

THE AESTHETICS OF VIDEOGAME MUSIC

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Abstract

The videogame now occupies a unique territory in contemporary culture that offers a new perspective on conceptions of high and low art. While the fear that the majority of videogames ‘pacify’ their audience in an Adornian “culture industry” is not without justification, its reductionism can be countered by a recognition of the diversity and aesthetic potential of the medium. This has been proposed by sociologist, Graeme Kirkpatrick, although without close attention to the role of music.

Videogame music often operates in similar ways to music in other mixed-media scenarios, such as film, or opera. In the same way that film music cannot be completely divorced from film, videogame music is contingent on and a crucial part of the videogame aesthetic. However, the interactive nature of the medium—its *différance*—has naturally led to the development of non-linear musical systems that tailor music in real time to the game’s dynamically changing dramatic action. Musical non-linearity points beyond both music and videogames (and their respective discourses) toward broader issues pertinent to contemporary musicology and critical thinking, not least to matters concerning high modernism (traditionally conceived of as resistant to mass culture). Such issues include Barthes’s “death of the author”, the significance of order/disorder as a formal spectrum, and postmodern conceptions and experiences of temporality. I argue that in this sense the videogame medium—and its music—warrants attention as a unique but not *sui generis* aesthetic experience. Precedent can be found for many of the formal ideas employed in such systems in certain aspects of avant-garde art, and especially in the aleatoric music prevalent in the 1950s and 60s. This thesis explores this paradox by considering videogames as both high and low, and, more significantly, I argue that the aesthetics of videogame music draw attention to the centrality of “play” in all cultural objects.

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To my grandfathers, both of whom inspired my love of music.

Richard Sweeney (1920–2008)

Anthony Henderson (1932–2012)

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Glossary

A concise glossary has been provided. Words that have been included are marked in **bold** upon their first occurrence in the main text.

Referencing Style

Videogames have been referenced in the format:

Title (Developer/Publisher, Year of Release)

Where only one company is listed, the **developer** and **publisher** are the same. The date shown is the earliest release date. Unless otherwise stated, it can be assumed that sequels are produced by the same developer and publisher as that of the first game. Further publication details are listed in the Bibliography.

Introduction

*Life's but a walking shadow, a poor player
That struts and frets his hour upon the stage
And then is heard no more. It is a tale
Told by an idiot, full of sound and fury
Signifying nothing.*

—Shakespeare, *Macbeth* (5.5.24–28).

On hearing of the death of his wife, Macbeth likens an individual's life to that of a lowly actor—a relatively short and ultimately meaningless “playing” at life and death.¹ In spite of all the ‘sound and fury’ of the drama, the passing of time renders the play, and by analogy, life itself, meaningless. Shakespeare's ultimate nihilistic utterance powerfully links the themes of this thesis: the aesthetic experience of time's arrow (the way in which linear time is perceived) and the significance of time spent playing (the possible meanings and purposes of the activity).²

This thesis is concerned with the aesthetics of videogame music, and the medium's place in a broader cultural history. The field of ludomusicology—the musicological study of videogame music—is now rapidly growing in much the same way that film musicology expanded in tandem with the “New Musicologies” of the 1980s and 1990s. One explanation for the timing of this growth is that, although videogame studies developed alongside videogames themselves in the late twentieth century, and despite the fact that music has been a point of discussion among videogame enthusiasts from the outset, musicologists have been consistently slow to address new sub-fields.³ In any case, a musicological approach is now appropriate and necessary not least

¹ Like playing as “acting”, playing as “gaming” also involves an element of pretence, or make-believe. See p. 18 below.

² In Chapter 3, I will look to various conceptions of music and temporality, including Karol Berger, *Bach's Cycle, Mozart's Arrow: An Essay on the Origins of Musical Modernity* (Berkeley: University of California Press, 2007).

³ In 2004, Zach Whalen noted that ‘While the game industry invests heavily in the creation of music, and nostalgic themes from early games resonate powerfully with mature gamers, music in videogames has so

because in the last decade, the perception that videogame music has come of age has been well established.⁴ After discussing the size of the videogame market (worth an estimated USD\$30 billion *per annum*) in the introduction to his book, *The Art of Videogames*, Grant Tavinor goes as far as to suggest that videogames may soon eclipse film and popular music as ‘the predominant popular art forms of the twentieth century.’⁵ This popularity and the associated economically driven value system are crucial factors in understanding videogames as cultural objects that intersect the indistinct and overlapping categories of mass culture and art. This thesis will investigate the unique ways in which videogame music blurs such boundaries, and in turn, this will demonstrate the cultural and theoretical value of analysing videogame music.

Of particular relevance to my argument in this thesis will be Graeme Kirkpatrick’s 2011 book *Aesthetic Theory and the Video Game*, for all that it fails to engage with music. His

far remained a tangential footnote to preliminary studies that attempt to account for the medium within the academy.’ See Zach Whalen, ‘Play Along - An Approach to Videogame Music,’ *Game Studies* 4/1 (November 2004), retrieved from <<http://www.gamestudies.org/0401/whalen/>>, accessed 18/07/2013. An early overview of interest in videogame music can be found in Matthew Belinkie, ‘Video Game Music: Not Just Kid Stuff,’ on *vgmusic.com* (15/12/1999), retrieved from <<http://www.vgmusic.com/vgpaper.shtml>>, accessed 04/09/2009. On musicology’s late interest in postmodernism, see Rudolf Flotzinger, ‘Postmodernism in music,’ *European Review* 6/1 (February 1998): 45–51.

⁴ The inclusion of videogame music in the ClassicFM 2013 Hall of Fame sparked a lively debate on their website including many interesting thoughts contributed by composers such as Garry Schyman, James Hannigan and Jason Graves. See ClassicFM, ‘Classic FM Conversation: Video game scores - what do you think?’, on *classicfm.com* (2013), retrieved from <<http://www.classicfm.com/hall-of-fame/2013/videogame-music-hall-fame-opinion/>>, and ‘Rachmaninov and video games triumph in Classic FM Hall of Fame,’ on *classicfm.com* (02/04/2013), retrieved from <<http://www.classicfm.com/hall-of-fame/2013/video-games-beethoven-hall-fame-top-5/>>, both accessed 15/04/2013. Grant Tavinor also highlights a number of developments that contribute to this view including the size and nature of popular internet forums: ‘These discussion boards have led to a level of gaming criticism and connoisseurship not previously seen.’ Grant Tavinor, *The Art of Videogames* (Chichester: Wiley-Blackwell, 2009), p. 7.

⁵ Tavinor, *The Art of Videogames*, p. 7. This question of ‘art status’ will be considered gradually over the following chapters. In mainstream media, the issue is still divisive: Keith Stuart, ‘Video games and art: why does the media get it so wrong?’, in *The Guardian* (08/01/2014), retrieved from <<http://www.theguardian.com/technology/gamesblog/2014/jan/08/video-games-art-and-the-shock-of-the-new>>, accessed 10/01/2014. See also Phillip Lipari, *The Video Game as an Artistic Medium According to Kantian Aesthetic Theory* (Dissertation, Boston College, May 2007), retrieved from <http://www.bc.edu/content/dam/files/schools/cas_sites/communication/pdf/thesis07.lipari.pdf>, accessed 22/07/2013. *Grand Theft Auto V* (Rockstar/Take-Two Interactive, 2013) for instance, generated USD\$1 billion within its first three days of sale (beating predictions of one month), Take-Two claiming that it is the fastest-selling entertainment product in history. See Andrew Goldfarb, ‘GTA 5 Sales Hit \$1 Billion In Three Days,’ on *Imagine Games Network* (20/09/2013), retrieved from <<http://uk.ign.com/articles/2013/09/20/gta-5-sales-hit-1-billion-in-three-days>>, accessed 22/09/2014.

provocative idea is that the videogame object is best understood from the perspective of traditional aesthetic theory. My contention is that ludomusicology can in fact highlight crucial points of convergence and divergence between videogames and music.⁶ This is because both offer aesthetic experiences that are temporally mediated through the tangible qualities of what is generally called “play”. Registering the relevance of broadly accepted definitions of music by Roger Scruton and Nicholas Cook, as Michiel Kamp has done, demonstrates the importance of aesthetic play in the context of videogame music.⁷ Scruton says that ‘when we hear music, we do not hear sound only; we hear something in the sound, something which moves with a force of its own.’⁸ Cook recognized that the statement, ‘anything can be music if it is heard as music’ has an important corollary: ‘nothing can be music if it is not heard as music.’⁹ These ideas are closely connected to the active play involved in aesthetic experience, and Roger Moseley’s application of ludomusicology as the study of ludicity in music demonstrates how videogame music is well placed to offer new perspectives on aesthetic theory and wider understandings of music.¹⁰

Temporal issues are well known in the field of videogame studies. Although Johan Huizinga’s rather static concept of the “magic circle”¹¹—a special spatial arena in which a game takes place—has been employed as a standard description of videogame form, Dominic Arsenault and Bernard Perron say that ‘playing a video game is always a continuous loop between the gamer’s input and the game’s output [...] We should not forget that the temporal dimension of

⁶ Graeme Kirkpatrick, *Aesthetic Theory and the Video Game* (Manchester: Manchester University Press, 2011). See also Julian McDougall, ‘Aesthetic Theory and the Video Game (2011) by Graeme Kirkpatrick,’ *Culture Machine Reviews* (August 2012), retrieved from <<http://www.culturemachine.net/index.php/cm/article/view/479/503>>, accessed 24/09/2014.

⁷ See Michiel Kamp, *Ludic Music in Video Games* (MA Thesis, Utrecht University, 2009).

⁸ See Roger Scruton, *The Aesthetics of Music* (Oxford: Oxford University Press, 1997), pp. 19–20.

⁹ See Nicholas Cook, *Music Imagination and Culture* (Oxford: Oxford University Press, 1990), p. 12.

¹⁰ See Roger Moseley, ‘Playing Games with Music (and Vice Versa): Ludomusicological Perspectives on *Guitar Hero* and *Rock Band*,’ in *Taking It to the Bridge*, eds. Nicholas Cook and Richard Pettengill (Ann Arbor: University of Michigan Press, 2013), pp. 279–318.

¹¹ See Johan Huizinga, *Homo Ludens: A Study of the Play Element in Culture* (Boston: Beacon Press, 1955), and on the ‘magic circle’ and videogames, see Katie Salen and Eric Zimmerman, *Rules of Play: Game Design Fundamentals* (Cambridge: The MIT Press, 2003), p. 95.

gameplay prevails on its spatial characterization.¹² Nevertheless, the aesthetic experience of time in videogames remains under-theorized. Ludomusicology not only contributes to an understanding of videogame music, but also to videogame studies, and multimedia studies more broadly. In this regard, Tavinor's characterization of videogames as a "cultural platypus"—an issue or area of study that sheds light not only on the object in question but back on the discipline itself—is apt.¹³

Aesthetic elements of the kind that will occupy me here point beyond themselves to wider-ranging issues of the status of art in contemporary culture and the so-called "high/low" divide.¹⁴ Invoking this terminology immediately risks reinforcing the distinctly modernist binarism of high art and mass culture as a mutually exclusive polarity. This risk of using language that inadvertently reinforces the concepts being deconstructed is itself a standard critique of postmodernism, but since the very term postmodernism responds to modernism, it is necessary to reference its false dichotomies with renewed critical focus. With this broad context in mind, I will consider certain aesthetic similarities and disparities between videogame music and other musics—specifically the non-linear (by which I mean aleatory, indeterminate and mobile form) avant-garde music prevalent since the 1950s. While it is relatively straightforward to draw up a paradoxical relationship between videogame music on the one hand—arguably participating in the Adornian "culture industry"—and avant-garde modernism on the other (usually thought to resist the culture industry), one should remain sceptical of facile parallelism. The modernist music

¹² Dominic Arsenault and Bernard Perron, 'In the Frame of the Magic Circle: The Circle(s) of Gameplay,' in *The Video Game Theory Reader 2*, eds. Bernard Perron and Mark J. P. Wolf (New York and Abingdon: Routledge, 2009), p. 113. See also David Myers, 'Circles tend to return: Book Review of *The magic circle: Principles of Gaming & Simulation* by Jan Klabbers,' *Game Studies*, <http://gamestudies.org/1202/articles/myers_book_review>, accessed 15/04/2013. The magic circle could also be reconceptualized as the cyclical processes that constitute a game. See also Anahid Kassabian and Freya Jarman, 'Representation of Music in Virtual Worlds,' in *Ludomusicology: Approaches to Video Game Music*, eds. Mark Sweeney, Tim Summers and Michiel Kamp (Equinox Publishing, forthcoming).

¹³ Tavinor notes that the discovery of the platypus in the eighteenth century challenged scientists to rethink many of their previous conceptions of biological classification. See *The Art of Videogames*, p. 12.

¹⁴ This division between highbrow and lowbrow art has a lot to do with accessibility and target audiences as well as other immanent distinctions.

in question is often thought of in terms of an “order/disorder” binarism that does not necessarily apply to videogame music. However, the distinction between chance (disorder) and choice (a form of non-linear *order*) was rediscovered by composers such as Pierre Boulez, and this non-linear form of order is more in keeping with videogame music and videogame aesthetics.¹⁵ This thesis will therefore also address questions pertinent to contemporary musicology and postmodern scholarship in general—namely, why the order/disorder spectrum has played such a central role in the aesthetic makeup of both music and videogames, and how it might be reconfigured by contemporary (and particularly postmodern) thought.¹⁶

Postmodernism is couched in the ensuing chapters primarily in terms of the fundamental principle of relativity. The apparatus of deconstruction critically highlights underlying ideologies, but this first step of self-consciousness need not be the end of the process of critical thought. Indeed, it has not been. James Franklin has argued that from a philosophical perspective, pervasive relativistic arguments have severe limitations that have not yet been circumvented. He argues that the relativist conclusion, “we cannot know things as they are in themselves” just does not follow from the premises about how we can know things only as they are related to us.¹⁷ The fact that these philosophical problems remain contentious at a fundamental level supports the continued efforts of theorists and interpreters. This is particularly clear in the case of the developing New Musicology (although that term has aged considerably), which brought aspects of Critical Theory into play within the discipline. At first, it offered a powerful ideology

¹⁵ After experimenting with ‘total serialism’ (where all musical parameters are systematically controlled and serially organized) in order to free himself from the clichés of leaned styles, Boulez rejected the chance procedures of Stockhausen’s *Piano Piece XI* (1956) because he realized that this was in fact the same trap of ‘automatism’ that Ligeti had levelled against Boulez’s *Structure Ia*: ‘Leaving any aspect to chance produced exactly the same effect as being forced by some scheme: the composer’s presumed liberty of action was compromised.’ Instead, in his Third Piano Sonata (1955–7) he employed a mobile form based on choice. See Paul Griffiths, *Modern Music and After: Directions Since 1945* (Oxford: Oxford University Press, 1995), p. 105. This work, and others, will be discussed elsewhere in this thesis.

¹⁶ Considering videogame music in this context may already imply aesthetic judgements from the outset. However, the comparisons afforded by this contextualization are informative in developing an aesthetic theory of videogame music.

¹⁷ James Franklin, ‘Stove’s Discovery of the Worst Argument in the World,’ *Philosophy* 77 (2002): 615–624.

critique, especially important for those groups that traditional historical musicology marginalized. However, the very self-reflective processes that enabled these developments have subsequently been reapplied on them, enabling the possibility of further “reconstruction”. The spirit of this second part of the repeating cycle of postmodernist methodology is evident in Alistair Williams’s *Constructing Musicology*.¹⁸ This discussion does not serve as a definition of postmodernism, of course, but as Fredric Jameson wrote, ‘*Postmodernism* is not something we can settle once and for all and then use with a clear conscience. The concept, if there is one, has to come at the end, and not at the beginning, of our discussions of it.’¹⁹ The remainder of this introduction will occupy itself with definitions and categorizations of the videogame object before moving on to consider the issues raised by an aesthetic study of videogame music.

The Videogame Object: Definitions and Categorizations

As with any related medium—such as film, music, or the novel—ontological definitions are always problematic. Nevertheless, some sense of what constitutes a videogame and how it can be categorized is an essential precursor to a discussion of its aesthetic properties. As the preeminent scholar in the field of videogame sound (including but not exclusive to music), Karen Collins’s adoption of Jesper Juul’s definition of ‘game’ is an appropriate place to start:

a rule based system with a variable and quantifiable outcome, where different outcomes are assigned different values, [where] the player exerts effort in order to influence the outcome, the player feels emotionally attached to the outcome, and the consequences of the activity are negotiable.²⁰

The qualifying ‘video’, Collins explains, simply refers ‘to any game *consumed* on video screens, whether these are computer monitors, mobile phones, handheld devices, televisions, or coin-

¹⁸ Alistair Williams, *Constructing Musicology* (Farnham: Ashgate, 2001), esp. pp. 139–40.

¹⁹ Fredric Jameson, *Postmodernism, Or, The Cultural Logic of Late Capitalism* (London: Verso, 1991), p. xxii.

²⁰ Jesper Juul cited in Karen Collins, *Game Sound: An Introduction to the History, Theory, and Practice of Videogame Music and Sound Design* (Cambridge, Massachusetts: MIT Press, 2008), pp. 2–3.

operated arcade consoles.²¹ At the inaugural conference of the Ludomusicology Research Group in Oxford (2012), a productive discussion about the distinction between “playing (musical) games” and “playing with (musical) toys” hinged on the idea of “structured play” as opposed to simply playing.²² Structuring could point to a mode of reception (a formalized institutional environment such as the concert hall, or more broadly, the way in which it is listened to), or to aspects of form and structure designed by an active agent (the composer). Both meanings are viable and useful, although the second is perhaps the most directly relevant to this study. Playing a videogame, then, involves playing in a structured way, with the game’s rules and mechanisms providing form.²³

The videogame market is clearly demarcated by genre, each one aimed at a specific demographic. However, there has been much debate about how exactly genre classifications should be defined and, more specifically, whether to rely on pre-established (largely narrative-based) genres adopted from other mediums, such as literature or film, or categories based on a game’s particular mode of interactivity. The Entertainment Software Association (ESA) provides a yearly booklet of statistics summarizing the state of the (American) industry, information that is

²¹ Collins, *Game Sound*, p. 3. (Emphasis added: it is no coincidence that Collins uses this word.) It is worth noting a great deal of discussion in the field of videogame studies about the need for consistent usage of certain terminology, especially with general terms such as ‘videogame’, ‘video-game’ music or indeed, ‘video game’. See ‘Introduction’ to Perron and Wolf, *The Video Game Theory Reader 2*, pp. 1–21, 6–8. For more detail, see David Thomas, Kyle Orland and Scott Steinberg, *The Videogame Style Guide and Reference Manual* (London: Power Play Publishing, 2007), retrieved from <<http://www.gamestyleguide.com>>, accessed 15/04/2013. This guide is in fact more of a glossary than a style guide in the traditional sense, but nevertheless provides a useful index of pertinent nomenclature as well as a limited bibliography and ‘who’s who’ in the industry. I have opted to conform to this guide’s suggestions on the formatting of certain terminology for the sake of consistency and readability, even though it has been criticized as somewhat arbitrary on occasion. For instance, it seems to break its own rule on determining the usage of terminology like ‘videogame’ based on popularity and consistency.

²² Naturally, these are not so much categories as a spectrum. This distinction is similarly useful when it comes to defining music as structured sound, in contradistinction to other unstructured sounds or sound effects (the purpose of which is to render naturally occurring sounds either through recording or some form of synthesis). It is worth noting that in his 1957 lecture on ‘Experimental Music’, John Cage defines music as ‘a purposeless play’ which is ‘an affirmation of life—not an attempt to bring *order out of chaos* nor to suggest improvements in creation, but simply a way of waking up to the very life we’re living.’ These concepts will be also discussed below in terms of aesthetic theory. See John Cage, *Silence: Lectures and Writings* (London: Marion Boyars, 1973), p. 12. (Emphasis added to highlight that this terminology is not coincidental.) The concept of “play” in terms of aesthetic theory will be discussed in more detail below.

²³ See also Anahid Kassabian and Freya Jarman, ‘Representation of Music in Virtual Worlds.’

often referred to as a good indicator of annual global trends. It is immediately evident when evaluating their list of so-called ‘super genres’ (see Table I.1) that there is little consistency; the list is a practical commercial categorization derived from ESA’s data source, rather than a systematic or inherently logical one. In addition, the categories are not clearly defined in the document and are in danger of overlapping with one another when compared to other ‘standard’ definitions.

Super Genre	% Units Sold 2011
Action	19.0%
Shooter	18.4%
Sport Games	14.8%
Family Entertainment	11.0%
Adventure	9.5%
Role-Playing	7.2%
Racing	5.8%
Casual	4.0%
Fighting	3.7%
Strategy	2.8%
Other Games, Compilations	2.1%
Children’s Entertainment	0.8%
Flight	0.6%
Arcade	0.2%

Table I.1: Units Sold by Super Genre (2011)²⁴

Alternative strategies have been proposed based on a variety of separate parameters, but no consensus has been reached.²⁵ As Thomas Apperley has pointed out, these debates are a reflection of a broader methodological divide within videogame studies, namely, between those favouring “narratology” and those who promote a “ludological” approach.²⁶ Ludology considers

²⁴ Entertainment Software Association, ‘2012 Sales, Demographic and Usage Data: Essential Facts about the Computer and Videogame Industry,’ retrieved from <http://www.theesa.com/facts/pdfs/esa_ef_2012.pdf>, accessed 04/09/2012. (Data source: NPD Group/Retail Tracking Service.)

²⁵ See, for instance, Ernest Adams, ‘The Designer’s Notebook: Sorting out the Genre Muddle,’ on *gamasutra.com* (09/07/2009) retrieved from <http://www.gamasutra.com/view/feature/132463/the_designers_notebook_sorting_.php>, accessed 04/09/2012.

²⁶ Thomas H. Apperley, ‘Genre and game studies: Toward a critical approach to videogame genres,’ *Simulation & Gaming* 37/1 (March 2006): 6–23. See also Mark J. P. Wolf, *The Medium of the Videogame*, esp. Chapter 6, ‘Genre and the Videogame,’ (University of Texas Press, 2002), retrieved from <<http://www.robinlionheart.com/gamedev/genres.shtml>>, accessed 04/09/2012. See also David A. Clearwater, ‘What Defines Video Game Genre? Thinking about Genre Study after the Great Divide,’ *Loading...* 5/8 (Spring 2011): 29–49.

videogames as structured play and is primarily concerned with their uniqueness as objects of study.²⁷ In contrast, the narratological approach considers videogame studies as an extension of literary or dramatic narrative.²⁸ Although the binarism of narratology and ludology is problematic for theorists as a powerful false dichotomy, as a spectrum it is unavoidable when considering individual games from the developers' or the audiences' perspectives.²⁹ The games themselves can often be categorized as being more inviting to one approach than another. *Crysis* (Crytek/EA, 2007) is a predominantly **single player, first-person shooter** (or "shoot-'em-up", also classified more broadly as an action/adventure game), and could be viewed as narrative-oriented in spite of its combative gameplay due to the importance of narrative **cut-scenes** in its single-player campaign.³⁰ In the second chapter, I will consider an abstract musical puzzle game, *Chime* (Zoë Mode/OneBigGame, 2007), that sits more obviously on the ludo-centric end of the spectrum. Nevertheless, it is important to remember that this spectrum is a guide to classification and not a prompt to a particular set of methodologies, both of which are useful. (Issues concerning music's ability to portray a narrative have been discussed at length since the advent of the New Musicology in the 1990s. While these debates have significance here and in the following chapters, for the most part they are not directly applicable to these mixed-media contexts.³¹)

²⁷ For an early 'manifesto', see Gonzalo Frasca, 'Ludology Meets Narratology: Similitude and differences between (video)games and narrative,' on *ludology.org* (24/09/2012), retrieved from <<http://www.ludology.org/articles/ludology.htm>>, accessed 24/04/2014. Originally published in Finnish as 'Ludologia kohtaa narratologian,' *Parnasso* 3 (1999): 365–371.

²⁸ See Janet Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (Cambridge, Massachusetts: MIT Press, 1998); and Barry Atkins, *More than a Game: The Computer Game as Fictional Form* (Manchester and New York: Manchester University Press, 2003).

²⁹ See Espen Aarseth, *Cybertext: Perspectives on Ergodic Literature* (Baltimore: John Hopkins University Press, 1997); and Gonzalo Frasca, 'Ludology Meets Narratology.'

³⁰ This observation reflects a tendency, rather than a rule. *Crysis* also has an additional multiplayer mode but unlike other FPS games such as those of the *Call of Duty* or *Battlefield* franchises, it is thought of as a single-player game first. These games also have single-player campaigns but their primary selling feature is a multiplayer gameplay experience.

³¹ See, for example, Vera Micznik, 'Music and Narrative Revisited: Degrees of Narrativity in Beethoven and Mahler,' *Journal of the Royal Musical Association* 126 (2001): 193–249; Carolyn Abbate, *Unsung Voices: Opera and Musical Narrative in the Nineteenth Century* (Princeton: Princeton University Press, 1991); Fred Everett Maus, 'Music as Narrative,' *Indiana Theory Review* 12 (1991): 1–34; Jean-Jacques Nattiez, 'Can One Speak of Narrativity in Music?,' trans. Katharine Ellis, *Journal of the Royal Musical Association* 115 (1990): 240–57 (originally published as 'Peut-on parler de narrativité en musique?,' *Canadian University Music Review: Alternative Musicologies/Les Musicologies alternatives* 10 (1990): 68–91; Richard Littlefield and



Figure I.1: First- and Third-Person Perspectives in *Crysis*

The genres in Table I.2 have been selected as the most commonly cited by both gamers and critics as the core categories. Whether or not a game is single player or **multiplayer** is one of the principal levels of categorization.³² Many games are also distinguished by the player's perspective, despite the fact that the player is often able to change perspectives during gameplay. For instance, shooters are often referred to as 'first-person shooters' (FPS), regardless of whether the player can switch to an over-the-shoulder camera third-person perspective. (The two images shown in Figure I.1 are both taken from *Crysis*: the first is in the default first-person perspective [FPP], as intended for normal gameplay, while in the second the player has switched to third-person perspective [TPP].)

David Neumeyer 'Rewriting Schenker: Narrative—History—Ideology,' *Music Theory Spectrum* 16/1 (Spring, 1992): 38–65; Fred Everett Maus, 'Classical Instrumental Music and Narrative,' in *A Companion to Narrative Theory* ed. James Phelan and Peter J. Rabinowitz (Oxford: Blackwell Publishing, 2005), pp. 466–483.

³² Of course, many games include both modes of gameplay. This sometimes strains resources so that priority is given to one over the other. See, for instance, Ken Levine's comments on the decision not to include a multiplayer mode for *BioShock Infinite*. Goldfarb, 'Ken Levine on Reinventing BioShock Infinite,' on *Imagine Games Network* (11 December 2012), retrieved from <<http://uk.ign.com/articles/2012/12/12/ken-levine-on-reinventing-bioshock-infinite>>, accessed 07/10/2013.

Genre	Description
Shooter/Shoot 'em up	FPP/TPP combat-oriented games in which the principal weapons are firearms.
Role-Playing	The RPG is often a TPP action/adventure game that involves developing a character's "statistics" (such as health) whilst exploring their story in a virtual world.
Action/Adventure	Category that could feasibly include most FPP/TPP games. Aside from the specific genres described above, other sub-genres include Stealth , Detective and Survival Horror . Usually predominantly narrative-based.
Fighting/Beat 'em up	Martial Arts/Boxing games in FPP/TPP.
Sport	Virtual representation of any sporting competition/activity.
Racing	Arguably a sub-genre of Sport, could include any form of racing, although generally refers to motorcar racing games in FPP/TPP.
Casual	A catchall category that includes anything from card games (such as Solitaire) to "Social Games" (such as <i>Farmville</i> , on the Facebook application platform).
Strategy	Further divided into the subcategories of real-time (RTS) and turn-based (TBS) games, these are most similar to board games such as RISK, and chess, usually providing large-scale bird's-eye overviews rather than FPP/TPP.
Simulation	Tend to emphasize realism, simulate specific real-world scenarios, such as city building/management or aviation.
Massively Multiplayer Online	MMO games deserve special mention, although they are not a genre in the same sense as the others described above. They usually comprise large-scale persistent online virtual worlds in which players interact and socialize through their avatars. Can be a multiplayer version of any of the above genres, but is most commonly associated with the RPG (MMORPG).

Table I.2: Genre Descriptions³³

While not directly musically relevant, these classifications do encompass musical trends. For instance, racing games are invariably dominated by high-octane rock music, often **licensed**.³⁴ Such correlations have been the subject of recent study: Tim Summers concludes that

Certain genres... prioritize distinct modes of interaction and components of musical function because of the interactive mechanism of the game, and thus provide the opportunity for the examination of those particular musical concerns. That this is so indicates the close relationship between music and gameplay/interaction in the video game medium.³⁵

³³ I have provided my own basic definitions of genre, which while broad and undoubtedly problematic, are sufficient for my purposes here.

³⁴ See Stephen Baysted, 'Palimpsest, pragmatism and the aesthetics of genre transformation: composing the hybrid score to Electronic Arts' *Need for Speed Shift 2: Unleashed*,' at *Ludomusicology Conference 2013* (Conference Paper, University of Liverpool, 11–12 April 2013).

³⁵ Summers, *Video Game Music – History, Form and Genre* (PhD Thesis, University of Bristol, August 2012), p. 376. See also Sean Zehnder and Scott Lipscomb, 'The Role of Music in Video Games,' in *Playing Video Games: Motives, Responses and Consequences*, eds. Peter Vorderer and Jennings Bryant (Mahwah, New Jersey and London: Lawrence Erlbaum Associates, Publishers, 2006), pp. 241–258.

While music has perhaps been more often approached in terms of the contribution it makes to mixed media meaning, in the case of videogames, it is clear that music also has close ties to ludological constructs. Describing ludology and narratology as a spectrum on which genre can be located is certainly an intellectually fruitful starting point as it highlights salient tensions between play (and its inherent cognitive requirements) and hermeneutic aspects of the videogame object. This tension is crucial to understanding the role of videogames in contemporary culture and such theorizing will also shed new light on musical aesthetics in general.

Aesthetic Theory

Graeme Kirkpatrick argues that videogames primarily demand to be considered aesthetically. Though Grant Tavinor's interests are explicitly focused on "art status", he concurs that the 'fictional first-hand experience of gameplay seems to give it an aesthetic edge.'³⁶ It is important to clarify exactly what is meant by the term "aesthetic" before going any further. The word comes from the Greek, *aisthanomai*, meaning 'to perceive', and along with the moral branch of philosophy, it has traditionally been categorized as "value theory", because it deals with value judgements.³⁷ The study of aesthetics has generally gone hand-in-hand with art, and the orthodox opinion that art is a sub-category of aesthetics still holds sway.³⁸ Although it is generally used to refer to objects that are simply visually pleasing, traditional aesthetic theory of the sort outlined by Immanuel Kant aims to move beyond the superficial surface of the object through a

³⁶ Tavinor, *The Art of Videogames*, p. 6.

³⁷ Aesthetics was introduced as a 'science of perception' by Alexander Baumgarten in the mid-eighteenth century. See Marcia Muelder Eaton, 'Art and the Aesthetic,' in *The Blackwell Guide To Aesthetics*, ed. Peter Kivy (Oxford: Blackwell Publishing, 2004), pp. 63–77. See also 'aesthetic, n. and adj.,' *OED Online* (Oxford University Press), retrieved from <<http://www.oed.com/view/Entry/3237>>, accessed 14/01/2014.

³⁸ Though the converse—that all art is aesthetic—is implied, it is less often stated, since art may also involve other aspects, such as meaning. Kant argued that art entailed knowledge (specifically, knowledge that an object has been intentionally created or crafted) in a way that aesthetic experience did not. See Eaton, 'Art and the Aesthetic.'

consideration of the interaction between “play” and “form”.³⁹ The concept of play adopted from Kant by subsequent theorists—imagination free from determinate concepts⁴⁰—is the basis from which form is perceived.⁴¹ Kant famously valued music the least of the arts, themselves collectively subordinate to nature. However, as Scruton argues, music is actually an excellent fit for Kant’s aesthetic theory:

When I hear music, I hear a certain organization. Something begins, develops, and maintains a unity among its parts. This unity is not indeed *there* in the notes before me. It is a product of my perception. I hear it only because my imagination, in its ‘free play’, brings my perception under the indeterminate idea of unity... But this perception is not arbitrary, since it is compelled by my rational nature. I perceive the organization in my experience as objective.⁴²

Thus, this unity of form is created in the subject (the listener/viewer) through a type of play, even though it is also possible to uncover its origins in the object (the music/image) through a process of objective analysis. The result of the interaction between play and form can be judged as aesthetically pleasing or beautiful. Explaining Kant’s theory, Kirkpatrick stresses that it is not the value system that is at issue here, but the combination of play and form in the videogame as creating an aesthetic experience.⁴³ Early forms of art theory (broadly speaking classical aesthetic theory) were based predominantly on *mimesis*⁴⁴—representation of an actual object. However,

³⁹ Prior to the publishing of his seminal *Critique of Judgment* in 1790, Kant himself had considered aesthetics as somewhat of a non-starter, since it seemed to be simply a question of taste and not an issue worthy of philosophical rigour. However, Kant later turned to aesthetics as the crucial subjective link between the two distinct realms of objective knowledge accessible by science (nature) and philosophy (self-consciousness). It is no coincidence that it was in the 1950s that a similar impasse in philosophical approaches to aesthetics was breached. See Peter Kivy’s ‘Introduction’ to *The Blackwell Guide To Aesthetics*, 1–11, pp. 1–3. See also Andrew Bowie, *Aesthetics and subjectivity from Kant to Nietzsche* (Manchester: Manchester University Press, 2003), esp. ‘Introduction’ and Chapter 1, pp. 1–48.

⁴⁰ ‘Indeterminate ideas’ like formal unity are, in other words, abstract ideas of the imagination. ‘In the free play of the imagination, concepts are either wholly indeterminate, or if determinate not applied. An example of the first is the imaginative “synthesis” involved in seeing a set of marks as a pattern. Here there is no determinate concept. There is nothing to a pattern except an experienced order, and no concept applied in the experience apart from that indeterminate idea. An example of the second is the “synthesis” involved in seeing a face in a picture. Here the concept “face” enters the imaginative synthesis, but it is not applied to the object. I do not judge that this, before me, is a face, but only that I have imaginative permission, as it were, so to see it.’ Scruton, *Kant: A Very Short Introduction* (Oxford: Oxford University Press, 2001), p. 105.

⁴¹ For a psychological evaluation of play as ‘imagination’, see Huizinga, *Homo Ludens*.

⁴² Scruton, *Kant*, p. 106.

⁴³ Kirkpatrick, *Aesthetic Theory and the Videogame*, p. 30.

⁴⁴ The opposition of mimesis to diegesis (a story enacted as opposed to a story ‘told’ by a narrator) is derived from Plato’s *Republic* and Aristotle’s *Poetics*. The terms are not to be confused with more recent

the aesthetic theory that emerged in the eighteenth century recognized an unbridgeable gap between the semblance of an object and the object itself, and therefore came to value aesthetic elements as distinct from representational accuracy. The growth of the importance of “absolute music” in the nineteenth century owes much to the fact that music was considered the most abstract and non-representational of the arts, its ability to express the inexpressible reflecting ‘how our self-understanding can never be fully achieved by discursive articulation.’⁴⁵

In some contexts—especially those associated with the visual arts—the term “form” is often used in a more Platonic, ontological sense. Form can be conceived of both spatially and temporally and the ambiguity arising from this lack of conceptual clarity is perhaps responsible for any confusion in Kirkpatrick’s equation of videogames and the aesthetics of fine art (videogames being temporal, like musical performances, while form in fine art paintings is primarily a spatial concept). The current move to develop appropriately medium-specific terminology and theory is therefore also particularly relevant for the concept of aesthetic form.⁴⁶ In his essay ‘The Video Game Aesthetic: Play as Form’, David Myers uses the term in more of an ontological sense (an object whose form represents a horse, for instance) than a musicologist might (as a synonym for, or category of, structure).⁴⁷ Due to the similar temporal and performative nature of both music and videogames, then, the musicological understanding of form should also prove to be particularly useful for videogame aesthetic theory. Jameson’s

film music theory’s opposition of diegetic/non-diegetic categories. In ludology, mimesis is sometimes used to refer to the self-consistency of a represented world, and the availability of in-game rationalizations for elements of the gameplay.

⁴⁵ Bowie, *Aesthetics and subjectivity*, p. 3 also pp. 34–5.

⁴⁶ See, for instance, papers presented at the second Ludomusicology Conference (12–13 April 2013, Liverpool University), retrieved from <<http://www.ludomusicology.org/past-events/easter-conference/ludo-2013-abstracts/>>, accessed 07/10/2013.

⁴⁷ This is the same sense as a Platonic archetype. Myers, ‘The Video Game Aesthetic: Play as Form,’ in *The Videogame Theory Reader 2*, pp. 45–64. Other essays from the same volume also contribute a range of disciplinary perspectives, not all of which can be prioritized here. For a summary, see *The Videogame Theory Reader 2*, ‘Introduction’, esp. pp. 16–17. It is telling that although the editors use the term ‘audiovisual’, the contributions are exclusively concerned with visual elements.

description of music, and pertinently, animation, in postmodern culture as ‘spatialized time’, is surely significant to the aesthetic theory of videogame music too.⁴⁸

Discussions of aesthetics tend to revolve around complex issues about the historical contingency or autonomy of aesthetic properties. On the one hand, Carl Dahlhaus states that ‘esthetic experience implies something historical.’⁴⁹ On the other, although Scruton promotes the idea of a critical function for art, by which art questions social conditions through artistic autonomy, he simultaneously argues that great art transcends social conditions: ‘Its meaning as ideology may be what interests us least, when we see it as a work of art.’⁵⁰ If aesthetic judgements are to be drawn (through analysis) from the music itself (in its most objective sound or notated form), they must be to some degree autonomous—as Dahlhaus would have it, “relatively autonomous”—from external goals and historical context. Nevertheless, such judgements *are* historically contingent: for instance, the influence of dance on musical form is a critical aspect of the aesthetics of a Chopin Waltz, although the dance characteristics have been absorbed into immanently musical ones and shed their original functions. Lawrence Kramer describes even Dahlhaus’s compromise of relative autonomy as a ‘chimera’—‘neither music nor anything else can be other than worldly through and through.’⁵¹ This stance is grounded in the view that pretences to an autonomous artwork are in fact a means of promoting a concealed ideology. Therefore, Kramer argues that it is essential for postmodern musicology to subject theories of musical understanding to criticism.⁵² This has led contemporary (and postmodern)

⁴⁸ See Jameson, *Postmodernism*, pp. 299–300.

⁴⁹ Carl Dahlhaus, *Aesthetics of Music*, trans. William W. Austin (Cambridge: Cambridge University Press, 1982), p. 73.

⁵⁰ Scruton, *The Aesthetics of Music*, p. 430.

⁵¹ Lawrence Kramer, ‘The Musicology of the Future,’ *Repercussions* 1 (1992): 5–18, 9.

⁵² See also Lawrence Kramer, ‘Music Criticism and the Postmodernist Turn: In Contrary Motion with Gary Tomlinson,’ *Current Musicology* 53 (1993): 25–35; Kramer, ‘The Musicology of the Future’; Kramer, *Musical Meaning: Toward a Critical History* (Berkeley: University of California Press, 2002); Susan McClary, *Feminine Endings: Music, Gender, and Sexuality* (Minnesota and Oxford: University of Minnesota Press, 1991); Gary Tomlinson, ‘Gary Tomlinson responds,’ *Current Musicology* 53 (1993): 36–40; and Tomlinson, ‘Musical Pasts and Postmodern Musicologies: A Response to Lawrence Kramer,’ *Current Musicology* 53 (1993): 18–24.

musicologists to employ dialectical approaches.⁵³ An appreciation of music as aesthetic experience should form part of a dialectical understanding alongside historical, analytical and hermeneutical modes of knowledge. Perhaps Kant's view of art in fact embodies these different modes well: 'Art is... an organ of philosophy, a means of advancing as we grope in the darkness where senses, imagination, and understanding coalesce into knowledge.'⁵⁴

Adorno and the Culture Industry

Theodor Adorno complicates Kant's idea of formal autonomy with Hegel's emphasis on an artwork's intellectual "import" (its significance and meaning) and Marx's insistence on the embeddedness of art in society. (The impact of New Musicology in the 1990s largely encouraged a perception of formalist analysis as a relic of modernist musicology.⁵⁵) This results in a precarious and complex understanding of art's aesthetic autonomy. Art's import is brought into a dialectical relationship with its "function"—categories that are at once distinct and yet ultimately inseparable. Adorno still tends to lay emphasis on the former, because he believes that art should be socially meaningful although not political (a "functionlessness" reminiscent of Kant's 'purposeless purposiveness'⁵⁶), and also due to the importance of his conception of "truth content" (*Wahrheitsinhalt*). An artwork's import stems from another dialectical relationship

⁵³ I posit that listeners shift focus through different modes of thought, aesthetic being just one. If this ability depends on the aesthetic and intellectual experiences of the listener (Dahlhaus suggested that they are an intrinsic part of aesthetic perception), then aesthetic experiences are indeed subjective to a degree. See Dahlhaus, *Aesthetics of Music*, p. 73.

⁵⁴ Dahlhaus, *Aesthetics of Music*, p. 38.

⁵⁵ Efforts were made to find an appropriate balance in grounding analysis in 'objective' musical materials and yet recognizing their historicity. See, for instance, Julian Horton, 'Postmodernism and the Critique of Musical Analysis,' *The Musical Quarterly* 85/2 (2001): 342–366; Derrick Puffett, 'Editorial: In Defence of Formalism,' *Music Analysis* 13/1 (1994): 3–5; Kofi Agawu, 'Analysing Music under the New Musicological Regime,' *Journal of Musicology* 15 (1997): 297–315; Joseph Kerman, 'How We Got into Analysis, and How to Get Out,' *Critical Inquiry* 7 (1980): 311–31; Kerman, *Contemplating Music: Challenges to Musicology* (Cambridge, Massachusetts: Harvard University Press, 1985); and Lawrence Kramer, *Classical Music and Postmodern Knowledge* (Berkeley: University of California Press, 1995).

⁵⁶ See Kant, *Critique of Judgement*, ed. Nicholas Walker, trans. James Creed Meredith (Oxford: Oxford University Press, 2007), pp. 51–3.

between form (*Form*—the articulation of a whole structure into various parts) and content (*Inhalt*—the specific organization of musical material that makes up a particular work).⁵⁷ Truth content (ostensibly a Boolean value judgement with no granularity or critical element) is contingent on a negotiation between the general and the particular. Adorno's conception of art is thereby predicated primarily on his aesthetic theory, rather than extra-musical signification.

Building on this aesthetic theory, Adorno suggested that traditional art is contingent on generating aesthetic pleasure and that it points beyond itself to a better place. In contrast, the products of the culture industry merely pretend to aspire to such 'transcendental beauty' but in fact pacify the population by displacing the desire for 'freedom and the genuinely new' with consumerism, and labelling those who are dissatisfied with the *status quo* as abnormal.⁵⁸ Unlike the music of Beethoven and Schoenberg, composers championed by Adorno, music produced in the culture industry provides facile and immediate pleasure that gives the impression of promoting individualism by claiming that what are in fact variations on a theme are real differences. This 'pseudo-individualization' masks both the standardization of products and their schematization, phenomena that ultimately encourage their audience to be unreflective of their condition and socio-economic status.⁵⁹ This is the hallmark of capitalist culture, as Adorno sees it.⁶⁰ As Andrew Bowie explains, aesthetic theory itself developed as a form of resistance to the dominance of the capitalist value system: 'Even though artworks clearly do become commodities,

⁵⁷ See Max Paddison, *Adorno's Aesthetics of Music* (Cambridge: Cambridge University Press, 1993), pp. 151–157.

⁵⁸ See Adorno and Max Horkheimer, 'The Culture Industry: Enlightenment as Mass Deception,' in *Dialectic of Enlightenment* (London: Verso Books, 1997), pp. 120–167; and Adorno, *The Culture Industry: Selected Essays on Mass Culture*, ed. J. M. Bernstein (London: Routledge, 1991), esp. Chapter 3.

⁵⁹ See Adorno and Horkheimer, 'The Culture Industry: Enlightenment as Mass Deception'; Adorno, 'The Schema of Mass Culture' in *The Culture Industry: Selected Essays on Mass Culture*, pp. 61–97; and 'Toward a Political Economy of the Industry' in Deborah Cook, *The Culture Industry Revisited: Theodor W. Adorno on Mass Culture* (Rowman & Littlefield, 1996), pp. 27–50.

⁶⁰ Adorno's largely pessimistic tone has been contrasted with the more utopian vision touted by Jacques Attali. See Jacques Attali, *Noise: The Political Economy of Music*, trans. Brian Massumi, Foreword by Fredric Jameson, Afterword by Susan McClary (Minnesota: University of Minnesota, 1985). Originally published in French as *Bruits: essai sur l'économie politique de la musique* (Presses Universitaires de France, 1977). See also Chapter 2.

neither their use-value nor their value as commodities can constitute them as works of art.⁶¹

Indeed, Kant argued that although art is intentionally produced (it is purposive) it is without purpose (social function).

Classical music is often repackaged as Muzak—the background music heard in supermarkets and elevators with its dynamic contrasts normalized—manipulative sounds to be *heard* but not *listened* to.⁶² Cook notes that historically, any music that confines the listener’s ‘freedom of imagination’ (Schumann’s formulation), whether it be overly prescribed modernist music or inane Muzak, jeopardizes its status *as music* in the eyes of many (conservative) critics.⁶³ Like Eduard Hanslick, Adorno even extended this criticism to include “programme music” (music reliant on, or at least supplemented by, a written programme, often in the form of a narrative). Hanslick’s own seminal work on musical aesthetics, *On The Beautiful in Music*, was published about a century before Adorno but already made clear that aesthetic art was more than a series of psychological effects and required the active participation of its audience.⁶⁴ Cook summarizes that in spite of many significant points of difference in the numerous positions put forward, ‘Adorno, Dahlhaus, and [Stephen] McAdams are in agreement with each other... that the active participation of the listener plays an essential role in the constitution of the musical artwork.’⁶⁵ However, *pace* Heinrich Schenker, Cook finds that even musically educated listeners do not

⁶¹ Bowie, *Aesthetics and subjectivity*, p. 4.

⁶² See the work of sociologist Tia DeNora, in particular, *Music in Everyday Life* (Cambridge: Cambridge University Press, 2000), and *After Adorno: Rethinking Music Sociology* (Cambridge: Cambridge University Press, 2003). See also *Ubiquitous Musics*, edited by Marta García Quiñones, Anahid Kassabian and Elena Boschi (Farnham, Surrey: Ashgate Publishing, 2013).

⁶³ See Cook, ‘Musical form and the listener,’ in *Music Imagination and Culture*, pp. 10–70, esp. pp. 10–22.

⁶⁴ See Eduard Hanslick, *On the Musically Beautiful: A Contribution Towards the Revision of the Aesthetics of Music*, trans. Geoffrey Payzant (Indianapolis: Hackett Publishing, 1986), p. 91. Originally published as *Vom Musikalisch-Schönen* (Leipzig, 1854).

⁶⁵ Cook, *Music, Imagination and Culture*, p. 17. The quotation refers to R. G. Collingwood, *The Principles of Art* (London: Oxford University Press, 1938); Stuart Hampshire, *Modern writers and other essays* (London: Chatto & Windus, 1969); Carl Dahlhaus, *Foundations of Music History*, trans. J. B. Robinson (Cambridge & New York: Cambridge University Press, 1983); and Stephen McAdams, ‘The auditory image: A metaphor for musical and psychological research on auditory organization,’ in *Cognitive Processes in the Perception of Art*, eds. W.R. Crozier and A.J. Chapman (Amsterdam: North-Holland, 1984), pp. 289–323.

generally listen to form in the way an aesthete might desire.⁶⁶ He nevertheless concludes that the disparity between musical experience and the aesthetic idealism of music theorists is an acceptable one because it is ‘a defining attribute of musical culture.’⁶⁷ I would add that while actively applied knowledge is necessary to label aspects of musical form, such as a recapitulation, only an active memory is required to experience the sense of return. Furthermore, when used by an aesthete rather than a music theorist, the term form is a broader concept of musical structure that also encompasses smaller-scale microstructures such as a melody or rhythmic patterns—aspects of musical form that are viable candidates for the conscious or unconscious experience of listeners, regardless of their musical education.

Kirkpatrick’s Theory of Videogame Aesthetics

In response to the emerging cultural climate (the perceived rapid Americanization or Westernization of global culture⁶⁸), post-war modernist conceptual artists sought to offer a form of artistic resistance through increasingly complex and abstract work: ‘Art’s seeming disorder is its organized response to the deeply administered chaos of capitalism.’⁶⁹ This in turn eventually led artists to a rejection of semblance, arguably even negating conventional aesthetics altogether. Kirkpatrick argues that objects such as Duchamp’s infamous *Fountain* (1917) have no form and therefore offer no aesthetic experience, at least in the traditional sense of the phrase.⁷⁰ According

⁶⁶ See Heinrich Schenker, *Free Composition*, ed. Oswald Jonas, trans. Ernst Oster (London: Longman, 1979), originally published as *Der freie Satz* (Wien, 1935); Felix Salzer, *Structural Hearing: Tonal Coherence in Music* (New York: Charles Boni, 1952); and David Carson Berry, *A Topical Guide to Schenkerian Literature: An Annotated Bibliography with Indices* (Hillsdale, NY: Pendragon Press, 2004).

⁶⁷ See Cook, *Music, Imagination and Culture*, pp. 68–70.

⁶⁸ See, for example, Volker R. Berghahn, ‘The debate on “Americanization” among economic and cultural historians,’ *Cold War History* 10/1 (February 2010): 107–130; and Ruth Oldenziel, ‘Is Globalization a code Word For Americanization?: Contemplating McDonalds, Coca-Cola, and military bases,’ *Tijdschrift voor Sociale en Economische Geschiedenis* 4/3 (2007): 84–106.

⁶⁹ Kirkpatrick, *Aesthetic Theory and the Video Game*, p. 39.

⁷⁰ On the contrary, one might argue that much modernist art prioritizes an excess of form over semblance in similar ways to what Kirkpatrick describes as neo-baroque. In this sense, some modernist art could be seen as ‘just aesthetics’ or ‘pure aesthetics’. The anti-utilitarianism of Romantic idealism was a significant impetus for both modernist and postmodernist attitudes towards form and utility.

to Arthur Danto's 1980 hypothesis, after the developments in sociology and cultural theory in the 1960s (such as attempts to reveal underlying issues of class bias and an insistence on the primacy of social context), art was 'liberated' from the constrictions of aesthetic criteria.⁷¹ Although such modernist art continued to have an element of play in the puzzles it presented, the sphere in which it operated was decisively relocated from semblance/representation to the socio-political.

Adorno and Horkheimer's 1944 exploration of the so-called culture industry (in *Dialectic of Enlightenment*) has been updated to take into account developments in the second half of the twentieth century in Scott Lash and Celia Lury's *Global Cultural Industry*.⁷² While Adorno pointed to comparatively long-term cycles of manipulation, Lash and Lury suggest that the contemporary culture industry encourages the consumer to somehow participate in the creation of the very commodities they are buying through the mode of play—something they describe as 'getting ontological'.⁷³ This argument puts Kirkpatrick in a position to state that the videogame occupies a unique place within this cultural history through a precarious balancing of semblance with playing games. (Though "play" alone usually involves a pretence that the activity is real, playing a game tends to involve abstract ludological rules that are just mechanisms of gaming. Kirkpatrick argues that in general, gamers tend to be even more reluctant, than, say, the audiences of plays or filmgoers, to willingly suspend their disbelief. This is ironically at odds with the widespread emphasis on immersion within a game's fictional world—though of course, in another sense one can be immersed in the activity of playing—and highlights a disparity in two types of players, casual, and more serious gamers who place much greater emphasis on the competitive nature of gameplay at the expense of everything else.) He suggests that there is a transfer of autonomous aesthetic principles from the modernist artwork, which can no longer contain them, to the

⁷¹ See Kirkpatrick, *Aesthetic Theory and the Video Game*, p. 34, and A. C. Danto, *Art After the End of Art* (Princeton, NJ: Princeton University Press, 1995).

⁷² See Adorno, *The Culture Industry*; Adorno and Horkheimer, *Dialectic of Enlightenment*; and Scott Lash and Celia Lury, *Global Cultural Industry* (Cambridge: Polity Press, 2007).

⁷³ See Kirkpatrick, *Aesthetic Theory and the Video Game*, p. 44.

videogame object, which, whilst appearing able to accommodate them, nevertheless participates at the same time in some form of culture industry. Crucially however, Kirkpatrick argues that due to the interactive nature of play, videogames stimulate action from the gamer rather than pacify them.⁷⁴

Like other ludologists, Kirkpatrick re-employs the traditional divorce between meaning and form in order to focus on the latter. (This approach also has the additional benefit of avoiding the slipperiness of the former.) While not denying the possibility of other routes of investigation, or that videogames can signify in multiple ways, Kirkpatrick expands the concept of play to encompass the player's tangible, physical interactions. He reinterprets the role of ludology as a defensive strategy that facilitates the re-emergence of form and play in videogames (their aesthetic autonomy) and provides a shield against the largely meaning-orientated humanities.⁷⁵ According to Kirkpatrick, ludologists nevertheless miss the importance of aesthetic experience. Kirkpatrick posits that the aesthetic experience of gameplay is a form of 'virtual time' akin to dance due to its peculiar 'meaning dynamics'.⁷⁶ This sense of 'virtual time' is predicated on the postponement of a decision regarding meaning. (The connection to dance also leads him to draw parallels between gameplay and musical *performance*, although he does not pursue tantalizing temporal similarities between videogame aesthetics and musical aesthetics.⁷⁷) Subsequently, Kirkpatrick considers the videogame aesthetic as an inversion of the modernist artwork (predicated on primarily visual grounds), in that the latter presents an abstract (non-representational), static experience of form discoverable through play, whereas the videogame

⁷⁴ See Kirkpatrick, *Aesthetic Theory and the Video Game*, p. 44. This is discussed in more detail below.

⁷⁵ Kirkpatrick, *Aesthetic Theory and the Video Game*, p. 1.

⁷⁶ Related to this is Aki Järvinen's discussion of play experiences, aesthetics and emotion in 'Video Games as Emotional Experiences,' in *The Video Game Theory Reader 2*, pp. 85–108, esp. pp. 94–5.

⁷⁷ See Kirkpatrick, *Aesthetic Theory and the Video Game*, Chapter 2, pp. 48–86. Kirkpatrick maps the ludology/narratology spectrum onto space and time and suggests that 'temporal factors... [such as] embodied rhythmic experiences... determine the spatial character of the video game form'. While he applauds ludology's focus on the importance of play in videogames, he also argues that its exaggerated spatial conception of videogame form fails to account for the role of 'suspended time', a gap he aims to address 'by aligning video games with dance.'

player constantly undermines the surface fiction while attempting to master the game's routines. He suggests that the nearest cultural precedent for such paradoxical 'meaning dynamics'—an excess of form overriding and negating meaning (here gameplay is corrosive to semblance, fiction and meaning)—lies in Angela Ndalians's conception of a "neo-baroque" aesthetic (after Benjamin).⁷⁸ Although Kirkpatrick's focus on higher-level philosophical concerns ignores the arguably socially conformist nature of gaming, his opposition of gameplay and meaning, being predicated on a more restricted concept of meaning, nevertheless warrants further discussion on its own terms.

Drawing on Jacques Rancière, Kirkpatrick resists Pierre Bourdieu's rejection of aesthetic form as an objective or socially autonomous phenomenon, arguing that 'the problems of essentialism and idealism really only arise if we overstate the relationship of form to meaning.'⁷⁹ (Whilst Bourdieu is ultimately correct, his objection to aesthetic theory in principle risks disregarding aesthetics altogether.) Kirkpatrick steers his reader through abstract puzzle games (such as *Tetris*), largely avoiding narrative-orientated games, and thus is able to emphasize the fact that games need not signify, or rather, *mean* anything. By restricting his definition of meaning to narrative, morals, satire, and parody, Kirkpatrick underplays the culturally embedded significance of play as performative in its own right. However, this enables him to cast gameplay in opposition to meaning, and he draws alternative hermeneutic approaches into a precarious relationship with his own:

...while there is convergence of contemporary play with mediated fiction, there is an equally significant move within fiction towards increased ludicity. These tendencies are related to one another in a move within the culture as a whole that exceeds either gameness or fictionality in the direction of form. The outcome of this move itself remains incomplete or undecided, which is the central difficulty for discussions of the videogame object.⁸⁰

⁷⁸ See Kirkpatrick, *Aesthetic Theory and the Video Game*, Chapter 5, and Angela Ndalians, *Neo-Baroque Aesthetics and Contemporary Entertainment* (London: MIT Press, 2004).

⁷⁹ Kirkpatrick, *Aesthetic Theory and the Video Game*, pp. 30–1.

⁸⁰ Kirkpatrick, *Aesthetic Theory and the Video Game*, pp. 160.

This is, in part, further justification for the aesthetic approach—the gameness/ludicity and fictionality/narrativity of the videogame object can be envisaged as two competing spheres of influence. As one contracts, the other expands to fill the space. The opposition of ludicity to meaning, at least in broad terms, is manifestly contestable. However, Kirkpatrick provides evidence (which I corroborate to a degree in Chapter 2) which certainly points to an antagonism between the requirements of playing a videogame and immersion within its fictional narrative.

Kirkpatrick states that:

Play and form in videogames are implicated in a specific kind of cultural politics, namely, one in which meaning is at stake. The metaphoric construct, commonly applied to games, of ‘world creation’ is indicative of their status in a culture that Geert Lovink (2008) accurately characterizes in terms of ‘creative nihilism’. The playful activity that surfaces here at the heart of consumer culture spins webs of meaning that offer some psychic protection from the salient threats of economic precarity and the kinds of subjective desolation associated with life in a manipulative ‘culture industry’ (Adorno 1991). At the same time, the resulting cultural practices (of gameplay) are hollowed out, transparent in their emptiness and increasingly stand as the sign of choices people are not making.⁸¹

In other words, Kirkpatrick discovers a duality within the videogame aesthetic: on the one hand, it appears to offer attractive forms and meanings that stand against the so-called ‘creative nihilism’ of the times, but on the other hand, the element of play acts as a powerful counterweight, all but negating any trace of meaning, rendering it ‘transparent’. Kirkpatrick’s word is appropriate since the fiction is rendered a transparent layer through which players focus their attention on the mechanisms of the game. Indeed, the game designers themselves usually assist in this.⁸² David Myers recognizes a similar negation of meaning by play that works in conjunction with his concept of “anti-form”—the knowledge that play involves a pretence (either in terms of semblance—players pretend an object is real—or more fundamentally in terms of play itself not being real, but a game).⁸³ The abstract structure of rules that make up (comprise) a game (its form) also signal that they make up (invent) a game and not something real:

⁸¹ Kirkpatrick, *Aesthetic Theory and the Video Game*, p. 16.

⁸² Numerous developer diaries and interviews demonstrate that game designers foreground gameplay mechanisms in multiple ways (such as audio and visual cues) but such systems, like the ‘heads up display’ (HUD), are removed during cut-scenes which are largely identical to film.

⁸³ Myers, ‘The Video Game Aesthetic,’ p. 47.

During video game play, representations of human experience—histories, narratives, societies, and simulations—are equally hollowed by the habitual and repetitive nature of play and are equally transformed by a more fundamental, proto-representational form: an anti-form. Video game play then serves as a revelation of those natural and historical affordances that determine our behaviour, and, simultaneously, for better or worse, as a means to avoid and deny those determinations.⁸⁴

The theoretical position we are left in is paradoxical: although Kirkpatrick's vision of an autonomous videogame aesthetic relies upon the bulwark of ludology, the aesthetic experience is contingent on the player negotiating between meaning and play, or postponing a decision on the former in favour of the immediate requirements of the latter. (Furthermore, as we shall see in the case of *Crysis*, the analysed form of a videogame object, when kept autonomous from any hermeneutic dispositions of the player, is a very different object of study to that player's aesthetic experience of form. Whether it is right and useful to consider the structure of a videogame as an autonomous "work" or whether it is only proper to consider a player's particular experience of form are questions on which musicology can offer insight.⁸⁵) Kirkpatrick views the videogame as a cultural form that dialectically succeeds in maintaining aesthetic autonomy, whilst simultaneously, being heteronomous in its relation to contemporary consumerism.⁸⁶ Indeed, paradoxically, he goes as far as to suggest that the aesthetic autonomy of all aesthetic art is in fact contingent on the heteronomy of its medium. This is because its existence and effectiveness, he argues, depends on the 'logic of contemporary domination'—capital and commerce.⁸⁷ Although this is a generalization that may not always hold true, it is a paradox closely related to both Scruton's precarious dialectic of art's critical function and autonomous existence, and Dahlhaus's concept of 'relative autonomy'.

⁸⁴ Myers, 'The Video Game Aesthetic,' p. 61.

⁸⁵ Iain Hart's conference paper evaluated the concept of gameplay as a set of 'experience potentials' in 'Meaningful play: A performative analysis of video game music,' at *Ludomusicology Conference 2013* (Conference Paper, University of Liverpool, 11–12 April). The related issues in musicology surround the 'work concept'. See Lydia Goehr's *The Imaginary Museum of Musical Works*, rev. ed. (New York: Oxford University Press, 2007) and *The Musical Work: Reality or Invention?*, ed. Michael Talbot (Liverpool: Liverpool University Press, 2000).

⁸⁶ See Kirkpatrick, *Aesthetic Theory and the Video Game*, p. 35.

⁸⁷ Kirkpatrick, *Aesthetic Theory and the Video Game*, p. 36.

Perhaps controversially, Kirkpatrick draws from Rancière to argue that videogames stimulate action:

The video game and its culture of play are ambivalent. On one side, this cultural form possesses the autonomy of the aesthetic artwork. It maintains an internal dissonance that ensures it is encountered and experienced as something that is not the same—it is not like the other things we experience in consumer capitalism. The video game does not pacify; it stimulates us into action and... this places it at odds with the culture industry.⁸⁸

Whether playing really amounts to action in the Adornian sense (as the antithesis to pacification) remains highly questionable. Although Adorno did not exactly define ‘action’ in this sense, pacification is a critical component of his conception of the culture industry. To argue that videogames stimulate action in this context must entail more than the physical action required by interactive play; players would need to be aesthetically, emotionally, or intellectually engaged. The state of consciousness of the player is a crucial factor here that might be broadly linked to different game genres, although such generalizations should be resisted. Indeed, Kirkpatrick’s generalizing assertion reduces the diversity of videogame experiences to an idealized, and convenient, misrepresentation. However, there is also supportive evidence presented in the subsequent chapters that players may engage with videogames on both mimetic and diegetic levels (by which I mean that they are conscious of and participate in various ludological and narratological modes of manipulation across multiple levels of diegesis).⁸⁹

It should be noted that Kirkpatrick presents the ‘meaning dynamics’ of the videogame aesthetic as an ‘internal dissonance’.⁹⁰ The musical metaphor is particularly apt to this thesis, as a dissonance begs to be resolved. Kirkpatrick suggests that the way in which form is experienced in videogames through temporal and spatial exploration (his term is ‘extension’⁹¹) of play is a unique mirror to that of modern art, in which form is internal to the subject. This “feeling out” of form is something like dance, he says, or musical performance. However, Kirkpatrick does not recognize

⁸⁸ See Kirkpatrick, *Aesthetic Theory and the Video Game*, pp. 41–44.

⁸⁹ See Michiel Kamp, ‘Chapter 1,’ in *Four Ways of Hearing Video Game Music* (PhD Thesis, University of Cambridge, 2014).

⁹⁰ Kirkpatrick, *Aesthetic Theory and the Video Game*, p. 35.

⁹¹ Kirkpatrick, *Aesthetic Theory and the Video Game*, p. 36.

the special relationship between music and aesthetic theory, and subsequently does not expand on his reference to musical performance as a parallel zone of meaning dynamics. Many have argued, like Andrew Bowie, that music is the “purest” realm of aesthetics because of its abstract non-representational similarity to language.⁹² Indeed, scientists have repeatedly shown that both music and language are processed in the same areas of the brain.⁹³ However, as Adorno noted, music is unlike language in that it is not literally symbolic of clear concepts.⁹⁴ Adorno goes as far as to argue that music has no semiotic system (though this is certainly contestable⁹⁵), and that ‘it is by distancing itself from language that its resemblance to language finds its fulfilment.’⁹⁶ For Adorno, this fulfilment is “meaningfulness” brought about through the interplay of form and content.

Nevertheless, it is clear that not all accept Adorno’s belief that the content of art is ultimately its aesthetic. Summers suggests that music contributes to the goal of making games ‘fun’—a crucial aspect of play according to Huizinga.⁹⁷ As such, music is an important aspect in the

⁹² Of course, both music and language can be representational, such as Olivier Messiaen’s *Réveil des Oiseaux* and simple uses of onomatopoeia.

⁹³ See, for instance, Daniele Schön, Reyna Gordon, Aurélie Campagne, Cyrille Magne, Corine Astésano, Jean-Luc Anton, Mireille Besson, ‘Similar cerebral networks in language, music and song perception,’ *NeuroImage* 51/1 (15 May 2010): 450–461; Daniela Sammler, Stefan Koelsch, Tonio Ball, Armin Brandt, Maren Grigutsch, Hans-Jürgen Huppertz, Thomas R. Knösche, Jörg Wellmer, Guido Widman, Christian E. Elger, Angela D. Friederici, Andreas Schulze-Bonhage, ‘Co-localizing linguistic and musical syntax with intracranial EEG,’ *NeuroImage* 64 (1 January 2013): 134–146; *Language and Music as Cognitive Systems*, eds. Patrick Rebuschat, Martin Rohrmeier, John A. Hawkins and Ian Cross (Oxford: Oxford University Press, 2011); and Stefan Koelsch, *Brain and Music* (Oxford: Wiley-Blackwell, 2012).

⁹⁴ Philosopher, Susanne Langer’s definition of art as ‘the creation of forms symbolic of human feeling’ is of particular significance here. See Langer, *Feeling and Form: A Theory of Art Developed from Philosophy in a New Key* (New York: Charles Scribner’s Sons, 1953), p. 40, and *Philosophy in a New Key* (New York: Mentor, 1951).

