-dna-how-austin-wintory-wrote-the-song-that-helped-create-journey.

Arcade, Chen had a challenge for Wintory in which he wanted a musical theme to take to the team to help define the game, help establish its tone, and get everyone involved on the same page of creativity. [9] While Wintory doesn't remember the exact details of the conversation, he remembers how much he was moved by it; "Whatever [Chen] said was magical. I walked out of the [meeting] and by the time I walked out to my car, the piece was in my mind. I left a voice mail to myself, literally singing the music to myself." [10]. Wintory then called his eventual collaborator cellist Tina Guo, and they immediately went straight to his studio so he could write and record the theme, which is transcribed below:

Main theme from *Journey*

The main theme of Journey, which is heard throughout the game, most prominently in the track 'Nascence'

Example 1: Main Theme from Journey, played on Ableton Solo Flute (0:00)

One of the goals in development, according to Wintory, was to create a score that could not only create an emotional response from players, but also still work with the actions of the players interactively. While short loops that would rapidly change according to the player's actions could have worked, Wintory said, "The idea of a few bars of music that would loop would have been a tragic 'missed opportunity'". (3) He further adds, "Extremely interactive music would be something like procedural audio

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[9] //
[10] //

that's being generated in real time by some kind of system. Which is as unmusical as it

can get. Perhaps I'm old school… I've had arguments with fellow composers, but I've

found that music is emotional and meaningful when played by a person. Musicality is a

human quality." (3) Of course, when most people envision video game music, they think

of synthesized music, but in the case of *Journey*, this would simply not work. As such,

while there are just a small amount of electronic parts in the score (in what I can only

assume is samples doubling the orchestra), the majority of it is performed with a live

orchestra and live players. The music for the game was recorded in Studio M1 in Skopje,

Macedonia by the Skopje Radio Symphonic Orchestra[11], which features Tina Guo as the

solo cellist. [12] This solo instrument is represented through the main theme, which as

Wintory says, "[…] is all about you, the player. Your interaction with the world, with

others, and with yourself as a self-reflective experience. Musically it's like a big cello

concerto where you are the soloist and all the rest of the instruments represent the world

around you, including other players." [13]

     According to TheSixthAxis, Wintory worked very closely with

thatgamecompany's Steve Johnson, the games sound designer for the whole 3-year

development, "constantly keeping each other in the loop." [14] When also asked about how

the music always seems to fit perfectly, Wintory said "I never wrote a piece of music

without detailed instructions from thatgamecompany on how to implement it. The goal

[11] Kuchera, Ben. "Musical DNA: how Austin Wintory wrote the song that helped create Journey." The PA Report - Musical DNA: how Austin Wintory wrote the song that helped create Journey. March 2, 2012. Accessed June 24, 2017. https://web.archive.org/web/20120418102513/http://penny-arcade.com/report/editorial-article/musical-dna-how-austin-wintory-wrote-the-song-that-helped-create-journey.
[12] Jeriaska. "Q&A: Sound in Thatgamecompany's Journey." IndieGames.com - The Weblog Q&A: Sound in Thatgamecompany's Journey. February 28, 2012. Accessed June 24, 2017. http://indiegames.com/2012/02/sound in journey thatgamecompany.html.
[13] nofi. "Interview: Composer Austin Wintory On Journey." Interview: Composer Austin Wintory On Journey. Accessed June 24, 2017. http://www.thesixthaxis.com/2012/03/15/interview-journey-composer-austin-wintory/.
[14] //

of course was to make it totally seamless, so that it feels like the music is unfolding in real time, as if being written by an unseen (and very fast!) composer." Not only was this the goal for this game, but also as seen in an interview with Keith Stuart on HookShot Inc., Wintory said, "I wanted to write a game score that was able to do two contradictory things simultaneously. It had to be deeply interactive to the player's experience, which usually means it needs to be modular and granular and able to be broken apart into these constituent bits for scripting. My ultimate dream for game scores is one that somehow does both of those. I work with a lot of musicians who truly move me and I wanted to put that in a game. In films we do this all the time, because it's a set linear timeline. It was quite a project, I had no idea what the hell I was doing. Sony was hugely supportive on the technical side, helping to choose when to make a cue deeply interactive and when to make it more linear." [15]

It is clearly the balance between interactivity and linear music that helps make *Journey* the art that many recognize it as. However, most casual gamers are unaware of the level of interactivity that was put into this game. Austin Wintory puts the kinds of questions one might ask about interactive music into words much better than I can here: "The music is always designed and composed, from the beginning, by asking what will the interaction be with this piece. Is this something the player will activate? Is it used as a narrative device? Are we suggesting something to the player? Will they react to the music? Should it exist in an atmospheric way to add subtext to the environment? All of these things interweave, and you have this kind of subtext-minded piece, and then once

[15] "Sound as story: Austin Wintory on Journey and the art of game music." Hookshot Inc. June 1, 2012. Accessed June 24, 2017. http://www.hookshotinc.com/sound-as-story-austin-wintory-interview/.

the player does something, it reorients what the music is doing, and you have this moment." [16] To answer these questions and others, my analysis will primarily focus on the interactivity of the audio in *Journey* will focus on sound design, stingers, and music as it pertains to both their narrative function, with the main idea being that the sounds the player hears creates that character and the world around the player, and how those sounds are carried out mechanically throughout the game, and how these could either be used in other games or improved in this and future games.

Part 1: Analysis of Sound Design In *Journey*

First, we will focus on the sound design within *Journey*, which in this instance refers to sound effects, ambience, and non-diegetic sounds such as dings and effects, but not musical ones such as stingers, which are presented later on. Since *Journey* is a narrative game, it makes sense to analyze it from beginning to end in all aspects of audio, but importantly to start at the sound design. While *Journey* is much better known for it's incredible score, it's the combination of the music along with both sound design and stingers that makes the game itself an incredible work. The sound design in this game helps create the world around you, and while the kind of interaction the sound design has is not as grandiose as the music, the particular way in which sounds are used in their respective environments helps the player interact with that world.   The sound design is made up of actual diegetic sounds, non-diegetic sounds, and ambiences. While the main

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[16] Kuchera, Ben. "Musical DNA: how Austin Wintory wrote the song that helped create Journey." The PA Report - Musical DNA: how Austin Wintory wrote the song that helped create Journey. March 2, 2012. Accessed June 24, 2017. https://web.archive.org/web/20120418102513/http://penny-arcade.com/report/editorial-article/musical-dna-how-austin-wintory-wrote-the-song-that-helped-create-journey.

effects have the purpose of recreating sounds around the player, the non-diegetic and ambiences play the role of creating not only the kind of worlds the player is interacting in, but to also guide the emotional state of the player. I have divided the game up into eight separate levels for analysis, and will focus on each of them separately.

