Experienced Worlds

Enhancing Immersion in Narrative Video Game Environments through Musical Representation

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My last thank you is to my family. This thesis is the culmination of not just a year of work, but of all my learning and experiences growing up. Thank you, Dad, for introducing me to video games early, to both my parents for creating the space and opportunity for me to explore large projects throughout my youth, and to my brother and cousins for accompanying me on journeys through countless games.

Preface

Over the past couple of years, I've often been asked the question "What kind of music do you listen to?" For some reason, this question has always stumped me. I'd think about it for a moment, and maybe start to answer flamenco, then realise that earlier that morning I had listened to jazz, but the night before I was exploring metal. I never had a good answer to the question, because there *wasn't* one. For many of us, there is no neat way to describe the music we listen to because we listen to dozens of genres and styles, our music choices changing depending on where we are and what we're doing. I think over time, my answer to this question has become a vague "whatever music is right for the moment".

That being said, the music that has most influenced my compositional style is video game music, which itself is devoid of genre. Some game scores feature a full orchestra, others use solo piano, while others still use jazz bands. This thesis uses video games—which offer clear representations of environment and narrative—as a medium within which to investigate this question of how my everyday choices of music correlate with my present environment and experience. As I've played through a number of narrative games, I have always cherished being immersed in the fantasy world, finding a way to be an essential part of the game and story.

Before starting this project, I anticipated that I would place a heavy emphasis on music analysis, identifying *every* musical trait that made a video game sky, for example, feel like a sky. That didn't end up being the case, and the thesis instead uses four case studies of environments and experiences to support a much more deliberate consideration of the role music plays in enhancing the player's immersion throughout the game. This thesis has been a joy to work on, and I hope that its various components can be of use in several ways. For composers like myself who wonder on how we can craft imagery through music, this project sheds light on what compositional tools are available to us, and how deeper listening grants us access to a shared literacy to draw upon for musical representation. For the field of ludomusicology, I hope that my writing offers a new angle on the connection between video game music and immersion, highlighting the role of musical representation in building immersivity. For those involved less deeply with music but who nonetheless derive great joy in listening, I hope the ideas discussed here invite us to think on music's role in enhancing presence in our everyday lives.

About the Shadow Website

https://cameronbryzek.com/thesis/music

As I began to cite music examples throughout my thesis, I found myself jumping back and forth between my writing and the audio tracks I was listening to elsewhere—Spotify, YouTube, etc. I began to wonder: what if the reader could hear the examples I talk about with no extra work of their own? If, once a reader started reading Chapter One, music accompanied their read in the same way that video game music plays alongside a player playing a game. With a living, online form of this thesis, that music accompaniment is possible, hence the existence of this site. The website is neither a replacement for nor a supplement to the thesis, but I think of it rather as a shadow of the thesis: it provides no new information, just ease of reference to musical examples.

The website also contains a page where all music examples are listed in order of appearance with embedded audio.

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Abstract

This thesis investigates the role of the composer in enhancing video game immersion: what musical techniques do composers employ to immerse players in narrative video game environments? To do so, it first establishes what it means to be immersed in a video game and what makes up a game environment, then analyses how player immersion is targeted by the use of specific musical techniques that promote a greater sense of connection between the player and the world, story, and characters of the game. Through the study of four case studies—the environments of the sky and the cave and the experiences of adventure and conflict—this thesis describes the phenomenological responses invited by the use of compositional techniques. Composers use musical representation of the environment to contribute to player sense of place and investment in the world, and representation of experiences to connect the player to an experience of the game's narrative, enhancing immersion in adventures that take place in imagined worlds.

Dedicated to Cougar. Thank you for all the quiet evenings of games.

Introduction

My earliest memory of playing video games begins in the Mushroom Kingdom, the virtual world in which the game *New Super Mario Bros. Wii* [2009] takes place. Upon launching the game, a joyful piano tune greeted me with the "Mario Theme", immediately pulling my attention into the fantasy world. From a grooving melody that inspired running to musical hits where every enemy in the game would take a moment to dance, I remember dashing recklessly through each level, propelled forward by shakers and tambourines. Until I entered my first enemy castle. My steps immediately slowed to the sound of snares, an organ, and a cello melody, my whimsical sprint replaced by warning bells that indicated danger ahead. Instead of witnessing this new environment, I felt one with my small red character, felt that *I* was in danger just by entering the fortress. Shortly, I would obtain my first "star power", becoming invincible and sprinting forward at breakneck speed to the groove of an electric bass and synth pad. At the time, I didn't know why I was running, but I immediately felt the urge to *move* and make progress.

I entered the video game space at a time when some game scores were composed entirely of MIDI instruments—electronically reproduced samples of real instruments—while others were incorporating recorded orchestras in their soundtracks. For example, Nintendo's *New Super Mario Bros. DS* [2006] uses many synthesisers of real instruments including drum sets, organs, and orchestral instruments. Released one year later, most tracks in *Super Mario Galaxy* [2007] are played by a combination of a recorded symphony orchestra and layered synths. As a composer, these grand orchestral scores hold the greatest influence on my compositional style, the music often featuring conspicuous ostinatos, clear thematic material with character and setting associations, and melodies that unfold over an extended period of time. As I've developed as a musician, composer, and gamer, my fascination with these musical features of narrative video games has only grown. Why did exploring a snowy mountain accompanied by cello melodies and glockenspiel ostinatos make me feel cold and cosy? What urged me to sprint through some levels, yet tread slowly and deliberately through others? How could I spend hours exploring under the sun of a game's fantasy world, then look outside and realise the moon was already high in the night sky?

Of course, not all game tracks are designed to represent the same environment; the sonic and visual atmosphere often change drastically throughout a game. While lush forest themes (such as "Through the Forest" from *Kirby's Return to Dream Land* (*Return to Dream Land*) [2011] or "Moss Grotto" from *Hollow Knight: Silksong* (*Silksong*) [2025]) might feature winds and plucked instruments such as banjos or harp, dark mechanical scenes (such as "Underworld" from *Return to Dream Land* or "Underworks" from *Silksong*) utilise more prevalent reverb and low, densely voiced frequencies. When travelling from one game environment to another, I would immediately feel this shift in atmosphere despite my bedroom remaining the same temperature, the same brightness. How could I be so drawn into a story on a screen that my heart would start racing if my character was in danger? Why would listening to a game's music track bring me to tears months after having finished the game? These questions—both as a composer inspired by evoking scenes of the natural world and as a player who has been on the receiving end of such music—have led me to wondering about the composer's potential for shaping the player's experience within specific game environments. In this thesis, I will investigate what musical techniques composers of music for narrative video games might employ to transport the player into the game world, a concept known as immersion. How do these composers invite listeners to not only picture forests, but also *feel* as if they've stepped into an enchanted woodland without ever leaving their desk?

More broadly, what is music's role in creating atmospheres and representing space through sound? What tools are available to composers who seek not only to convey emotion through music, but also to place an image in the listener's mind, to invite the audience into a new realm of their making? While there is an interesting psychological analogue to this question around quantifying the extent to which music boosts player immersion, this thesis focuses on the role of the composer in this process. Using narrative video games as a medium with clear environments and narrative experiences, this thesis investigates how composers work to augment player immersion, this sense of being fully transported into a new world.

Video Game Music

Developing Technology

Inseparable from video games since their birth in arcades is sound design. Someone walking into an arcade is greeted by the "waka" sound of Pac-Man's travels through a digital maze, or the science fiction "whoosh" of a fired laser in *Galaga* as a small, pixelated spacecraft fights aliens. Players would visit arcades and experience games as part of a collective "gaming" community, playing games not as a way of

experiencing a meaningful story, but simply as a mode of entertainment centred around completing game-specific tasks. For the earliest video games (from arcade systems in the 1970s through Nintendo's Nintendo Entertainment System (NES) released in 1983) sound chips were limited both in how many audio channels they could play at once and in how much physical space they could take up within game consoles [Burke 2024: 164]. At first, these chips were capable of outputting only pure electrical signals created in the same way the timbre of "synths" are made. Music written with this limited instrumentation is sometimes referred to as "8-bit music" or "chiptune". Due to this limited sound technology, composers were forced to adapt to writing for many timbres that hadn't been played before in live performances, creating an audio space saturated with the beeping of synths that has become synonymous with the sound of early video games.

As sound chips developed, the range of instrumentation available to video game composers grew in turn. Playing samples of live instruments became possible, as can be heard in the scores to many games on Nintendo's Super Nintendo Entertainment System (SNES) (1990), which was one of the earliest game consoles to feature music that explored a wider range of textures and timbres [Burke 2024: 170-74]. This allowed composers to shift away from solely synthesisers to sound worlds without instrumental limits including a full symphony orchestra or jazz big band. Alongside sound chip development, graphics cards and video game culture were also evolving, leading to an expansion of games beyond the single-task arcade games. When playing these games, players would now find themselves immersed in realistic skies or caves accompanied by music composed to represent these new environments.

This expanded compositional opportunity can be seen in a comparison of two tracks from Nintendo's "Kirby" game series. The track "Green Greens" from *Kirby's Dream Land* [1992] on the Nintendo Game Boy by Jun Ishikawa contains only synthesised audio. Working within these early limitations in instrumentation, Ishikawa makes excellent use of the available technology, focusing on creating clear melodic, rhythmic, and harmonic lines. Listening to the track, one can easily discern the high-pitch synth which carries the melody from the staccato waveforms and lower register arpeggios that create rhythm and harmony. While some tracks in this game utilise a sound channel dedicated to the bass line, Ishikawa writes here a more complicated texture, leaving no channels free for the bass alone (of the Game Boy's four sound channels, one is used for the melody, one for the rhythm, one for embellishing counter-melodies, and one for the harmony and bass). Instead, he uses the harmony line to jump to low pitches on strong beats, creating an implied bass line. Throughout this music's two sections, it is always possible to discern each individual line, but the limitations of the technology mean that there is no significant timbral change throughout the track.

Nineteen years after the release of *Kirby's Dream Land*, Ishikawa worked on the score to *Kirby's Return to Dream Land*, where the track "Green Greens" returns. This time, the range of instruments is widely expanded. The rhythm section is no longer one snare-like synth, but now consists of congas, shaker, snare, timbales, and crash cymbal. Along with this percussion expansion, Ishikawa's re-write of "Green Greens" features percussion breaks where all instruments except the rhythm section drop out. An electric bass plays a funk bass line, the melody is passed between a flute, clarinet, and synth, and the harmony, played by a hand pan and synths, is less prominent in the mix. Despite growing sound chip technology and the ability to incorporate the timbres of physical instruments, Ishikawa still features synths not only in the harmony, but also as an instrument carrying the melody for primary sections of the track. These synths were not a temporary timbre used in early games that was abandoned the moment technology improved, but have foundational ties to the roots of video game music, an association that many composers of music for narrative games still draw upon forty years after the release of the NES.

Storytelling and Narrative

Video game music is ultimately created to accompany a game, which itself has many other elements. In this thesis, I will be particularly analysing the music in "narrative games", games that feature cutscenes—moments in the game where the player watches a story unfold without performing any inputs for a period of time—and situate the player's experience of the story as a central component of the gameplay experience. In narrative games, music may play a different role than in other games where the objectives might be solving puzzles or battling other players. Many games are not fully situated within one category or game genre, but instead incorporate many elements as needed: a narrative game might involve puzzles, battles, and building segments. I will discuss games where the narrative aspect is an essential component of the player's experience—while the game may incorporate or feature these other gameplay features, the player is largely driven by an urge to progress through the story.

In many media, the audience is an external observer of a story, often growing invested in the characters and narrative, but never directly interacting with the film or literature. Narrative video games offer a unique shift to this method of storytelling, allowing the player to make decisions that have direct consequences on the story. As Daniel and Sidney Homan write, video games are a way of "sharing stories" rather than "telling" stories [2014: 169]. The listener does not just conceive of the story in their mind, the narrator places them into the story world, turning the tale into a dialogue between storyteller and audience, a unique experience for each individual.

Narrative video games take place within sets of immersive environments which themselves have evolved with developing game technology. American media scholar Henry Jenkins proposes that as opposed to telling stories linearly (like novels or films), video games engage in environmental storytelling in the same way that real world immersive environments such as amusement parks tell stories [2004]. In an amusement park, park goers step into a fantastical realm where all of their surroundings are tailored towards creating an experience. The world outside the theme park fades, replaced by a real fantasy where every environmental element is specifically designed to keep the audience immersed in the fiction. One of the earliest narrative games that aimed to create a semblance of this sensation was *Zork*, a text-based game released in 1977 with no visual graphics that allows the player to experience a story by reading and inputting short replies to lines of text. Since *Zork*, games have developed to tell stories in ways more similar to cinema, often beginning with a cutscene that grounds the narrative before the player gains any control of their character. These narrative games tell stories in fictional worlds within which the player may become immersed, suspending the player in an imagined world in much the same way as amusement parks surround park goers.

As the number of narrative games grew, the music accompanying these games evolved from early, classical music inspired game scores. Composers began to emulate film music, incorporating thematic ideas and timbres that bring a cinematic feel to the game [Garner 2024]. One game with such themes is *Ori and the Will of the Wisps* (*Will of the Wisps*) [2020], which incorporates its main theme into emotional cutscenes such as bringing a friend back to life accompanied by the track "Ori, Embracing the Light". In these narrative games, the music is not a passive auditory component of the medium, but is meant to draw the player into the scene, conveying the story's emotional connotations by inviting the player to take part in a narrative experience. In the past fifty years, video games have evolved from solely a gameplay-based medium akin to the arcade to an emotional art form similar to the cinema, emotionally involving the player in the story and allowing them to be immersed in the game as a narrative beyond just the mechanical play elements [Garner 2024].

Elements of Video Game Sound

Instead of being defined by typical stylistic aspects, "video game music" is instead better understood by function: the term is broadly used to describe any music written for a video game, just as the term "film music", though sometimes varying in style, describes any music written for a film. Video game music is sometimes written within a pre-existing genre, such as the *Cuphead* [2017] soundtrack by Kristofer Maddigan, which is almost entirely jazz inspired by big band, ragtime,

and barbershop quartets.[1] Just as often, though, video game music blends influences from a multitude of music styles. For instance, the track "Master Kohga Battle" from *The Legend of Zelda: Tears of the Kingdom* [2023] showcases a diverse mix of styles: instruments that may point to traditional Japanese music such as 太鼓 (taiko), 箏 (koto), and 三味線 (shamisen) are heard alongside ones reminiscent of metal styles: synths, electric guitars, electric basses, and a drum set. This music steps beyond the traditional notion of genre, often resulting in greater analytical complexity. As a result, several scholars have built methodologies that provide additional techniques that may be helpful when thinking about this music, discussed at the end of this introduction.

There are many similarities between video game music and music for film, though a primary distinction comes from the nonlinearity of video games. Music written for both games and film is unable to be placed within a single genre, often features orchestral instrumentation and, in the case of narrative games, supports the audience's experience of following the story. Due to these similarities, many composers (such as Christopher Larkin, Lorne Balfe, and Michael Hoenig, to name a few) specialise in writing music for both film and video games. The main difference in how music is listened to in these media is the nonlinear nature of the game. Whereas a film composer has complete control over what music accompanies each visual frame, video game composers have no way of predicting exactly what scene the music will accompany as players explore the narrative in any way they wish [Collins 2008: 4]. This nonlinearity means that the time at which the player hears a specific part of the music is only partially determined by the composer—the music responds to the gameplay, not to the director's will [Summers 2016: 37]. Whereas a film composer meticulously syncs music to visual scenes, the game composer instead writes a number of music tracks that will be triggered by distinct narrative cues throughout the gameplay.

In the context of video game music, this collection of all music tracks heard throughout the game is called the "score". The number of tracks can range from just one to well over a hundred, but is typically around 30–60. While within the game these tracks might loop as long as the player is within a given region—their beginning and ending times are more determined by the player's pace rather than the composer's discretion—the published tracks are often shorter, one to ten minute pieces that can be listened to in isolation of the game. These can be the music from a title screen or world screen, or the tunes that play in each "level"—distinct segments of the game where the player remains in a similar environment while pursuing a particular quest. For open world games that feature a range of environments and narrative arcs, these tracks are likely to be tied to different environments, boss

[1] As one example, see "Fiery Frolic", from *Cuphead*.

battles, or cutscenes. In general, every time a game undergoes a significant shift in atmosphere or setting, a new music track will be used: this could be entering a level, obtaining a new ability, or clicking pause and exiting to the title screen.

In addition to the score, the sonic space of a video game is often saturated with many nonmusical elements such as atmospheric sound or gameplay-related sound effects. These effects are distinctly seen in the game *Will of the Wisps*, where there are many sound effects tied to the player's actions such as an attack sound, a jump sound, a dash sound, etc. In addition, the game features detailed sound design tied to the unseen elements beyond the screen: distant birds chirping while in a forest, atmospheric wind rustling trees, the rushing of waterfalls. While this sound design plays an important role in the creation of a virtual world and the immersion of the player, they are not a primary focus of this thesis, which focuses on the composed score.[2]

Ludomusicology

Ludomusicology is the subfield of musicology dedicated to studying the relationship between music and play. The field was largely established in 2008 by Karen Collins' *Game Sound: An Introduction to the History, Theory, and Practice of Video Game Music and Sound Design* [2008]. Since then, ludomusicologists such as Mark Grimshaw, Kiri Miller, and William Gibbons have contributed to the field by exploring topics such as the connection between game music and technology, gamer ethnography, and psychological and phenomenological approaches to sound in games [Kamp, Summers, Sweeney 2016: 1-2]. With this rise in publications, ludomusicology has shifted from a field that initially inspired scepticism to one now widely accepted by musicologists [Fernández-Cortés, Cook 2021: 15]. In 2012, Michiel Kamp, Tim Summers, and Mark Sweeney founded the Ludomusicology Research Group that holds an annual conference for the field. Since its establishment, a number of issues central to ludomusicology have emerged that address the analysis of game music, the links between game interactivity and sound, and "the relationships between game music and art music traditions" [Kamp, Summers, Sweeney 2016: 2-3]. Summers lists fifteen questions he challenges himself to answer throughout his work [2024: 17-35], some of which are important considerations for this thesis, such as authorship, the role of the player in both shaping and experiencing the game, and the ties between game imagery and sound.

One question that Summers poses is "How does your work engage with issues of authorship, and the activity / power attributed to various agents in the game production? How do you negotiate between using composer/creator testimony and the trap of the intentional fallacy?" [2024: 21]. Summers describes how, often, it is

[2] For a discussion on the extent to which this ambient noise can be considered musical, see David Novak's "noise" in *keywords in sound* [Novak 2015].

very difficult to point to a single composer as the sole author of a piece of music in a video game. Sometimes, a large team works on the sound design, and audio creators may be left completely uncredited, making it difficult to attribute music to any single author. In addition, how should the artistic direction of the game's director, who has creative input on the end result of any audio, be accounted for? Summers also warns about falling into the trap of intentional fallacy: "using the author's intention as the primary means of judging and interpreting the artwork" [21]. The driving question of this thesis is investigating how music composed for narrative video games enhances immersion for gamers. The questions Summers raises, however, indicate that thinking of a single composer as creating the score to a game is often not entirely accurate. When discussing a given track, it will be important to account for not only composer intent, but also the impact of musical features on the qualities of immersion.

In her guide to writing game music, composer Winifred Phillips discusses the team-based quality of creating a video game soundtrack. She describes the different roles needed to produce a game's audio, though the actual filling of these roles varies based on game size and budget (sometimes, several tasks are performed by one individual). A music director oversees the many separate elements that must eventually combine, and a producer communicates with the composer and the game development team to keep the art aligned with the project. In addition, an audio director oversees the combination of dialogue, music, and sound effects in the game, working with a sound designer who collaborates with the programmers to tie the game's audio into the gameplay [2014: 135-44]. Phillips' description of the process affirms that analysing video game music is more complicated than identifying the composer's intent or style, but must more broadly account for the *game's* objective for the sound in a given scene, and the team's role in creating that overall sound. For games with smaller budgets, many of the music and audio roles listed above may fall solely to the composer, requiring proficiency with audio mixing and/or mastering [Phillips 2014]. As a video game composer collaborates with the game developer and design team, they develop skills beyond composition to ensure that the music and sound are perfectly integrated with the rest of the project.

One last question that Summers poses is the role of the player in video game music: "How is the authorial agency of the player accounted for in your work? What is omitted from a single perspective on the musical source?" [2024: 21]. As Summers writes, the player is in some ways performing the music that they are hearing. Controller inputs may dictate when the game music starts and stops similar to how a musician controls the beginning and end of sound with a bow on a string or a breath. At the same time, the player is a listener to the music. How is the player's experience of the score shaped by their role as both performer and listener? By investigating the link between player immersion and game immersivity, this thesis

aims to contribute to the branch of ludomusicology concerned with the connection between sound and phenomenology. Drawing on scholarship that analyses music's relationship to topics such as interactivity and attention, later chapters will discuss how composers use musical representation to target the game-theoretical concept of immersion.

Methodologies for Analysing Video Game Music

Since video game music is described less by common features and more by function, many methodologies have been proposed for thinking about video game music including Summers' "Methods of Analysis" [2016: 33-53], Sean Atkinson's case study analysing music that represents the experience of flying [2019], and Kamp's *Four Ways of Hearing Video Game Music* [2024]. All methodologies highlight the required fluidity of analysis in approaching video game music.

Summers writes that while an analyst may approach this music with established tools (such as harmonic analysis or thematic development), many of these techniques can be complicated by elements unique to game scores. For instance, video game music often features many looped and layered game cues, making chord analysis needlessly complex and not very useful for understanding how the music is functioning [2016: 39]. Atkinson further highlights the importance of incorporating the game's narrative in music analysis, writing that "analyzing out of context can lead to interpretations that do not coalesce with the way the music is used in game" [2024: 57]. To illustrate this, he examines the music of flying sequences in *Final Fantasy IV* and *The Legend of Zelda: Skyward Sword* [2011] [Atkinson 2019]. In these case studies, Atkinson does not first set up the narrative, then separately discuss the music, but rather interleaves important game events with their associated musical cues followed by interpretations of those musical features as they relate to his theme of soaring.

Kamp provides a more general method for thinking about the functions of video game music, identifying four main ways of listening to music that accompanies different parts of the game: *background music*, *aesthetic music*, *ludic music*, and *semiotic music*. He describes *background music* as music that is meant to set the atmospheric foundation of the game. This is music that, even when paid attention to, does not give specific insight into the gameplay [2024: 65]. By contrast, *aesthetic music* does not inform the gameplay, but is instead meant to be noticed and to convey small pockets of beauty that enhance the playing experience [108]. Whereas *aesthetic music* invites pausing and taking a moment to appreciate the beauty of small moments, Kamp writes that *ludic music* urges the player to *play*. This is music that is closely tied to the gameplay, unfolding in parallel with the player's actions [110]. Last, *semiotic music* is music that directly communicates information needed for gameplay. Whereas the other three forms of music accompany the gameplay, listening to these

musical cues in video games will directly aid the player in their experience of the game [143]. For example, in the "Stubbornness" section of *Celeste*'s [2018] "Chapter 9: Farewell", there are a series of platforms that appear and disappear on beat to a bell playing on quarter notes. For the player, listening to the soundtrack is essential to being able to easily complete this level.

Summers, Atkinson, and Kamp all emphasise the importance of context when analysing video game music. These scores do not exist in isolation—to be heard on a concert stage with no other cues—but rather exist in an ecosystem flush with visual design, story, and emotion. With this in mind, in this thesis I will analyse the scores to games that I have played and loved,[3] games that have drawn me into their worlds so fully that the waking world would seem as a dream. There are many, many fantastic video game scores spanning a wide range of musical styles and artistic colours, and my aim has been to choose games that I feel are representative of this variety. As I analyse the music in these games, I will first establish the defining features of the environments or experiences that the music accompanies. Each example will then include a brief description of the narrative events accompanying the game scene interwoven with an analysis of how specific musical features representationally connect to perceived aspects of that environment.

In Chapter 1, I will first establish two concepts that are central to the thesis: immersivity and environments. What does it mean for a player to be immersed? What are the roles of the composer and game designer in building immersivity? What do I mean by a video game environment, and what components contribute to crafting such an environment? Chapter 2 describes the role of musical representation of the environment in building a game's immersivity. How can the music enhance the player's sense of place in the world, situating them within these fantasy environments? The game environments of the sky and the cave are used as case studies for analysing musical representation of the environment. Chapter 3 describes music's role in representing the player's experience. As the player progresses through the overall narrative of a game, they engage with a range of quests and phenomenological experiences. How does the music immerse the player in the journey of their fictional avatar? This chapter uses the experience of adventuring and of conflict as case studies. The conclusion summarises the main findings of this investigation, discussing how musical representation of environment and experience enhance player immersion throughout the game narrative.

[3] I played one of these games—*Hollow Knight: Silksong*—midway through writing this thesis, as the ideas I write about here would lead me to think on my playing experience in a new light.