⁹⁵ See, for example, Jean-Jacques Nattiez, *Music and Discourse: Toward a Semiology of Music* (Princeton: Princeton University Press, 1990); Eero Tarasti, *A Theory of Musical Semiotics (Advances in Semiotics)* (Oxford: John Wiley & Sons, 1994); *Music Semiotics: A Network of Significations*, ed. Esti Sheinberg (Farnham: Ashgate, 2012); Esti Sheinberg, *Irony, Satire, Parody and the Grotesque in the Music of Dmitri Shostakovich* (Farnham: Ashgate: 2000); David Lidov, ‘Musical Semiotics—Science, Letters, or Art?’, *Integral* 10 (1998): 125–145; Jonathan Dunsby, ‘Music and Semiotics: The Nattiez Phase,’ *The Musical Quarterly* 69/1 (Winter, 1983): 27–43; and John Roeder, ‘Toward a Semiotic Evaluation of Music Analyses,’ *Music Theory Online* 0/5 (November, 1993).

⁹⁶ See Adorno, ‘Music and Language: A Fragment,’ in *Quasi una Fantasia, Essays on Modern Music*, trans. Rodney Livingstone (London: Verso, 1998), p. 6.

⁹⁷ Summers, *Video Game Music – History, Form and Genre*, p. 378.

creation of the magic circle. Furthermore, Summers emphasises that the hermeneutic call from music in videogames is far from a clear-cut semiotic system—of course, semiosis is rarely clear-cut. Rather, he suggests that it is itself a form of play: ‘music does not simply determine one particular effect upon a listener, it creates a space of negotiation with, interaction with, play with, humans.’⁹⁸ Drawing on the work of Tia DeNora and Thomas Henricks, Summers considers music as a ‘playful negotiation’ that ‘highlights the playfulness in music’s meaning-generation. Perhaps this, then, is the legacy of game music—it reveals not only the importance for music in play, but the play in music.’⁹⁹

Carolyn Abbate’s argument (following Vladimir Jankélévitch) in favour of “drastic” experience over “gnostic” knowledge is of relevance here too.¹⁰⁰ A critical element of this argument is Abbate’s distinction between the performer and the audience and the recognition that the performer has additional technical anxieties that preclude an active or conscious engagement with gnostic modes of knowledge (broadly speaking hermeneutics). In the case of videogames, it is clear that the role of the player is multifarious, and therefore, it should come as no surprise that the many different relevant modes of knowledge and experience do not always “play together”. My focus on the aesthetics of videogame music is therefore not a denial of hermeneutic methodologies, but a recognition of a concern shared by Scott Burnham, Pieter van den Toorn and literary critic Peter Brooks—for music to have a capacity to express something it must first have its own (relatively) autonomous voice. Though their anthropomorphisation of music confuses matters, in essence, they suggest that we should ask ‘not only what a musical text

⁹⁸ Summers, *Video Game Music – History, Form and Genre*, p. 380.

⁹⁹ Summers refers to DeNora, *Music in Everyday Life*; and Thomas S. Henricks, *Play Reconsidered: Sociological Perspectives on Human Expression* (Urbana and Chicago: University of Illinois Press, 2006). Summers, *Video Game Music – History, Form and Genre*, p. 381.

¹⁰⁰ See Carolyn Abbate, ‘Music—Drastic or Gnostic?’, *Critical Inquiry* 30/3 (Spring 2004): 505–36; and Vladimir Jankélévitch, *Music and the Ineffable*, trans. Carolyn Abbate (Princeton: Princeton University Press, 2003); and Christopher Small, *Musicking: The Meanings of Performing and Listening* (Hanover and London: Wesleyan University Press, 1998).

means but how it means.¹⁰¹ Furthermore, the assumption that the ‘what’ and ‘how’ of musical meaning are necessarily mutually exclusive categories is also erroneous.

At the heart of this thesis then lies the argument that the ‘internal dissonance’ created by the precarious ‘meaning dynamics’ explored by Kirkpatrick can be better understood in a musical framework. Kirkpatrick’s internal dissonance may not simply be an antagonism between play and meaning but rather, playing with form versus playing with meaning. Both are types of play that entail some sort of mental activity within the subject: this active engagement through play is the defining feature of aesthetic experience. The former (playing with form) entails a focus on aesthetic theory; the latter (playing with meaning) involves hermeneutics and narrativity. Regardless of these focal spheres, studying ludomusicology (encompassing both methodologies) draws attention to the concept of play as an active engagement with the music/game/Text—a concept, I argue, more significant than distinguishing between high and low art. Ultimately, my suggestion is that the activity of play lies at the heart of both art and the entertainment provided by mass culture. The videogame aesthetic, and videogame music especially, draws attention to this crucial feature, thereby softening the grip of rigid conceptions of high and low.

Thesis Overview

My epigraph from Macbeth’s famous soliloquy encapsulates the significance (or lack thereof) of mortal life experienced through time. Pertinently, Macbeth suggests that in spite of all the ‘sound and fury’, the playing on a stage (Shakespeare’s metaphor for the world) ‘signifies nothing’—a charge that could be levelled at videogames. I will challenge this nihilism by arguing that

¹⁰¹ See Scott Burnham, ‘Theorists and “The Music Itself”’, *Music Theory Online* 2/2 (1996), retrieved from <<http://www.mtosmt.org/issues/mto.96.2.2/mto.96.2.2.burnham.html>>, accessed 15/10/2013; and Peter Brooks, ‘Aesthetics and Ideology: What Happened to Poetics?’, *Critical Inquiry* 20/3 (1994): 509–23.

videogames are invariably meaningful and are valuable pursuits of aesthetic experience. Videogame music often operates in similar ways to music in other mixed-media scenarios, such as film, or opera. However, in the same way that film music cannot be completely divorced from film, videogame music is contingent on and part of a videogame aesthetic. While much videogame music is composed in the traditional manner, supporting a primarily visual narrative, more recently it is becoming increasingly popular to incorporate non-linear musical systems that tailor pre-composed music and other musical elements to the dynamically changing dramatic action produced by the game. I will argue that the videogame medium—and videogame music—warrants attention as a unique but not *sui generis* set of aesthetic experiences. Precedent can be found for many of the formal ideas employed in such systems in certain aspects of avant-garde art, and especially in the aleatory music of the 1950s and 60s. Videogames are a temporal medium, and this temporal quality conditions the ways in which form and play can be conceived. While Kirkpatrick recognizes elements of this, his hypothesis can be both enriched and challenged by the connections between videogame aesthetics and musical aesthetics.

Through a series of analyses, I will show that videogames now offer a diverse range of aesthetic experiences that are not easily corralled. The videogames selected as the core case studies in the following chapters are varied, but in order to offer sufficient evidence and insight into the culture industry, the majority are “blockbuster” archetypes of the most popular genres. Whilst it is possible to find low budget, independently developed and published games that aim at more niche markets, this would not be reflective of the medium as a whole. It is important to remember that one of the principal criticisms of Adorno’s conception of the culture industry is that he greatly reduced a diverse terrain.¹⁰² While accepting the importance of independent videogame production, I would propose that its experimental leanings tend to be situated on the

¹⁰² See J. M. Bernstein, ‘Introduction’ in Adorno’s *The Culture Industry*, pp. 1–28, esp. pp. 20–26.

outskirts of the industry, the core of which forms the object of investigation in the present study.¹⁰³

Following this introduction, the first chapter will investigate the main problems that arise when analysing videogame music and non-linear musical structures. The principal theme of the chapter is the issue of play, whether engendering aesthetic form or semiotic meanings. This introductory case study will focus on the music to the first person shooter, *Crysis*, and specifically, the way in which it is implemented and categorized within the game engine. It is important to note that software companies copy-protect their content and methodologies and it is often difficult to obtain research materials in the field. While scores are also practically unattainable (notation of these forms is problematic at best), several scholars have made pioneering and highly successful investigations into ludomusicology through transcriptions and descriptions of audio cues alongside multimedia examples.¹⁰⁴ I have transcribed only a minimal number of musical excerpts, as my analysis is focused on how these function within the structure. With this in mind, I have employed Crytek's **level** editor (Sandbox 2) to provide insight into the workings of their engine, allowing Inon Zur's music to *Crysis*—and its implementation—to be analysed in a more systematic way than has yet been achieved for any videogame. My analysis will contrast aesthetic idealism against the pragmatic functionality favoured by the commercially driven industry. Through conducting a musical analysis of a single videogame, I will consider in detail how the elements of play and form combine to provide an aesthetic experience. With reference to topic theory, I will also evaluate ways in which musical meaning can be established and categorized in videogames, enabling me to situate problematic discussions of musical meaning

¹⁰³ See, for example, *The Independent Games* article on 'Art Games', retrieved from <http://tig.wikia.com/wiki/Art_Game>, accessed 10/04/2013. See also Aaron Oldenburg, 'Sonic Mechanics: Audio as Gameplay,' *Game Studies* 13/1 (September 2013), retrieved from <http://gamestudies.org/1301/articles/oldenburg_sonic_mechanics>, accessed 20/10/2013.

¹⁰⁴ See for example Zach Whalen, 'Play Along: An Approach to Videogame Music.'

alongside aesthetic considerations. This, in turn, provokes a re-evaluation of the significance of setting up form and meaning as a dichotomy.

Chapter 2 will situate the videogame aesthetic within the discourse of poststructuralism as a means to investigate issues of authorship. This discussion will be centred on *Chime*, a musical puzzle game, which will be presented as a Text. I will consider the role of the player as a Barthesian Reader whose co-authorship of the music is jeopardized by the requirements of gameplay, calling into question Kirkpatrick's claim that videogames are a call to action. The aim is not to re-engage directly with debates about poststructuralism, but rather to draw on certain ideas that may prove useful to understanding videogames as postmodern objects. The chapter will look at both questions of form and meaning, with reference to Kofi Agawu's notion of play in musical semiotics.

The third chapter will consider the possibility of a musical-historical concept of postmodern temporalities (following the work of Karol Berger).¹⁰⁵ I will consider the distinctions between choice and chance and evaluate the importance of the order/disorder spectrum to both the musical and videogame aesthetics. The significance of these concepts lies in their enrichment of the understanding of the nature of videogame interactivity and listener participation. To bring this into focus, I will provide an overview of two games—*Shadows of the Colossus* (Team Ico/Sony Computer Entertainment, 2005), and *Journey* (Thatgamecompany/Sony Computer Entertainment, 2012)—both offering teleological temporal experiences. This will be followed by a more detailed case study of *The Witcher 2* (CD Projekt RED/Namco Bandai Games, 2011), a narrative-orientated **open-world** game focused on the importance of player choice. Finally, the theme of postmodern temporalities is taken to an extreme in *Bioshock Infinite* (Irrational Games/2K Games, 2013) which provides a commentary on the interactive nature of the videogame medium.

¹⁰⁵ Berger, *Bach's Cycle, Mozart's Arrow*.

Chapter 4 will invoke other strands of postmodern temporality, offering an analysis of the role music in constructing geopolitical landscapes in *Skyrim* (Bethesda Softworks, 2011). Instead of considering the overall form of the music in the game, here I investigate more traditional ways in which music has been used to create a particular temporal experience. I will start by providing an overview of the game's landscapes and lore, before evaluating the relationship of the theme music to that of other games in *The Elder Scrolls* series. This will be followed by a consideration of the Nordic features to diegetic songs heard within the gameworld. Finally, I will draw on Carl Dahlhaus's concepts of *Naturklang* and *Klangfläche* and the work of Daniel Grimley in an analysis of the game's exploration music.¹⁰⁶

In Chapter 5, the historical themes surrounding the mass-culture/high-art binarism alluded to in previous chapters come to a head in a case study of the survival-horror game *Dead Space* (Visceral Games/EA, 2008). The theme of the chapter is purposiveness—the origins of particular musical aesthetics and the intentions attached to their use. Music in this game is composed predominantly in two distinct “soundworlds”, neo-romantic and modernist. For the latter, the composer drew heavily on avant-garde modernist techniques that Hollywood has normalized into a clearly recognizable signifier for alien otherness.

The thesis concludes by uniting the themes outlined in the previous chapters around the concept of play. This provides the basis for a mediation between Adorno's culture industry and Kirkpatrick's videogame aesthetic. Finally, by drawing on parallels with the critical reception of Hollywood film music, I argue that ludomusicology provides a powerful new perspective from which reductive conceptions of the dichotomy between high and low culture are disrupted.

¹⁰⁶ See Carl Dahlhaus, *Nineteenth-Century Music*, trans. J. B. Robinson (Berkeley: University of California Press, 1989), and Daniel Grimley, *Grieg: Music, Landscape and Norwegian Identity* (Woodbridge, Suffolk: Boydell Press, 2006).

Chapter One

Analysing *Crysis*

Analysing videogame music raises several critical problems. This chapter starts by considering these issues before moving on to a case study of the first-person action/shooter, *Crysis* (Crytek/EA, 2007). My analysis is focused on what the concepts of “play” and “form”—the basis for any aesthetic experience—might actually entail, and how they might interact. After a brief historical and philosophical contextualization of mobile form, I offer my analysis in two parts—“playing with form” and “playing with meaning”. The first discusses the aims of those who made the game, the game’s narrative structure, and how music is technically manipulated in the game’s audio engine. The second part of my analysis provides an example of a short section of gameplay and demonstrates exactly what the music engine does. Then I consider how musical meaning is categorized within the game’s data structure, and how such meanings might be engendered by the player.

Critical Issues in Videogame Studies and Ludomusicology

As described in the introduction, the videogame is a multifaceted object, due to its multimedia nature (video, audio, text). However, the interactive elements provide an additional layer of complexity. Many music games like *Guitar Hero* or *Sing Star* provide “interactive” songs insofar as the player is required to “pseudo-perform” them in real time. (In *Guitar Hero*, players use guitar-shaped controllers to press buttons in synchronization with visual cues and a popular song. *Sing Star* is a karaoke game that analyses vocal input from a microphone and provides a score based on how

accurately players perform. Both games, like all videogames, entail a virtuosic performance of sorts but in these cases, the musical performance itself is disengaged from the actual player input. Kiri Miller's focus on the spaces between passive listening and genuine musical performances, and the virtual and the visceral, emphasizes the value of a 'participatory culture' contextualized within performance studies.¹ The present thesis considers the same territory from a different, broader perspective.) However, recent academic papers on interactive music in videogames², and forthcoming music games like *Fantasia: Music Evolved* (Disney Interactive Studios/Harmonix Music Systems, forthcoming 2014), push further still in attempting to realize truly bi-directional interactions between the game system and the player.

"Interactive music" (music that reacts in some way to certain stimuli) and "dynamic music" are categories employed in the videogame industry that occupy overlapping territories. There is a lack of consistency in the usage of these terms, and additional confusion arises when they are used interchangeably by the same writer. Karen Collins helpfully suggests that "dynamic music" is a broad category that encompasses "interactive" (contingent on player input) and "adaptive" (contingent on gameplay states) audio.³ Nevertheless, "interactive music" is also often used to describe simpler cue-/trigger-response mechanisms.⁴

Videogames of all sorts have always involved a degree of interactivity but, in the last decade, technological advancements have permitted the rapid development of so-called **sandbox** virtual

¹ Kiri Miller adopts this term from Henry Jenkins. See Kiri Miller, *Playing Along: Digital Games, YouTube, and Virtual Performance* (Oxford: Oxford University Press, 2012), p. 6. See also Aaron Delwiche, *The Participatory Cultures Handbook* (New York: Routledge, 2013), p. 3.

² See Richard Stevens, R. Raybould and D. McDermott, 'Not creepy music, but music for creeping: Ludo-Narrative conflict and communion in the stealth genre,' at *Ludomusicology Conference 2013* (Conference Paper, University of Liverpool, 11–12 April).

³ See Karen Collins, *Game Sound: An Introduction to the History, Theory, and Practice of Videogame Music and Sound Design* (Cambridge, Massachusetts: MIT Press, 2008), p. 139.

⁴ See also Bernard Perron and Mark J. P. Wolf (eds.), *The Video Game Theory Reader 2* (New York and Abingdon: Routledge, 2009), pp. 12–13 and Stevens, Raybould and McDermott, 'Not creepy music, but music for creeping.'

worlds in which players are afforded greater freedom to explore and pursue their own goals.⁵ With open-world gameplay now commonplace and expected, “linearity” in videogames has now become a firmly established value system in which gameplay that is considered “too linear” is frequently chastised, while virtual environments that reflect the player’s agency by offering “meaningful” consequences to their actions and decisions are greatly promoted.⁶ Nevertheless, as all publishers and critics in the games industry well know, repeatability (desirable) and subsequently, predictability (undesirable) are two of the most critical factors affecting sales. Consequently, over the last decade, there has been an ever-increasing tendency to stress non-linear playability. On the one hand then, developers are left with the problem of producing coherent, immersive, linear narratives, and on the other, they must ensure the game remains unpredictable and that players will want to replay it (an often heralded feature of “great art”, but also an important means of securing long-term commercial growth).⁷ Some of the most critically (and commercially) successful games frame non-linear elements within broader linear structures, as we shall see below. Sometimes the overriding narratives are governed by basic “branching”, with alternative pathways and even multiple endings contingent on

⁵ Jamie Sefton, ‘The roots of open-world games,’ on *gamesradar.com* (11/07/2007), retrieved from <<http://www.gamesradar.com/the-roots-of-open-world-games>>, accessed 03/12/2012. Fully realized open-world games do not actually exist, largely due to the high computational requirements. Marie-Laure Ryan makes a distinction of relevance here, between plot types for developing interactive narratives and concludes that while the “epic”, and to a slightly less extent, the “epistemic” plot types have been attempted with some success, a “dramatic” plot type remains out of reach. See Ryan, ‘Interactive Narrative, Plot Types, and Interpersonal Relations,’ in *Interactive Storytelling: Proceedings of 1st ICIDS 2008*, eds. Nicolas Szilas and Ulrike Spierling (2008), pp. 6–13.

⁶ These issues will be considered further in Chapter 3. It is worth noting that there is a well-established counter-culture to this trend, which prioritizes retrograde aesthetic styles and “reinvented” gameplay mechanisms for now less-mainstream “platform” genre games (*Braid* [Xbox 360: Number None, Inc./Microsoft Game Studios, 2008], for example). The increased availability of freeware game development tools and the growth of digital distribution networks such as Valve’s Steam Platform, and EA’s Origin, has spawned a growing genre of “indie” (individual/small-scale production) games. Parallels with the development of rock and indie music have been made by Taylor Cocke. See ‘Opinion: How Punk Rock’s Past Inspires the Future of Indie Games: Stickin’ it to The Man,’ on *Imagine Games Network* (31/07/2012), retrieved from <<http://uk.ign.com/articles/2012/07/31/opinion-how-punk-rocks-past-inspires-the-future-of-indie-games>>, accessed 01/08/2012.

⁷ Of course, this is genre-mediated to a degree. Reviews and score aggregate websites such as Metacritic (www.metacritic.com), alongside branding and developing multi-game franchises are essential reception factors. Reviews often evaluate value for money in terms of the average duration of the game and whether or not the player is likely to continue to play after having completed it.

the player's choices made throughout the game. In general, though, macro-structures remain relatively determined.⁸

The term "immersion" is equally ubiquitous across videogame studies and journalistic writing.⁹ This multifarious concept is often ill defined but Gordon Calleja has offered a model (the "player involvement model") developed through qualitative research, in an attempt to support practice with theory. He suggests that immersion (or 'presence'), in the context of videogame studies, has been taken as a reference to 'the shortening of the subjective distance between player and game environment, often yielding a sensation of inhabiting the space represented on-screen.'¹⁰ In the broader context of play, players of board games, for example, can also become "immersed", at least in the sense that their focus is occupied on the game rather than anything else. Instead of these one-dimensional visions of immersion, Calleja's holistic model proposes the new metaphor of 'incorporation'—a 'blending of [various] experiential phenomena afforded by involving gameplay.'¹¹ In its "micro" (real-time gameplay) phase, the player is "incorporated" within six carefully outlined dimensions—kinaesthetic, spatial, shared, narrative, affective, and ludic. The macro phase includes all forms of involvement outside of actual gameplay, such as the initial attraction and extra-game information. Incorporation avoids the problematic connotations associated with the other terms. This model is useful because it points to specific "dimensions" affecting player immersion, and this is

⁸ This is clearly the case for narrative-based games, but to an extent, it is also applicable to other genres. Even games as disparate as *Chime* (discussed in Chapter 2) and *Crusader Kings 2* (Paradox Interactive, 2012)—both open-ended in their own way—are ultimately ordered linearly. On videogames and narrative, see the special issue guest edited by Ben Winters in *Music, Sound, and the Moving Image* 6/1 (Spring 2012).

⁹ On immersion in videogames, see Isabella van Elferen, '¡Un forastero! Issues of virtuality and diegesis in videogame music,' *Music and The Moving Image* 4/2 (2011): 30–39; Laura Ermi and Frans Mäyrä, 'Fundamental Components of the Gameplay Experience: Analysing Immersion,' in *Changing Views: Worlds in Play. Selected Papers of the 2005 Digital Games Research Association's Second International Conference*, eds. Suzanne de Castell and Jennifer Jenson (2005): 15–27; and Sander Huiberts, 'Captivating Sound the Role of Audio for Immersion in Computer Games,' (PhD thesis, Utrecht School of the Arts & University of Portsmouth, November 2010), retrieved from <http://download.captivating-sound.com/Sander_Huiberts_CaptivatingSound.pdf>, accessed 08/10/2013.

¹⁰ Gordon Calleja, *In-Game: From Immersion to Incorporation* (Cambridge, Massachusetts: MIT Press, 2011), p. 2.

¹¹ Calleja, *In-Game*, p. 3.

important because it is the most often cited goal in the industry, especially for—but not exclusive to—narrative-based games. Isabella van Elferen’s “ALI” (affect – literacy – interaction) model conjoins interaction with immersion in a more general way, as a specific and separate mode of immersion.¹²

Much of the established nomenclature in videogame criticism is derivative of its older cousin, film music. The categories of “diegetic” and “non-diegetic” music, for example, although not exclusive to film music, have been lifted from its particular formulations.¹³ For many, this has proved largely unproblematic but it should be noted that while this was perhaps necessary to help establish the new field, too often the uniqueness of videogames has been underplayed. In recent years, however, much progress has been made toward establishing videogame-specific theory and terminology. This is evidenced by the growth of quality and diversity across game studies and, more specifically, the recent development of Ludomusicology as a discipline. This work has helped to refine concepts of diegesis beyond simple binary categories—useful though they can be—towards more fluid and complex models more appropriate to the medium.¹⁴

Videogames, then, somehow involve the various critical elements described above. These elements converge on a single distinguishing feature—interactivity—that points beyond the sphere of videogame studies. While interactivity can be viewed simply as a function of the videogame aesthetic, it is also relevant to a reconsideration of the cultural status of videogames as both a form

¹² Isabella van Elferen, ‘Keynote address,’ at *Ludomusicology: Videogame Music Research—Aesthetics and Approaches* (Conference Paper, University of Oxford, April 2012).

¹³ A helpful summary of the extensive literature on this topic can be found in Ben Winters, ‘The non-diegetic fallacy: film, music, and narrative space,’ *Music & Letters* 91/2 (2010): 224–244.

¹⁴ On diegesis and videogame music, see Zach Whalen, ‘Play Along - An Approach to Videogame Music,’ *Game Studies* 4/1 (November 2004), retrieved from <<http://www.gamestudies.org/0401/whalen/>>, accessed 18/07/2013; Kristine Jørgensen, ‘On transdiegetic sounds in computer games,’ *Northern Lights: Film & Media Studies Yearbook* 5/1 (September 2007): 105–117; Jørgensen, ‘Time for New Terminology? Diegetic and Non-Diegetic Sounds in Computer Games Revisited,’ in *Game Sound Technology and Player Interaction: Concepts and Developments*, ed. Mark Grimshaw (Hershey, PA: Information Science Reference, 2011), pp. 78–97; Isabella van Elferen, ‘¡Un forastero! Issues of virtuality and diegesis in videogame music,’ *Music and The Moving Image* 4/2 (2011): 30–39;

of mass entertainment and an art form, though these are not mutually exclusive categories. In this broader context, it is worth noting that interactivity itself can also be thought of as a challenge to linearity.

Crysis points: Historical and Philosophical Contexts of Mobile Form

In 'Losing Control: Indeterminacy and Improvisation in Music Since 1950', Sabine Feisst aims to delineate the various terms of twentieth-century "improvisatory" methodologies, and although this is not a sufficiently critical engagement with the issues (nor rich in analytical detail) it does provide a useful overview by highlighting the range of terminology used and offering references to foundational literature.¹⁵ Three terms in particular are relevant here:

- **Indeterminacy:** Predominantly American, pioneered by John Cage: 'Bringing about indeterminacy is bringing about a situation in which things would happen that are not under my control. Chance operations can guide me to a specific result, like the *Music of Changes*.'¹⁶ The final product itself can be "determined" or fixed.
- **Aleatory:** A Eurocentric development closely related to but distinct from indeterminacy, pioneered by Pierre Boulez and Witold Lutoslawski. Employs chance or limited chance procedures and performance flexibility.
- **(Open/closed) mobile form:** Initially employed by Karlheinz Stockhausen, Charles Ives and Terry Riley, amongst others. Earle Brown clarified that open form was distinct from aleatory/indeterminate chance music: 'I don't use chance! Do you think Indian music is chance-music? Do you think jazz is chance-music? [...] When you conduct my open-form pieces, you are not doing it by chance. You're doing it because you want the next thing to happen. Because you think it's right. And that's what an improviser does. It's what a composer does who writes closed-form music: but he does it in his room upstairs, rather than doing it on stage... There's a huge difference between improvisation (spontaneous decisions) and chance. Chance really has to be an exterior, objective thing.'¹⁷

¹⁵ Sabine Feisst, 'Losing Control: Indeterminacy and Improvisation in Music Since 1950,' on *New Music Box* (01/03/2002), retrieved from <<http://www.newmusicbox.org/page.nmbx?id=35tp00>>, accessed 17/10/2013.

¹⁶ Cage, cited by Feisst. Original text from Deborah Campana, 'Interview with Cage (1985),' *Form and Structure in the Music of John Cage* (Ph.D. thesis, Northwestern University Evanston 1985), p. 109.

¹⁷ Earle Brown cited by Feisst. Original text from Richard Duffalo, *Trackings* (New York: Oxford University Press, 1989), p. 114.

These important distinctions nevertheless fail to eliminate all ambiguity because there was never any terminological consensus from the outset—different composers (and commentators) employed different nomenclature, some loosely, and some precisely. Regardless, these discrepancies must be placed in a wider theoretical and historical context in order to see the thread of non-linearity that emerges. As Feisst’s title suggests, despite the differences between these various procedures, they were all developed in contradistinction both to previously accepted modernist technical procedures and, on a broader playing field, to Western Enlightenment traditions. In other words, collectively they can be defined through their alterity to the mainstream objectifying tenet of modernism—the “automatisms” of “totalism”—as well as their challenge to the primacy of reason and modes of temporality dominant in Enlightenment thinking. For the purposes of this project then, these definitions of non-linear strategies serve as just one side of the coin.

After Adorno’s binary opposition of Schoenberg and Stravinsky in the early-middle modernist period, some musicologists began to look for the next paradigmatic dichotomy.¹⁸ By 1976, Frank Hoogerwerf believed that contemporary composition lay on a dialectical continuum with total serialism and aleatorism forming the aesthetic antipodes.¹⁹ Acknowledging the ambiguity of the latter term (especially when compared with the former), Hoogerwerf did not categorically distinguish between aleatoric chance performance and indeterminate random compositional processes (neither has there been a systematic approach to the distinction between choice and chance.) Certainly, a broader, inclusive sense of the term is useful but, critically, it also makes no distinction between form and soundworld (the arrangements of pitch and phrases). Just like tonal/harmonic schemes, aleatoric procedures can also be applied (exclusively) to structure (open mobile forms for instance) and/or

¹⁸ Theodor W. Adorno, *Philosophy of Modern Music*, trans. Anne G. Mitchell & Wesley V. Blomster (London: Continuum, 2007).

¹⁹ Frank Hoogerwerf, ‘Cage Contra Stravinsky, or Delineating the Aleatory Aesthetic,’ *International Review of the Aesthetics and Sociology of Music* 7/2 (Winter 1976): 235–247.

soundworlds. Therefore, a quasi-sonata structure (even as a tonal archetype) could frame an aleatoric soundworld, or vice versa, a mobile form could encase a functional harmonic soundworld. *Crysis* is a mixture of these approaches. Hoogerwerf contends that ‘the basic tenet of aleatory music... is a purposeful denial of *all* elements of controlled self-expression on the part of the composer’.²⁰ This “definition” is a severely limited overview of aleatoric aesthetics in that it appears to exclude poly-aesthetic approaches to form and soundworlds in principle. Indeed, denying that non-linear adaptive music (employed in any medium, notably including videogames) is an indeterminate approach to form is, at best, pedantic.

Many subsequent writers have maintained the original ambiguity of terminology as well as Hoogerwerf’s utopian drive for clear theoretical dichotomies. Hoogerwerf polarizes what is a simple technical concept: chance, indeterminacy and aleatoric music could be said to lead towards, or imply Hoogerwerf’s definition, but the clearly related development of “mobile form” offers alternative possibilities. Such approaches were not only developed to allow a modernistic “freedom” from man’s social and cultural controls (‘For Cage, sounds must free themselves from technical shelter and artificial control, and must display themselves as they actually exist’²¹—rhetoric uncannily reminiscent of Schoenberg’s Expressionist “inner-necessity”) but also as a means to explore alternatives to linear structures. The mobile forms in pieces such as Riley’s *In C* (and here, the title provides a clue) could be described as closer to Mozart’s *Musikalisches Würfelspiel* (dice music) than Hoogerwerf’s aleatorism, especially when limiting discussion to form (see Chapter 2).²² Linear

²⁰ Hoogerwerf, ‘Cage Contra Stravinsky,’ 239, my emphasis.

²¹ Hoogerwerf, ‘Cage Contra Stravinsky,’ 244.

²² Riley’s *In C* consists of 53 ‘melodic patterns’ to be played in sequence, with the performer free to repeat each pattern as many times as they choose. The piece is tonal, as indicated by its title. Mozart’s *Musikalisches Würfelspiel* is structured in a similar way, although the order of the bars is determined by a game of dice and they are not repeated. However, there is a critical difference as Mozart’s game was conceived of and advertised as a template for amateurs to construct their own compositions—it was not a mobile work in its own right.

harmonic progressions in jazz improvisation also have an indeterminate form but depend upon tonal functionality to be communicative and expressive.

The implications offered by a structure like *Crysis* at once become clearer and more complex. Table 1.1 shows that the structural layers of the game employ different formal principles and approaches to time. This poly-aesthetic approach could be viewed as an (unwitting) compromise—the accidental result of competitive market requirements. However, when considered in the context of larger historical narratives such as Karol Berger’s overview of the changing conceptions of time in *Bach’s Cycle, Mozart’s Arrow* (see Chapter 3), it could be viewed as a prime example of a precarious postmodern dialectic.²³ Jonathan Kramer’s seventh facet of “postmodern music”—now over two decades old—after all, ‘avoids totalizing forms (e.g., does not want entire pieces to be tonal or serial or cast in a prescribed formal mold [*sic*])’.²⁴ For both theorists and practitioners, the tendency towards utopian strategies with clear objective definitions and simple binary oppositions is tenacious, despite increasingly ferocious attacks over the last thirty years.²⁵ Yet reality is rarely so categorically defined.

	Aesthetic	Time (Linearity)	Structural Music Objects (see below)
Background:	Traditional	Linear (dramatic narrative)	Cutscenes, Themes (<i>leitmotifs</i>)
Middle-ground:	Aleatoric	Non-linear (Adaptive/Mobile)	Flow Graphs and “MusicLogicControl”
Foreground:	Traditional	Linear (harmonic structure/goal-oriented tonality)	Musical Cues (ranging from approximately 1 second to 5 minutes)

Table 1.1: Structural Layers of *Crysis*

²³ Karol Berger, *Bach’s Cycle, Mozart’s Arrow: An Essay on the Origins of Musical Modernity* (Berkeley: University of California Press, 2007).

²⁴ Jonathan Kramer, ‘The Nature and Origins of Musical Postmodernism,’ *Postmodern Music/Postmodern Thought*, ed. Judy Lochhead & Joseph Auner (New York and Oxford: Routledge, 2002), pp. 16–17.

²⁵ Richard Taruskin’s collection of essays, *The Danger of Music and Other Anti-Utopian Essays* (Berkeley: University of California Press, 2009), serves as a timely reminder of the difficulty of letting go of these modernist traits.

Analysis: Part 1—Playing with Form

I will start my analysis by noting the role of the composer within the creative team and, drawing evidence from various interviews, I will evaluate their combined aims and claims. This will be followed by an analysis of the narrative structure, which will be expanded to consider how the musical macro-structure reflects the aims. I will then conduct two close investigations. The first will relate the implementation of musical materials in the game engine to functional mobility, and the second will relate harmonic and topical analysis to functional linearity.

Aims

The role of the composer is even less dominant within the videogame industry than it is in film production, but like film, the composer is seen as just one part of a sub-team that includes audio engineers, programmers, orchestrators and performers. Even the critical responsibility of deploying cues in the game is ordinarily beyond the direct control of the composer. In view of this, the most appropriate hermeneutic approach may be to focus on the audience's experience rather than the 'work object' and issues of intentionality. Nevertheless, composer Inon Zur was not divorced from the rest of the creative team, and took plenty of time to familiarize himself with the game and the developer's goals: 'The entire project took about a year from start to finish, but the bulk of the work took about 5 months. Once I learned more and more about the game during those months I was able to come up with more ideas of how to enhance the different situations. Like with many games, the composer needs to get to know the project in detail during which time it often evolves during the process.'²⁶ The degree of collaboration in large productions like *Crysis* is therefore very high:

²⁶ Zur cited by Randall Larson, 'A Crysis on His Hands: The Video Game Music of Inon Zur,' *Soundtrax* 2008/8 (08/04/2008), retrieved from <http://www.buysoundtrax.com/larsons_soundtrax_4_08_08.html>, accessed 13/02/2010.

We discussed the music system prior to the actual composing stage, so when I started to engage myself in the composing process I already had a clear idea of how the music system would work. This helped me a lot to make artistic choices based on the given music system. I think that this is a great way to work, and only this kind of close collaboration can bring great results when it comes to interactivity in music for video games. This is the future of how we will work in game music.²⁷

Clearly from this positive experience (at least publically) Zur does not lament a lack of artistic control in comparison to opera, or even film. Rather, as Boulez might once have argued, the structure and apparent constrictions promote greater creativity. Speaking more generally, Zur says it is both easier and harder to be given musical restrictions: 'When you are being restricted to a certain style and sometimes even thematic materials, it is narrowing the array of musical choices, but by that it is also simplifying your job in a way...'.²⁸

Zur was provided with the main sound effects for various **cutscenes** so he could experiment to find which musical ideas worked best. The Northwest Sinfonia orchestra recorded in Seattle with Zur conducting (December 2006), and the live music was then mixed with the synthesized sounds, all before the final mixes with the rest of the audio effects being adjusted and implemented by the rest of the team. The music was, from conception to completion, always just one part of the auditory channel. Zur explains how the implementation of the music for *Crysis* pioneered new techniques and structures:

Usually when we're trying to do interactive scores, we are doing either variations of the same cue, and instead of looping the cue, just transitioning between cue to the same cue but in a variation... Or we do stems, so we take the full mix of the cue and then we play only the strings, only brass, only percussion—just to make things more interesting.

In *Crysis* we did three (sometimes even four) levels of intensity of the cue, but it's still the same cue—that's the beauty of it... So imagine to yourself a 1.5-minute cue of music that is around the key of A minor, and it's around 120 BPM. And it has three major parts in it, but when it plays stripped down, it sounds very slow, ominous, almost ambient. Then the second intensity: there are some percussions being added to the same one, but it stays the same tempo, you just play double time—some string lines, some brass lines... And in the third intensity: everything is in double time,

²⁷ Zur in Larson, 'A *Crysis* on His Hands.'

²⁸ Zur in Larson, 'A *Crysis* on His Hands.'

sometimes even triple time, but it's again the same tempo. What you get, you get the very same cue.'²⁹

Elsewhere he clarifies:

The music system is designed to support dramatic changes in the story and to follow closely what is happening literally second-by-second. This is made possible by a new sophisticated music engine, which is choosing the cue based on the dramatic development almost instantly. Each cue has three variations—ambient, medium intensity, and full-on battle. The cues are basically the same when it comes to tempo, structure or keys, but the elements are changing. This allows the system to cross-fade between the variations seamlessly based on the given action, and overall it feels almost like a movie score because of how close the music follows the dramatic events.³⁰

An analysis of the implementation of the music is therefore paramount for an understanding of its structure. Zur also describes the desired effect:

Let's say we have contact with the enemy—either alien or Korean in the beginning—we're just playing sort of ominous level one. Then at some point it will transition to two, but it could transition at any given point because it uses the same cue. Even though the transitions are totally seamless, sometimes they are hidden behind some kind of explosion, scream, or any kind of sound effect. You feel like you're really in a movie.'³¹

In other words, the aim is to implement a mobile structure in such a way that provides a linear musical experience that is tailored specifically to the visual drama, and which is favourably comparable to film music.³²

Narrative Structure

In several interviews, Zur described the creative process for *Crysis* as a relatively simple evolution of thematic material scored for orchestral, electronic and ethnic elements in order to reflect the story

²⁹ Zur cited by Alex Van Zelfdan, 'In the Crysis Zone: We explore the otherworldly sounds of Crysis,' on *1up.com* (11/16/2007), retrieved from <<http://www.1up.com/do/feature?clid=3164380>>, accessed 13/02/2010.

³⁰ Zur in Larson, 'A *Crysis* on His Hands.'

³¹ Zur in Zelfdan, 'In the *Crysis* Zone.'

³² More recent games such as *The Last of Us* (Naughty Dog/Sony Computer Entertainment) have achieved even more sophisticated systems. See SoundWorks Collection, 'The Sound and Music of The Last of Us,' on *SoundWorks Collection* (2013), retrieved from <<http://soundworkscollection.com/videos/the-sound-and-music-of-the-last-of-us>>, accessed 19/07/2013.

and environments: 'I had to think about ways to portray the huge difference between all the entities in the game... The outcome of it is a vast style because it has lots of elements like straight score elements, some Eastern elements and some weird effects that have to do with the aliens.'³³ Zur explains that there is a close relationship between the musical process and the visual mode of communication, as he conceives both as narrative modes: 'it always starts and ends with a good story. When the story is not working the technique can't fix it. But when the story is good, then great creative ideas and technical assets like putting the audio to work can just bring it to life in a big way.'³⁴ Indeed, as the Audio Director, Joseph Zajonc put it, 'Inon's sense of orchestration and the sound palette he has developed for this title are integral to the feel and identity of *Crysis*.'³⁵ (It is worth noting at this point that, as an industry norm, it was an in-house professional who did the orchestration, in this case Paul Taylor.)

Crysis commences in a very familiar world. The player's name is Nomad, reflecting the literal and metaphorical journey on which he or she is about to embark. Nomad appears to be the youngest or least experienced of Delta Squad—five elite US commandos equipped with next-generation technology. The introductory levels allow players to familiarize themselves not only with Nomad's world but, from a pragmatic perspective, the controls for the weapon and "nano-suit" (high-tech armour that allows either bullet-proof protection, superb strength, immense speed, or temporary cloaking). The squad therefore has a decisive edge over the Korean army, who have illegally occupied the island on which the game is set. The game is organized into eleven chapters, each with a dramatic title and separate level for the game engine to load. Each of these levels can be opened in the Sandbox 2 Editor (hereafter SB2).

³³ Zur in Zelfdan, 'In the *Crysis* Zone.'

³⁴ Zur in Larson, 'A *Crysis* on His Hands.'

³⁵ Joseph Zajonc cited in Larson, 'A *Crysis* on His Hands.'

The narrative structure of these chapters could be classified as shown in Figure 1.1, some with abundantly clear narrative functions, and others more difficult to categorize. An alternative but similar scheme could interpret the whole as a binary structure, with ‘Core’ at the centre functioning as an otherworldly reintroduction to the following chapters, which form a parallel universe to the first half of the game. Through the zero gravity experience and close encounters with extra-terrestrial life forms in the Core, the character’s perspective on their entire world changes: nothing could ever be the same again for Nomad. Instead of fighting the Korean “other”, Nomad may well feel that humanity is united against a common foe. Indeed, from the Korean perspective, Delta squad in their advanced nano-suits function as their alien other. Zur’s creative process identifies these three distinctive entities, as if the Korean army is as different to the American forces as the aliens are. The music therefore reflects the dramatic structure more than the narrative. This observation also limits the usefulness of the tempting analogy between Figure 1.1 and a sonata form archetype, though sonata form has also been described in a similar way to the flow-charts used in games (see below).³⁶

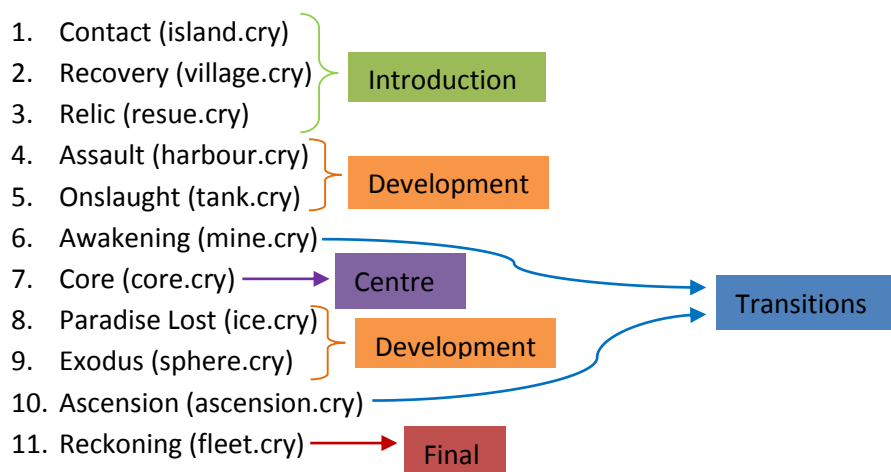


Figure 1.1: The Narrative Structure of *Crysis*

The opening level commences conventionally with a sequence of cutscenes giving the backdrop to the story. (Although the main musical themes are already familiar at this time due to the

³⁶ See James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late-Eighteenth-Century Sonata* (Oxford: Oxford University Press, 2006).

menu screens, they do not form part of the *Crysis* narrative and shall be disregarded here.) The player can control the camera, viewing the world through Nomad's eyes as he gets a mission briefing from his squad leader, Prophet, before jumping from an aeroplane. A temporary nano-suit malfunction separates Nomad from his squad, and he is soon warned by Prophet that enemy patrols are just ahead. At this early stage in the game, the narrative is directed comparatively strictly, and the player has little opportunity to explore significant non-linear structural elements. In fact, and this is fundamental, the elements of non-linear choice in the game are themselves not structurally significant. The player will follow the overriding narrative, which is the principal governor of the structural order of musical themes. This frames player choices (such as those in the experiment in Part 2c) and limits their musical influence within the mobile form layer.

The music of *Crysis* is neatly structured into "themes", each with a set of "moods". Appendix A shows a complete list of the themes (excluding special cutscene cues) employed in each level. (Multiple theme selectors are often used to select a theme more than once during a level for different dramatic moments. This shows the extent to which musical resources are recycled, but has been ignored in the table.) Each mood is organized into "pattern sets", which, in turn, are arranged in "layers". Finally, each layer contains any number of "patterns" (cues). Appendix B shows this break down for the first level of the game, 'Contact'. Clearly, CryEngine 2's music engine can accommodate large and flexible structures. However, closer investigation of the implementation shows that many of the actual cues are recycled between themes. The difference between potential and realization is a critical one, also reflected by the discrepancies between the composer's intentions and sound engineer's implementation.³⁷ The overall musical structure can therefore be expressed as in Figure 1.2, although, for readability, only the first two moods of the first theme in the first level have been expanded.

³⁷ There have been cases where the subtle compositional efforts of the composer for a particular cutscene cue were scuppered because the engineer also included the cue in a collection of music to be played randomly throughout the game.

Figure 1.2 shows two important things. First, the purple columns indicate linear structures and the orange columns indicate elements that can be mobile. The levels can only be experienced in the predetermined linear order, and the musical cues themselves are fixed audio files. The order in which themes, moods and layers are chosen sometimes depends on the dramatic status of the game. This status is contingent on plot, player choices, and random elements. Occasionally, these elements are fixed and scripted, simply functioning as a filing system for the cues (none of the structural elements in the game engine are exclusively mobile for this reason). Secondly, the boxes under levels, themes, moods and layers are all colour-coded to reflect density—the darker the box, the more items it contains (see the number in brackets). (In the case of moods, the density is the number of cues in the mood, not the number of layers.) From this we can make two very general observations: the music’s structural variety decreases significantly in the second half of the game once the new alien music is introduced but increases exponentially in the finale (‘Reckoning’) as the dramatic tempo increases towards its apotheosis; and, in contrast to this, in order to reduce predictability in slow or quiet dramatic scenarios, **stingers** and **incidentals** require more cues even though most will be unheard in each play-through. The difference between the density of the “action” and “middle” moods compared to the “incidental” and “ambient” (and “silence”) is a clear indication of this.

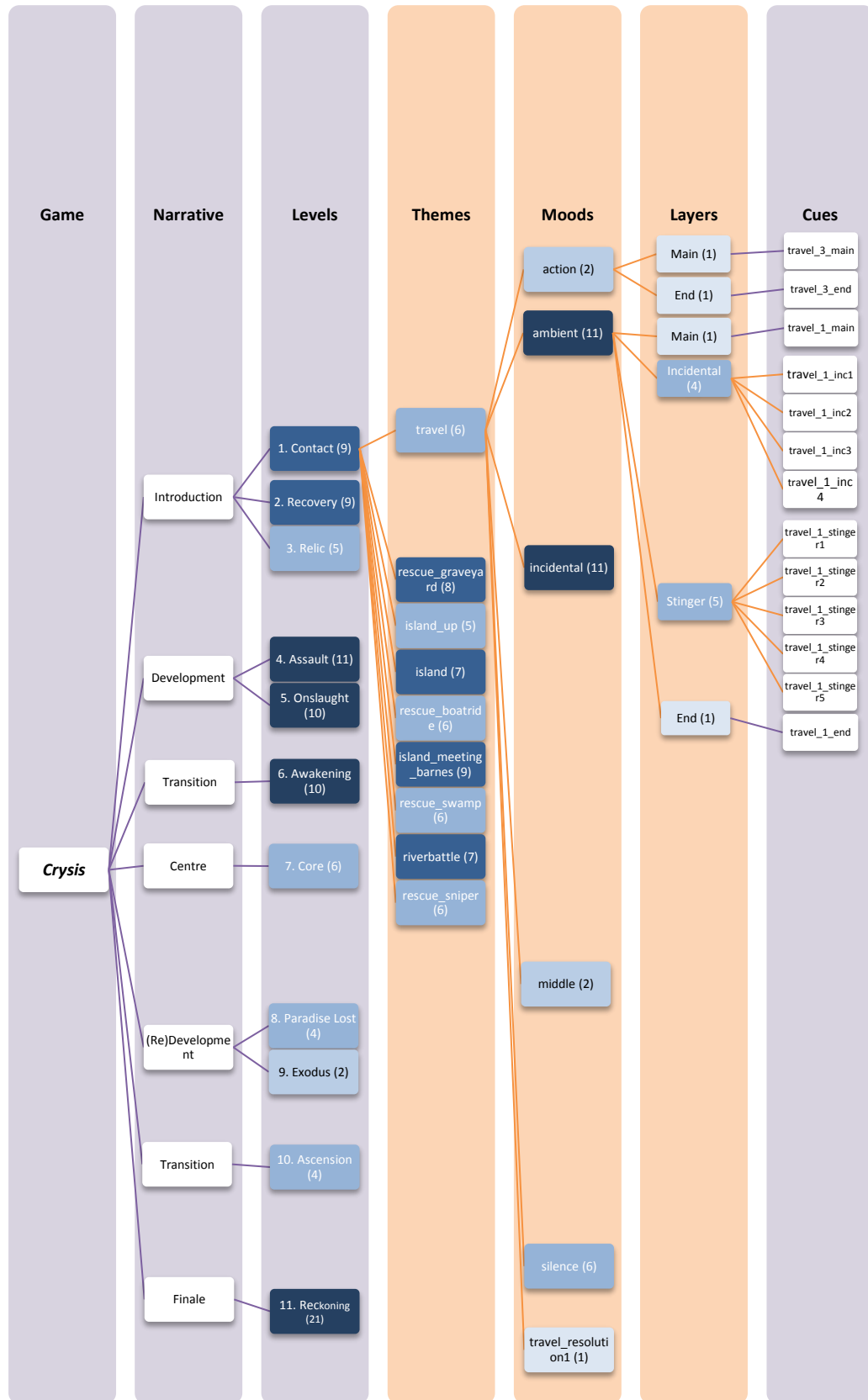


Figure 1.2: The Musical Structure of *Crysis*

Implementation and Functional Mobility

SB2 allows programmers to script logic flow graphs (hereafter FG) that control non-default behaviour for everything from the artificial intelligence (hereafter AI), mission goals, cutscenes, and the music.

The FGs are an infinite sheet of virtual graph paper on which various entities are placed and linked.

Each entity has certain parameters and input/output ports that control the flow of information.

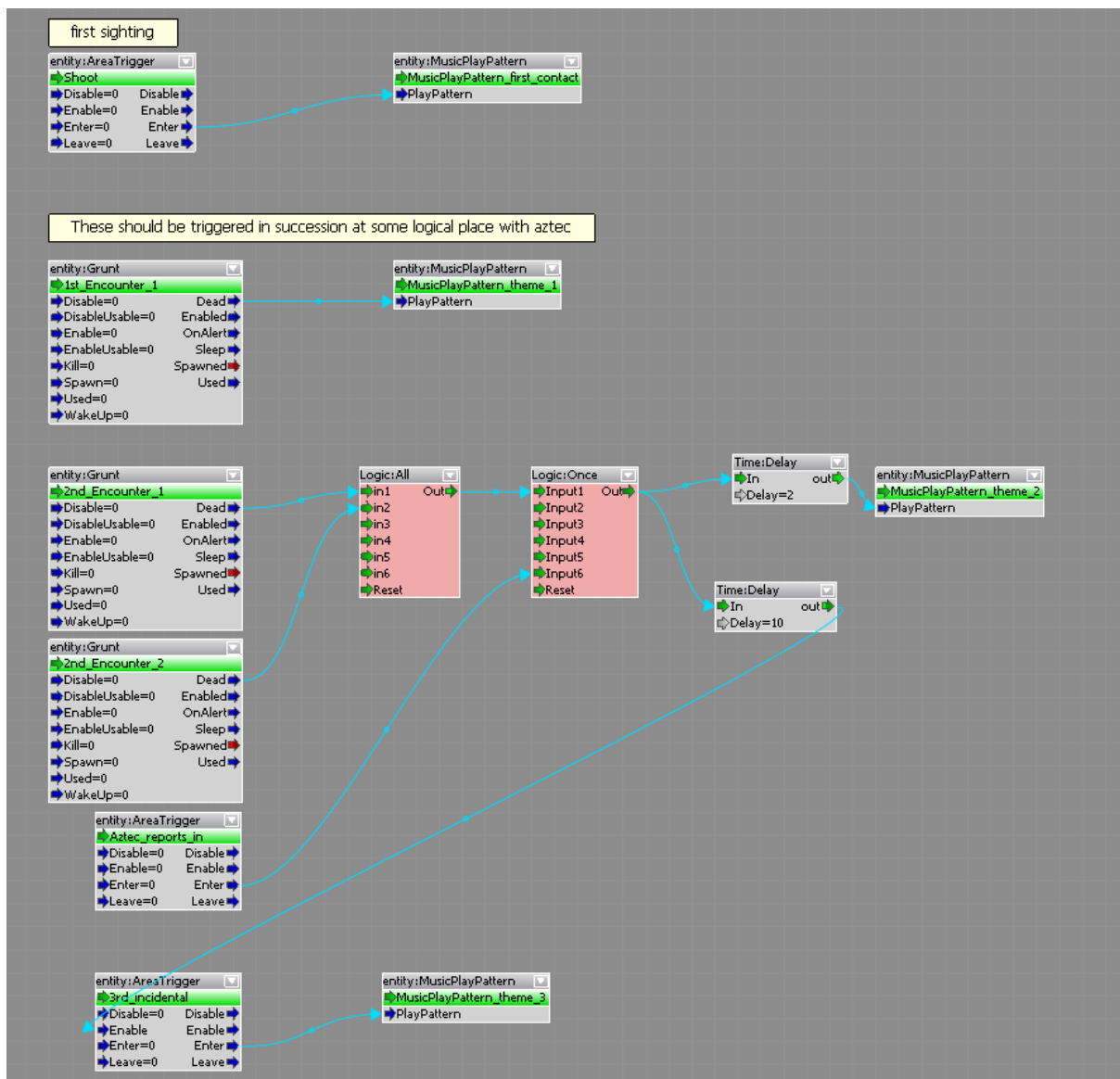


Figure 1.3: “First Sighting” (island.cry FG hilltop_meeting)

Figure 1.3 shows an excerpt from the FG “hilltop_meeting” in which the player first encounters the Koreans after landing at a nearby beach. When the player enters the area trigger “Shoot”, “MusicPlayPattern_first_contact” is played. Once the first enemy soldier (grunt 1st_Encounter_1) is dead, ‘MusicPlayPattern_theme_1 is played. Below this is the first example of some more complex game logic: if both “grunts”³⁸ (‘2nd_Encounter_1’ and ‘2nd_Encounter_2’) are dead or the player enters the area trigger “Aztec_reports_in” then two time delays are set. After 2 seconds, “MusicPlayPattern_theme_2” is played, then after a further eight seconds, the area trigger “3rd_incidental” is enabled. Once this area is entered, “MusicPlayPattern_theme_3” is played.

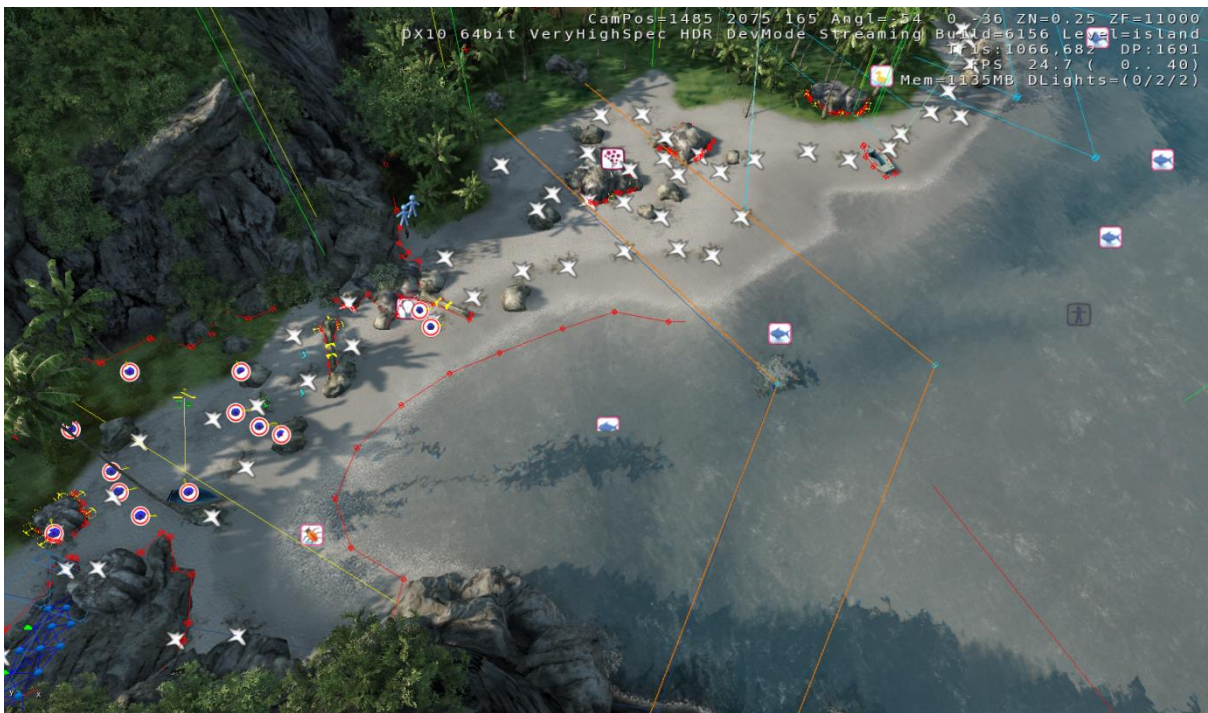


Figure 1.4: “First Sighting” (island.cry SB2)

Figure 1.4 shows the beach where the player first encounters the enemy. The two blue men icons near the cliff are the spawn points for the “grunts” (guards referred to as “2nd_Encounter_1” and “2nd_Encounter_2”), and the two orange lines forming a chevron across the middle of the screen

³⁸ The term is taken directly from the flow graphs, and is a common signifier for enemy soldiers in videogames.

show the area trigger “Aztec_reports_in”, through which the player must pass to continue. A clearer picture of the teleological linear framework encompassing elements of interactivity (closed mobile form) is hard to imagine. The FG is designed to accommodate any playing scenario: the player will most likely kill the enemies and move along the beach through the trigger, but if they choose not to, they can also be stealthy and swim around unnoticed. Either way, the trigger is activated and the music and narrative still function as planned. The music is determined in an interactive but linear mode: exactly when the music will play is not specified, only the order based on how the player interacts with the environment. This music therefore functions in much the same way as operatic or film music, with the conductor waiting for a script cue to bring in the orchestra.

Figure 1.5 shows the next significant excerpt from the “hilltop_meeting” FG which introduces further complexities. First, once the two patrol grunts are dead, a “MusicMoodSelector” entity is employed to set the mood to “incidental” music. The “MusicPlayPattern_sunrise” entity plays the pattern “meeting_barnes_hilltop” (theme: “island_meeting_barnes”, mood: “hilltop_meeting”) at a very memorable sunrise vista, and thirty seconds later, as Crytek’s FG comment puts it, the ‘first big battle music’ commences. The “travel” theme is selected and the MusicLogic is started. If the AI soldiers of groupID 1010 are alerted to Nomad’s presence (which can only happen once), the value 250 is added to the AI-Intensity parameter of the “MusicLogicControl” entity. This addition ensures a specific event has a particularly marked effect on the otherwise automatic adjustments the “MusicLogicControl” makes within a given theme. This entity is the principal exemplification of functional mobility through which the mobile form of the theme is converted into a linear experience contingent on the dramatic action. This action in turn is based on player choice, and on both random and scripted events.

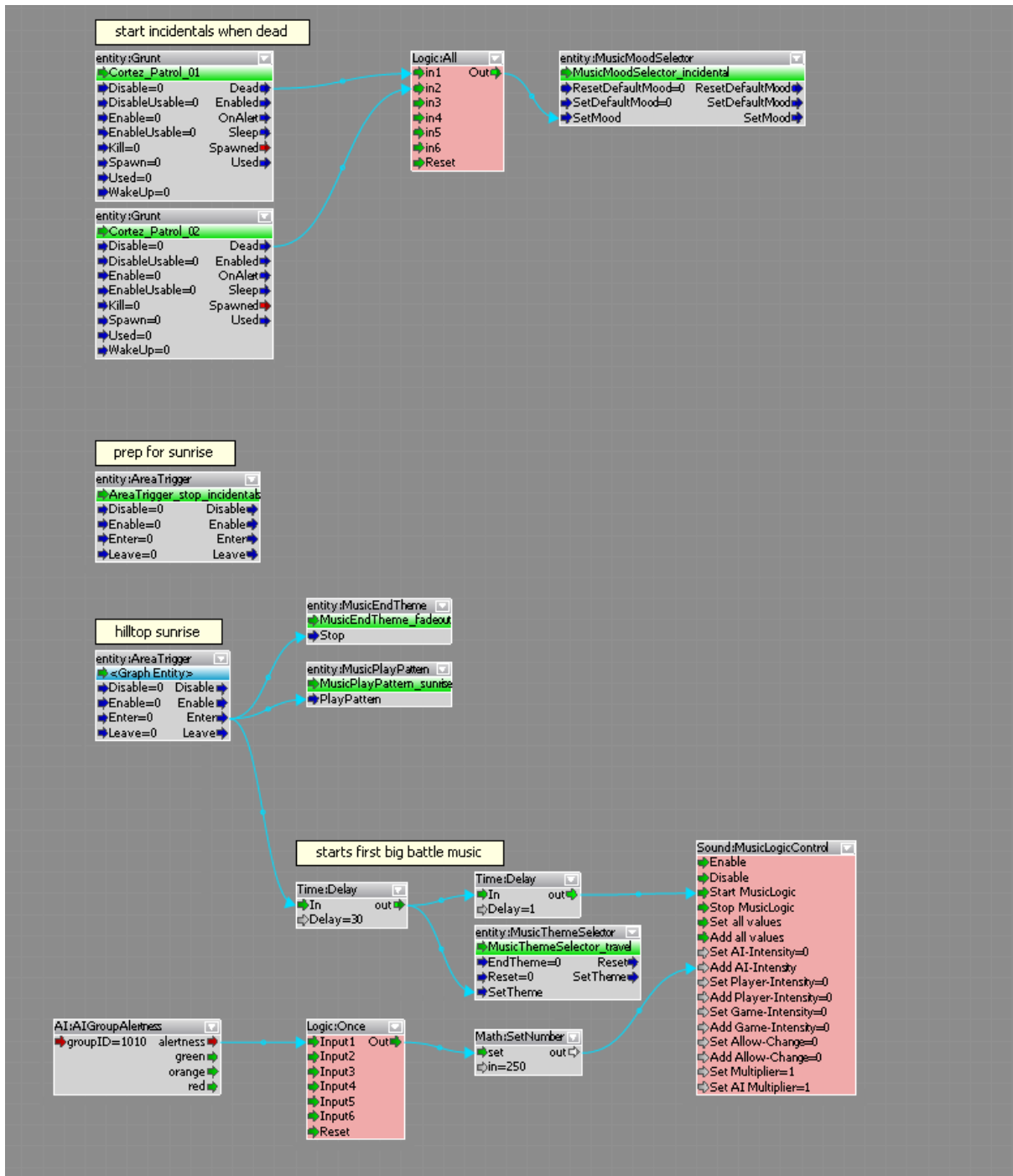


Figure 1.5: "First Light" (island.cry FG hilltop_meeting)

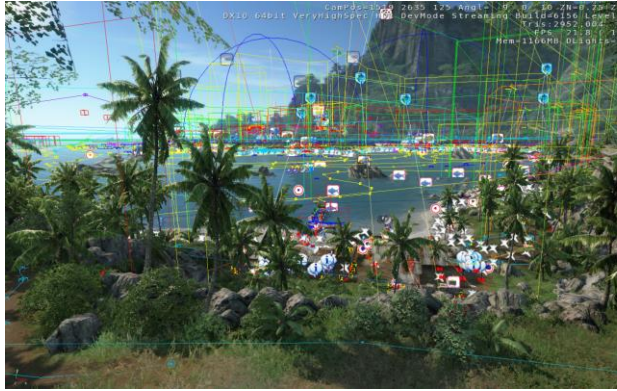


Figure 1.6: “First Light” (island.cry SB2)



Figure 1.7: “First Light” (island.cry)

Where Layers contain multiple cues, the “MusicLogicControl” plays one at random to avoid monotony. In the case of “First Light”, the FG ensures that there is a significant musical difference depending on whether the player decides to be stealthy or take on the guards “all guns blazing”. In either case, the “MusicLogicControl” will start with cues from the “Incidental Mood”, and as the action changes it will fade (blend) into cues from the other moods. In SB2’s database, under “Pattern Properties” for the cue “travel_incidental_02” (theme: travel, mood: incidental, layer: incidental), fade points have been marked at 88000, 176000, 264000 and 352000. These are the specified times in this particular cue that are customized for an effective transition into another cue from the same theme. Blends can be different speeds, depending on the action, and are usually masked by other sound effects. As we shall see below, the thread of harmonic continuity across entire themes permits coherent transitions. Unfortunately, Crytek provide little documentation on the “MusicLogicControl” entity, so to work out exactly how it links music to action it is necessary to hear (and view) it in action.

Analysis: Part 2—Playing with Meaning

An Experiment: Linear Experiences of Mobile Functionality

SB2 can show exactly what sounds are playing as the game is tested. Tables 1.2 and 1.3 show the music that was selected during two play-throughs of “First Light”, both lasting about 3.16 minutes. Similar tactics were employed in both examples but significant differences are noted under “Commentary”. These tables demonstrate that, somewhat paradoxically, more complex musical choices are actually often made when the pace of change in dramatic action is comparatively slow. The first minute of “Play-through 1” shows that when the player holds back and gradually increases the level of action from afar, the “MusicLogicControl” introduces different layers (stingers and incidentals) to keep the music interesting whilst maintaining the overriding moods. In “Play-through 2” this is unnecessary, as the main layer containing the more substantial cues for each mood suits the more stable and sustained action. In both examples, the “action” mood is only reached once there is a sufficient level of combat and remains active only briefly. The reason the mood is not activated sooner and more easily by player action, may be to prevent musical and dramatic fatigue. Plenty of shooting and similar action earlier on does not necessarily warrant this dramatic level of musical support—especially in a “first-person shooter” (FPS) genre bound to be full of such content—and the more tense “middle” mood cues are actually more suitable. The FG scripted addition of intensity (discussed above) is clearly active in “Play-through 1” and pushes the mood up to “action”, whereas in “Play-through 2” the intensity was already too low for it to make a significant difference. These moments (highlighted in the tables) are highly effective dramatically—in the first case, the level of combative action warrants an additional level of musical underscoring, with the player deliberately taking an ‘all guns blazing’ approach, while in the second case, the player continued to adopt slower, more stealthy tactics, and the close-encounter was a dramatic but localized event. The “MusicLogicControl” is quick to respond to the action, as demonstrated when, in “Play-through 1”,

the music has just begun a transition from the “action” to “middle” mood when the player kills the last guard in the area. Immediately both “action” and “middle” are blended out to be replaced by “ambient”.