The first level is the tutorial level, where some of the initial game mechanics and puzzle solving begin. It is a desert level, like many of the other levels, and thus introduces the kind of world your player is exploring. The most noticeable ambience that exists in the first level among almost all the later levels is the wind. It's presence, or lack thereof, signifies to the player the kind of intensity they are in, along with the type of environment they are in. How the sound of wind grows and fades away is muffled, or the type of variety of sounds the wind produces can help determine many things to the player, as we shall see later. In this initial level, however, the wind ambiance tends to just be environmental.

Of course, sand itself plays a large role in creating the environment for the player. Moving around within the sand makes footstep noises, and jumping from and landing in the sand has their own set of noises. These sounds just help put the player in the world they are exploring. Similarly, if you walk on other substances such as structures, stones, etc., you will hear sounds for those as well. We will see in later levels how this changes depending on where you are or what kind of environment you are in, but for the initial tutorial, nothing truly significant happens when it comes to the sand.

While many people would ignore or choose not to analyze the sound effect of the robed clothing you wear, I think it is an interesting narrative view that certainly demands more than just a quick look. Throughout the game, you can interact with carpet-like ribbons and gain a kind of light, or power that enables you to jump very far using the 'shout' mechanic. When you do so, you can move about the air as if you were flying when you jump. This experience, while it does sometimes provide the player as a means to progress through the game, other times (especially in the tutorial) it just is something to entertain the player. It is often referred to in literature, most famously by the book *How to Read Literature Like A Professor* that "flight tends to signify freedom, escape, the flight of the imagination, spirituality, and a return to home"[17]. Thus, when you hear the noise of the robe you are wearing fluttering like a large carpet in the wind (which is probably how the foley for it was created, or some other large fabric), it conjures up images of birds flying, the other carpet ribbons you see throughout the game, and other images of flight. Thus, anytime the character is able to produce this sound, it signifies the part of the journey that is free and unburdened. However, in later parts, this mechanic becomes either impossible or the sound of it has changed, but for the tutorial level, it just opens the player up to the idea that this is *their* journey, and not necessarily part of a strict storyline.

Example 2: Sound of the Clothing in Journey (0:48)

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[17] Foster, Thomas C. How to read literature like a professor: a lively and entertaining guide to reading between the lines. 102. New York, NY: HarperCollins, 2017.

The ribbons themselves, while a slight mixture between both sound effects and stingers, also play a key role in interacting with the player. When either a swarm of them is drawn in by you and swarms around the player via a shout, which is one of the mechanics introduced in the tutorial, a kind of wind chime, glittery, and magic sound comes from them. A similar sound appears whenever you activate a large ribbon via the same mechanic, or when the ribbons themselves start forming or disintegrating. This kind of sound invites a positive reaction from the player, making them want to continue drawing ribbons into themselves, and completing the level.

Example 3: Ribbon Sounds (1:03)

The last major aspect of the initial tutorial, which is seen in detail later, is the literal idea of mechanics. The sound of either wooden or forged metal gears grinding as you either exit a level or complete a major task within the level not only creates the world that you are exploring, but signifies a major change. It's much akin to the idea of unlocking a door or a chest, in which it seems to 'unlock' itself into the next part. While this is only exhibited during the end of the tutorial level, this literal mechanic will be seen in almost every proceeding level.

Example 4: Mechanical Noises (1:18)

Starting on the second level, which is another desert level, we hear the sound of a sand waterfall, signifying to the player that we are still in a sandy environment, and just

adding to the intrigue the world creates. We see this both right before the level begins, and as we finish the level. The most important thing to note here concerns both the music and the sound design, which will be explained in depth later. Upon starting the level, there is no music for the first section, only the sound of wind and other sound effects. Once a player manages to activate one of the first ribbons, a mechanical sound plays as a ribbon reforms to make a bridge in a small cut scene/transition. During this transition, music finally begins to play.   This moment in which there is no music sets the player in a state of being just alone with their surroundings, and a world that has not been interacted with yet, encouraging the player to do something.

Example 5: No Music to Start (1:45)

        While this concerns the entire game, I began to notice at this point that some of the larger sounds such as the deep mechanical noises also activated the rumble pack inside the controller, meaning I could also *feel* the sound as a player. This kind of immersion, while it isn't quite an aspect of audio, does in fact play to making the game an overall better experience. The screen will sometimes shake as well if the sound is loud enough as well.

        The third level, which once again is a desert level, very similar to the previous level, has some interesting use of sound design. First, the player will encounter a sort of 'ribbon creature', which are not only meant to lead the player toward their next goal, but also as part of the world the character is in. These creatures make sounds when you interact with them, almost as if they are communicating with you. Throughout the game,

there are creatures much like the ones you first encounter among many others. They make a 'cooing' sound that seems to beckon the player to follow them, and when they move ahead of you and you catch up, they make their noises as if appreciating your compliance.

Example 6: Ribbon Creatures (1:58)

As I played the game, I noticed that there was not as much wind for the first part of this level. As I stated before, the wind itself is a signal to the player on whether a situation is tenser or not. After completing the second level, and seeing the third is much the same, the developers must have wanted the player to feel a bit more secure, and brought that aspect down, and the music that occurs at this point seems to suggest this is actually the case.

Along with the wind working with the music and mood, when you get to one of the last ribbons in what I'll call the 'bright section' of the level, you see a series of shooting stars approach you and one lands right near you as a musical transition occurs. The music is somewhat magical and bright sounding, and the sound design of the shooting star seems to help support that sound, with a kind of magical rather than fierce wind chime sound that we heard with the ribbons.