1 | Immersion and Environment

A lone knight falls into a quiet cave, where all is still save for the distant scuttling of long-forgotten insects. Each footstep echoes in the cavernous space, blending with a far-away wind and the soft patter of water dripping from stalactites. Exploration reveals hints of an ancient civilisation: a door in the shape of a beetle's carapace, the ruins of abandoned structures and sign-posts. The knight enters the remnants of a village to the soft notes of a piano and a wind that remembers days of old, everything beyond the dim street lights shrouded in fog. A mere four buildings remain of what must once have been a prosperous settlement. Travelling deeper into the underground armed with only an old nail, the knight finds remnants of life—hostile insects that have minds only for malice. They dance to old forms of combat, memory of a warrior's movements returning to the rising tension of staccato strings and harmonic atmosphere.

A player controls this knight's every move with the manipulation of joysticks on a controller, their mind and body becoming one with the swing of the avatar's blade. Within minutes, the player finds themselves a part of this world, not only a witness to the cave, fog, and remnants of a civilisation, but a wanderer in this abandoned place. They have become immersed in this fantasy world, so connected to the knight they control and to the music and sonic atmosphere of the fictional environment that their consciousness is transported from the real world into the video game *Hollow Knight* [2017].

In this chapter, I will investigate what it means to be "immersed" in a narrative video game in order to build a sense of what composers work towards when scoring these games. After establishing what a video game "environment" is by beginning with an ecological basis for the term, I will explore how players experience these varied game settings. For scenes where player immersion is the goal, what is the music's role in building immersivity, and what features create the environment within which the player will ultimately become immersed? By establishing the concepts of immersion and environment, subsequent chapters will be able to meaningfully discuss how forms of musical representation target immersivity's constituent elements in specific environments and experiences.

Immersion

In non-academic settings, the concept of immersion is not unfamiliar. A sound system might advertise itself as having "immersive sound", or an artist might describe elements they add to a work as making their creation more "immersive". For example, Bose advertises their "Bose Immersive Audio" as "a sound that surrounds you" [Bose], and a content creator by the pseudonym "Scar" describes immersion in the game *Minecraft* as: "Making the space feel alive" [GoodVodsWithScar 2025: 7:05]. These colloquial uses of the term suggest that elements that either three-dimensionally encompass the player—such as audio panned to reflect the location of the sound source in the game—or hint at a living world beyond the user's direct field of view contribute to immersivity. How, and why do these sonic elements lead to greater immersion? Is a three-dimensional, audience surrounding atmosphere required for creating immersion? How is the highly individual experience of the player accounted for?

Though immersion is not very clearly defined, there is agreement that "to be immersed" is to feel as if one has entered the game world. As Janet Murray—professor of literature, media, and communication—writes, immersion is "the sensation of being surrounded by a completely other reality ... that takes over all of our attention" [1997: 99]. As a player engages with a game, immersion occurs when their perception of the real world is overshadowed by deep focus on the game and a sense of having shifted their consciousness from the real into the fantasy [Elferen 2016: 32-33]. While immersion may appear to varying extents in many types of video games, it is particularly common in narrative games within which the player fulfils a primary role in the progression of a story. Within these narrative games, many scholars agree that the music and sound design play a significant role in supporting immersion, ensuring that the player is anchored in the world and story as they engage with the ludic elements of the game [Summers 2016: 59].

In writing music that targets player immersion, composers primarily think about connecting the player's feelings to the world and narrative. This connection runs deeper than a composer setting out to simply make every player feel the same sense of "happy" or "sad", allowing each player to instead respond to the game uniquely. As composer Gareth Coker scores emotional scenes in games, he describes that "I want the music to help you connect with whatever it is you are feeling when you're watching the scene ... for some people the music will feel happy and joyous, and you might feel happy tears, but for some it might feel like sadness. It depends on how you relate to the character" [Howard 2021]. The music attempts to bring the player closer to the game both cognitively and emotionally so that experiencing the narrative is an aesthetic, impactful experience rather than a passive, disconnected one. Coker gives the player space to interpret the game on their own, working only

to build bonds between the player and story that will result in this more meaningful experience. To gain a better sense of this story, Coker plays through these games himself, writing that the process of playing through the game gives him "an idea of tempo, arrangement, pacing and weight" [Cornell 2021]. Reflecting on composing music for the game *Hollow Knight*, Christopher Larkin similarly describes how a primary compositional goal was crafting a sense of the game world's overall melancholy tone. Through the music, Larkin wanted to create "the feeling that something was here, and it is no longer" [Shamaly 2025]. This music conveys a more complete sense of the game world, communicating information that may not be gleaned from visuals alone: Larkin uses sonic atmosphere to immerse the player in a world of history beyond that seen on the screen. It is clear that composers are not attempting to manipulate or force the player into responding to the game in a fixed way. Instead, Coker and Larkin express wanting to induce "feeling" in the player that emerges as a result of being more connected with the game world. Through music, these game composers are able to create powerful ties between the human playing the game and the range of possible emotions created by the narrative, allowing each player to experience immersion uniquely.

Psychologists have attempted to quantitatively measure immersion in video games through the use of questionnaires that gather information about a number of different qualities such as "emotional involvement, cognitive involvement, realism, sensory involvement, control, challenge, and social presence" [Dombrovskis, Ļevina, Ruža 2025]. One of the earliest studies was Witmer and Singer's "Immersive Tendencies Questionnaire", which attempted to quantify user presence—"the subjective experience of being in one place or environment, even when one is physically situated in another"—in virtual environments [1998: 230]. The questions on their questionnaire were fairly direct, such as "Do you ever become so involved in a video game that it is as if you are inside the game rather than moving a joystick and watching the screen?" [1998: 234]. A later questionnaire titled the "Game Immersion Questionnaire" similarly attempted to quantitatively measure immersion in games by having participants rate various experiences on a scale from 1–5 such as "I often forget the passage of time while I am in the digital space," or "While I am in the digital space, it seems to me that everything that happens there, happens to me" [Cheng, She, Annetta 2015].

While these questions very specifically ask the players about the quality of their immersion, an aesthetic quality of the immersive experience is lost by consciously reflecting on the gaming experience. Shifting between being immersed in a game to filling out a questionnaire creates a disconnect by virtue of being forced to analyse that experience from the real world. Playing a game in the context of the questionnaire grounds the player in the real world, preventing a fully immersive experience from taking place—by trying to measure immersion, these questionnaires affect

the immersive experience. While these attempts at quantifying immersion lend insight into how psychologists think on this phenomenon, the methodology of the questionnaire as an attempt to quantify immersion leaves room for improvement.

Music's ability to build immersivity is heavily influenced by the player's individual literacy in video game music. Tim Summers describes drawing upon this literacy as using "general musical signs and/or references to other media and cultural touchstones that are already well-established" [2016: 60]. Literacy acts as a shared musical language between composer and player—as a player plays narrative video games, they learn and recognise musical tropes that appear in specific scenarios. As Melanie Fritsch describes, this literacy consists of a combination of music encountered in other games, in human culture more broadly, and in the context of the game technology [2016: 96]. By drawing on these musical features to give specific connotations to distinct segments of the game, composers of narrative video game music can build player investment in the fictional world and connect the player to the game's story through affective ties. As the music keeps the player engaged with the game for an extended period of time, they begin to find themself immersed in the environments and narrative. This section describes these aspects of investment, affective influence, and sustained attention as connections between the player and game, building an understanding of the goals a composer might have when attempting to craft an immersive experience through music.

Investment

When a player sits down to play a game, they are engaging in a transition of consciousness from the "real" world into a fantasy. Murray metaphorically illustrates this transition, writing that "*immersion* is a metaphorical term derived from the physical experience of being submerged in water" [1997: 99]. Before immersion takes place, the player is still grounded in the real; they are aware of the sounds and smells around them, of the temperature of their hands, and the game remains just moving images on a screen. As this player begins to further engage with the game, however, their consciousness shifts from Murray's metaphorical air into the water. Their focus on the real world dims, replaced by acceptance of the setting, characters, and sounds provided by the fiction [Ermi, Mäyrä 2011: 94]. Many times, I have found myself immersed in a game world for several hours, then surprised afterwards at how famished I was in real life, something I hadn't noticed *at all* while playing. Once a player has passed through this transition period, they find themselves more invested in the game world than in the real world. The fantasy is no longer an object that exists in their physical space, but the real has become a background to the fiction. By gaining this investment in the fictional world, the player opens the door to immersion.

Developing investment in the game world first requires the player to suspend their disbelief of the fictional aspects of a game. Much of these fantasy worlds could never exist in our world (eating a special mushroom doesn't immediately double one's height, as it does for Mario), but this cannot become a barrier to investment. When a player decides to play a game, they accept that the game might not be realistic, but that that is not a hindrance to the gaming experience. In his thesis on suspension of disbelief, Douglas William Brown argues that suspending disbelief allows the player to move beyond feeling simply "sympathy" for the game characters to feel "empathy" [2012: 205]. Brown explains that initially, the difference between the game and the real world forms a substantial barrier (sometimes called the "fourth wall") to immersion. He argues that by inviting a player to suspend their disbelief, games can blur this barrier, opening the path to immersion.

It would initially seem that this suspension of disbelief is a quality that the player must bring to the game, making immersion fully dependent on the player. While this has some truth (a player who attempts to point out every flaw in a game cannot possibly become immersed in it), most players enter games with the expectation that they will be suspending their disbelief. Samuel Taylor Coleridge, who coined the term "suspension of disbelief", believed that this suspension is a submission that the reader makes to the author [1817]. Coleridge suggests that interacting with media is always naturally accompanied by a suspension of disbelief. Brown points out that this suspension of disbelief may instead be seen as a "challenge from author to reader", where the player is challenged by the game to imagine more of the world than really exists based on hints created by the game [2012: 61]. Brown concludes that players will eagerly take on this challenge and suspend their disbelief, thereby inviting an immersive experience to occur. Becoming invested in a game does not happen immediately, and while the first step is the ability to suspend one's disbelief, being able to disbelieve the elements of a fantasy world does not immediately imply investment, much less immersion.

Investment is a deeper level of suspending one's disbelief. As a player begins to grow invested in a narrative game, they start to care about the narrative progression of the story and the results of segments of gameplay. Being an interactive storytelling medium, video games tell stories in a way in which the player becomes an active participant in the unfolding of the narrative. Investment in that story develops naturally as the player witnesses narrative progression as a result of their actions—the game shifts from being an object to be witnessed to becoming an experience. Becoming invested in the game's world and narrative is therefore essential for immersion to take place. Without a sense of importance in their quest, the player cannot meaningfully experience the sensation of being a part of the game world—investment tears down the barrier between real and fiction, fully inviting the player to believe in and take part in an immersive experience.

This investment in a game is ultimately a cognitive phenomenon. It relies on the player *believing* in the plausibility of the game and allowing themselves to be drawn into the world. The screen displaying the game becomes the player's entire world, and awareness of their real surroundings is replaced by focus on the game's environment. This dimming of the real world is accomplished by overtaking the player's senses, at once blocking out sensation of the real world (their vision becomes fixed on the game, and the sound design replaces sounds of the real world) and creating sensations tied to the experiences of the fictional world [Munday 2007: 57]. To open the door to immersion, then, is to allow the reality of a game world to take over one's perception of the world. Moving through life, we are naturally highly invested in the world around us. In order to become immersed in a narrative video game, that investment in the real world and our physical surroundings must be replaced by a similar investment in the game's fictional setting. As will be investigated in Chapter 2, music plays an important role in creating a greater sense of fictional surroundings, promoting investment through musical representation of game environments.

Affective Influence

While a player being invested in a game is necessary for immersion to take place, investment alone will not create an immersive experience. Scholars of video game music and of immersivity agree that for immersion to truly take place, the game must also elicit an affective response in the player. As Professors Lennart Nacke and Mark Grimshaw define, affect is "a discrete, conscious, subjective feeling that contributes to, and influences, an individual's emotion" [2011: 265]. This affect can describe both emotions such as sorrow or joy as well as the player's state of being: one might experience the quickening of their pulse when in danger, or the sense of calm that comes from a place of safety. Affective *ties* are emotional bonds that the game creates between the player and the game narrative, characters, and world. By forming this connection, the game more fully links the player to the story, shifting the gameplay from watching a tale unfold to being emotionally tied to that progression. Affect turns the cognitive experience of being invested in the development of the narrative into a deeper, emotional involvement with the game beyond mental attention and mechanical input.

Writing on music's role in audience immersion, Professor of Music Isabella van Elferen proposes the "ALI model" for investigating immersivity. This model describes three impacts of music on immersion: affect, literacy, and interaction (direct involvement with the music in a game) [2016: 35-39]. Elferen argues that game composers use knowledge of the expected literacy of the player in order to consciously target affect. In other words, the music's primary goal is to elicit an emotional response through reference to a shared musical vocabulary. As she writes,

"listening to music cannot but stir emotions, connotations or identifications" [35]. Through shared experience of hearing music in set contexts throughout films and video games, musical tropes draw on player literacy to induce a targeted affective response. When hearing low marcato strings at a fast tempo alongside a brass melody, for instance, players might picture an action scene, while a high solo violin and soft piano may indicate sombreness.

Psychologists and musicologists have also investigated the link between music, affect, and immersion. Studying player emotional response to playing games with and without sound, Nacke and Grimshaw argue that affect leads to higher attention in the game, which results in greater immersion in the world. They write that the direct impact of some aspects of music (timbre is cited as one example) on the emotions is still unclear [2011: 267, 276]. Similarly investigating the connection between affect and immersion through interviews with gamers, Emily Brown and Paul Cairns found that "gamers who did not feel total immersion talked of lack of empathy and the transfer of consciousness" [2004: 1299]. From these psychological studies, it is clear that an affective influence is correlated with increased immersion, and conversely that not experiencing immersion is associated with feeling unable to emotionally connect with the video game. As Nacke and Grimshaw identify, however, it is initially unclear whether immersion leads to an affective response, or if an affective response creates immersion. They propose that there is a "feedback loop" between the two, where "the game itself takes on an emotional character that reacts to the player's affect state and emotions and that elicits affect responses and emotions in turn" [2011: 277]. By creating affective ties between the player and game, composers can trigger this loop and invite the player into an immersive experience, turning the mechanical process of manipulating a controller into a meaningful time of play that emotionally draws the player into the narrative.

Composers intentionally build affective ties to connect the player more deeply with their character. Composer Winifred Phillips writes that to reach a state of deep immersion, players "must fully commiserate with the emotional turmoil that the characters suffer as they face various dilemmas and predicaments during the course of the game" [2014: 60]. This suggests that a game's influence on affect is not created passively as the player experiences the story, but is rather an active effort by the composer to specifically target players' emotional involvement throughout the game. As Phillips describes, being immersed in the game *depends* on this emotional connection between the player and their game character. By forming affective ties between player and narrative, the game gains a reality that it would not otherwise have, more fully transporting the player into the fictional world.

Several gamers cite music as being responsible for their experiencing powerful affective responses. One example of such music is the track "Guardian Battle" from *The Legend of Zelda: Breath of the Wild* (*BotW*) [2017], which plays when an enemy called a "guardian" begins to attack the player. One player describes their

experience with this music: "When the music changes and the ... beeping starts I still start sweating" [u/doomtoothx 2022]. In real life, the player isn't in any danger,[1] yet their body responds as if they are, signalling a deep connection between player and game character. As music invites the player more fully into these moments, the game becomes a time when the player experiences adventure and fiction in a way that cannot be achieved in the real world. Players also describe the ending of *Ori and the Will of the Wisps* (*Will of the Wisps*) as triggering significant emotional reactions [u/jxdie04 2024]. In an ending cutscene, the main character (whom the player controlled throughout the game) must sacrifice themself to heal the game world, the scene accompanied by an orchestral variation of the main theme, "Ori, Embracing the Light". Many players on Reddit report crying upon reaching this ending, and one user, u/Sharion_inuyatt describes that "After the end of the second game I can't see or listen to any music from this game without wanting to cry." [u/jxdie04 2024]. A second user, u/Zerir writes that "I didn't start crying until a couple nights later, but it gets to most everyone eventually..." [u/Sub_Omen 2021]. It is clear that through experiencing music while playing these games, players build powerful affective ties to the story and characters to the point that a tragic ending elicits tears even several days after having finished the game. When successfully connecting with the player's emotions during these experiences, narrative games more easily invite immersive experiences. In Chapter 3, I will discuss how musical representation of these experiences specifically targets this connection by enhancing a sense of place in narrative video game environments.

Sustained Attention

While investment and emotional influence form the basis for immersion, being briefly immersed does not mean that the player has an immersive experience. One can imagine playing a game for three minutes, then holding a conversation with a friend, briefly returning to the game, leaving to make a cup of tea, etc. Clearly, this experience routinely breaks the player's investment in the world, and affective ties to the characters cannot be meaningfully sustained. In this case, the player might be *playing* the game, but they are not immersed in it. Sustained attention is a third quality of immersivity, illustrating that immersion is not only a result of interaction with a game, but is also time-dependent. As a player offers their time to a narrative game, they are drawn into an immersive experience that can last for hours in which investment in the real world is replaced by investment in the game world and affective ties to the narrative and characters.

[1] Though one player on YouTube, star0chris [2023], connected their game to a device that delivers an electric shock whenever their character takes damage in the game, perhaps making the experience more immersive...

Brown and Cairns propose that this time dependence is linked with distinct stages of immersion, and that "the amount of time, effort and attention required from the gamer increases for more immersive experiences" [2004: 1299]. They identify three discrete levels of interaction with a game: *engagement*, *engrossment*, and *total immersion*. Using these stages to illustrate immersion's time dependence, Brown and Cairns propose that the more immersed a player becomes in the game, the more they will lose track of time. They point out the "fleeting nature of total immersion" [2004: 1300], identifying how the player's attention needs to remain on the game for an extended period of time for immersion to take place and continue. Any distraction from the game world may easily shatter this state by reminding the player that a world exists outside the narrative, thereby pulling them from the fantasy. For composers and game designers, building immersivity cannot be separated from an attempt to retain the player's attention while playing the game.

Variable in this time-dependent immersion is the length of time required for an individual player to feel immersed. Experienced players may immediately feel themselves drawn into an unfamiliar world, quickly transported into the fantasy. Players who approach games with less experience opening up their imaginations to fictional worlds might find that it takes a much longer period of time to feel immersed. It falls upon the game developer and composer to craft the world in such a way that experienced players will immediately accept and place themselves within the world, and new players will more quickly accept the fiction. This immersivity is created by a combination of all the game's elements, including the music, visuals, narrative, and gameplay aspects. While this variety of options is available for game designers seeking to build immersivity, this thesis focuses specifically on the composer's ability to invite immersive experiences through music.

Music plays a significant role in keeping the player attentive on the game. A study on the therapeutic applications of music found that listening to music before completing a task "reduced distractibility" on that task [Morton, Kershner, Siegel 1990]. In video games where the player engages with different environments and experiences, music has the ability to keep the player focused on the gameplay and story, sustaining attention in the fiction. This sustained attention in turn deepens immersion as the player remains suspended in the game world for an extended period of time. A later study on the reaction of the brain to listening to a musical symphony found that the parts of the brain associated with attention peaked at transition times between symphonic movements, further connecting the experience of music and its absence to aspects of attention [Sridharan et al. 2007]. These studies illustrate the immersive potential afforded to composers as they score different game experiences. While how it does so varies across games, music has the ability to increase player attention on the narrative, sustaining attention in the fantasy world and maintaining an involvement in the progression of the story.

When a game's soundtrack perfectly supports the gameplay, narrative, and visuals, the player finds themselves not only watching a screen, but surrounded by a sonic space that creates a more complete sense of the fictional game world.

Aside from only keeping player attention on the game, music can also affect how players perceive the passage of time. In one study investigating the role of music on time perception and immersion, Timothy Sanders and Paul Cairns found that "music reduces the experienced duration of playing a game but not the remembered duration", and that "the addition of music can make playing more or less immersive depending on whether the music is liked or not" [2010: 167]. These results highlight that when written well, music has the ability to deepen immersion by shifting the experience of the passage of time. Music leads to experiencing time more quickly, indicating both a focus on the medium and less perceived time that the player's attention must be suspended for. As Brown and Cairns identify, keeping this attention on the game over time is essential for maintaining immersion. Ultimately, the composer and sound design team have control over holding the player's attention through sound, at once replacing the sounds of the real world with music that artistically represents the fiction.

Flow State

One distinction that bears mentioning is the subtle difference between a player being "immersed" and a player entering a "flow state". While immersion involves building investment and empathy with the fictional setting, characters, and story, a flow state is entered when the player is so engrossed in the game that mechanically inputting controls becomes second nature. In this flow state, one does not necessarily need to be immersed in the game: a player can enter this state while playing an arcade game that has no story elements. Immersion, by contrast, is the sensation that one is submerged within the world of the game as an active participant, created by affective ties and elements that hint at a greater world beyond the frame of view of the player. Games with well-developed settings and difficult mechanics (such as *Hollow Knight*) can induce *both* immersion and a flow state, but games that require high-level mechanics without strong world building (such as *Tetris* [1984]), are more likely to induce a flow state without creating immersion.

In a brief psychological review of reported experiences of both flow and immersion, researchers argue that neither of these concepts have universally applicable definitions, and that even where some may attempt to define one as a combination of quantified cognitive and physiological responses, it is nearly impossible to define these concepts as an unchanging phenomenon experienced the same way by all players [Michailidis, Balaguer-Ballester, He 2018]. The authors propose that due to this ambiguity, there is no difference between flow and immersion. In practice, however, these terms are colloquially used quite differently. One

player on Reddit describes flow state as "being able to take complex, precise, and skillful action more quickly and precisely than conscious, thoughtful action allows" [u/Milskidasith 2023], a concept tied to mechanical ability, rather than cognition. By contrast, immersion is more tied to the setting and characters, with one player commenting that "you try your best to 'transport' yourself to the world setting" [u/[deleted] 2014]. While flow and immersion have similarities, there are clearly subtle differences in what player states they describe. Both concepts describe a high level of engagement with the game, but whereas flow state is more associated with an ease of play through perfect mechanical control, immersion represents a more meaningful experience where the player is invested in a narrative and emotionally impacted by the game's story events. At the deepest level of immersion, the separation between player and character disappears as they find themselves fully transported into a fantasy world.

Investment, affective influence, and sustained attention are needed together to create an immersive experience for the player. Though scholars have proposed many ways that game developers can intentionally build immersivity, immersion ultimately remains dependent on the player: if a player wilfully prevents themselves from becoming invested in the game, they will not be able to achieve immersion. In addition, one can imagine that for new gamers, the unfamiliarity of a controller might serve as a significant obstacle to immersion—if one is putting all of their energy into figuring out how to move and jump, what attention is left to becoming invested in the story and characters? In games that succeed at crafting immersivity, this real-world struggle can be translated to a struggle in the fictional world. In these situations, it is not the physical player struggling to manipulate the controls, but their character struggling to properly wield a sword, learning to fight. The game can frame the player's difficulty as a moment where player and character learn and grow together, forming a stronger connection between player and character in pursuit of narrative progression. Music plays an essential role in forming and maintaining this connection, strengthening affective ties between player and game while maintaining focus on progression of the narrative. To induce immersion, however, the player needs a world to be immersed *within*. Analysing how composers can contribute to immersivity therefore requires a sense of the game environments that form the fundamental components of the game world.

Environments

As our brave, solitary knight travels deeper into Hallownest, the virtual world in which the game *Hollow Knight* takes place, they discover that not only does this kingdom consist of old stones tinged blue, but parts of the world are lush with

vibrant greens or overgrown with pink crystals that radiate power. One moment, the player finds themselves surrounded by blue-grey pebbles, ornate fences, and plants that have long since faded to pale whites and greys. The ghostly sighs of a past nearly forgotten are accompanied by a string section playing slow harmony, the music an echo of a distant room. The knight wanders further, discovering a new region where life still thrives. Thick foliage covers every surface, drops of water patter through distant rooms, and elegant archways poke through twisting vines. Gone are the slow strings, now replaced by a dancing harp ostinato, a viola melody, and the buzzing of distant insects. As the player enters the region called "Greenpath", shown in Fig. 1.1, they discover life in this forgotten realm, an environment lush with both visual and sonic movement.

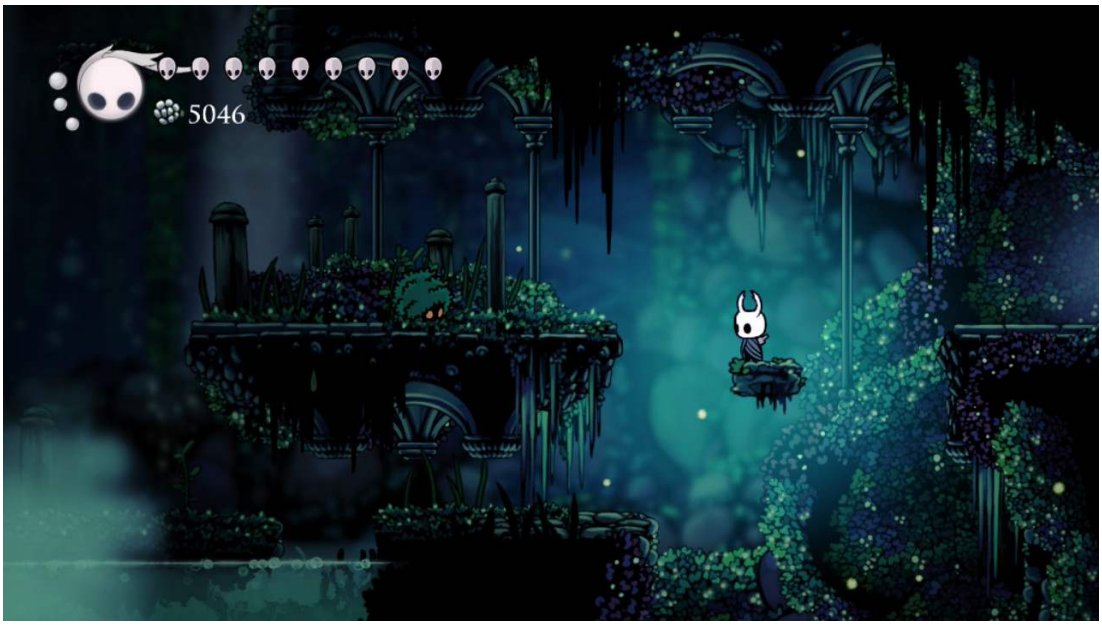


Figure 1.1: The region "Greenpath" from *Hollow Knight*.