Time (mm:ss)	Theme	Mood	Layer	Pattern	Blend	Commentary
00:06				meeting_barnes_hilltop		Vista into view
00:36	travel	incidental	main	travel_silence_incidental		Spying with binoculars
				meeting_barnes_hilltop		
00:38	travel	ambient	main	travel_1_main	in	
	travel	incidental	main	travel_silence_incidental	out	
				meeting_barnes_hilltop		
00:42	travel	ambient	main	travel_1_main		
				meeting_barnes_hilltop		
00:45	travel	ambient	main	travel_1_main		Quietly moving nearer
00:57	travel	silence	main	travel_silence		Stealth on
	travel	ambient	main	travel_1_main	out	
01:02	travel	silence	main	travel_silence		
01:08	travel	ambient	main	travel_1_main	in	Stealth off
	travel	silence	main	travel_silence	out	
01:11	travel	ambient	main	travel_1_main		
01:30	travel	middle	main	travel_2_main	in	Knock-out guard with barrel
	travel	ambient	main	travel_1_main	out	
01:34	travel	middle	main	travel_2_main		Stealth on, guards alerted to presence; reinforcements called
02:39	travel	action	main	travel_3_main	in	Full combat
	travel	middle	main	travel_2_main	out	
02:46	travel	action	main	travel_3_main		
02:47	travel	middle	main	travel_2_main	in	
	travel	action	main	travel_3_main	out	
02:49	travel	ambient	main	travel_1_main	in	Last guard killed
	travel	middle	main	travel_2_main	out	
	travel	action	main	travel_3_main	out	
02:52–03:16	travel	ambient	main	travel_1_main	in	Player destroys patrol boat

Table 1.2: “First Light” Play-through 1

Time (mm:ss)	Theme	Mood	Layer	Pattern	Blend	Commentary
00:11				meeting_barnes_hilltop		Vista into view
00:41	travel	incidental	main	travel_silence_incidental meeting_barnes_hilltop		Spying with binoculars
00:43	travel travel	incidental incidental	main stinger	travel_silence_incidental travel_incidental_stinger2 meeting_barnes_hilltop		
00:435	travel travel travel	ambient incidental incidental	main main stinger	travel_1_main travel_silence_incidental travel_incidental_stinger2 meeting_barnes_hilltop	in out	
00:49	travel travel	ambient incidental	main stinger	travel_1_main travel_incidental_stinger2		
00:51	travel	ambient	main	travel_1_main		Player holding back
01:01	travel travel	ambient ambient	incidental main	travel_1_inc2 travel_1_main		
01:04	travel travel travel	ambient silence ambient	incidental main main	travel_1_inc2 travel_silence travel_1_main	out out	Hiding behind rocks
01:07	travel travel	silence ambient	Main Main	travel_silence travel_1_main	out	Shooting with silencer from distance
01:10	travel	silence	Main	travel_silence		
01:14	travel travel	ambient silence	Main Main	travel_1_main travel_silence	in out	
01:18	travel	ambient	Main	travel_1_main		Guards alert: reinforcements called
01:33	travel travel	ambient ambient	incidental Main	travel_1_inc3 travel_1_main		
01:41	travel travel travel	ambient middle ambient	incidental Main Main	travel_1_inc3 travel_2_main travel_1_main	out in out	Close encounter with guard on path
01:42	travel travel	middle ambient	Main Main	travel_2_main travel_1_main	in out	
01:45	travel	middle	Main	travel_2_main		Still fighting guard on path
02:21	travel travel	action middle	Main Main	travel_3_main travel_2_main	in out	Full combat
02:27	travel	action	Main	travel_3_main		
02:39	travel travel	ambient action	Main Main	travel_1_main travel_3_main	in out	Last guard killed
02:45– 03:17	travel	ambient	Main	travel_1_main		Shooting at boat

Table 1.3: "First Light" Play-through 2

As a linear experience, the success of the “MusicLogicControl” is principally determined on the speed and nature of the blends. In Axel Berndt & Holger Theisel’s proposal for an adaptive system of real-time orchestration and performance, they also note latency is a critical factor in determining the most effective transitions.³⁹ Although Crytek have achieved an excellent response time to the various dramatic parameters, the fact that it is a response guarantees that the music can only ever be one step behind. Usually this does not matter in games with content limited to simple action and entertainment, but it does indicate that there is a significant limitation on the dramatic effectiveness of these mobile forms. However, adaptive compositional systems such as the aforementioned proposal are in their infancy and significant improvements can be expected over the coming decade. In any case, most contemporary games employ cutscenes for dramatic moments that require more careful crafting.

Topical Analyses and Functional Linearity

Inon Zur’s soundworld for *Crysis* is, predictably, a tonal one. (The “alien” music that appears halfway through the game is actually also tonal, a cross between Stravinsky, Piazzolla and Bernard Herrmann that is now something of a cliché.) Tonality, traditionally conceived, requires a degree of linear progression in order to function, but this need only happen at the phrase or cue-level of the structure. Much cognitive research has been devoted to the phenomenological question of tonality’s functionality at the macro-level of formal structure.⁴⁰ Nevertheless, the enculturalization—*pace* Schenker and his true devotees—of tonal functionality has ensured the power of the experiences it produces, at least on the small–medium scale harmonic level. With reference to topic theory, I will now investigate the ways in which Zur’s cues achieve their dramatic goals.

³⁹ Axel Berndt & Holger Theisel, ‘Adaptive Musical Expression from Automatic Realtime Orchestration and Performance,’ *International Conference on Interactive Digital Storytelling Proceedings* (2008): 132–143.

⁴⁰ Nicholas Cook, ‘Musical form and the listener,’ in *Music, Imagination and Culture* (Oxford: Oxford University Press, 1990), pp. 10–70.

Topic Theory

Cliché is a valuable tool, as well as a danger to originality in film and videogame music. While on the one hand it is necessary to ensure cues are clearly meaningful, if they sound too familiar, too pastiche or too melodramatic, they can become a distraction. Given the nature of mixing in videogame music, there is a greater degree of flexibility for the composer, as throughout the majority of the game the music functions almost subliminally under a plethora of sound effects and visual splendour: while maintaining effective functionality, a little cliché usually goes unnoticed.

Of course, this technique is not without precedent. The Enlightenment brought about a move from the High Baroque compositional focus on the single “affect” to multiple layers of expressive contrasts. This came with the recognition that an individual’s feelings were in a constant state of flux rather than a succession of distinct temperaments. Musically, this became evident not only in the varied expressive qualities in a single movement, but in the contrasts now drawn between key areas, phrases and even bars. With the rise of Opera Buffa in particular, instrumental music gained a frame of reference from which to build a library of *topoi*— ‘subjects for musical discourse’— either in the form of a full composition (“type”) or as a passage or figure within a single work (“style”).⁴¹ Leonard Ratner and Wye Allanbrook pioneered a systematic approach towards purposeful rhetorical devices in the instrumental music of composers such as Mozart and Haydn. Their keyboard sonata analyses, for instance, demonstrate the interaction of musical processes with expression through the use of contrasting topics. Allanbrook goes as far as suggesting that the development of sonata form was in part ‘a new mode of taking tonality, one that reinforces dramatic continuity while admitting the new delight in topical contrast and counterstatement.’⁴²

⁴¹ Leonard G. Ratner, *Classic Music: Expression, Form and Style* (New York: Schirmer Books, 1980), p. 9.

⁴² Wye Allanbrook, ‘Theorizing the Comic Surface,’ in *Music in the Mirror: Reflections on the History of Music Theory and Literature for the 21st Century*, ed. Andreas Giger and Thomas J. Mathiesen (Lincoln: University of Nebraska Press, 2002), p. 202.

In defining the essential criteria for each rhetorical element, Ratner demonstrates ‘ways in which the various parts of classic musical discourse could be put together to establish *coherence* and to promote *eloquence*’—what Ratner claims is the very essence of the classical style.⁴³ In rhetorical terms, unity is no longer created by all the musical elements working towards one temperament, as in a mono-affective Baroque instrumental movement; instead, the rhetorical *Hauptsatz* (the principal idea or theme) is worked through what Einstein referred to as “*il filo*”—the musical thread of connection and succession. Through her analysis of the first movement of Mozart’s keyboard sonata K. 332, Allanbrook shows that even when Mozart makes a sudden jump to a contrasting topic, unity is maintained through gestural similarities. For instance, the Exposition of K. 332 moves swiftly through several topics: a singing style—a parody of learned counterpoint—a gallant minuet—horn hunting calls—*Sturm und Drang* (tragic style)—a bright symmetrical minuet. Allanbrook argues that the iambic cadences form the common denominator between the horn calls and *Sturm und Drang* topics: keeping the iambic rhythm intact allows everything else to change. Ratner concludes ‘Mozart weaves threads of connection that link contrasted sections and figures by single notes, by overlaps in cadential action, by shifts of stance within cadential formulas. He veers again and again at surprising tangents, but always turns upon a point of leverage between the juxtaposed topics.’⁴⁴ In this way, the composer himself plays with meaning, creating a structure for the audience to experience and negotiate.

Furthermore, there is a close relationship between the formal logic of tonal progressions and the use of expressive *topoi*. The Exposition moves from the tonic (F major) to the dominant via the dominant minor. The succession of topics in this exposition clearly aligns itself with the tonal plan—the C minor passage idiomatically coincides with *Sturm und Drang*, moving naturally into the major mode and the lighter minuet. Thus different topics, Allanbrook argues, are suited to specific musical

⁴³ Ratner, *Classic Music*, p. 206.

⁴⁴ Ratner, ‘Topical content in Mozart’s Keyboard Sonatas,’ *Early Music* 19/4 (1991): 615–619.

functions: 'Just as the other gestures are chosen for their appropriateness to the particular moment in the key-area process that they further—the singing and learned styles bound together to create an extended opening period, the horn calls suitable for a codetta—the *Sturm und Drang* is tailored for modulation'.⁴⁵

Defining “moods”: Exploring the Main Topical Categories Employed in *Crysis*

The most commonly employed “moods” in *Crysis* are categorized as ‘action’, ‘ambient’, ‘incidental’, ‘middle’ and ‘silence’. While these moods seem like self-evident topics, an analysis of how they convey these states is fundamental to an understanding of music’s functionality within a videogame narrative. Table 1.4 compares the Main layers of the Travel theme moods, as this layer usually contains the most substantial musical cues.

⁴⁵ Allanbrook, ‘Two threads through the labyrinth: Topic and Process in the First Movements of K.332 and K.333,’ in *Convention in Eighteenth- and Nineteenth-Century Music: Essays in Honor of Leonard G. Ratner*, ed. Allanbrook, Janet M. Levy, & William P. Mahrt (New York: Pendragon Press, 1992), p. 136. Other work on semiotics has also made reference to topic theory. For example, see V. Kofi Agawu, *Playing with Signs: A Semiotic Interpretation of Classic Music* (Princeton, NJ: Princeton University Press, 1991), especially chapter 2, pp. 26–50.

Travel Theme, Main Layers	
Mood (Main Layer Cue) organized by intensity	Description
Silence (travel_silence) 'music/levels/silence.wav'	Both of these cues actually play a silent audio track. Their other layers are more significant.
Incidental (travel_silence_incidental) 'music/levels/silence.wav'	
Ambient (travel_1_main) 'music/levels/tank/travel_1_main.wav'	<ul style="list-style-type: none"> • music mimicking ambient sound effects, e.g. long held synthesized/string notes/chords with extreme fades and contrasts • light military topic (snare drum rhythms) • Korean/ethnic sporadic drumming
Middle (travel_2_main) 'music/levels/tank/travel_2_main.wav'	<ul style="list-style-type: none"> • musical theme in cellos & basses • more steady musical process: regular rhythmic energy in strings • horn theme • percussion punctuations (military & ethnic topics)
Action (travel_3_main) 'music/levels/tank/travel_3_main.wav'	<ul style="list-style-type: none"> • fuller consistent percussion (merging of topical rhythms) • brass theme with string stab chords accompaniment • lively electric bass • full horn theme grandly over top of lively percussion and strings

Table 1.4: "Travel Theme" Topical Analysis

The first thing to note is that the naming (and numbering) of the cues tells us about their structural relationship: they are organized according to levels of intensity. The principal methods for increasing intensity include amplifying volume, increasing consistency of metre, tempo, and rhythm, and a fuller orchestration. In all these cues, musical phrases are consistently contrasted with moments of comparative silence before being reinvigorated. On the face of it, it would seem that these are the only factors that distinguish the meaning and dramatic function of the cues. This is unsurprising, however, as the content of the game naturally does not require the full breadth of *topoi*—most, if not all, of the music required is bound to be from the same category. (Furthermore,

the number and variety of cues is misleading, as many are just seconds long and most are variants on the same thematic material.)

In any case, Zur does exploit four distinguishable topics prevalent across the entire game: the main theme on the French horns (heroic, epic topic); the military march with heavy percussion; the epic wordless chorus; and the electric bass guitar and synthesizers for the otherworldly alien music. These topical styles are closely associated with the thematic material. The main theme, for example, like the use of *leitmotifs* in opera and film music, is associated with the French Horn because as Zur explains: '[French Horns have] a serious pronouncement quality and depth, but also emotional strength...'⁴⁶ The popularity of this style of orchestral writing—the soundtracks to *Star Wars* and *The Lord of the Rings* come to mind—strengthens topical function. This reinforcing of the patterns of associations creates tropes that become the source of meaning in their own right.



Figure 1.8: Main Theme

The theme is a typically simple motif (Figure 1.8 is its most common form) whose compactness is critical not only for it to be readily recognizable, but also so that it can be easily manipulated throughout the score. As it is an arpeggiation of tonic and dominant chords, its harmonic functionality is straightforward to exploit. Combined with an antecedent–consequent phrase structure, the theme permits a ready and adaptable means of creating and incrementing tension. This is the rhetorical *Hauptsatz* that unites the entire game musically and all the other music

⁴⁶ Zur in Zelfdan, 'In the *Crysis* Zone.'

is at one point or another infused with it. Figure 1.9 is an example of how Zur accomplishes this by turning it into a rising sequence:

The figure shows two staves of music. The top staff is for Trumpet in Bb and the bottom staff is for Trumpet (Tpt.). Both are in 4/4 time, marked *ff* and tempo 100. The top staff has notes G4, A4, Bb4, C5, with orange accents on A4, Bb4, and C5. The bottom staff has notes G4, A4, Bb4, C5, D5, E5, F5, with orange accents on A4, Bb4, C5, D5, and E5. Chord symbols Dm, A7, Dm, Ab9, Db, and Fm are indicated below the staves. Dashed lines connect the notes across measures, showing a rising sequence.

Figure 1.9: Main Theme Development

Both the pitch structure and rhythmic profile of the theme remain largely intact, although the main melody notes (coloured in orange) rise by step instead of falling as they do in Figure 1.8, and the sequence is also displaced so that emphasis is no longer on the first note. This helps to make this passage more energetic, with greater forward-momentum. The chord symbols are deduced by implication and until bar 8 the harmonies all run over a tonic pedal. For this theme to achieve its dramatic function, its soundworld has to be structured linearly; the order in which tonal harmony progresses matters and it is precisely because of this that it can be exploited to increase dramatic tension. This can be explained in semiotic and phenomenological terms; for instance, Agawu says that ‘As in language, meaning is secured only when the entire [harmonic progression] has passed.’⁴⁷ I will return to semiotics in the following chapter; here, the focus will remain on listener expectations driven by linear tonal harmony. Eugene Narmour’s ‘implication-realisation’ analytical methodology offers a provocative, if flawed, attempt to provide a pseudo-scientific basis for understanding listener

⁴⁷ See Kofi Agawu, *Playing with Signs: A Semiotic Interpretation of Classic Music* (Princeton: Princeton University Press, 1991), p. 16.

expectations.⁴⁸ Narmour developed Leonard Meyer's earlier efforts by substituting Meyer's concept of 'expectancy' with 'implication', the former implying a subject with a single preferred expectation, the latter offering multiple possibilities from an ostensibly objective perspective.⁴⁹ Nevertheless, Narmour's claims of objectivity are still highly suspect, and although this mind-set for analysing implications is useful, it is important to note the limited extent to which his theory is supported by psychological science.⁵⁰ The teleological impulse towards bar 8 is generated from the beginning of the passage. The sequence starts by climbing the harmonic scale at a rate of one note per two-bar phrase. Once this is repeated, the rate of change accelerates so that the melody forms an actual scale in bar 7. Harmonically, the oscillation between tonic and dominant is made more potent each phrase with the addition of the seventh, and then the minor ninth. These factors combine to *imply* an imminent climax or harmonic conclusion, normatively towards the tonic note. However, in the event at bar 8, the implied tonic is avoided, with the preceding C-natural leading instead to a D \flat —the leading note respelled. This interruption functions as a substitute plagal cadence (\flat VI \equiv iv 7) in F minor, and without any tonal resolution, the music continues to push forwards.

Figure 1.10 is a simplified piano reduction of the introduction to the trailer music (which, like a Rossini overture, provides a useful summary of the music across the game), and demonstrates further how linear functional harmony plays with listener expectation. In the 3/2 section (bars 1–8), Zur exploits the features of the theme to steadily build tension towards the final cadence into bar 9. The dynamic markings in conjunction with long static chords clearly emphasize the harmonic

⁴⁸ Eugene Narmour, *The Analysis and Cognition of Melodic Complexity: The Implication-Realization Model*, (Chicago: University of Chicago Press, 1992). See also Naomi Cumming, 'Eugene Narmour's Theory of Melody,' *Music Analysis* 11/2–3 (1992): 368–370; and Ian Cross, 'Music Analysis and Music Perception,' *Music Analysis* 17/1 (1998): 3–20.

⁴⁹ See Leonard B. Meyer, *Emotion and Meaning in Music* (Chicago: University of Chicago Press, 1956).

⁵⁰ Indeed, Narmour's own *Beyond Schenkerism* (Chicago: Chicago University Press, 1977) was itself born out of this spirit. Neo-Schenkerians adopted a similar attitude by removing the psychological elements from Schenkerian Analysis, though their association with logical positivism has also been criticized along with proponents of Set Theory. See Cook, *A Guide to Musical Analysis*, (Oxford: Oxford University Press, 1994), pp. 122–123.

functions, shifting the tension and expectation in the progression onwards. The addition of an extra beat in bar 8 has the effect of a written out *ritenuto*, which emphasizes another substitute plagal function. This VI – i cadence is particularly suited for this moment, as VI shares an additional note with the tonic chord than iv, making it closer to a substitute statement for the tonic: this is a cadence that commences a new section rather than closing with perfect finality.

The image displays a musical score for 'Trailer Music' from the game *Crysis*. The score is presented in six systems, each with a piano part and a piano accompaniment (Pno.) part. The first system is marked 'Piano' and features a tempo of $\text{♩} = 50$. The second system is marked 'Pno.' and begins at measure 5. The third system is marked 'Pno.' and features a tempo of $\text{♩} = 180$, starting at measure 9. The fourth system is marked 'Pno.' and begins at measure 15. The fifth system is marked 'Pno.' and begins at measure 21. The sixth system is marked 'Pno.' and begins at measure 25. The score includes various musical notations such as dynamics (*f*, *ff*), articulation marks (accents), and phrasing slurs. The piano part consists of a melodic line with some rests, while the piano accompaniment provides a rhythmic and harmonic foundation with chords and moving lines in both hands.

Figure 1.10: Trailer Music

The march theme (bars 13–17 of Figure 1.10) is an optional counter-subject to the variations of the main theme and the two are often mixed together. The distinction between the style of the

introductory material and the march is held together through *il filo* of the prevailing tonality (D minor), the tonic pedal and the regular harmonic rhythm swinging between tonic and dominant. Similarly, in the game itself, as Zur indicated (above), the cues of various moods in a given theme are in effect variations on the “same cue” in that they have the same harmonic profile and phrase structure.

The other key theme in *Crysis* is the slow whole-tone bass-line descent (Figure 1.11) which arguably originates from the slow chordal style of the opening passage in Figure 1.10. (One could make a motivic connection with the bass-line in bar 5 of the figure, noting too the tendency to retain the tonic note as either a pedal point or shared harmonic note.) In the tonal context, this whole-tone progression is customized to represent the feelings of fear and awe when the player is in confrontation with alien enemies of vast magnitude. (In Figure 1.10, the right hand stab chords of bar 28 are performed by a large wordless chorus, another idiomatic topic akin to John Williams’ ‘Dual of the Fates’ from *Star Wars*, to name a familiar example. This too conveys an epic sense, although with greater urgency.)

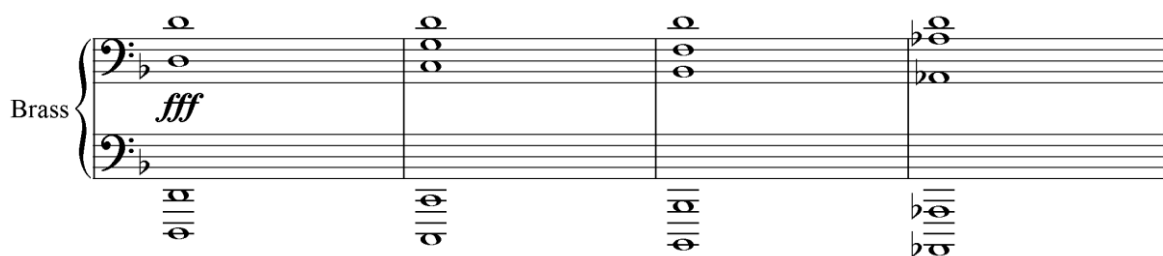


Figure 1.11: Descending Bass-line Theme

These three themes and the topical associations have clear *dramatic* functions, but as Allanbrook and Ratner suggest, some topics are also suited to particular *musical* functions. By musical function, in this context, the implication is of the *position* within a particular structural level: opening, developing, or closing. From Figure 1.10, one could legitimately suggest that the

presentation of the opening theme is suited to the exposition of the principal material due to its introductory declamatory style, whereas the military march is more appropriate as the main body of music. Beyond this, however, it becomes problematic to argue with any degree of exactitude or consistency that the topics or themes lend themselves to particular small-scale musical functions. Indeed, William Caplin has argued that the relationship between *topoi* and formal functions should not be overplayed, precisely because the principal function of these *topoi* is content based.⁵¹ Nevertheless, if we take the view that the “moods” themselves function in a similar fashion to musical topics, we can align them to the mobile musical structures previously uncovered (see Tables 1.2 and 1.3).

Conclusions

By looking at the structure and implementation of music in *Crysis*, I have shown how the different structural layers function from the top down. Mobile structures, described as a subset of the aleatoric aesthetic, do not necessarily imply aleatoric soundworlds. *Crysis* subverts Hoogerwerf’s perception of aleatoric approaches to form because it combines multiple aesthetics to achieve its musical and dramatic goals: the aesthetic experience includes both mobile form and topical tonal music. While there are problems with implementation, it nevertheless succeeds in demonstrating that this strategy can be an effective and viable one, as it allows the composer (and audio team) to employ appropriate structural systems at different hierarchical layers. Instead of promoting one aesthetic approach above all others, this poly-aesthetic approach employs both where they can be most effective in achieving the dramatic goals required to communicate clearly to the audience.

⁵¹ William Caplin, ‘On the Relation of Musical *Topoi* to Formal Function,’ *Eighteenth-Century Music* 2/1 (2005): 113–124.

I have also shown how the concepts of play and form might be readily employed in discussions about videogame music. The listener/player “plays with form” in a tangible way by exploring the formal limits of the open-world environment. In *Crysis*, play is not overtly focussed on the form of the musical content, but music is a significant component of the videogame aesthetic, and playing with the form of the game entails playing with the form of the music. The player also “plays with meaning” by interpreting musical topics as game state indicators, though this is just one way in which the player might engage with meaning. In the case of *Crysis*, playing with form—the aesthetics of the game—and meaning are complementary rather than contradictory or exclusive activities. Methodologically, separating these two facets of aesthetic experience helps to clarify them conceptually. However, in the following chapters this false dichotomy will not be as rigidly demarcated. Indeed, form and meaning are not just closely related; they are both functions of play.

Chapter Two

Authorship in *Chime*: the player as Reader

The attention-deficit disorders of contemporary postmodern life no doubt bring on new problems with which an older slower world did not have to deal; but they also confront us with remarkable new possibilities, with new kinds of texts and new kinds of philosophical problems (not least in the area of time and temporality) which offer exciting prospects and permit us to avoid repeating and rehashing all the old solutions under the aegis of the canon, perennial philosophy, the tradition, or whatever other ideological label may be affixed to the “eternal human” of the various regressive essentialisms.

—Jameson, *Valences of the Dialectic*¹

The advent of mobile form in the 1950s challenged many of the preconceptions traditionally brought to musical aesthetics. First among them, the “work concept”—a tenacious idea that has perhaps reached a natural aporia in its polemical history²—is stretched to the limits of its already indistinct definition. Indeterminacy in the compositional product highlights the age-old aesthetic questions: what is the musical object, and where is it located? In this light, Mozart’s oft-cited *Musikalisches Würfelspiel* cannot be viewed as a direct precedent for Riley’s *In C* (1964), for instance, because the former was conceived as a game (the title literally translates as ‘Musical

¹ Fredric Jameson, *Valences of the Dialectic* (London: Verso, 2010), pp. 494–495.

² See Lydia Goehr, *The Imaginary Museum of Musical Works* (New York: Oxford University Press, 2007) and Michael Talbot (ed.), *The Musical Work* (Liverpool: Liverpool University Press, 2000).

Dice-game’) which provides a template or tool for composing.³ It was not a composition in its own right and only by completing it would a final product (composition/work) materialize.⁴ Through an investigation of *Chime* (Zoë Mode/OneBigGame, 2007), a musical videogame that makes use of both aleatory and minimalist musical structures, I will evaluate issues of authorship, musical meaning and intentionality in relation to it. I will consider poststructuralist models—and in particular, Roland Barthes’s discussion of aleatory music as an example of “Text”—as a theoretical apparatus to further support this aim and consider the role of the player as a poststructuralist Reader.⁵

In 1991, the composer Evan Ziporyn challenged the validity of an individual compositional voice and composers’ ownership/property of their work arguing that these traditional conceptions of musical authorship were inconsistent with contemporary cultural pluralism and the use of digital technologies to manipulate and ‘refashion’ music.⁶ Ziporyn proposed a new take on Maher’s concept of Marxist music so that not only would ‘musical property’ be dispensed with, but also the entire apparatus of musicological ‘linguistic constructs’—our attempts to categorize and explain music in words. This chapter aims to demonstrate that ludomusicological attention—here specifically to conceptions of form in *Chime*—is not just an investigation into the ways in which music functions in videogame music, but a project that directly engages with, and contributes to, critical debates in musicology and contemporary art and culture.

³ See Stephen A Hedges, ‘Dice Music in the Eighteenth Century,’ *Music and Letters* 59 (1978): 180–87, 184–185.

⁴ See, for example, Lawrence M. Zbikowski, *Conceptualizing Music: Cognitive Structure, Theory, and Analysis* (Oxford and New York: Oxford University Press, 2002), pp. 142–143.

⁵ It is worth noting David Bordwell’s proposals for a cognitive approach to narrative theory not restricted to any particular medium. The relevant danger he highlights is that too often ‘borrowed theory’ from other genres (such as plays or novels) are inappropriately invoked to lend weight to a particular analysis. See David Bordwell, *Narration in the Fiction Film* (Madison: University of Wisconsin Press, 1985).

⁶ Evan Ziporyn, ‘Who Listens if You Care?’, in *Source Readings in Music History*, ed. Oliver Strunk, rev. ed. Leo Treitler (New York: W. W. Norton & Company, 1998), pp. 1311–18. Originally published in *New Observations* 86 (November/December 1991): 25–28.

Before considering issues of authorship, an important distinction should be made about Mozart's so-called *Musikalisches Würfelspiel*. Such games were popular in Mozart's day, but although his own Berlin publisher, Nikolaus Simrock, attributed one to him in 1792, direct authorship has never been authenticated.⁷ Essentially these games afford the player the ability to "compose" their own Minuet and Trio by rolling dice to determine the order of pre-composed material. With around two hundred bars of music available in total, and a combination of single and multiple-dice throws, the total number of possibilities for just sixteen bars is staggering. (One such game consists of 176 bars available for a sixteen-bar Minuet, to be determined by rolling two six-sided dice, and another 96 bars available for a sixteen-bar Trio, to be determined by a single six-sided die. This would result in $11^{16} \times 6^{16} = 1.3 \times 10^{29}$ unique combinations.⁸) The interrelating ideas of gaming, interactivity and (co-)authorship are clearly not new. However, the conception here is very different to the mobile form structures discussed below, as here the final "work" product is a fixed, linear (and teleological) construct. The game is merely a compositional tool. Conceptually (which is to say, not sonically), the result is not far from John Cage's use of the *I Ching* to provide the structure for his 1951 work, *Music of Changes*, although the requirements of tonality actually make the composition of Mozart's game more complex—it is much harder to produce a myriad of tonally congruent combinations than it is to produce random musical material. Of course, the difference in soundworld is paramount, as Mozart's "aleatory" interference in the compositional process is limited within certain rules that render it inaudible in the final product. From this, it is clear that the difference between applying chance or choice procedures to macro-musical structures (such as Mozart's mobile form Minuet) and micro-

⁷ There is much evidence that suggests it is likely Mozart composed such games; the fact that they existed in any case merits discussion. See David Cope, *Experiments in Musical Intelligence* (Madison, WI: A-R Editions, Inc., 1996), p. 7.

⁸ Many versions of the game have been computerized in various forms. For this particular version, see John Chuang, 'Mozart's Musikalisches Würfelspiel: A Musical Dice Game for Composing a Minuet,' on *sunsite.univie.ac.at* (1995), retrieved from <<http://sunsite.univie.ac.at/Mozart/dice/>>, accessed 05/08/2012. An index is also available at Sara Proft, 'Musical Dice Games,' on *saraproft.net* (1998/2009), retrieved from <<http://www.saraproft.net/blog/?p=2140>>, accessed 05/08/2012, although some are no longer accessible.

musical structures—the ordering of actual pitch content—is of vital importance to understanding their significance.

Poststructuralism and Authorship

The hermeneutic, analytical and, eventually, epistemological questions that arose as the discipline of musicology grew in the first half of the twentieth century, moved rapidly from ‘what and where is the meaning?’ to ‘who is in control of it?’ This led to some authors and composers abandoning meaning altogether in a somewhat nihilistic bid to escape the quagmire of attempting to claim any control and responsibility.⁹ The semiotic theory that accompanied these changes became increasingly abstract and complex after de Saussure’s dyadic division of the sign into ‘signifier and signified’.¹⁰ The argument that meaning resides in the sign and nowhere else implied that language itself (containing meaning) is external to and pre-exists the subject. Therefore, ‘a specific instance of signifying practice can mean whatever the shared and public possibilities of those signifiers in that order will permit.’¹¹ This rather neatly supports language’s primary communicative function, as the vision is not a purely private one but exists within a particular (complex but ultimately definable) socio-cultural context, and elevates the postmodern concept of inter-subjectivity over a simplistic subjectivist position. Barthes envisaged a timeless utopian model “Reader” who would range over rather than pierce a Text, behind which no hidden meaning exists. The Reader engenders meaning in the Text—a fluid and dynamic object that can nevertheless retain the author’s identity and intensions. One of Barthes’s examples of Text (in

⁹ See, for example, John Cage’s writings in *Silence: Lectures and Writings* (Middletown: Wesleyan University Press, 1973).

¹⁰ See Ferdinand de Saussure, *Course in General Linguistics*, eds. Charles Bally and Albert Sechehaye, trans. Roy Harris (La Salle, Illinois: Open Court, 1983).

¹¹ Catherine Belsey, *Poststructuralism* (Oxford: OUP, 2002), p. 18.

contradistinction to a Work) was aleatory music, due to its structural flexibility, authorial ambiguousness, and music's intangible abstract form of "meaning".¹² Conveniently, music history also provided a clear lineage, moving from the Work to the Text model.

The work concept, as discussed by musicologists since the inception of the discipline, forms a key part of the accompanying traditional value system. You can have good and bad Works, as well as masterworks, but it is not so with Texts, as such valuation would be contingent on the Reader. Poststructuralist theory can help contextualize the critical efforts of the last fifty years, but is also retroactive, and does not just apply to Texts created under its wing. In relation to viewing aleatory music as an archetypal Text, Joes and Song ask the question 'Is the Birth of the Reader the Birth of the Listener?' and in doing so, complicate the poietic and aesthetic positioning of the performer and audience as subjects.¹³ *Chime* (and videogame music in general) offers a pertinent example of this, and I will argue that the player's interaction with the Text fulfils Barthes's notion of a postmodern Reader. This postmodern elevation of Text over Work also neutralizes the auteuristic tendency to emphasize the poietic process over the aesthetic reception. It is often standard practice in film (and certain types of videogame) music to present composers with a near-complete visual stimulus, to which they respond in their accompaniment by subverting or supporting the image. Thus, when discussing musical meaning in film, analytical theorists, such as the film director Sergei Eisenstein, rely almost entirely on the dichotomy between music parallel to or in counterpoint with image—musical meaning either reinforces or subverts the visual narrative.¹⁴ Shifting the hermeneutic purview beyond intentionalism largely negates this false dichotomy.

¹² See Roland Barthes, 'From Work to Text,' in *Image – Music – Text*, ed. & trans. Stephen Heath (London: Fontana Press, 1977), pp. 162–163.

¹³ Joe Jeongwon & S. Hoo Song, 'Roland Barthes' "Text" and Aleatoric Music: Is the Birth of The Reader the Birth of the Listener?,' *Muzikologija 2* (2003): 263–81.

¹⁴ See Robynn J. Stilwell, "'I just put a drone under him...': Collage and Subversion in the Score of "Die Hard", *Music and Letters* 78/4 (1997): 551–580.

Although scholars in the field of videogame studies do not tend to refer to videogames explicitly as Texts, there are plenty of examples from the still-nascent field that draw on similar concepts. Brendan Keogh, for instance, challenges the field's 'historical hostility to critical and textual readings' by preferring to conceptualize the "videogame text" as 'the coming together of the player and the videogame in a cybernetic circuit of embodied pleasures. This circuit flows across both the actual and virtual worlds of play in a convergence of form and content.'¹⁵ The language here closely reflects the aesthetic theory discussed in the Introduction, and directly joins the concepts of play and Text.

These relationships have been considered in musicological contexts in terms of new paradigms of compositional freedom. French economist and intellectual, Jacques Attali, for instance, has suggested that composition be viewed as an activity not for exchange or use but solely for the pleasure of its 'producer':

Composition thus appears as a negation of the division of roles and labor [*sic*] as constructed by the old codes. Therefore, in the final analysis, to listen to music in the network of composition is to rewrite it: "to put music into operation, to draw it toward an unknown praxis," as Roland Barthes writes in a fine text on Beethoven. The listener is the operator. Composition, then, beyond the realm of music, calls into question the distinction between worker and consumer, between doing and destroying, a fundamental division of roles in all societies in which usage is defined by a code; to compose is to take pleasure in the instruments, the tools of communication, in use-time and exchange-time as lived and no longer as stockpiled.¹⁶

His utopian vision of a post-capitalist society has not been realized, and the proliferation of commercial music through new technologies such as mobile mp3 players and the internet has added to 'repetition' (Attali's term for the current, pre-compositional stage in his four-stage schema) as much as it has enabled new possibilities for the production and dissemination of art. However, the development of interactive videogames might signal a move in Attali's direction. Attali's notion of future 'composition' enhances the role of the 'listener' to that of an active

¹⁵ Brendan Keogh, 'Across Worlds and Bodies: Criticism in The Age of Video Games,' *Journal of Games Criticism* 1/1 (2013), retrieved from <<http://gamescriticism.org/articles/keogh-1-1>>, accessed 23/09/2014.

¹⁶ Jacques Attali, *Noise: The Political Economy of Music*, trans. Brian Massumi, foreword by Fredric Jameson, afterword by Susan McClary (Minneapolis: University of Minnesota Press, 1985), p. 135.

participant.¹⁷ (This is not so far from Adorno's thinking, as discussed in the Introduction.) Furthermore, the emphasis on interactivity as the standout feature of videogames may seem to engage with 'relational aesthetics', defined by Nicolas Bourriaud as 'an art taking as its theoretical horizon the realm of human interactions and its social context, rather than assertion of an independent and private symbolic space.'¹⁸ However, this is somewhat different from Attali's conception of interaction between the Text and the listener, and is an approach that will be discussed further in the Epilogue. Games like *Fantasia: Music Evolved* (Harmonix/Microsoft Studios, 2014) certainly make steps in Attali's direction by promising—though perhaps not delivering—interactive musical experiences that challenge notions of authorship in a way that more simplistic systems do not.¹⁹

Minimalism and Mobile Form

The combination of minimalist music and mobile form is not without precedent. Riley's 1964 work, *In C*, consists of 53 distinct patterns and is accompanied by extensive performance guidelines.²⁰ The piece is quasi-tonal, as indicated by its title, but there is little functional tonal harmony. However, following the prompt in the guidelines that the patterns can be grouped into twos or threes, it is possible to discern a tonal trajectory through the piece. The F in pattern 8 marks the first departure. The F-sharps from 14–28 indicate a move toward the dominant,

¹⁷ For more on this idea, see David Rosenboom, 'Propositional music: on emergent properties in morphogenesis and the evolution of music,' in *Arcana: Musicians on Music*, ed. J. Zorn (USA: Granary Books, 2000), pp. 203–232, 206. See also Aaron Oldenburg, 'Sonic Mechanics: Audio as Gameplay,' in *Game Studies* 13/1 (September 2013), and Michael Bull, 'No Dead Air! The iPod and the Culture of Mobile Listening,' *Leisure Studies* 24/4 (October 2005): 343–355.

¹⁸ See Nicolas Bourriaud, *Relational Aesthetics*, trans. S. Pleasance and F. Woods (Dijon: Les presses du réel, 1998/2002).

¹⁹ See the developer's early presentation on the game: Harmonix, 'The Heartwarming Origins of Fantasia: Music Evolved,' on *Imagine Games Network* (23/09/2013), retrieved from <<http://uk.ign.com/videos/2013/09/23/the-heartwarming-origins-of-fantasia-music-evolved>>, accessed 12/05/2014.

²⁰ See Terry Riley, "'In C": Performing Directions,' from the score for 'In C' (Celestial Harmonies, 1989).

although the move is left ambiguous. 29–30 often feel like the centre of the piece, with the strong and clear tonic harmony laid bare. From 31 to 41, or perhaps even extending until 48, there is a strong sense of the dominant seventh building toward a final cadence. The final two patterns, however, are alternations between B-flat and G, so this trajectory is incomplete or open-ended. With both elements of individual choice and chance group combinations, it arguably offers a more clearly “non-linear” listening experience than the Stockhausen or Boulez works discussed in the previous chapter. The teleology of the piece exists in its tonal unfolding, although the final “goal” is never reached. The “composed fade-out” at the end is not uncommon to minimalist and minimalist-inspired music, often ostensibly non-teleological, the effect being that the music has been “tuned out of”, rather than actually finished. In fact, it is not so much that the lack of a clear goal at the end indicates a non-teleological impetus, but rather that a non-teleological work sometimes has difficulties in coming to an *end*, preferring instead to draw to a close. (This is certainly the case with works inspired by Cage’s own ‘As Slow as Possible’ with its purported duration of 639 years.²¹)

Riley’s guidance also reflects a common minimalist attitude towards performer involvement beyond any clearly active role in selecting durations and repetitions. In addition to this, the players are urged to listen and contemplate the musical process as it unfolds in real-time, focusing on both their individual role and its place within the ensemble. Later minimalist composers place emphasis on process, which is largely automated. However, they conceive of the style as antithetical to that of both integral/total serialism and indeterminacy/aleatorism. Instead, their reduced complexity permits and encourages minute but *perceptible* transformations (usually rhythmic) of the given material. Steve Reich explains that the idea of ‘phasing’—the moving in and out of synchronization—is that it produces various ‘resulting patterns’:

²¹ See John Cage Organ Foundation, ‘John Cage Orgel Project,’ on john-cage.halberstadt.de, retrieved from <<http://web.archive.org/web/20110722045416/http://www.john-cage.halberstadt.de/new/index.php?seite=cdundtoene&l=e>>, accessed 26/03/2013.

...certain details of the music are worked out... during rehearsals. Resulting patterns are melodic patterns that result from the combination of two or more identical instruments playing the same repeating melodic pattern one or more beats out of phase with each other... Selecting resulting patterns is not improvising; it is actually filling in the details of the composition itself. It offers the performer the opportunity to listen to minute details and to sing or play the ones he or she finds most musical.²²

Many music games (such as *Chime*) allow a similar level of engagement, but as audience and performer are for the most part one and the same, this real-time experimentation with music is afforded to amateurs or so-called “non-musicians”.

The genre of music games has grown considerably in size and popularity in recent years, and includes a variety of puzzle games, like *Chime* and *Soundodger* (Studio Bean/Adult Swim Games, 2013), and musical “simulations” like the multi-billion dollar franchises *Guitar Hero*²³ and *Rock Band* (Harmonix/MTV Games). There are also several “interactive audio apps” such as Brian Eno’s *Bloom* (Brian Eno, Peter Chilvers/Opal Limited, 2008)²⁴ and Björk’s interactive album, *Biophilia* (2011), which do not fulfil a stricter definition of videogame, but are nevertheless closely related. Aaron Oldenburg’s excellent survey of experimental audio games looks back to the Mozart and Cage examples discussed here, making a similar argument that ‘The role of authorship in interaction design becomes less about authoring content than about authoring rules, or spaces for the audience to create content. The artwork emerges through a dialog between the audience and artist.’²⁵ (Oldenburg also tantalizingly links this thinking in the context of audio games to issues of art status.)

²² Steve Reich, ‘Writings about Music—Music as a Gradual Process and Notes on the Ensemble,’ in *Source Readings in Music History*, pp. 1385–1390. Originally published in *Writings about Music* (New York: New York University Press, 1974), pp. 9–11, 45–48.

²³ The *Guitar Hero* series was developed by Harmonix (2005–2007), Neversoft (2007–2010), Budcat Creations (2007–2009) and Vicarious Visions (2007–2010), and was published by RedOctane (2005–2009) and Activision (2006–2010).

²⁴ See Opal Limited, *Generative Music*. Retrieved from <<http://www.generativemusic.com>>, accessed 07/05/2014.

²⁵ Aaron Oldenburg, ‘Sonic Mechanics: Audio as Gameplay,’ *Game Studies* 13/1 (September 2013), retrieved from <http://gamestudies.org/1301/articles/oldenburg_sonic_mechanics>, accessed 07/05/2014.

Analysing *Chime*: Semiotics and Play

Chime is a block-placing puzzle game akin to *Tetris*, but with a clear musical focus. As such, the musical structure and the gameplay are inextricably connected. It will be necessary to describe the game mechanics in detail before a clear understanding of the aim of it can be reached. A backing track with a simple musical form (usually consisting of regular alternations of verse and chorus) provides the fundamental structure, its visual representation being a blank grid (16 by 32) with a “playback line” repeatedly moving from left to right (see Figure 2.1 below). Each square unit on the horizontal y-axis represents a single beat, and the playback always moves at a constant tempo in the same direction. Subsequently, every musical section has the same duration. As the playback line hits “blocks” (various pentomino shapes represented in Figure 2.1) placed anywhere on the grid by the player, “legal”²⁶ pitches within the current section are played based on a spatial spectrum (high to low). Each unit on the vertical x-axis of the game grid represents a legal pitch, but is not necessarily proportional. The (PC release of the) game includes six tracks/levels, the first (and initially the only unlocked track), *Brazil* by Philip Glass. As *Brazil* is based on the notes from chords I and V in F-major, the available pitches are not equally spaced intervallically on the x-axis (see Figure 2.1). The top-left square of each block is its rotational axis, and is therefore employed as the basis for the pitch selected to sound for the block.

²⁶ This is general programming terminology that often refers to data validation, and is used in the developer blog. See ‘Dev Blog: Tuning Chime – Redesigning scoring for Chime on PC,’ retrieved from <<http://www.chimegame.com/tuning-chime-redesigning-scoring-for-chime-on-pc/>>, accessed 25/5/11.

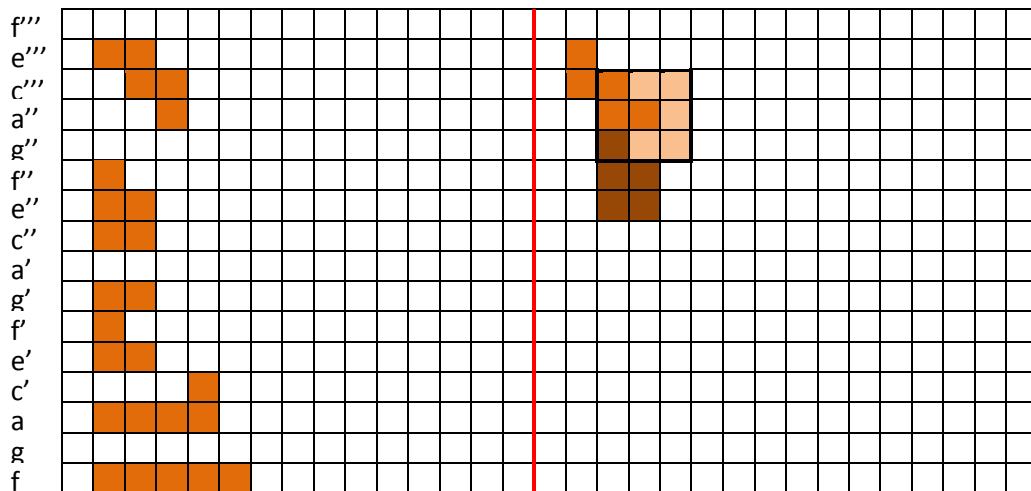


Figure 2.1: *Brazil* Level Grid in F major with a chord (f, a, g', f'', e'') made from each pentomino on beat two. The red line demarcates the two 16-beat sections that start *Brazil*. The black box demonstrates how blocks can be combined into quads.

As the blocks are combined into “quads” (a solid rectangle with an area of 3x3 or greater), pre-composed phrases are played, selected at random from a legal list depending on the section and number of layers in play. The quads are not permanent, but vanish after they can no longer be expanded into larger areas (a few seconds). Once they have been removed, they leave a coloured trace that indicates successful coverage of that part of the grid. The “fragments” left over outside of the black box decay after a lifetime of about five passes of the playback line, and as soon as one disappears, they all go, along with the player’s “multiplier” (a score bonus for initiating a run of quads). Additional musical layers are added as the player does better, for example, through increasing their multiplier by initiating a chain of simultaneous quads. The combination of blocks into quads also implies a holistic Gestalt-like musical phrase: you get far more, both musically and in terms of the gameplay, by combining the disparate blocks together. This continues until the player runs out of time (three difficulty settings of three, six and nine minutes are available²⁷), which they can extend by “covering” the grid with quads. The goal is to obtain one hundred percent coverage (or greater), which, although it does not necessarily equate

²⁷ There is also a ‘Free Mode’, which runs indefinitely, but this is not strictly speaking part of the actual game and will be ignored for the purposes of this analysis.

performing all the musical combinations, naturally does tend to involve most of the compositional potential. When the time runs out (or the player achieves complete coverage) the music ends rather abruptly using a quick fade instead of a pre-composed finish, leaving the player unresolved, and hopefully, keen to try again. (If the player is successful, they progress to a second “stage”, identical to the first, but carry over only their remaining time from the first.)

When analysing any mobile form, it is important to delimit its boundaries and determine exactly what freedoms the structure permits. In *Chime*, the fact that the gamer merely places pre-composed units from a limited selection implies that the meaning is engendered at least as much by the author, if not more. From either a structural or a poststructuralist perspective, the blocks as signs in *Chime* have been created, placed and chosen by the composer and audio-engineers. In fact, the “freedom” experienced in most games is ultimately an illusory one, as almost always, all of the possible scenarios available are pre-determined “options”, prepared paths which form the Work created by the author. The grid for *Brazil* is a simple rectangle (unlike some of the other tracks), 16 by 32 units (an area of 512 units), and all of the available blocks comprise five units in various configurations. The smallest quad is 3 by 3 (an area of 9 units). Initial calculations are misleading, as when properly combined, the total number of musical variations permitted when playing *Brazil* is a phenomenally large number. While it would be tempting to say that *a priori* this is effectively an infinite number, it is nevertheless decidedly finite. More importantly, the phenomenological element is of greater significance, and has a vastly smaller scope. Psychologically, with the use of *Gestalt*-like principles, it is possible to explain how the many variations found in several performances of a Chopin Etude, for instance, are all still recognized as the same piece of music.²⁸ The issue is complicated in the case of an interactive structure, as the player takes on the role of both audience and performer (but a performer with greater

²⁸ See, for example, Bruno Repp, ‘A microcosm of musical expression. I. Quantitative analysis of pianists’ timing in the initial measures of Chopin’s Etude in E major,’ *Journal of the Acoustical Society of America* 104/2 (1998): 1085–1100.

compositional powers than is usual). Being a minimalist work, *Brazil* is characteristic of music composed since the 1950s in that while structure is a significant part of its “meaning”, it is also abstract enough that one may not notice considerable deviations from the original scheme. (This is often the case with both aleatory and total serial works, and is one reason why, ironically, they sound so similar.) Nevertheless, it remains unavoidable that the majority of factors in any broad definition of this “meaning” are ones outside of the player’s influence (unlike *Crysis*, which offers a more complex balance). The gamer is given the role of a detective with a puzzle—in order to discover the “ultimate meaning” of the music (the full usage of all cues and layers, full complexity and therefore, their highest score), they must achieve it through skill, and will often be cut short by failing to increase their coverage in the allotted time. This ultimate meaning is determined by the composer (and is greatly mediated by the audio engineer). The idea of *Brazil* (restricted to its *Chime* variation) as a Work, is reliant on the repeatability of the game experience. Each time the player works through the track, it is recomposed and can only exist as a unique musical object—a Text. The entire construct exists as a Work only on paper.²⁹ This particular case is complicated by the fact that the version of *Brazil* used in *Chime* was prepared especially, and the original was not a mobile structure. Subsequently, the player takes the role of a detective, piecing together their own subjective perception (Text) of an original “work”—an elusive musical object that they can never access, as the version they hear will always be different—theirs.

Although they are both mobile forms, *Chime*’s structure is quite unlike that of *Crysis* (and that is no surprise given that the former is a small puzzle game made for charity, the latter the equivalent of a Hollywood blockbuster). In *Crysis*, the narrative dictates the macro structure, and the subsequent use of musical themes is more suited to a hierarchical format. *Chime* is a much smaller game in scope and scale, and is more focused on the “music itself” and the puzzle game-

²⁹ Carl Dahlhaus noted the complications ‘open form’ music posed for the already problematic ‘work concept’. See *Foundation of Music History*, trans. J. B. Robinson (Cambridge: Cambridge University Press, 1982), pp. 6–7.

play. In *Crysis*, the phenomenological subject is located in the visual symbiosis of the player and the game's first-person protagonist (Nomad). The first-person visual cue (an arm emitting from the bottom edge of the screen) simultaneously ensures this synergy is maintained whilst being unable to resist the inherent effect of alienation between subject and object. The visual channel is undoubtedly the primary communicative medium. The non-diegetic music functions in a similar paradoxical way, both immersing the player by affecting their mood (and sometimes operating as an early-warning system), and distancing them from the "realism" of a virtual narrative world. (This realism is arguably as much about replicating a film aesthetic as it is a reflection of the real world.) In fact, almost all of the developer's efforts are aimed at ensuring that this symbiosis between player and character is strongly maintained. By way of contrast, *Chime* has no protagonist, and indeed, no narrative. The goal of immersion (in a virtual world) is replaced by engrossment (in play). The subject is not situated in a virtually constructed world, but views both the visual and auditory objects directly. On face value, this subject appears to have more control in constructing the musical object because the principal communicative medium of the game is supposedly auditory. (In fact, the player has a considerable amount of influence over the music in *Crysis*, but the experience of this control is completely subverted by the different narrative and visual focus.) However, the mental requirements of the visual channel tend to prove too much. Placing the blocks optimally to expand coverage and rescuing the fragments to maintain the multiplier under the pressure of the time limit leaves little cognitive capacity to consciously construct the music, now a by-product of the game rather than its *raison d'être*. Indeed, the "developer diaries" clearly describe the decision to emphasize the more complex gameplay mechanics *visually*, and they go as far as to suggest that the final release of the game on PC (the original release was for Xbox) had changed from a 'musical toy-box' to a 'puzzle game with a musical element.'³⁰ In terms of the actual music, both the minimalist stylistic features and their implementation through a careful system of legal lists and layers combine to ensure that the

³⁰ See 'Dev Blog: Tuning Chime – Redesigning scoring for Chime on PC.'

musical output is a smooth and cohesive experience—so much so that the player’s ability to affect it in any noticeable way is negated. It is because of this that the actual number of musical variations is a largely meaningless statistic—the vast majority of these variations generate essentially the same experience.

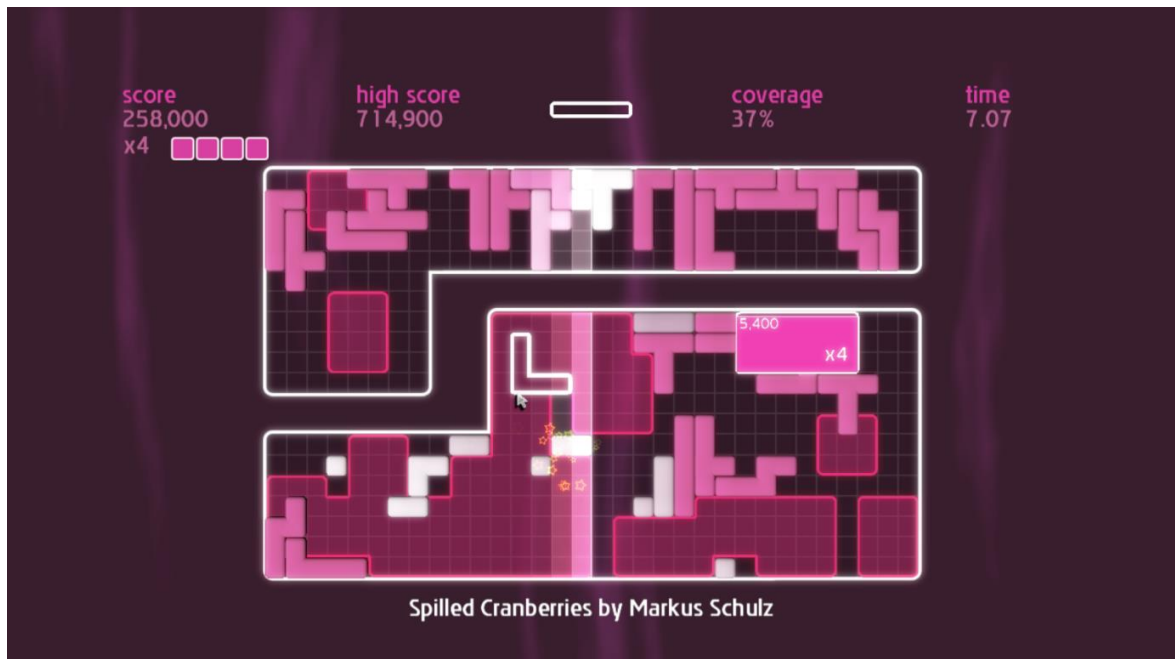


Figure 2.2: Split Grid, *Spilled Cranberries* by Markus Schultz

While all of the tracks in the game were clearly selected to fit a core musical style (essentially minimalist), they nevertheless encompass a variety of distinct approaches. The emphasis in *Brazil* consists of shifting background patterns and the plethora of orchestral colourings added by the quads. The blocks provide a “pointillistic”³¹ harmonic layer to the musical output, but as soon as the player begins combining blocks into quads and the musical complexity increases, this initial layer is buried. In *For Silence* by Paul Hartnoll (from *Orbital*), the backing track is less active but includes a vocal melody. Therefore, the blocks and quads are used to gradually introduce the vocal lines. Markus Shultz’s trance track—*Spilled Cranberries*—however,

³¹ Also referred to as ‘punctualism’. See, for example, Pierre Boulez, *Stocktakings from an Apprenticeship*, trans. Stephen Walsh (Oxford: Clarendon Press, 1991).

uses the blocks as the principal melody, with the quads adding special electronic effects, and the backing track merely provides the harmonic and rhythmic layers. For this level, the grid is split two-thirds of the way up the y-axis, which generally encourages players to focus on the larger section first, and add a higher “descant” to the melody they have created later (see Figure 2.2). Nevertheless, despite these different approaches, the music for the *Brazil* level can be considered structurally and stylistically representative of the others. This core musical style appears to involve two contradictory stylistic aesthetics:

Minimalist	<ol style="list-style-type: none"> 1. Backing track is process-driven. 2. Algorithmic process employs quintessentially minimalist material: small repeating tonal sections/cells.
Aleatory	<ol style="list-style-type: none"> 1. Macro structure (length) determined by timers and how long the player can keep it going for. 2. Medium layer structures, cues added at will of player, combinations add more layers.

Figure 2.3: *Brazil's* Aesthetic Dichotomy

The “game” element ensures a degree of indeterminacy, but critically, as in *Crysis*, in terms of structure rather than sound-world—all the aleatory elements that the player can manipulate are pre-composed “sound-bites” or select single-notes that will always fit the pre-determined harmonic framework. The explanation for this decision is simple: the stylistic characteristics of minimalism (and indeed the dance/trance music found on the other five tracks)—simple tonal sound-worlds organized by perceptible processes—lend themselves to the game’s procedures and readily available forms of manipulation (whereas string quartets, sonatas and opera do not), and perhaps even more importantly, create a viable (sellable) commodity.

At their most idealistic, there is a juxtaposition between the aesthetics of minimalism and aleatorism—one for control, the other against. In the previous chapter, I suggested that the apparent theoretical conflicts between mobile form and hierarchical harmonic structures could

be reconciled on a narrative-functional basis. In *Chime*, on the one hand, the use of minimalist automation (repetitive processes has become the definition of minimalism, despite its original emphasis on the use of minimal materials), born in opposition to the totalist movement of the 1950s, effectively removes human agency from the composition (and often its performance too, through the use of electronically generated sounds). The composer dictates a set of rules, provides minimal material, and then frees the sounds from authoritarian control and even ideology itself—pure abstract process (we are led to believe).³² Cage's own original forays into this conceptual area were undoubtedly more full-bodied, employing aleatory *chance* procedures so that the freedom of sound was not jeopardized by the composer's initial involvement. This indeterminacy is substantially different from structures based on *choice*, but as noted in the previous chapter, descriptions of the aleatory paradigm generally muddle the distinction. On the other hand, the player's involvement in *Chime* ensures human agency remains in the Text in a very real sense, and the entire presentation of the game—we shall see—highlights a certain hypocrisy common to all "liberators of sounds".³³

Every track in *Chime* is a celebration of its composer (despite the player's illusory compositional input), and therefore, in turn, the canonical associations of authorship in general. The main menu is organized by Work and composer, each level has the track and composer's name underneath the grid, and the selling points in the game's advertising are focused on these "artists". The player becomes a postmodern Reader, ranging through the Text, participating in its structure, and colluding in the culture of its construction, but the composer's voice remains

³² See, for example, Steve Reich's emphasis on process in 'Writings about Music.' Beirens also discusses the continuities between serialism and minimalism in Maarten Beirens, 'Beyond Antagonism: Serialism into Minimalism,' at *First International Conference on Music and Minimalism* (Conference Paper, Bangor, Wales, 31 August–2 September, 2007).

³³ It should be noted that Glass's brand of "post-minimalism" aims—somewhat ironically in this context—to re-humanize the style. See Potter, '1976 and All That: Minimalism and Post-Minimalism, Analysis and Listening Strategies,' at *First International Conference on Music and Minimalism* (Conference Paper, Bangor, Wales, 31 August–2 September, 2007).

strong. The phenomenon of hearing the composer's voice in the music transmitted by the performers has been better theorized for linear music in the established canons than for non-linear mobile form music.³⁴ The intense listener engagement with Beethoven is one powerful example in which the composer's voice is frequently thought to dominate that of the performer.³⁵ In the case of *Brazil*, Glass's voice is similarly unavoidable, but instead of dominating the player as Beethoven might, he negates the player's input by planting his ideology more subtly and allowing the player to believe they have some form of control.³⁶ When we hear (and watch) Beethoven's Fifth in concert, we know we are listening to Beethoven first, and the performers or the conductor, are speaking for him, or "interpreting" his Work. When we play *Brazil*, we are led to believe we have some role in the creation of the Text, and are forced to collude (if we are to play at all) rather than forced to listen.

Brazil comes from Philip Glass's round-the-world musical tour album, *Orion*. Although each featured nation is individually characterized with national instruments and idiomatic stylistic features, they are all seen through the Glassian lens. They are all minimalist pieces that, due to the cultural references of that particular sign (minimalism), sound *American*. The connection of American "city music" with the minimalist aesthetic has been well established through works such as Steve Reich's *City Life* (1995; a piece composed in a very deliberately different fashion to

³⁴ See, for instance, Edward T. Cone's *The Composer's Voice* (Berkeley, CA: University of California Press, 1974), which draws on literary criticism and rests on the assumption that 'Every composition is an utterance depending on an act of impersonation which it is the duty of the performer or performers to make clear' (p. 5).

³⁵ On Beethoven reception, see Scott Burnham, *Beethoven Hero* (Princeton: Princeton University Press, 2000). On the cultivation of genius and the sociological appraisal of Beethoven's achievements, see Tia DeNora, *Beethoven and the Construction of Genius: Musical Politics in Vienna, 1792–1803* (Berkeley, CA: University of California Press, 1995).

³⁶ In this case, Glass is not actually the active agent; the responsibility lies rather more with the audio-engineers and game designers. Similar analysis of expressly aleatory and mobile form music may demonstrate a more convincing trend.

Cage³⁷), and not least due to the perception that minimalist music (and art) originated there.³⁸

Wim Mertens argues that repetitive minimalist music, alongside the music of John Cage, reflects the ideological utopianism of the ‘libidinal philosophy’ of Deleuze and Lyotard—a position diametrically opposed to Adorno’s Marxist dialectics. (This position is based on the more optimistic idea that the universalized exchange-value system of modern capitalism leads to new possibilities for communication rather than alienation.) Mertens accepts the idea that Cage’s music ‘is no longer a product, a work that could be defined in a commodity system’ because he does not contest Lyotard’s premise that music may have ‘no content and no value-system.’³⁹ (Cage himself problematizes the notion of musical content in his 1952 composition, 4’33”, replacing traditionally authored musical content altogether in favour of unfettered sound.) This Franco-American school of thought ironically shares the utopian character of the American Dream. Yet in the same way that the tracks in *Chime* challenge notions of authorship while simultaneously celebrating individual artists, Cage (and his music) has been commoditized through branding and merchandise, no clearer than in the proliferation of printed “scores” of 4’33” in various formats. Furthermore, Lyotard’s suggestion that music can exist without content or a value-system is itself ideological and contestable. American minimalism, as the aesthetic basis of the music in *Chime*, offers up an idealized vision of musical authorship that, like the game’s pretensions to co-authorship, is something of a chimera. Both are thoroughly embedded in the elements of the culture industry that they supposedly transcend.

³⁷ See Paul Tingen, ‘Interview – Steve Reich: *City Life*,’ *Sound on Sound* (August 1995), retrieved from <http://www.soundonsound.com/sos/1995_articles/aug95/steverreich.html>, accessed 08/08/2014.

³⁸ See, for example, Jonathan W. Bernard, ‘The Minimalist Aesthetic in the Plastic Arts and in Music,’ *Perspectives of New Music* 31/1 (Winter, 1993): 86–132; Larry Sitsky, *Music of the Twentieth-Century Avant-Garde: A Biocritical Sourcebook* (Westport: Greenwood Press, 2002), p. 361; and Robert Fink, *Repeating Ourselves: American Minimal Music as Cultural Practice* (Berkeley: University of California Press, 2005).

³⁹ Wim Mertens, *American Minimal Music*, trans. J. Hautkicik, preface by Michael Nyman (London: Kahn & Averill, 1983), p. 119.

The stereotyped and clichéd takes on “world music” in *Orion* are Americanized, becoming mere traces. In semiotic theory, each signified also has the form of another sign. By the time the player Reads the Text in *Chime*, the number of cultural links and related meanings in the music has increased exponentially. A semantic web below traces some of the most obvious and important cultural signs in *Brazil*, and highlights the interaction of active agents (green squares) around them. It is important to note that all the arrows between cultural units really represent a complex web of connections made by a myriad of unknown agents, and each cultural unit itself is in fact an archetypal model. The diagram shows how the semantic connections can be traced in one particular reading of *Brazil*, but none of these cultural units have a tangible reality—they are cultural objects, stereotypes seen from the perspective of a particular subject (the Player). There is no objective reality to the unit “Brazilian Music”, and the 2004 Athens Olympiad⁴⁰, not being an agent in its own right, did not influence *Orion* (The Album) directly of its own volition. All of the connections to the *Orion* album were made through Philip Glass, and the connections he made were in turn influenced by a culture driven by the impacts of other agents.

⁴⁰ Glass composed *Orion* for the Olympiad, the acclaimed epic symbolist spectacle for the opening ceremony of the 2004 Greek Olympics. See Josh Tyrangiel, ‘A Classic Spectacle,’ in *Time* (16/08/2004), retrieved from <<http://www.time.com/time/magazine/article/0,9171,682263-1,00.html>>, accessed 16/06/11; and The Associated Press, ‘Master of Olympic Pageantry Prepares One Final Blowout,’ in *The New York Times* (29/08/2004), retrieved from <<http://www.nytimes.com/2004/08/29/sports/olympics/29closing.html?ex=1148788800&en=1c65a34c3766781c&ei=5070&pagewanted=print>>, accessed 16/06/2011.

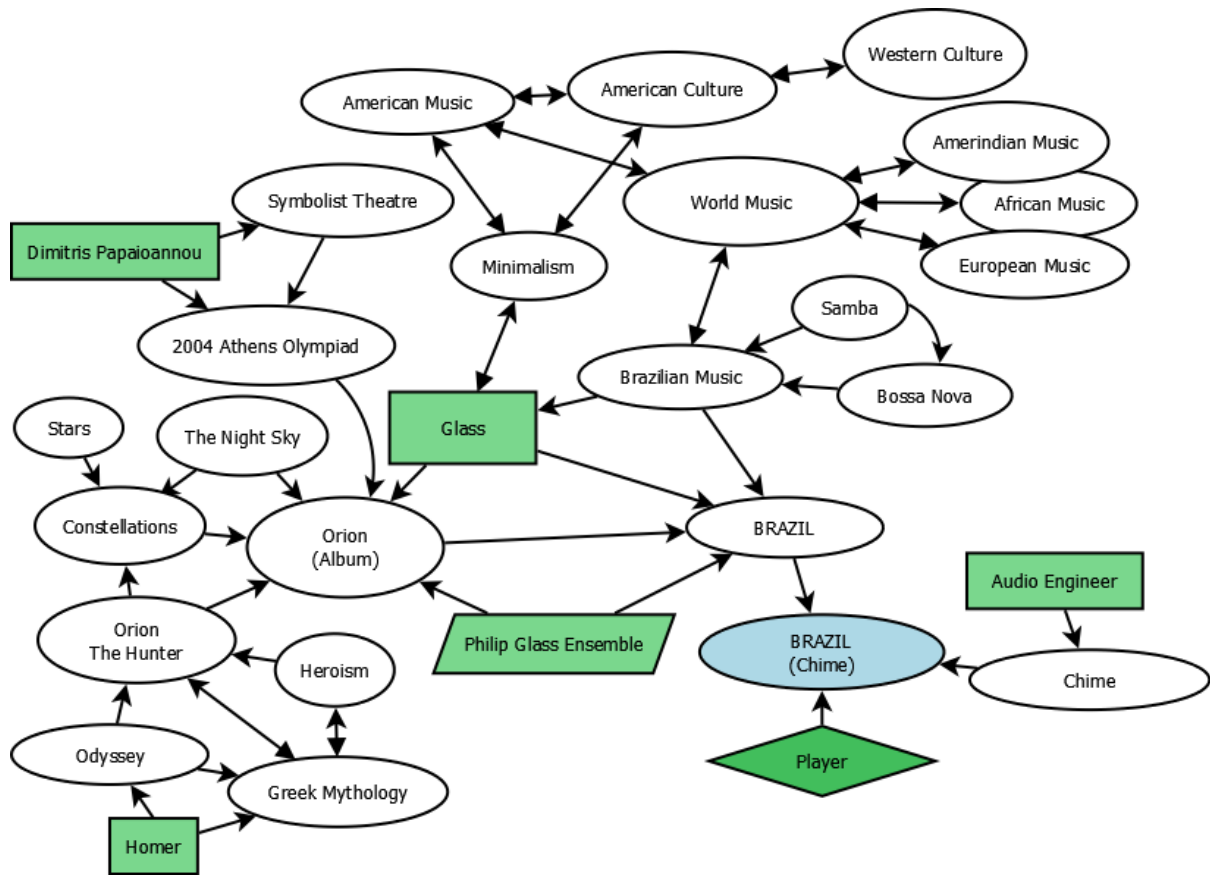


Figure 2.4: A Partial Semantic/Semiotic Web of *Brazil*

The connections drawn above are from a perspective, and are therefore to a certain extent arbitrary. Indeed, a myriad of other arrows could have been added between the units already present. Nevertheless, it serves to visualize the cultural connections one player might make, and thereby provide the raw materials from which a “reading” can be made. Does the listener or gamer primarily hear the influence of Brazilian music, or do they hear Glass, Minimalism, and America? I would argue that the powerful and incessant voice of the latter practically forces a reading of “Brazilian Music” as a paradigmatic typecast for the “World Music” trend (it is not limited to Glass) that sits behind it. If this is the case, then despite initial impressions and surface appearances, this trend amounts to little more than alterity: the East (or rather, non-West) as exotic Other. The Brazilian Music and World Music branches of Figure 2.4 could well be relocated on the other side of American and Western culture.