Example 7: Shooting Star Lands Near You (2:37)

As we descend into a valley, the mood suddenly changes both visually and aurally for the player. The wind begins to pick up, the light becomes blocked by a swirling sandstorm, which we can also hear, and both the music and other sounds coming from a nearby mechanical building are both dark and booming sounding. We can both hear the mechanisms inside what the player soon discovers are holding cells for the creatures they just met. The sound design here, while subtle, reflects the kind of world the player is experiencing: a cruel and darker side to the level. This part of the level contrasts with the light-sounding wind and joy the player felt before in the level, just by changing the volume and character of the wind and the darkness and timbre of tones being produced. It becomes even more pronounced once you begin ascending this mechanical structure, where not only do the sounds of the mechanics grow louder, but also more rhythmic. The random and chaotic nature that previously surrounded you, the freedom that the player was able to explore, is contrasted by the tight, rhythmic and dark pounding of machinery. The mechanical sound produced, as mentioned earlier, also signifies to the player that they are headed in the right direction, although it is a dark one, since it only begins to sound louder once you start ascending the structure. This pounding increases in volume as you ascend, and the music also fades out until you cross the bridge and you can now fully see and hear the moving mechanisms of the structure. They are very crushing, loud, and chain-like in design, and remind the player of imprisonment. Of course, as you progress to the end of the level, the wind slowly fades down, and you complete the level and set the creatures free. Again, the wind is a key signal to the player on how they should be feeling emotionally.

Example 8: End of Level 3 Sound Design Aspects (3:11)

The fourth level of the game is once again based in a sandy desert setting, but in this level, you are pushed along as you 'ski' through the sand. The player is free to explore the map horizontally, but must always be moving forward. In this level, you can hear the sound of moving through the sand, and the wind pushing you along. In this level, wind appears to be playing more of a restrictive role on the characters freedom; they aren't allowed to stop, go back up, or go beyond the limits of the course. In fact, as you attempt to go near the edge, the wind sound will intensify, darken, and push you back down, and then fade out to normal. In a strange way, while this would make the level not seem fun, it's actually incredibly exhilarating. The music definitely plays a larger role in this, but rather than thinking about the wind restricting you (like it will later in the game), it's more as if it is *guiding* you towards the goal. After one of the more dark moments in the game, you finally get to sit back, and relax, and let the world take you on a journey rather than the other way around.

Example 9: Skiing Through Sand, and Wind Guiding You (3:56)

The fifth level takes place underground directly after the previous level. As you drop down into a cave before the level begins, and even though you are underground, you can still hear the wind above you overheard, but filtered, reminding the player that the world you were once in is now above you. This extends throughout the entire next two levels. While still underground, many of the same elements from before still exist,

including the sand, and the small creatures. However, while the first part of this level is quite reminiscent of the previous levels, this changes about half way through as the music fades out. The player is introduced to mechanical sounds once again, and what appears to be the grinding of stones. The floor shakes and you can also hear bits of rock and sand crumble from the ceiling.

Example 10: Wind From Above (4:28)

The main idea in this level comes from the large beasts that appear in the level. Large, stone-like dragon creatures burst out of the ground and not only dominates the player's attention, but also the sound of the moment. Roars, stones crashing, and other noises from the creatures make certain that the player notices that not only are these creatures important, but also a threat. As you continue through the level, the noises of these creatures become more menacing and deep than previously, and outside of this point of the level, there is no other sound except for the muffled ambience of the wind. The purpose of these large creatures is that they will search for you and if you are spotted, they will lunge at you and attack you, knocking the player back and slowing you down. Interestingly, along with the other noises the large creature makes, when it attacks the player, the sound it produces is almost mechanical in nature. While mechanical sounds have previously suggested that they are a signal of advancement in the level, some mechanical sounds signal the idea of restriction or entrapment, much like in the third level with the cages and the large mechanical structure.

Example 11: The Beast Noises (4:37)

It was at this point in the game in which I began to notice a small golden box that when activated like the ribbons provided energy to jump. When activated, they have their own sound effect much like the ribbons, a positive sounding wind chime-like effect. Such an object, while they have no extra purpose, still gives the player a positive reaction to finding them.

Example 12: The Golden Box Sounds (5:08)

The sixth level is also underground, but is a more ethereal level in which you make your way up to the outside.   Many elements are similar from the previous levels; there is still a slight wind ambience as if the wind is rushing overhead, sounds involving the sand at the bottom of the cavern, and the use of mechanical sounds to signify advancement in the level. However, this level adds a new aspect to both the level design and the sound design as well; a light "water" that fills up the cavern. It functions a bit like water in that you can move around freely in it, but it's just part of the air in the room. If you fall in it, you can just push yourself back up. Subsequently, one of the kinds of effects used in sound design to recreate the effect that the player is underwater is to muffle the outside ambience by either eliminating the noise, or applying a low or high pass filter. In this case, the wind ambience is cut out when you are "submerged".

Example 13: Submerging Under the Light Water (5:20)

The seventh level is the most different of all the levels, which is a snowy environment rather than a sandy desert one. As such, many of the sound elements are radically different. Footstep and movement sounds are much more crunchy and soft rather than the grainy sound before. The most noticeable change is the wind, which not only has more variation, but more elements as well. The wind has picked up in intensity, is more swirling, and has a harsher, cutting sound to it. Visually and aurally, the player can hear and see when the wind picks up and becomes more intense, which unless you are behind a stone, will push you back. This is the 'puzzle' aspect of this level, which can prove to be frustrating to the player. As before, the wind reflects the emotional state that the player should be feeling, which is that of a harsh unforgiving environment. There are no longer any mechanical sounds to signal to the player that they have advanced in the level. Instead of the world working with the player, the world begins to work against the player.

Example 14: The New, Harsh Wind (5:47)

Another interesting feature of this level is how the ribbons behave in this environment. They are all frozen in place, and when activated by the player, will unfreeze and then freeze back up, making a cracking, icy sound. This sound helps establish the idea that the ribbons lose the 'life' to them in the harsh environment.

Example 15: Frozen Ribbons (6:29)

The large beasts that appeared in level five returns to further stop you in your journey with the same mechanic as before. They produce an even larger and reverberated noise than before, which brings out higher harmonics that suggest an even harsher appearance.

Example 16: Large Beasts Re-appear (6:56)

At this point, how the wind sounds in the ambience greatly corresponds to the intended emotions of the player until the end of the level. When you get to the end of the initial wind pushing, the player enters a small pathway in which the wind seems to die down. The snow around the player is calm, and the music reflects this sudden uplifting feeling. The combination of these choices of sound gives the player hope that they have finally made it to the end. However, once you exit this path, the wind not only picks up again, but becomes even harsher, whistling as it moves past the small narrow passage and other obstacles. It's harder to time when to move to the next obstacle, and becomes even more frustrating to the player. At this point in the level, you have no energy to make the jumps you usually can, and you fall to a lower part of the level.   Here, the harsh wind is not as intense, and while there are frozen ribbons in which you can use to go back up, it's almost tempting to the player to not go up. But the only way to get out of the space is to continue forward.