From these tranquil forest glades to active volcanoes spewing fire into the sky, video games range through an extraordinary number of different settings. A player can step straight from the depths of a jungle into rocky mountains, fully shifting their surroundings in moments. Despite these drastic changes in their character's location, the player never moves in the real world, yet game developers that target creating immersion want the player to feel as though they have. As Henry Jenkins writes,

> When game designers draw story elements from existing film or literary genres, they are most apt to tap those genres - fantasy, adventure, science fiction, horror, war - which are most invested in worldmaking and spatial storytelling. Games, in turn, may more fully realize the spatiality of these stories, giving a much more immersive and compelling representation of their narrative worlds [2004].

For narrative video games, these environments are an essential component of situating the narrative within an imagined world. Creating a setting is the foundation for telling a story, and to immerse the player within the story is to submerge them within the game environment.

In video games, players typically explore these environments in stages, beginning in a starting location then discovering more fantastical regions. This discovery is often led by the game's narrative—such as venturing to the top of a mountain peak to recover an essential relic—but can also be a result of the character's curiosity in exploring their surroundings regardless of ongoing story moments. When entering these environments, the game creates a sense of place through a combination of a number of features that both situate the player in the fictional world and respond to the player's actions. For instance, if a player rushes past a bush in a game, the bush will often rustle or drop leaves, rather than remain static. It is the collection of these different symbolic and physical elements that create the player's sense of place in these environments [Nelson, Ahn, Corley 2020: 237], creating a living virtual space within which the player can interact and play. To then "be someplace" within a video game is to have one's character be physically located in a specific environment, forming a sense of being surrounded by that environment's visual, sonic, and narrative features.

The term "environment" comes from an ecological perception of the world, thinking on all the elements that surround us in nature. Most fundamentally, animals take in information of the world around them in terms of what that environment can afford them: what elements of their local world might help them, what might be waiting to cause harm, and what can be safely ignored [Kamp 2024: 772]. From this ecological approach, video game environments are defined by the collection of features that make a region unique, including visual and sound design, shifts in gameplay, and environment-specific puzzles or obstacles: Is the player surrounded by trees that they must climb? By large boulders they need to bypass? Is water and swimming a central mechanic to the player's environment?

Nesting

Psychologist James Gibson breaks down environments into a set of elements on different perceptive scales by defining nesting. "For example, canyons are nested within mountains; trees are nested within canyons; leaves are nested within trees; and cells are nested within leaves" [1986: 5]. Nesting allows for a description of a game's environment at different scales of detail. For example, while playing through a two-dimensional game such as *Super Mario Bros. Wonder* [2023]—shown in Fig. 1.2—the player may briefly notice the rolling hills and rocky formations in the background, but not heed them further as they play through the game, since they have no impact on the gameplay. Removing that backdrop, however, would

Figure 1.2: Level design of the level "Welcome to the Flower Kingdom!" from *Super Mario Bros. Wonder*.

significantly impact the player's perception of the world, as can be seen in Fig. 1.3, where the game suddenly feels far less complete, and it is much more difficult to convince oneself that the story takes place in a wider universe. Though the player largely ignores the broadest nesting level of the environment, it is essential to their perception of the world.

While some nesting levels are essential to perception of the environment, others merely enhance the player's sense of place. In a game such as *BotW* where there is less emphasis on finishing a level and the player has the opportunity to freely explore the world as they pursue the main quest, the player can explore different characters' diaries or journals. One such diary entry reads "I wonder if I'm coming down with something. I'll ask Grandmother for some medicine tomorrow" [2017]. While this diary has no impact on the gameplay or any decision the player might make, it speaks to the non-playable characters in the game having experiences and lives beyond those witnessed throughout the narrative, enhancing the player's sense of a broader world. The positive impact of these smallest nesting details on the creation of a more complete sense of environment has been affirmed by several players on Reddit, who report that these small details lead to a more complete sense of a world [u/Mrs_IrrSoft 2023]. In this case, the player's attention is brought to a narrower level of nesting, demonstrating that even details that bear no impact on gameplay can contribute to the player's sense of the broader game world.

Figure 1.3: The level "Welcome to the Flower Kingdom!" from *Super Mario Bros. Wonder* with the background removed.

Focus and Periphery

Many of Gibson's nesting elements can be separated into what I define to be either focal or peripheral components of the environment. Focal elements are those aspects of one's surroundings that may have a directly positive or negative influence on the gameplay: the player must be aware of the game's terrain, any dangerous spikes or enemies, or of a power they might collect. The peripheral elements are all other aspects of an environment—the trees, bushes, and stones—that are not immediately important for the player, but that build one's sense of surroundings. As a visual example, Fig. 1.3 isolates the focal elements of the first level in *Super Mario Bros. Wonder*, while Fig. 1.2 shows both the focal and peripheral elements. In defining these components, I intend to simplify Gibson's ecological discussion by describing each element as either directly impactful to the gameplay or existing in the background. This allows for a more general description of what a set of elements accomplishes within video games, rather than breaking down environments into a dozen nested levels.

Both the peripheral and focal auditory spaces consist of a combination of music and sound design. Music most often plays a role in the periphery, creating an environment without being a prime focal point for the player. Michiel Kamp defines such music as "ambient music" [2024: 773], which is music whose purpose is to create an atmosphere without being foregrounded in the player's attention. An example of this ambient music will be described at the end of this chapter with a discussion of "Kwolok's Hollow" from *Will of the Wisps*, where the player's

main goal is to return life to a slowly dying forest. Music in this periphery is not always ambient, however. Kamp identifies that game scores also include "action music" [773] that may indicate a combat cue or dangerous moment for the player. For example, at a different point in *Will of the Wisps*, the player is "Escaping a Foul Presence", and a musical cue involving string pizzicato, low brass, and a flute prefaces danger marked by tremolo strings and low brass shouts which urge the player to run and escape. While the music does not bear a direct impact on gameplay in such a scene, it clearly signals peril to the player, sonically reflecting gameplay elements. Music is often peripheral, though it can also act as a focal component of the environment: Kamp's description of semiotic music would be best described as a focal component, due to its direct impact on gameplay [143].

Sound design often occupies a more focal sonic presence. Many sound effects are generated by the player (such as those sounds tied to jumping, attacking, using a special ability, etc.), and are mixed at a stereo location that follows the player's position on the screen so that to the player, these sounds appear as though they originate from the character. These sound cues are a sonic confirmation of the player's actions. When they press a button on their controller, they receive instant feedback from the game. While players do not *need* to hear these effects to progress in the game, I label these sounds as focal components due to their direct ties to essential gameplay elements: often, hearing these sounds assists the player. Some sound effects also exist in the peripheral space, such as echoes of water drops heard distantly within a cave or the rustling of leaves in a forest, creating atmosphere without being foregrounded in the player's attention.

In this peripheral context, what is music's role? Is music meant to represent the atmosphere displayed on the screen in the same way Debussy's "La Mer" is meant to depict a sense of water? Should hearing video game music in isolation be able to create an atmosphere? Or is music instead meant to merely support the visuals, ultimately relying on the game's visual component to be fully appreciated? Composer and filmmaker Michel Chion describes the relationship between sound and visuals as an "audiovisual illusion", in which "a sound enriches a given image so as to create the definite impression" [1994: 5]. Chion argues that sound is needed to bring the visuals to life and that, without sound, many visual effects on the screen lose a sense of materiality. This reliance on sound is slightly overstated (even from silently observing the still Fig. 1.1 at the start of this section, the reader can infer a great deal about the environment), but the role of audio that Chion is identifying should not be discounted. As he points out, "Most falls, blows, and explosions on the screen ... only take on consistency and materiality through sound" [5]. As many visuals in real life are accompanied by sound, there is a sense of something missing when witnessing the same visual without auditory information. Even in the peripheral setting, music fills this gap, conveying information about the quality of the world beyond what is displayed by the visuals. In doing so, music enhances

a sense of surroundings, at once representing the environment, supporting the visuals, and adding information to the environment that would not otherwise be communicated.

Elferen proposes that to accurately convey this information, music must appeal to audio-visual literacy: even in isolation from an environment, music evokes a sense of visuals by drawing on tropes that have appeared in that audio-visual environmental context [2016: 36-37]. For instance, in the desert village "Gerudo Town" from *BotW*, the instrumentation—a sitar, a number of wooden flutes, a snare, a triangle, and varied hand percussion—is likely to conjure the image of a desert-like environment. This image draws from stereotypes used extensively in Hollywood, which have been reinforced across countless media depicting deserts in both film and video games [Park 2024: 496]. As Kamp points out, though, the music can also provide supplementary information not gleaned from the visuals alone: "A score to a desert environment can either suggest that the desert is African or Middle Eastern through the use of augmented second intervals ... something that graphics or sound effects do not necessarily do" [2024: 776-77]. Despite often being non-diegetic, audio bolsters the player's three-dimensional perception of the fictional world through connecting this environment to ones they've encountered before in other media, expanding sense of place beyond the player's range of view. Instead of each video game region presenting a completely new scene for the player to learn and accept, game developers utilise shared literacy to call back to traits of environments found elsewhere. When players encounter a desert, many have pre-conceived notions of what the climate might be, what plants may reside there, and what musical timbres are likely to be present. By drawing upon this literacy, music as a peripheral element specifically communicates information beyond the screen.

Environment and Immersivity

For immersion to occur, the player needs something to be immersed *within*—the environment [Munday 2007: 56]. Created from a combination of an investment in the world and narrative and affective ties between the player and the experience of their character within the game world, a game's immersivity is dependent on the extent to which a game invites the player into its world. While many parts of a narrative video game—such as visual design and plot—contribute to this belief in the fantasy world, music plays a particularly important role in the development of the player's greater sense of the fictional environment. As Summers writes, music acts "as a medium to accentuate or develop our understanding of the game beyond the other communicative layers of the text" [2016: 72]. *How* music communicates information about the game environment to the player changes as the player adventures through different regions. The use of a sitar in the score

might easily immerse a player in a desert due to the tropes of film scores, but could feel out of place in an open sky due to a lack of literacy encountering such a timbre in this environment. Investigating how composers may target player immersion in a video game therefore requires an analysis of the environment that the player will be immersed within. Once a sense of the environment has been established, it then makes sense to analyse how immersion takes shape within that environment.

These video game environments are physically defined by their combination of focal and peripheral elements, which work together to contribute to the player's sense of place in a wider world. Music most often plays a role in the periphery as composers use musical representation to surround the player by these environments, rather than just two-dimensionally presenting them with a thematic setting. As Kamp argues [2024], an analysis of the musical elements that boost immersion within certain environments must not be separated from the player's role within those particular game scenes. As will be seen in Chapter 3, players do not simply exist passively within these environments, but rather experience the game's narrative progression. Immersion within an environment relies on the player building affective ties to that narrative influenced by what the player is doing in the game and where they are situated. For example, an open field may inspire frolicking, while pits of bubbling lava could induce trepidation and urge the player to step carefully. By the numerous ways that scholars such as Kamp and Elferen have proposed that video game music can be analysed in different contexts, it is clear that players are meant to experience video games differently in different situations, and that in these contexts the audiovisual elements of the game contribute to crafting a particular affective response [Kamp 2024].

An Example – Kwolok's Hollow

To illustrate how composers might write to create an environment that invites immersion, I end this chapter with a specific example from *Will of the Wisps*, scored by Gareth Coker. As the player pursues their quest of returning light to the forest within which the game takes place, they pass through a swampy, vibrant grotto named "Kwolok's Hollow". This is one of the earliest environments encountered in the game, in which the player is meant to slowly discover more of the game world while fighting slightly more challenging enemies. A still image of this environment is shown in Fig. 1.4. As the player explores this region, they are accompanied by the similarly titled music "Kwolok's Hollow", which uses a wide array of percussion instruments such as rattles and bells along with an orchestra primarily featuring winds and low strings.

A number of focal and peripheral elements contribute to the player's sense of this environment. Visually, the colour palette of this region immediately establishes a dark, damp atmosphere. The screen is saturated with deep shadows, green life,

Figure 1.4: The game environment "Kwolok's Hollow" from *Ori and the Will of the Wisps*.

grey stones, and blue fog filling the horizon line, indicating that the player is in some deep underground region where there is enough water for plants to grow, but no sunlight. The focal elements of this environment consist of the terrain the player (the bright figure at the centre of Fig. 1.4) stands on, spikes throughout the terrain (visible in the top right), and enemies that the player may encounter (not pictured). These elements have a direct impact on the player's gameplay, informing what terrain the player might traverse or avoid. Sonically, the focal elements of this environment primarily consist of sound effects generated by the player moving, jumping, attacking, etc. (many of which are accompanied by vibrations of the controller). When the player inputs to the controller, there is an immediate visual, audio, and tactile response that connects the player to their game avatar. Some visual peripheral elements include the stones and brambles in the background, the bright orange flowers, and the distant pillar seen only as a vague shadow. The player's attention is not foregrounded on these elements, yet witnessing them in periphery plays an important role in grounding the player within this cavernous environment.

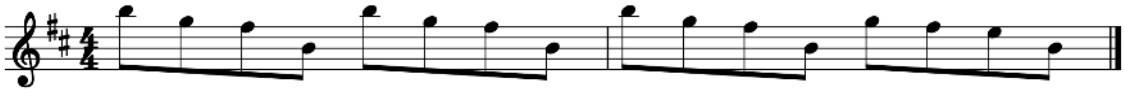
Sonically, the music is largely situated within this peripheral space—no harm will come to the player directly by virtue of ignoring the music. In writing for this environment with the track "Kwolok's Hollow", Coker uses many percussion rattles and bells played with high reverb that, despite the music being non-diegetic, feel as if they could be the scuttling of distant insects echoing through the game's caverns. This reverb mimics the echoes that one would hear when in a cave in real life, creating the impression that the sounds the player is hearing have sources

outside the game's field of view. By representing physical aspects of this space using music, Coker more fully situates the player within the environment, forming a perception of the foundational aspects of Kwolok's Hollow.

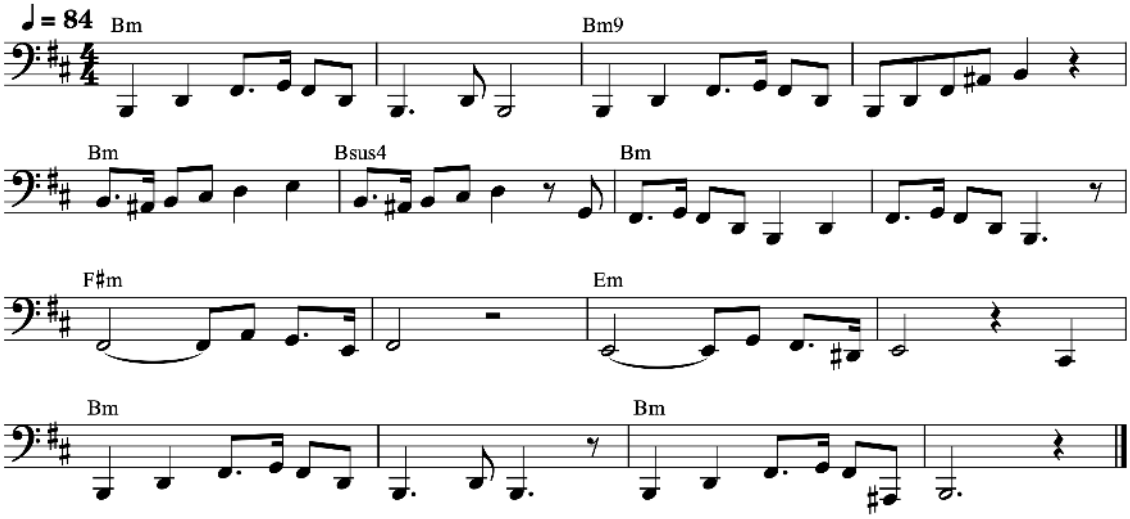
Connecting to more experiential aspects of this region, Coker writes many overlapping ostinatos and repeated lines, some of which pulse on quarter notes, some eighth notes, and some with more complex rhythms. One ostinato, played on chimes, is shown in Ex. 1.1, displaying a repeating descending line that grounds the music in B minor. Throughout this track, Coker often writes extended melodic lines where the harmony remains on the tonic, as seen in Ex. 1.2. This harmonic stillness urges careful movement, contrasting with the forward motion created by the repetition of the ostinato. In this region of exploration, the constancy of the overlapping ostinatos urge the player to adventure and explore, while the harmony and melody played in a low register instrument such as the bass clarinet keep the player grounded in this earthy environment. As the music expands the fictional world beyond a two-dimensional screen into a realm that surrounds the player, the player's perception of the reality of this environment grows in turn, bolstering a sense of being submerged into the game world.

By often giving the melody to a bass clarinet and pizzicato bass, Coker places the player's sonic attention in a low register to reflect the depth of this environment. One melodic feature which contributes to this sense of grounding is the frequent return to the B1 note, which has a gravelly timbre when played on the bass clarinet. Writing the melody for a low frequency instrument in harmonic minor, Coker promotes a feeling of unease that reflects the depths of the grotto, the shadows that hide potential dangers, and the trepidation that accompanies exploring an unfamiliar region. The narrow frequency range foregrounded in many parts of this track adds to this unease, forming a density much like that created by the enclosing stone walls of the cave. The use of pitch range, harmonic rhythm, and ostinatos target an affective response in the player, at once encouraging exploration while warning the player to be wary of the dark and the unknowns that may lurk in the shadows.

Player immersion in a narrative video game is the sense of being transported into the game world. This phenomenon is created by a combination of player investment in the world and affective ties with their character and the story sustained over



Example 1.1: Chimes ostinato for "Kwolok's Hollow" from *Ori and the Will of the Wisps*.



Example 1.2: Theme for "Kwolok's Hollow" from *Ori and the Will of the Wisps*.

an extended period of time. Investment first requires the player to suspend their disbelief, and is deepened by elements of the game that lead the player to caring deeply about their character and the narrative. As they develop this investment, affective ties are strengthened by music that emotionally links the player to the game. For composers, music has the ability to more fully welcome the player into the game world, suspending their attention within the fiction to create immersive experiences.

This immersion ultimately requires an environment to take place within. These environments consist of a combination of focal and peripheral elements—groups of features that create distinctions between different segments of the game world. Composers can use musical representation to build the player's sense of being surrounded by this fantastical world, creating a location in which immersion can take place. In the following chapter, I will investigate how composers can use musical representation to create a stronger sense of environment, using two environments—the sky and the cave—as case studies for thinking on what musical techniques contribute to greater connection between player and game.

2 | Environmental Representation

One way that music contributes to creating a more complete sense of the environment is through musical representation of extra-musical ideas. Using musical representation, composers can specifically convey qualities of the world through sound alone. As philosopher Charles Nussbaum suggests, representation is a transference of information between two distinct parties: the representor and the interpreter [2007: 4]. Language is a particularly direct form of representation: words are directly tied to physical items or ideas, and it is typically easy to quickly understand the meaning represented by a word. Music without words, however, is more abstract than language. Rather than direct links between idea and object, musical ideas can have many meanings, depending on the interpreter. This musical representation is a goal for composers writing program music, a broad classification of music meant to represent extra-musical ideas without the use of language. Nussbaum argues that as Western art music developed over the nineteenth century with composers writing program music, so did musical interpreters, creating a body of listeners that recognise the meanings conveyed by specific musical ideas [2]. Within a similar space of musical literacy, video game composers can draw on established musical conventions to represent abstract ideas, conveying mood and information without the use of language.

Musicologist Joshua Walden raises several questions central to musical representation including how musical representation differs from representation in other art forms, and to what extent music itself forms a language [2013: 2]. Central to these questions is the idea that non-lyrical music alone is able to convey meaning to the listener in a way not entirely unlike language. Common to all media for understanding representation is a reliance on past encounters with the object being represented. Someone who has never before seen or heard of an apple would have difficulty naming one from just an image. Similarly in music, as players engage with video games, they build literacy by encountering musical features such as timbre, key, harmony, and voicing in specific environments. In practice, a direct relationship between musical tropes and conveyed representation is uncommon for non-melodic features; melody can directly communicate information about place

or character (as is commonly accomplished using leitmotifs) in a way that form or harmonic choices usually cannot. Representation in music is often conveyed more abstractly, as will be explored throughout this chapter.

Western concert music provides many examples of musical representation. The end of the third movement of Ottorino Respighi's "Pines of Rome" plays back recordings of real birds chirping, directly forming an image of birds. Other times, representation is more abstract, such as in the sense of water created by the flowing nature of Claude Debussy's "La Mer". In this case, the dynamic swelling and receding of the harp and winds throughout the piece abstractly represent waves travelling across the surface of the ocean. Representation can sometimes be accomplished using timbre—a soft bass drum can evoke distant thunder, as in Robert W. Smith's "In a Gentle Rain"—or by use of leitmotifs associated with specific regions or narrative characters. While these concert pieces represent a range of different ideas, common to this program music is the goal of conveying an image or sense without the use of language.

While concert music represents settings or emotions more abstractly in a way that each audience member can interpret individually, video games are a medium within which it is very clear what image is in the composer's mind due to specific images displayed on the screen. These images are often recurrent across video games (many games may feature similar forests, for example). This specificity allows for comparison between elements of the game environment and of the music score. In these video games, the composer's role is to use music to enhance the player's perception of their fictional surroundings, enhancing their immersion in the narrative. Music creates a more developed world by conveying information about the atmosphere and tone of the environment not gleaned from visuals alone. By contributing to this sense of place within the game, composers promote greater investment between the player and the environment within which the narrative takes place. By building the player's investment in the game world, this musical representation of the environment brings the player closer to immersion.

This chapter will specifically investigate how composers approach the representation of two environments that occur across video games: the sky and the cave. The sky is an environment that exists not only in the game, but is present in everyday life, always vast and open above us when outdoors. While a constant presence in our lives, however, the nature of the sky is ever-shifting. One day, this environment may be clear blue interrupted only by wisps of white, while the next it might be dark with storm clouds, bringing a vicious rain. Despite the sky's familiarity, it is also unpredictable, a regularly changing constant to our everyday lives. By contrast, caves are not an environment that appears regularly in most people's lives. To experience the underground, one must embark on a journey, leaving the world behind to venture for a time into an unfamiliar region of warped light and sound. While the sky changes each day, the caves take millennia to shift, transforming

on far greater time scales than any human lifespan. This environment creates a different form of constant. While the sky is constant in its presence, the cave is constant in its appearance, marking a location that, no matter how long one takes to find their way back, will be the same. Aside from their physical qualities that affect the way we sense the passage of time, these environments are also correlated with unique symbolisms. Most notably for the sky is symbolism surrounding the divine: many Earth religions revolve around the passage of the sun through the sky [Eliade 1958: 38]. The caves are then a shelter from these gods, a symbolic representation of an escape from the outer world [Hawkins 2020: 16].

In video games, the sky and the underground draw upon these everyday connections with these environments as a foundation upon which to worldbuild. Many times, this manifests with the player beginning their journey underground, needing to leave this location of origin to progress (such as in the games *The Legend of Zelda: Breath of the Wild* (*BotW*) and *Hollow Knight: Silksong* (*Silksong*)). Other times, the player starts their journey in the sky (or on the surface), and ventures downwards (such as in *The Legend of Zelda: Tears of the Kingdom* (*TotK*), *Super Mario Bros.* [1985], and *Ori and the Will of the Wisps* (*Will of the Wisps*)). The sky and the cave represent the two extremes of the player's journey in a narrative video game. Each can mark the origin or end of the quest, but together, they define the boundaries within which the player explores and completes the game.[1]

It is my hope that thinking on these environments can serve a number of purposes. For the musicologist, these analyses connect to broader questions about musical representation, both in media such as video games and for music in general. Since the development of program music, many concert compositions have attempted to convey a story or even immerse the listener in that story. Being a medium in which both the story and the music are essential parts of the art, video games provide a clear way to investigate how musical ideas connect to the narrative. For the ludomusicologist, I hope that these discussions of environmental representation and their intended impact on immersion can raise new questions about the role of music in enhancing a three-dimensional sense of game space to promote player immersion. Thinking on this music specifically incorporates the role of the composer and sound designers in the process of writing music for video games. Finally, for the composer, I hope that greater understanding of musical techniques used to represent environments can be illuminating for approaching a composition meant to represent a specific image. Perhaps these elements can become a starting point for a new composition, or serve as a warning of common tropes that a composer might wish to avoid. Using music to represent phenomenological aspects of the environment, rather than those seen, is a powerful

[1] Some games involve the player travelling beyond the sky and into outer space, but this region external to a planet carries a sensation more of exploring a new world *outside* the ordinary, rather than one *above* the ordinary, as the sky represents.

way of situating the player in the game. The remainder of this chapter analyses what musical techniques aim to create such experiences. How do composers create a sense of space and openness in the sky, while closing off that sky and reminding the player of their unchanging surroundings for the cave? What tropes may or may not exist within these regions across games, and what similarities are there between composers with different compositional styles writing for similar environments?