Kofi Agawu's *Playing with Signs* alludes to an interaction between referential topics of the kind highlighted by Ratner (discussed in the previous chapter) and arguably non-referential tonal structure. Agawu draws on Saussure's distinction between *langue*—the social, higher-level normative 'Classical style' as presented by Charles Rosen (see Introduction)—and *parole*—the individual utterances or 'sub-languages' of particular composers.⁴¹ Agawu notes that Saussurian 'signs' cannot be clearly defined in musical terms, but notes that 'signs denoting topic are significant only within a cultural context that recognizes the conventional associations of certain kinds of musical material.'⁴² Drawing terminology from Roman Jakobson, Agawu's idea of 'play' builds on these foundations, which he identifies as a region (or activity) on a linear continuum between 'extroversive' ('the domains of expression'—referential links to the exterior world) and 'introversive' ('domains of structure'—referential links between sonic elements) semioses.⁴³ Agawu thus find the most value in semiotic analysis in the middleground where these approaches overlap.

The minimalist harmonic foundation of *Brazil* is the oscillation between F and C—tonic and dominant. The creation of blocks in *Chime* provide harmonic variance, such as a two-bar phrase that moves by step from tonic through supertonic seventh to the subdominant seventh chord and back. The melody notes rise F-G-A-flat while the bassline lowers its point of oscillation from C to B-flat. The gameplay sound effects that are layered on top—effects that mark block rotation and placement, and the score increasing—further obscure the harmonic and motivic procedures. If this minimalist soundworld can be considered as a topic for modern American city-life, then the more exotic layer of high tessitura wind instruments are Glass's signs for Brazil. The connecting of these musical features with topics, alongside the semantic web in Figure 2.4, are realized through the activity of semiotic play. The structure of this is revealing: the fundamental

⁴¹ See Kofi Agawu, *Playing with Signs: A Semiotic Interpretation of Classic Music* (Princeton: Princeton University Press, 1991), p. 15.

⁴² *Ibid.*, p. 16.

⁴³ *Ibid.*, p. 24.

musical form and harmony are subtly but powerfully connected to a universalizing conception of America, while strong topical references to Brazil/World music are made through less integral, surface referentials. The American minimalist sound is pervasive irrespective of the Player's involvement; the signifiers for Brazil occur as ludic rewards for the Player's interaction with the game, sprinkled over the musical soundscape. Playing the *Brazil* level in *Chime* involves the activity of play on aesthetic and semiotic levels, and reinforces the universalizing of American culture.

'Still Alive'

While *Brazil* might be primarily associated with the semantic references of Glass's cultural stereotyping, the PC release of *Chime* included a new and exclusive track—*Still Alive* by Jonathan Coulton—which brings with it another kind of intertextual references seen increasingly in modern videogames. The decision to release *Chime* on Valve's game store platform, Steam, prompted the developers to add a special level, complete with new artwork. This was not merely a move to increase sales (although that was surely a primary factor), but also part of the concerted cultural development of canon (and franchise) building. *Still Alive* is a notorious song from the ending credits of Valve's masterpiece, *Portal* (2007)—a first-person puzzle solving game famous in particular for its fascinating and quirky character, GLaDOS. GLaDOS is the artificial intelligence (arguably alive) who guides the player's character, Chell, through a series of problem solving tests. In the game's fanciful narrative, GLaDOS was designed as part of a three-tier research programme for a shower-curtain manufacturer, Cave Johnson, who had unfortunately become mentally unstable due to mercury poisoning. Subsequently, he introduced the three tiers: the 'Counter-Heimlich Manoeuvre' (a manoeuvre designed to ensure choking); the 'Take-A-Wish Foundation' (which granted the wishes of dying children to unrelated, healthy adults); and the "Portal gun" which creates man-sized ad-hoc quantum tunnels essentially allowing teleportation

(all somehow for the purposes of improving shower curtains). The game's extended mythology is fairly complex as it is situated in the very-successful *Half-Life* universe as a related prequel (the portal gun was first seen in these games), but the core narrative is relatively restricted and simple. However, to make things more confusing, almost all the information the player gets from the game—such as their own identity as an adopted orphan with no friends—comes from GLaDOS, a self-confessed liar (or as she puts it, someone given to 'enhancing the truth'). As Chell progresses through the first few test chambers, it soon becomes clear that GLaDOS's experiments have brought about the demise of all other test subjects, and her promise of 'cake' becomes an increasingly suspicious goal.⁴⁴

GLaDOS's attitude towards music and art is similarly perfunctory, which becomes especially evident in the much larger sequel (*Portal 2*, 2011) when, for instance, Chell is asked to look at a watercolour of a log cabin by a lake at the foot of a mountain, and is told 'This is art. You will hear a buzzer. When you hear the buzzer, stare at the art. [Clock ticks for four seconds.] You should now feel mentally reinvigorated. If you suspect staring at art has not supplied the required intellectual sustenance, reflect briefly on this classical music. [Quasi-classical music plays for four seconds. Buzzer sound abruptly interrupts.]'⁴⁵ The 'Machiavellian Bach' track heard in Test Chamber 5 is highlighted to the player when GLaDOS exclaims, 'Oh no, now he's playing classical music!' The music is a synthesized performance of Bach's 'Little Prelude in C minor', BWV 934, transposed to F minor. By drawing on popular conceptions of contrapuntal music as pure, but complex mathematical process (exemplified by Bach), the music embodies the game's algorithmic

⁴⁴ For example, the player may discover a secret room with the words 'The cake is a lie' scrawled in blood on the wall.

⁴⁵ Dictated directly from the game. The *attitude* toward 'art' is unquestionably a real concern for the developers, as is evident in some of the soundtrack titles: 'Love as a Construct' and 'Comedy = Tragedy + Time'. See also Valve's graphic novel written in conjunction with the release of *Portal 2* at <<http://www.thinkwithportals.com/comic/>>, accessed 23/09/2014.

and computational themes, especially when performed on an electric technological instrument.⁴⁶ These representations of ‘high art’ are presented “tongue-in-cheek”, but it is not clear precisely what message the player is supposed to be taking from this. Michael Burden and Sean Gouglas have argued that because *Portal*’s gameplay and narrative tensions between algorithm and freedom are only resolvable through the ‘aesthetic of play’—an active negotiation with the game’s rules—the game itself is an artistic achievement.⁴⁷

GLaDOS’s curiously vulnerable and child-like minions take the form of automated mobile machinegun turrets. They undoubtedly represent one form of innocence, although they carry their mother’s murderous venom and are forced to function within a closed environment. It is a world outside of their control and it is as if they did not know any better. The end of *Portal 2* has a similar (if slightly less successful) credit song by the same composer, but this is followed by what has come to be known as the ‘Turret Opera’, or ‘O Cara Mia, Addio’, composed in-house by Mike Morasky. As if to say, ‘it ‘ain’t over ‘til the fat lady sings’ (the soprano soloist is an especially wide turret, surrounded by the normal turrets acting as accordions), the song includes several in-jokes and **Easter eggs**⁴⁸, but most interestingly, it is sung in Italian in the style of Puccini’s aria ‘O mio babbino caro’ from *Gianni Schicchi* (1918), bringing the juxtaposition between science (evil and

⁴⁶ There is a widespread perception that Bach’s music is particularly logical, and that contrapuntal music might be described in part with algorithmic processes. Indeed, in 1739, Leonhard Euler, who worked at the court of Frederick II in Berlin at the same time as Bach, published *Tentamen novae theoriae musicae*, which attempted to incorporate musical theory in mathematics. Books such as Douglas R. Hofstadter, *Gödel, Escher, Bach: An Eternal Golden Braid* (Basic Books, 1979) have used Bach’s music as an example of how meaning might be created from underlying cognitive processes. See also David J. Benson, *Music: A Mathematical Offering* (Cambridge: Cambridge University Press, 2007); and Gareth Loy, *Musimathics: The Mathematical Foundations of Music* (Cambridge, MA: MIT Press, 2006).

⁴⁷ Michael Burden and Sean Gouglas, ‘The Algorithmic Experience: Portal as Art,’ *Game Studies* 12/2 (December 2012), retrieved from <http://gamestudies.org/1202/articles/the_algorithmic_experience>, accessed 07/05/2014.

⁴⁸ It is here, for instance, that we find out that Chell’s name is a pun on the Italian for ‘sky’ (*cielo*, or in French, *le ciel*)—a clear metaphor made visually explicit when Chell rises in the elevators to leave the underground laboratories and break free from Aperture Science.

deadly tyranny) and art (beauty, light and innocence) to the fore.⁴⁹ (However, the Italian is poor—improvised by the singer, Ellen McLain.⁵⁰)

Alongside the fact that the song is more semantically explicit (due to the lyrics), the canon-forming aspect of this additional level is largely contingent on the player's knowledge and experience of the intertextual references, something that the target audience is likely to be more familiar with than *Brazil*. In much the same way as *Brazil*, *Still Alive* provides an opportunity for the player to engage actively with the meaning and ideology of the music. Given the player's role in *Chime* as Reader/co-author, they are now afforded the chance to forge a new relationship with GLaDOS, and by piecing together her logic through their meta-puzzle and recomposing her song, they "play" a version of her. The player colludes in a celebration of a character whose insidious form of utilitarianism (maximum utility based on her function rather than pleasure or happiness) permits morally outrageous acts of brutality on others, and even her own suffering and destruction. In the same way that we might feel sorrow when Vito Corleone stumbles in his orchard (*The Godfather*, 1972), and are so often led into rooting for the "bad guy" in film and literature, playing *Chime's* version of *Still Alive* deliberately eulogizes the brilliant, but defunct and immoral (or amoral) GLaDOS.

*This was a triumph.
I'm making a note here: HUGE SUCCESS.
It's hard to overstate my satisfaction.*

*Aperture Science:
We do what we must because we can.
For the good of all of us
Except the ones who are dead.*

*(Chorus 1)
But there's no sense crying over every mistake,*

*You just keep on trying till you run out of cake,
And the science gets done and you make a neat
gun
For the people who are still alive.*

*I'm not even angry.
I'm being so sincere right now.
Even though you broke my heart and killed me.
And tore me to pieces.
And threw every piece into a fire.
As they burned it hurt because*

⁴⁹ A transcribed score is available online at Sebastian Wolff, 'Turret Opera (Cara Mia) – a cappella,' on *sebastianwolff.info* (24/04/2011), retrieved from <<http://sebastianwolff.info/news/2011/04/turret-opera-cara-mia-a-cappella/>>, accessed 26/09/2014.

⁵⁰ See Reddit interview with Ellen McLain: Slipknutz, 'GLaDOS responds to r/gaming's questions!,' on *Reddit* (2011), retrieved from <http://www.reddit.com/r/gaming/comments/iur9l/glados_responds_to_rgamings_questions/>, accessed 06/05/2014.

I was so happy for you.

(Chorus 2)

*Now these points of data make a beautiful line,
And we're out of beta we're releasing on time.
So I'm GLaD I got burned think of all the things
we learned
For the people who are still alive.*

Go ahead and leave me.

*I think I prefer to stay inside.
Maybe you'll find someone else to help you.
Maybe Black Mesa.
THAT WAS A JOKE. HA HA, FAT CHANCE.
Anyway, this cake is great:
It's so delicious and moist.*

(Chorus 3)

*Look at me still talking when there's science to
do.
When I look out there it makes me GLaD I'm not
you.
I've experiments to run,
There is research to be done
On the people who are still alive*

(Coda)

*And believe me I am still alive.
I'm doing science and I'm still alive.
I feel FANTASTIC and I'm still alive.
While you're dying I'll be still alive.
And when you're dead I will be still alive.*

*Still alive
Still alive*

Figure 2.5: Jonathan Coulton, *Still Alive*⁵¹

In the original game, the confusing ambiguity surrounding GLaDOS and her motives is complemented by the music, which on numerous occasions provides clear warnings as the player gradually uncovers the horror of their tutor and guardian. Throughout, GLaDOS displays a conflicted personality disorder that cannot resolve her need to be liked with the manipulative totalitarian attitude with which she conducts experiments on Chell and dismisses subjects in pursuit of her primary function—“science” at any cost. The song *Still Alive* is celebrating the continued (and eternal⁵²) existence of herself and her project, the endless pursuit of science at any cost, even after the player defeats and apparently kills her.

The music is joyous, but relaxed in character. The words are sung by GLaDOS (voiced by the opera singer, Ellen McLain) as if she is composing her log after her experiment (you and a portal gun) succeeds. There is little sense of bitterness about the fact that you just tried to destroy her. The music emphasizes the comic effect of the lyrics, for instance, the sudden matter-of-fact halt on the last line of the second verse—it is her operatic speech, which displays her idiosyncrasies, sense of self (the spelling of ‘glad’ as ‘GLaD’), and the accents she places on specific words (capitalized). These

⁵¹ These lyrics are taken directly from the game.

⁵² For as long as there are people still alive, there will be a GLaDOS. Although the ‘neat gun’ she refers to in the song in a literal sense means the relatively innocuous portal gun, there is also an eerie sense of impending doom due to human self-destructiveness.

accents also reflect her surface character—the way she presents herself to her test subjects, at least in the first game. As each vocal line depends on the timing and placement of quads, some of these original effects are now contingent on the player in *Chime*, who once again becomes a postmodern Reader, actively engaging with and engendering the “meaning” of the Text. It is worth reiterating that the player does not have much room for real re-composition, and cannot change the order or content of the song (at least in terms of its lyrics). As always, the extent to which they are truly “engaged” in this sense depends on the individual.

Regardless of whether or not a particular player is consciously engaging with the game as a Text, the interplay of music, lyrics and gameplay in the context of *Chime* emphasizes the abstract puzzle-nature of both games. The first line of the second chorus, for example, is held back (the background track just loops as if patiently waiting) until the player succeeds in creating a certain number of quads. Whilst during *Portal*, Chell attempts to escape GLaDOS’s physical and mental labyrinth, finding out more about herself along the way, in ‘Still Alive’, the player is retrospectively made even more aware that it is really GLaDOS who is trapped due to her faulty programming. This sense is only heightened in *Chime*, as the player is afforded the opportunity to play with the “blocks” of logic. *Portal*’s themes of freedom and algorithm and process are taken to a new level of meta-play and undesirable effects of gameplay on the aesthetic form of the song heighten the sense that interactivity is all very well, but an algorithmic process cannot challenge the free will of human thought.

Conclusions

Ultimately, the music in *Chime*, whether it is Glass or Coulton, fails to foreground its own non-linearity, restricting it to a skin-deep veneer. The similarity and repetitiveness of the musical style is tantamount to musical “white-wash”, and the immersive visual requirements of the gameplay

overwhelm any experience of musical (re-)composition. All the player's musical input is neutralized due to the increased 'entropy'—a term Ligeti employed to describe precisely this phenomenon.⁵³ Ironically, by keeping the non-linearity on the surface and ensuring it is made uniform and harmonically coherent, it is simultaneously made into a transparent and negligible force. This is more evident in Glass's *Brazil*, because the minimalist style is very much in keeping with what Karen Collins calls 'the elimination of the dramatic curve.'⁵⁴ However, Collins was discussing mobile form and non-linear videogame music, rather than minimalism, and fears that such structures are not suited to dramatic narratives as they cannot ensure goal-orientated temporality. Nevertheless, like the hybrid aesthetic discussed in the previous chapter, *Still Alive* maintains a fixed sense of direction, both musically, and due to the ordered lyrics. While some of the momentum of the original song may be lost in its interactive counterpart, the time given for the player to influence events in *Chime* does not fundamentally change the latent meanings. Rather, the player is afforded time to hear those details in the music, such as the accompaniment, that the goal-oriented motion would have taken the focus from. We saw a similar amalgamation of otherwise antithetical aesthetic principles in *Crysis*, but here, there is a more tangible sense of aesthetic play in that the active engagement is with the form of the music and how it actually sounds. In the epigraph to this chapter, Jameson positively identifies new philosophical conceptions of time and temporality as possible outcomes of the changing attention spans in contemporary (postmodern) culture. These will be the subject of the next chapter.

It would be unjust and inappropriate to criticize the music or game for not conforming to the poststructuralist model of Text—indeed, that was never the developers' aim—but the interplay on an abstract rather than phenomenological level is suggestive and compelling. The question remains as to whether gaming can ensure the active participation and engagement of the Reader with the

⁵³ See Ligeti, 'Metamorphoses of Musical Form,' in Strunk, *Source Readings in Music History*, pp. 1376–1385.

⁵⁴ Karen Collins, *Game Sound: An Introduction to the History, Theory, and Practice of Video Game Music and Sound Design* (Cambridge, MA: MIT Press, 2008), p. 160.

Text, or whether it masks and detracts from other modes of meaning and signification. In the case of *Portal*, the evidence available suggests that there is an awareness of how much the player should engage with the game's content, and there is also some reluctance amongst the target audience to take it too seriously.⁵⁵ With the "birth of the reader" (the player) reasonably established, the final question that must be returned to is the "death of the author". The professed avant-garde 'freedom from authorial control' might only ever be a mode of false consciousness, but it is especially so within the context of videogames given the enchainment of the gamer as an object (as consumer) of capitalist control. OneBigGame's aforementioned not-for-profit charity work (the company promised to donate 80% of their profits to selected charity partners⁵⁶) complicates the process of situating the game within the Culture Industry, but does not remove it altogether. Authorial authority may have been dispersed somewhat in the videogame industry, as responsibility and control over "ultimate meanings" are shared with a number of other active agents: the audio engineer, the developer, and the publisher amongst the most influential.⁵⁷ However, the distrust of intentionality and authorship need not lead to the complete purging of authorship altogether. When Barthes wrote that 'the birth of the reader must be at the cost of the death of the Author', he meant to subvert authorial authority as the source of an ultimate interpretive goal primarily as a means to elevate the Reader beyond the role of a passive consumer.⁵⁸ In this, the interactivity of videogames as aesthetic (musical) experiences can only sometimes be said to strengthen his hand. Furthermore, *pace* Barthes, *Chime* simultaneously proclaims that the Authors are unquestionably 'still alive.'

⁵⁵ Aside from numerous critical reviews, there is a great deal of discussion of the game in various forums. One particular extract suggests a somewhat sarcastic attitude to the game's opening tutorial sequence:

'Immediately after completing the art portion of the puzzle, you are told to reflect upon some (very interesting) classical music. After listening to the short portion of music, I took about seven hours to think about what reflecting really meant. Then before going back to sleep, I actually reflected on the music for another good 9 hours. I really thought they stressed the point of reflections, and I really enjoyed my time spent thinking about what it all meant in this portion of the game.' See PartyAssociate, '1 out of 10 Portal 2 players haven't gotten Wake Up Call?', on *Steam Forums* (05/17/2011), retrieved from <<http://forums.steampowered.com/forums/showthread.php?p=22464145>>, accessed 23/06/2011.

⁵⁶ See statement on OneBigGame's website: <<http://www.onebiggame.com/about/>>, accessed 25/5/2011.

⁵⁷ See also work on the 'Intentional Fallacy' in Leroy Searle, 'New Criticism,' in *The Johns Hopkins Guide to Literary Theory*, 2nd edition, ed. Michael Groden, Martin Kreiswirth & Imre Szeman (Baltimore: The Johns Hopkins University Press, 2005).

⁵⁸ See Barthes, 'The Death of the Author,' in *Image – Music – Text*, p. 148.

Chapter Three

Postmodern Temporalities

Music do I hear?

Music

Ha, ha! keep time: how sour sweet music is,
When time is broke and no proportion kept!
So is it in the music of men's lives.
And here have I the daintiness of ear
To cheque time broke in a disorder'd string;
But for the concord of my state and time
Had not an ear to hear my true time broke.
I wasted time, and now doth time waste me;
For now hath time made me his numbering clock:
My thoughts are minutes; and with sighs they jar
Their watches on unto mine eyes, the outward watch,
Whereto my finger, like a dial's point,
Is pointing still, in cleansing them from tears.

—Shakespeare, *Richard II* (5.5.41–54).

Temporality is subjectivity, and subjectivity is temporality.

—David Couzens Hoy¹

A Theory of Modern Temporality

Karol Berger opens his study of musical linearity, *Bach's Cycle, Mozart's Arrow*, by juxtaposing two paintings—Nicolas Poussin's *Il ballo della vita humana* (*A Dance to the Music of Time*, 1639–40) and Giandomenico Tiepolo's *Il Mondo Novo* (*The New World*, 1791).² This contrast provides a

¹ D. Couzens Hoy, *The Time of Our Lives: A Critical History of Temporality* (Cambridge, MA: MIT Press, 2012), p. 73.

² Karol Berger, *Bach's Cycle, Mozart's Arrow: An Essay on the Origins of Musical Modernity* (Berkeley: University of California Press, 2007).

lucid visualization of the transition from what Berger labels ‘God’s Time’ (cyclical and eternal) to ‘Man’s’ (teleological):

The earlier of the two abounds in circular images: bodies move along circular orbits to the music of Time’s lyre. Poussin’s time is cyclical, ruled by the sun’s daily rising and setting, the annual succession of recurring seasons, turns of the wheel of fortune—all the eternal cycles that govern human life. Tiepolo, by contrast, observes from behind a thoroughly modern crowd assembled to gawk at a spectacle made possible by the newest technological medium... a magic lantern displaying the exotic marvels of “the new world”. These humans are not subject to an eternal, unchanging order. On the contrary, they are children of a unique historical moment, their gaze fixed on a dimly imagined future, a new, emerging world. Tiepolo’s time is linear, progressive, oriented toward the future.³

Berger argues that it was not until the late eighteenth century that a teleological attitude to musical structure was seriously adopted: the *progression* from past to future became goal-oriented with ‘time’s arrow.’⁴ Before this, ‘music was simply “in time.”’ In Christian philosophy, human temporality (in both senses of the word) was framed by God’s eternity. The change from ‘Bach’s Cycle’ to ‘Mozart’s Arrow’ thus reflects the paradigm shift that brings about modernity: a move away from Christian eternity to a directed Hegelian conception of history and the Enlightenment’s emphasis on Kantian reason and Newtonian scientific causality.⁵

In this chapter, I will consider the temporal features of the videogame aesthetic in this broader philosophical context. First, I will briefly outline theories of modern temporalities, referring primarily to Berger. This will be supported by a brief discussion of two games, *Shadows of the Colossus* (Team Ico/Sony Computer Entertainment, 2005) and *Journey* (thatgamecompany/Sony Computer Entertainment, 2012) that exemplify teleological form.

³ Berger, *Bach’s Cycle, Mozart’s Arrow*, p. 1.

⁴ Berger, *Bach’s Cycle, Mozart’s Arrow*, p. 9.

⁵ Of course, Newton’s own theological works are testament to the fact that these have not always been considered fundamental opposition here. There is an uncanny parallel between these philosophical and scientific developments. In the mid-nineteenth century, pertinent discoveries such as entropy in the second law of thermodynamics, and Maxwell’s equations, clearly relate to the ‘arrow of time’. The full and dramatic impact of Einstein’s mathematics on the public consciousness came precisely forty years after the publication of Special Relativity, pre-empting the paradigm shift proposed by this thesis. Nevertheless, to draw direct connections or causal relationships would be specious. However, James Winters has made the point that the richness and diversity of different temporal aesthetics in the post-war era has reconfigured postmodern temporality in Einsteinian rather than Newtonian ways. Therefore, he claims that the writing of multiple historical narratives (rather than a single ‘master narrative’) was inevitable. See James A. Winters, “‘Narratime’: Post-Modern Temporality and Narrative,’ *Journal of Issues in Integrative Studies* 11 (1993): 27–43.

Following this, I will consider an extension to Berger's narrative in the form of a postmodern paradigm shift in the ways time is conceived. This will be supported by a more in-depth discussion of two further games, *The Witcher 2* (CD Projekt RED/Namco Bandai Games, 2011), and finally, *BioShock Infinite* (Irrational Games/2K Games, 2013).

To elucidate these ideas of temporal aesthetics a little further, but now in explicitly musical terms, the popular and oft-mentioned idea that Mozart's music is 'perfect' and came to him in 'perfect form'—in other words, in such an order that you could not displace so much as a single note without disrupting its finely-tuned aesthetic balance, let alone reorder movements in a multi-movement work—can be sharply juxtaposed with Bach's apparently easy-going attitude with regards to reorganizing musical events and recycling musical material in often incongruous contexts.⁶ This is, of course, more a matter of perception than historical fact, but that makes it no less significant, and it is certainly a perception that existed in Mozart's day.⁷ Teleological forward-driving motion is widely regarded as an idiomatic feature of Beethoven's music, and as a touchstone for the temporal exploits of subsequent Romantic composers, its carefully crafted linear structure is assumed to be of vital and central aesthetic importance.⁸ Yet, a more pragmatic disposition can still be found in Beethoven: in an oft-cited letter (dated 1819) to his one-time pupil, Ferdinand Ries, Beethoven exhibited a great deal of artistic flexibility by suggesting that Ries reorder or even omit the slow movement of Opus 106 (Sonata No. 29 in B-flat) if he felt it more suitable for the London audience.⁹ Of all the works in his extensive *oeuvre*, to concede to

⁶ For two clear examples, see Dietrich von Hildebrand, 'Reconsiderations: Wolfgang Amadeus Mozart,' trans. John Henry Cronby, *Logos* 7/2 (Spring 2004): 189–212 and Norman Carrell, *Bach the Borrower* (London: George Allen and Unwin, 1967), esp. pp. 227–365.

⁷ See Maynard Solomon, *Mozart: A Life* (New York: Harper Perennial, 1995) and Matthew Head, 'Myths of a Sinful Father: Maynard Solomon's "Mozart",' *Music & Letters* 80/1 (1999): 74–85.

⁸ On Beethoven, see Scott Burnham, *Beethoven Hero* (Princeton: Princeton University Press, 2000). By way of contrast, see for example, Peter Pesic, 'Schubert's Dream,' *19th-Century Music* 23/2 (Autumn 1999): 136–144.

⁹ Ludwig van Beethoven, *Beethoven's Letters*, trans. J. S. Shedlock, ed. A. Eaglefield-Hull, notes by A. C. Kalischer (London: Dent, 1926), p. 268.

the whims of fashion over the *Hammerklavier* has been taken as powerfully indicative of Beethoven's pragmatism overriding retrospectively configured ideals.

In any case, certainly for the most part, such pragmatism was heavily submerged for the remainder of the nineteenth century, and it would be another hundred and forty-five years before composers explicitly permitted and deliberately engaged with performer and audience 'choice'. This date of 1964 saw the composition of Terry Riley's *In C* (previously discussed in Chapter 2), in which the performers are afforded a considerable degree of 'compositional' authority. Two earlier works—Stockhausen's *Klavierstück XI* (1956) and Boulez's Third Piano Sonata (1955–7)—have been taken by many music historians as *exempla prima* of the avant-garde aleatoric music popular in the 1950s and '60s, at least amongst its composer proponents (see Chapter 5).¹⁰ However, the particularly accessible format and minimalist style of the ostensibly tonal *In C* have enabled wider dissemination and longevity. Works such as these provide an important counterpoint to both videogame music, and from a more interdisciplinary angle, videogames themselves, and help to frame videogames as a quintessentially *postmodern* cultural phenomenon involving a complex and paradoxical relationship with both avant-gardism and Enlightenment thinking as a whole. This chapter, therefore, addresses two related questions: 'Why has order (defined both broadly as hierarchical organization, and specifically as linearity) in music mattered?', and 'How might videogames reflect contemporary postmodern conceptions of linearity?'

Music's temporal nature has long been considered as a parallel for the most significant aspect of temporal experience: mortality. Nearing his own end, Shakespeare's Richard II notes music's innate ability (as a performative art) to mark our experience of time, observing that its temporal structure—the order and proportion of its constituent parts—mirrors the proper

¹⁰ See 'Europe 4: Mobile Form, 1956–1962,' in Paul Griffiths, *Modern Music and After: Directions Since 1945* (Oxford: Oxford University Press, 1995), pp. 104–115. Though not himself a composer, Griffiths is a forceful advocate of a canonic reading of avant-garde music.

hierarchy that governs life. The music taunts him because he hears in it the disorder he failed to notice or failed to deal with in life. Yet, it is also a gift to him, and thus a rare 'sign of love'. Order and disorder as functions of time are therefore often understood as a critical philosophical underpinning to temporal experiences in general, and musical experiences in particular. However, issues relating to musical 'chance' and 'choice' have not been systematically addressed, and given their prevalence in videogames (due to its interactive nature), an appreciation of the difference is critical in order to properly understand and situate the medium within a broader framework.

In the central chapter ('Jean-Jacques contra Augustinum') of *Bach's Cycle, Mozart's Arrow*, Berger explains how Rousseau, followed closely by Kant and Hegel, established Enlightenment thinking by developing a viable alternative to the predominant Christian world-view.¹¹ The issue was of man's moral responsibility and involved a problematic dichotomy between maintaining God's omnipotence and allowing for the gift of free will. Rousseau proposed that the concept of free will should be supplemented with freedom as "autonomy" and that the first could exist without the second (free of causal determination but without rational guidance), but not the reverse. Berger goes on to show that the modern (Enlightenment) system of moral politics is based on balancing traditional freedom with autonomy. Within this framework, liberalism emphasizes the former (individual freedom over determination by society), democracy the latter (society over the rights of the individual). He also highlights the inherent dangers of sitting too closely to either pole. The result of this line of thought was that early modern Enlightenment thinkers essentially dispensed with God (at least in terms of earthly matters), and replaced Him with nature (a central theme of Romanticism). The 'supreme good', or, the principal goal of life, changed from Augustinian 'eternal life in peace' (Heaven) to 'perpetual peace' on earth:

¹¹ Rousseau considered himself a musician, albeit dilettante. The 300th anniversary of his birth was marked by a useful series of papers, accessible at <http://oxfordjournals.org/subject/humanities/rousseauarticles.html>.

The essential difference is that Kant's goal is innerworldly; hence, unlike the otherworldly goal of Augustine, it neither postulates the eventual escape from time into eternity nor privileges rest over change. On the contrary, the whole point of establishing perfectly constituted states and peaceful relations among them is to create conditions in which humanity's rational capacities for self-improvement can be fully unleashed. The end of history is not the state of passive, atemporal contemplation of divine perfection but rather a state of active, open-ended development.¹²

Consequently, Man's time was emancipated from God's; God was replaced by Nature.¹³

This "meta-narrative" of temporality is well established, and is largely endorsed in various ways by several studies on musical temporality.¹⁴ The two key premises of Jonathan Kramer's work on musical non-linearity are, first, that time is manifold and can be characterized in music in multiple ways, and second, that art, and music in particular, 'offers metaphors for all levels of temporality.'¹⁵ (These ideas intersect with structures such as James Hepokoski's "rotational form" in ways that will be picked up on in the next chapter.) However, Kramer's analyses were almost entirely limited to the twentieth century, and they have not been adopted more widely, in part due to the complexity of his overlapping categories of musical-temporal experience.¹⁶ Robert Adlington has argued that onward musical motion should be considered as just one of many bodily metaphors, and not a uniquely privileged condition of musical temporality.¹⁷ He further suggests that the commonplace conception of music's path-like forward motion actually stems from widespread metaphorical ideas of temporal motion. Benedict Taylor has argued that in spite of the numerous lacunae and aporias involved in theorizing musical temporality, ultimately the

¹² Berger, *Bach's Cycle, Mozart's Arrow*, pp. 169–70.

¹³ See Berger, *Bach's Cycle, Mozart's Arrow*, p. 151.

¹⁴ See, for example, David B Greene, *Temporal Processes in Beethoven's Music* (New York: Gordon and Breach, 1982); Raymond Monelle, *The Sense of Music: Semiotic Essays* (Princeton, N.J.: Princeton University Press, 2000), esp. ch. 4; and Melanie Wald-Fuhrmann, 'Moment musical: Die Wahrnehmbarkeit der Zeit durch Musik,' *Das Achtzehnte Jahrhundert* 30/2 (2006): 207–220.

¹⁵ Jonathan Kramer, *The Time of Music: New Meanings, New Temporalities, New Listening Strategies* (New York: Schirmer Books, 1988), p. 451. Although in an earlier formulation, his hypothesis is expressed more succinctly in 'New Temporalities in Music,' *Critical Inquiry* 7/3 (1981): 539–56.

¹⁶ Kramer did consider other a limited number of other examples, such as 'Multiple and non-linear time on Beethoven's Op. 135', *Perspectives of New Music* 11/2 (1973): 122–45.

¹⁷ See Robert Adlington, 'Moving beyond Motion: Metaphors for Changing Sound,' *Journal of the Royal Musical Association* 128/2 (2003): 297–318.

imperfect metaphorical approaches of hermeneutic and historical discourse are valid, if problematic pursuits.¹⁸

Berger juxtaposed the music of Bach and Mozart, although he did not fall into the trap of suggesting that cyclical procedures do not occur in the latter. Rather, Mozart lays *emphasis* on Man's time, or as Berger puts it, Mozart demonstrates a 'preference' for one over the other.¹⁹ This is evident in Berger's reading of sonata structure—arguably cyclical, to a degree—which elevates a sense of 'real change through time.'²⁰ Indeed the prevalence of *da capo* form in the Baroque, alongside variations and ritornello form, is sharply contrasted by the dominance of sonata structure in the Classical period. This observation alone seems enough to corroborate Berger's principal hypothesis. It is worth pointing out that a circle of fifths produces some harmonic momentum, but often with no direction, finishing where it started. Frequently, the sense of drive found, for instance, in Vivaldi's concertos, is derived from a *perpetuum mobile* (constant rhythm combined with a particular texture and instrumentation) that arguably drives forward but does not change. In this regard, the sense is of an unchanging vigorous effect, rather than a *dynamic process*.

Charles Rosen identifies one of the principal conceptual changes from the Baroque to the Classical style as the destruction of musical linearity. However, by this, he means neither a teleological impulse nor even a temporal category. Rather, he conceives of a kind of linearity in terms of horizontal (contrapuntal) and vertical (harmonic) *lines*, or voices. He points to the prevalence of figured bass as 'a conception of the flow of music in terms of a series of vertical

¹⁸ See Benedict Taylor, 'Music, Time and Philosophy,' in *The Melody of Time: Music and Temporality in the Romantic Era* (Oxford: Oxford University Press, forthcoming), and Taylor, *Mendelssohn, Time and Memory: The Romantic Conception of Cyclic Form* (Cambridge: Cambridge University Press, 2011).

¹⁹ Susan McClary has also written about the particular sense of timelessness and focus on the present in the music of D'Anglebert as a preference that serves a political function in seventeenth-century Versailles. See Susan McClary, 'Temp work: Music and the cultural shaping of time,' *Musicology Australia* 23/1 (2000): 160–175.

²⁰ John Butt, 'From "early" to "modern" music,' *Early Music* 36/2 (May 2008): 304–306, 305.

lines... carried by a strong horizontal bass line.²¹ The ever-pervasive classical mannerism of Alberti bass

blurs the independence both of the three contrapuntal voices which it theoretically contains and of the chordal or homophonic harmony which it supposedly illustrates. It breaks down the isolation of the voices by integrating them into one line, and of the chords by integrating them into a continuous movement. Linear form is essentially the isolation of the elements of music, and the history of music, until our day, may be seen as a gradual breakdown of all the various isolating forces of the art—contrapuntal independence of voices, homophonic progression, closed and framed forms, and diatonic clarity...

[This was achieved] by isolating the phrase and articulating the structure. Late eighteenth-century phrasing is emphatically periodic, and comes in clearly defined groups of three, four, or five measures, generally four. Imposing this new periodic system upon the musical flow and blurring the inner progression of that flow by the new accompaniment figures meant that the linear sense of the classical style was transferred to a higher level, and had to be perceived as the continuity of the whole work, and not as the linear continuity of the individual elements.

The vehicle of the new style was a texture called the sonata.²²

Discussions about the nature of the Classical concept of development are of interest here too. Its function in Sonata structure is to delay the return of the tonic and heighten the drama of that return.²³ Indeed, the Recapitulation as ‘a dramatic reinterpretation of the exposition’ is the more important structural goal. What sense there is of “real change” in the first and final movements of Beethoven’s *Pastoral* Sonata, however, is debatable. The sense of return or cycle is very powerful in the finale, after its development section runs out of steam, and the rondo theme returns in the exact same fashion as the opening. (Whether the coda amounts to real change is also a matter for debate.) The sense, by the end of all four movements (and the multi-movement structure is surely an important factor here), is certainly not one of change, progress or forward momentum. Rather, if anything, it is one of calm reassurance of the presiding *pastorale* atmosphere, nostalgic or “current”. One feels more like having been on a journey after Bach’s *Goldberg Variations*, in spite of the obvious cyclical nature of that genre, and the *exact* repeat of the opening theme at the end.

²¹ Charles Rosen, *The Classical Style* (London: Faber and Faber, 1971, revised edition 1997), p. 29.

²² Rosen, *The Classical Style*, p. 29.

²³ See Rosen, *The Classical Style*, pp. 99–101.

One of the first features of Baroque music taught in school music classes is its recognizable “drive”. Certainly this can be characterized as forward momentum. In contrast, the Classical Sonata structure consistently breaks up the whole into demarcated sections, sometimes pushing onwards, at other times pausing for respite.²⁴ But the lesson learned from Adorno’s criticism of Stravinsky and one of the key problems of minimalism, is that this kind of rhythmic pulsation, whilst retaining a sense of forward drive, more often than not negates itself and remains static (see also the following chapter). It is these very moments in the Classical idiom where the music slows, pauses, or changes direction, that make *direction* important. The whirlwind finale of Beethoven’s Fourth Symphony, the entire “narrative” of the Fifth, the rhythmic ‘apotheosis of the dance’ in the Seventh (to borrow Wagner’s characterization), or the build to the Recapitulation in the first movement of the Eighth serve as just four clear examples where this dynamism creates forward momentum quite unlike anything found in the Baroque. (One could add that Beethoven’s well-known socio-political agenda—more clearly expressed in the ‘*Eroica*’ and ‘Choral’ Symphonies—is, perhaps, even more in keeping with Berger’s discussion of Rousseau than Mozart.²⁵) Berger shows how Beethoven and his followers immediately began the work of problematizing this Classical forward-driven momentum. Composers such as Schubert, as mentioned above, also experimented with the listener’s temporal experience by interpolating tonally removed (often in the flat-submediant key) and harmonically static reveries, entirely in keeping, of course, with the Romantic disposition. This only serves to heighten the overall sense of direction, and has encouraged numerous narrative (or more often “emotional-narrative”) interpretations of so-called absolute music (see also chapters two and four).

²⁴ An alternative dialogical sonata theory proposed by James Hepokoski and Warren Darcy explains the rhetorical structure as a series of action sets punctuated by compositional defaults or deformations. See Hepokoski and Darcy, *Elements of Sonata Theory: Norms, Types and Deformations in the Late Eighteenth Century Sonata* (New York and Oxford: Oxford University Press, 2006).

²⁵ Perhaps this is unsurprising, given Beethoven’s exposure to the Illuminati through his teacher from his teenage years, Gottlob Neefe. See Maynard Solomon, ‘Beethoven, Freemasonry, and the Tagebuch of 1812–1818,’ *Beethoven Forum* 8 (2000): 101–146.

Berger's argument is essentially historical, not philosophical or theological, and this difference of framing is crucial. The strength of Berger's argument (like Lydia Goehr's '1800 thesis'²⁶) lies not in the detail of establishing clear-cut binarisms, but rather, in how they enrich understanding and provoke a reconsideration of their overlapping bodies of texts. Peter Williams remains sceptical both of Berger's overarching vision and of his detailed analysis.²⁷ As Green aptly put it, a clear-cut 'bifurcation' of predominantly ontological concepts will always leave the author open to the simplest of criticisms—that it is reductionist.²⁸ Indeed, any discussion of paradigms and paradigmatic shifts involves an element of generalizing historical narrative that has long been held suspect. In spite of this, Berger nevertheless provides a framework in which meaningful observations can be made, and makes explicit the reasons why these issues (the way temporality is experienced and manipulated in contemporary cultural artefacts) might be important.

Shadows of the Colossus and Journey

Shadows of the Colossus has often been held as a prime example of videogame art.²⁹ Chris Roper wrote that the game shares a particular sense of solitude with its predecessor, *Ico* (2001), and this sense helps to create the necessary time and space for the player to think and "play".³⁰ The

²⁶ As presented in Lydia Goehr, *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music* (New York: Oxford University Press, 2007), esp. pp. 1–9.

²⁷ Peter Williams, 'Review. Karol Berger: Bach's cycle, Mozart's arrow,' *The Musical Times* 149/1903 (Summer 2008): 116–118, 117.

²⁸ Edward Green, 'Review: Bach's Cycle, Mozart's Arrow: An Essay on the Origins of Musical Modernity by Karol BERGER,' *International Review of the Aesthetics and Sociology of Music* 40/2 (December 2009): 353–359, retrieved from <<http://www.jstor.org/stable/20696546>>, accessed 09/07/2012.

²⁹ A few examples include Ben Kuchera, 'Masterpiece: *Shadow of the Colossus*,' on *ars technica* (19/09/2010), retrieved from <<http://arstechnica.com/gaming/2010/09/masterpiece-shadow-of-the-colossus/>>, accessed 19/04/2013, and the links from this interview: Stephany Nunneley, 'Ueda "flattered" *Shadow of the Colossus* is considered art by many,' on *vg247.com* (24/09/2010), retrieved from <<http://www.vg247.com/2010/09/24/ueda-flattered-shadow-of-the-colossus-is-considered-art-by-many/>>, accessed 19/04/2013.

³⁰ Chris Roper, 'Shadow of the Colossus Review,' on *Imagine Games Network* (October 2005), retrieved from <<http://uk.ign.com/articles/2005/10/17/shadow-of-the-colossus-review>>, accessed 18/04/2013.

game's minimalist approach (even by the standards of the day the game world is sparse and simple) sees the player travelling on horseback with little else to do but admire the scenery and contemplate their goals. These goals come in the form of sixteen **boss** encounters in which the player must defeat seemingly innocent and largely unprovocative Colossi in order to achieve their final quest—bringing an unknown girl back to life (the plot gradually thickens, ultimately into a fully-formed narrative that qualifies much of the action in hindsight). Each battle with a colossus is more involving and lavish than the last as the player gradually draws nearer the ultimate goal, but the time interspersing these encounters becomes an increasingly difficult experience for players contemplating the morality of their actions.³¹



Figure 3.1: *Shadows of the Colossus*

Music is only heard at the cutscenes and Colossi battles that intersect the player's exploration and travel sequences. William Gibbons has argued that the (formal) interplay

³¹ On videogames and morality, see Grant Tavinor, *The Art of Videogames* (Chichester: Wiley-Blackwell, 2009), p. 8–9.

between silence and decidedly un-triumphant musical “rewards” creates a particularly successful pacing between moments of musical saturation and relief, an aesthetic experience critical, he suggests, to the moral contemplation touted by players and critics alike.³² To this end, the audio mix points to something more, in that while there is no music playing, other sound effects come to the fore when they would otherwise have been drowned out. I would argue that these sounds even have a musical quality to them—the wind sometimes having a particular tone and the rhythm of the horse, Agro’s hooves, for instance—sounds that are both more noticeable and all the more meaningful, affective and effective. The music (and sound) of *Shadows* is a crucial part of the experience of aesthetic form. The player navigates by holding up a sword and pointing it around until the controller vibrates to indicate the direction. As a result the game can be described as a linear teleological experience, but with a cyclical form.

Journey is a profoundly teleological and linear experience, in spite of the sense of freedom the gameplay affords. Like *Shadows*, it is minimalist in its aesthetic, but even more so in terms of its narrative. Players find themselves in a vast desert landscape with a huge mountain in the distance as their only goal.³³ The title provides the only clue to understanding the metaphoric landscapes the player can explore: the journey is explicitly based on Joseph Campbell’s monomyth theory of narrative (the hero’s journey archetype), and the ultimate destination is of lesser importance.³⁴ There is a multiplayer element, but all forms of competition and direct communication are avoided. Instead, the player may come across one or two other real players (all appear identical) on their journey and both have the opportunity to continue together, co-operating for mutual benefit and the sheer enjoyment of the shared experience. The only way in

³² William Gibbons, ‘Keynote address,’ at *Ludomusicology Conference 2013* (Conference Paper, Liverpool University, 11–12 April 2013).

³³ Artist David O’Reilly’s *Mountain* (2014) provides a similarly artistic aesthetic experience.

³⁴ See Joseph Campbell, *The Hero with a Thousand Faces* (Novato, California: New World Library, 2008).

which they can communicate and express their individuality is through a very simple audio-visual system of chirps and icons, and through their actions.³⁵



Figure 3.2: *Journey*

The music to the game was composed by Austin Wintory, and is based entirely around a theme for the cello that represents the player/protagonist and his/her journey. Wintory worked closely with the sound designer, Steve Johnson, in order to link the dynamic score closely to in-game events.³⁶ The score is predominantly (but not exclusively) orchestral, and Wintory aimed to purge any specific cultural references in order to ensure the language remained 'as universal and

³⁵ For more on communication in *Journey*, see Giancarlo Varanini, 'How Journey Changes Everything and Nothing,' on *gamespot.com* (March 2012), retrieved from <<http://uk.gamespot.com/features/how-journey-changes-everything-and-nothing-6366633/>>, accessed 25/04/2013. Players develop their own codes, although there is no 'official' consensus, see also Gamespot forum discussion here: DigitalDame, 'Journey Communication,' on *gamespot.com* (2012), retrieved from <<http://uk.gamespot.com/journey/forum/journey-communication-29110800/>>, accessed 25/04/2013.

³⁶ See nofi, 'Interview: Composer Austin Wintory On Journey,' on *thesixthaxis.com* (15/03/2012), retrieved from <<http://www.thesixthaxis.com/2012/03/15/interview-journey-composer-austin-wintory/>>, accessed 25/04/2013.

culture-less as possible. Inevitably there are fragments but by and large, I just wanted to make something that felt right, without needing to justify any choices based on references to cultures, etc.³⁷ Such claims to universality, and even the possibility of being cultureless, are highly suspect, especially keeping in mind the issues raised in the discussion of *Brazil* in the previous chapter. However, in its attempt to remove the tropes of individuality, *Journey* unlocks for many players a deeper layer of personal aesthetic experience—shared, but not disrupted by others. I argue that this also assuages Adorno’s fear of ‘pseudo-individualization’, demonstrating that videogames can occupy the space of mass culture without necessarily adopting the negative traits assigned to them by his Culture Industry. Indeed, the polarization of mass culture and high art categories is once again challenged.

Relatedly, thatgamecompany’s approach to gameplay and narrative has led some critics to question whether *Journey* ought to be classified as a game or some other interactive aesthetic experience. As Keith Stuart puts it, *Journey* has no ‘fail state’:

...although there is perceived peril, it seems impossible to actually “die” while playing. There is no time limit, so solving puzzles has no sense of tension. And although the presence of puzzles suggests challenge and therefore a game-like experience, these tasks are simple and toy-like.

Players cannot compete for resources or physically interact (the collision detection was apparently removed so that participants couldn’t knock each other off walkways). Although there is exploration, the experience ends inevitably with one conclusion – though of course, that conclusion can be interpreted differently by each player.³⁸

Stuart argues that *Journey* should therefore be thought of as ‘interactive art’, rather than a game, as ‘Through its gorgeous emotionally resonant soundtrack, its looming symbolic landscapes, its exploration of interactivity and telepresence, it wants us to ask questions and experience feelings, without necessarily having to engage with game-like structures.’³⁹ He concludes that it is:

³⁷ Ibid.

³⁸ Keith Stuart, ‘Is Journey a game or a piece of interactive art?’ *The Guardian* (March 2012), retrieved from <<http://www.guardian.co.uk/technology/gamesblog/2012/mar/15/journey-game-or-interactive-art>>, accessed 25/04/2013.

³⁹ Ibid.

art without all the baggage; it is art without a gallery, art without a critical elite telling you what it means or where it fits in to their esoteric pantheon.

All art is about communication – that's the only definition that really works. And at the centre of *Journey*, is the conundrum – how do two players who find themselves in this landscape, with no traditional means to talk to each other, share the experience? And what is the game trying to tell us, anyway?⁴⁰

Though he adopts the tone of the 'critical elite', Stuart clearly does not consider himself a replacement for them, and does not regard the large and powerful media industry as a potentially more subtle influencer of canon than a gallery or museum. In any case, thatgamecompany now enjoy a reputation for developing aesthetic experiences as much as games (for instance, *fIOW* from 2007 and *Flower* from 2009).⁴¹

Journey is arguably more teleologically focused than *Shadows*, without the cyclical stages to temper the linear form. Of course, the interactivity and duration of the game involve various optional non-linear deviations, but the fact that the game is about life and mortality supports this interpretation. Indeed, the game's aesthetic experience of a powerfully teleological temporal form supports the themes it explores as an additional metaphorical layer. Although there is no 'fail state', there is an ending. This perhaps differs from Hegelian teleology which has as its *raison d'être* continual development. As in the music of Bach and Mozart, although the temporal form of these videogames can be interpreted in various ways, one temporal mode is evidently predominant. The same cannot be said for the categorization of *Journey* as a game, aesthetic experience, interactive artwork, or a function of mass entertainment—it is all of these things.

⁴⁰ Ibid.

⁴¹ thatgamecompany are developing a new game but taking their time over what they promise will be a 'game-changer' for the industry. See <<http://uk.ign.com/articles/2013/04/09/new-thatgamecompany-project-is-years-off>>, accessed 25/04/2013. These 'aesthetic experiences' are often talked about in terms of the most fertile sector of videogames as art. See Tavinor, *The Art of Videogames*, p. 196.

Postmodern “People’s Time”

To supplement Berger’s narrative, I searched for a third image to explicate an analogous shift from Modernity to Postmodernity and found David Hockney’s “joiner”, *Pearblossom Highway No.2* (1986, see Figure 3.3).⁴² This collage is made up of over 700 photographs, taken over several days. The subject matter is a famously dangerous Californian highway, route 138, seen from the perspectives of both the driver and passenger. A sense of momentum and urgency is created by the fleeting fragments and the persistent warnings to ‘Stop’. Scale and angle are misaligned in the final montage as if snapshots of many localized objects were taken from one or other of the subject positions and then through their collaboration, internalized and reassembled ‘in the mind’s eye’. The resultant image blurs the boundaries between multiple subject positions and supports the ambiguous play with time.

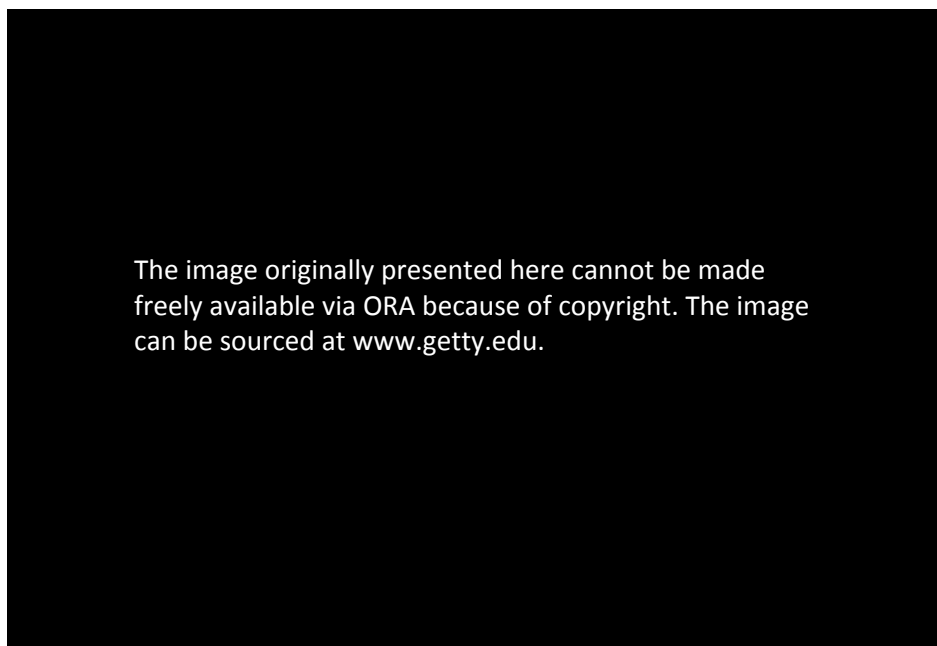


Figure 3.3: David Hockney: *Pearblossom Highway*, 11th to 18th April 1986 No.2, photographic collage, 77x112 1/2 in.

⁴² In Panography, a joiner is the common term for the whole picture that comprises multiple images, usually photographs.

Postmodernism is highly sceptical of teleological attitudes, alongside all grand narratives, not least because they are considered reductive and exclusionary.⁴³ Indeed, even though Lyotard was one of the first and most influential exponents of the very term “postmodernism”, he later became suspicious of its usage. As Peter Sedgwick has explained, holding onto the ‘post’ in postmodernism reaffirms the very modernist tendencies it supposedly subverts by continuing to rely on pre- / post- binarisms and meta-narratives.⁴⁴ Even philosophy itself, Lyotard noted, is open-ended, not teleological, since ‘Philosophical discourse has as its rule to discover its rule: its *a priori* is what it has at stake.’⁴⁵

James Winders has argued that the aesthetic contexts of postmodern music, art and literature have provided ‘Einsteinian’ didactic examples for historians wed to ‘Newtonian’ chronological narrative.⁴⁶ Music that has most often been accredited with the postmodernism label—and this task is clearly problematic—has been so recognized due to its multifarious nature and eclectic poly-stylism.⁴⁷ Jonathan Kramer, involved in this debate from the outset of New Musicology in the 1980s, rejects the view that postmodern music is a ‘nostalgic return to a past consisting of recognizable tunes, regular rhythms, tonality, and the like. In such a view, the postmodern turn expresses a conservative desire to recapture a lost sense of unity.’⁴⁸ Instead, Kramer argues that postmodernists ‘reconfigure’ the past with ‘unity as an option’.⁴⁹ (How this

⁴³ See Judy Lochhead and Joseph Auner (eds.), *Postmodern Music/Postmodern Thought* (New York and London: Routledge, 2002), p. 6.

⁴⁴ Peter Sedgwick, ‘Review: Postmodern Music/Postmodern Thought by Judy Lochhead,’ *Twentieth Century Music* 1/1 (March 2004): 130–135, 135.

⁴⁵ Jean François Lyotard, *The Differend: Phrases in Dispute* (Minneapolis: University of Minnesota Press, 1991), pp. 60–1.

⁴⁶ See James Winders, “‘Narratime’: Postmodern Temporality and Narrative,’ *Issues in Integrative Studies* 11 (1993): 27–43.

⁴⁷ See Richard Taruskin’s chapter on Alfred Schnittke, ‘After Everything’, chapter 6 in *Defining Russia Musically* (Princeton: Princeton University Press, 1997), pp. 99–104.

⁴⁸ Jonathan Kramer, cited in Sedgwick, 131.

⁴⁹ Works such as Louis Andriessen’s *De Tijd* are an example of a postmodern synthesis/dialectical resolution of time and eternity. See Maarten Beirens, ‘Time, eternity and the problem of minimal music’s alleged non-linearity in Louis Andriessen’s *De Tijd*,’ *Divergence Press* 1 (March 2013), retrieved from <<http://divergencepress.com/Journal/JournalIssue/tabid/85/ID/4/Time-eternity-and-the-problem-of-minimal-musics-alleged-non-linearity-in-Louis-Andriessens-De-Tijd.aspx>>, accessed 24/06/2014.

sits with the fragmentation common in modernist literature, such as T. S. Eliot and James Joyce, is part of Postmodernism's simultaneous rejection of and engagement with Modernism.) This *preference* for disunity is combined with other common traits: 'a tendency simultaneously to break with and to extend the logic of modernism, irony, the rejection of the distinction between "high" and "low" art, quotation[...], fragmentation, plurality, multiple meanings, [and] an emphasis on the role of the listener in the construction of musical meaning.'⁵⁰ (The rejection of high and low has particular relevance to this thesis, and is addressed again in the conclusion.)

Kramer's full list from 2002 suggests that postmodern music:

1. is not simply a repudiation of modernism or its continuation, but *has* aspects of both a break and an extension;
2. is, on some level and in some way, ironic;
3. does not respect boundaries between sonorities and procedures of the past and of the present;
4. challenges barriers between "high" and "low" styles;
5. shows disdain for the often unquestioned value of structural *unity*;
6. questions the mutual exclusivity of elitist and populist values;
7. avoids totalizing forms (e.g., does not want entire pieces to be tonal or serial or cast in a prescribed formal mold [*sic*]);
8. considers music not as autonomous but as relevant to cultural, social, and political contexts;
9. includes quotations of or references to music of many traditions and cultures;
10. considers technology not only as a way to preserve and transmit music but also as deeply implicated in the production and essence of music;
11. embraces contradictions;
12. distrusts binary oppositions;
13. includes fragmentations and discontinuities;
14. encompasses pluralism and eclecticism;
15. presents multiple meanings and multiple temporalities;
16. locates meaning and even structure in listeners, more than in scores, performances, or composers.⁵¹

For Kramer (following Umberto Eco, and Lyotard himself), these sixteen facets together make up an attitude rather than a rigid stylistic definition or historical period, and as a result, it is possible to talk of postmodern temporalities in Beethoven, Mahler and Ives (his chosen examples).

Sedgwick understandably complains about the 'list-making' of those authors (Kramer included)

⁵⁰ Sedgwick, 131.

⁵¹ Kramer, 'The Nature and Origins of Musical Postmodernism,' in *Postmodern Music/Postmodern Thought*, eds. Judy Lochhead and Joseph Auner (New York and Oxford: Routledge, 2002), pp. 13–26, 16–17.

attempting to offer definitions of this elusive category, as their lists inevitably allow for music to be uncritically labelled anachronistically and incorrectly. However, this very issue is a result of postmodern thinking, so that a definition can only ever consist of a 'family of resemblances', in Wittgenstein's parlance. Kramer himself adds an important caveat to this, explaining that it is not a 'checklist' by which one can simply identify postmodern music—it 'is not a category with neat boundaries.'⁵² The evidence presented above suggests that it is viable to conceive of new temporalities that have arisen out of a postmodern paradigm shift.⁵³ (Again, this very statement eschews the postmodern aversion to meta-narrative, but it remains useful with the proviso that it is not intended as a single, objective, "master" history.)

Postmodern Temporalities in Videogames

The Witcher 2 and *Bioshock Infinite* are both non-linear narrative games that each pose a different set of problems. Such non-linear games are becoming increasingly popular; companies like Quantum Dream have made a name for themselves as interactive story-tellers with games such as *Heavy Rain* (Sony Computer Entertainment, 2010), a non-linear thriller billed as an interactive *film noir*, and their more recent *Beyond: Two Souls* (2013), starring Ellen Page and Willem Dafoe. The *Max Payne* trilogy is another example of *film-noir* inspired games that attempt to present a filmic linearized narrative based on non-linear player decisions. Many recent RPGs also have similar aspirations, for instance, the *Dragon Age* and *Fable* series.⁵⁴

⁵² Kramer, Sedgwick, 131.

⁵³ For a concepts of 'Postmodern Temporality' based on Derrida and Deleuze, see Aislin Baker, 'Postmodern Time: Derrida, Deleuze, and the Shift,' (thesis, University of Adelaide, November 2001).

⁵⁴ Inon Zur, *Dragon Age: Origins* (BioWare/Electronic Arts, Xbox360, PS3 & PC: 2009), Inon Zur, *Dragon Age 2* (BioWare/Electronic Arts, Xbox360, PS3 & PC: 2011), Danny Elfman & Russell Shaw, *Fable* (Big Blue Box, Lionhead Studios/Microsoft Game Studios, Xbox: 2004, PC: 2005), Danny Elfman & Russell Shaw, *Fable 2* (Lionhead Studios/Microsoft Games, Xbox360: 2008), Russell Shaw, *Fable 3* (Lionhead Studios/Microsoft Games, Xbox360: 2010, PC: 2011).

The Witcher series of games is an exemplary case of artistic aspirations apparently superseding commercial concerns. As with *Shadows* and *Journey*, I will evaluate the series as an attempt to ‘artify’⁵⁵ the medium by developing the complexity and seriousness of narrative content, especially with regard to players making meaningful (by which game developers tend to mean consequential) and morally equivocal decisions. The economic argument for this approach simply relies on the belief that the players will recognise and value higher-quality “products” (perhaps as art) and, in turn, will be willing to pay more for them. More specifically, I will consider what role the music has and how the game’s structure can be thought of in terms of a postmodern conception of non-linear temporality. These ideas are taken further in *Bioshock Infinite*, which overtly plays with issues of temporality with its postmodern narrative, often in ways foregrounded by the music. The game offers ostensibly meaningful choices that ultimately turn out to be largely insignificant. Indeed, although the narrative seems to resolve in a satisfactory way, the cliffhanger in the epilogue reminds the player that all their efforts were arguably wasted.

Choice in *The Witcher 2: Assassins of Kings*

In May 2011, the Polish Prime Minister Donald Tusk welcomed United States President Barack Obama on his state visit to Poland with an iPad preloaded with a collection of notable Polish films, including Tomasz Bagiński’s 2002 animated short, *Katedra*, several signed English-language translations of Andrzej Sapkowski’s novels, and CD Projekt’s *The Witcher 2: Assassins of Kings*, a videogame based on a series of books by the same author.⁵⁶ This could be taken as an indication

⁵⁵ Tim Summers has talked about ‘artifying’ rather than ‘high-artifying’ videogame studies. ‘Wagner, Kant and a Metaphysical Rubber Chicken: Perception and Interaction in Adventure Games,’ at *Ludomusicology Conference 2013* (Conference Paper, University of Liverpool, 11–12 April 2013).

⁵⁶ John Funk, ‘Polish Prime Minister Gives Obama *Witcher 2*,’ in *Escapist Magazine* (22/05/2011), retrieved from <<http://www.escapistmagazine.com/news/view/110469-Polish-Prime-Minister-Gives-Obama-Witcher-2>>, accessed 16/05/2012.

that the videogame has come of age, and is now treated on a similar footing to any other cultural artefact. *The Witcher* franchise is the highest-profile international game franchise produced in Poland, having sold over 6 million copies to date, and being based on fantasy lore steeped in Slavic mythology by Poland's 'answer to Tolkien', it is perhaps no surprise that the Premier was proud to present it.⁵⁷

The games are third-person perspective (predominantly employing an over-the-shoulder camera) single-player RPGs, the first released in 2007 and the third due for release in February 2015. Focus here will be on the second game, *Assassins of Kings*. In order to immerse new players in the game world, complex background story and extensive lore, CD Projekt released a Retail Premium Edition as the standard edition of the game, including a DVD of bonus materials, the soundtrack, a paper world map, a game guide and manual, a pamphlet and brass coin, and two unique Origami figures.⁵⁸ This provides tangible physical artefacts that were intended to help make the overall experience more immersive and involving. The physical map, for instance, is completely unnecessary as an in-game tool already exists, but it helps to encourage players to care about otherwise unfamiliar and meaningless fictional locations.

The primary selling point of the game highlights some of the developer's key goals:

Complex, expansive adventure in which every decision may have grave consequences. An intense, emotionally charged, nonlinear story for mature players, offering over 40 hours of gameplay, 4 different beginnings and 16 different endings. Make choices that really matter. Your decisions impact [*sic*] relations with other characters and entire communities, and may also influence the political situation in the Northern Kingdoms.

The apparent freedom of choice is limited with the game's framework—you play a particular character, who has his own background, and you are immediately 'plunged into the deep end' as the story continues where the first game left off, with many relationships already developed.

Interestingly, for those players who completed the first instalment and wish to continue their

⁵⁷ See Robert Purchase, 'CD Projekt Red announces 6 million *The Witcher* sales,' on *eurogamer.net* (25/10/2013), retrieved from <<http://www.eurogamer.net/articles/2013-10-25-cd-projekt-red-announces-6-million-the-witcher-sales>>, accessed 03/08/2014.

⁵⁸ The 'Enhanced Edition', provided for free in April 2012, substantially adds to this both in terms of volume of content and through the patching of various problems and adding miscellaneous improvements.

own brand of the saga, it is possible to load their final saved game file from *The Witcher* into *The Witcher 2* and start where they left off. This means that any decisions and events that took place in a particular way during the first game will be properly reflected in the second—for instance, if a particular character was killed, or if the player/protagonist developed a close relationship with another particular character. Alternatively, the game can run standalone, with a default set of narrative options built in. What is evident in the sequel, is that even more so than the first game, the key decisions are not highlighted to the player as they are in many other games of this kind. The player is not presented with overtly good/evil binary decisions that will clearly impact upon the narrative and their positioning on the game’s moral compass. (Neither of these games actually represents this sort of information directly, although many RPGs do, such as the Light-/Dark-side spectrum in the *Star Wars: Knights of the Old Republic* games—see Figure 3.4 below.) Instead, the player often inadvertently initiates a particular series of events, and is occasionally forced into making tough decisions based on limited information and lack of knowledge about their consequences.⁵⁹ The Enhanced Edition of the game helps to clarify these moments, but only in retrospect by summarizing the key points of the saga at the end of each chapter.