Example 17: Wind Whistling, Falling Down (7:20)

At the last part of the level, the wind is the most intense. There are visuals of lightning, which corresponds to various sounds of thunder, swirling snow, and the even harsher whistling of the wind. The wind itself pushes against you and becomes increasingly frustrating to the player, bearing down on them and slowing their journey forward. As the player inevitably slows down, the wind and other weather elements begin to die down, as does the music. All that is left to hear is the players own staggering footsteps in the snow, first giving the player a sense of being separated from the world, which then too fades out as the player falls to the ground. All that is left is complete silence, giving a powerful, self-reflecting moment for the player.

Example 18: The End of Level 7 (7:59)

After a cut-scene in which the player is miraculously revived and shoots towards the top of the mountain, level 8 is a more ethereal and bright setting, taking place at the summit.   One of the first elements you can hear is the soft swooshes of the wind, clouds, and creatures, creating a soft ambience for the player. Because there is once again an ocean of 'light water', you are essentially able to fly at this point with no danger of falling.

Example 19: The New Ambience (8:33)

Once the player gets to a certain point, the next portion of the level travels downhill, and for once, the player gets to ski on actual snow rather than sand. This sound is similar to the sand, but is softer and wetter, like snow.

Example 20: Skiing on Snow (9:36)

As the player progresses, you hear and see a waterfall ahead of you, a river flowing down the mountain, and mist as you approach the end. These sounds and sights of the snow melting symbolize the fading away of the harshness of the snow the player had encountered before, as if the troubles of the past are melting away.

Example 21: Melting Sounds (10:08)

When you finally ascend at the final part of the level, the sound design is behind the music in the mix. This is because of the emotional weight of finally making it to the top, and so while the sound effects are still present, they are not as important to the narrative.

Example 22: SFX behind Music in Mix (10:28)

After reaching the top, the player lands in a cave, and you can hear the sound of wind in the cave. The sand you are now walking on has a light, glittery and even ethereal sound to it. As the player walks through the cave toward the light at the end of the

tunnel, these sound effects fade out and it's just the sound of the music and your footsteps. As the player enters the light, the music also fades out, and all that is left is your footsteps, until even this fades away and you complete the game.

Example 23: End of Level 8 (10:58)

In summation, there are several important points to establish about the sound design in *Journey.* The first is that the ambience and wind play an important part in establishing the intended mood that the player should be feeling and experiencing. As the wind and other elements get more intense, the player usually feels a stronger challenge or a frustration. The ambience also entails other details about the player's environment outside of obvious setting places. These include where the player is relative to where they were before, such as the underground levels, and the final level in which they are in the air.

The second is that mechanical sounds tend to signify advancement to the next part in a level, but can also symbolize confinement or control. While they can literally portray the mechanical things on screen, they can also signify the idea that the living creatures are entrapped inside them, such as in the last part of the third level. However, most of the time, they are used when a player activates a large ribbon or shrine, or whatever is needed to activate the next part of the level. Since this also lines up with most of the transitions in the score, it also provides transitional noise for the music.

The last idea to take away is that the sound effects and music, along with the next element of stingers, play together in both a sonorous and emotional aspect. Since the

game is creating a world for the player, each element must interact with one another in a similar manner, which is why the definition between the three elements in this game is difficult to distinguish.

Part 2: Analysis of Stingers In *Journey*

The second and smallest element of audio for analysis in *Journey* is the use of stingers throughout the levels pertaining to various actions, objects, and mechanics of the game. In this instance, there are many more sound effects than stingers, and most of the stingers that occur are one-shot sounds, meaning they are just a single sound. While many stingers in other games are constant throughout any game, *Journey* not only changes how a mechanic will sound from one level to another, but even sometimes within a level. The stingers have a very close coordination with the music that plays along throughout each level, and exploring not only the various stingers throughout the game, but also how some of them change according to the music, is an important aspect of the audio within *Journey*.

Throughout the game, there are only a few types of stingers that are triggered by the player. The first is when all ribbons are absorbed by the player, which will produce a synth and string-like chord rooted around G#, which is very similar to a large series of later stingers. The second type of stinger occurs when you fully activate a large ribbon, which produces a single triangle hit, which gives the player a signal that they have activated the next part.

Example 24: Ribbon Absorption Stinger (13:37)

Example 25: Large Ribbon Activation (14:11)

An important stinger occurs anytime you are either at the end of a level, or in the sixth level, activating the parts of the level, which is when you shout to activate the small pillars and either the end level cut scene begins or a change occurs. A small stinger will occur once you have activated all of them.

Example 26: Final Activation Stinger (14:23)

Some of the other stingers are from small golden boxes that you find scattered the game. While they produce a sound effect while near them, fully activating them also produces a stinger that is just a more intense version of the sound effect. Doing this has no implication for beating the game, but according to several guides, including one by IGN, finding them increases the length of your scarf, and is part of an achievement trophy you can obtain[18].

Example 27: Golden Box Stinger (5:08)

However, there is a single stinger that provides the MOST important sound in the game outside of the music, and that is the set of stingers that sound when you press the

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[18] Clements, Ryan. "Journey Review." IGN. March 01, 2012. Accessed June 27, 2017.
http://www.ign.com/articles/2012/03/01/journey-review.

'O' button on the PlayStation controller, which activates the 'shout'. Not only are there three variants of this mechanic based on how long you hold the button and release it for, but several variants among them, which themselves vary in amount, pitch, and design depending on the level the player is in. The variation of pitches that occur depend on the key that the music is in and the tonal notes that exist in that level, which are generally all the same in order to keep continuity between different parts of the level, which will be explained later. As another note, these pitches will be played in a random order, so they are not synchronized to the music nor do they play in a sequence. Even without the synchronization or pattern, these stingers provide an extra layer to the music that only the player can control, which not only adds to the interactivity of the audio, but also makes the experience more enjoyable for the player and heightens the effectiveness of the music. The stingers also change their reverb according to the environment that the player is in. For instance, in a large open space like the desert, the reverb is much more dry, but in a smaller enclosed place or valley, the reverb becomes wetter. Another variation that comes up is the volume of the stingers when the camera angle either moves far away or changes. In the second level during both the musical transition and the mechanical change to the next part of the level, the camera angle moves out, but the player can still move and interact with the environment. However, the stingers become basically inaudible when the camera is that far away.