The Skies

Perception of the Sky

Due to its changing nature, it can be difficult to describe what elements consistently make up a sky environment. In a video game, one sky may feature calm breezes and rolling clouds, while travelling to the other end of the world introduces violent rains and raging thunder. Applied meteorologist John Thornes and anthropologist Tim Ingold give us two ways of describing this environment through its features and perception. In a paper investigating the link between cultural perception of the sky and of climatology, Thornes identifies "five visual atmospheric elements" that are often found in artist depictions of the sky: 1. the dome of the blue sky, 2. the atmosphere, 3. clouds and weather, 4. daylight, sunlight, starlight, moonlight and optical effects, and 5. climate [2008: 574]. While the quality of these features may change—clouds can be wispy or dense—this list provides the core elements that physically make up a sky. Ingold adds the observation that the features that exist in the air have time-dependent qualities that shape human perception of this environment. His description explains the phenomenological way that the sky is experienced: how the character of the environment changes when a human is placed inside it.

For the purpose of this thesis, Thornes' elements provide a starting point for analysing music's purpose in sky environments. In representing the sky, an artist may place greater weight on one element in Thornes' list than others [2008: 574]. For example, they may choose to create a grand depiction of beautiful clouds without needing to consider the climate of the created region. As described in Chapter 1, these sky elements can perform either a focal or peripheral role in a video game. The level "Nutty Noon" from *Kirby's Return to Dream Land* (*Return to Dream Land*), for instance, has both peripheral and focal clouds. As seen in Fig. 2.1, white, peripheral clouds circle in the background, while orange-yellow clouds play a focal role in the foreground, marking the terrain which the player must traverse. The music in this level will be discussed in greater depth as a case study in the following subsections. As will be seen throughout this section, the music in airy environments may target representation of one or multiple of the sky elements Thornes identifies. With such artistic flexibility within one environment, it becomes less clear what it

Figure 2.1: The level "Nutty Noon" from *Kirby's Return to Dream Land*. Screenshot taken by u/[deleted] and posted on Reddit in r/Kirby [2023].

means to generally represent the sky: When a composer is writing to evoke images of the "sky", what scenes are they conveying? The calm sky? The tempest? By investigating video game environments which themselves isolate specific elements of the sky through visual and narrative cues, this section analyses compositional choices that support very particular images of this environment.

The skies created by these combinations of physical features are perceived primarily through their changes. In his investigation of the experience of this environment, Ingold proposes that an interaction with the sky is characterised by experiencing "the incessant movements of wind and weather", which he describes as the "fluxes of the medium" of the open air [2007: 34]. In other words, Ingold argues that the sky is devoid of concrete features, experienced only by *changes* in the atmosphere—such as the wind—rather than by features of the atmosphere itself. Ingold's analysis implies that the sky has no experienced "steady-state" condition, but is perceived only as it shifts between various states. One does not generally *feel* the surrounding air, but will certainly notice a gust of wind. This perspective has some friction with Thornes' five identified elements of the sky, which clearly discern recurring visual elements of this environment: Thornes describes skies represented in visual media where the art stays static for all time, while Ingold proposes that a static sky has no associated experience. Taken together, however, Thornes' analysis of the sky provides concrete features that form the foundation of a sky, and Ingold adds that this environment is not perceived through these still elements, but rather engaged with through its changes. To immerse the player in

this environment, a video game first creates the backdrop of the sky by presenting its focal and peripheral components, then accomplishes the much more difficult task of forming the sensation of environmental shifts associated with the wind despite having no control over the player's physical surroundings.

While visual elements and narrative progression can begin to create this experiential flux associated with the sky, music—being a time-based medium—plays an important role in immersing the players within this shifting environment. This section analyses music encountered in this environment across four games: *TotK*, *Celeste*, *Return to Dream Land* and *The Legend of Zelda: Skyward Sword* (*Skyward Sword*). Musical representation of the sky in these games both sets the physical background of the sky by sonically bolstering the visual atmosphere and conveys to the player the shifts in environment that they would experience from being out of doors on a windy day. While not a comprehensive accounting for music in all sky environments across every video game, I believe these four games to be a representative sample of skies encountered across large-world narrative games. *TotK* and *Skyward Sword* situate the sky as the player's starting point, from which they must descend to progress in the game, while *Celeste* is the opposite, with the player needing to climb to the sky to complete the game. *Return to Dream Land* places the sky as a region that the player passes through, but is neither explicitly a starting nor ending location. From the music in these environments, several trends in musical representation appear, such as the creation of a sense of space through harmony, the use of wind instruments as a call to moving air, and flow created through melody, groove, and form.

A Sense of Space

As Ingold notes, the sky is typically a difficult medium to describe due to its small number of distinct features. When looking at a tree, one can very precisely describe its colour, texture, and density, but the sky has far fewer elements to discuss in depth, and describers usually resort to simply "blue", "pretty", or "cloudy". To compensate for what we cannot see, we often describe the temperature of the air or discuss the presence of the wind, ways of characterising an environment that must be experienced rather than seen. This intangibility is often perceived as shifts in one's surrounding atmosphere over time, the "sky" becoming a name for the vast expanses of empty air ever-present when outdoors.

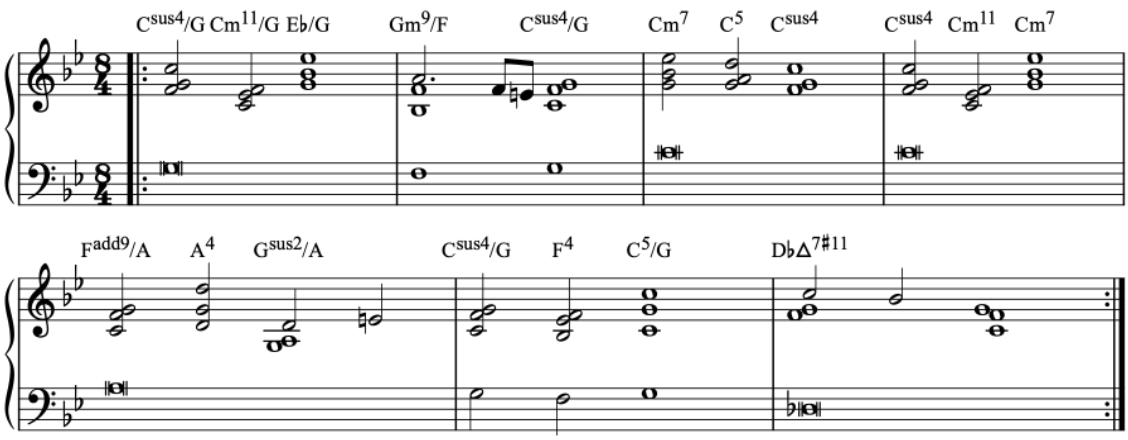
The sense of space central to this perception of the sky is reflected in many games that situate the player in this environment. In *TotK*, the player begins their adventure on the "Great Sky Island", a collection of islands floating in the sky high above the game world of "Hyrule". Here, the player must complete a series of four puzzles whose solving teaches them about the main mechanics of the game, building skills that will accompany them on their journey throughout the rest of

Hyrule. As they explore the Great Sky Island, the player must often leap or glide across open sky to travel from one segment of land to another. As this region is the very first of the game, these islands retain a fairly peaceful atmosphere, the player not encountering very difficult enemies as they explore this open expanse. A visual of this environment is shown in Fig. 2.2, which displays the assembly of floating islands and high cloud density.

Figure 2.2: "Great Sky Island" from *The Legend of Zelda: Tears of the Kingdom*.

In representing the sky's sense of space musically, composers often reflect the small number of tangible features using harmony. As the player explores the Great Sky Island, they are accompanied by the track "The Sky", which includes extensive harmonic ambiguity through the use of suspended chords and quartal and quintal harmony. More than half of the chords notated in Ex. 2.1 lack a third, cueing to the listener an instability in mode. While my transcription suggests C dorian, one could reasonably analyse this music in G dorian. By maintaining this harmonic and modal ambiguity, the composers ensure that there is no tonic for the player to latch onto—while one might briefly hum what seems to be the i chord, that "tonic" is likely to shift by the next bar. In doing so, the composers create a lack of groundedness, conveying that this environment is open to change, smoothly transitioning between different states. The music never lingers long in a particular mode, always shifting and cueing the player to this environment's lack of a resting condition.

Lena Raine's track "Reach for the Summit" for *Celeste* also features this modal ambiguity. In this game, the player's overall objective is to climb to the summit of a tall mountain by travelling through seven levels that slowly ascend towards



Example 2.1: The beginning of "Sky Islands Main Theme" from *The Legend of Zelda: Tears of the Kingdom*, transcribed by Matéo Di Martino [2023] and organised by author.

that peak. In the seventh level, "The Summit", that goal is finally within reach as the player completes the last stretch of climbing the mountain. No longer are they surrounded on all sides by caves, but now half of the displayed screen is open sky. The player moves constantly upwards, rather than from left to right as is common in earlier parts of the game. Visually, this environment displays a distant sunrise lush with pink and orange tones, close and distant clouds, the mountain that the player is ascending, and vertical white lines that represent the moving wind, as shown in Fig. 2.3.

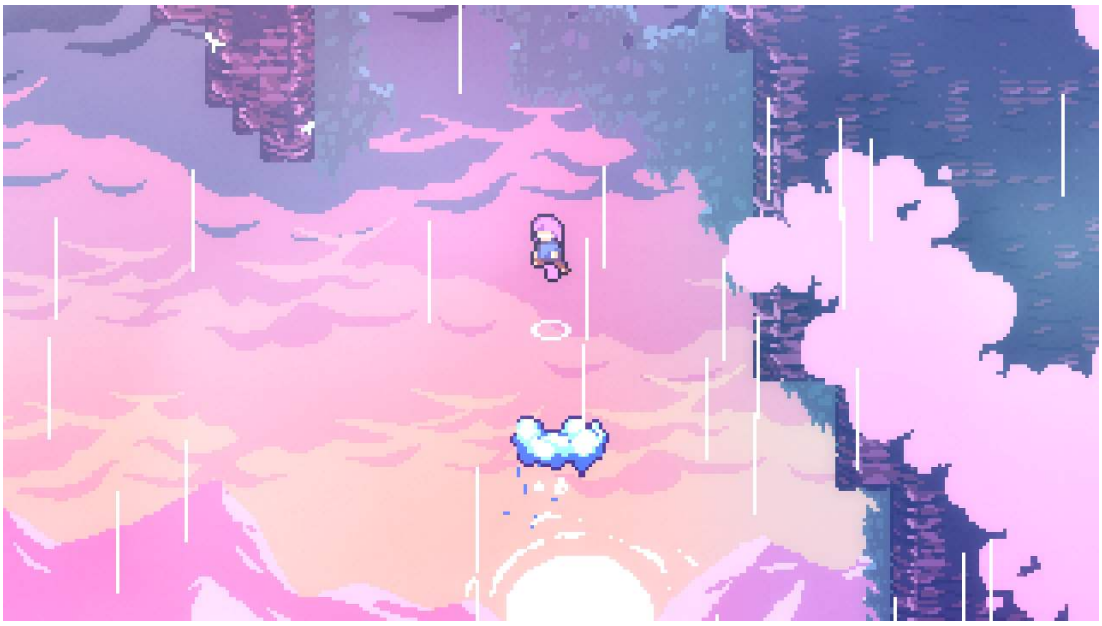
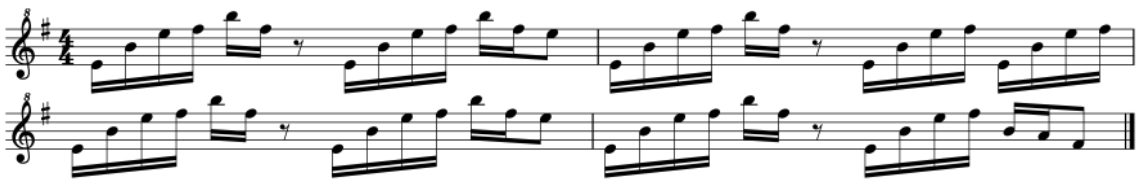


Figure 2.3: The level "The Summit: 3000 M" from *Celeste*.

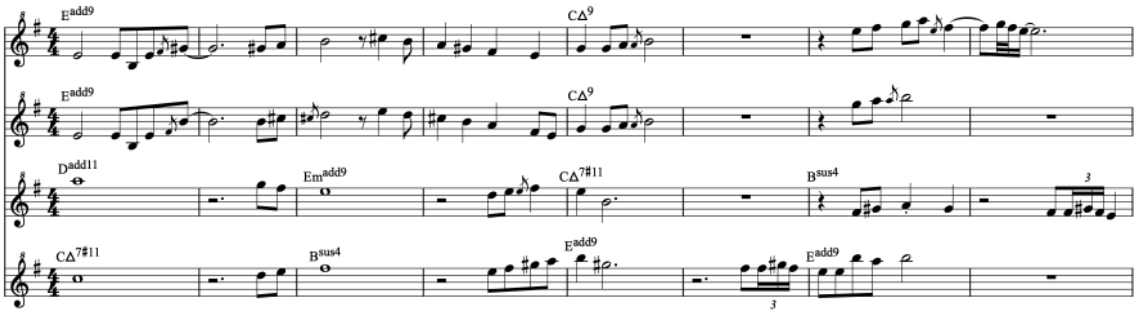
"Reach for the Summit" revolves around the primary ostinato notated in Ex. 2.2. This ostinato arpeggiates an E^{sus2} chord, tonally centring the music around E, but remaining harmonically ambiguous by omitting a third. By never resolving, the suspended second in this ostinato suggests that the environment is *always* on the brink of change, but has no "steady state" to return to. This allows the melody to fluidly shift between different modes of E, as seen in Ex. 2.3. While the track initially seems grounded in E major through the use of a G-sharp in the first bar, the fifth bar introduces a G-natural with a $C^{\Delta 9}$ chord, reintroducing modal ambiguity through the use of a chromatic mediant. By combination of the suspended ostinato and the use of the I and ♭VI chords, Raine clearly conveys a key centre around E, but does not allow that mode to rest in either minor or major for very long. As with "The Sky", this modal ambiguity has the effect of keeping the player ungrounded. While the emphasis on E in "Reach for the Summit" gives the player more to cling to than the constantly shifting tonic in "The Sky", the player is constantly springing away from this home, never resting long in one state.

One last example which makes use of suspended harmony is in *Return to Dream Land*, where the player completes the first part of the game by ascending a tower into the sky while surrounded by clouds. At one point in this journey, they find themselves traversing a land where orange-gold clouds make up the entirety of the terrain they traverse, as shown in Fig. 2.4. Accompanying this level is Jun Ishikawa's track "Dreaming of Clouds". At this point in the game, the player has played through four "worlds", each of a different theme and consisting of a number of individual stages—starting in a forest world, the player must travel through a desert, ocean, and icy mountain before ascending to the clouds. For the player playing this game for the first time, this airy world called "Nutty Noon" seems to be the ending of the game as they ascend higher into the clouds, climbing towards a grand finale. This is not the peaceful beginning sky of *TotK*, but rather a sprint to the finish line similar to *Celeste*'s "The Summit".

Ishikawa uses extended harmony—particularly a significant number of major seven chords and added ninths—in "Dreaming of Clouds". As shown in Ex. 2.4, nearly every major chord in the first section of the track has one of these two chord extensions, and nearly every minor chord has an added seventh. Similar to how a



Example 2.2: The primary ostinato in "Reach for the Summit" from *Celeste*, transcribed by Shinkai Setsuna [2018] and organised by author.

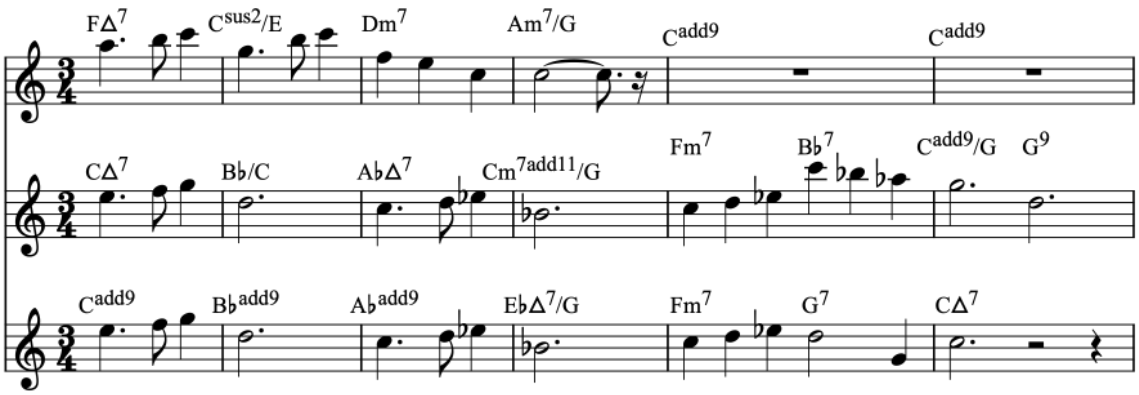


Example 2.3: The first melody of "Reach for the Summit" from *Celeste*, transcribed by Shinkai Setsuna [2018] and organised by author.

Figure 2.4: Ending segment of "Nutty Noon: Stage 3" from *Kirby's Return to Dream Land*. Screenshot accessed from playthrough by BornLosersGaming [2024].

suspended chord lacking a third creates a feeling of space by removing a feeling of groundedness, these chord extensions create a lifting sensation in the music that pushes the player away from a resting state. While "Dreaming of Clouds" stays tonally centred around C, Ishikawa also uses a significant amount of modal mixture, as seen by the prevalence of B-flat major, A-flat major, and F minor chords. This modal mixture again creates modal ambiguity, creating an ever-shifting harmonic background to represent the sky's experienced flux.

Several commonalities emerge in the chordal extensions that composers use when writing for the sky across these examples. Most striking is the frequency of the major ninth or suspended second, major seventh, and added elevenths or suspended fourths. By frequently omitting thirds, these composers remove a sense of grounding, allowing the music's mode to remain fluid, rather than fixed. For depicting an environment which itself is ever-shifting and intangible, this choice in



Example 2.4: Intro and first section to "Dreaming of Clouds" from *Kirby's Return to Dream Land*, transcribed by SQUISHY_ [2022] and organised by author.

harmony reflects a sense of atmospheric space. Through near-constant suspension, these composers hint at imminent atmospheric change, using notes that would typically resolve to a triad, then shifting to a new suspension without resolution.

The prevalent use of modal ambiguity in these examples also supports a lack of defined resting state. Both "Reach for the Summit" and "Dreaming of Clouds" make frequent use of a major I chord, but also use the ♭VI and ♭VII chords more often than the diatonic sixth and seventh chords. *TotK*'s "The Sky" shifts between many tonal centres, starting around a sense of C, but easily flowing through related modes. In the same way that suspension creates a sense of space and non-resolution within individual chords, this modal ambiguity leaves the music suspended above the tonal centre through time. This is not a firmly grounded environment, but one in constant flux. By representing ideas of space and suspension central to a perception of the sky, composers call to the player's real-world experience of the sky as a shifting environment, expanding the video game environment to enhance player investment in the fictional world.

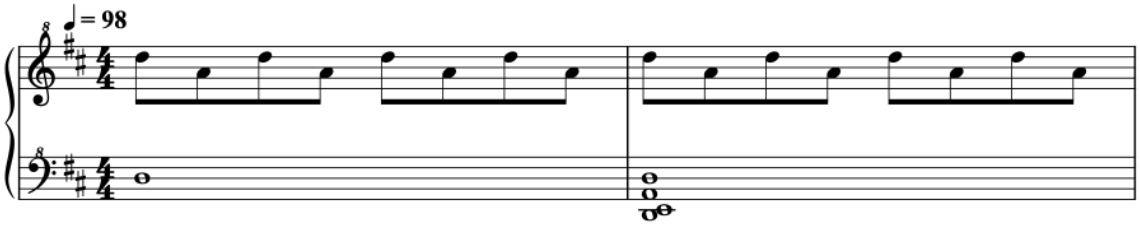
Moving Air

In games that utilise an expansive instrumentation, the instruments that composers use to write for the sky often reflect features of the wind. By giving important melodic lines to woodwinds, composers evoke the image of moving air, directly connecting the music to one physical feature of the sky. In using this instrumentation, the music engages in representation more directly: to form an image of the wind, the composers use moving air. "The Sky" presents this woodwind instrumentation most clearly. The primary instrument used in the track is a softly played alto saxophone, each chord swelling into perception, then fading out by the end of the measure. In addition to the alto saxophone, clarinets fill in the middle and lower voices, and a very faint violin plays a descant that gives the impression

of hearing overtones from the winds. While the track remains musical, the soft entrances, swells, and fades of the woodwinds feel like the brief appearances of gentle gusts of wind.

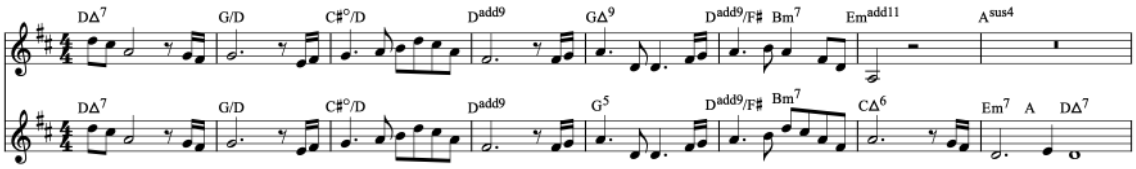
Choosing instruments that create music using the passage of air to represent the wind is not a compositional choice unique to *TotK*. In *Return to Dream Land*, the primary melody of "Dreaming of Clouds" (Ex. 2.4) is carried by a clarinet, oboe, and flute at different points throughout the track. Similarly, in *Skyward Sword*, the player begins their journey in "Skyloft", a peaceful village situated on a number of islands floating in the sky amongst the clouds. The first time this village is introduced to the player, the composers write a flute leaping between a D and an A accompanied by a guitar playing a D^{sus2} chord, as shown in Ex. 2.5. The melody shown in Ex. 2.6 is quickly introduced on an accordion while the flute calls back to the perfect fourth leaps above the melody around cadences. This track plays for all moments when the player is outdoors in Skyloft, so that being surrounded by sky is associated with a sonic sense of moving wind. By contrast, the music that plays within buildings in Skyloft typically features much more prominent pizzicato strings supporting a piccolo melody that reminds the player of the outdoors without explicitly situating them outside.

While woodwinds appear frequently in this music, however, these tracks do not foreground brass instruments, despite their similar use of the movement of air. This bias towards *wood*winds is likely explained by strong associations between brass instruments and military bands [Herbert 2017: 5] or to other intense events such as hunting fanfares [Berlioz, Strauss 1991: 259].[2] While the timbre of woodwinds such as the flute is tied to a clear perception of moving air, brass has been more often heard in concert and military bands, shifting sonic affiliations away from the sky, and towards battle. Chapter 3 will analyse a combination of these cases with the track "Colgera Battle" from *TotK*, which situates a grand battle that takes place in the sky.



Example 2.5: Opening to "Skyloft" from *The Legend of Zelda: Skyward Sword*, transcribed by Alec Weesner [2023] and organised by author.

[2] This is not to say that brass instruments are limited *only* to action, but rather that their prevalence in these musical scenes influences the perception of their timbre.



Example 2.6: The primary melody to "Skyloft" from *The Legend of Zelda: Skyward Sword*, transcribed by Alec Weesner [2023] and organised by author.

In creating a virtual environment of the sky that evokes the sensation of being outdoors, it is clear that video game composers make frequent use of woodwinds to create a sense of moving air. Using instruments that move air to create music calls to the nature of the sky, lending melody and harmony to what is normally perceived only as the sound of a gust of wind. Despite the player not hearing woodwinds as soon as they step outside in the real world, the use of this instrument group in video games immediately represents the wind, reminding the player of a primary feature of their environment. This distinction between the real world and virtual experiences of the sky is particularly interesting as it demonstrates that immersing the player is not necessarily an attempt to create a hyperrealistic sense of surroundings, but is rather an evocation of aesthetic associations with the environment that are represented through music. In this case, instrumentation invites the player to imagine the wind, using timbre to bolster a sense of the outdoors and surround the player with the sky.

Atmospheric Flow

In video games, the flowing nature of the sky is communicated through melodic structure, rhythm, and form. In video games, there are several contexts for which the weather—one of the atmospheric elements that Thornes identifies—is important to the player's sense of the environment, most notably appearing as either ever-present wind supported by a large degree of atmospheric movement, or as a lack of driving wind which creates a feeling of calm. These two categories are a useful simplification of the wider range of atmospheric possibilities that may be encountered in sky environments, which range from peaceful breezes to violent thunderstorms. This section will analyse compositional techniques that reflect the constant movement and flow present in the sky.