Figure 3.4: *Star Wars: Knights of the Old Republic 2*—Light/Dark Spectrum

⁵⁹ In some games like *Heavy Rain* (Quantum Dream/Sony Computer Entertainment) and *Star Wars: The Old Republic* (BioWare/EA and LucasArts), the player must make their decision within a time limit before a default/other option is declared. This mechanism is generally implemented to ensure that the player cannot look up the consequences online or suspend the dramatic action of the scene to think through their choices unrealistically. Of course, not all choices need be limited in this way.

The game presents the Northern Kingdoms in turmoil, following on just months after the first instalment, but unlike its predecessor, it is narrated by the protagonist's friend, the bard, Dandelion. The protagonist, Geralt of Rivia is an amnesiac "witcher"—essentially a superhuman mutant monster-slayer.⁶⁰ Race is a core theme to the narrative. On the whole, race in this context refers to the various civilized humanoids—humans, elves, dwarves, gnomes and halflings.⁶¹ Other sentient creatures exist but are considerably different either physically, or perhaps in terms of their degree of consciousness or intelligence. They are generally categorized collectively, and negatively, as monsters. As witchers are sterile mutants, they are treated uniquely and occupy a space between humans and other civilized races. Furthermore, the lore in both the game and the books suggests that witchers generally adopt a politically neutral path, preferring to opt out of the various social struggles around them in order to focus on what they do best—slaying monsters. It is clear from this that when talking about racial issues in the game, one is talking as much about differing species. Nevertheless, the conflicts in the narrative between the Scoia'tael faction (freedom fighters or terrorists?) and the humans, and the tensions Geralt encounters all across the Northern Kingdoms due to partition policies (non-human ghettos) are treated by the characters as an issue akin to racial issues in the real world. This problematizes the idea of race even further, and is made all the more apparent when Geralt engages with Trolls, for instance, whose categorization as sentient monsters is clearly problematic due to their peaceful collaboration with other humanoid races. These details are representative of the developers' conscious effort to elevate the thematic content of the game beyond stereotypical expectations of the medium.

⁶⁰ Geralt is known also as Gwynbleidd, Elder Speech meaning 'The White Wolf', a name given to him by the dryads.

⁶¹ *The Witcher Wiki* adds 'Of these, humans and elves are capable of interbreeding, thus producing half-elves. Dryads are also a humanoid, but less civilized race,' retrieved from <<http://witcher.wikia.com/wiki/Race>>, accessed 23/05/2012.

Geralt's journal does not provide a single narrative, but functions rather more as a folder, providing key functionality in tracking and organizing the many quests, characters, locations, and other sorts of information Geralt needs to retain. However, the entries are written in Dandelion's hand (despite the fact that he is often elsewhere), and they are always kept up to date, though it is written retrospectively. As such, it consistently reflects the player's decisions exactly as if that was *the* saga, and it could not have been any other way. Nevertheless, the difference of voice is an important element to the narrative, not only in preserving Geralt's stoic and un-heroic persona, but also in adding some distance between the telling of the events and the player's motivations for any one decision.

The **quest** 'With Flickering Heart' presents the player with an innocuous choice that is closely related to music. While Geralt is conducting an investigation, the player is given control of Dandelion who must lure a succubus by selecting lines from a particular ballad. Naturally, Dandelion commences his journal entry with the prideful line 'And now let me tell you how I solved a crime in Vergen with a bit of help from Geralt...' He later continues:

The book the witcher found had been stolen from me some time before. Needless to say, I was glad to recover it. This clue suggested that the succubus was an avid fan of poetry. Thus, I had no choice but to return to the village to lure the beast out with some moving lyrics. As many an epic romance states, and as Geralt reassured me, succubi are nocturnal creatures, so the witcher and I agreed to meet at midnight.

If Dandelion does not select the correct lyrics, and the quest fails:

I tried to charm the succubus with sonnets to no avail, throwing my verses to the wind. The she-beast would not emerge from her den. Certain that no one could have done better in my place, I could but throw my arms up in helplessness. Thus, my career as a detective came to a premature and disappointing end.⁶²

If Geralt decides to talk to Ele'yas after meeting the succubus:

The succubus literally ate out of my hand – such was the power of my poetry. With my aid, the witcher could speak with the demon. According to the beast, the murderer was the elf Ele'yas, a jealous lover, for you must know that the succubus had many lovers, all the murder victims among them. Geralt listened to her testimony and went to speak to the elf.

⁶² See <http://witcher.wikia.com/wiki/With_Flickering_Heart>, accessed 22/05/2013.

Obviously El'yas protested his innocence. And, to be honest, Geralt and I had no evidence to prove either his or the succubus' guilt beyond a reasonable doubt. The word of a monster against the word of a bandit – the decision was hard indeed.

Musically the song is unsophisticated—Dandelion speaks the lyrics rhythmically over a series of familiar chords as if reciting a poem. The player gets a time-limited choice of three lines for each of the three verses, and gets more than one chance should they select an inappropriate line. The correct lines can be found in Dandelion's poetry sketchbook:

If our bodies could a song compose... (second dialogue option)

My heart would inquire of your hands pale and fine... If they'd grasp it gently, to hold like a rose... (first dialogue option)

Or treat it as a morsel upon which to dine? (second dialogue option)⁶³

Much of the folk music heard in the game is structurally straightforward, but in this specific narrative context, the gameplay requirements have apparently led the developers to simplify the musical potential of the quest to such a degree that there is little of musical interest left. This is noteworthy, however, as it demonstrates a potential conflict between artistic potential and commercial resources or concerns about accessibility.

♩. = 30

Recorder

Fine

6 Violin

Vln.

10

Vln. **D.C. al Fine**

Figure 3.5: 'A Tavern on the Riverbank' (Tavern Piana 1)

⁶³ Lyrics taken from <http://witcher.wikia.com/wiki/With_Flickering_Heart>, accessed 22/05/2013.

The extensive use of folk music in the first *Witcher* game is reduced somewhat in *The Witcher 2* but nevertheless continues to provide an important source of immersion. Diegetic folk music in particular adds a certain depth to the social interactions in the game, as well as an additional source for more obscure references to the lore. The music transcribed in Figures 3.5–7 is representative of the folk music in the game (Figure 3.5 is from *The Witcher 2*, but Figures 3.6 and 3.7 are from *The Witcher*). The melodic profile of these instrumental pieces helps to create a coherent and consistent soundworld for the game, with a reliance on modal harmonies common to real-world folk music. (These issues will be picked up on in the following chapter.)

The musical score for 'A Game of Dice' is presented in a system of staves. It begins with a tempo marking of ♩ = 160. The score is divided into five systems, each containing two staves: Treble Recorder (Tr. Rec.) and Violin (Vln.).

- System 1:** The Treble Recorder part starts with a whole rest for the first four measures, followed by a double bar line and a repeat sign. The melody begins in the fifth measure with a quarter note G4, followed by eighth notes A4, B4, and A4, and a quarter note G4. The dynamic is marked *mf*. The Violin part provides a harmonic accompaniment with a steady eighth-note pattern of G4, A4, B4, and A4.
- System 2:** The Treble Recorder continues the melody with eighth-note patterns. The Violin accompaniment remains consistent.
- System 3:** The Treble Recorder part features a melodic phrase with a slur over the first four notes. The Violin accompaniment continues.
- System 4:** The Treble Recorder part continues with a melodic phrase. The Violin accompaniment continues.
- System 5:** The Treble Recorder part concludes with a melodic phrase. The Violin accompaniment continues.

Figure 3.6: 'A Game of Dice'

These short pieces have a timeless quality that is particularly fitting considering the context in which they are heard—*not* during moments of drama or combat. They serve to create a sense of calm rural landscape that, like an aria in an opera, temporarily steps outside of the teleological machinations of the plot. Dandelion’s song juxtaposes this musical style with the tension created by the goal-orientated quest—should the player fail to find the correct combination of lines (or if they had not checked in his book), they run the risk of failing to lure their target, bringing the quest to an abrupt close. However, gameplay and narrative take clear precedence over the music, which is treated as “flavour” rather than an essential component of the storytelling.

The musical score is for a piece titled 'Trade Quarter—Peaceful Moments'. It is written in treble clef with a key signature of one sharp (F#) and a common time signature (C). The tempo is marked as ♩ = 120. The score is divided into three systems, each with a Flute (Fl.) and Guitar (Gtr.) part. The first system (measures 1-5) shows the Flute playing a melodic line with a slur over measures 1-4 and a fermata over measure 5. The Guitar plays a rhythmic accompaniment of eighth notes in measures 1-2, marked *mf*, followed by rests in measures 3-5. The second system (measures 6-10) shows the Flute with a whole rest in measure 6, followed by a melodic phrase starting in measure 7. The Guitar has rests in measures 6-8 and then a rhythmic pattern in measures 9-10. The third system (measures 11-15) shows the Flute with a melodic line starting in measure 11 and a fermata over measure 15. The Guitar has rests in measures 11-15.

Figure 3.7: ‘Trade Quarter—Peaceful Moments’

‘With Flickering Heart’ represents the most common type of decision the player is required to make. It is consequential only insofar as the small secondary quest provides entertainment and a small amount of experience points. Such quests are useful for the player but

are not all required to proceed through the main questline. The song, or rather, recitative, is only heard if the player chooses to take up this particular quest, and subsequently does not reflect a significant compositional investment. However, the transcriptions in Figures 3.5–7 do represent a notable proportion of the musical material in the game. Although there is greater musical variety in the folk songs from the first game, in both games the majority of the folk music is broadly in keeping with, if not directly motivically connected to the rest of the thematic material. The folk music provides relief in the form of static temporal experiences that punctuate more intense periods of gameplay. As the player determines which secondary quests to follow, and the pacing between explorative role-playing gameplay, and action that develops their character or moves the main plot forward, they are determining the aesthetic form of the game through play.

Certain quests are pivotal to the narrative structure. Table 3.1 lists all the quests in the game alphabetically with those that entail important decisions marked in bold.⁶⁴ The list provides a sense of the scale and macro-form of the game.

⁶⁴ Table 3.1 is derived from <http://witcher.wikia.com/wiki/The_Witcher_2_quests>, accessed 01/05/2013.

Prologue	Chapter II	
At the Fore	A Sackful of Fluff (DLC)	
Barricade	A Score to Settle	
Blood of His Blood	Death Symbolized	
By the King's Will	From a Bygone Era	
Melitele's Heart	Hatred Symbolized	
Returning Memories	The Eternal Battle	
The Assassins of Kings	Path: Roche	Path: Iorveth
The Dungeons of the La Valettes	Against the Blue Stripes	A Matter of Life and Death
To the Temple!	Ave Henselt!	Baltimore's Nightmare
Trial by Fire	Bring it on: Kaedweni Camp	Bring it on: Vergen
Woe to the Vanquished	Conspiracy Theory	Hey, Work's on in the Mines!
Chapter I	Courage Symbolized	Hunting Magic
A Rough Landing	Faith Symbolized	One on One: Vergen
A Sword for Monsters	In Cervisia Veritas	Poker Face: Vergen
At a Crossroads: Scoia'tael	Little Sisters	Prelude to War: Aedirn
At a Crossroads: Vernon Roche	Lost Lambs	Royal Blood
Bring it on: Flotsam	Poker Face: Kaedweni Camp	Subterranean Life
By the Gods - Stringing Up Sods	Prelude to War: Kaedwen	Suspect: Thorak
Death to the Traitor! (Side with Roche)	The Blood Curse	The Harpy Contract
Fight Club	The Butcher of Cidaris	The Queen Harpy Contract
Hung Over	The Path to Vision	The Walls Have Ears
In the Claws of Madness	The Rotfiend Contract	The War Council
Indecent Proposal	The Siege of Vergen	Vergen Besieged
Little Shop of Dreams	The Spear of Destiny	With Flickering Heart
Malena	Chapter III	
Margot's Disappearance	A Summit of Mages	
Mystic River	An Encrypted Manuscript	
One on One: Flotsam	Bring it on: Loc Muinne	
Poker Face: Flotsam	Enter the Dragon	
The Ballista	Poker Face: Loc Muinne	
The Endrega Contract	The Gargoyle Contract	
The Floating Prison (Side with Iorveth)	Path: Roche	Path: Iorveth
The Kayran	Crown Witness	A Tome Truly Rare
The Kayran: A Matter of Price	For Temeria!	Dearhenna's Journal
The Kayran: Ostmurk	Lilies and Vipers	The Secrets of Loc Muinne
The Nekker Contract	Of His Blood and Bone	The Spellbreaker
The Rose of Remembrance	Pacta Sunt Servanda	For a Higher Cause!
The Scent of Incense	The Messenger	
Troll Trouble (DLC)		
Where is Triss Merigold?		

Table 3.1: Quests in *The Witcher 2*

The narrative structure of the game can therefore be summarized as Table 3.2, in which the most important decisions in the game determine major paths. The number of significantly different endings is equal to the number of significant decisions squared ($4^2 = 16$, the third game will provide 32 separate endings):

Prologue (La Valette Dungeon) <i>Determine fate of Aryan La Valette</i>	
Chapter I (Flotsam) <i>Align with Iorveth and the Scoia'tael or Vernen Roche</i>	
Chapter II (Vergen/Aedirn)	
Path: Iorveth <i>Permit or prevent the lynching of Stennis</i>	Path: Roche <i>Influence King Henselt's fate</i>
Chapter III (Loc Muinne)	
Path: Iorveth (Stennis) <i>Aid either Triss or Filippa</i>	Path: Roche (Henselt) <i>Aid either Triss or Anais</i>
Epilogue	

Table 3.2: Narrative Structure of *The Witcher 2*

The consequences of these decisions can be expressed as a flow chart (Figure 3.8) that maps out the multiple pathways through to the end of the game (quests are colour-coded with the consequences in a paler shade):

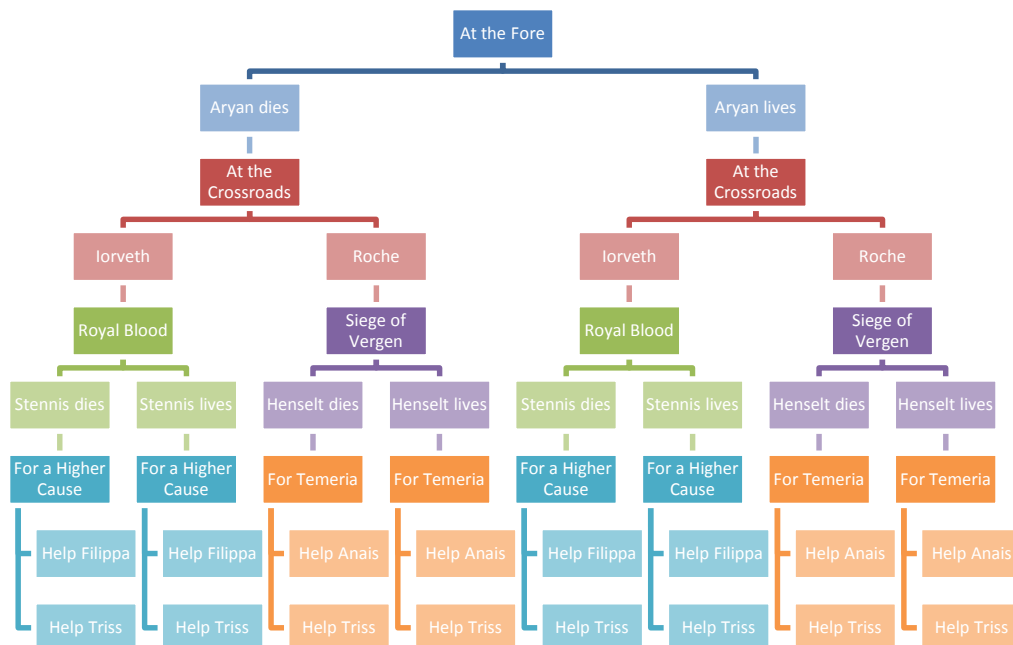


Figure 3.8: Decision Flow Chart

The details surrounding each of these decisions are considerably more complex than these Boolean diagrams portray. In the 'Assassins of Kings' quest in Chapter I, Geralt confronts Letho, the 'Kingslayer', and the player is required to make perhaps the most significant narrative choice in the game in helping either Iorveth or Roche. This decision has immediate consequences for the remainder of Geralt's time in Flotsam (Chapter I), specifically, affecting the 'Where is Triss Merigold?' quest. However, it is not Geralt's final answer on the matter and it is not until the player reaches the quest 'At the Crossroads' that they are forced either to confirm or revoke their initial intentions. Once Geralt makes this decision, the whole of chapter two is spent in an entirely different location, with different characters and a unique set of quests. The other area cannot be accessed unless the player starts the game again (or reloads a saved game prior to the pivotal decision).

The gap between choice and consequence was stretched in the first game in an attempt to deepen the player's sense of determinism and morality. This helps to disguise the underlying simplicity of the game's Boolean narrative tree structure, giving an impression of free choice and self-determination. As one reviewer pointed out, in most games of this type, a quick save before choices are made permit the player to reload and replay their option if it does not work out the way they hoped.⁶⁵ Due to the delayed and largely unforeseeable consequences, the developers attempted to emulate the "butterfly effect" and to deter players from cheating the game's narrative mechanisms. The player is presented with the results and they often regret earlier decisions. However, it usually transpires that whichever decision the player makes, the possible outcomes can rarely be characterized in binary good/bad categories. More often than not, they occupy a not great/slightly worse territory, or otherwise both have unforeseen negative consequences to temper any sense of achievement. Another key tactic employed by the

⁶⁵ Phill Cameron, 'How The Witcher Dealt With Choice,' on *Rock, Paper, Shotgun* (04/05/2011), retrieved from <<http://www.rockpapershotgun.com/2011/05/04/how-the-witcher-dealt-with-choice/>>, accessed 03/08/2014.

developers is to have far-reaching consequences disguised by seemingly innocuous choices. (Some decisions are time-limited to force the player's hand and prevent them from over-thinking or cheating by looking up the consequences online.) In this way, the developers attempted to 'artify' the game at the expense of making a large amount of material redundant, as is evident in the number of quests that are bypassed by the branching narrative in Table 3.1.

In terms of musical resources, the game engine (RED Engine) makes use of perhaps the most popular audio **middleware** on the market—Firelight Technologies' FMOD, the main alternatives being Audio Kinetic's Wwise, Microsoft's DirectSound or Creative Labs' OpenAL. FMOD is a software audio engine that enables the creation and playback of interactive audio. In *The Witcher 2* it is predominantly employed as a **soundbank** and system of simple audio cues, and on inspection of the game files with FMOD Designer and RedKit—the freely available downloadable **modding** tool provided by the developers—it seems little use was made of FMOD's dynamic music features. The most obvious result of the use of dynamic music in the game occurs when Geralt is travelling or exploring and a musical battle cue fades in indicating the presence of a nearby foe, whether or not the player has seen them. The result is disruptive—as one player put it, 'dynamic music [should] approximate your mental state, but [not] dictate it.'⁶⁶

With over 40 hours of gameplay advertised, it is unsurprising but interesting to note that the composers produced approximately three hours of music. The narrative structure of the game (outlined in Tables 3.1 and 3.2, and Figure 3.8) is to an extent indicative of the macro-musical form. The musical tracks extracted from the game (as opposed to those on the extended soundtrack) give a good indication as to the sorts of categories that are most voluminous. The categories listed in Appendix C are mine, based on the track titles, and can be summarized by the

⁶⁶ LTK. 'Adaptive/Dynamic Music,' On *Rock, Paper, Shotgun* (04/12/2012), retrieved from <<http://www.rockpapershotgun.com/forums/showthread.php?6922-Adaptive-Dynamic-Music>>, accessed 03/08/2014.

following table and graph, which total up the durations of each category and present them as a percentage of the total duration of the music:

Category	% duration (rounded)	No. Tracks
Other	25%	30
Battle	24%	29
Area	15%	9
Specific	14%	21
Piana	11%	5
Ambient	8%	2
Debate	2%	3
Jingle	1%	6
Minigames	1%	2
Total	100%	107

Table 3.3: Categories as Percentage of Total Duration

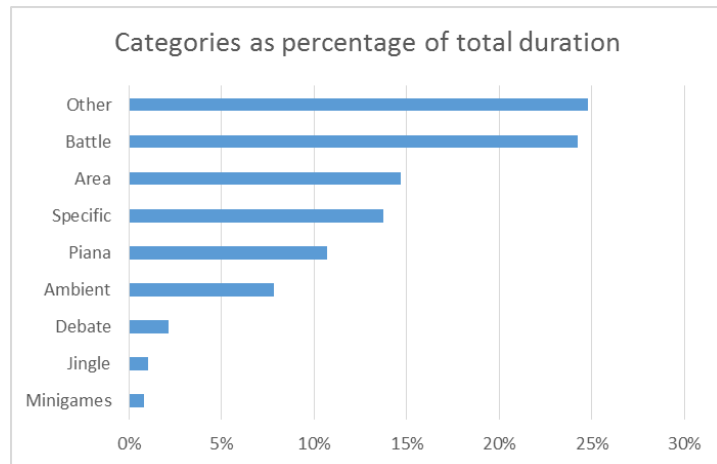


Figure 3.9: Categories as Percentage of Total Duration

Many of the tracks do not obviously belong to one category or another but, nevertheless, certain trends can be deduced. (Many of the track categories that have been marked as ‘Other’ may well belong to the ‘Specific’ category, and there may be crossover between the various categories.)

The key point is that there is a great deal of specific music (at least 14 percent of the total duration)—that is, music that has been composed for specific moments in the narrative—much of which may not be heard on a single play-through of the game. One might have expected that musical tracks would be re-used across the various endings and decision points. The results are surprising, economically speaking, but given the developers’ stated aims, it is in keeping with their intention to create a film-like musical score for a non-linear narrative videogame. (Figure 3.10 is a reduction of the filmscore-like main theme, which employs similar topical reference to the main theme from *Crysis*.) Much of the music is made necessarily redundant when the player makes choices and takes specific narrative (and geographical) paths.

The image displays a musical score for the 'The Witcher 2 Main Theme'. It consists of five staves. The top staff is for 'Horns in F', starting with a tempo marking of quarter note = 50. The second staff is for 'Strings', marked with a piano (*p*) dynamic. The third staff is for 'Hn.' (Horn), marked with a forte (*f*) dynamic. The fourth staff is for 'Choir', also marked with a forte (*f*) dynamic. The fifth staff is for 'Str.' (String), marked with a piano (*p*) dynamic. The score is in 6/8 time and features a key signature of two sharps (F# and C#). The music is characterized by a steady, rhythmic pattern in the strings and horns, with a melodic line in the horns and choir.

Figure 3.10: *The Witcher 2* Main Theme

The music reflects a postmodern approach to narrative in that its non-linear structure is contingent on the non-linear narrative and the player's own decisions. However, the music to the game plays a more significant role than a simple mirror. Obviously, the game is not 'through-composed', and non-diegetic underscoring is not always required or desirable. There are plenty of opportunities for diegetic folk music in the game. Sonically, the game employs two core sound-worlds—that of the epic orchestra, and "other" ethnic and folk elements including "folk metal". In both games, Geralt gradually overcomes his amnesia through a series of stylized flashback sequences. These are markedly different visually, and the camera pans over a semi-animated image stylized as a graphic novel.⁶⁷ They are differentiated sonically too, with the folk metal music occurring only in these **pre-rendered** cutscenes. These short narrative constructs punctuate the

⁶⁷ The developers have in fact produced a series of five graphic novels over the years to accompany the series. See, for example, Michal Galek, Arkadiusz Klimek, and Lukasz Poller, *The Witcher: Reasons of State* (Komiksowe Hity, 2011). Prior to this, a six-issue graphic novel series of *The Witcher* was written by Maciej Parowski and illustrated by Bogusław Polc in the mid-1990s.

five main ‘acts’ of the game (including the Introduction and Epilogue) and occur regardless of the player’s choices. This structural punctuation, alongside the lack of suturing between different states of dynamic music, is somewhat reminiscent of the ways in which Wagner’s music in *The Ring* cycle reflects the so-called ‘interlace structure’ of its narrative sources: ‘In place of the classical Aristotelian unity of time, place, and action, the interlace design sets up a literary form based on sudden disjunctions, mysterious failures of explanation, and multiplicities of motive.’⁶⁸ In a similar way to the music in *The Ring*, structural points are clearly highlighted with aesthetic disjoints, and the entirety of the non-linear narrative structure encourages polysemy and multiple perspectives. These ideas will be returned to in the following chapter. While *The Witcher* games aim to complicate their approach to narrative by experimenting with non-linear branching techniques (and, obviously, the usual layers of interaction afforded by the medium), there are other, very different ways in which videogames can reflect postmodern temporalities.

Postmodern Temporalities in *Bioshock Infinite*

Bioshock Infinite is set in the dystopian floating city of Columbia (the female personification of the United States of America) and, like its prequels, *Bioshock* (2007) and *Bioshock 2* (2010), it was inspired by American exceptionalism and Ayn Rand’s objectivist philosophy.⁶⁹ The game is rich with allusions to real-world history, political ideologies and religious ideas.⁷⁰ (Figure 3.11 shows one of the many propaganda posters from Columbia in which the character, Songbird, can be

⁶⁸ See J. P. E. Harper-Scott, ‘Medieval Romance and Wagner’s Musical Narrative in the Ring,’ *19th-Century Music* 32/3 (Spring 2009): 211–234.

⁶⁹ For two contrasting overviews, see George Monbiot, ‘How Ayn Rand became the new right’s version of Marx,’ in *The Guardian* (March 2012), retrieved from <<http://www.guardian.co.uk/commentisfree/2012/mar/05/new-right-ayn-rand-marx>>, accessed 29/04/2013, and Andrew Bernstein, *Objectivism in One Lesson: An Introduction to the Philosophy of Ayn Rand* (Lanham, Maryland: Hamilton Books, 2009).

⁷⁰ See Ben Popper ‘*BioShock Infinite* makes great art from America’s racist past and political present,’ on *The Verge* (April 2013) <<http://www.theverge.com/2013/4/2/4170256/bioshock-infinite-making-great-art-from-americas-racist-past-and>>, accessed 26/04/2013.

seen as an allusion to the Holy Ghost in Christian iconography.⁷¹)

However, the key idea explored by the game is that of the “multiverse”—an infinite number of possible universes in which every possible combination of choice and chance event takes place.⁷²

The player takes on the role of Booker DeWitt, whose unscrupulous actions as a soldier in the US Army 7th Cavalry Regiment at the Battle of Wounded Knee (the 1890 massacre of American Indians) lead him to look for absolution by way of a baptismal rebirth.⁷³ However, in the end, Booker rejects the baptism, and after his wife dies in childbirth, he descends into alcoholism and gambling. After being sacked from the Pinkertons for his extreme methods in breaking up union strikes, he turns private investigator but soon builds up insurmountable debts.⁷⁴ A stranger (Robert Lutece) brokers a deal between him and Father Zachary Comstock in which Booker gives up his daughter, Anna, in exchange for Comstock clearing his debts. Booker eventually agrees but then immediately regrets his decision and pursues them to a strange portal in an alleyway. In trying to wrestle Anna from Comstock’s grasp as the portal closes, the tip of Anna’s finger is the only thing Booker manages to keep on his side. He later brands his right hand with her initials, ‘AD’ (letters that appear on warning posters around Columbia).



Figure 3.11: Columbia Propaganda—Songbird Poster

⁷¹ Image retrieved from <http://bioshock.wikia.com/wiki/File:BSI_-_PraiseSongbird.png>, accessed 29/04/2013.

⁷² This theme has been explored by many writers. Gilles Deleuze used ‘The Garden of Forking Paths’ by Jorge Luis Borges to illustrate the Leibnizian concept of several impossible worlds simultaneously existing and the Aristotelian problem of “future contingents”. See Deleuze, *Cinema 2: The Time-Image*, trans. Hugh Tomlinson and Robert Galeta (Minneapolis: University of Minnesota Press, 1989), pp. 130–131. The story has also been linked to Bryce DeWitt’s ‘The Many World Interpretation of Quantum Mechanics,’ N. Graham and B. DeWitt eds. (Princeton University Press: Princeton, 1973). Booker’s surname is likely to be a reference to the author.

⁷³ This is likely a reference to the film, *The Last Samurai* (2003).

⁷⁴ Flashbacks to Booker’s office prior to arriving in Columbia show the mirror lettering on his door: ‘Investigations into Matters both Public & Private’.



Figure 3.12: Comstock takes Anna

Twenty years later, Robert Lutece returns and offers Booker a chance to bring Anna back from Columbia. Booker agrees and enters a ‘Tear’ in the fabric of space-time⁷⁵ but doing so confuses his memories of his mission with Comstock’s offer, remembering only the instruction ‘Bring us the girl, and wipe away the debt’, a phrase now with a double meaning. The game starts with Robert and Rosalind Lutece dropping Booker off at a lighthouse off the Coast of Maine, at the top of which a chair transports him up through the clouds to Columbia’s Welcome Centre. (The Luteces provide existential comic relief in the style of Rosencrantz and Guildenstern, specifically referencing Tom Stoppard’s coin-flipping scene from *Rosencrantz and Guildenstern Are Dead*.⁷⁶) In order to enter the city, Booker is forcibly baptized before reaching the Columbia annual raffle and fair.⁷⁷ Father Comstock, also known as The Prophet, turns out to be a religious zealot who rules the city. Comstock is holding his daughter Elizabeth (this is Anna, whose name is all but forgotten by Booker, and meaningless to the player) captive in a tower, and attempting to siphon her valuable ability to create Tears.⁷⁸ Elizabeth is guarded by Songbird, a huge flying

⁷⁵ Tears are essentially portals between different universes or worlds—a common feature of fictional fantasy literature such as Philip Pullman’s *His Dark Materials* book series.

⁷⁶ See also Kevin James Wong, ‘Bioshock Infinite is a Metacommentary on the Nature of Video Game Storytelling,’ on kevinjameswong.com (08/04/2013), retrieved from <<http://kevinjameswong.com/2013/04/08/bioshock-infinite-is-a-metacommentary-on-the-nature-of-video-game-storytelling/>>, accessed 29/04/2013.

⁷⁷ The fair is based on the World’s Fair: Columbian Exposition, held in 1893. See Wikipedia entry: <http://en.wikipedia.org/wiki/World%27s_Columbian_Exposition>, accessed 29/04/2013.

⁷⁸ There are clues in the game that this is in fact Booker’s 123rd attempt to rescue Elizabeth.

mechanical creature. (In posters and public announcement tannoys around the city, Elizabeth is referred to as the Lamb, and Booker, the False Shepherd.)



Figure 3.13: *La Revanche du Jedi*, Paris Tear

Elizabeth's desire to escape to Paris—her imprisonment is a key theme—is referenced through a Tear that shows *Revenge of the Jedi* on at the cinema. Elizabeth's Tears can sometimes be traversed and, in normal gameplay, the player can even instruct her to open Tear anomalies to access additional health or ammunition, for example. After war breaks out in Columbia between The Founders, a faction of rich white supremacists led by Comstock, and the Vox Populi, a multi-racial and multi-nationality group of poor working class citizens, Elizabeth takes Booker through a Tear into another universe where he becomes a hero of the revolution (see Figure 3.14).



Figure 3.14: DeWitt as Hero of the Revolution

In an alternative timeline, Comstock has succeeded in his goal of brainwashing Elizabeth into a 'purer' (more monstrous) version of himself, and she therefore succeeds him. Elizabeth informs Booker that he can prevent this and gives him an encrypted clue that unlocks the ability to control Songbird. Back in what is assumedly the "original" universe, the player/Booker manages to rescue Elizabeth and together they decrypt her clue and, with Songbird's help, they defeat Comstock. Elizabeth soon understands what is happening and tries to explain the multiverse to Booker by taking him through yet another Tear to Rapture, the submarine city from the original *BioShock* game. The player is given little time to ponder the parallels between the two worlds, as Booker is swiftly taken through a doorway to a sea of lighthouses that Elizabeth explains are the doorways to every possible universe.⁷⁹ At this point, through a series of doorways and flashbacks, the narrative unfolds rapidly.

⁷⁹ Rapture was also a dystopian state, created and ruled by Andrew Ryan based on his own personal philosophy. For a more detailed comparison, see Paul Tassi, 'The One Twist in *BioShock Infinite's* Ending You Might Have Missed Completely,' on *Forbes* (March 2013), retrieved from <<http://www.forbes.com/sites/insertcoin/2013/03/29/the-one-twist-in-bioshock-infinite-you-might-have-missed-completely/>>, accessed 02/05/2013.



Figure 3.15: Left—Elizabeth transports Booker to Rapture. Right—Elizabeth shows Booker (one version of) the lighthouses.

It is revealed that in one timeline, Booker chooses not to be baptized after the Battle of Wounded Knee and instead attempts to live with the atrocities he committed, becoming the character the player knows at the start of the game. (This timeline includes both the Booker who sold his daughter, and the one who led the Vox Populi to victory over Comstock.) However, in another universe, Booker accepts the baptism and, believing that he is now cleansed of his sins, he takes a new name—Zachary Hale Comstock. After building Columbia, Comstock realizes he has become sterile due to prolonged exposures to space-time Tears, and in order to secure his creation, he sends Lutece to another universe to fetch his own child, Anna DeWitt, (whom he renames Elizabeth).⁸⁰ At the very end of the game, Booker is confronted by an assortment of Elizabeths, all from different timelines. Instead of baptizing him this time, realizing the only solution, they drown him to prevent either the Comstock or the Booker sides of his character emerging. This causes them to vanish one by one, as each of their timelines no longer exists. Finally, following the game's credits, there is a short epilogue cliff-hanger that Paul Tassi describes as the

⁸⁰ It also transpires that the Lutece's are not twins, or husband and wife, but in fact the same person. In Comstock's universe, Lutece is born as Rosalind, a physicist who helps Comstock to create his floating city using quantum mechanics. In DeWitt's universe, it is Robert Lutece who collects Anna. The two become a team when Comstock's siphon starts to open Tears between various universes, and when Comstock eventually kills them in his universe for knowing too much, they return to Booker and offer him the mission that starts the game.

‘Schrodinger’s Cat scenario’: DeWitt is back in his apartment in 1893 and calls out to Anna, but before he can see into her cot, the camera cuts to black.⁸¹



Figure 3.16: Lutece and Lutece

BioShock Infinite could be described as a postmodern game for a number of reasons. The references to contemporary physics (quantum mechanics and the multiverse) notwithstanding, the game’s narrative directly questions the validity of a single narrative perspective. *BioShock Infinite* can also be seen as a “meta-game” in that it provides a commentary on the nature of playing videogames. If the player dies before meeting Elizabeth, for instance, they appear in a black-and-white room like those of Booker’s flashbacks, and Booker says ‘What the... What just happened?’ before exiting his office back into the world where he died. (When Booker dies with Elizabeth as his companion, a similar scenario is used in which Elizabeth gives him an injection as if saving his life in a quiet corner.) Kevin James Wong has noted the distance between the emergent (player’s) and fixed (designer’s) narratives—what the Luteces refer to as ‘constants and variables’—while the game offers a degree of freedom and the actual experiences of various

⁸¹ See Paul Tassi, ‘An Attempt to Understand BioShock Infinite’s Brilliant and Bizarre Ending,’ on *Forbes* (27/03/2013), retrieved from <<http://www.forbes.com/sites/insertcoin/2013/03/27/an-attempt-to-understand-bioshock-infinites-brilliant-and-bizarre-ending/>>, accessed 02/05/2013.

players will be different, all of these differences will conform to Elizabeth's description of the lighthouses:

There are a million, million worlds. All different and all similar. Constants and variables. There's always a lighthouse, there's always a man, there's always a city... Sometimes something's different... yet... the same.⁸²

Unlike *The Witcher 2*, the decisions *BioShock Infinite* presents players give the illusion that their choices will be significant, although there is no "number tracking" morality system in the game.⁸³

One such example is the choice between the bird or cage brooch that Elizabeth asks Booker to select—a choice that seems meaningful but ultimately only changes what Elizabeth wears on her choker for the game's duration. A more potent example is the time-limited decision to throw a ball at either the racist character Fink or the couple on stage (see Figure 3.18). The player has to make their decision quickly at three levels: they may weigh the potential consequences in terms of gameplay, they may consider what their version of Booker would most likely do (role-playing), or they may base the decision on their own personal response. Kevin Levine has reported that a staggering 100% of people who had played the **demo** of the game had chosen to risk exposing Booker's identity in this dangerous situation rather than appear racist.⁸⁴ Again, whichever decision the player makes, Booker is caught and identified by the police before he actually throws the ball.

⁸² See Wong, 'BioShock Infinite is a Metacommentary on the Nature of Video Game Storytelling.' The idea is similar to that explored by Borges in 'The Library of Babel', in which the infinite informational capacity renders the knowledge contained within useless.

⁸³ See interview with Ken Levine: outsidexbox, 'BioShock Infinite - Ken Levine Interview and Gameplay - Ending, Racism and Quantum Mechanics,' on *YouTube* (13/12/2012), retrieved from <<http://www.youtube.com/watch?v=8EbsuHrC0c0>>, accessed 02/05/2013.

⁸⁴ See Mark Ward, 'Playing Games with Culture,' *BBC News* (March 2013), <<http://www.bbc.co.uk/news/technology-21925124>>, accessed 07/05/2013. At the North American Conference on Video Game Music (Youngstown State University, 18/01/2014), Sarah Pozderac-Chenevey presented a paper entitled 'Breaking the Circle: Analyzing the Narrative Function of Music Manipulation in *BioShock Infinite*', that links racial issues presented in the game directly with the use of appropriated music—in particular, Chopin's *Nocturne in E-flat*.



Figure 3.17: Illusion of Choice—the Bird or the Cage



Figure 3.18: Is Booker a Racist, or the Player?

Ben Popper argues that the significance in presenting the player with (the illusion of) choice is that it offers the player a chance to participate in the narrative in an active way.⁸⁵ All the significant decision moments in the game are presented as a commentary on this fashionable

⁸⁵ See Ben Popper, 'BioShock Infinite makes great art from America's racist past and political present.'

narrative construct, but in *BioShock Infinite* they all turn out to be largely irrelevant.⁸⁶ As Wong puts it,

Players are led by prior experiences with similar games to think that these binary choices matter with respect to the game's narrative, and by subverting these expectations by making these choices almost irrelevant to the game's conclusion, *Bioshock Infinite* raises questions about whether or not truly meaningful choice can really exist within a designer-driven narrative.⁸⁷

Indeed, there are numerous moments throughout the game where the player is not afforded choices, but is forced to either accept the game's narrative progress and continue, perhaps with something they do not like—such as taking the preacher's hand and initiating the forced baptism scene—or to stop playing altogether. This creates a certain unease when the only “option” on the screen is so often, ‘Press F’.⁸⁸ This self-reflectiveness creates a commentary not only on the games narrative themes, but also on the nature of the medium itself with its innate conflict between linear algorithm and non-linear choice. (*The Stanley Parable* [Davey Wreden, 2011] received critical acclaim for its self-conscious narrative in which the narrator toys with the player about the confines of the game's rules.⁸⁹) Returning to the terminology of Chapter 2, the illusory choices presented by the game are a construct that allows the player to be Reader of the Text but, simultaneously, the player does not have autonomy in the fictional world:

In the game's final sequence, Booker finds himself reliving the moment he sold his daughter to repay his debt. Booker tries to resist, and players, disgusted at this grim realization, will too. “You can wait as long as you want, eventually you're going to give him what he wants. You don't leave this room until you do.” says Elizabeth. At this point, the only option available to the player is to pick up the baby and hand it over to the man at the door, players cannot fight back or escape the room. Players will inevitably surrender the baby, since they cannot progress until they do. Both Booker, and the player, are rendered incapable of making any other decision by the very nature of *Bioshock Infinite's* method of storytelling.

⁸⁶ See S. Brad, ‘BioShock Infinite post-review: Your questions answered,’ on *gamespersecond.com* (March 2013), retrieved from <<http://gamespersecond.com/2013/03/bioshock-infinite-post-review-your-questions-answered/>>, accessed 07/05/2013.

⁸⁷ See Wong, ‘Bioshock Infinite is a Metacommentary on the Nature of Video Game Storytelling.’

⁸⁸ On the first *BioShock* and the illusion of choice, see dmax3901, ‘Bioshock and Postmodernism - A man chooses,’ on *giantbomb.com* (September 2012), retrieved from <<http://www.giantbomb.com/profile/dmax3901/blog/article-bioshock-and-postmodernism-a-man-chooses/96189/>>, accessed 29/04/2013.

⁸⁹ See, for example, Alejandro Aagaard, ‘Why “The Stanley Parable” Almost Granted Videogames “Art” Status,’ on *What Culture* (2012), retrieved from <<http://whatculture.com/gaming/why-the-stanley-parable-almost-granted-videogames-art-status.php>>, accessed 26/05/14.

Aside from surrendering the baby after waiting for an indefinite time, the only other option available to the player is to quit the game.

So is Booker an autonomous being, or is he controlled by an omniscient force called the Player? Perhaps the question being raised here is whether players are autonomous beings or simply actors controlled by the invisible hand of game design. The interactive nature of the medium would suggest that players are truly autonomous and capable of making rational decisions that influence the world of the game, but all this is an illusion. It is impossible for true, meaningful autonomy to exist in a single-player narrative game because the authored nature of fiction prohibits players from making choices outside of the ones that a game's system allows.⁹⁰

The multiverse aspect of the narrative also suggests that such choices are meaningless as a universe will exist in which the consequences of each permutation has been fully realized. (This line of thought also remains at the end of the game, bringing into question the usual paradoxes associated with narratives that explore the manipulation of 'timelines'.)

The concept of "ludonarrative dissonance"—now an important component of videogame theory—was originally coined by Clint Hocking to describe the disconnection between *BioShock's* gameplay and narrative.⁹¹ Hocking employed the term in a negative sense because he felt the game was mocking him by removing real freedom of choice (or rather, the developers were). He argued that the dissonance created a violation of aesthetic distance and thereby broke the immersion for the player. In their 2013 Freeplay Independent Games Festival presentation, Marigold Bartlett and Stephen Swift recognized a problem with the term:

The word "dissonance" comes from music theory. And as music theory tells us, dissonance is pregnant with resolve... So when an immersive sim, which has simulatory systems and a character narrative, has a dissonance between those things which is left unresolved, it implies an incompleteness... The idea of ludonarrative dissonance implies a utopian future where these things can resolve themselves.⁹²

Noting that the terminology had been misused as an invitation for facile criticism of games that did not appear to 'resolve', they then went on to defend it:

⁹⁰ See Wong, 'BioShock Infinite is a Metacommentary on the Nature of Video Game Storytelling.'

⁹¹ See Clint Hocking, 'Ludonarrative Dissonance in Bioshock: The problem of what the game is about,' on *clicknothing.typepad.com* (07/10/2007), retrieved <http://clicknothing.typepad.com/click_nothing/2007/10/ludonarrative-d.html>, accessed 11/08/2014.

⁹² Transcript available online: Sam Crisp, 'How To Destroy Everything, Or, Why Video Games Do Not Exist (And How This Is Great For Everyone),' on *samcrisp.tumblr.com* (01/10/2013), retrieved from <<http://samcrisp.tumblr.com/post/62718211352/how-to-destroy-everything-or-why-video-games-do-not>>, accessed 11/08/2014.

For many people, truths are inarticulate. For many people, the world doesn't work the way people tell them it does. For many people, dominant narratives our culture is fed are certainly dissonant with the systems they have agency within.

We don't want to develop a critical language which subjugates truths that are incoherent, that are told on their own terms, and that are nonetheless very true.

... games [like *BioShock*] are destructive. Not because they refute what mainstream games do, but because they refute the very dichotomies we've constructed to judge mainstream games. Shallow concepts of aesthetics which portray ourselves as superior to others.

The musical metaphor is a useful and provocative one, but the dissonance may not require a resolution in the sense Hocking desired. In *BioShock Infinite*, the music, narrative and gameplay combine to form a dissonant "whole" that takes these issues further still.

Like the music to *BioShock* and *BioShock 2*, there is a juxtaposition between modernist string-dominant orchestral music and early twentieth-century piano and vocal popular music (often from diegetic sound sources).⁹³ The preference for a small string ensemble for Elizabeth's theme (a descending scale scored for three violins, violas and cellos) was emphasized early on.⁹⁴ (Its use in both 'The Girl in the Tower' and especially 'Elizabeth' is reminiscent of the opening to Schoenberg's *Verklärte Nacht*.) In all three games, the aim was to produce the music like a film score and largely avoid dynamic music. As a result, all the cues are put in 'deliberately by hand'.⁹⁵ However, in *BioShock Infinite*, the audio team experimented with combat dynamic music (such as 'headshot sync stingers').⁹⁶ The synchronization of elements of gameplay with musical events is the most remarkable aspect of this system, as there is no larger scale mobile structure.

⁹³ See Dan Seitz, 'Gary Schyman Talks To Us About Scoring "BioShock Infinite",' on *uproxx.com* (25/03/2013), retrieved from <<http://www.uproxx.com/gammasquad/2013/03/interview-gary-schyman-on-scoring-bioshock-infinite/>>, accessed 02/05/2013.

⁹⁴ See Jennifer Bosier, 'Composer Interview: Garry Schyman Discusses "BioShock: Infinite" Soundtrack,' on *Forbes* (25/03/2013), retrieved from <<http://www.forbes.com/sites/jenniferbosier/2013/03/25/composer-interview-garry-schyman-discusses-bioshock-infinite-soundtrack/>>, accessed 02/05/2013. See also Jon Leo, 'Sound Byte: Meet the Composer - BioShock Series,' on *gamespot.com* (24/03/2013), retrieved from <<http://uk.gamespot.com/features/sound-byte-meet-the-composer-bioshock-series-6405858/>>, accessed 02/05/2013.

⁹⁵ See *gametrailers.com*, 'Composing BioShock Infinite,' on *gametrailers.com* (04/072013), retrieved from <<http://www.gametrailers.com/full-episodes/i7tvjh/backtrack-composing-bioshock-infinite>>, accessed 02/05/2013.

⁹⁶ See part 2 of *gametrailers.com*. 'Composing BioShock Infinite.'



Figure 3.19: 'Lighter Than Air' (Violin Solo)

The majority of the non-diegetic music consists of relatively sparse and short incidental cues, usually triggered on entry to a new location. The track 'Lighter than air', for instance, is heard only once in the game when leaving the Welcome Center through the doors and entering New Eden Square—the first real sighting of the floating city.⁹⁷ The melody for solo violin (transcribed as Figure 3.19) evokes the openness of the famous cor anglais theme from the second movement of Dvorak's 'New World' Symphony. However, it is overlaid with music in a different key and altogether different style, with string effects (solo violin harmonics with celesta and flutes) reminiscent of those in the final scene of Strauss's *Der Rosenkavalier*.⁹⁸ Joseph E. Jones references these orchestral effects as the 'rose chords' because they signify the silver rose central to the plot of that opera, but he also notes that they 'transport the listener to a musically distant

⁹⁷ A voxophone (short in-game recording) indicates that Comstock uses this phrase to describe Columbia. See 'Bioshock Infinite Wiki,' on *Imagine Games Network*, retrieved from <<http://uk.ign.com/wikis/bioshock-infinite/Voxophones>>, accessed 22/05/2013.

⁹⁸ Omair Shariq has rescored the cue to see the effect that removing these 'dissonances' (as he describes them) has. He suggests that it might be what a player would here in an 'uncorrupted' Columbia. See Omair Shariq, 'Lighter Than Air - Gary Schyman - Bioshock Infinite OST (Without Dissonant Undertones),' on *YouTube* (08/04/2013), retrieved from <<http://www.youtube.com/watch?v=nvZmlkHxPTw>>, accessed 22/05/2013.

realm where indeed, time seems to stand still.⁹⁹ The combination of these sounds in the Strauss is not unlike the overlaying of harmonic worlds found in part three ('The Housatonic at Stockbridge') of Charles Ives' *Three Places in New England: An Orchestral Set*.

Der Rosenkavalier's idiomatic *fin de siècle* confusion of hope and melancholy is also evident in Scott Joplin's *Solace*, an excerpt of which forms the basis for the loading screen music (see Figure 3.20).¹⁰⁰ In the game, the track has been manipulated to sound like an old recording. The mood it encapsulates is heightened by the 'very slow march time' tempo marking, and the repetitive nature of this seemingly light-hearted merry-go-round piece almost mocks the player/protagonist for the futility of their efforts.

⁹⁹ See Joseph. E. Jones, "*Der Rosenkavalier*": *Genesis, Modelling, and New Aesthetic Paths* (Dissertation, University of Illinois, 2009), p. 152.

¹⁰⁰ The excerpt was transcribed from Scott Joplin, *Solace* (New York: Seminary Music Co., 1909), retrieved from <[http://imslp.org/wiki/Solace_\(Joplin,_Scott\)](http://imslp.org/wiki/Solace_(Joplin,_Scott))>, accessed 03/05/2013.

The image displays a musical score for the piece "Solace" by Scott Joplin, specifically an excerpt from measures 55 to 83. The score is written for Piano (Pno.) and is in 2/4 time. It begins at measure 55 with the tempo marking "Very slow march time" and a dynamic of *mp*. The tempo changes to "A tempo" at measure 60. The score includes various musical notations such as treble and bass clefs, notes, rests, and dynamic markings (*mf*, *mp*, *f*). There are first and second endings at measures 66-67 and 83-84. The piece concludes with a "Fine" marking at the end of the second ending.

Figure 3.20: *Solace* by Scott Joplin (excerpt)

Music also plays an important role in the game's narrative, as Kevin Levine explains, 'It's very intentional... We don't break the fourth wall a lot, we're not commentating in that way. But music is an important aspect of what's going on in that world.'¹⁰¹ In other words, whilst strictly speaking the game does not 'break the fourth wall' by contravening the diegetic fiction and communicating directly to the player (aside from gameplay features such as the HUD, which in this game is relatively minimalist), it nevertheless provides a layer of "meta-fiction" as part of the narrative. Music is a crucial part of the story as well as the storytelling. The clue the elderly Elizabeth gives to Booker is an image of a birdcage, which she realizes is a musical code: the notes C-A-G-E played on a special musical device summons Songbird. Similarly, when Booker first arrives at the lighthouse at the very start of the game, in order to enter the room at the top and take the rocket up into Columbia, he must ring three bells in a sequence laid out for him on a card in a box of his possessions. Ringing the bells summons Columbia to the lighthouse, and Booker hears a loud musical response coming from the clouds as the light changes and the city draws near.

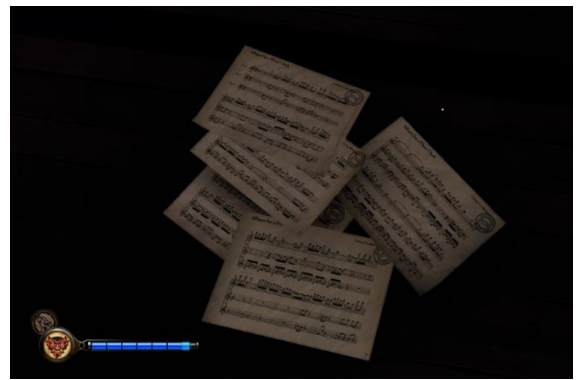


Figure 3.21: Albert Fink's 'Musical Melodies'

¹⁰¹ Kevin Levine cited by Chris Kohler, 'If You Leave Me, I'll Die: 9 Popular Songs That Unlock BioShock Infinite's Mysteries,' *Wired* (August 2012), retrieved from <http://www.wired.com/gamelife/2012/12/bioshock-infinite-music/>, accessed 26/04/2013.

More significant than these examples is that the player often finds Tears throughout the city which are signalled by anachronistic popular music.¹⁰² When Booker and Elizabeth come across a Tear emitting the original 1969 Creedence Clearwater Revival song, 'Fortunate Son', Elizabeth remarks that she doubts anybody has heard the song before—ironic given its use in many films and videogames based on the Vietnam War. In the latter half of the game, the player comes across Albert Fink's (the brother of Jeremiah Fink) 'Magical Melodies' music house (see Figure 3.21) in which there are clues that indicate that Fink was able to appropriate music from 'the future' through a Tear in his studio and rearrange it into 1912 pastiche.¹⁰³ Elizabeth, it turns out, was wrong, as 'Fortunate Son' can later be heard reimagined as a negro spiritual sung by a member of the Vox Populi under a pair of gallows, although this seems an unlikely target audience for Fink, a member of the Founders' establishment. Now rather than an anti-war song, it has become a reflection on the revolution and a commentary on the injustice and poverty suffered by the minorities. Similarly, the use of R.E.M.'s 'Shiny Happy People' in another part of the game (the Hall of Heroes) turns the original song's sarcastic adoption of the titular phrase from a Chinese leaflet (published after the 1989 Tiananmen Square Massacre) back on its head as a fresh work of propaganda.¹⁰⁴

¹⁰² Many players have commented on the usage of anachronistic music in the game as a 'postmodern' strategy. See, for instance, Sean Hamill, 'The Postmodern Crisis of Bioshock Infinite,' on *shamillartntech.blogspot.co.uk* (April 2013), retrieved from <<http://shamillartntech.blogspot.co.uk/2013/04/the-postmodern-crisis-of-bioshock.html>>, accessed 29/04/2013.

¹⁰³ It was his success that led his brother to appropriate technologies such as Raptor's Plasmids and Big Daddys which in Columbia are reinvented as Vigors and Handy men.

¹⁰⁴ Arguably, R.E.M.'s intention also backfired, as the subtle sense of irony has been largely lost without the prerequisite knowledge.



Figure 3.22: Fink's Plagiarized 'God Only Knows!'

Perhaps the most recognizable example early on in the game is the use of The Beach Boys' 'God Only Knows!' reimagined as a turn-of-the-century Barbershop quartet.¹⁰⁵ The song's lyrics (which ask what the singer would do if they were to lose their lover) are obviously pertinent to Booker's predicament. However, it is presented more as if praising Comstock, the Prophet, for his gift of Columbia. As another example, 'Everybody Wants to Rule the World' by Tears For Fears is heard as a simple song with piano accompaniment playing in Jeremiah Fink's home. The lyrics promote action over indecision, accurately summarized by the Latin aphorism, *carpe diem*.¹⁰⁶ Like 'God Only Knows', the song is reflective of various themes and pertinent to the positions of several characters. (For instance, Jeremiah Fink's attempts to hire Booker to keep control of his workforce and maintain his industrial monopoly.) The song also highlights one of the core themes

¹⁰⁵ Originally, in an early trailer for the game, instead of referencing Fink's involvement, the barbershop quartet was advertised as 'The Bee Sharps', a reference to the 'Be Sharps' quartet from *The Simpsons*.

¹⁰⁶ See Brittany Vincent, 'The Caged Bird Sings: Five Stirring Musical Covers in BioShock Infinite,' on *gamespot.com* (April 2013), retrieved from <<http://uk.gamespot.com/features/the-caged-bird-sings-five-stirring-musical-covers-in-bioshock-infinite-6407144/>>, accessed 08/05/2013.

of the game in that both the Founders and the Vox Populi rebelled in order to create a ‘better world’ but in practice they both end up adopting equally ruthless methods.

All of these songs can be classified as diegetic in one sense or another, and even music such as August Wilhelmj’s ‘Air on the G String’ (an arrangement of Bach’s ‘Air’ from *Suite No. 3 in D major*, BWV 1068) is emitted from a locatable sound source—radios and phonographs are pervasive across the game. The following tables (3.4 and 3.5) list all the pre-existing and anachronistic music in the game respectively. Table 3.6 lists the original music composed for the game’s soundtrack, the bulk of the non-diegetic music to the game.¹⁰⁷ Even here there is some crossover, in that the song ‘Will the Circle Be Unbroken’ is at one point performed by Elizabeth and Booker in the game but is also heard in various other non-diegetic renditions.

¹⁰⁷ Tables 3.4, 3.5, and 3.6 were derived from <http://bioshock.wikia.com/wiki/BioShock_Infinite_Soundtrack>, accessed 07/05/2013.

Title	Artist/Composer	Year	Location
Wild Prarie [sic] Rose	Ommie Wise	Original	The Fair, stage
Ain't We Got Fun?			
It All Depends On You			
[Ain't She Sweet]			
I'm Wild About That Thing			
Canon in D Major	Johann Pachelbel	1694	Comstock House, projector room
'Air on the G String' ('Air' from <i>Suite No. 3 in D major</i> , BWV 1068)	J.S. Bach	1723	Cult of John Wilkes Booth
K626. 'Requiem Mass in D minor'; "Lacrimosa" (Alt. wobbly version, Lady Comstock humming version), "Agnus Dei", "Rex Tremendae", "Confutatis"	Wolfgang Amadeus Mozart	1791 (composed)	Hall of Heroes Lady Comstock's Grave, Battle (Siren humming it)
Nocturne in E-flat major, Op. 9, No. 2	Frederick Chopin	1832	Finkton
Bridal Chorus	Richard Wagner	1850	Raffle Stage, First Prize #77
The Bonnie Blue Flag	Polk Miller Harry McCarthy (original)	1861 (original)	Outside the entrance to The Hall of Heroes
(Give Me That) Old-Time Religion	Polk Miller	1873	Lighthouse at the beginning
Will the Circle Be Unbroken	Courtnee Draper (vocals), Troy Baker (guitar), Ada R. Habershon (lyrics), Charles H. Gabriel (composer)	1907 (original)	VGA trailer
Shine On, Harvest Moon	Ada Jones and Bill Murray Nora Bayes, Jack Norworth (original)	1908 (original)	In The Fellow Travellers Bar
Watermelon Party	Polk Miller	1909 (original)	
Solace	Scott Joplin	1909	Loading Screen
After You've Gone	Jessy Carolina Marion Harris (vocals), Henry Creamer (lyrics), Turner Layton (composer)	1918 (original)	Menu, Monument Island, Comstock House
(What Do We Do on a) Dew-Dew-Dewey Day	Charles Kayle & His Orchestra Tin Pan Alley (original)	1927	
Me And My Shadow	Al Jolson, Billy Rose, and Dave Dreyer (original)	1927 (original)	
St. James Infirmary Blues	Duke Ellington	1928	Shantytown
Makin' Whoopee	Eddie Cantor (original)	1929 (original)	In The Salty Oyster Bar
Button Up Your Overcoat	Helen Kane (vocals)	1929	Emporia Towers, abandoned bar
Goodnight, Irene	Jim Bonney (Producer), Bill Lobley (vocals) Lead Belly (original)	1932 (original)	The Raffle
Just a Closer Walk With Thee	Courtnee Draper (vocals), James Edwards (piano) Unknown, The Selah Jubilee Singers (original)	1941 (original)	

Table 3.4: Pre-existing Music

Title	Artist	Year	Location
La Mer (Beyond the Sea)	Django Reinhardt	1949	Rapture
Tainted Love	Scott Bradlee (piano), Miche Braden (vocals) Ed Cobb, Gloria Jones (original)	1964 (original)	Graveyard Shift Bar in Shantytown
God Only Knows	The Beach Boys (original) as sung by A Mighty Wind barbershop quartet	1966 (original)	Early in the game and End Credits
Shake Sugaree	Elizabeth Cotten (guitar), Brenda Evans (vocals)	1967 (original)	Shantytown
Fortunate Son	Creedence Clearwater Revival (original) Jessie Carolina (Vocals)	1969 (original)	Sung by woman in Shantytown during successful uprising, Plaza of Zeal in a Tear (Original)
Girls Just Want to Have Fun	Jim Bonney (calliope) Cyndi Lauper (original)	1979 (original)	Battleship Bay (Calliope), Memorial Gardens in a Tear (Original)
Everybody Wants to Rule The World	Scott Bradlee (vocals, piano) Tears for Fears (original)	1985	E3 2011 Gameplay, Demo, Phonograph at Fink's House
Shiny Happy People	Tony Babino R.E.M. (original)	1991	Exiting gondola to Comstock's House

Table 3.5: Anachronistic Music

N°	Title	Artist(s)/Composer(s)	Additional performer(s)
1.	Introduction	Ken Levine	Performed by Oliver Vaquer, Jennifer Hale, Troy Baker
2.	Welcome to Columbia	G. Schyman, J. Bonney	
3.	Will The Circle Be Unbroken – choral version	A. Habershon, C. Gabriel	Arranged by Marc Lacuesta Maureen Murphy (vocal soloist)
4.	Lighter Than Air	G.Schyman	
5.	Lutece	G. Schyman	
6.	The Battle For Columbia I	G. Schyman, J. Bonney	
7.	The Girl In The Tower	G. Schyman	
8.	Elizabeth	G. Schyman	
9.	The Songbird	G. Schyman	
10.	Rory O'More/Saddle The Pony	S. Lover	Rodney Miller (fiddle) Elvie Miller (piano, accordion) David Porter (guitar)
11.	The Battle For Columbia II	G. Schyman	
12.	The Readiness Is All	K. Levine, J. Bonney	
13.	Lions Walk With Lions	G. Schyman	
14.	Will The Circle Be Unbroken	A. Habershon, C. Gabriel	Courtnee Draper (vocal) Troy Baker (guitar)
15.	Unintended Consequences	G. Schyman	
16.	The Battle For Columbia III	G. Schyman	
17.	Family Reunion	G. Schyman	
18.	Solace	S. Joplin	Duncan Watt (piano)
19.	The Battle For Columbia IV	G. Schyman	
20.	The Battle For Columbia V	G. Schyman	
21.	Let Go	G. Schyman	
22.	Doors	G. Schyman	

23.	The Girl For The Debt	G. Schyman	
24.	Back In The Boat	G. Schyman	
25.	AD	G. Schyman	
26.	Smothered	G. Schyman	
27.	Baptism	G. Schyman, J. Bonney	
28.	Will The Circle Be Unbroken – full version	A. Habershon, C. Gabriel	Courtnee Draper (vocal) Troy Baker (guitar)

Table 3.6: Soundtrack

Brittany Vincent says that Cyndi Lauper’s 1979 ‘Girls Just Wanna Have Fun’ is ‘a jubilant expression of womanhood and living on your own terms, and it’s an important (if cheesy) song celebrating feminism and choice.’¹⁰⁸ The arrangement is heard as steam organ music at the Battleship Bay beach, Elizabeth’s first taste of freedom. The game’s pervasive drowning symbolism (Booker drowns Comstock with Elizabeth standing by, Elizabeth drowns the over-protective Songbird with Booker standing by, and finally, Elizabeth drowns Booker, with alternate versions of herself standing by¹⁰⁹) is here juxtaposed with Booker and Elizabeth’s dramatic arrival at Battleship Bay: after the player’s first encounter with Songbird (who destroys the tower which houses the main siphon), they fall into the sea where Songbird cannot endure the pressure for long. For once in the game, the water saves Booker and Elizabeth and they arrive on the beach in an area of safety, providing dramatic relief after the previous sequence.

The decision to include both pastiche arrangements as well as snippets of these original songs has an impact beyond that of storytelling. The Tears that emit futuristic sound-worlds do not simply provide an explanation for Fink’s success, they also realize multi-dimensional/temporal experiences. These Tears are not placed conveniently for side-by-side comparisons, but rather like Easter eggs, they are placed off the main pathways of the game (although they are not difficult to discover). Often, there is a considerable interval between hearing a pastiche and an

¹⁰⁸ Brittany Vincent, ‘The Caged Bird Sings.’ See also Gillian G. Gaar, *She’s a Rebel: The History of Women in Rock & Roll* (Seattle: Seal Press, 2002), pp. 264–5.

¹⁰⁹ Even Comstock’s prophetic propaganda employs similar terminology to describe Elizabeth’s destruction of New York: ‘The Seed of the Prophet shall sit the throne and drown in flame the Mountains of Man.’

excerpt of the original. The arrangements are carefully balanced between being appropriate for the period (the music of Stephen Foster was one clear inspiration¹¹⁰) and local context in the game and reflecting the original music enough to be meaningful to an attentive player with the prerequisite knowledge. Players have also discussed how their experience of hearing these songs outside of the game is irrevocably infused with new references. This phenomenon is not exclusive to videogame music, or film music for that matter, but *BioShock Infinite* plays on the issue and offers an additional layer of richness.

The game also plays with the player outside of the game experience itself through the inclusion of Easter eggs.¹¹¹ One musical example of this “meta-temporal playing” is the discovery that when an unusual ambient sound heard in certain areas around the game is recorded and then sped up outside of the game, it turns out to be an excerpt from another song, hidden in a ‘temporal fold’.¹¹² The somewhat obscured lyrics are approximately ‘In times far... they will catch up to... us to relive.’ This is obviously the sort of detail that is deliberately crafted for a particular type of audience, as it could not be discovered in the game. However, once one is aware of it, it does have an impact on the game experience.

William Gibbons describes these popular songs as a functioning part of the game’s aesthetic in that they evoke the time period of the setting (and in doing so, dichotomize the optimistic American dream with the dystopian reality) and often act as ‘title-based musical puns’

¹¹⁰ See Leo, ‘Sound Byte: Meet the Composer - BioShock Series.’

¹¹¹ There are also **backmasked** messages such as the reversed lines ‘... Give me my Romeo; and, when he shall die, Take him and cut him out in little stars, And he will make the face of heaven so fine...’ from Shakespeare’s *Romeo and Juliet*, heard when Booker gains the ‘Possession’ Vigor in ‘The Welcome Center’ [sic]. Other similar easter eggs are documented in GamesSeriesNetwork, ‘BioShock Infinite Easter Eggs and Secrets,’ on *YouTube* (20/04/2013), retrieved from <<http://www.youtube.com/watch?v=ObNh8Zr6gsc>>, accessed 07/05/2013.

¹¹² See cakechieveables, ‘Bioshock Infinite - Music Hidden in Ambient Noise (Easter Egg),’ On *YouTube* (5/04/2013), retrieved from <http://www.youtube.com/watch?annotation_id=annotation_768866&feature=iv&src_vid=pK74rxBDd-I&v=pK74rxBDd-I>, accessed 26/04/2013.

characteristic of silent-film cinema pianists.¹¹³ Andra Ivănescu has highlighted that the song ‘Will the Circle Be Unbroken’ is the game’s theme song in that it contains the core narrative beyond the superficial relevance of its lyrics:

Booker DeWitt and Zachary Hale Comstock are revealed to be different versions of the same person, brought together by Rosalind/Robert Lutece. He then chooses to save the world by sacrificing himself, thus ‘breaking the circle’ and preventing any versions of himself from continuing to live. The lyrics of the song are, as with ‘Beyond the Sea’ taken literally, at least to begin with. The salvation seems to lie in the sky; that is, in the city of Columbia. However, as is revealed at the end of the game, the original, metaphorical meaning seems in fact to be the appropriate one and salvation might lie not in the actual sky but in death and the heaven that Booker might reach after it.¹¹⁴

Ivănescu does not note the reason Fink is named as the ‘composer’ for the anachronistic music but suggests that the music ‘operates like the Proustian madeleine, acting as a constant reminder to the player’, who notices anachronisms that their character cannot.¹¹⁵ In fact, the narrative goes deeper; Booker *can* become aware that the songs are taken from another time and place, and even remarks on their alien soundworlds. Nevertheless, Ivănescu quite reasonably links the breaking of the fourth wall with Kristine Jorgensen’s argument that videogames characteristically or inherently blur diegetic/extradiegetic spaces.¹¹⁶ Through a comparison of *BioShock Infinite* to Plato’s *Republic*, Roger Travis reconciles the game’s “ludonarrative dissonance” as an invitation ‘to imagine a way to make ethical choices without presuming that those choices are freely made.’¹¹⁷ In other words, the game challenges the player to contemplate their actions within and outside of the narrative. Ivănescu concludes that although the songs in *BioShock Infinite* do not

¹¹³ William Gibbons, ‘Wrap Your Troubles in Dreams: Popular Music, Narrative and Dystopia in BioShock,’ *Game Studies* 11/3 (December 2011), retrieved from <<http://gamestudies.org/1103/articles/gibbons>>, accessed 04/08/14.