Example 28: Reverb Differences (14:40)

Example 29: Volume + Camera Angle (15:06)

As explained, the stinger mechanic of the shout has the most diversity and interest for the game. There are three different intensities of this mechanic, short, medium, and long, depending on how long you hold the 'O' button. Typically, the long stingers have the least amount of variation, while the medium ones have the most variation. This is probably due to the fact that the player will use the medium length more throughout the game. Most of the stinger sounds are combinations of orchestral, pitched percussion, and heavy synthetic sounds, of which the later aspect helps in defining the stingers separately from the actual music underneath.

Starting in level one and continuing to level 2, there are three variations for the short stinger, which are pitched A, B, and C#. For these levels, the short stinger has a staccato flute-like sound, mimicking the short button press of the player. The medium stinger has five variations pitched A in two octaves, B, C#, and F#. The sound here is a longer, more synthetic and string-like sound. The long stinger has only two variations in these levels, pitched approximately A and F#. These stingers are not only the longest of the three, but also involve the most unique sound elements, and chord-like structures.

Example 30: Level 1 and 2 Shout Stingers (15:41)

The third level is the first one to change the variation of the stingers, with the short stingers pitched E, F#, and G# with the same flute-like staccato displayed before. The medium length stingers are pitched F#, E, and an F# with a prominent C# harmonic. They have a similar sound to the previous two levels.   Lastly, the long stingers in this level have no change to them, staying A and F# and keeping the same sound as before.

Example 31: Level 3 Shout Stingers (16:16)

The fourth level once again changes the pitches, but also the sounds used for the stingers. The short variations consist of pitches E, A, B, and D. These sounds are made with a vibraphone-like hit along with some strings underneath. Like the previous levels, this sound is the shortest in comparison to the others. The medium variations consist of E, G, A, B and D, which is the most variation for this level of stinger in the whole game. The long stingers in this level are pitched roughly around A (low octave), D, and A (high octave). Like the other long variations, they are the longest and have the most unique aspects of sound within them, and the most chord-like.

Example 32: Level 4 Shout Stingers (16:54)

Level five and six, the underground levels, also share the same stingers with each other much like levels one and two did. In this particular case, the short stingers are focused around D, A, C, and E, with a similar sound to the previous level. The medium length stingers are D, G, A, and C with also a similar sound. The long stingers are E (lower octave), D, and E (higher octave). Again, a similar sound applies to these stingers.

Example 33: Level 5 and 6 Shout Stingers (17:31)

Level seven, the snow level, is a particular case when it comes to the stingers. While all three instances of the stinger exist, you won't be able to use the long one towards the end of the level, and the stingers in general are much quieter. This is probably because throughout this level, your character is freezing to death, and so their shout is weaker.

The short stingers are A, F#, E, and D, the medium stingers D (lower octave), B, A, and D (higher octave), and the long stingers are E, a chord centered on A, D and E, and a chord centered on G and F#. From this point onwards in the game, the long stingers are more like chords rather than single notes.

Example 34: Level 7 Shout Stingers (18:21)

The final level also has it's own variation of the shout stingers, though in this instance, there are as many long stingers as the medium ones, which is the only level that has this occurring. The short stingers once again have the short flute sound that was heard in the beginning of the game and are pitched B, C#, and D. The medium stingers are on A, B, C#, and E and also share a similar sound to the beginning. The long stingers are on F#, a very low B, C#, and a chord centered on E and A. Like before, these longer stingers are more chord-like in their composition, and are made up of many different sounds.

Example 35: Level 8 Shout Stingers (19:26)

These stingers throughout the game are done in such a way that when played, they will blend with the music, matching pitches that are used in the music throughout a level. Like previously mentioned, and explained later in more detail, the music follows similar modal scales within a single level, which is why the stingers are also able to follow this. In first analyzing these shout stingers, the overall musical form of the game can also begin to be assessed. Certain keys pertain to different locations, and the usage of similar stingers across levels, such as level one and two along with level five and six help define location and environment. The use of similar sounds, such as the short flute sound in the first three levels and the final level help define the atmosphere that those levels create for the player. For instance, the vibraphone + strings short stingers used in levels four through seven bring a continuity between those levels as a descent from the bright desert levels earlier in the game (where the fourth level is a transition from those levels to underground). Similarly, the fact that all levels have medium and long stingers that aesthetically sound similar help create the continuity of the game as a whole, along with any of the other stingers that are present throughout the game outside of the shout stingers. In summation, along with providing information about the mechanics of the game and signaling them to the player, the stingers play an important part in creating the overarching soundscape of both the sound effects and the music.

Part 3: Analysis of Music In *Journey*

The final and most important aspect of the audio that influences the interactivity of the player to the audio in Journey is the music. Perhaps the most complex and intricate

aspect of the music is not only that it's use of orchestration, instrumentation, and structure works well with the narrative of the game, but also the use of transitions and branches to make the music evolve as the player moves through the game. As mentioned in the introduction, Wintory's goal for this game was to create a score that was not only linear, but also interactive simultaneously, which in many ways serves as a contradiction. Interactivity is inherently non-linear because it can be changed by the player at any given moment, unlike a true linear score which follows a set time code and is always the same every time, like the score for a film or piece of orchestral music. However, this very same interactivity means that not only can the player influence it, but also there can be both a sense of narrative linearity as well as multiple variations of the music as it is played during the game. The player's actions dictate when and where the music changes, but the transitions between them can be seamless. Thus, the music is never the same twice, and this gives the overall score a fresh feel every time it is played. If done correctly, an interactive score can achieve a linear feel by acting on the fact that it can move to the next section at any time. *Journey* is one such game where this happens.

It should be important to note here that within *Journey*, there are several cinematic cut-scenes that take place usually in between each level. Since these parts of the music are not interactive, I will not be covering them in my analysis (though doing so would probably make for an interesting paper on it's own).