In "Dreaming of Clouds" and "Reach for the Summit", Ishikawa and Raine use rhythm to convey this sense of movement. "Dreaming of Clouds" has four contrasting sections that promote a persistent groove forward with a drum kit and funk bass rhythm. The kick drum on quarter notes plays against a syncopated piano to create rhythmic complexity without sacrificing a clear pulse. These rhythms are most complex in the second section of music, where the electric bass arpeggiates the

harmony by sliding between notes. In the fourth section, however, this rhythmic density largely vanishes, the pulse provided only by a triangle and the piano while the bass holds a pedal and the drums drop out. This sudden rhythmic contrast creates a sense of momentary suspension, a brief moment of calm. By alternating between highly rhythmic sections and sparser ones, Ishikawa creates rhythmic flow throughout the form, alternatingly representing moments of high atmospheric density and gaps of space.

Similarly, in "Reach for the Summit", Raine writes a highly syncopated percussion section, consisting at times of a shaker, a drum set, or synthesised percussive clicks. In writing this complicated texture, Raine does not sacrifice a sense of pulse. Each downbeat is very clear, the eighth note ostinatos and a snare or claps on even beats clearly maintaining a forward drive that propels the player through the level. In *Celeste*, it is clear that the atmosphere is quite windy, as can be seen visually by the white lines that travel across the screen in Fig. 2.3. While tracks in windy environments are not the only parts of video game music that have strong grooves, it is notable that games where there is a significant amount of wind are accompanied by high-energy music. This music indicates that large weather shifts can be emphasised through highly syncopated music with driving pulses that represent the dense movement of air. Variations in this rhythmic complexity create flow in time, evoking the constantly changing nature of the sky through form.

In contrast to the complex rhythms of these two tracks, "The Sky" is particularly interesting for its notable lack of pulse. Rather than being driven by a percussion groove or rhythmic motive, each measure fades in and out of the atmosphere at seemingly random moments. This flowing sonic atmosphere supports an environment in which, though the player has a specific goal to pursue, they are free to explore their surroundings as they wish with no time pressure. Rather than representing a constant wind, "The Sky" builds the environment of a soft breeze that briefly enters the atmosphere, noticeable only for a bare moment.

This distinct swelling and receding in "The Sky" is not entirely missing in the other three examples, most prominent with an analysis of melody and form. Melodically, "Dreaming of Clouds" promotes the rhythmic motive often heard in the first section shown in Ex. 2.4: a dotted quarter note, eighth note, and quarter note. The melody's clarity in this opening section primes the player for recognising the return of the tune later in the track as it is passed between several instruments. Between melodic sections, Ishikawa writes non-melodic, textural sections that have a more soloistic feel. By alternating between sections that clearly carry this melody and ones that are more rhythmic or textural with no distinct melody, the music flows between states, representing a shifting sky.

"Reach for the Summit" conveys a similar sense of flow through melody. The first melodic section follows a double period structure, as shown in Ex. 2.3. Notably different between the antecedent and consequent group is the sense of elongation

created by the whole notes at the beginning of the phrases in the consequent group. Whereas the antecedent group maintains the music's forward drive using eighth notes, the melody is far less active in the consequent group, the drive instead carried by a rhythmic acceleration in the strings filling inner harmonic voices. In addition to elongating melodic gestures through simplification, Raine also creates flow through dynamic swelling. The melody often powerfully introduces phrases, receding towards the end of each bar. Through this change in dynamics, Raine again creates a sense of flowing in time, shifting between strong gusts of wind and the moment of brief stillness between breezes. In addition to melodic flow, embellishing synthesisers fade in and out of the mix, arpeggiating harmony to create a rising and falling motion as they appear for the briefest moment before receding into the background.

The primary melody of "Skyloft" (Ex. 2.6) also conveys flow through shifts in character created by changes in instrumentation. In the first section, the accordion carries the melody, accompanied by a guitar and bass arpeggiating harmony, a tremolo mandolin in a high register, and a violin holding long notes for harmony. Then, a new melody is passed between a horn, the accordion, a flute, and the violin, displaying a number of instruments working together to carry a single line that does not linger long in one place. Similar to "Reach for the Summit", this dovetailing leads to dynamic flow in the melody: the beginnings of phrases powerfully introduce ideas, then fade through the rest of the line. By often passing the melody between instruments, "Skyloft" does not linger long in one place, always flowing between musical states.

This creation of flow in different sky environments is perhaps the most interesting form of musical representation for the sky, displaying a variety of techniques that together influence how this environment is perceived. Even in tracks that use constant groove to urge the player to move quickly amidst howling wind, composers use melody and form to create environmental swelling and receding. Unlike the visual artists that Thornes discusses, composers are not creating a still image of an environment meant to capture a single frame of the sky. By being a time-based medium, music can go beyond solely alluding to these fundamental features by forming a sensation of what it means to be a part of the environment. When one steps outdoors, they do not simply see the colour of the sky and the texture of the clouds, they feel the expansion of space, the small fluctuations in wind through the environment. In video games, composers use music to bolster the visual atmosphere by incorporating time-based changes that dynamically represent the sky. Changes that occur within bars, phrases, or throughout the whole piece with form evoke the sensation of being immersed in an environment of constant change, not only telling the player that they are in a sky, but communicating information about that sky's quality and character.

Caves and the Underground

Perception of the Underground

Far less present in most people's everyday lives than the sky, the cave presents an atmosphere where, rather than being surrounded by open space, the sky is fully blocked from sight by rock on all sides. In a publication identifying the general physical features of caves, geologists I. M. Morgan and W. E. Davies describe this environment as "a natural opening in the ground extending beyond the zone of light" [1991: 2], citing a number of geological processes that can lead to the formation of a cave such as ground water eroding rock over time, tunnels left by lava passages, and sand blasted by wind slowly forming crevices in the earth [3-5]. In each of these cases, a natural material slowly forms these underground caverns, which eventually develop features such as stalactites, stalagmites, and mineral deposits [8-13]. Changes here do not occur on the timescale of days, but on that of millennia.

In video games, these defining characteristics of caves are often visually depicted in environments where the player finds themselves fully underground with no trace of the sun's light. As with the sky, the role of the cave can vary significantly, with some games such as *TotK* having the player venture into the underground as part of the narrative, while other games such as *BotW* do not significantly tie caves to the story, leaving their visit optional to the player. Other games, such as *Hollow Knight*, take place almost entirely underground, featuring a wide variety of thematic caves including overgrown mossy regions and ones where magma runs through the walls. In each of these game environments, the cave presents a region separate from the outer world. There are distinct moments of entry and exit from the underground, a transition made significant by the coming and going of the sky.

Aside from the physical features of the cave, this environment creates a sense of stillness associated with the timescales for which formation changes occur. To enter a cave is to enter a space where time seems to freeze as geological processes take so long to occur as to be completely imperceptible. Cultural geographer Harriet Hawkins describes one experience of being in a cave, writing "we did pause often to reflect on the press of geology, on the feeling of being amidst millennia, smoothing with hands rocks shaped by thousands of years of running water" [2020: 8]. Through the exploration of the cave as an environment that may provide a respite from troubles in the outer world, Hawkins frames the underground as a location carrying thousands of years of geographic history, an unchanging place that exists out of the ordinary. This framing is significant in its large contrast to the sky. Whereas the sky is experienced largely through its changes, the cave is instead experienced in its stillness.

This timeless perception of the underground has contributed to a number of symbolic interpretations of the cave. In an investigation into perceptions of this environment by connection to the role of the underground in visual culture and spiritual practices, Mark A. Cheetham and Elizabeth D. Harvey describe the cave as an origin source, writing that caves "are imagined as a record of an originary moment in human creativity" [2002: 105]. Since caves are not a typical part of everyday life, perception of this environment often leans towards this symbolic imagery rather than recurring physical experiences. The authors provide one example of this imagery, writing abstractly that "artists and theorists" reproduce caves as "projections of inspiration or of the mind itself", existing "between interior and exterior, between materiality and transcendence, between the seen and the unseen" [106]. This description of where the cave "exists" demonstrates that perception of this environment moves beyond simply the recall of physical features that define a cave. The authors frame the underground as a liminal space that acts as a transition between different modes of thought, not itself defined by its physicality, but more understood through its symbolic meanings. As Hawkins writes, "The underground has long been a site to which humanity turns – intellectually, imaginatively and literally – when its ways of life are under threat" [2020: 16]. In this reading, the cave is an environment of respite, a calm region that serves as an escape from the world when needed. Combining these perceptions of the cave's symbolic interpretations, this environment becomes an ancient source of origin, a respite from the world, and a transition between states of consciousness. This is an environment that, despite having physical presence, is conceived of more through the abstract impressions it creates rather than solely by the recollection of its material details.

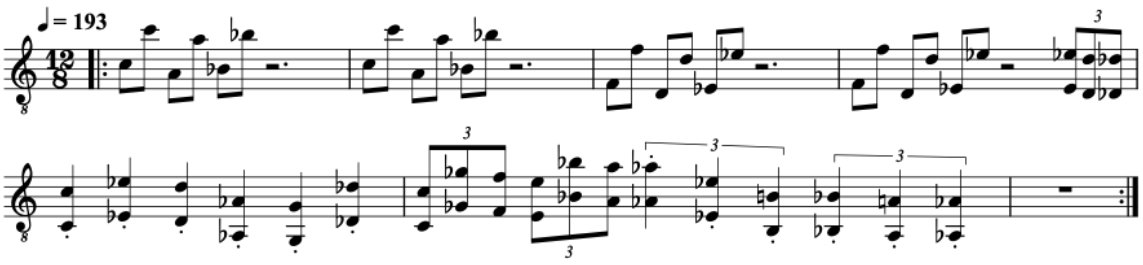
In addition to philosophical consideration of how the cave as a space is perceived, several psychologists have investigated the physiological and psychological effects of being inside a cave. These studies were conducted with the intention of using the results to make predictions about human response in space and aerospace conditions, identifying several psychological effects correlated with extended isolation in underground caves. Amongst the findings was an observed dilation of time perception caused by the darkness of the cave environment impacting circadian rhythms [Zuccarelli, Galasso, Turner, Coffey, Bessone, and Strapazzon 2019: 14]. While players cannot be expected to experience the same phenomenon by sitting behind a screen, it is noteworthy that this study found that prolonged darkness leads to a disruption of natural human cycles. This darkness is a key component of the cave environment, characterising the unknown all around and the distortion of the familiar created by being surrounded on all sides by shadow with no references to the passage of time in the outer world. While their finding that being inside a cave disrupts the body's natural cycles cannot be directly applied to the experience

of a cave in a game, this result is significant in demonstrating the strangeness intrinsic to a perception of this environment. While the sky is familiar, the cave is a space of unknowns, an environment that exists outside the normal.

In a similar investigation into using phenomenological experiences of caves as an analogue for spaceflight, neurologists and psychologists identify a number of sensory inputs that are warped by the structure of the cave. They write that "many cave environments have continuous background noise from wind and water movement", and that "lighting in caves is produced by headlamps, which create partial, focal illumination of complex three-dimensional spaces and complicates movement and navigation" [Mogilever, Zuccarelli, Burles, Iaria, Strapazzon, Bessone, Coffey 2018: 9]. In games, lighting does not come from headlamps, but rather from a number of different sources that can either be diegetic (such as a torch on a wall), or non-diegetic (such as a baseline light level coded into the game engine that prevents the screen from being pitch black, even if the torch is removed). These light sources can similarly warp the visuals displayed on screen, shrouding the atmosphere in darkness while leaving the player partially illuminated at the centre of the screen. The study further identifies the atmospheric contrast this presents when compared to the outdoors: whereas outdoor environments are well-lit by the sun, caves subvert familiar interactions with light through the use of many light sources that distort visual perception of space. In discussing the sonic features of the cave, the authors specifically describe these sounds as "background noise", situating the sonic atmosphere as a collection of peripheral elements. Whereas sources of sound are often visible when outdoors (leaves moved by the wind visibly tremble, a fox leaping through a bush creates a distinct rustle), the authors provide examples of background noises that are likely not visible or tangible (the distant echo of wind or water), further differentiating the cave environment from that of the outdoors and indicating that in addition to a visual distortion of space, the cave also presents a sonic distortion of space.

As composers write for cave environments, they may write musical features that evoke this disorienting nature of being underground. Using musical representation, they at once convey the environmental contrast between the underground and the outdoors and communicate the perceived qualities of the cave. The music in this environment situates the player deep underground, distorting light and sound while creating a sense of stillness. The remainder of this chapter will analyse how composers write music meant to evoke these qualities of the cave in the games *Super Mario Bros.*, *BotW*, *Silksong*, and *Ori and the Blind Forest* (*Blind Forest*) [2015].

One of the most well-known underground themes comes from the *Super Mario Bros.* game series by Nintendo, where the player, playing as "Mario", must traverse the "Mushroom Kingdom", dodging and defeating enemies along the way. In many 2D Mario games, the player is situated above ground in the first level, and must venture underground in the second, upon which they hear the "Underground



Example 2.7: Mario "Underground Theme" by Koji Kondo, transcribed by Ashanti Mills [VGLeadSheets] and organised by author.

Theme" by Koji Kondo, transcribed in Ex. 2.7. The original *Super Mario Bros.* does not fall under the category of games that target building immersivity due to its greater similarity to an arcade game than to a narrative game. A later game in the same series, *New Super Mario Bros. U* [2012], does however fall under this category of immersive narrative games, and composers Shiho Fujii and Mahito Yokota reuse the "Underground Theme" as a motive upon which to write a new cave theme with expanded harmony and rhythm. This section will primarily analyse the modified track written for *New Super Mario Bros. U*, but it is notable that a cave theme written in 1985 has persisted across a number of games and decades to represent the Mario underground.[3] In *BotW*, caves do not make up a primary component of the gameplay, but are scattered across the world for players to find and explore. In both *Silksong* and *Blind Forest*, the player interacts with a variety of caves throughout their journey through the world, passing through different thematic manifestations of the underground. This section primarily analyses stone-based caverns in these games (as opposed to volcanic or crystalline caves) to remain focused on an image of the underground independent of other elemental influences.

A Transition from the Outer World

A central component to the perception of the cave is the transition that marks a substantial shift in atmosphere from the above-ground. Moving from a region with open access to the sky to one of warped sight and sound where the player is fully enclosed by stone creates a significant distortion of space. To emphasise this shift in surroundings, video game composers often employ changes of register, tempo, and instrumental tone to create contrast with and mute the outside world. For example, the "Underground Theme" that plays in the second level of *New Super Mario Bros. U*—called "Tilted Tunnel" and shown on the right in Fig. 2.5—presents a significant deviation from what is heard right before the cave theme. Directly

[3] Koji Kondo also drew upon pre-existing music when writing themes for Nintendo games, in particular taking inspiration from the track "Let's Not Talk About It" [Friendship 1979] for the Mario "Underground Theme".

before entering the underground, the player is running through the grassy terrain shown on the left of Fig. 2.5 to the playful tune "Acorn Plains", which plays at 110 BPM with a funk bass, melody carried by a synth, and short vocal accents. Accompanying the track is a constant high-pitched tambourine playing sixteenth notes, urging the player to frolic through the level. As soon as they enter a pipe and descend to the underground, however, the Mario "Underground Theme" plays, retaining a similar instrumentation, but shifting to a much more chromatic melody and a slightly slower tempo of 98 BPM. The constant, driving tambourine is gone, replaced by a syncopated, dark shaker that creates a sense of creeping, rather than running as above ground.

In this Mario game, the cave theme is less representative of the cave in isolation, and more useful for analysing how music can create immediate contrast in environment. When entering a cave, one experiences a distortion of visual and sonic space [Mogilever, Zuccarelli, Burles, Iaria, Strapazzon, Bessone, Coffey 2018: 9], emulated in this track by the increased use of syncopation and embellishing material in "Underground Theme" as compared to "Acorn Plains". As the player progresses underground, the melody is passed to the bass, and high frequencies are reserved only for textural elements. By this point, the player has built a sense of what it means to be in the outer world, and this track sonically disrupts that sense. Unlike transitions between two outdoor environments, this is one that significantly warps the world, closing off the sky and marking a substantial change from the ordinary.

For the game composer, this indicates that shifts in atmosphere are an important part of conveying qualities of an environment. When a player moves between two distinct spaces such as the Mario above and underground, the contrast between sonic environments can indicate significant environmental change. This sonic contrast quickly sets the groundwork for more specific representation of the cave. Other games have more representationally evoked the cave through the use of audio mixing and production tools to create space and echoes, and a musical sense of timelessness crafted by slow harmonic rhythm and instrumentation.

Figure 2.5: The level "Tilted Tunnel" from *New Super Mario Bros. U*. Screenshot accessed from playthrough by MaverickPhoenix [2021]. On the left is the above-ground section of the level, while the right shows the cave part of the level.

Echoes of Space

One quality of video game music which I have so far implicitly relied upon is that all video game music is heard as a mixed and mastered recording of real instruments or virtual instrument samples, rather than as, for example, a live string section playing in the same room as the player.[4] Unlike a concert hall, where the sound is extremely dependent on the acoustics of the room, video game composers and sound designers have a large degree of control over exactly what the player hears, moderated only by how the player listens to the game's audio (with or without headphones, for instance). Many times, this mix plays a lesser role in what the player hears than the music itself, but in some cases such as the cave, mixing decisions become more perceptible.

The most noticeable mixing tool used in the cave environment is the addition of reverb to emulate the echoes one would hear from making sound in a cave. This creates a different sense of space than that of the sky. Whereas the previous section identified the sky as an open, shifting environment with no steady state, the cave is nearly the opposite. The underground instead blends earth and darkness, where at once, one experiences the millennia of unchanging history and origin beneath their feet [Cheetham, Harvey 2002: 105] and is surrounded by isolating darkness that seems to extend to infinity [Zuccarelli, Galasso, Turner, Coffey, Bessone, Strapazzon 2019: 1]. Hidden in these shadowy depths are unseen sound sources that echo through the caverns (dripping water, falling stones), every sound amplified by the harsh stone walls. By using reverb when mixing audio, composers can sonically recreate this expansion of sound and space, mimicking the auditory environment of the cave. In *New Super Mario Bros. U*, for example, Fujii and Yokota arrange the "Underground Theme" to create this broadening of atmosphere. A number of embellishing elements are added into the mix, including small echoes of the melody on different instruments, triangle taps, accentual chromatic runs, and held tones that maintain the music's atonality. Meanwhile, the melody remains in a low register throughout the entire track. The mix in this re-arrangement features an increased level of reverb, heard most notably on the snare and the embellishing musical elements. This reverb brings out the textural elements by hinting at distant echoes, creating a widening of space representative of the cave that mimics the environment's distorted sound.

The track "Down the Moon Grotto" by Gareth Coker from *Blind Forest* displays a similar range of embellishing atmospheric material in non-melodic parts of the score. In this game, the player must travel through the game world "Nibel" to restore balance and save a dying forest. At one point in the game, the player explores a region called the "Moon Grotto", shown in Fig. 2.6. This environment presents a

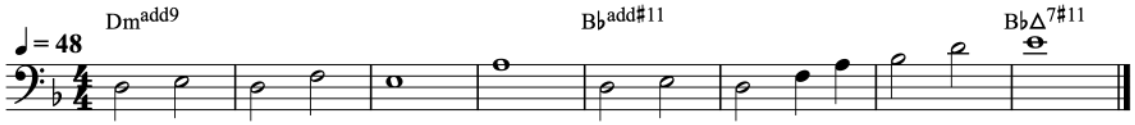
[4] One notable exception is a number of groups playing live music accompaniment to the game *Mario Kart*, such as "Marioke" [Marioke Live 2025] and "100getz" [Grace 2024].

dark cave of blue and green tones where the player is often fully surrounded by rock. There are many glowing plants and fantastical vines growing throughout the region, maintaining an environmental sense of life. As they progress through this environment, the player is often faced with dangers such as spikes (shown at the top of Fig. 2.6) or enemies (the purple "spine slug" in the bottom left of Fig. 2.6). In these passages, Coker creates atmosphere through held choral tones and echoes of melodic motives. A tambourine accompanies a high-reverb steel drum line that leaps between A and E, maintaining both a sense of rhythm and a drone on A minor while notably lacking a melody in many sections. In such non-melodic parts of the music, Coker alternates between writing cello and bass pizzicato and times when the low strings fully drop out. Featuring primarily textural musical material, these sections invite the player to listen for distant echoes, rather than prominent melodies. Mixed with the reverb on the tambourine and steel drum, this track creates a sense of a cavernous space that extends far beyond sight where these distant sound sources may exist.

Expanding on this sense of space, Christopher Larkin's score to *Silksong* uses instrumental range to create the broader sense of the cave. Over the course of the game, the player must ascend from deep in underground caves to the peak of a grand citadel. These beginning caverns vary greatly, with some overgrown and lush with moss, while others, such as "The Marrow", are rocky and full of shadow as shown in Fig. 2.7. A large part of The Marrow fully surrounds the player by stone and shadow as they explore confining caves while fighting enemies and avoiding spikes (bottom of Fig. 2.7). In more open spaces of this region, the player sees

Figure 2.6: The "Moon Grotto" from *Ori and the Blind Forest*.

hints of magma that indicate that they are deep underground and foreshadow a later, fire-based region of the game called "Deep Docks". Creating a resonant cave space when composing for "The Marrow", Larkin chooses an instrumentation that allows for exploration of a broad sonic range. Low brass plays root notes at the bottom of their range, a gravelly timbre upon which choral voices fill harmonic inner voices and a high solo violin carries the melody. On top of the sustained harmonic foundation that plays primarily i, V, and ♭VI chords (shown in Ex. 2.8), the melody soon shifts to a viola, narrowing the upper range of the track. By keeping a



Example 2.8: Introduction to "The Marrow" from *Hollow Knight: Silksong*, transcribed by MuseScore arrangers [2025] and organised by author.

constant foundation in the lower voices and shifting the upper ranges of the music, Larkin directly evokes the image of the cave, that underground region where aeons of earth stand below the player, yet the ceiling can be either far off and open or close and confining. This instrumental range supports the narrative by reminding the player that they are at the bottom of their journey upwards, and that a long climb awaits. Contributing to a resonant atmosphere, many instruments and synthesisers hold a drone as the melody unfolds. Sometimes, this drone is held in the brass, other times in the choir, and the entrance of new drones always briefly overlaps with

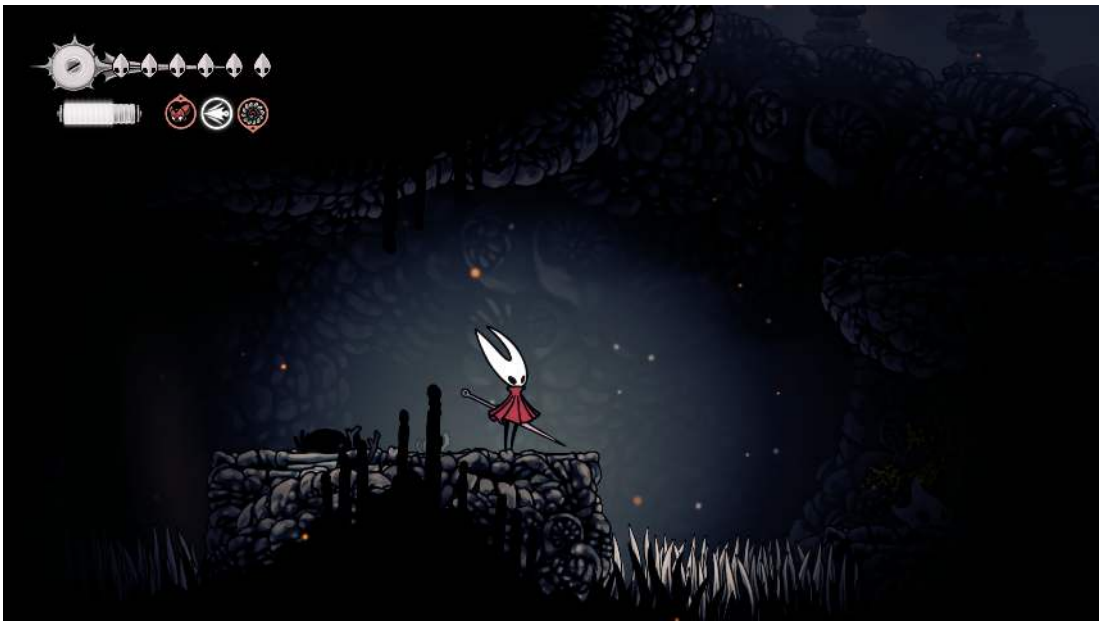


Figure 2.7: "The Marrow" from *Hollow Knight: Silksong*.

the fading of old ones, creating a layering effect that diminishes the importance of individual instruments in favour of an overall sonic atmosphere. While the melody remains the focus, the rest of the mix is saturated with reverberating echoes and sonic information from a variety of sources, building the foundation and history of the cave while alluding to a sense of grandeur and space.

Composers use reverb, musical embellishments, and range to sonically imitate the soundscape that one experiences while inside a cave. The prevalence of reverb in these tracks evokes the distant echoes of the environment, non-melodic musical accents saturating the atmosphere to create complexity that leads to a warping of sonic space. As with the use of woodwinds in sky environments, this mixing calls to the player's literacy of what it is to be in a cave, surrounded by distant echoes and extending darkness. Low drones and pedals contribute to a deeper perception of the cave, alluding to centuries of history embedded in rock below the player and situating them not only in a two-dimensional image depicted on the screen, but in a broader world surrounded by earth, the sky hidden from view.