¹¹⁴ Andra Ivănescu, ‘The Music of Tomorrow, Yesterday! Music, Time and Technology in *BioShock Infinite*,’ *Networking Knowledge* 7/2 (2014): 51–66.

¹¹⁵ Other papers on *BioShock Infinite* have also accepted the premise that the characters in the game are unaware of the source of the music. See, for example, Enoch Jacobus, ‘There’s Always a Lighthouse: Commentary and Foreshadowing in the Diegetic Music of BioShock: Infinite,’ at *North American Conference on Video Game Music* (Conference Paper, Youngstown State University, Youngstown, Ohio, 18/01/2014), retrieved from <<http://thetheoretician.weebly.com/presentations.html>>, accessed 11/08/2014.

¹¹⁶ See Kristine Jorgensen, ‘On transdiegetic sounds in computer games,’ *Northern Lights: Film & Media Studies Yearbook* 5/1 (Intellect: September 2007): 105–117.

¹¹⁷ Roger Travis, ‘BioShock in the Cave: Ethical Education in Plato and in Video Games,’ in *Ethics and Game Design: Teaching Values through Play*, eds. K. Schrier and D. Gibson (Hershey: Information Science Reference, 2010), pp. 86–101.

fulfil specific ludic or narrative functions, they simultaneously enhance and subvert immersion. In this, they are crucial to the aesthetic make-up of the medium.

Conclusion

Throughout this chapter, I have been considering the relationship between the “art status” of videogames and the aesthetic prerequisites for a postmodern interpretation of their temporal structures. It is no coincidence that these games are also the most often cited as examples of videogames as art, at least by those players invested in gaming culture; one blogger even suggested that the form of *BioShock Infinite* is a ‘narrative fugue’ that places it on a par with ‘one of the rare “games” like Chess or Go, [or] one of the Masterworks like the 9th Symphony or the Ulysses, the Magic Flute, Guernica, the Sistine Chapel, Hamlet, Faust, 2001: A Space Odyssey that are considered a cultural heritage of mankind [sic].’¹¹⁸ Avoiding the tendency towards master narratives of other narrative-based forms, videogames such as *The Witcher 2* exemplifies a “proof of principle” for non-linear narratives in the medium. Although in all videogames a tension

¹¹⁸ See Andreas Ahlborn, ‘THE ART OF THE FUGUE - Bioshock Infintite's narrative interpreted as a contrapuntal Composition,’ on *Gamasutra* (July 2013), retrieved from <http://gamasutra.com/blogs/AndreasAhlborn/20130407/190006/THE_ART_OF_THE_FUGUE__Bioshock_Infintites_narrative_interpreted_as_a_contrapuntal_Composition.php>, accessed 02/07/2015. For *Shadows of the Colossus*, see Chris Roper, ‘Shadow of the Colossus Review,’ on *Imagine Games Network* (October 2005), retrieved from <<http://uk.ign.com/articles/2005/10/17/shadow-of-the-colossus-review>>, accessed 18/04/2013. For *Journey*, see Keith Stuart, ‘Is Journey a game or a piece of interactive art?,’ in *The Guardian* (15/03/2012), retrieved from <<http://www.guardian.co.uk/technology/gamesblog/2012/mar/15/journey-game-or-interactive-art>>, accessed 25/04/2013. For *Bioshock Infinite*, see Ben Popper, ‘“BioShock Infinite” makes great art from America’s racist past and political present.’ For *The Witcher 2*, see Seth Schiesel, ‘Exploring Moral Consequences, the Obvious and the Unintended,’ in *New York Times Review* (June 2011), retrieved from <http://www.nytimes.com/2011/06/22/arts/video-games/witcher-2-new-from-cd-projekt-red-in-poland-video-game-review.html?_r=0>, accessed 26/04/2013. For a contrasting perspective to Tavinor’s *The Art of Videogames*, see the rather unsatisfactory conclusions of Robert Ebert, a film critic, in ‘Okay, kids, play on my lawn,’ on *rogerebert.com* (July 2010), retrieved from <<http://www.rogerebert.com/rogers-journal/okay-kids-play-on-my-lawn>>, accessed 18/04/2013. See also Theresa Devine, ‘Considering Games as Art,’ on *YouTube* (20/08/2011), retrieved from <<http://www.youtube.com/watch?v=1WJodVhPru0>>, accessed 18/04/2013. See also Smithsonian, *2012 Art Exhibition of videogames*, retrieved from <<http://americanart.si.edu/exhibitions/archive/2012/games/winninggames.pdf>>, accessed 18/04/2013.

remains between the requirements of gameplay and a meaningful narrative (games such as the *Max Payne* series achieve an interesting compromise between action and an interactive film noir), games such as *BioShock Infinite* demonstrate a degree of self-reflectiveness that to an extent transcends such limitations. While *BioShock* does not attempt to achieve the non-linear narrative through a meaningful decision-consequence system, the ways in which it explores the limits of the medium through narrative and gameplay arguably provide a more interesting commentary. The music in *The Witcher 2* and *BioShock Infinite* signal what is important about these games. Both offer very different realizations of postmodern approaches to temporality. The game discussed in the next chapter will provide a third perspective.

Chapter Four

Landscapes in *Skyrim*



Figure 4.1: A Characteristic Landscape from *Skyrim*¹

Hold Infinity in the palm of your hand
And Eternity in an hour.

—William Blake, *Auguries of Innocence*

Through his characteristically paradoxical aphorisms, Blake's unorthodox Christian vision reminds the reader of man's desire to connect the physical, temporal world with the transcendental. The relationships he draws between time and space are profoundly subjective and are contingent on

¹ This image was taken from <<http://forums.nexusmods.com/index.php/topic/529632-the-beauty-of-skyrim-unedited-in-game-screenshot-1>>, accessed 14/03/2013.

the state of mind of the beholder. Drawing on recent work on music and landscape, I will show how the music to the fantasy RPG, *The Elder Scrolls V: Skyrim* (Bethesda Game Studios/Bethesda Softworks, 2011), composed by Jeremy Soule, contributes to a particular sense of landscape.² Landscape has been the subject of much discussion within videogame studies and musicology, though there has been little crossover to date.³ My conception is primarily geopolitical, as the landscapes in question are very closely associated with a particular socio-cultural group within the game's world—the 'Nords'. However, the music also creates a specific sense of time and place, or rather, a state of consciousness in which awareness of these dimensions is somehow heightened. Before any substantial interpretations can be made regarding the music, it is first necessary to gain an understanding of the landscape and what it means to the people of the region. This involves its geography and climate, and its history, mythology and lore.

Forging Identities

Skyrim is the fifth major release in a large and popular series of games, *The Elder Scrolls*. The lore and history of the games is extensive, in a similar vein to J. R. R. Tolkien's *The Lord of the Rings*, but because there is no centralized compilation aside from a fan-run wiki website, references

² The composer is also in the process of completing his first symphony, 'The Northerner'. See <<http://www.kickstarter.com/projects/499808045/from-the-composer-of-skyrim-soule-symphony-no-1>>, accessed 18/02/2014.

³ For instance, see Mary Fuller and Henry Jenkins, 'Nintendo® and New World Travel Writing: A Dialogue,' in *Cybersociety: Computer-Mediated Communication and Community*, ed. Steven G. Jones (Thousand Oaks: Sage Publications, 1995), pp. 57–72. See also Bjarke Liboriussen, 'The Landscape Aesthetics of Computer Games,' in *Conference Proceedings of the Philosophy of Computer Games 2008*, ed. by Stephan Günzel, Michael Liebe and Dieter Mersch (Potsdam: University Press 2008): 144–155, retrieved from <<http://pub.ub.uni-potsdam.de/volltexte/2008/2458/>>, accessed 18/02/2014. See also Sarah C. Davachi, 'Looking inward: La Monte Young, Arvo Pärt, and the spatiotemporal dwelling environment of minimalist music,' *Divergence Press 1* (March 2013), retrieved from <<http://divergencepress.com/Journal/JournalIssue/tabid/85/ID/6/Looking-inward-La-Monte-Young-Arvo-Part-and-the-spatiotemporal-dwelling-environment-of-minimalist-music.aspx>>, accessed 08/07/2013. The Hearing Landscape Critically research network has hosted a number of conferences that have engendered renewed interest in this area. See <<http://www.music.ox.ac.uk/research/projects/hearing-landscape-critically/>>, accessed 18/02/2014.

across the various games are often vague and sometimes contradictory.⁴ The games (see Table 4.1) are set predominantly on the continent of Tamriel (Figure 4.2) of the fantasy world, Nirn. The continent is divided into nine provinces, each home to a native race. The term “race” is problematic used to mark out various different sentient species with similarly troubling distinctions to those made in *The Witcher*. As *Skyrim* is the northernmost province of Tamriel, its geography and climate are similar to that of the Scandinavian Peninsula. The indigenous Nords who live there still are clearly modelled on Scandinavian culture, and specifically, the Vikings. An Empire based in Cyrodiil still attempts to assert its authority across Tamriel.



Figure 4.2: Tamriel

1994	<i>TES: Arena</i>	2006	<i>TES IV: Oblivion</i>
1996	<i>TES II: Daggerfall</i>		<i>TES Travels: Oblivion</i>
1997	<i>An Elder Scrolls Legend: Battlespire</i>	2006	<i>TES IV: Knights of the Nine</i>
1998	<i>TES Adventures: Redguard</i>	2007	<i>TES IV: Shivering Isles</i>
2002	<i>TES III: Morrowind</i>	2011	<i>TES V: Skyrim</i>
	<i>TES III: Tribunal</i>	2012	<i>TES V: Dawnguard</i>
2003	<i>TES III: Bloodmoon</i>		<i>TES V: Hearthfire</i>
	<i>TES Travels: Stormhold</i>		<i>TES V: Dragonborn</i>
2004	<i>TES Travels: Dawnstar</i>	2013	<i>TES Online</i>
	<i>TES Travels: Shadowkey</i>		

Table 4.1: *The Elder Scrolls* (TES) Release Timeline

⁴ Conflicts in the history of the Elder Scrolls can be found here: <<http://elderscrolls.wikia.com/wiki/Timeline>>. Both Figures 4.2 and 4.3 were taken from the ‘Cosmology’ section of *The Elder Scrolls Wiki*, retrieved from <http://elderscrolls.wikia.com/wiki/The_Elder_Scrolls>, accessed 20/09/2012.

The world order of *The Elder Scrolls* is founded on a classic dualism. However, unlike the unequal Abrahamic good and evil, the games draw on a variety of Eastern and pre-Christian Western traditions with a concept of order and chaos. This duality has various parallels in the games, the most clearly stated being that of stasis (unchanging continuity) and force (unknowable energy, or change).⁵ Tamrielic religions tend to be based on creation myths that invariably start with the interaction of order and chaos. Like real-world mythologies, these absolutes are deified in mythological characters whose procreation or conflict brings about the creation of the world. This world includes several separate dimensions or planes of existence, including the realm of Oblivion (ruled by immortal god-like beings known as Daedra) and the mortal realm of Mundus (see Figure 4.3). The concept of time is generally conceived of as a synthesis of continuity and change.

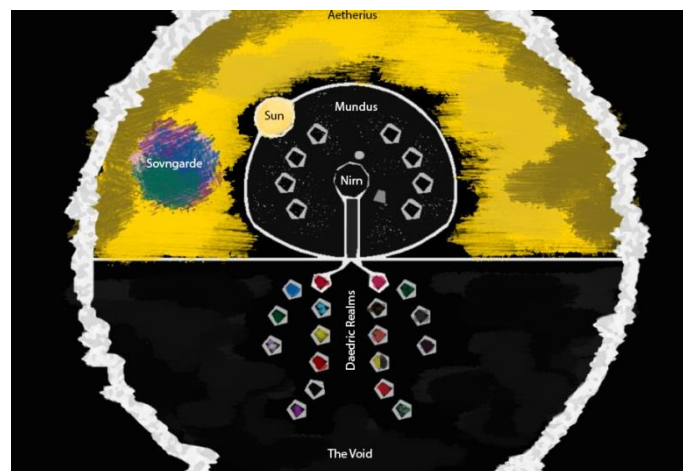


Figure 4.3: *The Elder Scrolls* Universe

The Aedra ('our ancestors') were the original spirits of the world who participate in these creation myths, alongside their negation, the Daedra ('not our ancestors').⁶ These spirits are known throughout Tamriel as the Eight Divines, a pantheon of six gods and three goddesses:

⁵ See *The Elder Scrolls Wiki*, retrieved from <http://elderscrolls.wikia.com/wiki/The_Elder_Scrolls>, accessed 21/09/2012.

⁶ "Aedra" is derived from Scandinavian "Aeldre", meaning elders.

Akatosh	The Dragon God of Time and chief god
Arkay	God of Life & Death
Dibella	Goddess of Beauty
Julianos	God of Wisdom and Logic
Kynareth	Goddess of Nature
Mara	Mother Goddess and Goddess of Love
Stendarr	God of Mercy
Zenithar	God of Work and Commerce

Table 4.2: The Eight Divines

However, worship of the Eight Divines was not consistent across Tamriel, with various factions adopting their own versions of the creation myth, and some disregarding the Eight altogether. Such religious divisions are a crucial part of the geopolitical landscape of the game.

Landscapes in *Skyrim*

The physical geography of the region and its location on the continent is another important context to understanding the people. Playing on Louis Althusser's *For Marx*, Doreen Massey's argument *For Space* counters the traditional modernist conception of space as a static political landscape and rests on three propositions:

First, that we recognise space as the product of interrelations, as constituted through interactions, from the immensity of the global to the intimately tiny.

Second, that we understand space as the sphere of the possibility of the existence of multiplicity in the sense of contemporaneous plurality; as the sphere in which distinct trajectories coexist; as the sphere therefore of coexisting heterogeneity.

Third, that we recognise space as always under construction. Precisely because space on this reading is a product of relations-between, relations that are necessarily embedded material practices which have to be carried out, it is always in the process of being made. It is never finished; never closed.⁷

These premises are also relevant to both the ludic and musical sense of aesthetic play in the player's construction of the form of the virtual world and its possible meanings. For example, when analysing a videogame's structure it is important to keep in mind that the virtual space is

⁷ See Doreen Massey, *for space* (London: Sage, 2005), p. 9.

constructed by individual players in specific play sessions. Massey notes that what is special about a place, or landscape, is ‘the unavoidable challenge of negotiating a here and now (itself drawing on a history and a geography of thens and theres); and a negotiation which must take place with and between both human and nonhuman.’⁸ In *Skyrim*, this is a negotiation between the player (through their avatar) and the virtual landscape, as well as other AI characters, human and nonhuman. It is also a multimedia negotiation, not an exclusively visual one, although the visual mode is often privileged. Michel Chion, for example, argues that music adds value to the audio-visual contract by simply generating ‘empathetic’ or ‘anempathetic’ effects.⁹ However, Chion does not provide a clear distinction between music and sound effects, an issue that will be picked up in Chapter 5.

Figure 4.4 is one of many unofficial (fan-made) maps of *Skyrim*, marking the principal geographic features, as well as most of the cities and settlements in the game.¹⁰



Figure 4.4: *Skyrim*

⁸ Massey, *for space*, p. 140.

⁹ See Michel Chion, *Audio-Vision: Sound on Screen* (New York: Columbia University Press, 1994), pp. 8–9.

¹⁰ This map was created by Gamebanshee and was retrieved from <<http://www.gamebanshee.com/skyrim/mapofskyrim.php>>, accessed 20/02/2013.

Four out of five of Tamriel's highest mountains are located within Skyrim, 'The Throat of the World' (**H6**) being the highest and most important. There are other mountain ranges, a large coastline, tundra, pine forests and lakes. Early in the region's history, the province was divided up into nine geopolitical regions known as holds, each governed by a jarl: Eastmarch, The Pale, Winterhold, Hjaalmarch, Haafingar, The Reach, Whiterun, Falkreath, and The Rift (these are also outlined on the map above).



Figure 4.5: A Farmstead in Whiterun

At the heart of Skyrim lies Whiterun, bordering six of the eight holds.¹¹ Giants roam the plains and herd great mammoths. Fertile plains support satellite farms around the huge central hill of Whiterun (**G5**) and provide most of the food for Skyrim. While the landscapes of Skyrim are diverse, they also make up a coherent, self-consistent whole. However, even the plainer and less

¹¹ Figure 4.5 was taken from <<http://skyrim.nexusmods.com/images/11342>>, accessed 14/03/2013.

obviously attractive locales have an idealized, Romantic feel to them. Virtual landscape imagery in videogames is invariably idealized and has long been prized by players, many of whom make their own timelapse videos to showcase the virtual world, often accompanied by selected numbers from the soundtrack.¹² These tributes to the game's landscapes are themselves real (and virtual) creative acts in which players position their characters and cameras at certain times of day in the virtual world in order to frame specific compositions for their screenshots or video captures.

Of course, the attention requirements of actual gameplay form an important counter-balance. Much like the real world, time, space and safety from external distractions are all prerequisites for the enjoyment of landscape. That said, the "combat" music employed in this game is surprisingly in keeping with the overarching sense of space (and time) of the saga. There is no attempt to synchronize it to the action as was the aim in *Crysis*, and therefore, cues are more generic and inevitably become repetitive. As such, they provide a simple ludic signal to alert the player to danger, and then immediately fade into the peripheries of the player's attention. Furthermore, the surroundings are often an important part of the gameplay, especially when encountering difficult enemies. For instance, it is often necessary to take cover or break the line-of-sight between the player's character and their target. The nature of RPG combat also means that, while attention is required, it is of a different sort to the combat systems in an FPS, for instance. What is represented on screen is just that—a representation of the actual mathematical fight between the player's statistics (their health, damage, armour etc.) and those of their enemies. It is for this reason that RPGs often look unrealistic to the extent that swords

¹² See, for instance, the *Skyrim* page on the website, *gamesLandscape.com*, retrieved from <<http://gameslandscape.com/skyrim-landscape>>, accessed 15/09/2012. Further collections of images can be found here: <<http://imgur.com/a/Tfm4S>>, accessed 20/09/2012. Figure 4.6 was taken from the thread <<http://www.overclock.net/t/1185158/gamepur-skyrim-icenhancer-mod-confirmed-first-jaw-dropping-screenshot/30>>, accessed 14/03/2013. See also TheCrypticMedia, 'Skyrim - The Beauty of Skyrim,' on *YouTube* (24/11/2011), retrieved from <<http://www.youtube.com/watch?v=a5kYV8J6EBY>>; SlimReaction, 'Skyrim Beautiful Graphics Montage|HD| (Mods,High Settings),' on *YouTube* (13/12/2011), retrieved from <<http://www.youtube.com/watch?v=bgdU4EUUpZk8>>; Sc Klan Srbija, 'Beautiful Skyrim World,' on *YouTube* (17/11/2011), retrieved from <<http://www.youtube.com/watch?v=s2OmDOdPSeY>>; Wrenthereaper, 'Oh Gorgeous Skyrim,' on *YouTube* (20/11/2011), retrieved from <<http://www.youtube.com/watch?v=plQLZsB5nfU>>, all accessed 15/11/2012.

occasionally swing in broad motions and then pause, waiting for the **cooldown** before the player can activate another attack. In any case, there is certainly a case to be made that landscape is in the minds of the majority of players, if not at all times.

Bethesda's game engine for *Skyrim*, The Creation Engine, can be accessed through their community modding toolkit—Creation Kit. This is often used as a tool to adjust the time-of-day, lighting, and other features in order to generate particular images without having to travel about in game itself. In addition, the Creation Kit allows modders to add fan-made modifications (mods) to the game, one of the largest categories of which is visual effects. These modders spend a great deal of time and effort creating free mods for other players to enjoy, improving everything from textures and foliage to fluid physics and lighting. Landscape, in this context, is a subjective experience, and not merely an objective geographic location.¹³ This implies that the subject-position of the beholder is more than simply a point from which their perspective radiates, rather it also frames certain qualities of the visual landscape.¹⁴ Although some images are customized in the Creation Engine, many images of *Skyrim* are taken from within the game, through the perspective of the protagonist—an avatar for the player, customized by the player.

It should be noted that similar attention is paid by the community to the musical and other audio aspects of the game, although this specialty undoubtedly occupies fewer people. Regardless, for *Morrowind*, *Oblivion* and *Skyrim*, there are various fan-made mods that add new original music and even the ability to perform musical instruments in the game.¹⁵ However, for

¹³ 'In his volume on the future of environmental criticism, Lawrence Buell differentiates place and space, writing that space is merely a "spatial location" whereas a place has gathered meaning either from an individual, or an imagined community. The role of world history then, is to document the "history of space becoming place." Buell's perspective is primarily literary, but I contend that music fills the cultural role that he describes.' Lucille Mok, 'An Iron Road from Sea to Sea: Oscar Peterson's *Canadiana Suite* (1964),' at *Hearing Landscape Critically* (Conference Paper, University of Oxford, 2012).

¹⁴ As Carina Venter puts it, 'Landscape... need not be constructed as an object to be feasted upon by an "eye", but as a living space folded into and flowing from the body of an "I".' Carina Venter, 'The Twilight of Vision: an "Eye" for an "I",' at *Hearing Landscape Critically* (Conference Paper, University of Oxford, 2012).

¹⁵ For a selection of audio mods for *Skyrim*, see <<http://skyrim.nexusmods.com/mods/searchresults/?cat=61>>, accessed 20/03/13.

the most part this functionality does not impact greatly on the issue of landscape and in any case, lies outside of the original gameplay experience.

Landscape sunsets commonly composed by players often frame a post-Nietzschean image very much in keeping with the player's saga.¹⁶ As is common in modern fantasy sagas such as this, in order to present a realistic and consistent virtual world with serious and adult themes, the developers sometimes force the player to make decisions with ambiguous or controversial moral components, often depriving them of sufficient information.¹⁷ The player's choices, whether they be black and white, or more often shades of grey, tends to push the protagonist's personal narrative towards a Nietzschean *Übermensch*—a superman somehow beyond or superior to those who misguidedly hold on to clear-cut moral codes. This is in accordance with the lore of the game, which is based on an amoral dualistic system, despite the fact that moral aspects pervade the religious and political elements of the game.¹⁸ Some players advocate role-play by prescribing a particular character for their avatar from the outset and then attempt to conform to the most likely decisions that character would make. Many more only play games

¹⁶ Nietzsche's analogy of the sun as God—the deterministic source of world order—is a crucial part of his explanation of the death of God. He viewed the world as aesthetic art in the sense that it does not follow pre-determined rules. His poem, *Also Sprach Zarathustra* (1891) also uses landscapes with mountains and sunsets as metaphors. See Mark Tanzer, *On Existentialism* (Belmont, CA: Thomson Wadsworth, 2008), pp. 23–5. Such landscape imagery can also be found in works such as Delius's *Song of the High Hills*. See Daniel Grimley, 'Music, Landscape, and the Sound of Place: Hearing Delius's *Song of the High Hills*,' at *Hearing Landscape Critically* (Conference Paper, University of Oxford, 2012).

¹⁷ One such example requires the player to choose between continuing the questline that leads to them joining the assassins of the 'Dark Brotherhood', or abandoning it altogether. In order to join and not fail the quest, the player is asked to interrogate three people tied up, on the knees with execution hoods over their heads. The player is told that only one of the three is a real target for the Dark Brotherhood, the other two are 'innocent'. Although the player would never know it without replaying the sequence multiple times, killing any of the three will allow them to continue and join, although the exact combination of kills will result in a different response from Astrid, the Dark Brotherhood representative. Although it seems the player can simply walk away, the only other option to avoid the risk of killing an innocent victim is actually to kill Astrid herself. This results in the termination of the 'Join the Dark Brotherhood' questline and the start of 'Destroy the Dark Brotherhood' instead. (The player could not have reached this point without killing other characters and making similar decisions.) See information on the quest 'With Friends Like These...' at <http://elderscrolls.wikia.com/wiki/With_Friends_Like_These...>, accessed 22/03/2013.

¹⁸ It is also not too much of a stretch to consider certain elements from the history of Tamriel such as the original defeat of Alduin, and even the player's final victory as a form of Eternal Recurrence, though linking this directly with the repetitive nature of the music may be less helpful.

through once, if they complete them at all, and therefore aim to explore the most interesting content, regardless of whether joining a guild of assassins, for example, is incongruous with the character's honourable warrior background.

These images then represent the creative or artistic impulse of a significant proportion of the gaming population. However, the framework provided by the game still holds true—the creative palette is very much limited. The panoramas below (Figures 4.8–10¹⁹) are presented here to give an impression of the variety of the region's landscapes, landscapes that are very much part of the player's sense of their character's saga.

¹⁹ All Panoramas taken from Umran Ali, 'Skyrim Panarama's [sic],' on *Emergent Landscapes* (04/04/2012), retrieved from <<http://emergentlandscapes.wordpress.com/2012/04/04/skyrim-panoramas/>>, accessed 20/09/2012.

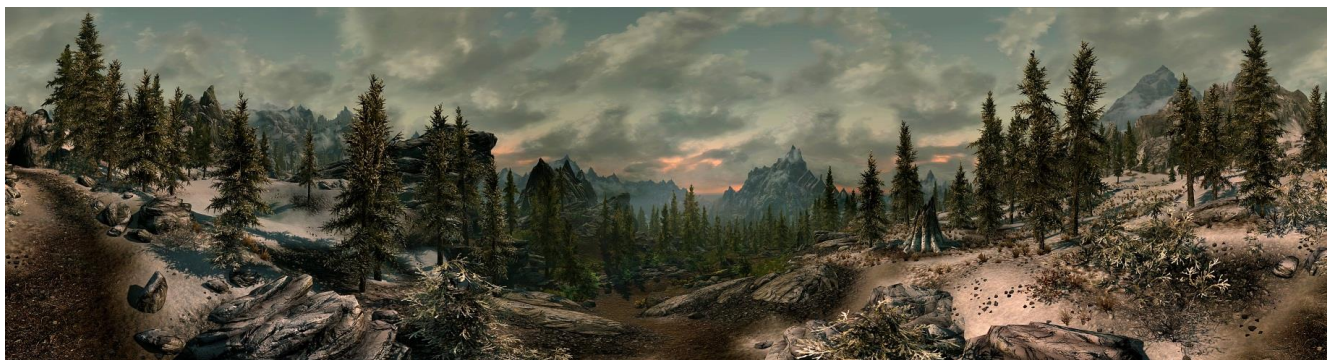


Figure 4.6: *Skyrim* Panoramas

The Player's Saga

In the immediate history before the game, the Jarl of Windhelm, Ulfric Stormcloak rebels against the Empire in order to liberate Skyrim from a ban of Talos worship. Ulfric kills Skyrim's puppet High King in a duel, provoking the Empire into deploying an Imperial Legion to the province. The player is thrown into the middle of a Civil War (generally referred to as the 'Stormcloak Rebellion' by the Empire and the 'Great Uprising' by the Stormcloaks).²⁰ The protagonist's personal background is completely blank, and the player's experience of the game consists of an individual's saga in the tradition of the great Norse narratives. The player's character is 'Dragonborn'—that is, born with the soul of a dragon and the ability to converse with them in their powerful language. By absorbing defeated dragon souls in the game, the player can learn 'words of power' that make up *Thu'um*, or 'Shouts'. The main quest is to defeat a powerful dragon known as Alduin the World Eater, the Nordic God of Destruction. Alduin serves as the negation of the Nine, a corrupted servant who loosely parallels the fall of Lucifer.²¹ The structure of the main **questline** is split into three acts:

Act I	Act II	Act III
Unbound	A Blade In The Dark	The Fallen
Before the Storm	Diplomatic Immunity	Paarthurnax*
Bleak Falls Barrow	A Cornered Rat	Season Unending*
Dragon Rising	Alduin's Wall	The World-Eater's Eyrie
The Way of the Voice	The Throat of the World	Sovngarde
The Horn of Jurgen Windcaller	Elder Knowledge	Dragonslayer
	Alduin's Bane	Epilogue

Table 4.3: *Skyrim's* Main Questline²²

²⁰ Most of Skyrim's citizens clearly side with one faction or the other, but many distrust Ulfric's motives even while supporting aspects of his cause. The difference in name styles is indicative of certain characters' affiliations and origins. Ulfric's commander, Galmar Stone-Fist plans operations from the Stormcloak stronghold, Windhelm's Palace of Kings. General Tullius is the Imperial Military Governor of Skyrim, based at Castle Dour in Solitude. His commander is Legate Rikke, although he has a more obviously Nordic ally in Jarl Elisif the Fair of Haafingar—Ulfric's rival for the position of High King. It was initially the Imperials who belittled Ulfric's followers by calling them 'Stormcloaks' but the name was since adopted as a badge of honour.

²¹ The name is reminiscent of Tolkien's 'Anduin' River in Middle Earth. Figure 4.11 was taken from <<http://www.pcgamewallpapers.net/1920x1200/tes-v-skyrim-by-dead-end-thrills-01.jpg>>, accessed 14/03/2013.

²² The asterisk marks quests that are conditional or optional. See <[http://elderscrolls.wikia.com/wiki/Main_Quest_\(Skyrim\)](http://elderscrolls.wikia.com/wiki/Main_Quest_(Skyrim))>, accessed 20/03/13.



Figure 4.6: A Dragon

The player is, for the most part, free to travel about wherever they choose across *Skyrim*, acting on, postponing or rejecting outright numerous quests besides those of the main story. These sub-quests and side-stories provide the player with the necessary ‘experience’ to **level up** and become more powerful, in turn allowing them to make progress on the epic narrative. As such, developers take a great deal of care over the pacing and balance. In RPGs such as this, the player is expected to complete the **grind** by defeating enemies of a certain difficulty, exploring, and completing sub-quests. The payoff for this is granted in the form of experience, powers, and items such as weapons and armour. We will return to this precarious balancing act later in this chapter, and in the Epilogue.²³

Critically, the player is afforded a choice of race before starting the game, affecting their likely alignments to various factions, although not dictating their choices in the branching narrative.

²³ Some players have expressed disappointment at the dramatic climax of *Skyrim*. See, for example, Alessandro, ‘Hater’s Corner—*Skyrim*’s Climax Is A Joke,’ on *egamer.co.za* (27/01/2012), retrieved from <<http://egamer.co.za/2012/01/haters-corner-skyrims-climax-is-a-joke>>, accessed 21/09/2012.

Early on, they are given the chance to leave Helgen either with the Imperials or with the Stormcloaks, setting the tone for the rest of the game. The game is designed so that the player can affect events, or let things run their course. As a result, they are offered the chance to influence others and make both moral and political decisions, some straightforward, others considerably more complex and unclear.

The Nords have developed their own distinctive culture.²⁴ Known for their love of music and mead, they are tolerant if not welcoming of outsiders. In fact, they hold a strong prejudice against Elves of all kinds, blaming them for any misfortunes suffered. The 'Old Ways' and superstitions are still followed in the 'Old Holds' of the northeast (Winterhold, Eastmarch, The Rift, and The Pale), such as the tradition of young warriors (wearing animal skins) spending weeks in the mountains during winter in order to hunt their first 'ice wraith' and gain full citizenship status. Their names are often based on omens.

The Nords value reputation and honour above all else in order to secure a place in the Hall of Valor in Sovngarde, the Nordic afterlife.²⁵ However, both of these are reliant on deeds achieved in life, and most often, physical prowess and bravery and skill in combat. Indeed, it is said that 'a Nord is judged not by the manner in which he lived, but the manner in which he died.'²⁶ The Nords are also revered seamen, crewing merchant fleets from the Northern coast to the whole of Tamriel. Indeed, they originally migrated to Skyrim from Atmora, a separate continent north of Tamriel, after 'the freezing' caused Atmora to become increasingly inhospitable.²⁷ Many traditions held in the 'Old Ways' no longer reflected the present reality of the world at the start of the game, include, for

²⁴ For an overview, see <<http://www.uesp.net/wiki/Lore:Nord>>, accessed 13/03/2013.

²⁵ Though there is no (Gallicised) '-garde' suffice in any Nordic language, in various Scandinavian languages, 'Sovnegard' can be translated to 'a place for sleep', and is loosely based on Asgard, the home of the gods in Norse mythology. See <[http://elderscrolls.wikia.com/wiki/Sovngarde_\(Location\)](http://elderscrolls.wikia.com/wiki/Sovngarde_(Location))>, accessed 27/02/2013.

²⁶ See 'A Dream of Sovngarde', in game book. Retrieved from <http://www.uesp.net/wiki/Lore:A_Dream_of_Sovngarde>, accessed 14/03/2013.

²⁷ See <<http://www.uesp.net/wiki/Lore:Atmora>>, accessed 13/03/2013.

instance, a Dragon cult which led to the first Dragon War, history that had almost become myth. This cult originated in the Atmoran tradition of worshiping animal gods, and it is still believed that those celebrated in the modern Pantheon are just new names for older personifications of various forces.

The Nords also have their own distinctive architecture.²⁸ In an environment like *Skyrim*, it is no surprise that the ship-builders are experts of timber construction. To conserve warmth in extreme weather, Nord buildings usually include rooms underground. Buildings tend to be tall, however, and dragon motifs are a common ornamental feature. Many of their constructions have lasted for thousands of years due to their technique of using wooden supports for a principally stone-based structure.



Figure 4.7: Nordic Architecture at Dragon's Reach, Whiterun

So far, I have highlighted the static construction of the game's geopolitical landscape, as set at the start of the game. I will now consider how musical play can reconstruct this landscape.

²⁸ Figure 4.11 was taken from <http://images.bit-tech.net/content_images/2011/10/elder-scrolls-v-skyrim-preview/whiterun_wlegal.jpg>, accessed 14/03/2013.

Musical Analysis

My analysis starts with an overview of the technical features of the Creation Engine. I then consider the theme music to the game and its relationship with the themes of earlier instalments. This will be followed by an analysis of the diegetic music included in the game—the folk music performed by bards in taverns across the landscape. Finally, I will consider other scholarship on music and landscape pertinent to the music of *Skyrim* and draw further comparisons with Scandinavian programme music.

The Creation Engine: Implementation and Distribution of Musical Materials

In order to understand how the music of *Skyrim* functions it is important to investigate how the musical material (by which I mean the cues, or ‘tracks’, in this context) is distributed and implemented by the Creation engine. The music engine itself does not appear to be as complex as CryEngine. Opening up the main game file (*Skyrim.esm*) in the Creation Kit software allows the user to browse the game’s resources through the ‘object window’. Expanding the ‘Audio’ category in the filters column reveals the following types of audio objects:

- Acoustic Space
- Music Track
- Music Type
- Reverb Parameters
- Sound Category
- Sound Descriptor
- Sound Marker
- Sound Output Model

Selecting ‘Music Track’ reveals a list of all the Music Track in-engine objects (see Figure 4.13 below). These are essentially containers or markers that point to actual music files in the data structure. The music section of the main game’s data structure (excluding any add-ons or new downloadable content) has been replicated as Appendix D and lists every music track in the standard version of the

game in the original file structure.²⁹ In addition to the evidence in Creation Kit, this is revealing as it shows how the cues are categorized. It also tells us that while the official soundtrack consists of a generous 53 tracks (3.6 hours) spread across four CDs³⁰, the actual in game music amounts to 235 tracks with a total duration of approximately 4.3 hours. The data structure, without all the audio files listed is as follows:

\music	\music\explore\reach\palette\night\a
\music\combat	\music\explore\reach\palette\night\b
\music\dread	\music\explore\reach\palette\night\c
\music\dungeon	\music\explore\snow\palette\day\a
\music\dungeon\cave	\music\explore\snow\palette\day\b
\music\dungeon\fort	\music\explore\snow\palette\day\c
\music\dungeon\ice	\music\explore\snow\palette\night\a
\music\explore	\music\explore\snow\palette\night\b
\music\explore\forestfall\palette\day\a	\music\explore\sovngarde\palette\day\a
\music\explore\forestfall\palette\day\b	\music\explore\sovngarde\palette\day\b
\music\explore\forestpine\palette\day\a	\music\explore\tundra\palette\day\a
\music\explore\forestpine\palette\day\b	\music\explore\tundra\palette\day\b
\music\explore\forestpine\palette\night\a	\music\explore\tundra\palette\day\c
\music\explore\forestpine\palette\night\b	\music\reveal
\music\explore\mountain\palette\day\a	\music\reward
\music\explore\mountain\palette\day\b	\music\special
\music\explore\mountain\palette\night\a	\music\special\failure
\music\explore\mountain\palette\night\b	\music\stinger
\music\explore\mountain\palette\night\c	\music\tavern
\music\explore\reach\palette\day\a	\music\town
\music\explore\reach\palette\day\b	

Table 4.4: *Skyrim's* In-Game Music Data Structure

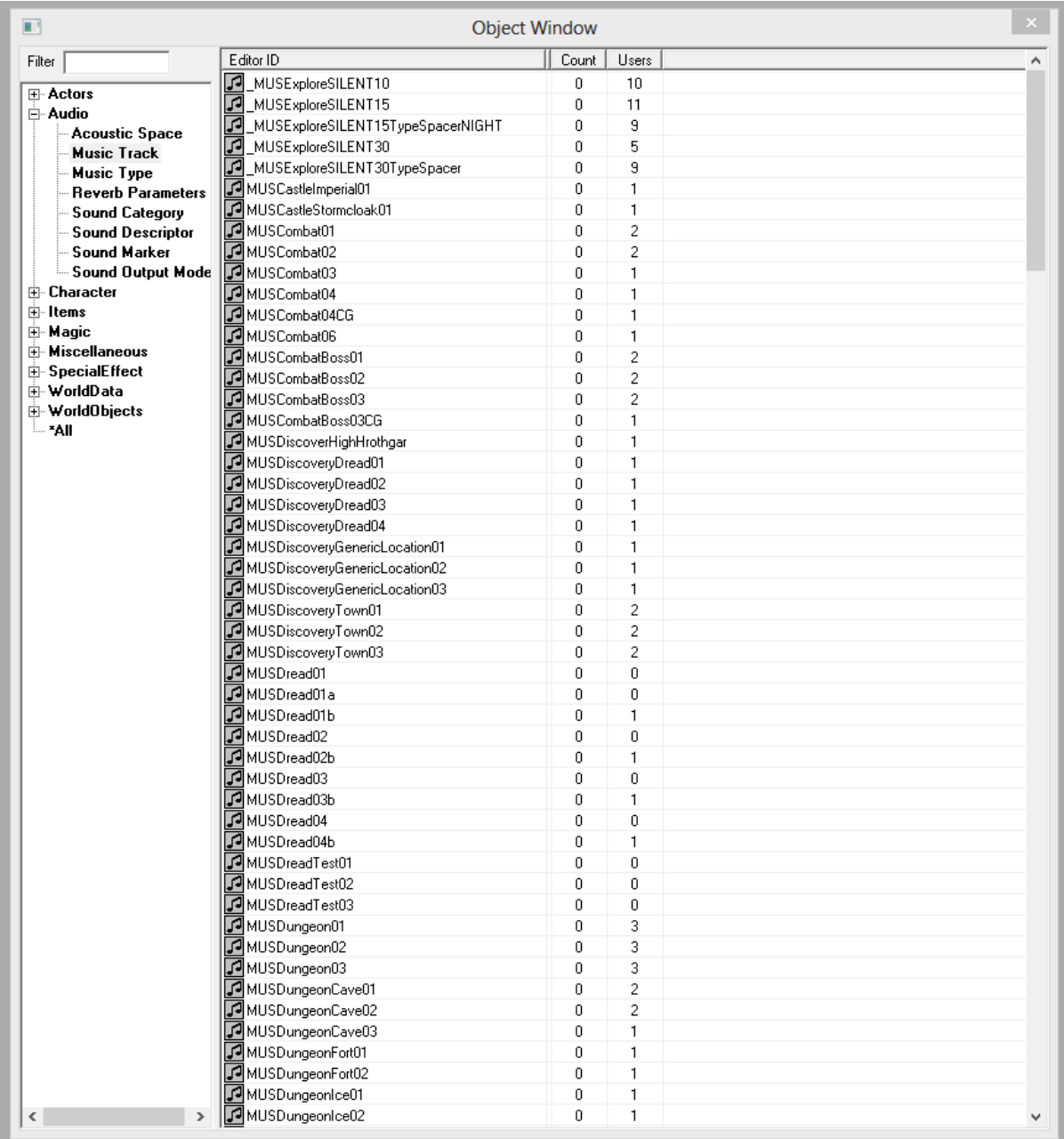
Table 4.4 shows us that there is a default or generic set of audio tracks for when the player is in a **dungeon**, but that specific types of dungeons such as caves, or forts have their own specific set of tracks. These categories should equate roughly with the Music Types in the Creation Kit, although they need not tally up exactly. While some of these folders only contain two or three files, most contain more. Indeed, the 'music' folder contains several audio files that assumedly did not 'fit'

²⁹ All the audio tracks in the data structure prefixed by 'music' were extracted from the compressed game files, and then converted to **wave** format.

³⁰ It should be noted that the fourth disc is of a different nature, containing just one 42-minute track of atmospheric ambient music.

anywhere else or warrant their own unique folder to contain them. The list, therefore, also gives an immediate indication of the categories of music that are most common or voluminous in the game.

It is interesting to note, for instance, that there is a single ‘combat’ folder, whilst music of exploration is more carefully organized into many specific categories, two of which relate to specific regions (‘reach’ and ‘sovngarde’), the others pertaining to the sort of environment or terrain the player is exploring.



Filter	Editor ID	Count	Users
Actors	MUSExploreSILENT10	0	10
Audio	MUSExploreSILENT15	0	11
Acoustic Space	MUSExploreSILENT15TypeSpacerNIGHT	0	9
Music Track	MUSExploreSILENT30	0	5
Music Type	MUSExploreSILENT30TypeSpacer	0	9
Reverb Parameters	MUSCastleImperial01	0	1
Sound Category	MUSCastleStormcloak01	0	1
Sound Descriptor	MUSCombat01	0	2
Sound Marker	MUSCombat02	0	2
Sound Output Mode	MUSCombat03	0	1
Character	MUSCombat04	0	1
Items	MUSCombat04CG	0	1
Magic	MUSCombat06	0	1
Miscellaneous	MUSCombatBoss01	0	2
SpecialEffect	MUSCombatBoss02	0	2
WorldData	MUSCombatBoss03	0	2
WorldObjects	MUSCombatBoss03CG	0	1
*All	MUSDiscoverHighHrothgar	0	1
	MUSDiscoveryDread01	0	1
	MUSDiscoveryDread02	0	1
	MUSDiscoveryDread03	0	1
	MUSDiscoveryDread04	0	1
	MUSDiscoveryGenericLocation01	0	1
	MUSDiscoveryGenericLocation02	0	1
	MUSDiscoveryGenericLocation03	0	1
	MUSDiscoveryTown01	0	2
	MUSDiscoveryTown02	0	2
	MUSDiscoveryTown03	0	2
	MUSDread01	0	0
	MUSDread01a	0	0
	MUSDread01b	0	1
	MUSDread02	0	0
	MUSDread02b	0	1
	MUSDread03	0	0
	MUSDread03b	0	1
	MUSDread04	0	0
	MUSDread04b	0	1
	MUSDreadTest01	0	0
	MUSDreadTest02	0	0
	MUSDreadTest03	0	0
	MUSDungeon01	0	3
	MUSDungeon02	0	3
	MUSDungeon03	0	3
	MUSDungeonCave01	0	2
	MUSDungeonCave02	0	2
	MUSDungeonCave03	0	1
	MUSDungeonFort01	0	1
	MUSDungeonFort02	0	1
	MUSDungeonIce01	0	1
	MUSDungeonIce02	0	1

Figure 4.8: Creation Kit—Music Tracks in the Object Window

Opening up the properties of 'MUSCombat01' displays a simple dialogue box that includes the track type (Palette, Silent or Single), whether or not it has any 'Conditions', the actual audio file name and location within the games data structure, a 'Finale' file name, a list of 'Cue Points', and looping information (see Figure 4.14).³¹

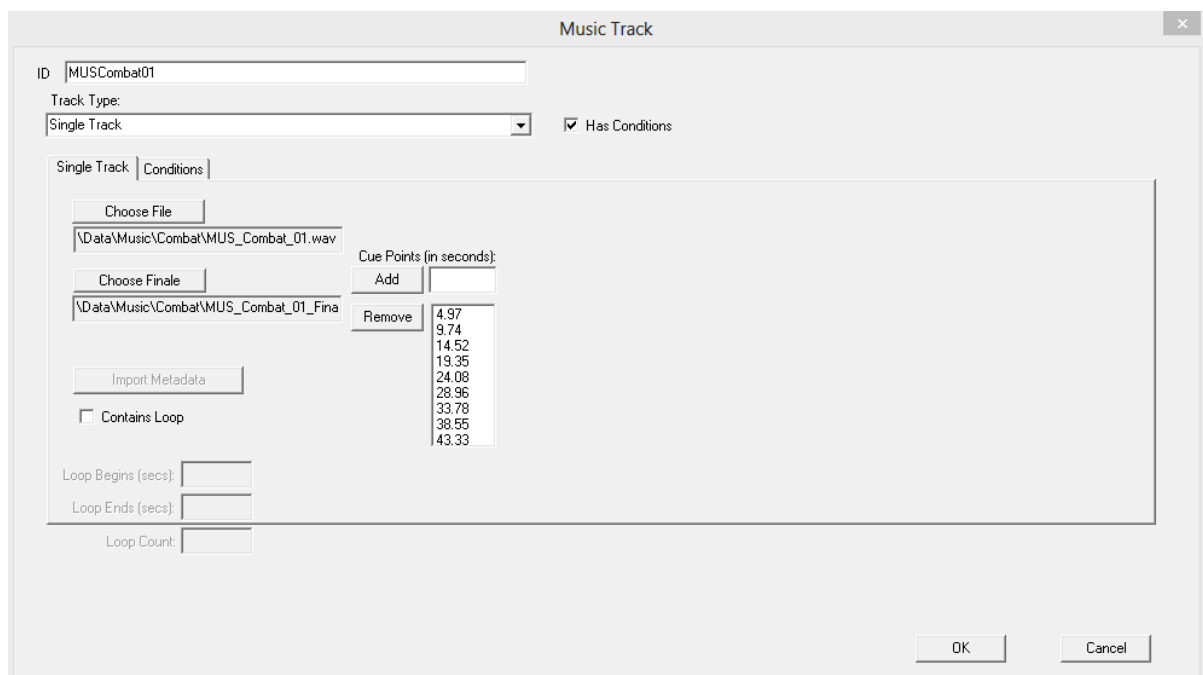


Figure 4.9: Music Track 'MUSCombat01' Properties

Under the 'Conditions' tab, any number of criteria can be specified that limit whether or not the track can be played in a particular circumstance. 'MUSCombat01' has just one condition:

³¹ Palette: multi-layer track with a combination of layers played at random. Silent: to create periods of silence between other track types. Finale and Cue Points: particular with combat music, when combat finishes, the nearest cue point is selected and the music quickly crossfades to the short 'finale' track. For more information on track types, see <http://www.creationkit.com/Music_Track>, accessed 04/04/2013.

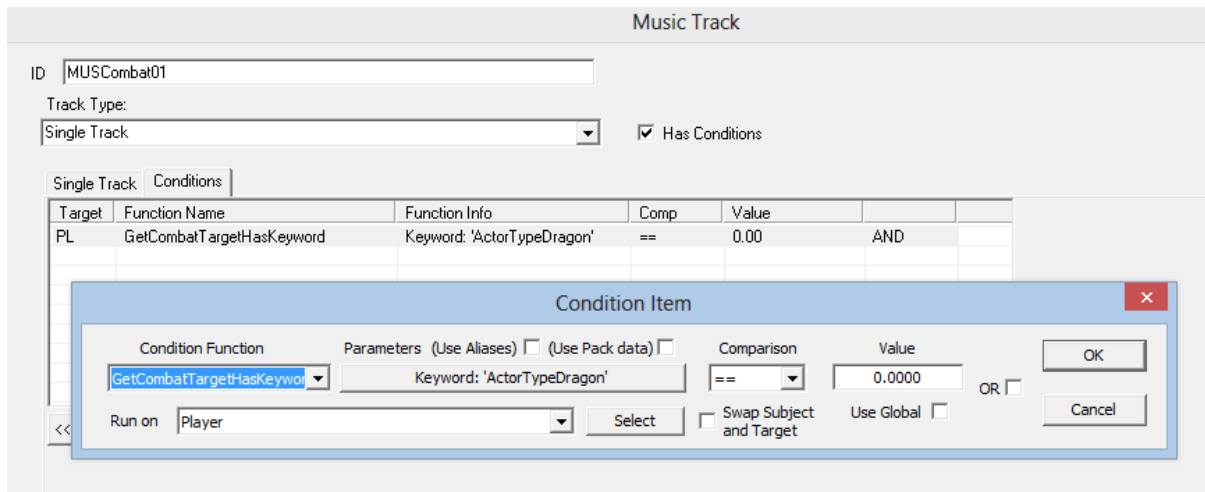


Figure 4.10: Music Track 'MUSCombat01' Conditions

This condition simply ensures that 'MUSCombat01' is not used if the player's combat target is a dragon. (The 'MUSCombatBoss' tracks have conditions that allow them to play when the player encounters this scenario.) Much of this is familiar from the exploration of 'CryEngine' in Chapter 1, although the degree of sophistication available (or at least, 'on display') in the 'Creation Kit' is arguably more limited.

Right-clicking on 'MUSCombat01' in the Object Window also grants access to a 'Use Report' which provides a list of references to contexts in which this music track object is employed (see background of Figure 4.16). These references are to the 'Music Types' found in the filter list of the Object Window. The 'MUSCombat' type listed here has the following properties:

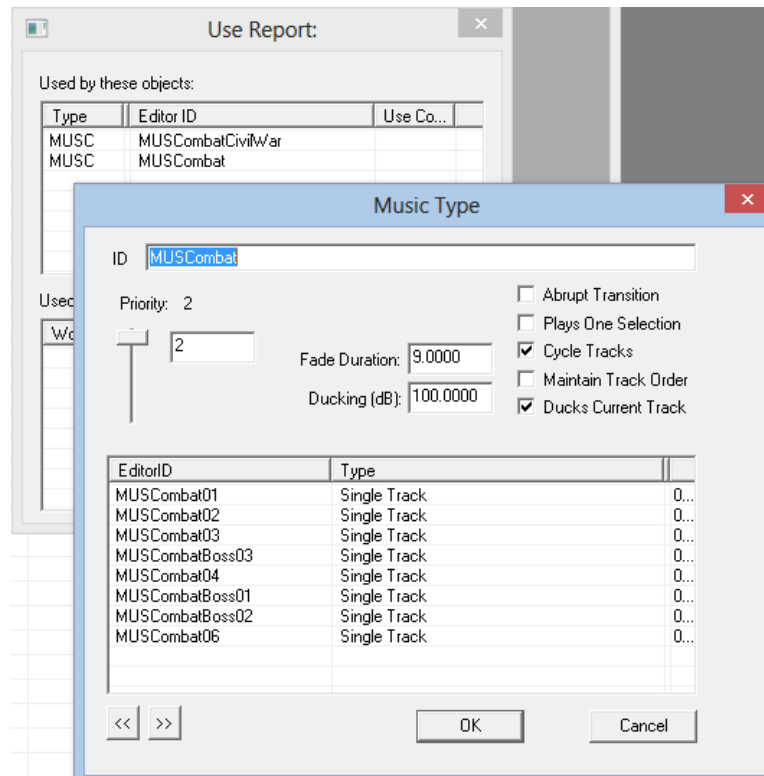


Figure 4.11: Music Type 'MUSCombat' Properties

From this, we can deduce that a 'Music Type' is a form of container that groups together a set of 'Music Tracks', in this case, including 'MUSCombat01', and several others. The Music Type has a priority property that informs the music engine's mixer whether or not it should be heard instead of something else that may be playing. Since this music is clearly combat related, it has a high priority, so it will usually be audible if it is triggered. There are a number of other properties that affect how the engine handles a transition to this Music Type, such as the so-called 'ducking', which in this case reduces the volume of the previous ('current') track by 100dB.

This, alongside the data structure already explained above, is a sufficient understanding of how the musical cues are categorized and employed in the game. It is a traditional system that organizes the audio files into categories based on where and when they will be heard in game and then links them to a cue system. For the most part these cues permit the engine to select a music

track at random from a particular music type, although certain music tracks are conditioned to play only in certain situations, and some for unique events.³²

The Elder Scrolls Theme Music

The extensive official game soundtrack (available for purchase separately) provides a reasonably accurate representation of the music in the game, although cues are often re-recorded. The relative simplicity of the music engine only requires fully composed cues and it is both possible and quite likely that the whole cue (or music track) is heard in game, especially in scenarios when the player is travelling across the landscape on their way to their next objective.³³ The back cover of the soundtrack reads ‘from the icy sounds inspired by the game’s highest mountain peaks to the powerful themes capturing the magnificence of the dragons.’

The first item on the soundtrack is entitled ‘Dragonborn’, a reduction of which is transcribed in its entirety as Figure 4.18 (below).³⁴ It features the title music for the game, and it is heard in the game’s first official trailer.³⁵ (In the data structure, the track is called ‘mus_maintheme’ but it must be treated uniquely by the Creation Engine, as it is not on the list of music tracks.) This makes it an obvious starting point for any musical analysis, as the player is likely to have already heard it even before the game was published. Although this actual track is not played during normal gameplay, the theme and many other features are used. For instance, the track ‘One They Fear’ features a darker and more combative version of the main theme that is referenced in the Creation Engine as

³² It is most likely not a truly random selection, but rather one that ensures variety.

³³ Indeed, the audio director has stated that they did not attempt to link the music too closely to the action. See Bethesda Softworks, ‘The Sound of Skyrim,’ on *YouTube* (03/11/2011), retrieved from <<http://www.youtube.com/watch?v=QLnPwnJJcFQ>>, accessed 06/03/13.

³⁴ Some elements of this transcription have been modified for a more suitably pianistic impression of the overall sound, for example, the LH part of bars 71–8. However, other markings such as the choir’s ‘shouts’ have been made where relevant to the discussion, even though they are not intended for performance.

³⁵ See the official trailer here: Bethesda Softworks, ‘The Elder Scrolls V: Skyrim - Official Trailer,’ on *YouTube* (23/02/2011), retrieved from <<http://www.youtube.com/watch?v=JSRtYpNRoNO>>, accessed 06/03/2013.

'mus_combat_boss_02'. The notes of this version are slightly adjusted to make them more suitable for their particular task, but the structure is similar. Figure 4.17 gives an indication of the rhythmic style:



Figure 4.12: 'One They Fear' (Trumpet Excerpt in C)

I have included some indications on the score regarding instrumentation, when relevant to my discussion. Some entries, transitions and rhythmic details are blurred to a certain extent by the orchestration, in particular the use of suspended cymbals and other percussion. This is also compounded by copious amounts of **reverb** and a normal degree of *rubato*. Indeed, Jeremy Soule's music is recognizable primarily for the ambient character, created in no small part by the use of reverb.³⁶

The music is primarily in B minor, although the basic harmonic vocabulary is built around the common bass-line sequence B-G-A-E. The balanced two-bar pattern is a simple and effective one. The falling third brings about a mode switch that is then answered by the falling perfect fourth. Although the intervals are different, their effect is similar: the chord of E major acts as the dominant of A, an unfinished motion, just as the G major chord opens out from B minor. This makes the whole harmonic unit particularly suitable for extended repetition as a bass ostinato. The harmony also brings about a particularly jarring false relation between G major and the G-sharp mediant of E

³⁶ Soule explains in a podcast about his forthcoming Symphony No. 1 (The Northerner) that the virtual reverb chamber used for *Skyrim* was like placing the performers in a great Gothic Cathedral. See <<http://www.kickstarter.com/projects/499808045/from-the-composer-of-skyrim-soule-symphony-no-1/posts/430577>>, accessed 25/03/2013. Also see Daniel Ran, 'TES V: Skyrim & The Evolution of Soule,' on *danielran.com* (no date), retrieved from <<http://www.danielran.com/blog/tes-v-skyrim-and-the-evolution-of-soule>>, accessed 12/03/2013.

major. The end of the piece moves to the final chord of E major as if it is opening up a new world of possibilities. Indeed, on the trailer, the camera pans upwards over the rocks behind the protagonist bringing into view a large valley with large mountains in the distance. More dragons await in the ruins on the hillside, as if everything seen in the trailer was just a teaser for the saga that awaits the player who explores this vast landscape. Even though the false relation is pervasive, the G-sharp introduced by the horn in bar 105 feels like opening a door, making for the sort of ending that can only work for an introductory piece.

$\text{♩} = 70$ [Shout]

Piano [Bass Drum] *pp*

9 [Horns] *mf*

16 [Choir] *f*

23 [Trumpet]

29 [Trumpet] *p* [Horn] *mp* *pp*

34 [Choir]

40 [Horn & Choir] *f*

This musical score is for a piano accompaniment, consisting of eight systems of music. Each system is labeled 'Pno.' on the left. The score is written in a key signature of one sharp (F#) and a common time signature (C). The systems are numbered 46, 52, 58, 64, 71, 76, 82, and 88. The score includes various musical notations such as notes, rests, and dynamic markings. It also features several performance instructions in brackets: '[Female duet]' at the beginning of system 46, '[Shout]' appearing in systems 46, 52, 82, and 88, '[Horn]' in system 52, and '[Trumpet]' in system 58. Dynamic markings include *p*, *pp*, *mf*, *f*, and *ff*. The score shows a progression from a quiet, atmospheric beginning to a more intense and rhythmic section towards the end.

Figure 4.13: 'Dragonborn' (Piano Reduction)

Chorus:

Dovahkiin, Dovahkiin, naal ok zin los vahriin,
 Wah dein vokul mahfaeraak ahst vaal!
 Ahrk fin norok paal graan fod nust hon zindro
 zaan,
 Dovahkiin, fah hin kogaan mu draal!

Verse 1:

Huzrah nu, kul do od, wah aan bok lingrah vod,
 Ahrk fin tey, boziik fun, do fin gein!
 Wo lost fron wah ney dov, ahrk fin reylik do jul,
 Voth aan suleyk wah ronit faal krein

Verse 2:

Ahrk fin zul, rok drey kod, nau tol morokei frod,
 Rul lot Taazokaan motaad voth kein!
 Sahrot Thu'um, med aan tuz, vey zeim hokoron
 pah,
 Ol fin Dovahkiin komeyt ok rein!

Chorus**Verse 3:**

Ahrk fin Kel lost prodah, do ved viing ko fin krah,
 Tol fod zeymah win kein meyz fundein!
 Alduin, feyn do jun, kruziik vokun staadnau,
 Voth aan bahlok wah diivon fin lein!

Verse 4:

Nuz aan sul, fent alok, fod fin vul dovah nok,
 Fen kos nahlot mahfaeraak ahrk ruz!
 Paaz Keizaal fen kos stin nol bein Alduin jot,
 Dovahkiin kos fin saviik do muz!

Chorus**Chorus:**

Dragonborn, Dragonborn, by his honour is sworn,
 To keep evil forever at bay!
 And the fiercest foes rout when they hear triumph's
 shout,
 Dragonborn, for your blessing we pray!

Verse 1:

Hearken now, sons of snow, to an age, long ago,
 And the tale, boldly told, of the one!
 Who was kin to both wrym, and the races of man,
 With a power to rival the sun!

Verse 2:

And the voice, he did wield, on that glorious field,
 When great Tamriel shuddered with war!
 Mighty Thu'um, like a blade, cut through enemies all,
 As the Dragonborn issued his roar!

Chorus**Verse 3:**

And the Scrolls have foretold, of black wings in the cold,
 That when brothers wage war come unfurled!
 Alduin, Bane of Kings, ancient shadow unbound,
 With a hunger to swallow the world!

Verse 4:

But a day, shall arise, when the dark dragon's lies,
 Will be silenced forever and then!
 Fair Skyrim will be free from foul Alduin's maw!
 Dragonborn be the saviour of men!

ChorusTable 4.5: Dragonborn Lyrics and Translation³⁷

³⁷ Retrieved from <http://elderscrolls.wikia.com/wiki/Skyrim_Soundtrack>, accessed 07/03/2013.

Interviews make clear that the initial inspiration for the stylistic shift between the ‘original’ Elder Scrolls theme (the main theme of *Morrowind*) came from Mark Lampert and the developer’s audio team.³⁸ As we have seen in other games, it is common for the composer to be approached with several ideas already prepared, and in this case, the key idea was for a ‘Viking choir’ version of the more lyrical *Morrowind* theme. As a result, unlike previous title themes of the series, this theme is in fact a song. The lyrics are composed in the dragon language, invented specifically for this purpose as only a few words were required for the rest of the game (see Table 4.5). Care was taken to ensure that both the original lyrics and the English translation would rhyme and read well. (Indeed, the poetry undeniably has its own musical quality.) While the song is not strictly speaking an ‘anthem’ sung in game, it can be thought of as such. Musical anthems and folk songs help create as well as solidify and represent identity within a particular social/ethnic group. As this music accompanies the official game trailer, it is the first soundworld that the player is likely to be exposed to, perhaps even long before the game was published. This makes it all the more important to begin the work of defining exactly how the Nords are represented.

In order to produce a suitably Nordic sound, a male choir of thirty singers was recorded three times and then remixed to give the effect of a larger body of Viking warriors. At bars 45–48 and 91–94, the horns play a dotted downward leaping octave motif, combining with a rhythmic shout from the choir that slides back up the octave. While the horn motif is an obviously war-like trope, this shout is a musical realization of the shout sound effects employed in the game—as already mentioned, an integral part of the player’s personal saga as well as the Nord’s cultural heritage (in particular, the Old Ways of the Ancient Dragon Cult). At bar 49, the choir begin to chant their verse by speaking rhythmically instead of singing. Such chanting is not uncommon in videogames and films as a generic device to evoke ancient or sacred power, but here it serves as

³⁸ See interviews with Mark Lampert, audio director and sound designer at Bethesda Game Studios: Mark Lampert, ‘The Sounds of Skyrim,’ on *gameinformer.com* (14/01/2014), retrieved from <<http://www.gameinformer.com/b/news/archive/2011/01/14/the-sounds-of-skyrim.aspx>>, accessed 01/03/2013.

something more specifically tailored to the Elder Scrolls lore and the Nordic people in particular. The rhythmic chanting of the male voices at bar 55 is all the more potent due to the hemiola effect (already begun at bar 49) produced by overlaying the incantation with a truncated but double-time (half note values) version of the main theme in the horn part. This version of the theme sounds more like *Morrowind's* (see below) due to its slower pace, and is used as a theme in its own right in other tracks such as 'Unbroken Road' (see below). (It is interesting to note that the female vocal parts simultaneously provide a retrograde version of this melody.)

The anacrusis to bar 21 is self-evidently the start of *Skyrim's* main theme. However, there are actually two renditions of the Elder Scrolls theme within the *Skyrim* version, one as written at bar 1 of Figure 4.18 below (the upbeats to bars 30 and 71 in Figure 4.18), the other, the anacrusis to bar 15 (the upbeats to bars 21 and 83 in Figure 4.18). The second is essentially the same as the first but at twice the speed, although this becomes more apparent when comparing the heterophonic texture of the third phrase (bar 18 below, bar 25 in Figure 4.18). While the choir sing the modified version, the trumpet plays a line much closer melodically and rhythmically to the original.

Figure 4.19 below places the themes of all the Elder Scrolls games side-by-side for comparison.³⁹ It is immediately clear that the theme first began to take shape with *Daggerfall*, although the technical limitations on audio production for the first two games set them somewhat apart from the rest sonically. The fifth bar of the *Oblivion* excerpt is its theme proper, and its reflective character could be related to the fact that it is an inversion of the rising melodic contour of the peaceful but hopeful *Morrowind* theme. Although the meter is now simple-quadruple, the accompaniment's emphasis on the first two beats give a lazy waltz-like feel, as if the third beat enjoyed a fermata on every bar. In any case, the rhythmic profile of the theme itself combined with the same harmonic content ensure a sense of familiarity. The simple-triple time of *Morrowind's*

³⁹ The themes in Figure 4.19 were originally transcribed by Daniel Ran in 'The Elder Scrolls: Retrospective,' on *danielran.com* (no date), retrieved from <<http://www.danielran.com/blog/the-elder-scrolls-retrospective>>, accessed 12/03/2013. Jeremy Soule became the series composer for *Morrowind* and subsequent games.

peaceful descending scale is overlaid on *Skyrim*'s compound-duple time (bar 10 of both themes, bar 79 in Figure 4.18 above) producing a climactic hemiola. Such rhythmic effects are also traceable back to *Daggerfall*, memorable for the rhythmic juxtaposition of its counter-melody as much as for its actual melody. The dotted rhythm of the drum's introduction signals a return to Tamriel and *The Elder Scrolls* series, as it too features at the start of the *Morrowind* theme.

Arena

1 Daggerfall

9

1 Morrowind

8

1 Oblivion

10

15

1 Skyrim

11

17

Detailed description: The figure displays six musical excerpts from the Elder Scrolls series. Each excerpt is written on a single staff in treble clef. The first excerpt, 'Arena', is in 3/4 time with a key signature of two flats. The second, 'Daggerfall', is in 6/8 time with three flats and includes fingerings (2) and a measure number '9'. The third, 'Morrowind', is in 3/4 time with two flats and includes a measure number '8'. The fourth, 'Oblivion', is in 4/4 time with two flats and includes measure numbers '10' and '15'. The fifth, 'Skyrim', is in 6/8 time with one sharp and includes measure numbers '11' and '17'. The sixth excerpt is in 6/8 time with one sharp. The music is primarily melodic and features various rhythmic patterns and articulations.

Figure 4.14: *The Elder Scrolls* Main Themes Compared

Like the *Morrowind* theme, the theme for *Skyrim* consists of three four-bar phrases, the second an altered repetition of the first, both rising in thirds by step, and the third descends by step. All three contain the same motifs, the rising scale consisting of two quaver upbeats leading upwards by step to the downbeat, or a variation on this in which the upbeats leap a third before reaching the note in between on the downbeat (Figure 4.19: bars 2–3, 8–9 and 12–13). The cadential pattern that brings the first and, in the case of *Morrowind*, final phrase to conclusion is an exact inversion of the opening scale. However, due to the length of the third phrase, this final cadence feels as though it should be the start of the next one and as if it has been tagged on the end. In the case of *Skyrim*, the theme never ends in this way, but instead continues with the new variation, starting at the same point (bar 13–14).