Since the level structure of the game is very similar throughout, the music can also follow this form throughout the whole game. The music within a typical level is made up of an introduction, followed by long loops that branch consecutively from one section of the level to the next, which are linked by a transitional section, and can either

have a level ending, or a 'false' ending that acts like a transition and leads into the next section. There are no examples of vertical re-sequencing, or layering, present throughout the game, and everything is played out horizontally.

Introduction passages are played as soon as the player enters a new level, and play out linearly until they reach the initial loop (or in the case of the second level, until they fade out, as the loop is not present). They are very straightforward and simple, though they often vary in length and content immensely, as shown later.

The loops within *Journey* are definitely excellent musical examples of how to properly implement long loops, or slow textures, within game music. Oh this subject, Winifred Phillips in her book *A Composer's Guide to Game Music* says, "Such a musical composition does not feature melodies prominently, although fragments of melody may float in and out. Blending well with environmental sound effects, these tracks are highly ambient in nature. […] This can be highly desirable when attempting to create a mood, particularly when the prevailing emotion is at the darker end of the spectrum." [19] These long loops work by making it difficult for the player to discern where the end and start of the loops occur unless they are actively listening to it. Creating the large variations of intensity within each loop also gives a sense of dynamics that seem to create moments that *feel* interactive, as I experienced during my many play-through's of the game. I often mistook a variation in the loop for something I was doing with the player, such as climbing a staircase in the early levels, or walking up a hill.   As such, these types of loops are very effective in a narrative game such as this. Within each level, there are several instances of loops, which are connected by a transition segment. Because of the

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[19] Phillips, Winifred. *A Composer's Guide to Game Music*. 167. Cambridge, MA: The MIT Press, 2014.

nature of the loops and their dynamic writing, this means that the transition segments become tricky.

In many games, music that has a transition segment is usually built so that at any point in the loop, a player can move from one musical section to the other seamlessly. But in many of these cases, the loop itself is static throughout, and so only a single transition is needed. In the case of *Journey,* the loop at any one given point may be radically different than another, and so there needs to be multiple versions of the transition for each loop.

Lastly, there are the level endings, or fade-outs into the next transition. In *Journey,* they are designed in such a way as to mimic fade out towards a destination, and instead of acting as a loop with a fadeout layer like many games do, *Journey's* approach to level endings is one that is timed to what the player is *expected* to do. In every case, the level end or fade out into another section is triggered by a location, sometimes not even near the end of the level, as is the case in the second level (we'll see this later). In most cases, the timed level endings work perfectly, since the player naturally tries to progress forward and the timing matches up. However, any deviation from this loses the effect slightly, i.e. heading back into the level, taking longer than expected, or not progressing forward after triggering. In these cases, the fade out occurs, but then leaves the player with an awkward silence, which suggests to the player to move on. However, the silence does seem to ruin the linearity that was intended for the game. These occurrences will be analyzed in detail, and suggestions for improvement in the conclusion.

For the analysis of the music, I will be referencing the official *Journey* soundtrack, which is a rough linear approximation of the music in the game. However, since it contains the entire section of loops, transitions, and level endings, it works as a good clear reference point without interference from the other sounds in the game.

The first instance of music during the gameplay occurs in the first level when the player reaches the top of the hill and it goes into a controlled 'cutscene', showing the game title. The music that accompanies this is linear and is triggered by the player walking onto a certain point. This track titled "The Call" in the OST starts with a delicate and high cello solo, playing the main theme, which is later accompanied by hurried electronics, woodwinds and strings until it reaches a peak.

Example 36: The Opening to "The Call" (19:57)

The music then moves to the introduction of the next loop, which is a simple drone on B. When the player first slides down the first hill, it moves into a different loop with a similar, but more evolving drone, but now an alto flute plays snippets of the main theme.

Later in the level, you are shown the mechanic of activating large ribbons with the shout mechanic, and this initiates a transition into the next loop, another similar sounding loop but with cello also playing aspects of the main theme.

When you make it to the end of the level and activate the final set of ribbons into the cutscene, there is a small transition that occurs, making the movement from a slow drone into a moving melodic set of lines.

Example 37: Ending of "The Call" (20:32)

Note how that within this level, there is a very strong presence of the original theme for *Journey*, and this theme not only helps give unity to the level itself, but an overarching thematic idea for the game as a whole.

The game then moves into a cutscene, which for this paper I will not be analyzing. However, the cutscene does carry over to the actual gameplay, which in the track "First Confluence" translates to the ending of both the track and the level. This fades out to no music regardless if the player choses to move forward or not onto the next level.

The second level of the game starts off with no music, providing only sound effects and stingers as the only sound elements. This ends when the player activates the first ribbon within the level, and the intro to the first loop begins, which corresponds to the track "Second Confluence".   This loop has both a drone element and also a harp and bass pizzicato playing different elements of the main theme. The second ribbon activation changes the loop slightly, adding an alto flute playing a similar motif as earlier in the game with similar pitches, rhythms, and content.   The transition to this is more like an end to the initial loop, with the second version of this loop playing.

When you go onto the bridge you have constructed in the level, there is a transition into a faster, more percussive version of these ideas, which acts as an outro to before the cutscene. Like other preset fade-outs, this isn't timed to how fast the player goes, and can mean that there is some awkward silence to entice the player to move on. Interestingly, like several tracks in the game, the music is not found in the OST. Once again, after the cutscene ends, the musical tail of it acts like an outro to the level, including the silences once the music ends.

Example 38: Bridge Outro (21:09)

The third level begins with an introduction/miniature cutscene that fades to nothing before the main loop begins. This loop is the first time in the whole game that the key has changed (from B minor to F# minor) and subsequently, the underlying "shout" mechanic changes pitch as well. This loop continues until the player activates the first ribbon, releasing the carpet creature and moving the level forward, using a transition between each cue. With the energetic and lively creature comes subsequently energetic and lively music, increasing in tempo and adding percussive elements.   Note that this theme contains a variation on the main theme.

Example 39: "Threshold" (21:51)

When the player moves forward and activates another ribbon creature, a new transition occurs with a more melodic flute line rather than short and punchy, and new

percussive elements start appearing in the mix. Subsequently, the meteor that falls has it's own transition and new loop that begins after it appears, bringing the most intensity of the cues in it's percussive nature.   However, once the player reaches over the hill, there is a transition to a darker cue with low brass and percussion, mimicking the dark environment the player is now in.   As the player then goes up the structure and frees a carpet creature from its holding and goes across the bridge, there is a transition to a much less intense loop because the main auditory focus is on the spinning banging machinery of the large structure. When the player reaches the top platform, there is another transition into a softer loop for when the player activates the final cutscene of the level. After this cutscene occurs, there is no music until the player triggers the shout to grab a creature and fly off to the next level. This initiates a cue from "The Third Confluence" which in a musical sense not only adds to the current gameplay, but also gives a musical foreshadowing of the musical elements to come in the next level.