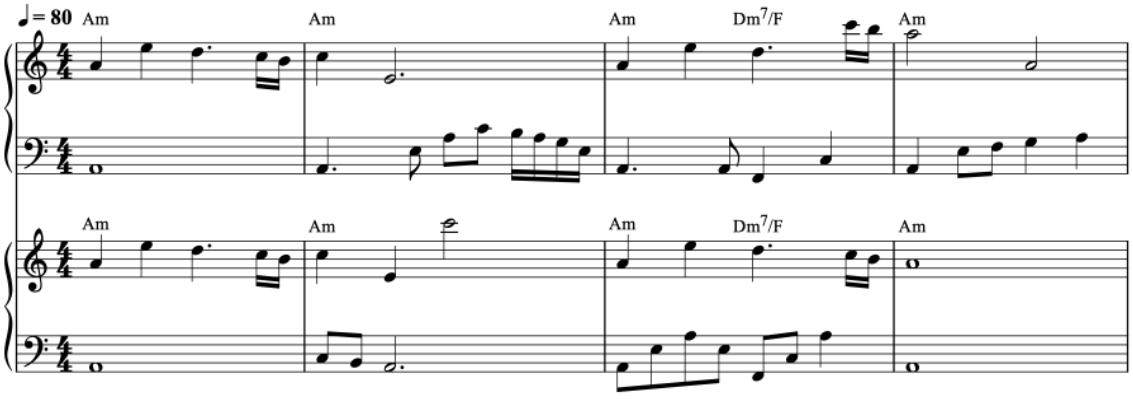
Evoking Timelessness

As identified by Hawkins and psychologists investigating human response to caves, the underground represents an ancient environment of slow changes, where often, the only sensory input is a "continuous" background noise. Composers use slow tempi, harmonic rhythm, or instrumentation to create this sense of stillness and lack of change over time. For instance, Larkin's theme to "The Marrow" unfolds slowly, both melodically and harmonically. The first thematic material begins at the start of the track with a parallel period, as transcribed in Ex. 2.8. While the melody begins on the i chord in the antecedent phrase, the same starting notes are harmonised with the ♭VI chord in the consequent phrase, hinting at progression while repeating thematic material. Noteworthy about this theme is its slow tempo of about 48 BPM. While strings and low percussion make it clear that there is a pulse to the music, the theme takes about forty seconds to play the eight bars notated in Ex. 2.8, creating long suspensions without significant harmonic movement. By using such a tempo, Larkin creates a sense of repose, where the player is encouraged to proceed through this ancient atmosphere without rush. Through slow harmonic rhythm and single melodic lines carried by either a solo violin or choral voices, Larkin evokes a sense of stasis and history akin to what one might feel upon entering a cemetery: this is not a region to sprint through, but rather one to respect for its stillness and permanence.

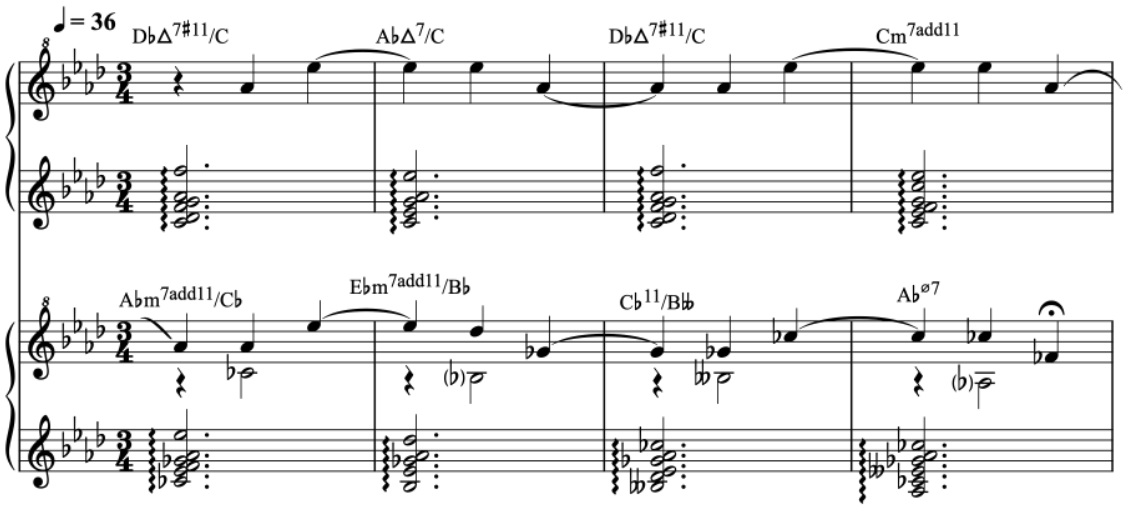
Creating a similar sense of atmospheric stillness through harmony, "Down the Moon Grotto" remains entirely diatonic, grounding the music in A minor. The melody is heard on a clarinet, piano, and flute, and is shown in Ex. 2.9 with a reduction of the pizzicato strings that provide harmony shown below the melody.

This theme consists of two similar phrases repeating a melodic motive (the sequence of A–E–D) at the beginning of each subphrase. Harmonically, nearly every bar remains on the tonic, with only a brief shift to the iv^6_5 chord in the second half of the third measure of each phrase. This lack of harmonic movement again creates a sense of stillness—despite the melody's movement and the textural embellishments, this environment is not one attributed with a great deal of flux. Rather, the repeating motives in the melody and slow harmonic rhythm indicate that changes take time to unfold; any shifts in the atmosphere are imperceptible.

BotW similarly uses a slow tempo (quarter note 36, as shown in Ex. 2.10) to evoke the cave shown in Fig. 2.8 through the game's "Cave Theme". In the "Hebra Great Skeleton Cave", the player finds themselves in a very sparse cave environment with few features other than the walls, ceiling, and occasional boulder. This environment creates atmosphere through the use of fog which limits visibility (as can be seen by the greenish tint in Fig. 2.8) and the blue-grey colour of the stone walls that alludes to the frigidity of this cave, which is located beneath a snowy mountain. The "Cave Theme" has a steady pulse that is interrupted only by a fermata on the final note of each phrase: between a piano very clearly marking downbeats and a melody synth playing beats two and three, this theme clearly outlines a simple triple metre with few shifts in rhythm. No single note is held for longer than three beats, leading to a sense of fading echoes rather than suspension, as if the sound was made once, lasted for a moment in the space, then dissipated. Whereas "The Marrow" and "Down the Moon Grotto" use harmonic suspension to convey lack of change, the "Cave Theme" uses this rhythmic regularity to create a sense of unchanging familiarity. The repetition of a piano arpeggiating chords on each downbeat signals a lack of change, calling to the cave's timelessness. By only playing on beats two and three, the primary synth adds to this regularity, representing Hawkins' interpretation of the cave as an ancient site that has existed unchanging for millennia. This theme



Example 2.9: The main melody to "Down the Moon Grotto" from *Ori and the Blind Forest* as played by a piano.



Example 2.10: *The Legend of Zelda: Breath of the Wild* "Cave Theme", transcribed by L Marisson [2020] and organised by author.

Figure 2.8: The "Hebra Great Skeleton Cave" from *The Legend of Zelda: Breath of the Wild*.

becomes an echo of the cave's static nature, representing the grotto as a space of respite and comfort where, no matter what complexity occurs in the outer world, the environment encased by stone remains a constant.

Through either a slow tempo, slow harmonic rhythm, or a combination of the two, these cave themes sonically represent the slowly shifting nature of the cave. By repeating rhythmic or melodic ideas such as in the *BotW* "Cave Theme", composers represent the ancient and continuous sensations that Hawkins, Cheetham, Harvey, and psychologists associate with the cave, situating the player within an environment where change happens on timescales of thousands of years, rather than seconds or minutes. The cave becomes a warping of the exterior world, one that exists as a brief, dark gap between millennia of history and confining stone walls that threaten to suffocate. This is an environment where very little changes, one where the smallest sound will be heard back as an echo. By evoking these qualities of the cave environment, composers and sound designers place the player in a foreign location not typically experienced in everyday life that creates a damping of all that is familiar.

Conclusions

Using music to represent an idea appears across a variety of genres and styles, conveying images or stories without the use of language. By utilising musical representation, composers for narrative video games craft sonic environments that complement the ones seen on the screen and constructed in players' imaginations. This music differs across environments, using compositional techniques such as form, harmonic rhythm, and instrumentation to appeal to the player's literacy and create a world beyond that depicted by the visuals. Analysing musical representation in these environments contributes to a greater understanding of how music can create a sense of the world within which players ultimately become invested and immersed, describing musical techniques composers might utilise to craft imagined worlds.

In sky environments, composers can create a sensation of the wind by building a sonic sense of space, giving melodic lines to woodwinds, and by conveying a sense of flow through melody and form. The scores to these video game skies create this sense of space through modal and harmonic ambiguity, often incorporating suspended chords without thirds and adding extensions such as major sevenths, ninths, and elevenths or raised fourths. This modal ambiguity often comes from a large degree of modal mixture, alluding to the idea that the sky has no rest-state, but is instead experienced through its ever-changing nature. Woodwinds remind the player of moving air, clearly representing the winds that one would feel from stepping outside. This flow of wind is supported by oscillations in complexity of melody and form, the music in this environment flowing between moments

of density and ones of space. By utilising these musical elements, composers can contribute to a greater sense of space than that seen only in the visuals, immersing the player in a wider, open sky.

As the player travels underground to the caves, they find themselves closed off from that open sky, surrounded by millennia of unchanging stone. Composers utilise drastic changes in tone and range to represent this transition to the underground, using mixing techniques, tempo, harmonic rhythm, and range to convey the timeless sensation of being deep in a cave. Incorporating mixing tools such as reverb, composers can imitate the sonic atmosphere one would experience from being in a confining space surrounded by hard stone, creating the impression of echoes travelling through the environment around the player. Central to the perception of the cave is its static nature, reflected sonically by extended drones on a single chord and slowly moving melodies. Through these musical tools, composers create a warping of space and time, immersing the player in an environment not only characterised by being surrounded by rock deep underground, but also by its impact on the senses as the familiar world above vanishes.

While this chapter focused on two specific environments in video games, narrative games feature many more regions, such as those lush with forest undergrowth, frosty with ice, or roaring with magma. Each of these regions has its own sonic associations, and there is great value to be found in analysing the many other environments that appear across games. In particular, the elements that I have identified here as being common to the sky and the cave may not be entirely unique to these atmospheres: a dense forest that blocks out the sky, for instance, may utilise features of enclosure that are found in the isolation of the cave. Studying more of these extreme, fantastical regions depicted in games would further an understanding of how composers perceive the natural world, and how music can translate that perception into shared art.

Musical representation of the environment provides composers with an effective way of enhancing the player's sense of the world, but it is not the only musical tool available to composers that contributes to immersivity. Essential to player immersion is the game connecting with the player through the creation of affective ties. Aside from composing music that builds investment by situating the player within the game world, composers also write experiential music that gives the player a purpose within that world, as will be investigated in the following chapter. This purpose leads to a deeper level of player immersion, where the player has now built emotional ties to the world, characters, and story, and finds themselves fully transported into the fantasy environments.

3 | Experiential Music

While representing the environment is essential for creating the world within which the player will be immersed, a player does not simply exist passively within various regions of a game. As discussed in the previous chapter, musical representation of the environment enhances spatial perception by conveying qualities of the environment not derived from visuals alone. This type of representation forms the groundwork for the player to then engage in a meaningful experience within the game. These experiences are created by collections of phenomenological events consisting of kinetic components (what the player is physically doing) and affective components (the player's response to the ongoing action). The term "experience" can describe the player's interaction with the game at a variety of timescales including throughout the game as a whole or in shorter levels. For early arcade games, these levels were clearly defined by pauses in the gameplay and text that appeared on-screen such as "Level 1" and "Level 2", forming distinct experiential segments. By contrast, many recent narrative games feature large open worlds where the player may not follow a linear progression, and the boundary between levels and distinct experiences is blurred. I will use the term level to describe a segment of a game where the player remains in a similar environment while pursuing a particular quest. These quests can either follow the game's narrative by defining goal-based segments that the player *must* complete, or can be "side quests", optional explorations that the player can choose to complete. Levels form the core experience of the narrative in a video game, describing not only what is physically in the game, but what the player is *doing*: how they are playing the game.

The player creates experiences by performing an active role in progressing the game's story. This progression can take many forms including exploring different environments, fighting enemies, soaring through the sky, and so on. The types of experiences found throughout a game are limited only by the game developers' imagination, and are not necessarily tied to particular environments. In a video game, one can just as well run on top of a cloud or run through a cave, neither environment being *necessary* for the experience of running to take place. Sometimes, however, the experience *is* linked to the environment, such as sailing in the sea or soaring through the sky. This chapter will focus on experiences without environmental links in order to more precisely analyse features of the experience,

rather than features of the environment. By forming an experience, narrative video games deepen the player's presence in the imagined world, boosting immersivity by giving the player a role in the story. Music representing an experience is therefore a more abstract form of musical representation than representation of the environment. Whereas environmental representation can draw upon perceived characteristics of the environment sensed independent of experience, experiential music attempts to directly connect the player to their experience of the narrative. As the player begins to play an active role in the environment in pursuit of a goal, they become immersed in both the environment and in the experience, moving beyond investment to build affective ties between themselves and the story: the events on-screen are not solely witnessed as in a film, but are actively partaken in and empathised with.

Music plays a vital role in realising the player's purpose in these experiences, lending credibility to the affective ties created by the gameplay. In building this connection, music more deeply links the player to their game character. Rather than the avatar being simply a collection of pixels to be controlled by moving a joystick, a part of the player becomes the character on screen as they experience the same excitement, fear, and sorrow promoted by the narrative. As Isabella van Elferen describes, "Affect is a vital and inevitable aspect of any musical experience: listening to music cannot but stir emotions, connotations or identifications" [2016: 35]. For the deepest level of immersion, these identifications between the player and game reinforce the player's role in shaping the narrative and the resulting emotional impact returned to the player. When this music appropriately enhances the narrative experience, Michiel Kamp describes the result as an "aesthetic experience". As he writes, "The random onset of the music turns the mundane ... activity of building shelter in *Minecraft* into a situation, an experience with qualities like 'mundaneness' that the music reflects and maps onto; the everyday becomes a moment of reflection on everydayness" [2024: 68]. While the *type* of experience remains the same, when the music appropriately reflects the experience, the result is a period of greater immersion in the moment where even a "mundane" experience becomes a time worth noting. Music brings greater focus to the game, moving beyond reflecting the events on-screen to directly immersing the player in their role as an influencer of those events, shifting gameplay from manipulation of an avatar to identification with that avatar.

As with environmental representation, the music's ability to connect the player to their avatar's experiences is limited by player literacy in video game music. Melanie Fritsch describes how the player develops literacy by learning and recognising musical signals associated with ludic gameplay experiences [2016]. For instance, a sonic cue that plays every time the player dies (such as the chromatic "Death" sequence in *Kirby's Return to Dream Land* (*Return to Dream Land*)) will quickly become associated with restarting a segment of the game. Much like

how composers draw upon established musical traditions to appeal to player literacy in representing the environment, composers can also draw on literacy in encountering music accompanying experiences to convey information about the quality of that experience. Drawing upon this literacy allows composers to quickly convey specific information about the gameplay experience, deepening immersion by further connecting the player with the story [2016].

In this chapter, I will discuss three stages of experience that appear often in the levels of narrative video games: the onset of adventure, the experience of progression, and facing conflict. These experiences describe the beginning, middle, and end of the player's journey through a level. Narrative games often include times of exploration such as the beginning of the game when the player first embarks on their adventure into the wider game world. These are the player's first interactions with an unfamiliar game, a time when each encounter is new, and they are encouraged to explore the world freely. During the adventure, the player experiences a combination of focus towards an eventual destination while remaining uncertain about the path that their journey will take, this level consisting of a combination of a known "quest" and unknowable obstacles. As they progress through the game, players will often face conflict as enemies stand in their path. The most extreme form of this conflict is the "boss battle", where the player engages in a difficult fight against a very powerful enemy. These battles typically mark significant cadences in the narrative where the player must overcome a challenging gauntlet to progress, presenting players with a challenge of sustained tension which requires focus and skill to succeed in.

The adventure and the boss battle are essential parts of experiencing any video game level. When exploring at the beginning of a game, the player must develop mechanical skills and knowledge of the game's mechanics to progress. Faced with an uncertain future, the only familiarity becomes their growing comfortability with how their on-screen character moves. As the player approaches a story cadence, however, they grow by overcoming challenges, and very little uncertainty remains: by the end, they have already witnessed the entire journey. The boss battle creates an identifiable "ending" to each level, a moment in the game where the player's knowledge and skills are tested in a difficult experience that could, in some cases, take hours to surpass. By analysing music that drives the adventure and this climactic conflict, this chapter examines two events that occur at opposing parts of the video game narrative, investigating what compositional techniques enhance the player's affective response and deepen immersion during these experiences.

While here I focus on how composers craft experiences in video games, music's ties to how we experience the world are not solely limited to games. I hope that this chapter will serve as a useful tool for understanding how music turns images and moments into dynamic experiences. Kamp's description of music creating "aesthetic experiences" extends beyond video games to the music listened to in

everyday life. Investigating music that accompanies video game experiences invites us to think on how our choices of music can contribute to increased immersion both in video games and in our lives more broadly: how might music create a greater sense of presence in the everyday life, just as it does in narrative video games?

Adventuring

The Experience of Adventure

When one becomes immersed in a narrative video game, they are transported from the real world into a fiction in which an adventure takes place. This adventure marks a break from the ordinary, and can range from simply taking care of a farm to embarking on a grand quest to save the world. As the player engages with the video game, they are given the opportunity to become the hero of a fantasy world, experiencing a journey which could be impossible in real life. Writing on the phenomenology of this engagement, Professor of Digital Media Melanie Swalwell describes how the player becomes a part of this adventure, projecting themself "into the games space and responding to its movements, moving with it" [2011: 3]. In narrative video games, a player does not simply bear witness to an adventure unfolding, but takes active part in that exploration and journey, becoming the character that moves through the game.

Philosopher Simon Gusman identifies the general characteristics of adventure through an analysis of theories by Georg Simmel and Vladimir Jankélévitch that highlight the importance of this experience's beginning, middle, and end. From Simmel's perspective, the most distinct quality of an adventure occurs at the start of the journey, which creates a discontinuity from the everyday life. Simmel proposes that this "everyday" consists of a "coherent chain of events" [Gusman 2023: 3] which is disrupted at the onset of adventure: this experience is primarily defined not by its specific qualities, but by its unusuality. Due to this fixed period of disruption, adventures become experiences with "strictly defined boundaries" in time [3]. In particular, embarking on an adventure has a distinct starting point, a time of trepidation where the adventurer leaves behind the familiar to explore the unknown. To describe the ending of the adventure, Simmel identifies that these journeys are goal-focused, framing this experience as one with a specific finish in mind. For instance, the experience of climbing a mountain is focused on the goal of reaching the peak. This is a goal that persists throughout adventuring, always urging the player onwards and promoting constant movement.

While many adventures *are* framed around their end goals, however, the destination does not fully describe the journey. Writing on the experience of this journey, Jankélévitch proposes a less goal-focused view of the adventure, emphasising instead the aspect of "anticipation" central to the adventuring experience [Gus-

man 2023: 12]. Particularly relevant to the adventures encountered in video games is the indeterminate nature of the future. One may set off to climb a mountain knowing that their goal is to reach the peak while possibly having only a vague idea of the specifics that their adventure will take. They may know the general route, but have no way to predict each boulder that must be traversed, each loose pebble waiting to tumble down the slope. In a game, the player may similarly know that they must reach a certain location (such as a village or castle), but are typically unaware of the encounters that will lead them to that destination. Gusman quotes that "Jankélévitch stresses the fact that adventure embodies both certainty and uncertainty. This ambiguity is the most fundamental aspect of adventure (Jankélévitch 1963, 10–11). The future is ambiguous, because we do know that it will happen, but do not know what is going to happen" [2023: 12]. These quests are not undertaken meaninglessly, but rather carry a combination of uncertainty, excitement, fear, and freedom. To leave that which is familiar is invigorating, and to embark on an adventure in a video game means exploring a world where everything is new and unfamiliar. This unknown may initially seem to induce trepidation or fear, but philosopher Simon Perrier proposes that adventures are enticing *because* of their unknowability. He writes that adventures are "desirable even if we do not really know what to expect, desirable precisely because we do not know" [2018: 48].[1] In other words, the attribute of an adventure that makes the quest exciting is not only the break from the familiar and the everyday, but the sense of unknown induced by exploring an unpredictable future. This experience starts with a break from the ordinary, is guided by the certainty of the destination (or at least, a sense that it is certain), and is characterised by an uncertainty in the manifestation of the journey, a strange blend of emotions that captures both eagerness and trepidation.

This section will analyse the experience of adventuring and exploring across four video games that feature a musical shift at narrative moments where the player has just gained access to a new way to adventure. For the games *Hollow Knight: Silksong* (*Silksong*) and *Ori and the Blind Forest* (*Blind Forest*), I will analyse the music that accompanies the player's first moment of exploration in the narrative. These tracks support not just the player's adventure into a new region, but into the entire game, displaying a time when *every* aspect of the game is new and unfamiliar. In *Ori and the Will of the Wisps* (*Will of the Wisps*), the player learns a new ability called "Bash" early in the game that expands their ability to traverse terrain and move quickly through the world. As they begin to experiment with this new way of exploring the world, the track "Dashing and Bashing" plays, urging experimentation with this new skill. Last, in *The Legend of Zelda: Breath of the Wild* (*BotW*), any time the player rides a horse, they gallop along to "Riding - Day", a quick piano tune that

[1] Translated from French: "désirable même si nous ne savons pas vraiment ce que nous en attendons, désirable parce que nous ne le savons pas" [2018: 48].

urges movement and exploration. Throughout these tracks, movement is conveyed through ostinatos and swift melodic ideas, and the combination of certain and uncertain is conveyed through harmony, mode, voicing, and form.

Movement through Ostinatos

Essential to an adventure is the departure from the known and the venture into the unfamiliar which grounds the experience of adventuring in movement—the player must keep moving forward, lest their surroundings become too familiar, returning the adventure to the ordinary. In game scores, this movement is most often conveyed through ostinatos and quick melodic ideas which accompany the player's journey, urging them on to adventure and explore. Through repeating lines that accompany the in-game adventuring, composers evoke the kinetic qualities of adventuring by travelling on foot or by horse, convincing the player that they are taking part in a grand quest despite not moving in the real world.

Silksong's "Moss Grotto" has a particularly distinct, yet simple ostinato played by a harp in simple quadruple metre. The Moss Grotto is the first region the player is able to explore in the game, their first adventure embarked upon once they gain control of their character. This is an area of lush mossy greens and relatively few enemies where the player can find their bearings in the game and learn the controls, as shown in Fig. 3.1. For the majority of the track, this ostinato alternates between a B and an E in the key of E minor, adjusting slightly for the harmony in places,

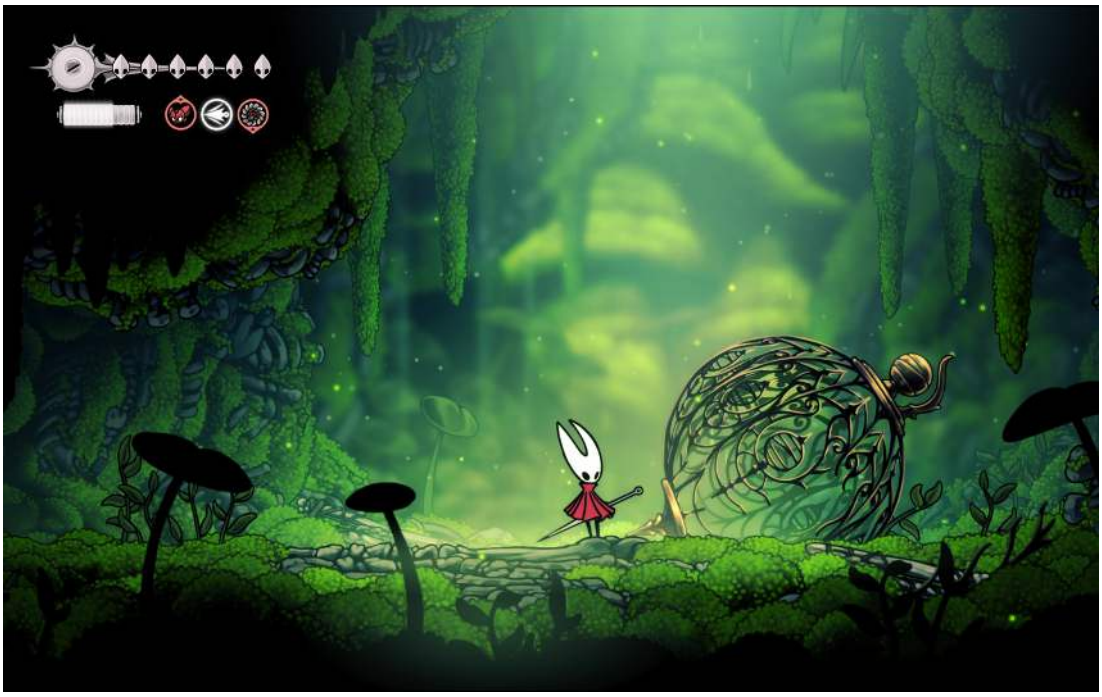
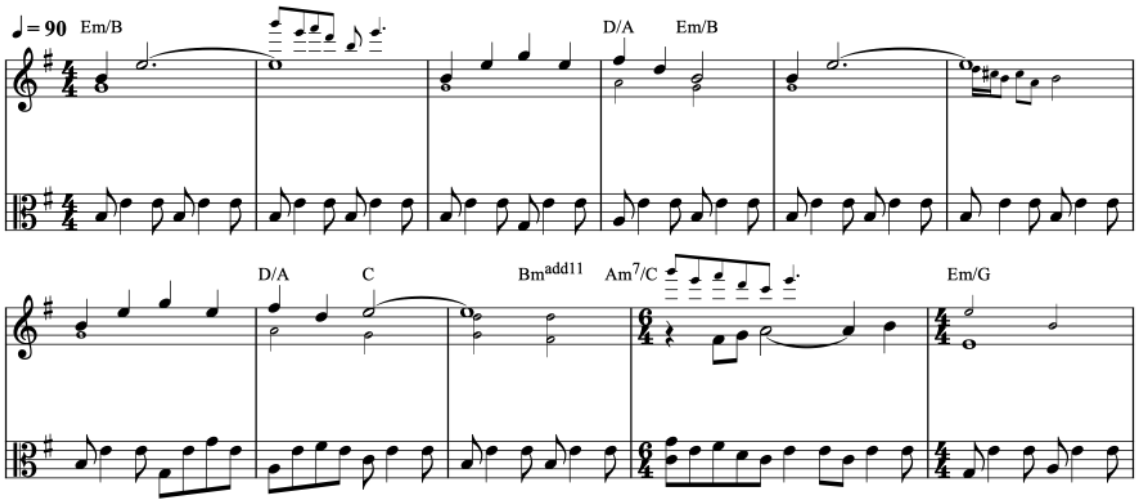


Figure 3.1: The starting region "Moss Grotto" from *Hollow Knight: Silksong*.