The reason why these comparisons are pertinent to this discussion is that they not only trace the heritage of the musical material, but in doing so, they also help to form a better understanding of how the music to *Skyrim* is designed to evoke a particular landscape. If the same musical theme can be used to unite several disparate locations, races and cultures under one banner, then the differences in how it is presented become all the more important. Principally, ‘Dragonborn’ is obviously a rousing and dramatic ‘teaser’ designed to sell the narrative and ultimately, the game itself. However, it also marks a return for those already familiar with the *Elder Scrolls* theme (and other features such as the drum introduction). For a new audience, it relies upon established tropes from the classical repertoire and film music to begin the work of immersing the audience in a mythical time and place. Although the game is set in a specific historical and geographic context, the music’s principal contribution is in creating a familiarly mythological yet distinctive atmosphere. The analysis above demonstrates that several specific musical features help to create a more focused and determined version of the otherwise fairly languid theme. The rhythmic elements that in *Daggerfall* contributed to a lazy and dreamlike wandering are now reconfigured to create a sense of drama and heroic optimism. These features are critical in helping to create the world of *Skyrim*, both reinforcing and defining its landscape and culture.

Songs of Skyrim (Diegetic Music)

The player can obtain a book (of which there are many in game) entitled '*Songs of Skyrim*, Compiled by Giraud Gemaine, Historian of the Bards' College, Solitude.'⁴⁰ The book contains the lyrics to several popular songs, but there is no indication of the melody. However, by travelling around *Skyrim*, the player can pay bards in various local taverns to perform.⁴¹ Three songs from the book will be discussed here in further detail: 'Ragnar The Red', 'The Dragonborn Comes', and 'The Age of Oppression/Aggression'.

These songs form the majority of the diegetic music in the game (there are other short passages and instrumental excerpts that the bards play from time to time, and sometimes various **NPCs** can be heard whistling or humming various folk tunes) and as such can offer a very particular perspective on Nordic culture within the game—this is the music that the Nords themselves perform. The Creation Engine also reveals five music tracks that are heard in taverns, the first two of which are in the Music Type 'MUSTavern' (used in various specific locations), the remainder in the separate group, 'MUSTavernB' (used in all the main settlement taverns). The tracks sound 'diegetic', like ambient background tavern music performed by the bards, but they are not requested by the player or actively performed in the same way as the songs discussed below. The track 'mus_tavern_01' contains a drone that frequently clashes on the downbeat with the melody's accented passing notes. The second track (rerecorded on the soundtrack as 'The Bannered Mare') is a clearer texture, starting with a simple melody and clear chordal accompaniment that gradually becomes increasingly embellished and contrapuntal, before returning to the simplicity of the opening. The third track (also included on the soundtrack as 'A Winter's Tale') has a quiet repetitive beating of a drum, and an additional countermelody performed as if the fingers are barely touching

⁴⁰ For details, see <http://elderscrolls.wikia.com/wiki/Songs_of_Skyrim>, accessed 12/03/13. The lyrics here were taken from this source, although they are also available in game.

⁴¹ A taste of these songs performed by a variety of bards can be found in Stormie McTrooper, 'TES V: *Skyrim* Bard's Songs,' on *YouTube* (December 2011), retrieved from <<http://www.youtube.com/playlist?list=PLE03E7B122AB46BCE>>, accessed 12/03/13.

the strings. The melody of the fourth track is performed on a flute or panpipe of some kind, again over a pedal or drone-like bass. The fifth track has a more mobile harmonic drone and a more complex ensemble, with all of the instruments above, and violins. There is also a much deeper bass instrument. All the tavern music tracks are peaceful and relaxed, and follow simple strophic structures as if they are ordinarily sung.

Ideally, it would be beneficial to be able to compare this music with diegetic music from other parts of Tamriel, or from early games such as *Oblivion* or *Morrowind*. Unfortunately, no such music exists, excluding fan-made music mods (of which there are several, as already indicated).⁴² As a result, in order to isolate and identify the specifically Nordic features of this folk music, an impression of the music of other cultures must be gained from the non-diegetic music available. Although this flawed comparison is likely to be misleading to a degree, how the other races and cultural groups are characterized in the non-diegetic music should still prove to be a workable point of reference. One obvious example is the track 'Imperial Throne' (mus_castle_imperial_01) from the soundtrack. The three-part texture consists of long quiet pedal notes in the bass supporting an exotic intertwining duet. The soundworld is unmistakably reminiscent of Tchaikovsky's 'Danse Arabe' from *The Nutcracker* (although darker and even more mysterious). This may at first seem a surprising characterization of Imperial culture, but as the Empire compares favourably with that of the real-world Romans, it is worth remembering that both tolerated and absorbed many different aspects of the cultures they conquered. Of course, this makes a direct comparison with Nord folk music particularly problematic, especially given the shared Nordic and Imperial history outlined above. Nevertheless, the fact that this 'middle-eastern' exotic soundworld was selected to represent Imperial flavour within the province of Skyrim, and the fact that it is decidedly different from the music discussed below, makes for a valid contextualization. A second (and admittedly less 'musical')

⁴² The music to *Morrowind* and, to a lesser extent, *Oblivion*, was criticized for not being sufficiently immersive due to a reliance on repeating small sets of generic music tracks for a very limited number of situations (exploration, battle, etc.). This spurred on modifications to the game. See Tim Summers, *Video Game Music – History, Form and Genre* (PhD Thesis, University of Bristol, August 2012), pp. 308–9.

comparison can be drawn from the two quite different military horn calls. These can be heard at times of conflict in the game, as one side prepares to go into battle, and also directly in the Creation Engine. Whilst the Imperial horn call (NPCHumanHornImperial) does sound quite rustic, compared to the more lyrical Stormcloak horn call (NPCHumanHornStormcloak) it has a clearer, raspier tone and timbre, probably due to the use of metal. The Stormcloak horn, about a tone lower in pitch, sounds less refined and sophisticated—a simple ‘blowing horn’ probably made from cow horn.

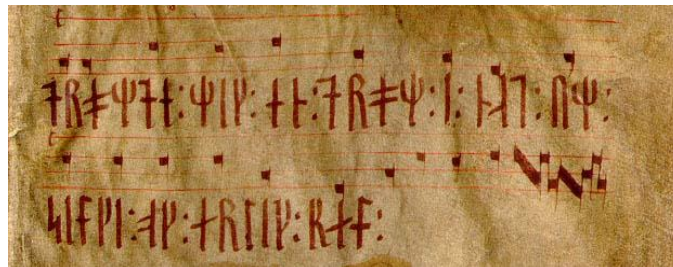


Figure 4.15: *Drømde mig en drøm i nat*

Another useful comparison to make would be real-world Nordic folk music. The earliest surviving notated music of possible Viking origin is *Drømde mig en drøm i nat*, ‘I Dreamed a Dream...’, the first two lines of a folksong notated at the end of the *Codex Runicus*, an important fourteenth-century vellum manuscript containing early Danish laws. The words are written in runes and apparently describe the narrator’s dream of becoming a rich woman.⁴³ The melody, assumedly older than the notation, is now famous to Danes as an interval signal used on Danish Radio since 1931.

⁴³ There has been some debate about the meaning of the runes, which appear to be written in the same hand as the rest of the legal document. See Ake Persson and John Holmqvist, *Runtenom* (2003–4), p. 6. Figure 4.20 was taken from Wikimedia Commons where it was sourced from the University of Copenhagen/The Royal Library of Copenhagen Digitization Library. The complete manuscript can be found here: <http://haandskrift.ku.dk/en/about_the_manuscripts/digitised_manuscripts/>.



Figure 4.16: 'I Dreamed a Dream...'

The song is in either the modern Aeolian mode, or perhaps the related Dorian mode (T-s-T-T-T-s-T), though the tuning of instruments of the day make exact comparisons difficult. According to Hucbald, a ninth-century Benedictine monk greatly influenced by Boethius, a six-string lyre would be tuned T-T-s-T-T.⁴⁴ This would make it easy to perform various major scales, as well as the Dorian (playing the open strings gives the leading note followed by the first five notes). The rhythm in Figure 4.21 is ultimately based on conjecture, though the trochaic character is a notable feature of folk and dance music. Richard Taruskin points to another manuscript—*Nobilis, Humilis*, a hymn to the twelfth-century St. Magnus—that may provide clues to an ancient Nordic style of singing, apparently corroborated by Giraldus Cambrensis, also known as Gerald of Wales, a twelfth-century chronicler.⁴⁵ The hymn is composed for two voices and is often referred to as a *gymel*, although the term more usually denotes a temporary split of one voice into two parts. The most significant element of this style was the use of parallel thirds around a fulcrum pitch. Although all the songs in *Skyrim* are written for just one voice, they do move about a central pitch (modal centre). The intervals used extend further than thirds too, so it is clear that this more refined source was not a significant influence.

Other Nordic music traditions are even more difficult to trace in the folk music of the game. Circle dancing to vocal ballads make up a significant component of these folk traditions, for instance. Yet in the game, the folk songs are presented in a stifled, rigid manner, as if the bards are trying to reinvent a tradition that the local people have forgotten, and their attempts are lacklustre. Andrew

⁴⁴ Hucbald, *De Harmonica Institutione* (c. 880), pp. 22–23. See Richard Taruskin, *The Oxford History of Western Music: Volume 1—Music from the Earliest Notations to the Sixteenth Century* (New York: Oxford University Press, 2010), pp. 77–8.

⁴⁵ See Taruskin, *Music from the Earliest Notations to the Sixteenth Century*, pp. 392–6.

Cronshaw explains that more recent Finnish and Estonian “runo-song” has a four-footed trochaic rhythm, invariably in 4/4 or 5/4 time. Cronshaw says that often ‘the line has eight beats, the melody rarely spans more than the first five notes of a diatonic scale and its short phrases tend to use descending patterns.’⁴⁶ The songs in *Skyrim* are predominantly in 6/8, but are often organized in 8-beat phrases, and have a similarly limited vocal range. However, Jan Ling has noted that traditional Finnish runic songs, like Saami “jojk”, entail more recitative and calling than melodic singing.⁴⁷ This suggests that the folk music in *Skyrim* was composed in a similar way to Philip Glass’s *Brazil* in *Chime* (see Chapter 2)—as a topic for an old traditional folk music that would be broadly acceptable in a mass-market Hollywood-like videogame.



Figure 4.17: ‘The Bannered Mare’

Like many of the songs discussed here, ‘The Bannered Mare’ instrumental (Figure 21, a song named after Whiterun’s tavern) is predominantly composed in the modern Aeolian mode (also known as the natural minor mode, T-s-T-T-s-T-T), with occasional harmonic inflections (bar 4). The dotted but freely flowing rhythm with its steady two-beat oscillation is also reflective of the dance-like folk music.

⁴⁶ See Andrew Cronshaw, ‘Finland: new runes,’ in *World Music: Africa, Europe and the Middle East*, Simon Broughton, Mark Ellingham and Richard Trillo (eds.), (London: Rough Guides, 1999), p. 91.

⁴⁷ See Jan Ling, *A History of European Folk Music* (Rochester, NY: University of Rochester Press, 1997), p.78.

Songs of Skyrim tells us that ‘Ragnar the Red is a traditional song of Whiterun. Despite the grim final image, the song is generally regarded as light and rollicking and a favorite in inns across Skyrim.’ It can be performed on request by bards such as Karita in Dawnstar's Windpeak Inn, Sven in Riverwood, and Mikael at The Bannered Mare in Whiterun, amongst others, although other NPCs can sometimes be heard singing lines or humming the tune.

♩ = 120

Tenor

(Oh...) There once was a he-ro named Rag-nar The Red, Who came riding from White-run from

5

T. ole Ro-rik - stead! And the brag-gart did swag-ger and brand-ish his blade, As he told of bold bat tlesand

9

T. gold he had made! But then he went qui-et did Rag-narThe Red, When he met the shield-maid-en Ma-

13

T. til - da who said... "Oh, you talk andyou lie andyou drink all our mead! Now I think it'shigh time that you

17

T. lie down and bleed!" And so then came clash-ingand slash-ing of steel, As thebrave lassMa-til-da charged

21

T. in full of zeal! And the brag - gart named Rag - nar was

23

T. boast-ful no mooooooree... When his ug - ly red headrolled a - round on the floor!

Figure 4.18: ‘Ragnar the Red’

The humorous and boisterous nature of the lyrics make it particularly suitable as a popular tavern song although it is interesting to note that it is a heroine who puts the boastful liar Ragnar into his place. The Nordic warrior ethos does not exclude women, and indeed, besides the player's own potential choice of sex, there are plenty of other female NPCs who engage in both politics and combat. (That said, the majority of NPC positions of power are perhaps unsurprisingly male.) Indeed,

the real-world runo-song texts that have been collected cover all aspects of life from a female perspective.⁴⁸ The abrupt key changes and short pauses at the end of each short two-line (one sentence) verse are common devices employed in such folk songs, designed to heighten both the humour and suspense for the audience. (In the actual game, these pauses occur in all the songs and are actually bizarrely long, lasting on average almost the same length as a verse. This is reflected in the Creation Engine, which reveals that each verse is a separate audio track. Figure 4.24 shows the two voice files for the first line of Ragnar the Red. Whether this was done for convenience, or whether it was an aesthetic decision, is unclear—both seem similarly implausible explanations.) Otherwise, the harmonies and melody are relatively simple, though it is worth noting how the tonal centre shifts down a tone for the central passage, after the unrelated imperfect cadence in bar 9. The renditions of the song by the various bards are for the most part identical, with slight changes of emphasis and the odd difference of opinion regarding precise pitches or rhythms. The main purpose for the inclusion of this song is assumedly to add an additional layer to the Nord’s cultural heritage, as well as an additional source of immersion and entertainment. This is necessary in fantasy games to provide an illusion of depth to their fictional constructs.

‘The Dragonborn Comes’, however, is clearly a point of focus for the player in that it tells them that the saga of the Dragonborn is popular and pervasive across Skyrim. As explained in the

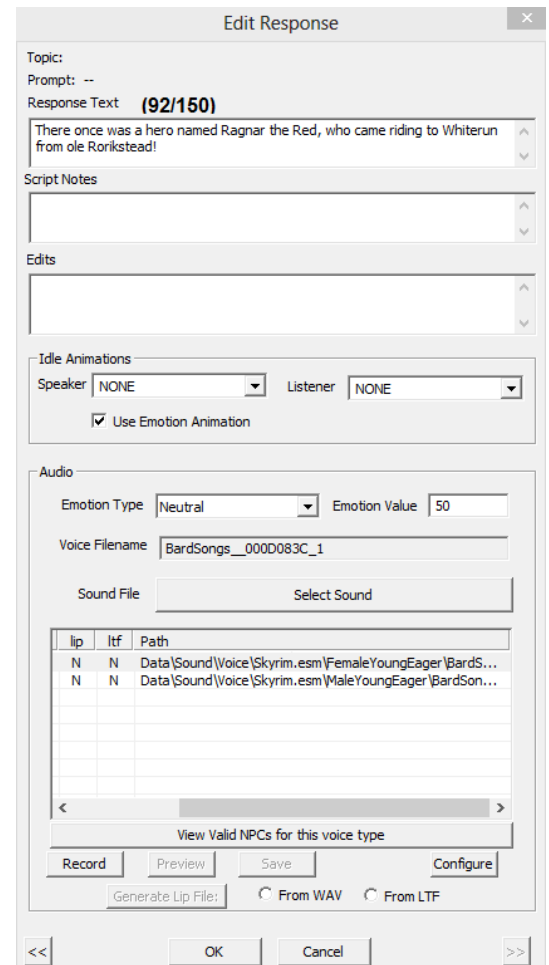


Figure 4.19: ‘Ragnar the Red’—Verse One in the Creation Engine

⁴⁸ See Cronshaw, ‘Estonia,’ in *World Music: Africa, Europe and the Middle East*, p. 17.

Songs of Skyrim, it also presents the heroic Dragonborn as an aspirational epitome of Nordic characteristics:

The Dragonborn Comes has been handed down from generation to generation of bards. The Dragonborn in Nord culture is the archetype of what a Nord should be. The song itself has been used to rally soldiers and to bring hope.

The Dragonborn Comes

*Our hero, our hero, claims a warrior's heart.
I tell you, I tell you, the Dragonborn comes.
With a Voice wielding power of the ancient Nord art.
Believe, believe, the Dragonborn comes.
It's an end to the evil, of all Skyrim's foes.
Beware, beware, the Dragonborn comes.
For the darkness has passed, and the legend yet grows.
You'll know, you'll know the Dragonborn's come.*

The musical lines are repetitive, in the form AABABABA, where A is closed harmonic pattern (ending with 'the Dragonborn comes', aside from the first line), and B is open-ended. The lyrics emphasize the power of the Dragonborn's Shout on the first change of melodic pattern (B).

The overtly political 'Age of Oppression/Aggression' are two versions of the same Civil War song. All music can help to form the relationships between people and the places in which they live, and therefore, it is highly political both as an activity, and a received object.⁴⁹ Songs of this nature gain an additional political dimension, primarily through lyrics which associate the performer and (willing) audience—often performers as well through their participation—with a particular place or socio-cultural group. The lyrics for the pro-Stormcloak Age of Oppression read:

*We drink to our youth, and to days come and gone.
For the age of oppression is now nearly done.
We'll drive out the Empire from this land that we own.
With our blood and our steel we will take back our home.
All hail to Ulfric! You are the High King!
In your great honor we drink and we sing.
We're the children of Skyrim, and we fight all our lives.
And when Sovngarde beckons, every one of us dies!
But this land is ours and we'll see it wiped clean.
Of the scourge that has sullied our hopes and our dreams.*

⁴⁹ Another real-world scenario that sheds light on this mechanism is explored by Matthew Machin, in 'Controlling and Contesting a Musical Landscape: Flamenco, Regional Identity and Political Autonomy in Andalusia, Spain,' at *Hearing Landscape Critically* (Conference Paper, University of Oxford, 2012).

They are sung to the same melody (and similar rhythm) as the anti-Imperial Age of Aggression (see Figure 4.25 below). The structure of the lyrics and much of the wording is also identical, aside from the obviously central lines that state affiliation:

$\text{♩} = 90$

Soprano

5 We drink to our youth, to the days come and gone. For the Age of Agg-ress-ion is

9 just a-bout done. We'll drive out the Storm-cloaks and re store what we own. With oublood and our steel we will

13 take back our home. Down with Ul - fric! The killer of kings! On the day of your death we'll

16 drink and we'll sing. We're the chil - dren of Sky - rim, and we fight all our lives. And when

19 So - vn - garde be-ckons, ev - ery one of us dies! But this land is ours and we'll

see it wiped clean! Of the scourge that has su - llied our hopes and our dreams.

Figure 4.20: 'The Age of Aggression'

Quest: BardSongs

EditorID: BardSongsBallad01Scene, BardSongsBallad01W#IntroScene, BardSongsDrinkingSong01Scene, BardSongsDrinkingSong01W#IntroSc, BardSongsDrinkingSong02Scene, BardSongsDrinkingSong02W#IntroSc, BardSongsDrinkingSong03Scene, BardSongsDrinkingSong03W#IntroSc

ID: BardSongsDrinkingSong03Scei

Phase 3, Phase 4, Phase 5, Phase 6, Phase 7

Bard: D(E), C(E), PD(E), OC(E).

Action 10: <<Shared>> [E] We drink to our youth, and to days come and gone. For the age of oppression is now nearly done. <<Shared>> We drink to our youth, to days come and gone. For the age of aggression is just about done.

Action 2: <<Shared>> We'll drive out the Empire from this land that we own. With our blood and our steel we will take back our home. <<Shared>> We'll drive out the Stormcloaks and restore what we own. With our blood and our steel we'll take back our home.

Action 3: <<Shared>> All hail to Ulfric! You are the High King! In your great honor we drink and we sing. <<Shared>> Down with Ulfric the killer of kings. On the day of your death we'll drink and we'll sing.

Action 4: <<Shared>> [E] We're the children of Skyrim, and we fight all our lives. And when Sovngarde beckons, every one of us dies!

Action 5: <<Shared>> [E] E land is ours and w wiped clean. Of th that has sullied ou and our dreams.

Action 13: BardSongsBardSpotTravel, DefaultStayAtCurrentLocation

Show all text, OK

Figure 4.21: 'The Age of Oppression/Aggression' in Creation Engine

The *Songs of Skyrim* tells us that ‘It isn’t known which of the two was written first but the tune, with loyalty appropriate lyrics, is quite popular on both sides of the war.’ In fact, in the Creation Engine, both versions are stored as the same song (see Figure 4.26). One version or another is known by all the bards of *Skyrim*, depending largely on who controls the territory in which the song is requested. The bards themselves show little evidence of any hidden loyalties of their own—if the Stormcloaks succeed in taking a city, the resident bard will most likely switch sides and sing *The Age of Oppression* when once he offered the Imperial version only.⁵⁰ The game provides a neutral palette in the form of the protagonist’s avatar that can be personalized by the player’s choices to side with one particular faction, or none. As the player can walk into any tavern in *Skyrim* at any point in the game, depending on the region’s current affiliation (the player’s involvement in the Civil War can affect this), a degree of flexibility in the system is required. While the bards only offer one version of the song in their selection, they do make political comments to commend your choice.

The folk melody itself is assumedly older than both sets of lyrics in the game’s chronology, perhaps even older than the Civil War itself. It is rousing for both sides because it is assumedly a popular part of the heritage each claims as their own, but its provenance also ensures that, at least on the surface, it is politically neutral. However, the similarity of this melody to the other songs performed in the province may well indicate that it is in fact reflective of Nordic culture. If this is the case, then this tune is perhaps unlikely to be as popular in *Morrowind* or *Cyrodill*, if it is known at all. The music is primarily composed in either the Aeolian (the natural minor scale) or Dorian mode—although the sixth degree of the scale, B, is not included in the melody, both a G major chord and a G minor chord are used on the second beats of bars one and two respectively. Like the other songs, it seems Nordic music is based on much real-world folk music in that it predominantly (although not exclusively) relies upon modal rather than classical functional harmony.

⁵⁰ Ulfric himself can occasionally be heard reciting lines from the *Age of Aggression* in his sleep, assumedly a joke from the developers, or otherwise an indication of the character’s pride of his own infamy.

It is also possible to find a revised edition of the book that includes the lyrics to ‘The Following’—‘an ancient song we've only recently been able to translate. Without a tune or a sure pronunciation the song is lost to time. It's included here to show the deep history of song here in *Skyrim*.’ These lyrics are those of the main Elder scrolls theme discussed above. The fact that bards do not seem to know this song, and that the tune is forgotten is interesting in that it allows the song to function as the non-diegetic main theme rather than a diegetic anthem. This edition also contains an additional song that can be sung by the bards once the player has completed the main story questline:

Tale of the tongues is a newer song. One that has come in to favor [*sic*] since the Dragonborn put down Alduin. It actually describes the events of the first battle against the dragons.

Tale of the Tongues

*Alduin's wings, they did darken the sky.
His roar fury's fire, and his scales sharpened scythes.
Men ran and they cowered, and they fought and they died.
They burned and they bled as they issued their cries.*

*We need saviors to free us from Alduin's rage.
Heroes on the field of this new war to wage.
And if Alduin wins, man is gone from this world.
Lost in the shadow of the black wings unfurled.*

*But then came the Tongues on that terrible day.
Steadfast as winter, they entered the fray.
And all heard the music of Alduin's doom.
The sweet song of *Skyrim*, sky-shattering *Thu'um*.*

*And so the Tongues freed us from Alduin's rage.
Gave the gift of the Voice, ushered in a new Age.
If Alduin is eternal, then eternity's done.
For his story is over and the dragons are gone.*

This song reinforces the impact the player has on the game world—now their great deeds are recorded by the bards to be passed on through the generations. Collectively, these diegetic songs enable the player to reconstruct *Skyrim*'s geopolitical landscape.

The scale of the diegetic music of *Skyrim* is naturally small, as anything longer than a short song is unlikely to hold the attention of the intended audience, especially as an optional ‘aside’ to

the core gameplay. However, this is indicative of a widespread perception of videogame music amounting to nothing more than a collection of ‘miniatures’, or specific character pieces. It is plain to see why this view is prevalent—the vast majority of the music discussed in this thesis so far is composed for a specific dramatic purpose (danger, combat, heroic) with average durations never more than four or five minutes. Indeed, even the more ambient ‘exploration’ music investigated below tends to last no more than six or seven minutes. To a certain degree, this limits what can be done with regard to musical processes and more complex formal structures. However, like the component parts of an opera, or the cues of a film score, these individual examples are in fact excerpts from a much more substantial whole. As already mentioned, the overall scale of the music to a game like *Skyrim* is much larger than any film, at least in terms of duration. That should be no surprise, as the average playtime for the game is 75 hours, with many players spending several hundred hours in the game world.⁵¹ As such, the paltry four-and-a-half or so hours of music does not seem that much, considering the amount of repetition that necessarily takes place. For games like this, the balancing act between familiarity and boredom becomes the crucial psychological element that governs large-scale musical structure.

Klangfläche Landscapes

Daniel Grimley’s reappraisal of Grieg aims to ‘move beyond the cosy, small-scale image’⁵² of the composer through a consideration of music and landscape. For this reason, alongside the Scandinavian backdrop, Grimley’s study is a particularly pertinent point of reference for an analysis

⁵¹ See Brendan Sinclair, ‘Skyrim PC players average 75 hours of playtime,’ on *gamespot.com* (08/02/2012), retrieved from <<http://uk.gamespot.com/news/skyrim-pc-players-average-75-hours-of-playtime-6350045>>, accessed 18/03/2013.

⁵² Daniel Grimley, *Grieg: Music, Landscape and Norwegian Identity* (Boydell Press, 2006), p. 223.

of the music to *Skyrim*. For Grimley, landscape is not merely an imitative representation, but an ideological construct that expresses a particular time and place. Grimley also notes that landscape

presupposes both a process of composition (the creation of frames of reference or forms of spatial organisation) and the presence and active participation of a viewer (their sense of perspective). Furthermore... landscape is not merely concerned with spatial perception, but also possesses a temporal dimension.⁵³

For these reasons, music is well suited to depict landscape sonically. Grieg described the mountain landscape of western Norway as an 'ecstatic or epiphanal experience' that, with the sense of home and nation evident in his compositions, Grimley shows resonates with high romanticism. In Grieg's compositional response to this experience of landscape, an effect of enchantment, distance, and nostalgia is generated by a 'suspended temporality' or radical 'spatial' quality, and a 'heightened sense of aural awareness or sensitivity to sound.'⁵⁴

Like many so-called nationalist composers, the reception of Grieg has for many years limited the status of his achievements to the local or small-scale. (The size and relative stability of the many component parts of the Holy Roman Empire ensured a sense of unity, longevity, and universality, despite the fact that the composers it prized became just as involved in creating a sense of Germanic nationalism as outsiders.) There are several associated myths that have contributed to this perception—Grieg's ill health and small stature perhaps the most pervasive. But, alongside the imbalance between large-scale (symphonic) and small (songs) that makes up his oeuvre, it was Grieg's own admission that he had difficulty with large traditional forms that has perpetuated the image of a 'miniaturist'.⁵⁵ Nevertheless, Grimley argues that Grieg's approach to form was part of a productive creative engagement between two linguistic camps: the creation of Norwegian cultural identities and his training in the Austro-German heritage at the Leipzig conservatoire:

The creative tension in Grieg's music is not the result of an inability to meet the demands of large-scale symphonic form, as his critical reception has often suggested, but the product of a

⁵³ Grimley, *Grieg: Music, Landscape and Norwegian Identity*, p. 56.

⁵⁴ Grimley, *Grieg: Music, Landscape and Norwegian Identity*, pp. 79–80.

⁵⁵ Grimley, *Grieg: Music, Landscape and Norwegian Identity*, p. 6.

linguistic conflict between the deliberately primitivist treatment of musical material and an increasingly abstract sense of syntax and structure.⁵⁶

This is evident, Grimley suggests, in the dualism between diatonic and modal systems that govern works such as *Slåtter*. Such tensions reflect an ideological construction of musical landscape in which the music problematizes the relationships between the socio-cultural and political trends of nationalism, cosmopolitanism and protectionism in Norway.

Grimley draws on Dahlhaus's conceptions of *Naturklang* and *Klangfläche*—two closely related concepts that are both antithetical to 'teleological process', what Dahlhaus characterized as the hallmark of nineteenth-century symphonic music. *Naturklang* is a sense of stasis paradoxically reliant on an inner drive generated by ostinatos and a proto-minimalist rhythmic repetition of 'cells'. Dahlhaus defines *Klangfläche* as 'the sound-sheet... outwardly static but inwardly in constant motion.'⁵⁷ He argues that in order for music to depict nature, the teleological impulse of the 'imperative of organic development'⁵⁸—practically a musical 'doctrine' founded on Beethoven—must be subverted. In other words, through avoiding the usual (at least, the Germanic orientated norms presented as universal by Dahlhaus and others) 'character of musical form as process'⁵⁹, a particular kind of stasis is permitted, regardless of any amount of internal rhythmic interest. Examples Dahlhaus cites include, most obviously, the development section of the first movement of Beethoven's Pastoral Symphony, which Dahlhaus characterizes as an 'idyll' or 'refuge' from Beethoven's own formal principals, the Forest Murmurs from Wagner's *Siegfried*, which Dahlhaus uses as an example of harmonic 'open-endedness', and even the tumultuous thunderstorm of the Prelude to Act 1 of *Die Walküre*. In each case, 'the music remains riveted to the spot motivically and harmonically, no matter how gentle or violent its rhythmic motion.'⁶⁰ To ensure that the music is not so static that it becomes 'dull and lifeless', Dahlhaus pinpoints both a particular use of rhythmic

⁵⁶ Grimley, *Grieg: Music, Landscape and Norwegian Identity*, p. 8.

⁵⁷ Carl Dahlhaus, *Nineteenth Century Music*, p. 307.

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Ibid.

patterning and the use of unresolved non-harmonic notes. By thwarting the usual logic of harmonic dissonance and resolution, and layering this with a set of rhythmic patterns that operate on a more minimalist or cellular basis, rather than a classically informed balanced aesthetic, the necessary sense of stasis can be achieved that is the prerequisite to any landscape imagery. However, as R. Andrew Lee has pointed out, the experience of a temporal stasis in music need not be defined merely through alterity to conventional musical processes.⁶¹

In Grieg's music, Grimley creatively but precisely finds these concepts of landscape in the tensions caused by the juxtaposition of Norwegian folk music with European diatonic harmony.⁶² Many of these elements are also present in the music for *Skyrim*, although there are some significant differences in terms of scale and form. The track 'Unbroken Road' will form the centrepiece of my analysis for this section, but beforehand, it will be useful to investigate a number of specific features that are common to much of the music in the 'explore' types. That this music is particularly pertinent to the sorts of concepts discussed above is largely self-evident, especially when compared to other categories of music in the game such as the music for combat. However, I will argue that it is the combination of these specific features that can bring about a sense of *Klangfläche*.

The first and perhaps most obvious element that makes up the soundworld is the particular timbre of the instrumentation. 'From Past to Present' is a heavily string-based composition, a facet of the orchestration that we can call idiomatic for *Skyrim's* landscape music. In the game, the track is used as both 'mus_town_day_02' and 'mus_explore_day_02'.

⁶¹ See R. Andrew Lee, 'Temporality as an analytical approach to minimalist music: Tom Johnson's An hour for piano,' *Divergence Press Journal* 1 (March 2013), retrieved from <<http://divergencepress.com/Journal/JournalIssue/tabid/85/ID/9/categoryId/1/Temporality-as-an-analytical-approach-to-minimalist-music-Tom-Johnsons-An-hour-for-piano.aspx>>, accessed 08/07/2013.

⁶² For an overview, see Stephen Downes, 'Review: *Grieg: Music, Landscape and Norwegian Identity* by Daniel Grimley', *Music and Letters* (2008): 438–40.

Figure 4.22: 'From Past to Present'—Excerpt 1

The music continually hangs on open-ended (imperfect) cadence points. The opening passage transcribed as Figure 4.27 is a case in point. The music appears to start in D minor, although the first two phrases ambiguously resolve on to the subdominant major (G major). The third phrase appears to confirm that the home key is based upon D by introducing the C-sharp, but the F-sharp that precedes it confuses the mode and results in a particularly expectant feeling. In fact, some cues come to an end on comparatively open-ended harmonies, and even those that feel tonally closed or complete often employ fade outs, whether composed or electronically imposed. Following the cadence point in bar 7, the music returns to the minor mode with supplementary melodies in the woodwind, and then continues in much the same vein with frequent mode switches.

Figure 4.23: 'From Past to Present'—Excerpt 2

The main theme (Figure 4.28) consists of two balanced phrases, the second identical to the first with the exception of the last note, which remains on the 'A'. The theme itself is doubled in the

violins and cellos—that often cliché Romantic texture pervasive across music of the nineteenth century and in film scores to this day. The harmony oscillates around the G major chord and the harmonic vocabulary remains a combination of traditional diatonic functionality with modal harmonic procedures adopted from folk music. The harmonic progression is constructed around two cadences, the first a perfect cadence indicated by the move from D to G in the basses, and the second, F to G. However, strictly speaking, the first is not a perfect cadence as it moves from the dominant minor to the tonic. As if to reiterate or compliment this fact, the subsequent cadence returns wholeheartedly to the F-natural and combined with the melody itself, moves in parallel motion back to the tonic. This heightens the hopeful and uplifting oscillating pendulum effect which is only brought to a close on the second phrase which returns to an open chord of D (D minor is implied although no F is sounded). The openness of the final chord creates a melancholic emptiness demonstrating that the harmony is not as ambiguous as it had first appeared.

Aside from the added reverb, there are other important ‘effects’ that help to create the sensation of space. The principal lines for the track ‘Journey’s End’ have been transcribed below as a clear three-part contrapuntal texture. However, the sound is thickened through the use of enharmonic cluster chords. For example, the first comes in the second bar with the entry of the second voice and consists of the notes E-flat, F and G, as well as the A-flat in the part below. The slow pacing, meandering rhythm and gentle enharmonic suspensions create an ethereal feel with the gentle dissonances of the chord clusters moving in parallel motion. Even in the jaunty ‘The City Gates’ (‘mus_town_day_01’ in the data structure), these cluster harmonies are pervasive.

Figure 4.24: 'Journey's End'—Excerpt

The familiar combination of horn melody and string accompaniment is also found in 'Awake' ('mus_special_cartintro_01'), although this track is much shorter as it is used at the very start of the game while the player is in the cart with Ulfric on their way to be executed. As a result, for once the form is not ABA, but AB. The violins hold long, high tessitura lines like those that embellish the theme of 'From Past to Present', which create a sense of vertical space. Once the theme has been fully realized by the horn, the strings quietly reveal a version of the Elder Scrolls theme, but fade out prematurely.

Figure 4.25: 'Awake'—Horn melody

Horn calls such as this are pervasive across the soundtrack because they fulfil two functions: the horn is a heroic and warrior-like cultural trope, and the many leaping fourths and fifths traditional to horn calls are effective in helping to create a certain sense of time and space.

‘The Streets of Whiterun’ (‘mus_town_day_03’) draws from the heritage of “city” music using a falling fifth as a piano motif that repeats every bar.⁶³ This motif remains at the same pitch while the harmony shifts around, turning initially enharmonic notes into more interesting ‘flavours’ such as sharpened sevenths. The strings grow from another wash of harmonic accompaniment to an increasingly impassioned theme in the cello. Again, this theme is created through the repetition of short phrases. The use of repetition, especially in the case of the falling piano motif, gives a timeless quality to the music, although a better characterization might be a melancholic mixture of nostalgia for something past, or sadness at the realization that it will not last.

‘Far Horizons’, ‘mus_explore_day08’ starts with another horn solo (with string countermelody):

Figure 4.26: ‘Far Horizon’—Excerpt 1

Figure 4.27: ‘Far Horizon’—Excerpt 2

⁶³ See, for instance, Ivan Hewett, ‘Different Strains. Music in 12 Parts by Philip Glass; Michael Riesman; Proverb; Nagoya Marimbas; City Life by Steve Reich; Bob Becker; James Preiss; Paul Hillier; Bradley Lubman; El Dorado by John Adams; Kent Nagano; Berceuse élégiaque by Adams; Busoni; John Adams; The Black Gondola by Adams; Liszt; John Adams,’ *The Musical Times* 138/1848 (February 1997): 20–23.

The open intervals (a rising fifth and a falling fourth) are idiomatic of the space-creating quality to the horn themes in the game. A version of the Elder Scrolls theme (Figure 4.31) also makes an appearance in the middle of the ABA form. Although it is clearly a variation on the Elder Scrolls theme, it is different enough to ensure that the audience is not over-exposed.

In summary, the musical elements of the non-diegetic music for *Skrim* that make up this *Klangfläche* music are:

- String based instrumentation
- (Harmonically) Open-ended phrases and cues
- Themes presented in octaves (cellos and violins)
- Mixture of traditional diatonic harmony and 'folk'/modal procedures (parallel motion, mode switches indicative, provide extended harmonic vocabulary)
- Open-ended harmonies but not 'ambiguous'—sense of home key and solid foundation
- Horn calls/melodies (open intervals creating space)
- Wash of harmonic 'accompaniment' (time) and string tessitura creating vast space
- Themes created through repetition, accompaniment's also based on ostinati. Repetition creates timeless quality
- Few 'main themes' and subtle variations ensure balance is struck between repetitiveness and familiarity
- Reverb and chord clusters.

Unbroken Road

The track 'Unbroken Road' (Figure 4.34 below) is in a simple ternary ABA form, with each 'A' section culminating in a sweeping rendition of the slow version of the Elder Scrolls theme heard in the horn part of Figure 4.18 above. The track has a duration of about six-and-a-half minutes. In the data structure it is entitled 'mus_explore_day_06' and in the Creation Engine we see that unlike most of the other 'explore' tracks, it is only used for one unique Music Type: MUSSpecialElderScrollSequence. (By way of contrast, the Music Track MUSExploreDay01 is used in Music Types MUSExploreMarsh, MUSExploreCoast, MUSExploreMoountain, MUSExploreTundra, MUSExploreReach, MUSExploreSnow, MUSExploreForestPine, MUSExploreFall, and two other test types.) This special music type is uniquely attached to a particular moment in the game, although like the other 'explore' tracks,

MUSExploreDay06 includes conditions that ensure it is only heard between the hours of 8am and 6pm (see Figure 4.33). It seems the track is only supposed to play at the moment the player obtains or reads the Elder Scroll in the quest, 'Elder Knowledge', but as the music track MUSExploreDay04 has no usage information whatsoever, it may be that the tracks are also referenced in other ways.⁶⁴

Target	Function Name	Function Info	Comp	Value		
S	GetCurrentTime	NONE	>=	8.00	AND	
S	GetCurrentTime	NONE	<=	18.00	AND	

Figure 4.28: MUSExploreDay06 conditions

The horn melody that commences the track is actually the tail end of the main theme that appears in the strings at bar 25 (cf. bars 1–8 with 32–37). The rising third by step is the principal motivic component, originating from the start of the main *Skyrim*/Elder Scrolls theme. The music builds gradually in both volume and texture, culminating in the presentation of the main theme that is doubled in the violins and cellos encompassing three octaves. The sweeping character of the melody is greatly enhanced by its contrasting but supportive accompaniment in the rest of the strings—a pulsating but static wash of a single harmony. The music dies down in a similar fashion, repeating the final phrase of the melody.

The 'B' section is marked by the solo flute entrance. Although the horn continues to echo the closing phrase from the previous section, and the wash of harmony remains largely unchanged, the character is decidedly different. The instrumental solos benefit from added clarity since the texture of the accompaniment is less rich. Eventually the passage dies away and the music returns to

⁶⁴ The comments on a YouTube video of the track indicate that the music does not always play at the moment it should. There is also a degree of debate about whether the language sung by the choir is that of the Dragons, or Latin. See allaboutSkyrimmusic, 'Unbroken Road - The Elder Scrolls V: Skyrim Original Game Soundtrack,' on *YouTube* (12/12/2011), retrieved from <<http://www.youtube.com/watch?v=N7ttwvNhRq30>>, accessed 19/03/13.

the start. In the build-up section before the main theme returns for the second time, a choir joins the violin part at the moment parallel to bar 9 below, though there is no record of what the lyrics are. This additional punctuation adds to the building dramatic tension and supplements the sweeping aesthetic with a sense of player's role in an epic saga. The overall feeling is not unlike that expressed in Strauss's aforementioned *Alpine Symphony*, although the sections are greatly condensed. In this sense, the music in section A describes (at least figuratively) the protagonist's ascent into the mountains, their arrival at the summit, and a subsequent descent. The B section introduces an obviously related (nearby) but different sort of terrain—pine trees on more level ground perhaps—the repeating flute motif reminiscent of birdcalls.

The music of Sibelius also makes for a useful point of comparison. The reception of Sibelius, perhaps even more so than Grieg, was inextricably tied up with the growing nationalist sentiment in Finland prior to the disintegration of the Russian Empire in 1917. Richard Taruskin points out that in later years, the composer himself 'loomed not merely as a Finnish national monument but as the very embodiment of the North—harsh, frosty, inscrutable, chastening.'⁶⁵ *Finlandia* makes for an interesting parallel with *Skyrim*'s main theme, in that it was banned in Russia as although it is not an anthem with words, the theme was remarkably reminiscent of the pre-existing folk song 'Finland, Awake!'⁶⁶

More pertinently though, the ostinato string writing that opens the Finale of Sibelius's Symphony No. 5 (also noticeable in the fourth symphony finale) has the effect of a tremolo that also bears direct comparison with 'Unbroken Road'. The famous horn melody of that movement, and the horn call that opens the work are remarkably similar in style to Soule's. However, perhaps more significant is Sibelius's treatment of form. The ternary form of 'Unbroken Road' is common to the

⁶⁵ See Richard Taruskin, *The Oxford History of Western Music: Volume 3—Music in the Nineteenth Century* (Oxford & New York: Oxford University Press, 2010), p. 823.

⁶⁶ See Taruskin, *Music in the Nineteenth Century*, p. 822. The theme itself is in fact not a folk song, but a hymn by Emil Genetz.

vast majority of longer tracks. Perhaps in a similar way to James Hepokoski's take on the 'rotational' form of the first movement of Sibelius's fifth symphony, the music of the second 'A' section is somehow transformed through repetition. The addition of the choir is not a big difference sonically, or structurally, but it is a significant one nonetheless. The 'Klang' meditation Hepokoski refers to is also of relevance to Soule's music for *Skyrim*—the form of individual tracks is governed as much by the musical material and attention to the soundworld as any pre-conceived abstract structure.⁶⁷ Of course, the musical processes Sibelius employed in his symphonies also included an important teleological strand, often leading to a 'breakthrough' moment. Without this, the concept of 'cycles', or rotational repetitions more obviously indicates a sense of stasis.

That is not to say that there is a complete lack of musical processes in the music for *Skyrim*. Often, what musical processes can be traced are operating on a different temporal plane, or in a different way. Chris Garrard suggests that until we move beyond viewing what he identifies as 'glacial music' from the outside as static drift, it is difficult to properly identify and evaluate the slow-moving processes that create it.⁶⁸ It is important to remember that even though the two Sibelius finales mentioned above only last around nine-and-a-half minutes, in general, it is nevertheless problematic to draw direct comparisons between the large-scale formal structures of this music with that of the game. As we have discussed in previous chapters, the larger form of the music in video games of this genre is governed by the dramatic pacing of the gameplay, and beyond that, ultimately the narrative. 'Unbroken Road' is an example of a piece of music that does in fact give musical form to this larger structure, as it is only heard at a specific and dramatic moment in the narrative. While the exact timing is contingent on many factors, the player's own decisions and play-style not least, the moment comes approximately two-thirds of the way through the main questline—hardly a surprising proportion (see Table 4.3 above).

⁶⁷ See James Hepokoski, *Sibelius: Symphony no.5* (Cambridge: Cambridge University Press, 1993).

⁶⁸ Chris Garrard, 'Carving a Landscape with History: Silvestrov's Orchestral Music as Glacial Process,' at *Hearing Landscape Critically* (Conference Paper, University of Oxford, 2012).

The musical score is for the piece 'Unbroken Road' from the game *Skyrim*. It is written in 8/8 time with a tempo of quarter note = 50. The score is divided into three systems. The first system (measures 1-14) features a Horn in F part with dynamics *mp* and *mf*, and a Violin I part with a tremolo effect and *pp* dynamics. The Violin II, Viola, Violoncello, and Double Bass parts are marked with *p* and *mp*. The second system (measures 15-30) features a Horn part with *mf* and *ff* dynamics, and Violin I, II, Viola, and Double Bass parts with *mf* and *ff* dynamics. The third system (measures 31-36) features a Flute solo with *mp* dynamics, and Violin I, II, Viola, and Double Bass parts with *f* and *pp* dynamics. The score includes various musical notations such as dynamics, articulation, and performance instructions like 'tremolo' and 'solo'.

Figure 4.29: 'Unbroken Road'—Excerpt

The stylistic features identified in the musical excerpts above are combined here to create an archetypal example of *Naturklang* or *Klangfläche*. The use of reverb (throughout the soundtrack) enhances the generally slow pacing of the explore music and gives the impression that the music is being heard in a vast landscape. The tumultuous string ostinati provide rhythmic interest but remain static. Great washes of slow harmonic rhythm support long sweeping themes for strings and frequently, the horn. This sense of movement within stasis sets up a particular subject position from which the landscape is surveyed. In addition to this, a particular time is created. The principal musical process is that of repetition, which by its very nature does not progress, develop or change. Even the larger scale structure is a form of repetition, the B section providing some contrast but with a strong sense of continuation. Dahlhaus's concepts provide a useful way of describing the particular aesthetic sense of time and space created by the music, and this aesthetic is well suited to the phenomenological experience of exploring the virtual world.

Moments like this in the game—the music powerfully coinciding with a particularly picturesque vista—are often arresting in the sense that they demands the player's time and indulgence. Structurally, these experiences are usually *not* predetermined to coincide with the exploration of particular locations. Rather, they occur randomly across many hours of gameplay. Michiel Kamp has argued that the serendipitous nature of 'stumbling upon' these musical encounters has more in common with Ronald Hepburn's aesthetics of nature than the authored, controlled semiotics usually associated with artworks.⁶⁹ While the identity-forming diegetic songs serve more obvious semiotic functions, the exploration music is integral to the game's aesthetic identity, and, in turn, its commercial success. The aesthetic experience of *Naturklang* is ultimately

⁶⁹ Michiel Kamp, 'Serendipity and Authoredness: Music and Natural Vistas in *Skyrim* and *Assassin's Creed*,' at *Ludomusicology Conference 2014* (Conference Paper, Chichester University, 10–12 April). Ronald Hepburn charts the shift in moving from the eighteenth-century emphasis on aesthetics in nature to twentieth-century definitions of aesthetics as a 'philosophy of art' in 'Contemporary Aesthetics and the Neglect of Natural Beauty,' in *The Aesthetics of Natural Environments*, eds. Allen Carlson and Arnold Berleant (Toronto: Broadview Press, 2004), pp. 43–62.

more important than the specific narrative and lore in creating the game's unique identity and sense of appeal. These late-romantic cues are, of course, close to the music found in mass-entertainment cinema, but this should not imply that the music is deficient, uninteresting, or an 'easy option'. In fact, the particular mythology of order/chaos in *The Elder Scrolls* games, with its concept of time as a synthesis of continuity and change, is very much in keeping with serendipitous moments of musical stasis. Such issues are the focus of the next chapter.

In describing the 'Unbroken Road' cue, and others, as examples of *Naturklang* and *Klangfläche*, and in recognizing certain musical similarities with Norwegian and Finnish nationalist composers Grieg and Sibelius, an ideological conception of landscapes in *Skyrim* emerges. Although there are no clear musical tensions that highlight ideological positions (between "universal" and "modern" tonality and localized folk modes, for instance), the idealized landscapes, the simplistic and universalized version of folk music traditions, and the referencing of Scandinavian nationalist music provides a Hollywood-like impression of a fictional Viking world. Indeed, the game as a whole can be viewed as a simplified microcosm for the multiplicity of historical ideological and geopolitical issues from the Scandinavian region.

Massey's conception of space as a product of 'interrelations' is realized in the geopolitical landscapes of *Skyrim*. The Nordic diegetic music can be identified through its alterity to non-diegetic non-Nordic (Imperial) music. The landscape is plural and heterogeneous, with numerous characters and factions presenting a variety of perspectives on the political landscape, as is evidenced in the diegetic songs. The player's actions through the game ensure that the geopolitical landscape is not static, but constantly under construction. Exploration through the virtual world does not entail the same tangible connection to aesthetic play with musical form that we have seen in other games. However, the player's negotiation between the various political forces in the game creates a unique landscape, and the game's music is embedded in this reconstruction. The prevailing aesthetic experience engendered by the non-diegetic music is closely connected to the game's fiction.

Although the shortcomings inherent in constructing a newly invented large and vivid virtual world sometimes prevail on the player's suspension of disbelief, the music crucially provides a complementary aesthetic experience in support of the fiction. The success of this game has often been said to be its immersive world, but it is actually the aesthetic experiences it offers.

Chapter Five

Isaac's Silence: purposive aesthetics in *Dead Space*

This chapter is concerned with a particular set of relationships between videogame music, film music, and modernist avant-garde music. In a case study of Jason Graves's soundtrack for the third-person science fiction survival horror game series, *Dead Space* (EA, 2008, 2011, 2013), I delineate a particular soundworld and trace its origins back, via Hollywood, to the aleatory avant-garde music prevalent since the 1950s.¹ Graves unsurprisingly drew on the rich heritage of science fiction and horror film scores. However, rather than simply imitating a received caricature of modernist music as used in horror films, he also studied the works of Polish avant-garde composers Krzysztof Penderecki, Witold Lutosławski and Henryk Górecki. Throughout its disparate history, this particular soundworld has always been defined as “other” to the security provided by the western tonal tradition as characterized/caricaturized in neo-romantic film scores—to which two of these composers nevertheless significantly “reverted”.² While it was in the context of Hollywood's science fiction and horror films that this aesthetic solidified its “scary” semantic associations, I argue that games like *Dead Space* and its sequels have more in common with the aesthetic paradigm's original intentions. This situation is particularly ironic given the wider avant-garde's often-dismissive attitude towards mass culture.

¹ The term ‘soundworld’ is related to R. Murray Schafer's concept of a ‘soundscape’. However, Schafer's term is all encompassing whereas soundworld tends to refer to a particular musical “style”. See ‘The Music of the Environment’, in *Audio Culture: Readings in Modern Music*, ed. Christoph Cox and Daniel Warner (New York: Continuum, 2004), pp. 29–39.

² Take, for examples, Penderecki's Second ‘Christmas’ Symphony, and Gorecki's Third Symphony.

In the first *Dead Space*, the player's character, Isaac Clarke, is a silent protagonist—he does not speak. Given the widespread acknowledgement of the importance of “immersion” as a primary goal for the videogame medium, this narrative device is of particular interest as it supports a symbiotic relationship between player and avatar. The acoustic void left by Isaac's silence is filled by both music and sound effects—sonically, sometimes indistinguishable from one another. The blurriness of this distinction problematizes the distance between sound effects and music, and goes hand-in-hand with Graves's research into avant-garde aleatory experimentation. Furthermore, the use of a dynamic music system that (re-)composes the soundtrack in real-time to fit the action on screen both supports and negates various aleatory principles.

Isaac's Silence

When his vessel crash-lands into the spaceship it was sent to assist, the protagonist of *Dead Space*, Isaac Clarke³, becomes separated from his two colleagues and finds himself a lone engineer on the USG *Ishimura*⁴ (a huge mining ship orbiting the planet Aegis VII), fending off ‘necromorphs’ (alien-infected zombies) whilst attempting to repair the ship's systems and find a way to escape to safety. Isaac is given the dangerous and difficult repair tasks, while his friends offer profuse guidance over the intercom. Throughout the game, attention is drawn to the symbiosis⁵ of the protagonist with the player, but in the most peculiar way: each time Isaac is spoken to by other characters, he never replies. Ordinarily, if the protagonist does not simply

³ Named after science fiction writers Isaac Asimov and Arthur C. Clarke.

⁴ ‘石村’, a Japanese surname which translates literally to ‘Stone Village’, the implication perhaps being that the ‘Planet Cracker’ class ship is now home to the dead.

⁵ See, for example, Jeroen D. Stout, ‘Symbiosis: Masquerading avatar autonomy as player actions,’ on *unbirthgame.com* (2010), retrieved from <[http://unbirthgame.com/Stout,%20J.D.,%20Symbiosis-%20Masquerading%20avatar%20autonomy%20as%20player%20actions%20\(a4\).pdf](http://unbirthgame.com/Stout,%20J.D.,%20Symbiosis-%20Masquerading%20avatar%20autonomy%20as%20player%20actions%20(a4).pdf)>, accessed 22/10/2013; Kate O’Riordan, ‘Playing With Lara in Virtual Space,’ in *Technospaces: Inside the New Media*, ed. S. R. Munt (London: Continuum, 2001), pp. 224–238; and Rune Klevjer, *What is the Avatar? Fiction and Embodiment in Avatar-Based Singleplayer Computer Games* (PhD Thesis, University of Bergen, July 2006).

speak for the player (with the voice of a pre-recorded voice actor), games often invoke some form of multiple-choice response system, whereby the player can express a degree of control over what the character says. Alternatively, the script can be composed in such a way as to minimize the risk of drawing attention to what must surely be considered the most fundamental point of illusory immersion—the subject positioning of the player and protagonist. But whenever Isaac is asked a question in *Dead Space*, there is nothing but an eerie silence. It seems to be a deliberate strategy, as there are plentiful solutions to avoiding such awkward self-consciousness, as demonstrated in the numerous narrative strategies of other games. With “immersion” as a primary goal, most games lay emphasis on the mimetic (showing/enacting) rather than diegetic (telling/explaining) qualities of the narrative, but in *Dead Space*, fundamental story-telling devices are laid bare, and the subsequent alienation arguably endangers the suspension of disbelief.

Silent protagonists are not uncommon in the first and third-person action or role-playing games, perhaps because the question of identity is particularly difficult to manage when the player and protagonist—often literally worlds apart—have to unite as one. Most often, as exemplified by the silent protagonist Gordon Freeman, of the influential *Half Life* (Sierra Entertainment, 1998), these characters are defined by detailed yet generic hints offered through the comments of NPCs, various (and often otherwise irrelevant) props, and extra-game information, such as accompanying artwork. This framework permits the player to fill in some character details for themselves, whilst simultaneously providing the player with those important details that locate and define the character in the game world. This way, the bond between player and protagonist is made stronger, and the character's journey through the narrative becomes the player's. Throughout *Dead Space*, Isaac boasts a mechanical suit similar to that worn by the comic book character Iron Man, and subsequently he is masked for the duration of the game.⁶ Although the suit was obviously designed for engineering tasks (the mask protects Isaac's

⁶ Except to those eagle-eyed gamers who moved the camera round to look at his face before he stood up with his mask in the prologue.

face from his blowtorch, for example), it also acts as armour against the necromorphs and helps to downplay Isaac's own identity as separate from the player. Most of the weapons Isaac employs in the game are repair tools, although ironically, the player is explicitly encouraged to use them to dismember.⁷

A key difference between Gordon Freeman and Isaac is that the player is not particularly struck by Gordon's silence because the carefully constructed dialogue—any logical response to another character would amount to no more than a redundant 'okay' or 'thanks'. At the very start of *Dead Space*, the camera zooms out of the white-noise static that concluded a video transmission from Isaac's girlfriend, Nicole, to reveal that Isaac is replaying the video before arriving at the *Ishimura*. Overhearing, Kendra, his technologist colleague, asks (or rather comments):

Kendra: How many times you watched that thing?

Isaac: [Pause]

Kendra: Guess you really miss her. [Short pause.] Don't worry, we're almost there. You'll be able to look her up once we're on board. Sounds like you two have a lot of catching up to do.

[On arrival near Aegis VII—the planet orbited by the *Ishimura*—music is cued in an 'epic' 'neo-romantic' style (see Figures 5.8 and 5.9).⁸]

The pause is not very long, but Kendra certainly waits for a response before continuing. As this is the first instance in the game, it may not strike the player as especially odd. Kendra's question is left satisfactorily rhetorical, and although the subsequent pauses in the game's dialogue are hardly Pinteresque, they do nevertheless hold a latent tension that perhaps foreshadows the ensuing violence. Given Isaac's other frequent vocalisations (moans, screams and grunts), the lack of direct communication or even occasional private monologue is a noticeable omission.

⁷ The fastest and most efficient way to take down the Necromorphs, the game tutorial tells us, is to shoot off their limbs. This is to help contrast the game with the more usual approach of aiming for the head or vital organs.

⁸ These are my labels.

In *Dead Space*, the only hints provided about Isaac's backstory are the brief and relatively vague allusions to Nicole working on board the *Ishimura* as a medical officer prior to his arrival. Her presence provides an additional motivation for Isaac's actions on board, as well as a pretext for his participation on the trip. As the story progresses, Isaac receives messages from Nicole, helping him uncover two conspiracies involving the mystical Church of Unitology and the government, for whom Kendra turns out to be an undercover agent. These "factions" were both using the *Ishimura* as a vehicle for obtaining a powerful artefact—the "Marker"—from the planet colony Aegis VII. It transpires that the Marker pacifies the 'hive mind' of the necromorphs, and keeps them under control, but it also can manipulate Isaac's state of mind with powerful hallucinogenic effects. By the end of game, Isaac discovers that Nicole committed suicide prior to his arrival, and that the transmissions he thought were coming from her were actually from the Marker. The personal and evidently deep relationship with Nicole provides an important emotional element to Isaac's adventure, although if anything, attention during normal gameplay is drawn away from any sort of empathy or attachment to this plot feature. Indeed, Isaac is a man of action and seems surprisingly "at home" for an engineer (as opposed to a marine, perhaps) under such extreme circumstances. His slow, cumbersome movements and stooped posture give him an ambiguous appearance that is neither gung-ho, nor petrified, but ironically actually rather alien-like.



Figure 5.1: Isaac Ambles Along, Exploring a Corridor on the *Ishimura*

While Isaac quietly “gets the job done”, his counterparts are very vocal and eventually reveal their true colours as unreliable plot manipulators. Isaac’s actions are left to stand alone as evidence of his/the player’s agency. Although he is at the heart of the game’s drama, Isaac’s expressionlessness leaves a communicative vacuum that begs to be filled.

Selecting Soundworlds

Isaac’s role loosely parallels Ellen Ripley’s character in Ridley Scott’s sci-fi horror, *Alien* (1979), although, direct comparison makes the taciturn Ripley (played by Sigourney Weaver) appear loquacious. The antagonistic relationship between Scott and the film’s composer, Jerry Goldsmith was, despite their own misgivings, a productive one, as it resulted in an interesting dialectic of musical styles: the essentially neo-romantic vision preferred by Goldsmith for the film in

juxtaposition with (or perhaps, complementary to) the extended instrumental techniques borrowed from the avant-garde, or what he referred to as 'the obvious thing: weird and strange, and which everybody loved.'⁹ In other words, Scott believed that "scary" and 'weird' sound effects would sell but was willing to meet Goldsmith half way. (The idea of this music being a functional "sound effect" is particularly relevant.) The resultant synthesis can nevertheless be thought of as an opposition because, as we shall see, each distinct soundworld serves a particular emotional function within the film: the neo-romantic music coming to the fore to support the epic narrative, and the modernist music taking over in tension-building or violent sequences. Consciously or not, this duality was carried over by Jason Graves, who had worked with Goldsmith in the past.¹⁰ However, Graves conducted an unusual amount of research in preparation for creating his score, looking back to modernist avant-garde music just as Goldsmith himself had done for the pioneering score to *Planet of the Apes* (1968) (see below). For Penderecki, Lutoslawski and Gorecki—three composers Graves paid particular attention to—the resultant soundworld was a by-product of a technical, aesthetic and, in the end, philosophical process.¹¹ As we shall see later, more often than not it was the "means" of sonically assembling the score, rather than the "ends" of the particular musical outputs that are significant. The music to *Dead Space* has more in common with the modernist art music experiments than *Alien's* score, although surface similarities are often specious. In *Dead Space*, the means are functional, but also, for that very reason, means to ends and not ends in themselves.

⁹ See David McIntee, *Beautiful Monsters: The Unofficial and Unauthorized Guide to the Alien and Predator Films* (Surrey: Telos Publishing Ltd., 2005), p.38. Ironically, the credits of *Alien* were re-scored by Scott, who replaced Goldsmith's original cue with an excerpt from Howard Hanson's Symphony No. 2, which has the telling subtitle of 'Romantic'. Goldsmith's cue was not entirely dissimilar, although its atmosphere is darker than the Hanson, and its reference to the opening theme Scott had already cut made it somewhat redundant.

¹⁰ The biography on Jason Grave's official website appears to have changed in recent years and no longer provides much detail about the composer's background. However, some of the missing elements are referenced at <http://en.wikipedia.org/wiki/Jason_Graves>, accessed 21/03/2013. In an interview, Graves refers to 'studying under' Goldsmith and Christopher Young. See Michael Naumenko, 'Jason Graves Interview: Brutal, Visceral, Musical,' on *game-ost.com* (November 2008), retrieved from <<http://www.game-ost.com/articles.php?action=view&id=45>>, accessed 21/03/2013.

¹¹ See Naumenko, 'Jason Graves Interview: Brutal, Visceral, Musical.'

Tim Summers has developed some useful terminology for describing the process by which 'music can use intertextual and semiotic referents from other media and cultural touchstones that are already well-established to enhance the game experience.'¹² This, he calls, 'texturing', 'since it has the result of creating depth, implied detail and rounded context to the surface level of gameplay activity.'¹³ Another key term, prevalent in its broader sense across the film and videogame industry, is 'epic'.¹⁴ With this, Summers refers primarily to the macro-level narratives and contexts in which a videogame takes place—those elements that do not usually have a direct impact on the gameplay, but are crucial to immersing the player in their avatar's world, usually by grounding the action with a sense of purpose. Indeed, the term is clearly an apt description of the majority of first-person action games where the stakes are invariably high.

While the basic plot arc of *Dead Space* echoes that of *Alien*, there are further parallels to be made between the sequels, *Dead Space 2* (EA, 2011) and *Aliens* (James Cameron, 1986). Both move away from the personal, internalized focus in the originals toward a more general action-orientated group dynamic where the protagonists return, but this time, backed up by a squad of marines. This shifts the emotional and psychological elements of the horror significantly, and goes hand-in-hand with the *Dead Space 2* writers' decision to unmask Isaac, give him a voice, and more explicitly "characterize" him. The change of heart certainly generated a great deal of debate.¹⁵ Graves, who was re-employed as the composer for both sequels, was left with a dilemma in how

¹² Summers, 'The Aesthetics of Video Game Music: Epic Texturing in the First-Person Shooter,' *The Soundtrack 5/2* (2012): 131–151. See also his chapter, "'Making You Feel": Epic Texturing and the First-Person Shooters,' in *Video Game Music – History, Form and Genre* (PhD Thesis, University of Bristol, August 2012), 34–72.

¹³ Summers, 'The Aesthetics of Video Game Music,' p. 3.

¹⁴ *Ibid.*, pp. 3–5.

¹⁵ See forum threads such as maksut029, 'Isaac should be muted!,' on *ps3trophies.org* (01/20/2011), retrieved from <<http://www.ps3trophies.org/forum/dead-space-2/89472-isaac-should-muted.html>>, accessed 24/01/2012. Also see M. Suliman, 'The Two Voices of Isaac Clarke,' on *Mending The Wall* (14/02/2011), retrieved from <<http://mendingthewall.com/2011/02/14/the-two-voices-of-isaac-clarke/>>, accessed 24/01/2012.

to write for this newly balanced narrative. In the first instance, he inevitably had to reflect the larger stakes (society as opposed to individual):

The original *Dead Space* was very claustrophobic, and the music had a very chaotic, out-of-control sound to it. I wanted the music for *Dead Space 2* to sound bigger and more focused than the original. So the score makes use of more instruments in the orchestra to convey that larger-than-life feeling.¹⁶

But simultaneously, he had to maintain and further develop Isaac's internal struggle:

Isaac definitely has a more identifiable character arc in the sequel. I used a string quartet, which is the antithesis of the huge, churning orchestra, to portray Isaac's vulnerability and character arc as he progresses through the game.¹⁷

Graves developed new material for the sequel, such as Isaac's leitmotif (D-E-A-D), but maintained much that made the original soundworld distinctive—a form of musical branding essential to preserving the identity of the series. His final press release clarifies the two distinctive musical areas that characterize the individual within the epic narrative:

The score really runs the gamut as you play through the game. There are much bigger and scarier pieces along with quieter, more personal moments to counterbalance them. I wrote for string quartet to portray Isaac's vulnerable side. It's quite the emotional arc, but of course still done in a very 'Dead Space' way.¹⁸

This is reminiscent of the duality found in the Goldsmith score between the Romantic "epic" and the modern "horror", although neither the game nor the film treat orchestration or style as exclusive categories. Both attempt to unify the opposing soundworlds into a particular stylistic fusion.

Dead Space [1]'s narrative structure provides the game's overall macro form, summarized in the chapter titles that combine to produce the acrostic "spoiler", 'N.I.C.O.L.E. I.S. D.E.A.D.':

- Chapter 1: **N**ew Arrivals
- Chapter 2: **I**ntensive Care
- Chapter 3: **C**ourse Correction
- Chapter 4: **O**bliteration Imminent
- Chapter 5: **L**ethal Devotion

¹⁶ Naumenko, 'Jason Graves Interview: The Same, But Different and Better,' on *game-ost.com* (January 2011), retrieved from <<http://www.game-ost.com/articles.php?id=87&action=view>>, accessed 16/10/2011.

¹⁷ Ibid.

¹⁸ Ibid.

Chapter 6: Environmental Hazard (*Boss: The Leviathan*)

Chapter 7: Into the Void

Chapter 8: Search and Rescue (*Boss: The Slug*)

Chapter 9: Dead on Arrival

Chapter 10: End of Days

Chapter 11: Alternate Solutions

Chapter 12: Dead Space (*Boss: The Hive Mind*)

The end of each complete word in the acrostic is a chapter that culminates in a boss fight: 'The Leviathan' appears at the E of 'Nicole', the 'Slug' at the S of 'is', and the 'Hive Mind' at the end of 'dead'. With the obvious exception of Isaac (and Nicole), all of the main cast of characters are killed in the final four chapters, Hammond in 'Dead on Arrival', Challus Mercer in 'End of Days', Dr Terrence Kyne in 'Alternate Solutions' and Kendra in 'Dead Space'. The narrative structure is conditioned by the pendulum effect of non-interactive cutscenes that punctuate gameplay. The interactive gameplay sequences are themselves carefully paced between moments of intense combat action and tension-building exploration. The two types of music (neo-romantic and modernist) map onto this form, the neo-romantic music featuring predominantly in cutscenes and pre-scripted sequences, and the dynamic modernist music underscoring gameplay. However, this opposition is not a simple aural distinction as both soundworlds are frequently integrated together to produce a coherent style (see below).