Example 40: "Ending of Third Confluence" (22:16)

For the beginning of the fourth level, there is an introductory cutscene with introduction music, timed so that when the player hits the ground and begins sliding down, the next cue begins. The first loop from "The Road of Trials" has a very fast and lively cello and flute duet, accompanied by steel string guitar, vibraphone, and other percussion and string elements. This use of tempo, instrumentation, and key are very similar to the ending of the third level that was mentioned earlier.

When the player reaches the end of this section and enters a tunnel, a well-timed transition occurs which brings this cue to a high intensity and then drops to a more smooth and gentle cue as the player enters the next section.   Regardless of how long you take on the previous section or inside the tunnel itself, the timing matches the player's actions.

Example 41: "The Road of Trials First Transition" (22:54)

When the player exits the tunnel, the music acts as an outro and fades to nothing until the player activates the first ribbon of this stage of the level.   This initiates the first loop of this section, which is a lively, but not as intense version of the previous loop with mostly just percussion. When the second ribbon is activated, a transition occurs and a flute is added to the slightly different loop, and with the third ribbon, strings and cello are added. The last ribbon has a transition to a small cutscene showing the small ribbons moving to an area of the map, which moves to a version of the loop with harp added.

Once again, when the player goes up and then jumps off the ledge, there is a transition that occurs when the player hits the ground and begins sliding down. This cue is essentially a B section of the first "The Road of Trials" cue that occurred earlier in the level. When the player goes onto the bridge that changes the camera angle, a new part of the cue starts which acts as a long outro to the previous cue. Designed in a way that if the player goes through the level normally, it should nearly coincide with the end of the music, the cue does indeed fade out and stop playing if the player decides to stay in this

section. This is one of my favorite cues in the game, so I am providing the transcription to this section.

Example 42: "The Road of Trials Third Transition" (23:15)

When the player decides to move on from this point, like previously, when the player enters the section where they begin sliding down the hill again, a new loop begins, which acts as a C-section to "The Road of Trials" cue. This continues until they reach a drop-off hill when then triggers a transition to the outro of the whole level, which then initiates a small cutscene of them descending to the next level. Like most levels, this one also ends with the player activating the last cutscene and then fades out until the player progresses to the next section.

Example 43: "The Road of Trials Fourth Transition" (26:42)

The fifth level of the game starts off with the typical level introduction into the main loop, which corresponds to the track "Temptations". The first transition after this occurs when you travel past the first archway, signified by the addition of strings, and a new loop begins from this. A similar transition occurs under the next archway the player encounters.

When the player first encounters the large stone creature, there is a sudden change in music with the transition and the next loop. This is initiated by the small cutscene that

occurs when the player reaches this point in the level. This occurs again when the player is going through a tunnel and sees the creature through a window, and then again when the player encounters the second of the large stone creatures, all triggered by location flags in the game.

The last transition within this level occurs when you start sliding down the large hill with a controlled cutscene, where you can still move the player but other actions are automated. Like some of the other instances of this kind of transition from before, the time that the player spends on this section will not throw off the timing of the incoming downbeat for when the player reaches the bottom.

Example 44: "Transition in Descent" (27:28)

The sixth level of *Journey* is by far the most simple when it comes to the musical format between transitions and loops. Like most levels it begins with a level introduction into a loop, and transitions occur whenever the player activates a shrine. This occurs five times during the level, with varying loops each time the player advances. There isn't much to analyze when it comes to this level because nothing new or interesting happens with the transitions or loops in comparison to the narrative. Like all other levels, there is a cutscene at the end of the level and it also had a fade out after the cutscene before the player exits the level.

The penultimate level of the game has the most instances of transitions and loops, since it is also the longest level of the game. The level intro starts when the player exits the first door, and a loop follows. The first instance of interactive music within the level occurs when you first see one of the stone creatures from the fifth level, which plays the outro to the first loop, and then fades out to no music until the player reaches the next part of the stage involving the heavy wind and stone wind blockers. At this section, there is a new intro and a new loop that plays.

Going through the rock archway at the end of this section initiates a new transition and a new loop. However, this is a very short section, because almost immediately you see another one of the stone creatures, and a similar outro and fade out of the music occurs. A new loop does not occur until the player goes past the large ribbon bridge midway through the level and then goes under the archway.

As the player makes it past this new section with high wind and the stone creatures and passes under yet another archway, the music drastically changes to a much more peaceful sounding loop, with underlying sweeping alto flute lines and low string chords. This mimics the peaceful surroundings the player suddenly finds himself or herself in. Once the player reaches the end of this small passageway, the camera angle changes, and a abrupt, almost additive transition occurs which then adds an upper string line to the loop, giving the player a real sense of hope and finality to the game. This music is found in the track "Reclamation"

Example 45: "Reclamation" (28:07)

When the player goes through the next archway after making their way up from the ribbons into the very windy section, there is a transition which results in a fadeout of the music as heard in the end of "Reclamation". There is no music for this next section until the player makes their way to the final archway, which triggers a loop introduction and then the following loop, a chaotic and busy sounding cue that mimics the intense weather that surrounds the player, as heard in the track "Nadir". When the player makes it to a certain point up the hill, a loop outro begins which fades out to nothing, mimicking the actions that occur on screen as the player looses consciousness

Example 46: "Final Fadeout Transition in Nadir" (29:11)

. Afterwards, there is a cutscene, which after it is played, there is a small fade out until the player decides to move forward and launch into the sky. With the fade out and in of the two tracks, it feels like a held note, giving the player some control over the tempo of the music in this one instance of the game. This acts as an introduction in the track "Apotheosis".

Example 47: "Triggered Cutscene in Apotheosis" (30:43)

The last level of the game provides not only some of the most amazing emotional and thematic material, but it also displays many of the different techniques throughout the game for transitional scoring. The previous music acts as an introduction to this level's

first loop, which presents the theme of this level immediately, as seen in the track "Apotheosis".