Example 3.1: First melody to "Moss Grotto" from *Hollow Knight: Silksong*, transcribed by sebastienskaf [2025] and organised by author.

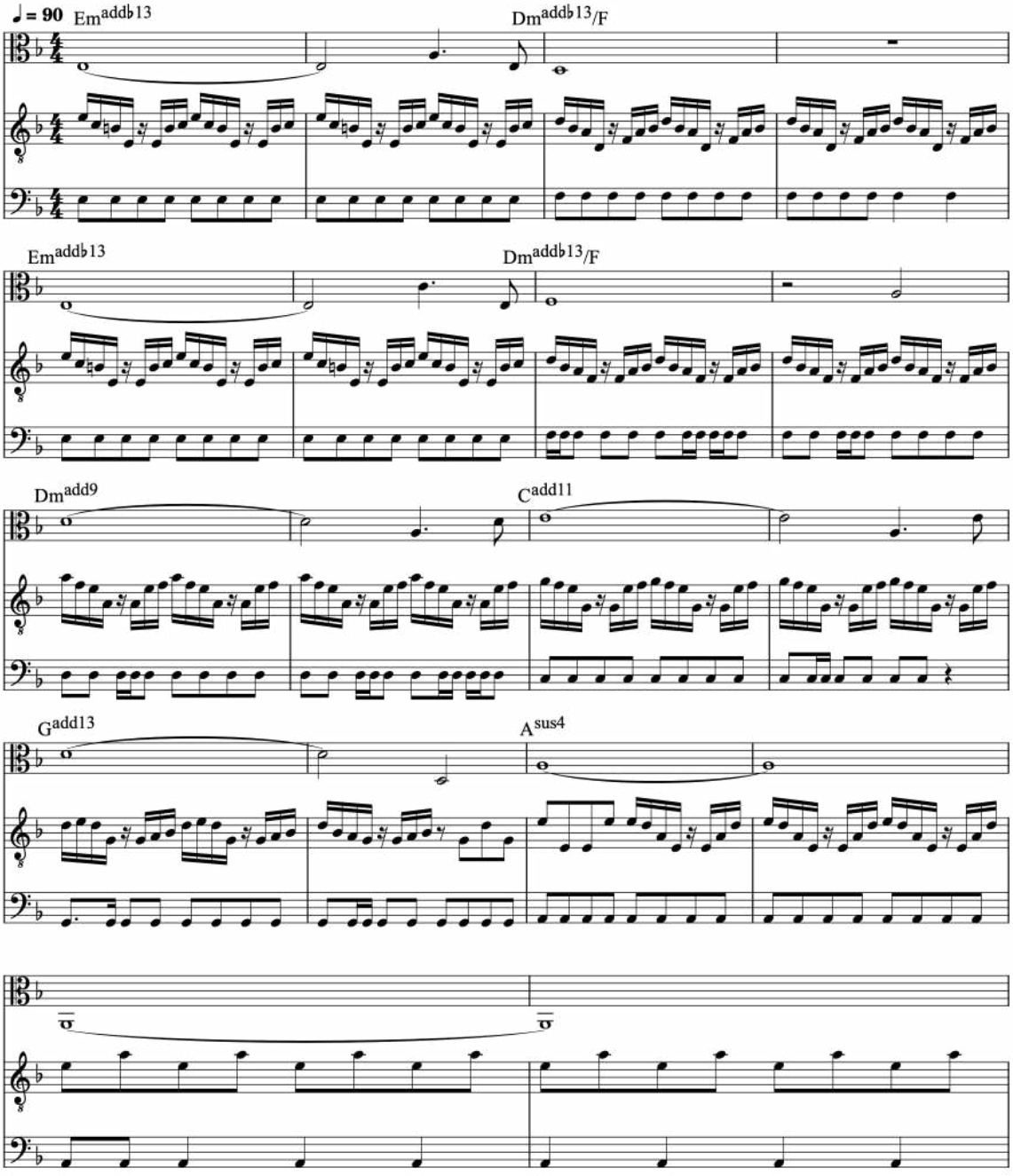
as shown in Ex. 3.1. By inverting the i chord in this ostinato, Christopher Larkin creates a sense of suspension without leaving the tonic that keeps the player lifted away from stillness. This ostinato communicates that though the environment may feel comforting and welcoming, it is not itself a home or place for rest, but rather a journey towards an ending. Coming at the beginning of the game, this suspension immediately urges the player to begin moving, marking the onset of the adventure: as soon as the player enters the game world, Larkin's music encourages travelling by preventing stagnation.

As the player explores more of the Moss Grotto, the harp ostinato expands to arpeggiating chords instead of simply moving between B and E. Accompanying this development, Larkin writes more embellishing material in the glockenspiel and a hang drum. All instruments move between playing the melody (often multiple instruments at once) and playing embellishing textural material, creating many overlapping rhythms that contribute to a constant sense of movement. Through these layers, the rhythm of the ostinato is still heard faintly, falling into the strong beats to indicate a continuous trot forwards. Slowly, the ostinato shifts from solely representing the onset of adventure to also encouraging progression. Now, the player has departed from the familiar and must keep progressing forwards. They are accompanied by the same urge that moved them away from stillness, a lingering sense of movement that becomes a representation of the middle of the adventure. By its regularity and inversion, this ostinato banishes any possibility of stillness, urging the player to explore and progress through the game away from their starting location.

When the player first gains control of their character after an introductory cutscene in *Blind Forest*, the music "First Steps Into Sunken Glades" welcomes them to the world with a soft piano melody. The player finds themselves awakening in a dark forest clearing with the "spirit tree" seen in the distance, as shown in Fig. 3.2. The player's ultimate goal throughout the narrative is to revive this tree, restoring life to the forest. Unlike the immediate urge to move created by "Moss Grotto",

Figure 3.2: The beginning of the "Sunken Glades" region in *Ori and the Blind Forest*.

Gareth Coker gives the beginning of "First Steps Into Sunken Glades" a soft quality using a piano to create atmosphere, ensuring that the player is not overwhelmed by a large, new world, but is rather able to explore peacefully with curiosity. As they explore further, the music rhythmically accelerates to accompany their exploration, shifting to a representation of the middle of the adventure. Cellos enter with a softly driving eighth note pulse along with a wave-like piano ostinato which arpeggiates chords in D minor, as shown in Ex. 3.2. For a significant part of the track, the cellos maintain this pulse, urging the player to move forward and progress, exploring this new world as they begin their adventure into the story. Coker's choice to delay the entrance of the driving pulse is particularly interesting due to its contrast to Larkin's harp ostinato in "Moss Grotto" beginning nearly immediately. In *Silksong*, the player is encouraged to explore as quickly as possible in order to ascend to the peak of the world on a quest for revenge, while in *Blind Forest* the narrative sets up less time pressure, indicating that the player's quest is urgent, but that many dangers lie ahead, so caution is necessary. Once the player gains their bearings with

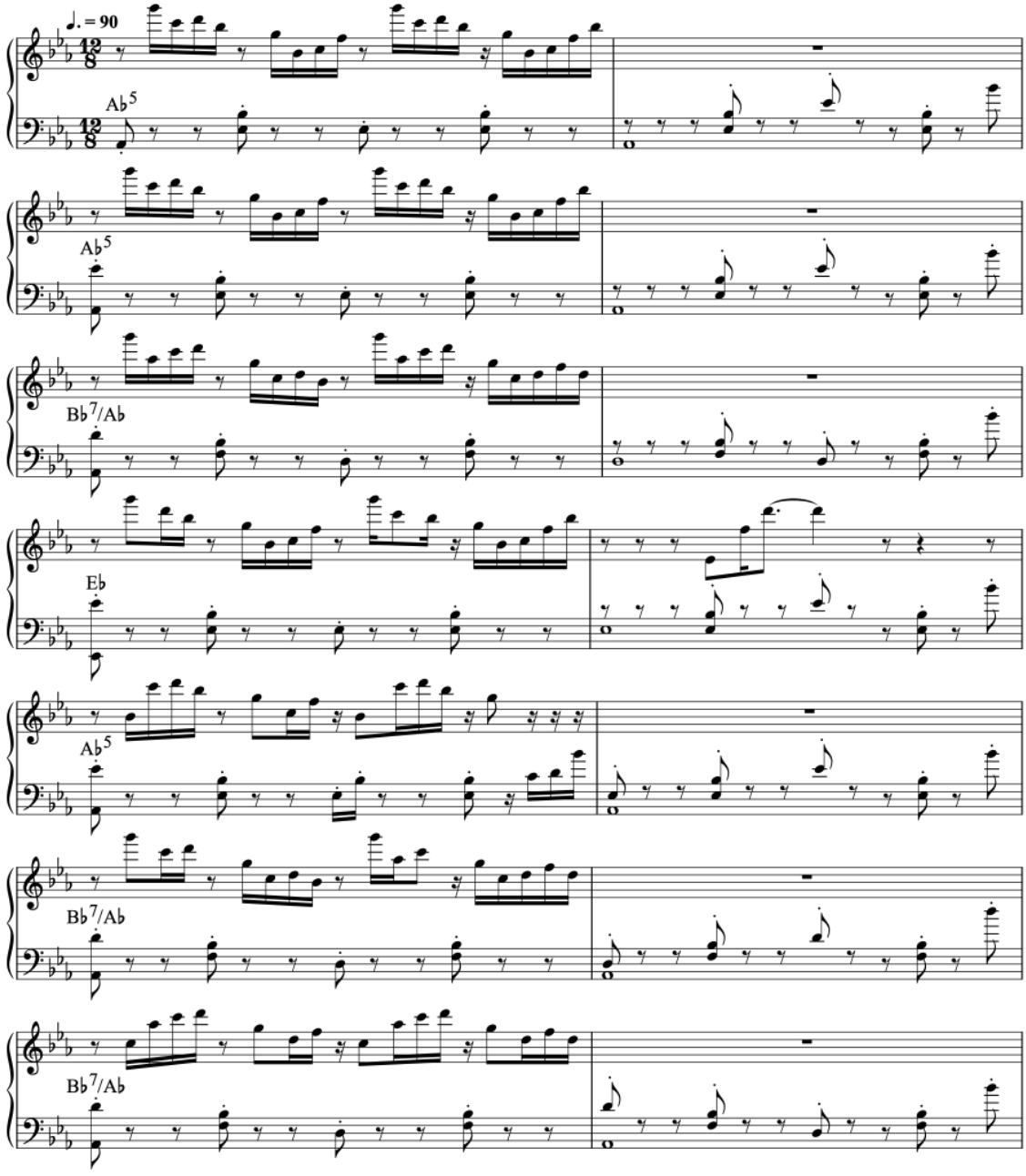


Example 3.2: The middle of "First Steps Into Sunken Glades" from *Ori and the Blind Forest*, transcribed in part by Hornet's Flight [2020] and organised by author.

the controls and can start to move more freely about the world, Coker introduces the low strings pulse and piano ostinato which encourage the player to bravely explore their surroundings.

A third game which emphasises this sense of movement while adventuring is *BotW*, which plays the tune "Riding - Day" each time the player gallops on a horse (but only during the daytime; a separate tune, "Riding - Night", plays at night). An image of a player riding a horse in *BotW* is shown in Fig. 3.3. This theme revolves around a quickly moving lower voice on a piano that conveys a clear tempo primarily through staccato notes and dyads. Syncopated against this clear rhythm are repeated melodic lines in the piano's upper voice, and at some parts in the track sustained violin and viola lines. Central to this track are the short repeated melodic fragments in the piano upper voice shown in Ex. 3.3. These lines cast the music playfully, using agility and regularity to indicate constant movement. Typically, the upper voice plays in groups of four sixteenth notes the first three times it appears and in five the fourth time, as can be seen in the first three systems of Ex. 3.3. In the fourth system, the rhythms shift slightly, with only three notes in this upper voice the first and third times they are played. These subtle shifts introduce slight change into a foundation of familiarity and movement. The recurrence of the treble line gives the player a repeated idea to focus on, but the changes imitate the imperfections intrinsic to exploring varying terrain. Rather than directly representing the rhythm one would hear listening to a galloping horse,

Figure 3.3: Screenshot of Link riding a horse in *The Legend of Zelda: Breath of the Wild*.



Example 3.3: The beginning to "Riding (Day)" from *The Legend of Zelda: Breath of the Wild*, transcribed by Kian M [2018] and organised by author.

the composers instead more abstractly evoke the experienced steadiness of the gallop through repetition of this melodic idea which remains fairly regular, but occasionally shifts.

The quality of the adventure most conveyed through ostinatos and quickly repeated melodic ideas is the sense of constant movement created by venturing away from the familiar. The adventure is an experience described by a journey that progresses towards a fixed destination, a time when one cannot remain still, but must keep travelling forward. Whether the player is taking their first steps into the game world or galloping through a field of grass, they find themself exploring novel environments, pushing forward towards an end goal for their adventure. Also noteworthy in each of these examples (and a fourth example, as will be seen soon) is that composers write with a tempo of around 90 BPM. While four tracks is too small of a sample size for making a meaningful statement about the correlation between this tempo and a sense of adventuring, 90 BPM effectively creates a sense of moving forward, but not too eagerly. The repetition of the ostinato sonically reflects this constant movement, so that even if the player pauses for a moment in their gameplay, the soundtrack maintains this experience's sensation of moving forward in one's adventure.

The Known and the Unknown

Adventures are undertaken with goals and destinations in mind, and while that overall quest may at times become vague, this driving motivation remains a constant "knowable" upon which the adventure is founded. This clear sense of purpose is pitted against the feeling of uncertainty intrinsic to the journey, forming a strange mix of excitement and trepidation. Musically, this sense of purpose can be implied using harmony, while the uncertainty and unpredictability can be conveyed through mode and overlapping textures. To demonstrate the tension between the known and the unknown, composers use a juxtaposition of driving harmony, suspension, and complicated rhythms (this combination also showed up in Chapter 2 with the discussions of "Dreaming of Clouds" and "Reach for the Summit", which both marked explorations into an uncertain sky), retaining a sense of overall drive while representing the experienced complexity of the adventure.

Larkin conveys this constant progression towards a goal through bass movement in "Moss Grotto", but maintains the sense of the unknown through modal mixture and harmonic inversion. As the player travels deeper into the region, Larkin often distinctly uses the third and fourth scale degrees in the lower voice of the ostinato to promote a sense of forward movement towards the five (as seen in bars three and four, seven and eight, and eleven in Ex. 3.1). By keeping the tonic inverted, Larkin maintains a sense of moving towards a goal without reaching it yet. Throughout the track, Larkin also uses stepwise motion of the second and third scale degrees

to approach the major subdominant. Combining this with both C-naturals and C-sharps in the melody and in embellishing musical material, the music smoothly flows between E minor, E dorian, and A major with significant modal mixture. Just as this modal ambiguity in the sky environment creates a sense of suspension and openness to the atmosphere, the recurrence of this harmony for this experience of the unknowable adventure creates a sensation of an uncertain future while using stepwise motion in the bass to maintain the feeling of progressing towards a goal. By shifting the mode throughout the music, Larkin subtly indicates that this quest is complicated, where the ending of the adventure is possibly further than one thinks it is.

The modal mixture impacts how Larkin's melody—centred around leaps of a fourth—is perceived. As shown in Ex. 3.1, the melody begins on a flute with a leap of a fourth from B to E, the same interval prevalent in the harp ostinato. This motive can also be seen in embellishing material such as the glockenspiel line (shown as cue notes in bar two), which ends with a similar leap of a perfect fourth from B to E. Despite landing on the first scale degree, the use of dorian leads to this motive being perceived as an open fourth instead of a five to one movement, creating a sense of suspension that delays resolution. This suspension at once contributes to the uncertain nature of the adventure to convey unpredictability for the future and creates space for the harmonic progression to indicate progress towards a goal which is not yet attained.

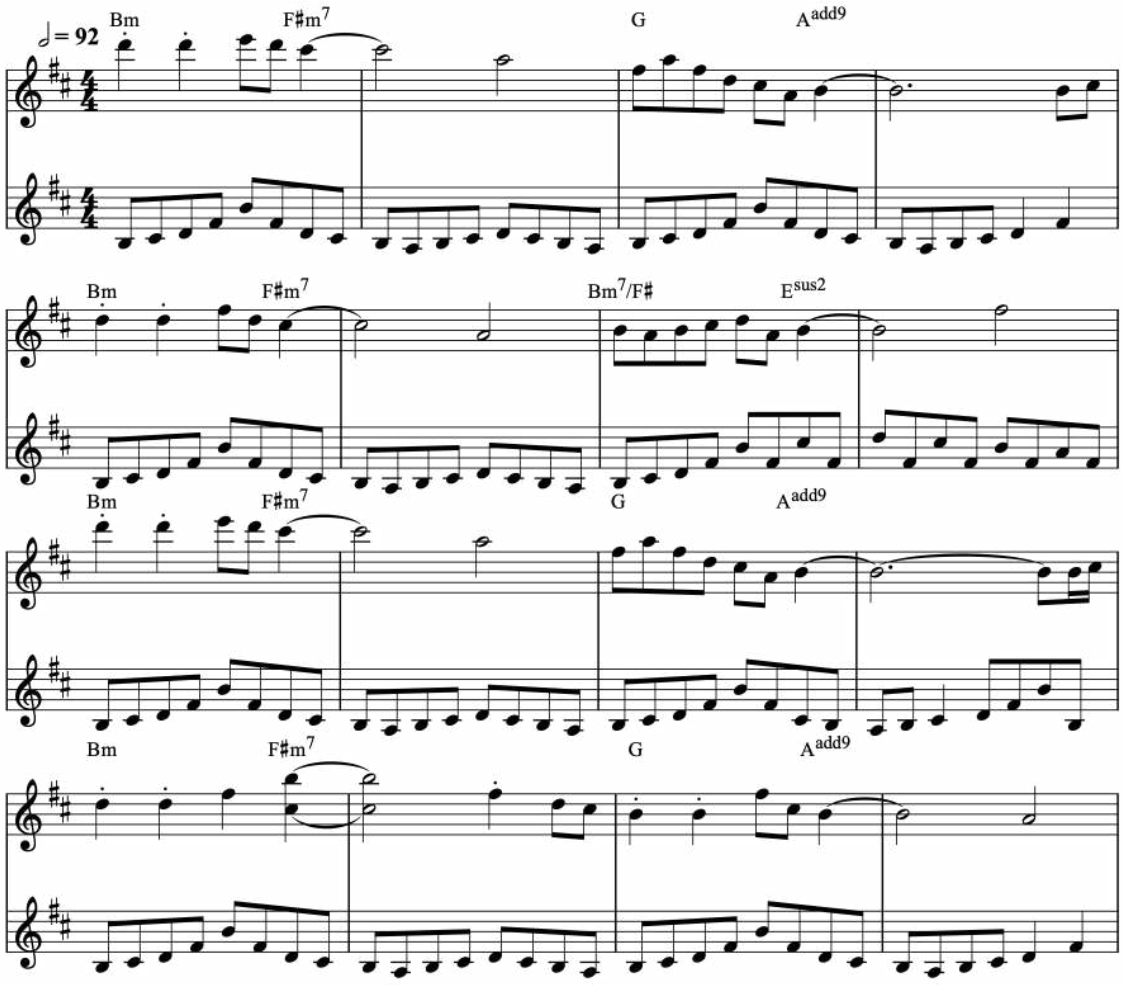
Creating a similar sense of suspension, *BotW*'s "Riding - Day" uses contrasting rhythms and an A-flat lydian scale to contribute to a sense of progression towards an eventual goal. Unlike "Moss Grotto", the melodic upper voice of the piano does not conform to the lower voice's harmony. Against this stable rhythm which clearly lays out a harmonic progression, the changing upper voice typically arpeggiates every *other* note of the A-flat lydian scale not present in the lower voice, less implying harmony than suspension around the scale. The theme stays entirely diatonic throughout its length, yet the lack of agreement in harmony between the two voices contributes to a similar lack of resolution. While the lower voice may clearly outline a harmony, landing on the I chord never feels perfectly resolved due to the chordal extensions created by the upper voice, the I chord itself being voiced as a quintal, and the use of lydian that creates an overall lifted feeling. In this case, the stable rhythm and clear harmony of the lower voice promote the movement towards a goal, while the suspended and slightly less regular upper voice reminds the player of the unknown that they are riding to. Together, the two voices create a combination of certainty of purpose and open possibilities held by the future.

In *Will of the Wisps*, the player learns the "Bash" ability early on in their adventure as a way to expand their movement and exploration skills. A visual of this bash ability is shown in Fig. 3.4. Once the player begins experimenting with their new ability, they are accompanied by the track "Dashing and Bashing", which features a

Figure 3.4: The "bash" ability from *Ori and the Will of the Wisps*. Ori, the small white creature in the centre of the screen that the player controls, is "bashing" off of a purple projectile in the direction indicated by the white arrow.

quick ostinato in the cellos, shown on the lower staff of Ex. 3.4. Harmonically, this track stays grounded in B minor, the primary melody following a double period where all phrases harmonically begin the same using the i and v chords. The second half of three out of the four phrases in this double period return to the i chord using a ♭VI–♭VII–i progression, creating a similar forward drive as in the stepwise bass motion in "Moss Grotto". As this piece progresses, it shifts between melodic and non-melodic sections, characteristic of Coker's compositional style. The low strings drive the pulse for the majority of the music, either through stepwise eighth note lines or through strong beats on quarter notes. Due to the music's quick tempo of half note 92 BPM, even textural sections that lack a distinct melody create a sense of environmental movement through overlapping layers and instrumental echoes, inviting the player to kinetically explore their newfound ability. While the music may allow the player to take a short moment to catch their breath, it never stagnates, consistently returning to the driving pulse that urges the player to move and explore.

Supporting the harmonic motion in "Dashing and Bashing" is the textural and harmonic rhythm. While each set of four bars uses four chords, the change to the second and fourth chords occurs on the fourth beat of a measure, rather than



Example 3.4: The beginning to "Dashing and Bashing" from *Ori and the Will of the Wisps*, transcribed by LazyTotodile [2020] and organised by author.

on the downbeat of the following bar. By placing the chord change just before the strong beat, Coker creates a slight rhythmic instability as the regularity of the cello line is pitted against the harmonic rhythm. This instability keeps the music from resting still, forcing the rhythm to always flow forward. As a consequence, "Dashing and Bashing" has a more complicated rhythmic texture that urges the player to explore. Using these textural combinations of rhythms, Coker conveys the dynamism intrinsic to adventuring while encouraging quick movement.

Though the adventure is a time of uncertainty where the familiar is left behind, exploration is exciting precisely because of its unknowable nature [Perrier 2018: 48]. To experience an adventure is to at once sense a constant drive towards one's goal, but also to recognise that the path to that goal is clouded in uncertainties. By mixing rhythmic foundations with harmonic and bass lines that progress towards a

resolution that sometimes never comes, composers can craft this combination of sensations created by the adventure, keeping the player moving towards their goal while warning of the dangerous possibilities of the future.