Example 48: "Apotheosis (excerpt)" (31:24)

When the player goes through an archway into a section that the player slides down snow much like in the fourth level of the game, a transition occurs and a B version of the loop plays.

Example 49: "Small Transition" (31:24)

The next transition occurs when the player goes past the top of the waterfall in the next section, playing the C version of the loop. Going further up this portion of the level activates the level outro, which acts as the final climax to the entire score of Journey, and is a untimed outro that is intended to reach a peak when the player gets to the entrance of the last cave, if the player goes at the ideal speed.

Example 50: "The Final Outro to Apotheosis" (33:40)

A series of transitions then occurs after this outro. When in the cave, there is a low hum of a loop, which then has a cello section play when the player progresses into the cave, this then moves to a mellow loop with bells playing. When the player goes into the light at the end, the previous loop ends, and a cutscene begins, with a solo cello

playing the main theme of the game one last time before the ending credit cutscene begins.

For the music in *Journey*, there are a couple of key points to take away from this simple analysis. First is that the score of *Journey* is constructed interactively via a transitional score, which has the advantages of both a linear score and that of a loop-based game. This is seen in many instances of the game, but commonly occurs in either two ways, the first when a player completes a section of the level, such as activating a ribbon, or when the player reaches a specific point in the level, such as an archway or specific spot where a narrative action occurs. Another point to take away from this analysis is the idea that each area contains similar sounding loops that share themes, orchestration and instrumentation, key signatures, and tempo, and these themes evolve and change throughout the game as a whole. For instance, the initial theme of the game takes many different and new forms, as highlighted in the transcriptions.

Part 4: Conclusion and Improvements to Audio in *Journey*

Overall, the combination of sound effects, stingers, and music within *Journey* makes for a very effective moving and emotional interactive experience with the player. Each element of the audio not only is effective on its own, but also matches and mixes well with other elements of the audio. Within the large spectrum of sounds in this game, there are several major points to take away from this analysis.

The first significant idea is that the sound effect of wind gives the player many subtle narratives and emotional cues that play with both the environment and the music. Wind is present in virtually every part of the game, including the subtle whistle of wind while underground, cueing the player to various things going on around them. The wind and sounds of air are also symbolic of times in which the player is free to explore, and when the player is restricted by the game as to where they can move, such as in the fourth level of the game when the wind pushes you back.

The second important aspect of the audio in the game is the fundamental relationship between the key signature of the music and the notes that are used in the stingers. Because in a modern score the idea of keys is somewhat inaccurate to describe cues, a collection of pitches makes for a better representation. Instead of having a single or small collection of shout mechanic sounds used through the entire game, there are dozens of sounds that change depending on which level or levels you are in. Since the music is arguably the most important narrative aspect of the game (and the reason so many people play it), these stingers help support the music and thus the narrative in the game, and give the player the ability to add to the music on their own terms by shouting!

The last and final aspect of the audio to keep in mind is the idea that that whole score of *Journey* is presented with a horizontal transitional score, created with first an introduction, then long and changing loops that are timed with several variations to move onto a new part of the score with a transition, and finally an outro. This format holds true for the entirety of the game, whether that outro happens at the end of a level, within the level, or is part of a cutscene that in reality just acts as an outro to the loop. While the way this was done is not entirely perfect (see in the following paragraphs), the way in

which one piece of music moves into another is done quite flawlessly and helps create the illusion of a true linear score. Because the loops are so intricately made on their own, it is often difficult to hear where one loop ends and another begins, and this very fact makes transitional scores powerful because it feels like the music is always moving somewhere.

While there are many things to take away from the interactive audio in *Journey*, there are several aspects that could be improved upon in either future editions/sequels of *Journey*, or other narrative genre games that are similar. The first is that more aspects of vertical re-sequencing, or layering, in all tracks could add to the interactivity further in the game. While there are instances that feel like additive layering because instruments are added, once this loop is activated via a transition, the player cannot return to the previous musical state. While it is both a game mechanic in itself that players aren't able to go back and that in and of itself might be a fault, in many cases the player is not fully done exploring a section and sometimes going back is a possibility. Regardless of this, the music stays in the same loop as before and does not move back to its previous state. For example, triggering a loop via ribbon activation changes the loop to signal to the player that they have correctly moved on in the puzzle, but what if the player wishes to ignore this and go exploring in an earlier stage of the map? Additive layering could solve this problem and provide an extra level of interaction without necessarily creating more time spent recording the music in the studio.

A second issue with the music in particular that could be improved on is the fadeouts in between sections, particularly at the end of levels. Like with before, some players may not want to immediately progress in the game, taking the time to explore and

enjoy the scenery before moving on. However, because there are outros that do not move into loops in many instances, this leaves an awkward silence that almost begs the player to move on in order to hear music again. The most clear instance of this occurrence is on the second level of the game, where if the player so wishes, they can forgo moving onwards and instead go back and collect specific items or explore different things on the map, or even interact with potential other online players that might appear. In all of these instances, once they finish the level and the music fades out, there is an unnecessary silence that could easily be solved with a loop or drone, or even with additive layering that could start up if the player goes backwards.

A third improvement that could be made to the audio, and again specifically the music is the small timing issues that happen when the player does move forward, but takes slightly longer with a certain section, for instance, the bridge in the second level or the transitional tunnels in the fourth level, and most importantly, the final ascent in the last level. These moments are powerful, but even with bar-based scores, they lose their power if the timing is ever so slightly off. However, both standard implementation software's FMOD and WWISE have the ability to control tempo according to player or data input. This means that if the player takes, say, slightly longer than is expected, the end of a loop could warp the tempo slightly as to make a perfect or better synchronization with the music. This would save studio and implementation time because the amount of recorded transitions or mixed transitions would be significantly reduced, since now the tempo warp covers any ill-timed single beats or bars.

With a re-release on the PlayStation 4, numerous awards, and the Grammy nomination under its belt, *Journey* set the bar for narrative games and transitional interactive scores. The use of all the elements the game has to offer, including graphics and narrative, means that *Journey* isn't just a piece of one type of art, but a collection of many arts in a single package, and the way that it interacts with the player makes it a very special one. Roger Ebert was definitely incorrect in assuming games can never reach the status of art, but the only question now is how far can games get to in the future? What kinds of amazing technologies will make interactive scores and audio even more interactive within five, ten, or even twenty years? Like in Ebert's case, it's probably a good idea to not make a prediction yet!

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