Conflict

Whereas adventures describe the journey undertaken in pursuit of a quest's end, conflict is often the final barrier to completion of that quest, a test of all learned throughout the adventure. Narrative video games are often rife with conflict, most often in the format of battle against either small enemies that the player encounters while adventuring or against much more difficult enemies, "bosses", that must be defeated at significant story beats. In some games, such as *Hollow Knight* and *Dark Souls*,[2] these boss fights are so difficult that the player could fail hundreds of times across real-life hours or even days before succeeding and continuing on in the narrative. Other games, such as *Return to Dream Land*, are easier, and while these boss fights still mark significant story beats, the player is likely to emerge victorious within a couple of tries. In these fights, the game induces in the player the feeling of being in a battle despite remaining safe at home. To analyse this experience, this section will investigate the question: How does a video game use music to shift the player's experience from pushing buttons on a controller to becoming a warrior engaging in combat against a difficult enemy?

Mechanically, each boss typically has a select number of attack patterns that the player quickly learns to recognise and avoid. For the best players, these patterns are learned immediately, and the boss is quickly defeated. For many, these patterns are learned over dozens of repetitions of failure and perseverance. The boss fight is a trial of skill, a period of time in which the player actively learns, persists, and eventually succeeds. Similar to a real-life sparring bout, these battles often shift between short bursts of high action and the player waiting for a clear opening to attack, creating a constant sense of danger interrupted by brief flashes of dangerous action. As the player deals damage to this boss, the enemy will often evolve in what are called "phases". A common number of phases for a boss fight is three, though this is not in any way a definite rule. These phases usually grow progressively more difficult as the player comes closer to defeating the boss, sometimes adding variations to existing attack patterns to make them more challenging, and other times introducing entirely new attack patterns that the player must learn. The best boss fights can be the most memorable parts of a video game, and these fights are so useful for describing the narrative that when discussing games with others, I have often found myself conveying my progression by naming the most recent boss I had

[2] *Dark Souls* is particularly notorious for its difficult boss fights, but I have not played this game, and cannot make meaningful commentary about the connection between the conflict in that game and its narrative.

vanquished. The enemies faced range greatly in theme, with some being large, fiery monsters, while others may be shadow-based humanoid enemies, for example. The musical "boss themes" that accompany these fights vary just as much, reflecting the changing thematic nature of the boss. Common to these themes, however, is the conveyed sense of a difficult fight, as will be discussed throughout this section.

Unlike the experience of adventure or an environment such as the sky, being in a fight is not an experience in which everyone has partaken, save those who engage in martial arts. Like the cave, most can picture some idea of what it *might* be like to be in a fight, but physically brawling is not a core component of modern life. Nevertheless, a great amount of research has gone into investigating how humans respond to being in a fight, both psychologically and physiologically. Being exposed to dangerous physical or psychological stimuli induces a stress response that can disrupt the body in numerous ways, including increasing heart rate, quickening breathing, increasing blood pressure, and, if sustained over an extended period of time, by negatively impacting the skeletal and gastrointestinal systems (among others) [Chu, Marwaha, Sanvictores, Awosika, Ayers 2024]. At the same time, the one engaged in a fight must maintain constant attention on the battle, as a single mistake can spell disaster. This need for constant attention leads to mental strain and tension as the fight shifts between offensive and defensive action, each warrior attempting to find an opening to strike the other [Barreira, Telles, Gutiérrez-García, Andrieu 2025]. While video games never physically place the player in danger, a game that successfully immerses the player in the game—and here in the action—will have players' hearts pounding as they face a difficult enemy, palms sweating as they avoid certain death.

In these boss battles, players may struggle with the mechanical gameplay, and this can prove a significant challenge to immersion. I remember a particular personal experience while playing *Silksong* in which I struggled with a boss fight, but the score turned that struggle into immersion. I felt that my struggle came not from a failing to properly manipulate the controller (though that was, technically, the reason), but rather that I was an inexperienced duelist fighting an opponent more skilled than I, the music turning the encounter into an epic battle for life. Music can only accomplish so much, however, as evidenced by the number of players that quit difficult games upon being unable to progress past a certain difficult level or boss [Steam Community]. Experiencing a boss battle occurs primarily in three parts: the approach to the battle, the fight itself, and the victory (or repeated losses). In this section, I will discuss this approach to battle, which is notable for its common *lack* of music, and music's role in enhancing immersion by connecting the game fight to the experience of a real-life fight using militaristic instrumentation and by creating a constant sense of tension and focus.

The Approach to the Fight

The experience of a boss battle in a video game does not begin when the boss first appears on the screen, but before that as the player approaches the arena where the fight is to take place. In the real-world context of mixed martial arts, this approach to the fight manifests as "a period of mixed feelings: adrenaline, anxiety, fear, but also courage and happiness" [Telles, Vaittinen, Barreira 2018]. In video games, the same anticipation occurs, with the moment before battle in a game typically shifting from environmental music to full silence before the boss's theme begins playing. For particularly important battles, a cutscene plays before the fight, creating a temporary separation between gameplay and narrative that emphasises the climactic story beat. The music will often cut out at the end of these cutscenes, so that the player hears only sound effects. Then, as the boss appears on the screen, the boss's theme enters in full force and the player regains control of their character; the battle has begun.

In *Silksong*, this change is especially striking as the player shifts from being immersed in the music of "Deep Docks"—an epic, forlorn, choral atmosphere that conveys a tale of history, work, and grandeur in G minor—to silence interrupted only by "Lace Humming"[3] in D-flat minor, a tritone away. Lace is a boss woven of silk who is first seen conducting silk flies as shown in Fig. 3.5. She is notable for being about the same size as the player (many other bosses are much larger than they are), creating the impression of fighting a foe of similar background and ability. As the player approaches, a brief dialogue ensues in which Lace assures the player that they will be defeated, before she and the player leap into action to the theme "Lace" played by a string quintet.

Unlike the Lace battle, which the player effectively walks into without losing control of the character, both the final fight against Magolor (Fig. 3.6) in *Return to Dream Land* and the fight against Colgera (Fig. 3.7) in *The Legend of Zelda: Tears of the Kingdom* (*TotK*) are approached using cutscenes. As they approach the Magolor fight, the player has just finished defeating multiple of this boss's earlier stages, first by attacking his ship, then by fighting his original form. After this second phase, high-energy music cuts out as the player delivers what seems to be their final blows against the enemy, the sonic space filled only with the sound effects of a slicing sword. As Magolor seems to die, still no music plays as all goes white. At this point, it is likely that the player believes that they have won the battle, but the appearance of a new form to the beginning of the "C-R-O-W-N-E-D" theme starting on an arpeggiated i^5 quintal indicates that there is still more to come. In this game, the disappearance of the music acts as a "calm before the storm", where

[3] Throughout Silksong, Larkin makes frequent use of the Dies Irae (Day of Wrath) motive, including in Lace's humming. Jrhall2 on YouTube describes a comprehensive list of each of its appearances throughout the game [Jrhall2 2025].

Figure 3.5: Lace from *Hollow Knight: Silksong* [Hollow Knight Wiki].

the empty sonic atmosphere sets up a dramatic entrance of the boss theme. The Colgera fight in *TotK* similarly begins with a cutscene where the player must trigger an ancient device that frees the boss from a cage. During this process, no music is heard, the only sounds that of the clicking of archaic mechanisms. Here, the player can easily predict that a battle is coming, but the exact nature of their enemy is still unknown. The silence marks a moment of anticipation, building tension through a fear of the unknown that will be resolved only by the appearance of the boss. As Colgera is freed, the player is launched into the sky by a tornado, accompanied by the beginning of the "Colgera Battle" theme: a flute melody above a drone on the tonic and strings playing ascending and descending chromatic runs.

For games where the player is almost always accompanied by music, this moment preceding a fight where the music gives way entirely to sound effects is particularly potent in situating the experience of the fight. In much the same way that martial artists experience adrenaline before a fight, or new musicians may approach solo performances full of nerves, the distinct *lack* of music in the approach to the fight cues the player to begin anticipating battle, priming them for the action.

Militaristic Instrumentation and Drive

Many themes to boss fights in narrative video games utilise a full symphony orchestra, drawing especially on the percussion and brass sections. The prevalence of these instrument groups calls to a perception of music in real-world military use. Historically, war drums have been used extensively to convey battle signals

Figure 3.6: Magolor after being crowned in the game *Kirby's Return to Dream Land* [WiKirby 2026].

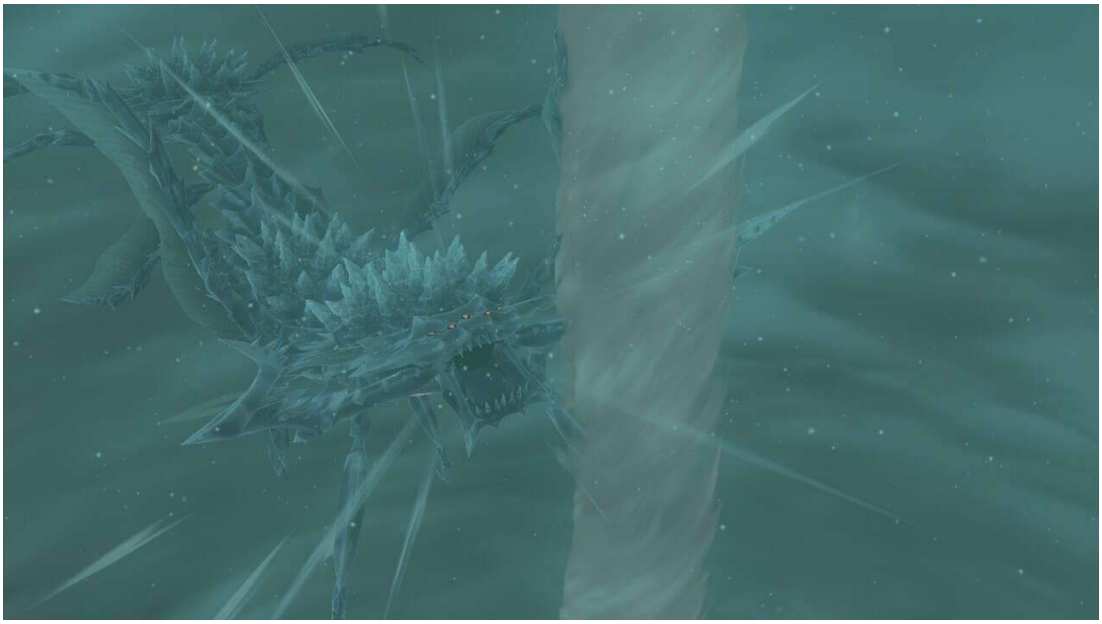


Figure 3.7: Colgera from *The Legend of Zelda: Tears of the Kingdom* [GameSpot].

across world cultures, and brass instruments such as the bugle and trumpet have an extensive repertoire of composed signals used to convey battlefield instructions [O'Keeffe 2025: 26]. Many modern militaries also maintain wind bands that, though rarely present on the battlefield itself, have strengthened the cultural association of brass and percussion in combat [O'Keeffe 2025: 4]. These associations give composers a shared musical literacy upon which to draw when composing for a battle.

One track that features this high presence of percussion and brass is the "Colgera Battle" theme, which utilises a tambourine and a timpani to very clearly drive the quarter notes of the quick tempo boss theme (176 BPM in simple quadruple metre). Along with this percussion section—which later adds snare, toms, and bass drum—all the strings repeat an ostinato playing the first four scale degrees of A-flat dorian, at once keeping the harmony fixed on the tonic while hinting at rising away from that foundation to engage in battle. The melody for this track is primarily carried by the woodwinds (as is fitting for a fight taking place in the sky, based on the findings of Chapter 2) and brass, alternating between long melodic passages, quick staccato lines, and, at one point in the track, a fast, highly syncopated melody. Often, this melody is carried by multiple woodwinds at once (sometimes with the first violins added in), creating a mixing of overtones that adds to textural complexity. When the tambourine is later joined by a snare, the overall effect is a constant rhythmic drive from the percussion section with organised melodic material in the winds carrying the piece's themes, a combination that calls to the instrumentation commonly associated with military bands and war signals.

"C-R-O-W-N-E-D" is similarly driven by its constant percussion, most notably a hi-hat playing the repeated rhythmic motive shown in Ex. 3.5. Accompanying the hi-hat, an anvil plays forte hits on the "and" of beat two and on beat four for a significant portion of the track. In addition to the percussion section, Jun Ishikawa also uses the full orchestra to propel this rhythm. The cellos and basses clearly signal downbeats with a tresillo rhythm through the first two beats of each bar in the first section of the track. This rhythm is later augmented to fill the entire bar. Many of the melodies featured throughout this track[4] are played as sequences of repeated sixteenth notes, so that every aspect of the music promotes a sense of urgency. The music features no extended melodic lines, filling any moments

Example 3.5: Driving hi-hat rhythm of "C-R-O-W-N-E-D" from *Kirby's Return to Dreamland*.

[4] Several leitmotifs from throughout the game are used throughout this boss battle, and are identified in detail in the Kirby Wiki [WiKirby].

when an instrument sustains a note with textural complexity. For instance, the violins may finish a quick line by sustaining the final note only for the horns to enter with an echo of the line beneath, shifting the player's sonic attention away from legato and onto the staccato elements of the music. While the presence of a full symphony orchestra driving the music diminishes the individual role of the brass throughout each section, large musical moments always feature the brass playing the melody. By using the brass in climactic moments, Ishikawa ensures that for times most likely to catch the player's attention, the brass is heard proudly holding the melody. In addition, this instrument section is often highlighted around modulation points. Throughout its length, the track modulates from F major to A-flat minor, then to E minor and C minor [WiKirby]. After each modulation, the melody is given to the brass, once again drawing the player's ear to instruments such as the trumpet and French horn. In doing so, Ishikawa evokes the military associations with these timbres, using percussion to constantly drive battle while highlighting grand moments with brass.

While not a *necessary* component of a boss fight in video games, a militaristic focus on percussion and brass to drive the music and accent cadences is a useful tool available to composers scoring battles. Due to the prevalence of these instrument groups in both war signals and in military bands, the use of these timbres creates an easier connection to conflict and battle than other instrument groups, a result of player literacy in the experience of battle.

Foundation and Tension

Essential to the experience of the boss fight is the player's sustained sense of tension from being pitted against a difficult enemy in an arena. Throughout these fights, there are generally no moments of rest; the player must maintain constant focus on the game in order to avoid certain death and ensure victory over their opponent. Just as the music in the experience of an adventure maintains a constant atmosphere of movement through ostinatos and harmony, boss battles use rhythmic pulse, syncopation, and drones on the minor i chord to keep the player engaged in the battle and suspended in an experience of high pressure and tension.

Played by a string quintet rather than full symphony orchestra, "Lace" is one of the most intense boss fights encountered in *Silksong*, not for its difficulty, but for its basis in a duel: in this fight, the player is pitted against a blademaster of equal size and skill, rather than being forced to slowly deal damage to a much larger enemy. This battle is a test of agility and skill, rather than a fight of attrition. "Lace" is played largely in $\frac{5}{4}$ metre in G harmonic minor, with Larkin alternating between writing a string quintet playing in unison and supporting solo breaks on individual lines. The melody is given first to the cello, then to the first and second violins in octaves. It then passes to the viola before returning to the violins in octaves.

The low strings often play accented downbeats followed by heavy syncopation, broken up by sections in simple triple metre where the violins play two staccato eighth notes followed by the other strings responding with a quick low musical idea. Though the use of $\frac{5}{4}$ metre immediately creates instability, the cello and bass accent most downbeats, giving the music a driving pulse that is not difficult to follow despite the high degree of syncopation throughout the rest of the bar. In addition to the rhythmic and melodic movements throughout "Lace", Larkin makes excellent use of dynamics, featuring both solo lines above the quintet and powerful tutti moments. As the player approaches the end of the battle, the dynamics shift from forte to a subito mezzo piano that crescendos into the finale, accompanying the player to their victory against this enemy. The combination of clear downbeats, syncopated bass lines, and constantly driving eighth or sixteenth notes in at least one of the five voices contributes to the player's sustained feeling of needing to remain "light on their feet" to avoid injury, reinforcing that this is a moment of high tension where just one slip of focus can spell disaster.

In a moment of greater tension, the track "Shriek and Ori" accompanies the final boss fight of the game *Will of the Wisps*, a fight in which the player must perform many agile movements in midair to fight the twisted owl Shriek (Fig. 3.8) and avoid death. This track is played by a full symphony orchestra at 90 BPM in simple double metre, a bass drum driving the pulse for nearly its entire length playing either eighth notes or the same rhythm as in "C-R-O-W-N-E-D", shown in Ex. 3.5. The melody is incredibly thematically geared towards both Shriek's leitmotifs and to the game's main theme, with the low strings and low brass often playing these themes as a countermelody to a melody in the high brass. The track is also often driven by the low strings, shifting between quick sections using sixteenth notes

Figure 3.8: Shriek from *Ori and the Will of the Wisps* [Oripedia].

and texturally sparser sections playing only quarter notes. Assisting these open sections are moments where the low brass plays a single low pedal on the tonic every other bar, creating some sense of arrival in this time of high conflict. Counter to the mystery of the future found at the onset of adventure, this boss battle is brimming with certainties and danger. The time for mysteries is past, replaced by the near-certainty of death from fighting this antagonist, and now the player's life is entirely in their own hands. Against this tonic, the flutes and strings play a repeated descending chromatic ostinato which creates harmonic tension against the low frequencies that stay grounded on the i chord. As the player enters the second stage of this battle, Coker modulates up a half-step from C-sharp minor to D minor, further raising the tension into the last moments of the game. In the grand thematic moments, a choir sings the theme on wordless vowels, urging the player on to victory. Through rhythmic pulse, dramatic use of the i chord, and a half-step modulation, Coker sustains a sense of danger and tension throughout this boss fight, fully connecting the player to the battle experience.

As in the final fight in *Will of the Wisps*, "Colgera Battle" is written with an extremely dense texture, pitting many quick chromatic lines in the flute, piccolo, and strings against ostinatos on the i chord. These quick accentual lines dance around the melody, adding textural complexity to the player's peripheral sense of the battle. Many sections begin with a drone in the low strings and brass on the tonic, then chromatically rise as the melody unfolds. Despite this movement, this piece is not driven by chromatic harmony, but rather remains grounded in an A-flat dorian scale with a diatonic foundation and chromatic accentuation. Dovetailing between different instrument groups contributes to melodic complexity, forcing the player to keep track of a number of moving sonic components at once. All the while, the piece continues driving forward, shifting between moments of clear melodic lines and more textural sections with quick rhythmic melodies. By combining drive through rhythm and tension created by chromatic movement above the i chord, the composers maintain the urgency intrinsic to the fight. This example helps illustrate that whether the player fights accompanied by a full symphony orchestra or a string quintet, a characteristic component of the boss battle is its inclusion of instruments (typically lower in register) pushing the music's tempo while melodic and embellishing material create tension between a drone on the minor tonic and dissonant lines or accents.

Conclusions

Experiential music invites a player from merely being immersed in a location to being immersed in a story, an essential component of the player taking part in the narrative of a video game. This music holds the power to turn mundane experiences into aesthetic moments, shifting the game from being simply a manipulation of

a controller into a meaningful period of play where the player develops skills, becomes the hero of a story, and pursues a fantasy quest. Video game music provides an opportunity for analysing the experiential music tied to experiences such as adventuring and battling, lending insight into how music can bolster one's perception of their actions. Through evoking the phenomenological traits of these experiences, video game composers more directly link the player to the progression of the narrative, enhancing affective ties between player and story to promote deeper levels of immersion.

In the adventure, the player embarks on a quest with an overall goal, but little knowledge of the path that the journey will take. This adventure features a combination of constant movement taking the player away from the everyday conveyed through ostinatos and repetition, and highlights the juxtaposition of the known adventuring goal and the unknown of the exploration through rhythmic foundations and harmony. Music accompanying the adventure often uses the lydian and dorian modes to create suspension, and step-wise harmonic or bass movement to build a sense of progression, though this movement does not always resolve. The adventure becomes an exciting experience due to its unknowable nature, a period where anything can happen, but the only way to witness the future is to explore.

Unlike the adventure, which describes setting out on a quest with a goal but no knowledge of the journey, video games often situate boss battles as significant moments of conflict and narrative progression at the end of each level. These boss battles are tests of skill where the player must use all the knowledge developed on their journey to overcome a powerful enemy, the music highlighting the dangerous nature of this experience and the constant tension underscoring the fight. Often, these fights affect the player before they enter the arena with the sudden disappearance of music, building tension that resolves to a minor tonic when the boss appears. When writing for these battles, composers can draw on prevalent military instrumentation such as percussion and brass to appeal to the player's literacy in hearing these instrument groups in scenes of war. Most important to creating the boss battle is the balance between a foundation created by quick, low register instruments often playing on the tonic and melodic and embellishing material that creates tension through chromaticism above that i chord. By writing music that brings the player into the battle, the composer turns the player into a warrior, a character that has the skill to prevail in a fight against a difficult enemy through perseverance and learning.

While this chapter focused on the experiences of the adventure and conflict, video games feature many different types of experiences, and some narrative games may not have these two experiences. In addition, many experiences are tied to environments, leading to musical combinations of environmental and experiential representation, as was seen briefly with "Colgera Battle". In this medium which can

present the player with so many different experiences, the composer has the power to shape the player's sense of ongoing narrative events, implying speed at a time of exploration or trepidation when the player must be wary. Some similar features show up across multiple experiences—such as the motion in both adventuring and fighting—yet with different connotations, and the execution of their representation must match the narrative quality of that feature. There would be great value in investigating additional experiences that appear across video games, identifying what elements composers commonly use to represent experiences in general, what techniques may be unique to a specific experience, and how this representation may extend to music beyond video game scores.

Conclusion

Music in narrative video games plays a powerful role in inviting an audience to engage more deeply with fictional environments, shifting from observing a narrative unfold to experiencing imagined worlds. The journey to immersion is initiated by a player's investment in the world, characters, and narrative of the game, a budding attachment which composers can enhance by representing both the nature of and the experienced qualities of the environment. Music expands the game beyond the screen to convey a sense of a broader world. As players progress through the game's narrative, they engage in a range of experiences formed by a combination of kinetic and affective components. Writing music that reflects these experiences, composers build affective ties between the player and game, turning the narrative from a story observed into one experienced. For an interactive medium such as video games, this connection between player and world is essential to forming an immersive experience. As the player's attention remains focused on the narrative game, they find themselves transported from the real world into a fantasy.

As composers, we write music for many different reasons. Sometimes, that music is to dance to, other times to cry to, and other times it is an exploration of what it means to create art. For me, composition has always been a way to express the beauty I find in all my surroundings: through writing music, I am able to share the way I perceive the world in a way I find impossible with words. By careful choice of music in a particular moment, I have found that I can craft a heightened sense of presence—music has this incredible ability to turn any activity into an experience worth noting. Choosing this music is no easy task. What may be appropriate for a specific environment or experience can change drastically depending on the qualities of that moment. By investigating how composers use musical representation of environments and experiences, this thesis analyses music's role in creating this sense of place within video games, which offer clear depictions of environment and experience. While this project is certainly not a comprehensive accounting for all music that appears across all video games, the scores studied here indicate that there are many musical techniques that, when utilised well, enrich our perceptions of the world around us.

As seen in four case studies—the environments of the sky and the cave and the experiences of adventure and conflict—investigated throughout this thesis, the ways that composers represent game environments and experiences vary greatly. Each environment in a game presents the player with a unique combination of

focal and peripheral components that directly impact gameplay or situate a sense of place. While the extensive use of chordal extensions and harmonic suspension create a sense of space that evokes qualities of the sky, fast lines in low strings drive the player forward, urging them to move. Combinations of these techniques are not necessarily exclusive; a composer may choose to sketch features of the sky through harmony and timbre while rhythmically driving the player to fight. Crafting immersion through music requires careful deliberation on how the player witnesses and experiences the environment, representing the qualities of that environment most connected to the player's experience of the narrative. The specific mixture of these many musical techniques shapes the player's connection to the game, enhancing immersion in distinct, complex ways.

Beyond the games, music, and questions covered throughout this work, there are still many questions around music's part in video game immersion that one may consider. While this thesis primarily investigated the role of the composer in targeting immersive experiences in narrative games, one could think about the psychological aspects of how well the player responds to that music: Can player immersion be measured quantitatively? How might music behave similarly or differently in another type of game—say, a strategy game, where more emphasis is placed on the player's careful thinking than on the kinetic actions of their game avatar? Narrative video game music often responds dynamically to the player's actions: environmental music changes are cued by the player moving from one region to another. How does the player's role in orchestrating the score's development connect with immersivity? Further, video games are not the only media that uses music to immerse the player in a narrative. Film composers, for instance, immerse the viewer in a story over which they have no control. How might composers use environmental and experiential representation to create immersion in other media, and where might adaptations be necessary? Last, shared musical literacy formed by cultural experiences gives composers a wealth of ideas to draw upon as a starting point for representation. To what extent does this literacy vary in other media, and how might composers write differently as a result?

Music creates bonds between performer, audience, and environment, a moment when we can, through sound alone, be drawn into fantastical, imagined worlds. Unlike language, music holds the power to communicate ideas through abstraction, conveying environments and experiences through melody and harmony, rhythm and timbre. Composers use music to enhance stories, crafting meaning and emotion while leaving space for individual interpretation. Through creating and experiencing music, we form beautiful connections to games, each other, and ourselves.

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