In *Dead Space 2*, Graves readopts the Romantic dichotomy between public and private musical spheres, embodied in orchestral and chamber music respectively. Indeed, although some players preferred the music to the first game, others found that the greater weight on the more familiar neo-romantic music in the sequel(s) provided relief from the unrelenting modernist music.¹⁹ Furthermore, it seems while many players were content with the modernist music as an underscore to violent gameplay, some said they felt that it was not as enjoyable to listen to outside the context of gameplay and so preferred the more obviously "epic" music. These

¹⁹ See DeadSpace1984, 'Dead Space 3 Music,' on *Aegis 7* (17/02/2013), retrieved from <<http://forums.aegis7.com/32-dead-space-3/6991-dead-space-3-music.html>>, accessed 21/03/2013.

opinions indicate that while there were some disagreements, it is clear that a balance was sought and largely achieved: the “inward turn” to Isaac’s subjective psyche is balanced with an epic texturing of neo-romantic music—the outside world and larger social struggles of the narrative. This provides aesthetic relief and moral security, grounding the game around values that attempt to stabilize its otherwise precarious, uncertain and violent character.

The third—and perhaps final—game in the series, *Dead Space 3*, continues the trajectory from private to public spheres, expanding the original remit to include more action. However, it has received mixed reviews, primarily because the action comes at the expense of the suspense and horror promised by the genre. This conflict of interests seems to have been brought about because the developers or publishers attempted to expand the target audience by making the game more action-orientated than suspenseful, and in doing so they have jeopardized the loyalty of their original fan-base.²⁰ Additionally, *Dead Space 3* was heavily “monetized” in game, reflecting recent trends in free-to-play MMO games that make their money through “microtransactions” instead of subscription fees. Players are encouraged to purchase additional items to help them within the game world (such as supplies or upgrades), but with real money rather than gameplay earned credits. Despite the fact that it has become common in other genres, it is not common in expensive **AAA** titles like *Dead Space*, and many players and reviewers expressed such animosity towards the setup that the developers felt the need to defend their decision, suggesting that microtransactions would encourage the mobile gaming demographic (smaller, simpler games produced on social networking websites or for less powerful mobile devices) to try other sorts of games.²¹ This is a little dubious, since that demographic exists

²⁰ See Andy Robinson, ‘EA: “We don't want to p*ss off our fans” with Dead Space 3... But franchise needs to become “more broadly appealing”,’ on *computerandvideogames.com* (15/06/2012), retrieved from <<http://www.computerandvideogames.com/353788/ea-we-dont-want-to-pss-off-our-fans-with-dead-space-3/>>, accessed 19/08/2013.

²¹ See, for instance, Imran, ‘ImRage: Dead Space 3’s Micro-Transactions Goes Too Far,’ on *egamer.co.za* (21/02/2013), retrieved from <<http://egamer.co.za/2013/02/imrage-dead-space-3s-micro-transactions-goes-too-far/>>, accessed 16/09/2013; and Shaun Prescott, ‘Interview: Dead Space 3 producer on micro-

precisely for casual gamers who tend not to be interested in more traditional videogames of this type.

These conflicting pressures are particularly interesting for the present case study, since they explicitly pit economic against creative values. Electronic Arts (EA), the largest videogame publisher in the world, own the intellectual property (IP) of the series. Referring to AAA titles in general (games developed for popular platforms with enormous marketing budgets), but with the *Dead Space* IP in mind, the President of EA Games Label, Frank Gibeau, has stated that an audience size of 'anything less than [five million] becomes quite difficult financially given how expensive it is to make games and market them.'²² The sales figures for the three games are graphed in Figures 5.2 (PC) and 5.3 (Xbox 360).²³

transactions and keeping the horror alive,' on *computerandvideogames.com* (25/01/2013), retrieved from <<http://www.computerandvideogames.com/388167/interviews/interview-dead-space-3-producer-on-micro-transactions-and-keeping-the-horror-alive/>>, accessed 16/09/2013.

²² See Andy Robinson, 'Exclusive: A Frank chat with EA's Gibeau,' on *computerandvideogames.com* (15/06/2012), retrieved from <<http://www.computerandvideogames.com/353554/interviews/exclusive-a-frank-chat-with-eas-gibeau/>>, accessed 04/04/2013.

²³ Both Figures 5.1 and 5.2 are taken from VGChartz, a videogame statistics website, <<http://www.vgchartz.com/>>, accessed 16/08/2013.



Figure 5.2: *Dead Space* Series Cumulative Global Weekly Sales

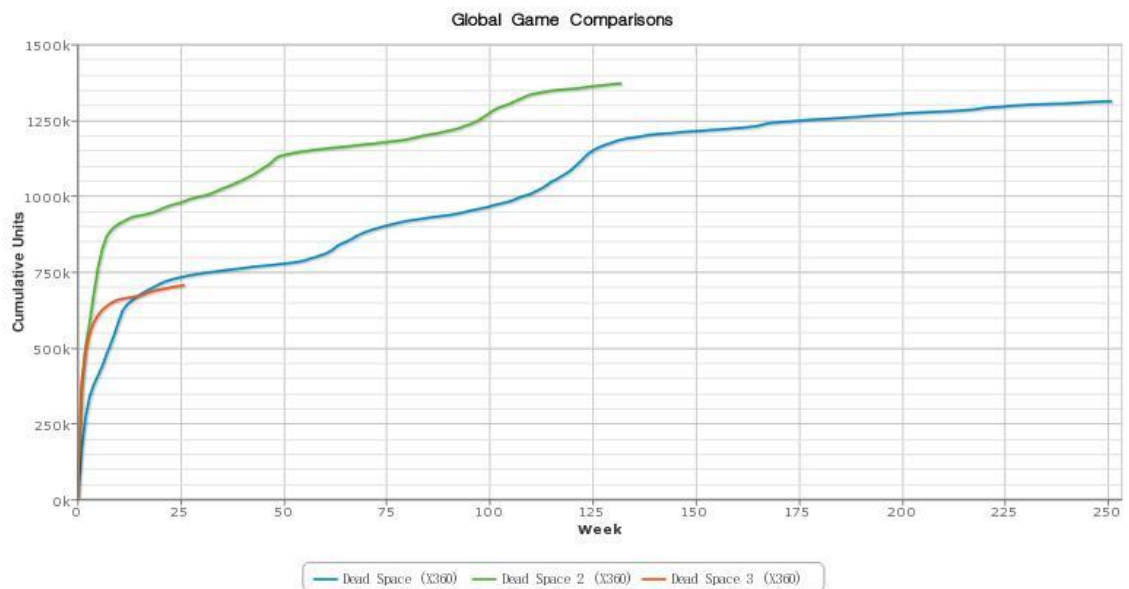


Figure 5.3: *Dead Space* Series Cumulative Global Weekly Sales (Xbox 360)

Across the three platforms the games were released on (PC, Xbox360 and PlayStation 3), it is clear that *Dead Space 3* is unlikely to meet Gibeau's target and it was speculated in the media that development on *Dead Space 4* was shelved due to disappointing sales figures.²⁴ In addition,

²⁴ See David Scammell, 'Dead Space 4 canned, series in trouble following poor sales of Dead Space 3,' on *videogamer.com* (05/03/2013), retrieved from <http://www.videogamer.com/xbox360/dead_space_3/news/dead_space_4_canned_series_in_trouble_fo

players' reviews of the soundtrack for *Dead Space 3* were mixed, some missing the tension and unrelenting violence of the first game, others preferring the more 'epically balanced' score (as mentioned above).²⁵ The slight dip in reception ratings according to critic aggregator website, MetaCritic, are reflective of the sales:

	<i>Dead Space (2008)</i>	<i>Dead Space 2 (2011)</i>	<i>Dead Space 3 (2013)</i>
MetaCritic Rating ²⁶	(X360) 89/100 (PS3) 88/100 (PC) 86/100	(X360) 90/100 (PS3) 89/100 (PC) 87/100	(PC) 79/100 (X360) 78/100 (PS3) 76/100

Table 5.1: *Dead Space* series MetaCritic Ratings

Nevertheless, there is no doubt that the three games produced were largely successful economically, reaching the large audience figures expected of a mass-market product of this type. However, new sales models have aggravated many gamers, some of whom, according to Peter Moore, EA's Chief Operating Officer, believe that games should not even be 'a profitable enterprise'.²⁷ On the one hand, with gamers demanding greater artistic integrity and a diverse range of aesthetic experiences from videogame developers, and on the other, the publishers' need to make games commercially viable, debates like this have tended to polarize art and mass culture. That this well-worn question of commercial and creative (or artistic) value is so topical across the industry (and in the music industry too, of course) is perhaps more useful and

llowing_poor_sales_of_dead_space_3.html>, accessed 19/08/2013. EA denied the rumour: Martin Gaston, 'EA denies Dead Space series cancellation,' on *gamespot.com* (March 2013), retrieved from <<http://uk.gamespot.com/news/ea-denies-dead-space-series-cancellation-6404823>>, accessed 19/08/2013. See also Robinson, 'EA: "We don't want to p*ss off our fans" with Dead Space 3.'

²⁵ See DeadSpace1984, 'Dead Space 3 Music.'

²⁶ In order to provide standardized comparisons of "how good" individual games are, MetaCritic compiles the ratings attached to reviews from many sources and normalizes them into an average out of 100, 0 being the worst, and 100 being the best rating a game could receive. See their explanation at <<http://www.metacritic.com/about-metascores>>, accessed 06/02/2014. The ratings for the games discussed here can also be found on their respective Wikipedia pages: <[http://en.wikipedia.org/wiki/Dead_Space_\(video_game\)](http://en.wikipedia.org/wiki/Dead_Space_(video_game))>, <http://en.wikipedia.org/wiki/Dead_Space_2>, and <http://en.wikipedia.org/wiki/Dead_Space_3>, all accessed 03/04/2013.

²⁷ See Peter Moore, cited by Colin Campbell, 'Why Do People "Hate" EA?,' on *Imagine Games Network* (14/06/2012), retrieved from <<http://uk.ign.com/articles/2012/06/14/why-do-people-hate-ea>>, accessed 23/09/2013.

interesting than the debate itself, as it may indicate the perception that videogames have, taken as a whole, narrowed the gap between polarized conceptions of high and low art. The diversity of gaming experiences points to a more integrated and interconnected conception of these binary constructs.

The Sound of Avant-Garde Modernism: 'Who Cares if You Listen?'

While the neo-romantic soundworld employed by Graves across the series is familiar from Goldsmith's score, the modernist soundworld he utilizes for the internal psychological narrative and for the horror aspect of the genre, is perhaps less so. Given Graves himself studied certain aleatory avant-garde works, an understanding of the contexts in which they were written is crucial to a proper contextualization of *Dead Space*. Two works often cited as pioneering examples of aleatory music are Stockhausen's *Klavierstück XI* (1956) and Pierre Boulez's *Third Piano Sonata* (1958), both generally categorized as modernist and avant-garde. The structure of the first of these is relatively simple and reflects Stockhausen's interest in experimenting with sound itself. The pianist is instructed to glance randomly between the nineteen different sections of music to determine the order in which they should be played as he/she goes along, only finishing if one group is reached three times. Tempo and dynamic indications are given at the end of each section, to be employed in the next, whichever it may be, ensuring a degree of musical continuity. Stockhausen deliberately sets his project aside from earlier experiments with mobile form, such as Henry Cowell's 'Mosaic' Quartet (1934), or the indeterminate chance pieces by John Cage²⁸, instead, claiming that the work

²⁸ On Cage and mass audiences see Andre Mount, 'Testing Art with a Live Studio Audience: John Cage at an Intersection of Popular Television and the Avant-Garde,' *Music and the Moving Image* 4/3 (2011): 31–56.

is nothing but a sound in which certain partials, components, are behaving statistically... As soon as I compose a noise... then the wave structure of this sound is aleatory. If I make a whole piece similar to the ways in which this sound is organized, then naturally the individual components of this piece could also be exchanged, permutated, without changing its basic quality.²⁹

Stockhausen's use of aleatorism on the structural plane—as mobile form—is supposed to be a mirror of the statistical randomness he finds in individual noises. *Klavierstück XI* is therefore to be thought of as a metaphor for sound itself. This is a modernist project as its quasi-scientific experimental aim is an investigation of the objective qualities of sound. Temporally, the experience of form is partially contingent on the listener's knowledge of the score. While all experience is linear in an immediate sense, and the final product of a mobile-structure will be too, multiple performances reveal the work's non-linear structure. By applying aleatory procedures to both form and soundworld, Stockhausen ensures that the musical experience is consistent with his experimental intentions.

Boulez's Third Piano Sonata offered a critique of Stockhausen's experiment. Crucially, Boulez recognized the trap of assuming that chance—and the musical forms that relied on it (indeterminate and aleatory music)—was antithetical to the 'automatisms' of total serialism. He discovered that, as Paul Griffiths puts it, 'leaving any aspect to chance produced exactly the same effect as being forced by some scheme: the composer's presumed liberty of action was compromised.'³⁰ Thus, both total serialism and indeterminacy involve automatisms that jeopardize "freedom" in one way or another. (For this reason, these works can be described as modernist, because they push an "objective" abstract "language" over the communicative language of a subjective author.) Boulez's Third Piano Sonata offers five 'formants' ('Antiphonie', 'Tropé', 'Constellation-Miroir', 'Strophe', and 'Séquence'; only numbers two and three were formally published) which the performer is asked to order in advance, as if preparing a route on a

²⁹ Jonathan Cott, *Stockhausen* (London: Simon & Schuster, 1973), p. 70. See also Paul Griffiths, *Modern Music and After* (New York: Oxford University Press, 2010), p. 105.

³⁰ Griffiths, *Modern Music and After*, p. 105.

map. In 'Sonate, que me veux-tu?' (1963), Boulez likened the role of the performer to Theseus in the Labyrinth.³¹ The image is evocative of Isaac's journey around the dark corridors of the Ishimura, but it is also provocative in the sense that the player follows narrative threads through the game's non-linear maze-like form, creating a unique linear audio-visual experience. Boulez drew heavily on literary criticism, work by James Joyce, and the poet Stéphane Mallarmé's concept of 'perpetual expansion' derived from *Un coup de dés*.³² Significantly, Boulez—characteristically of post-war French intellectuals³³—initially rejected Cage's "indeterminacy", but Cage claims that once Boulez had discovered Mallarmé, he began his own investigation and developed his own terminology, rebranding indeterminacy as 'aleatory'.³⁴ Boulez's 1957 essay, 'Aléa', offered a compositional framework in which chance is restricted in order to maintain creative control, a feature that distinguishes it from Cagean chance both procedurally and intellectually.³⁵

It would be remiss not to recognize the contributions of Varèse and his disciple, Xenakis. Both composers had a background in science and mathematics which greatly informed their work. Xenakis positioned himself against both integral serialism and earlier traditional tonal music because he argued that they both assume that absolute causality and determinacy are the rules by which the world works. However, he also rejected the "absolute" indeterminacy of Cage, for similar reasons to Boulez. Instead, Xenakis proposed that the future of music was "stochastic" as that better reflected the modern understanding of the world, according to probability theory,

³¹ Pierre Boulez, 'Sonate, que me veux-tu?', *Perspectives of New Music* 1/2 (Spring, 1963): 32–44.

³² *Pli selon pli* (1957–1962) took these ideas further by setting Mallarmé on a larger scale, which also brought about other restrictions.

³³ See Robert Barsky's chapter 'The Intellectual as Commissar' in *Noam Chomsky: A Life of Dissent* (Massachusetts: MIT Press, 1998). An edition of the book is available online at <http://cognet.mit.edu/library/books/chomsky/chomsky/5/9.html>, accessed 09/08/2012.

³⁴ For a detailed account of Boulez's writings on his relationship to Cage and indeterminacy, see Kathryn Whitney, *Determining Indeterminacy: Vision and Revision in the Writings of Pierre Boulez* (DPhil Thesis, University of Oxford, 2000). Available on the Oxford University Research Archive: <<http://ora.ox.ac.uk/objects/uuid%3A1ff0a118-6df6-4352-a567-303b2235ce31>>, accessed 8 August 2012.

³⁵ Pierre Boulez, *Aléa*.

polyvalent logic, and modern (quantum) physics.³⁶ (Works such as *Persephassa* (1969) for percussion ensemble were based on thousands of mathematical calculations.) Subsequently, he was suspicious of “linear” music and placed chance (*tyche*), disorder (*ataxia*) and disorganization in contrast with reason (*logos*), order (*taxis*) and organization (*systasis*). Nevertheless, as the world he reflects in his music is tangible and literal, his language is conceived of as an “objective” tool, and in this sense, much of his music retains a modernist outlook.

The relationship of the avant-garde to its audience is most famously encapsulated in the title of Milton Babbitt's notoriously arrogant essay ‘Who Cares if You Listen?’³⁷ Likening research in music to research in science (and specifically, theoretical physics), Babbitt accepted music's isolation from society as an inevitable consequence of its increased complexity. He subsequently believed that serious contemporary avant-garde music was necessarily elitist and required institutional (university) support, as it was beyond the everyday concerns of society. It is possible to detect an overly-rational bitterness in much avant-garde writing as the need to justify their work—and funding—became increasingly necessary. Georgina Born's introduction to her study on Boulez's own ‘Institutionalization of the Musical Avant-Garde’ at the state-funded IRCAM, *Rationalizing Culture*, adopts Susan McClary's well-known phrase to characterize writing of the period as a ‘rhetoric of survival’.³⁸ Born's title, thus, has a double meaning in that rationality itself was the key issue (understanding and “practicing” culture by objectifying it), but that also, rationalizing, or “legitimizing” culture became necessary in an unprecedented way. (Of course, the avant-garde efforts to legitimize themselves and their work remain highly contentious.)

³⁶ Iannis Xenakis, ‘Free Stochastic Music,’ in *Source Readings in Music History*, ed. Oliver Strunk, rev. ed. Leo Treitler (New York: W. W. Norton & Company, 1998), pp. 1371–1375. Originally published in *Formalized Music*, rev. ed. Stuyvesant (NY: Pendragon Press, 1992), pp. 35, 8–10, 264.

³⁷ The original title—‘The Composer as Specialist’—was discarded by the journal's editor, in favour of one more provocative. See Milton Babbitt, ‘Who Cares if You Listen?,’ in *Source Readings in Music History*, pp. 1305–1311. Originally published in *High Fidelity* 8/2 (Feb., 1958): 38–40.

³⁸ Georgina Born, *Rationalizing Culture: IRCAM, Boulez, and the Institutionalization of the Musical Avant-Garde* (Berkeley: University of California Press, 1995), 1–11. See also Susan McClary, ‘Terminal Prestige: The Case of Avant-Garde Music Composition,’ *Cultural Critique* 12 (Spring, 1989): 57–81, 62.

Despite the flaws of this important ethnographic study, it highlights certain tensions and paradoxes in avant-garde thinking.³⁹ Babbitt's claims lose sight of music's purpose/function as a performative art and communicative language and his almost childish equation with science is clearly flawed since in that discipline, social justification and "function" is paramount in spite of mass incomprehension.

Penderecki's career path is characteristic of this Zeitgeist. His first compositionally "mature style" (during the 1960s) experimented with extended string techniques and the dialectic between very specific instructions and indeterminate graphic notations. Perhaps his most famous work, *Threnody to the Victims of Hiroshima* (1960) is scored for 52 string instruments and in it, Penderecki applied the idea of tone/chord clusters to textures, developing them into a more large scale aesthetic style often referred to as 'sound mass composition'. The indeterminate notational elements (the score is written with symbols rather than traditional musical notation), alongside the original title of *8'37"* provide overt clues to artistic intentions which became manifest when in 1994, Penderecki explained that:

[The piece] existed only in my imagination, in a somewhat abstract way. When Jan Krenz recorded it and I could listen to an actual performance, I was struck with the emotional charge of the work. I thought it would be a waste to condemn it to such anonymity, to those "digits". I searched for associations and, in the end, I decided to dedicate it to the Hiroshima victims.⁴⁰

³⁹ Born's study is by no means exhaustive and her anthropological perspective comes at a price. See Elizabeth Hinkle-Turner, 'Georgina Born: Rationalizing Culture: IRCAM, Boulez, and the Institutionalization of the Musical Avant-Garde,' review of the book *Rationalizing Culture* by Georgina Born, *Computer Music Journal* 23/3 (Autumn 1999): 118–120. Julian Anderson's review also points out that the conflicting methodologies alongside her acknowledged background leads to a bias that fundamentally inflects the tone of the book as well as Born's conclusions. See Julian Anderson, 'Down with them: Value for money or a monstrous white elephant?,' review of the book *Rationalizing Culture* by Georgina Born, *The Musical Times* 138/1848 (February 1997): 25–29.

⁴⁰ Penderecki cited in Sarah Wallin, 'Krzysztof Penderecki: Threnody for the Victims of Hiroshima (1960),' on *sarahwallinhuff.com* (05/06/2009), retrieved from <<http://sarahwallinhuff.com/wp-content/uploads/2005/09/penderecki.pdf>>, accessed 24/09/2014. Originally in Mieczyslaw Tomaszewski, 'Liner notes,' in *Krzysztof Penderecki. Orchestral Works Vol. 1: Symphony No. 3, Threnody*, trans. Jan Rybicki and Richard Whitehouse, performed by Polish National Radio Symphony Orchestra, conducted by Antoni Wit, Audio CD (Naxos, 2000). See also Tim Rutherford-Johnson, 'Taruskin, Vol. 5, page 220,' on *The Rambler* (12 June 2007), retrieved from <<http://johnsonsrambler.wordpress.com/2007/06/12/taruskin-vol5-page-220/>>, accessed 19/10/2013.

Without undermining the “validity” of these extra-musical associations, which, it should be noted, were only given weight by the composer after he had successfully moved in a very different direction⁴¹, the fact remains that the origins of the work were undoubtedly heavily influenced by Cage. It seems that Penderecki originally had little sense of how the final result would actually sound, or how an audience might respond to perceived semantic “content”. The evidence suggests he was rather more concerned with the abstract experimentation—the use of new *determining* notations for aleatory (indeterminate) techniques. Any emotional responses or meaningful interpretations were by-products of an experiment with sound and musical structure. That said, it is also true to say that the majority of aleatory/indeterminate music was composed as “other” to the accepted classical canon. Breaking away from tonality and its associated rhythmic and formal structures by definition means “otherness”. In an interview, Graves refers to Goldsmith’s *Alien* as the textbook horror soundtrack, but suggests that the ‘original roots of every horror film score that’s ever been written’ can be found in Penderecki, not least due to the use of *Threnody* in Stanley Kubrick’s cult classic, *The Shining* (1980) and more recently, in Alfonso Cuarón’s *Children of Men* (2006).⁴² (There is a small irony in the fact that Goldsmith himself had turned to Penderecki for inspiration for *Planet of the Apes*.) However, when referring to *Threnody*, Graves shows little awareness of the composer’s original intentions, remarking only on the impact of the music.

Specifically, there are several string techniques and notational elements employed in *Threnody* that were of use to Graves. Penderecki outlined his new notations in detail at the start of the composition (Figure 5.4).⁴³

⁴¹ In the 1970s, Penderecki began moving toward what has been described as a ‘post-romantic’ idiom. He explained that he was saved from the trappings of the avant-garde illusion of ‘universalism’ when he ‘realised the Utopian quality of its Promethean tone.’ See Tomaszewski, ‘Liner notes.’

⁴² See John Llewellyn Probert, ‘Jason Graves,’ on *This Is Horror* (no date), retrieved from <<http://www.thisishorror.co.uk/interviews/jason-graves/>>, accessed 21/03/2013.

⁴³ Figures 5.4–7 are taken from Krzysztof Penderecki’s score for *Threnody for the Victims of Hiroshima* (1960), Copyright 1961 (Renewed) EMI Deshon Music, Inc., used with permission.

SKRÓTY I SYMBOLE	ABBREVIATIONS AND SYMBOLS		SIGNES D'ABREVIATION ET SYMBOLES	ABKÜRZUNGEN UND SYMBOLE
ordinario sul ponticello sul tasto col legno legno battuto		ord. s. p. s. t. c. l. l. batt.		
podwyższenie o $\frac{1}{4}$ tonu	raised by $\frac{1}{4}$ tone	↑	hausse la note d'un quart de ton	Erhöhung um $\frac{1}{4}$ Ton
podwyższenie o $\frac{3}{4}$ tonu	raised by $\frac{3}{4}$ tone	♯	hausse la note de trois quarts de ton	Erhöhung um $\frac{3}{4}$ Ton
obniżenie o $\frac{1}{4}$ tonu	lowered by $\frac{1}{4}$ tone	♭	abaisse la note d'un quart de ton	Erniedrigung um $\frac{1}{4}$ Ton
obniżenie o $\frac{3}{4}$ tonu	lowered by $\frac{3}{4}$ tone	♭	abaisse la note de trois quarts de ton	Erniedrigung um $\frac{3}{4}$ Ton
najwyższy dźwięk instrumentu (wysokość nieokreślona)	highest note of the instrument (indefinite pitch)	▲	le son le plus aigu de l'instrument (hauteur indéterminée)	höchster Ton des Instrumentes (unbestimmte Tonhöhe)
grać między podstawkiem i strunnikiem	play between bridge and tailpiece	↑	jouer entre le chevalet et le cordier	zwischen Steg und Saitenhalter spielen
arpeggio na 4 strunach za podstawkiem	arpeggio on 4 strings behind the bridge	↑	arpège sur 4 cordes entre le chevalet et le cordier	Arpeggio zwischen Steg und Saitenhalter (4 Saiten)
grać na strunniku (arco)	play on tailpiece (arco)	↑	jouer sur le cordier (arco)	auf dem Saitenhalter spielen (arco)
grać na podstawku	play on bridge	↑	jouer sur le chevalet	auf dem Steg spielen
efekt perkusyjny: uderzać w górną płytę skrzypiec żabką lub czubkami palców	percussion effect: strike the upper sounding board of the violin with the nut or the finger-tips	↑	effet de percussion: frapper la table de dessus du violon avec le talon de l'archet ou avec les bouts des doigts	Schlagzeugeffekt: mit dem Frosch oder mit Fingerspitze die Decke schlagen
kilka nieregularnych zmian smyczka	several irregular changes of bow	n v	plusieurs changements d'archet irréguliers	mehrere unregelmäßige Bogenwechsel
molto vibrato	molto vibrato	~~~~~	molto vibrato	molto vibrato
bardzo wolne vibrato w obrębie ćwierćtonu, uzyskane przez przesuwanie palca	very slow vibrato with a $\frac{1}{4}$ tone frequency difference produced by sliding the finger	~~~~~	vibrato très lent à interval d'un quart de ton par le déplacement du doigt	sehr langsames Vibrato mit $\frac{1}{4}$ -Ton-Frequenzdifferenz durch Fingerverschiebung
bardzo szybkie i nierytmizowane tremolo	very rapid not rhythmicized tremolo	⚡	trémolo très rapide, mais sans rythme précis	sehr schnelles, nicht rhythmisiertes Tremolo

Figure 5.4: *Threnody*—Abbreviations and Symbols

These symbols can be seen scattered across the semi-graphic (but nevertheless precise) score in Figure 5.5.⁴⁴ The instrumental divisions are further subdivided, and Penderecki indicates the exact number required in each. The total forces required are 24 violins, 10 violas, 10 cellos and 8 double bass.

⁴⁴ A good indication of how these symbols sound can be found at gerubach, 'Penderecki - Threnody (Animated Score),' on *YouTube* (06/02/2011), retrieved from <<http://www.youtube.com/watch?v=HilGthRhwP8>>, accessed 22/03/2013.

The image displays a complex musical score for an orchestral excerpt. It is organized into three sections, labeled I, II, and III. Section I (measures 13-16) features four violins (4Vn), three violas (3VI), three violas cellos (3Vc), and two cellos (2Cb). Section II (measures 17-20) includes four violins (4Vn), three violas (3VI), three violas cellos (3Vc), and two cellos (2Cb). Section III (measures 21-24) consists of four violins (4Vn), three violas (3VI), three violas cellos (3Vc), and two cellos (2Cb). The score is annotated with numerous performance directions: 'arco' (arco), 'pizz.' (pizzicato), '1. batt.' (first beat), and dynamic markings such as 'ff sempre' (fortissimo sempre), 'pp' (pianissimo), 'mf' (mezzo-forte), and 'f' (forte). A circled number '56' is present at the top left, and the numbers '15' and '17' are at the top right. A '10'' time signature is located at the bottom left. The publisher's logo 'wfp 5598' is at the bottom left.

Figure 5.5: *Threnody— Excerpt 1*

There is no time signature—instead the music is played in ‘real time’ with sections delineated by their duration in seconds (see 18” and 20” at the bottom of the score in Figure 5.6). The first 12 violins in Figure 5.6 are assigned a specific note (the chromatic scale attached with a dotted line

beneath the top staff). Violins 13–24 are likewise assigned a different set of notes. These are combined as chord clusters, notated as thick lines that cover a complete spectrum of notes. Thus, a second violin cluster joins the first sounding a minor third below.

The musical score for 'Threnody— Excerpt 2' features five staves. The top staff is for 12Vn (Violins 1-12), the second for 10VI (Violins 1-10), the third for 10Vc (Violas 1-10), the fourth for 8Cb (Cellos 1-8), and the fifth for 8Cb (Cellos 1-8). Each staff contains a thick black line representing a chord cluster, with arrows indicating movement. The score includes dynamic markings such as *ff*, *s.p.*, *gliss.*, and *pp*. Time markers **18''** and **20''** are present at the bottom. A circled number **16** is in the top left corner.

*) flażolety kwartowe / Flageolettöne / flageolet tones / harmoniques

Figure 5.6: *Threnody*— Excerpt 2

The clusters can move up or down as indicated by the arrows, but they can also expand in compass. The extract in Figure 5.7 shows how the upper and lower violin parts delineate the outer limits of the cluster as it expands and contracts.

The image shows a musical score for 'Threnody—Excerpt 3'. It consists of four staves: 24Vn (Violins), 10VI (Violas), 10Vc (Violas), and 8Cb (Cellos). The score is divided into three measures: 15, 20, and 10. The notation is complex, featuring cluster chords and dynamic markings such as *p*, *f*, and *ppp*. Performance instructions include 'con sord.' and 'ord.'. The score is marked with circled numbers 13 and 15 at the top. At the bottom, there is a note: '* patrz uwagi na s. 8 / vgl. Anmerkung auf Seite 8 / cf note on page 8 / voir note à la page 8'.

Figure 5.7: *Threnody*—Excerpt 3

The music dovetails between impactful cluster chords and sparser textures, a structure that parallels the dramatic pacing of *Dead Space* as much as it does any horror movie. It is worth noting that most of these technical and notational features—the ones employed by Graves to produce his score (see ‘Composition and Implementation’ below)—actually leave very little room for “chance”. The aleatory aspects come predominantly from conceptualizing musical components as broader brush-strokes. Penderecki’s notations hardly fulfil Cage’s desire to free sound from the tyranny of the composer.

Much of the music in *Dead Space* appears derivative of Penderecki and others, not just in terms of soundworld, but through the composer's creative process. Through the use of *Threnody* in *The Shining* (1980) and *Polymorphia* in *The Exorcist*, this soundworld became a clear sign for a particularly alien and frightening otherness, a learned cultural trope. But the extreme sounds generated by such experimental writing in an atonal idiom was always at odds and therefore other to even the most extreme reaches of Romantic music—reaffirming, as it always does, tonality and hierarchical organization *by the very act* of stretching it to its limits. The gendered image of Classic Hollywood film scores, heavily influenced by late romantic concert and operatic repertoires, as 'over-emotional' or 'slavishly descriptive' has traditionally been juxtaposed with modernist music and its avant-garde opposition to mass culture.⁴⁵ Jeremy Barham explains:

...composers of scores for the psychologically, technologically or sociologically dystopian visions of the following films—to varying degrees products of the early Cold War years and the socio-political unrest and gloom of the late 1960s and early 1970s—demonstrated viable new alternatives to prevailing neo-romantic scoring practices, whether through the use of pre-existent music or not:

- Fred M. Wilcox's *Forbidden Planet* (1956)—pre-synthesizer 'electronic tonalities' by Louis and Bebe Barron;
- Alfred Hitchcock's *Psycho* (1960)—Bernard Herrmann's minimalist dissonant strings with which *The Shining's* score has much in common;
- Alain Resnais's elusive *Je t'aime, je t'aime* (1968)—Penderecki's evidently alien-sounding vocal writing;
- Franklin Schaffner's *Planet of the Apes* (1968)—percussive, Varèse-like modernity from Jerry Goldsmith, who was reputedly influenced by Penderecki;
- George Lucas's *THX 1138* (1970)—grating avant-garde electronic tone clusters by Schiffrin;
- Andrei Tarkovski's *Solaris* (1972)—Eduard Artemiev's harsh or brooding electronic sonorities and his similar treatments of Bach;
- The aforementioned *The Exorcist*.

⁴⁵ Caryl Flinn describes Classic Hollywood film music as 'out of step' with the 'contemporary music scene'. See Caryl Flinn, *Strains of Utopia: Gender, Nostalgia, and Hollywood Film Music* (Princeton: Princeton University Press, 1992), pp. 20–3. See also Peter Franklin, *Seeing Through Music: Gender and Modernism In Classic Hollywood Film Scores* (Oxford: Oxford University Press, 2011), pp. 3–18.

...more broadly, the use of Bach, for example, (for which read functional tonal harmony) as a universal signifier of humanity in films such as *THX* and *Solaris*, alongside atonal clusters as some kind of dehumanized inverse involving technological oppression or psychological disturbance, initiated an approach that has since attained the status of reactionary cliché.⁴⁶

Barham also notes the irony in these developments when taking into account the famous 1947 Adorno-Eisler diatribe against the commercialization of music by Hollywood.⁴⁷ How much more incredulous would they have been to find a mobile implementation of this modernist music in videogames? Noting Dahlhaus's remark that 'audiences who detest Schoenberg's music in the concert hall will accept it without a murmur as background film music is as fundamental as it is depressing'⁴⁸, Barham quotes Mayersberg's comparison of *The Shining* to post-war music:

It seems technically brilliant and yet fundamentally heartless. It seems deliberately clever and yet remains enigmatic. Kubrick has tried to bridge a gap which has occurred in the language of film. How can you express dissonance and fragmentation, the essential features of our present lives, in a manner which respects traditional harmonies? Can disorder ever be expressed in an orderly way?⁴⁹

The Shining, says Barham, responds to Eisler and Adorno by 'providing music which is more than a "secondary piece of decoration" and which has "its own logic and integrity" but going far beyond this to ground aspects of the filmmaking process in the explanatory, instinctive world of musico-poetic expression.'⁵⁰ However, Kubrick seemed to support the integrity of the music one minute by adjusting one particular sequence in order to fit it to the pre-existing Bartók, and subverting it the next by chopping it up and layering it with sound effects and other excerpts (sometimes from the same piece). The resultant collage is a new form whose musical components only retain traces of their own original forms. Since *Dead Space* is not reliant on recycled or quoted material, its music being composed and "designed" to fit the dynamic game environment, it may fare

⁴⁶ Jeremy Barham, 'Incorporating Monsters: Music as Context, Character and Construction in Kubrick's *The Shining*,' in *Terror Tracks: Music, Sound and Horror Cinema*, ed. Philip Hayward (London: Equinox Publishing, 2009), p. 138. Kubrick's use of György Ligeti's highly modernist micropolyphonic works in *2001: A Space Odyssey* (1968) is also an important point of reference.

⁴⁷ See Theodor Adorno and Hans Eisler, *Composing for the Films* (London: The Athlone Press, 1994).

⁴⁸ Dahlhaus cited by Barham, 'Incorporating Monsters,' 139.

⁴⁹ Mayersberg cited by Barham, 'Incorporating Monsters,' p. 139.

⁵⁰ Barham, 'Incorporating Monsters,' p. 139.

differently. Furthermore, aleatoric chance music arguably has less to lose than serial or tonal music, for instance, as its musical integrity is not contingent on linear order in any case.

Figure 5.9 (below) shows a representative excerpt from the soundtrack, 'Welcome Aboard the U.S.G. *Ishimura*'. In the game, the cue commences at bar 16 as underscoring to the opening cutscene dialogue, just as the team arrive at Aegis VII.⁵¹ The cue later introduces many of the string effects and brass cluster chords of the violent modernist music before returning briefly to the calmer opening material. The second violin part of bars 1–7, includes an example of the expanding string glissandi as it would be notated by Penderecki. One of the principal musical themes—a three-note string melody (bars 9–10) rising by step with swelling dynamics—is then introduced accompanying the first view of the *Ishimura*. The sense of yearning in the theme is heightened at bar 20 as the melody is converted into a chromatic rise, moving from a diminished chord on F-sharp to an augmented D-major chord instead of the original E-minor to G-major progression. The suspenseful fermata on the C-sharp in the first violins at the end of bar 19 occurs just as a crewmember asks the question, 'Now... where is she?', referring to the *Ishimura*, shortly before the ship comes into view from behind an asteroid (see Figure 5.8), accompanied by the grander rendition of the string theme at bar 20. This demonstrates a film-like degree of synchrony between the musical score and the visuals during cutscenes. It also shows the close integration of both soundworlds, with the string glissandi functioning almost as a leitmotif or topic to represent the impending danger. In this way, the passage starts the didactic work of attributing the different musical soundworlds with particular narrative/gameplay functions: it teaches the player that neo-romantic music is heard when they are in a safe environment exploring the epic context of the narrative, but the modernist music indicates unknown dangers.

⁵¹ Bars 1–15 provide an introduction on the soundtrack, but are not heard in the game.

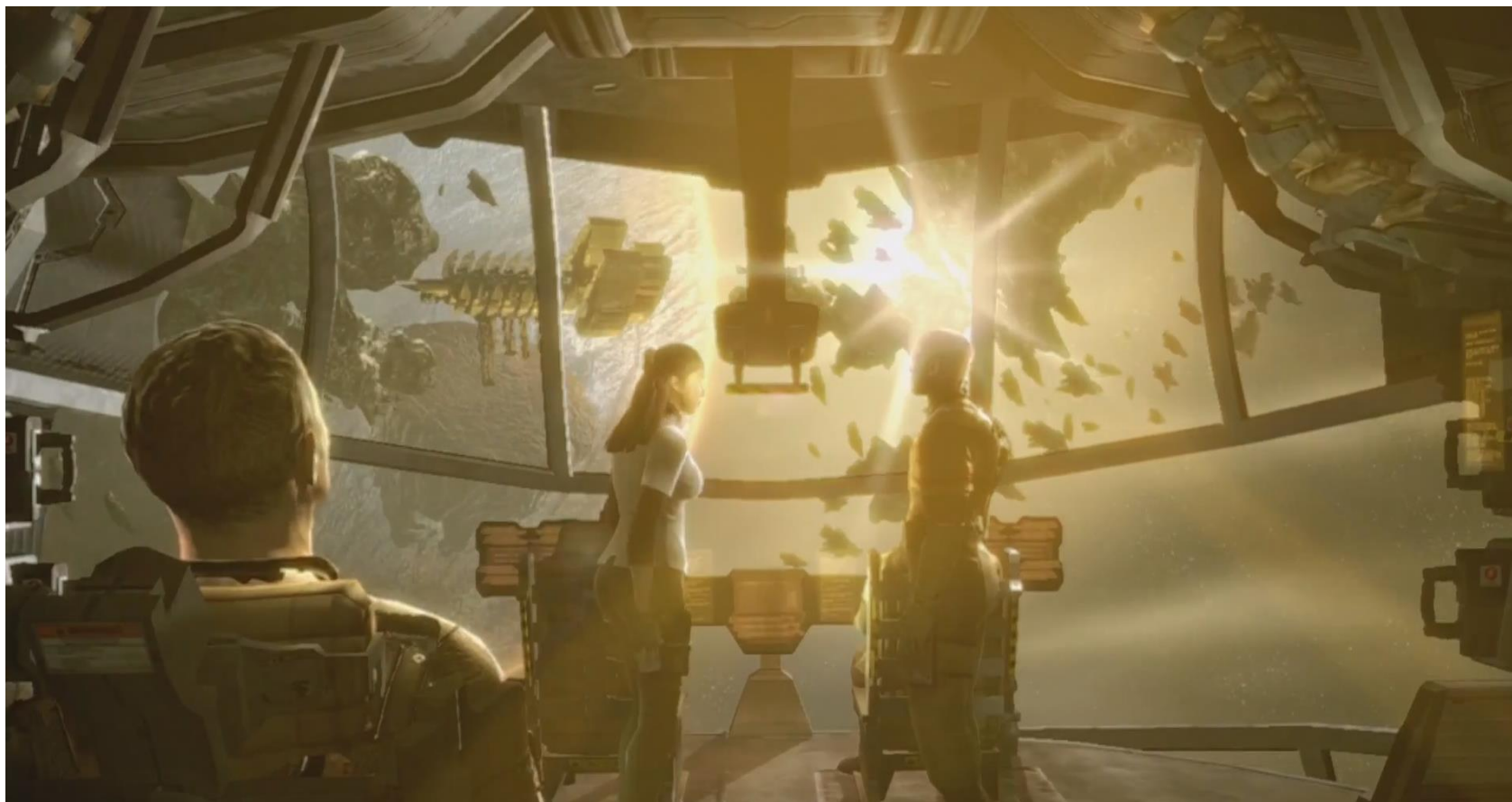


Figure 5.8: The U.S.G. *Ishimura* Comes into View (bar 20)

This musical score system includes parts for Flute, Clarinet in Bb, Bassoon, Harp, Violin I, Violin II, Viola, Violoncello, and Double Bass. The tempo is marked as quarter note = 80. The key signature has two sharps (F# and C#). The score shows dynamic markings such as *ppp*, *mp*, *f*, and *pp*. The Harp part features a complex arpeggiated pattern. The Violin I and II parts have a *legato* marking. The Double Bass part includes *pizz.* (pizzicato) markings.

This musical score system includes parts for Flute (Fl.), Oboe (Ob.), Clarinet (Cl.), Bassoon (Bsn.), Horns (Hrn.), Cymbals (Cym.), Violin I (Vln. I), Violin II (Vln. II), Viola (Vla.), Violoncello (Vcl.), and Double Bass (Db.). The score includes performance directions such as *rit.* (ritardando), *l'istimura comes into view*, and *A tempo*. Dynamic markings include *mf*, *f*, *ppp*, *mp*, *p*, *ff*, and *pp*. The Violin I and II parts are marked *legato*. The Double Bass part includes *pizz.* and *arco* markings.

Figure 5.9: Welcome Aboard the U.S.G. *Ishimura* (Excerpt)

Grave's approach to such cutscene underscoring is no different from traditional film scoring. His use of Penderecki's extended string techniques and advanced musical notations, in this context, is to introduce the horror soundworld as a topic or sign. However, the writing certainly has 'logic and integrity'. The dominant seventh chord on A reached at bar 19's *fermata* achieves a sense of suspense without sounding cliché, despite its functional simplicity. This is largely because the chord is reached chromatically, rather than via a clear functional relationship, and it does not resolve. Instead, the music continues around diminished and augmented chord on F-sharp. The four two-bar phrases (Figure 5.10) first resolve back to the D-sharp note of origin, then expand upwards by a semitone, then two semitones, and finally with full contrary motion. The pull created by the use of diminished and augmented harmonies as both dissonances and their resolutions creates a powerful sense of yearning tension and mystery. However, as we shall see, the macro form of the game—the ebb and flow of sequences of gameplay, exploration and cutscenes—provides an additional layer of complexity.

Figure 5.10: Harmonic Progression, bars 16–23

Composition and Implementation

Distinguishing between different types of musical cues in the game—be they simple pieces for cutscenes or dynamic music—is often more difficult than it might at first seem, since there are no readily-available scores, and the distinctions can only be made through careful listening.⁵² (Some fixed cues, for instance, could be composed to sound much the same as the modernist dynamic music heard during gameplay. Nevertheless, a clear distinction can be made between the neo-romantic and modernist soundworlds.) Much is revealed in interviews and developer diaries. After defining the parameters and musical style, Don Veca, the audio director, sent Graves a more detailed brief, including many audio clips of moments from his favourite soundtracks. According to various post-production interviews, Graves then recorded various musical elements (many were aleatory improvisations) with which to create a 'sonic palette'.⁵³ These elements included numerous isolated string glissandi and various brass chords with which he could later create any number of chord clusters, for instance. From that point on, it was actually Veca who took on the predominant role of implementing the music within the game. During actual gameplay, the music appears to have been arranged into four layers, each a stereo track representing a distinct 'fear level': creepy, tense, very tense, and chaotic.⁵⁴ This implies that the cues are already set sound files by the time the game engine can use them, and therefore the level of manipulation that the music engine can achieve must be on a higher hierarchical plane. Each layer is streamed in synchronization and then one or all are mixed "on-the-fly" depending on various game variables, such as the proximity of the necromorphs. So for each two-minute cue, there would actually be

⁵² Furthermore, the dynamic mixing of all of these audio elements creates a collage of sound that is often moved into the background so that the game's diegetic sounds—such as dialogue, gunfire, or footsteps—can be easily identified.

⁵³ See Tim Curran, 'Filling in the *Dead Space*,' *Film Score Monthly* 13/10 (2008), retrieved from <<http://www.filmscoremonthly.com/fsmonline/story.cfm?maID=1607&issueID=44>>, accessed 26/08/2011. See also music4games.net, 'The Music of *Dead Space*: Artistic Design and Technical Implementation,' on *music4games.net* (24/10/2008), retrieved from <http://www.music4games.net/Features_Display.aspx?id=313>, accessed 16/10/2011.

⁵⁴ In an interview concerning *Dead Space 2*, Graves suggests that as many as eight streams were available. See Naumenko, 'Jason Graves Interview: The Same, But Different and Better.'

eight minutes worth of musical material available for sounding. This could be described as a “dynamic” or “interactive” music system.

The thesis of Umberto Eco's *The Open Work* maintains that the distinction between poetics and aesthetics is of particular importance to the ‘open work’, which he defines specifically as one with aleatory or indeterminate elements (either in soundworld or form), and broadly in contradistinction to all ‘traditional art’.⁵⁵ Eco, while not wanting to displace aesthetic judgements altogether, attempted to rebalance contemporary criticism by laying emphasis on poetics—by which he meant a work's artistic purpose as opposed to the aesthetic value of the result.⁵⁶ This was particularly pertinent in the case of the open work because it was the indeterminate elements rather than any semantic “content” that formed an ‘epistemological metaphor’ of modern society, as Eco saw it.⁵⁷ In other words, the process of abstract formal experimentation was itself a basis for value judgements prior to any extra-musical associations later wrought. (In another sense, the “music itself” can also be thought of as a locus for “meaning/content”). This adds weight to the idea that these conceptual origins matter. The cynic's cry that Graves' own experimentation was merely a means for gaining academic kudos and therefore amounted to little more than a publicity stunt might thus be held at bay. The opposite suggestion that this experimentation was only a means to achieving a particular result—that the process was necessary to create the scary soundworld required—is fallacious because it is neither technically

⁵⁵ Umberto Eco, *The Open Work*, trans. Anna Cancogni, introduction David Robey (Cambridge, MA: Harvard University Press, 1989), pp. xvii–xviii.

⁵⁶ Understanding of the open work as the cornerstone for a new paradigm of modern aesthetics, Eco's take on ‘intentional fallacy’ precluded neither the validity of authorial intent, nor the problem of infinite interpretive possibilities. Traditional aesthetic theory established by Kant put forward the idea that beautiful objects appear ‘purposive but without purpose’. However, this was primarily an issue about function, not intended meanings. See Roger Scruton, *Kant: A Very Short Introduction* (Oxford: Oxford University Press, 2001, originally published 1982), pp. 107–9.

⁵⁷ Eco, *The Open Work*, p. xiv.

necessary nor cost effective.⁵⁸ The programming requirements alongside the need for multiple recording sessions incurred an “unnecessary” expense.

Understanding exactly which musical elements are pre-composed and which are left flexible therefore matters a great deal. The first stage in Graves's compositional process is remarkably similar to the indeterminate experimentation found in *Threnody*. But with this, Graves seems to be developing a ‘sonic palette’ of materials with which to compose the score. Subsequently, the aleatorism of this initial experimentation is averted or “fixed”, perhaps because Graves also knew in advance (apparently Penderecki did not) that he wanted to exploit the semantic content now attached to the resultant soundworld. Regardless, the story is complicated further when the score born out of this sonic palette is configured in layers and made interactive. As Graves/Veca had a specific dramatic goal to achieve, they end up with four layers that the game engine can move freely between. It is important to remember that some of the actual soundtrack in the game is not interactive, but pre-composed for cutscenes or particular dramatic moments. Most of the neo-romantic music is found at these moments, framing or punctuating the interactive layered system that is left to accompany the core gameplay elements. While *Threnody* demonstrates an antagonistic relationship between aleatory and totalist serial techniques (perhaps ultimately leaning towards the latter), *Dead Space* arguably achieves a more integrated dialectic. From this perspective, both “works” could be described as postmodern, with multiple subjectivities found in their polystylistic aesthetic. There is some irony in this, as both aleatorism and serialism were born out of a modernist mind-set—both were initially employed as a means to “purify” the musical language, making it objective—although the former is paradoxically well suited to postmodern epistemology, as is a polystylistic combination of aleatory and serial music.

⁵⁸ This is reflected in Tim Curran's interview with Graves in which the composer states that the convoluted ‘off-the-cuff’ production procedure he suggested to Audio Director, Don Veca, actually became the process used, in spite of its expense. See Curran, ‘Filling in the Dead Space.’

The semantic content Penderecki seemed initially oblivious to was sought after and exploited by Graves and Veca because it had picked up a powerful and now practically inescapable association with an “otherness” peculiar to horror and sci-fi film genres. The contrast of tonal and atonal language, regular phrasing and rhythmic instability, melodically led textures and disjointed, chaotic ones, all aid in defining each other.

Neo-Romantic Narrator, Modernist Psycho-Analysis

It is worth considering the extent to which the music in *Dead Space* might function as Isaac's emotional voice, or another distinct “narrator”. Carolyn Abbate's famous argument that music can only rarely be said to function as narrative rests on the premise that narrative is signalled through the use of an external voice—a narrator. Abbate posits that in *The Ring*, Wagner undermines his Schopenhauerian view of music as an ‘untainted and transcendent’ discourse by employing both textual and musical narrative voices that ‘ring false’: ‘polyphonic narration’ (many narrators speaking ‘with and across the text’), she says, ‘undercuts the very notion of music as a voice whose purity is assured by virtue of its nonverbal nature.’⁵⁹ (This echoes the interlace structure discussed in Chapter 3.) Abbate's call to listen for prosopopoeia in music as a sign of the presence of a narrator is particularly useful in *Dead Space*, in which an autonomous musical software engine may arguably have its own degree of agency.

Often when Isaac is alone, the music could be said to express Isaac's fears, whether or not they are justified. The interactive music engine described above outputs one of four streams of

⁵⁹ See Carolyn Abbate's *Unsung Voices* (Princeton: Princeton University Press, 1991), p. xiv. For other musicological scholarship that delineates independent musical voices see, for example, Holly Rogers, ‘Beethoven's Myth Sympathy: Hollywood's Re-Construction,’ *British Postgraduate Musicology* 8 (June 2006), retrieved from <<http://www.bpmonline.org.uk/bpm8/Rogers.html>>, accessed 25/10/2011.

music, each representing an incremental degree of fear and action.⁶⁰ The decisions the engine makes are contingent on a cumulative dramatic input variable, specifically the sum-total “fear factor”. This number is based on the number of individual objects (usually the necromorphs themselves) present within a given radius of the player, and the objects’ ‘fear emitters’—values attributed to the objects which represent how scary or threatening they may appear. The crucial point to note here is that the music engine, the musical voice one could say, has no way of testing the validity of the information it receives. Subsequently, the programmers can trick it, and in turn, the player, by attributing fear values to inanimate objects. These may include metal panels on the walls, for example, that could be triggered to fall off as Isaac passes by, in turn causing the music engine to react in the same way that the player might—as if they were in real danger. This is an effective scare tactic given the number of real surprise attacks he suffers. The sudden events can be, and often are, tied to loud sound effects but other music is layered before and after that has the potential to warn the player of impending danger. Thus, the music engine itself is tricked into treating real threats, and those fabricated by the programmers, in the same way, jeopardizing the engine’s omnipotence. This brings into question whether this musical voice is an additional subject within the game world—some other narrative force (the Marker perhaps) that can manipulate the player—or part of Isaac’s consciousness.

In addition to being an unreliable narrator, there is also a fuzziness involved in delineating sound from music, diegetic from non-diegetic, and between what is in Isaac’s imagination and what is real. The use of “stab chords” (short stingers usually comprising loud and sudden individual chords or notes in isolation) across the game series highlights the close relationship between these meaningful sound effects and the musical score “proper”—a pervasive distinction otherwise seemingly unimportant in mixed-media contexts. Nicholas Cook insists that music is a communicative medium and that multimedia analysis must therefore proceed from meaning,

⁶⁰ Graves talks about transitioning from one level to another (rather than mixing multiple layers incrementally) in Tim Curran’s interview. See Curran, ‘Filling in the Dead Space.’

rather than mere effect: 'what distinguishes the concept of meaning from that of effect is that the former is predicated on communication, on human agency, whereas the latter is not (that is why we talk about the effects of sunlight, not its meaning).'⁶¹ Indeed, it is valid (and easier) to speak of the effect of "inanimate" sounds on the player/listener, but sound effects in games are the result of purposive communicative action. Cook's aim, of course, was to redress music theorists' lack of analytical attention to the role of agency in meaning-generation, rather than to problematize the distinction between sound effects and music. In a quintessentially Cagean sense, Isaac's "silence" is not silence at all, but is filled with the ambient sounds of his (and the player's) worst nightmares, both on a diegetic level, and through the music's non-diegetic emotive content. As Cage noted, ambient sounds, when people pay attention to them, can function as music in that they communicate certain meanings.⁶² Certainly the efforts that the audio engineers go to in placing and balancing the plethora of diegetic sounds in videogames are testament to the fact that they are a purposeful and meaningful contribution to the games narrative. This would suggest that from Isaac's perspective, diegetic ambient sounds need not be orchestrated by some living agent to function as a form of language and carry meaning. Of course, the player knows that the ambient sounds have all been carefully prepared, but the idea applies just as well to the player's world as Isaac's. The implication of this line of thought is clear enough, although somehow still contentious: the transmission of meaning is not contingent on human agency; the only active agent required is a "reader". Beyond the connection to Cage, the significance of this relationship between sound effects and the musical score is that it highlights that both, being meaningful, stand in opposition to any anti-expressive avant-garde ideology.

The lack of vocal communication creates a specifically auditory expressive void in the game's narrative. Like the sound returning as the air rushes back in when Isaac leaves the vacuum

⁶¹ See Nicholas Cook, *Analysing Musical Multimedia* (Oxford: Oxford University Press, 1998), p. 4.

⁶² See, for example, John Cage, 'Experimental Music,' in *Silence: Lectures and Writings* (Middletown: Wesleyan University Press, 1973), pp. 7–12.

of space in damaged parts of the Ishimura, this is filled in various ways, but primarily through the music. It also highlights the special closeness of music to other forms of communicative sound within the videogame aesthetic. Cage's own experience at Harvard in 1951 led him to observe that even in a soundproofed anechoic chamber, the sounds of one's own heartbeat, nervous system and circulation become amplified in the inner ear. Indeed, *Dead Space* echoes this idea when Isaac must pass through various depressurized areas of the damaged ship. Sound waves, obviously, cannot travel in a vacuum, so the sounds he hears as the pressure gates open are audibly and visually "sucked away" with the air leaving him in comparative quiet. Nevertheless, the sounds in his own suit are inescapable, and become all the more meaningful: his breathing becomes a charged expression of the inherent danger and precariousness of his situation. This is "embodiment" at its most literal, and reminds the subject of that very real and human preoccupation: mortality.

Twinkle, Twinkle...

Pervasive across the *Dead Space* series runs another musical trope idiomatic to the horror film genre as well as in videogames: the incongruous use of a nursery rhyme in a violent or scary context.⁶³ Some gamers have referred to this form of incongruence as 'ludic counterpoint', and Michiel Kamp has also suggested the more theoretically-cognizant term of 'ludo-musical dissonance', which draws on the established term, "ludonarrative dissonance".⁶⁴ Kamp argues

⁶³ See, for example, the 'Drunken Whaler' trailer for *Dishonoured* (Arkane Studios/Bethesda Softworks, 2012), <<https://www.youtube.com/watch?v=X7khCk0bdnE>>, accessed 23/09/2014. The music was also used as part of the game's soundtrack.

⁶⁴ See Joe Baxter-Webb, 'comparing the use of "contrapuntal" music in violent film and videogames,' on *Boss Level Video Game Music*, retrieved from <<https://bosslevelvgm.wordpress.com/2014/07/14/comparing-the-use-of-contrapuntal-music-in-violent-film-and-videogames>>, accessed 25/06/2015; and Michiel Kamp, 'Ludo-musical dissonance in *Diablo III*,' at *Ludomusicology Conference 2015* (Conference Paper, Utrecht University, 9–10 April 2015).

that “ludo-musical dissonance” can be characterized as ‘ready-to-hand’ in the manner of Heidegger’s “broken hammer”, and demonstrates how the phenomenon can ‘show how we experience background music in video games as a form of equipment that withdraws from our attention when it works correctly, but reveals its historical, film-musical context when it breaks down.’ This is another theoretical basis for analysing points of convergence or divergence between the intertwined strands of musical, ludic and narrative meaning in games, and is pertinent to Kirkpatrick’s concept of the ‘internal dissonance’ between play and meaning.

First heard in the so-called ‘lullaby’ trailer, ‘Twinkle, Twinkle, Little Star’ is played twice during *Dead Space*; in the first instance, a brief excerpt accompanies Isaac as he takes the elevator to the West Grow Chamber in Chapter 6, and later the whole song is heard looping in the Crew’s Quarters Lounge at the start of Chapter 10.⁶⁵ On both occasions, the music quietly drifts around the ship as if from some disembodied diegetically-ambiguous voice. The sequences are not cutscenes, but are moments when the player is not in combat, and is either confined or relatively “at-ease”.



Figure 5.11: ‘Twinkle, Twinkle, Little Star’

⁶⁵ Additionally, if the player does not load a game after the menu has loaded, the whole ‘Lullaby’ trailer is played. (If the player scrolls through the main menu quickly, the modernist action music is heard.) The song is also heard in *Dead Space 2*, and several other minor games in the series. See *Dead Space Wikia*, ‘Twinkle Twinkle Little Star,’ on *Dead Space Wikia*, retrieved from <http://deadspace.wikia.com/wiki/Twinkle_Twinkle_Little_Star>, accessed 22/08/2013. *Dead Space 2* also includes ‘Ring a Ring o’ Roses’.

'Twinkle, Twinkle' is a simple strophic binary structure as transcribed (at pitch) in Figure 5.11. The melody was first published in 1761 in an anthology of popular French songs as a theme and variations entitled 'Ah! Vous Dirai-Je, Maman'.⁶⁶ Some twenty years later, Mozart wrote his famous set of variations on the song, though he was not the only composer to do so.⁶⁷ The French rhyme was a parody of a well-known anonymous love poem 'La Confidence', in which a girl explains to her mother that she has been 'defeated by love'.⁶⁸ The original poem consisted of the following verses:

Twinkle, twinkle, little star,
How I wonder what you are.
Up above the world so high,
Like a diamond in the sky.

When the blazing sun is gone,
When he nothing shines upon,
Then you show your little light,
Twinkle, twinkle, all the night.

Then the traveller in the dark,
Thanks you for your tiny[/little] spark,
He could not see which way to go,
If you did not twinkle so.

In the dark blue sky you keep,
And often through my curtains peep,
For you never shut your eye,
'Till the sun is in the sky.

As your bright and tiny spark,
Lights the traveller in the dark.
Though I know not what you are,
Twinkle, twinkle, little star.

⁶⁶ M. Bouin, *Les Amusements d'une Heure et Demy* (Paris, 1761). Available online at <<http://gallica.bnf.fr/ark:/12148/btv1b90790216>>, accessed 12/03/2014. See also, James J. Fuld, *The Book of World Famous Music: Classical, Popular and Folk*, 5th edition (New York: Dover Publications, 2000).

⁶⁷ Mozart, *Variations on 'Ah vous dirai-je, Maman'*, K. 265 / K. 300e (1781 or 1782).

⁶⁸ The English nursery rhyme's often-unattributed lyrics come from Jane Taylor's 1806 poem, 'The Star', and first appeared together with the melody in *The Singing Master* in 1838. See Jane and Ann Taylor, *Rhymes for the Nursery* (London: Harvey and Darton, 1824), pp. 10–11; Anonymous, *The Singing Master: 3. The First Class Tune Book* (London: Taylor & Walton, 1838). See Max Cryer, *Love Me Tender: The Stories Behind the World's Best-loved Songs* (Auckland: Exisle Publishing, 2008), pp. 83–5.

However, in the game, the last two verses are replaced with a long pause followed by the first two lines of the second stanza, and the final two lines of the last, combining to make a rather darkly poignant point:

When the blazing sun is gone,
When he nothing shines upon,
Though I know not what you are,
Twinkle, twinkle, little star.

There is a structural “problem” in combining the melody with the lyrics, and that is that the first line of the music needs to be repeated in order to reach tonal conclusion at the end. However, perhaps predictably, Graves opted instead to leave the song tonally open, ending on the cliffhanger supertonic.

On the one hand, the presence of ‘Twinkle, Twinkle’ could be cynically viewed as cliché. The fact that the juxtaposing device has been used so often in film means that it has built up semantic currency and it is a tried and tested means of creating the “creepy” feeling essential to marketing the game (it is not coincidence that this music was chosen for one of the first promotional trailers).⁶⁹ On the other hand, the particular presentation of the song is a tantalizing source of narrative-enriching signification. Furthermore, it is one of the most memorable and talked about features of the soundtrack. The performance is associated with a lullaby in the trailer, which helps to qualify these interpretive boundaries: this is not a child’s recital, but a parent’s, and perhaps a mother’s. The voice is adult but has a “broken” quality (it is quivering and uneasy), so instead of soothing, the ironic juxtaposition indicates that it is the singer herself who is in need of comfort. The overtones of innocence attached to the singing of nursery rhymes are still present but the sense is more of a lack of innocence, and a lack of hope in a situation already beyond repair. The ambiguity created by the juxtaposition between the violent imagery and ‘Twinkle, Twinkle’ subverts the innocent message of the nursery rhyme and creates a powerfully

⁶⁹ See, for example, Laura Wiebe Taylor, ‘Popular Songs and Ordinary Violence: Exposing Basic Human Brutality in the Films of Rob Zombie,’ in *Terror Tracks*, pp. 229–237.

ironic message.⁷⁰ Some players have gone further in suggesting that the lyrics offer specific narrative parallels, noting that the deliberate placement of such cultural references are not accidental.⁷¹ One such interpretation sees Isaac as the 'traveller in the dark', following the Marker (the star). Irrespective of this interpretations, the diegetically-ambiguous voice signals the different types of 'voices' examined by Abbate—this is not simply the voice of a human singing, but also a musical-narrative voice.

It is ironic that this simple, tonal binary structure with its balanced antecedent/consequent phrase structure—the most "classical" music in the game—provides the most unsettling and destabilizing musical experience. Perhaps this is due to the fact that to some extent, the atonal, aleatory, alien, modernist music ironically becomes the most grounded because the player tends to be both in control and fully-conscious of their predicament, whereas control is taken away from them during cutscenes or moments of pre-scripted narrative suspense, or they are otherwise unaware of what is around the corner during tension-building exploration. Furthermore, the aleatory music is not presented as an interpretive conundrum. In the elevator, when the song is sounded, although the player is in control, they have nowhere to go, and nothing to do but wait. When the player hears the full rendition of 'Twinkle, Twinkle Little Star', they are investigating a room full of violently disfigured corpses and trying to make sense of their surroundings. The fact that this imagery is accompanied by a nursery rhyme is deeply unsettling. The juxtaposition is a different category of ludo-musical dissonance than Kamp's description of a functional breakdown; rather, here the goal or function is achieved through incongruity. The mystery of the song's origins, its diegetic status, and its potential meanings

⁷⁰ See Esti Sheinberg, *Irony, Satire, Parody and the Grotesque in the Music of Shostakovich: A Theory of Musical Incongruities* (Aldershot: Ashgate, 2000), p. 64. On moving from 'innocence' to 'experience', see Byron Almén in *Northrop Frye, A Theory of musical narrative* (Bloomington, IN: Indiana University Press, 2008), pp. 64–65.

⁷¹ See anonymous response to Gamespot forum user 'ZombiDeadZombi': 'And usually, when you put a song on a movie/game, whatever, you usually have a reason to put it there.' 'Dead Space - Twinkle twinkle little Star...', on *Gamespot* (21/07/2009), retrieved from <<http://uk.gamespot.com/dead-space/forum/dead-space-twinkle-twinkle-little-star-50389453/>>, accessed 22/08/2013.

present a complex puzzle for the player. However, it is not presented as a puzzle to be solved like others in the game. Rather, its puzzling nature fulfils a primarily emotive function that disorientates the player and creates a sense of unease—it does not matter so much who is singing or what the song means, just that the player is scared, and that the puzzle provokes play.

The juxtaposition of the nursery rhyme with the player's sense of fear and horror might be described as musical-narrative rather than ludo-musical dissonance, because the music provides a different message to the narrative environment, not specifically the gameplay. Indeed, there is ludo-narrative consonance, and the familiarity of the nursery rhyme as a horror film trope may also suggest ludo-musical consonance. The analysis therefore serves as an interesting case study of the myriad interactions between various sources of meaning and experience. This 'nexus of possibilities' (following David Weissman's terminology) is fertile territory for the activity of play.⁷²

Isaac's silence signals an acoustic void pertinent to understanding *Dead Space's* position on the spectrum of mass culture and high art. Because Isaac does not communicate directly (at least in the first game), greater attention might be paid to other strands of signification. Graves employs two clearly delineated musical soundworlds, the neo-romantic, which functions as a narrator of sorts, and the modernist, which underscores the player's gameplay, as if expressing Isaac's fears. While both of these can be traced back to Hollywood film scores such as Goldsmith's *Alien*, the latter has a more complex history. Like the fusion of styles in *Alien*, the two soundworlds are distinct but not conflicting. They are combined into a genre-defining musical world. Although Graves's interest in the techniques of the avant-garde seem to be significant only insofar as it enables aleatory notation and technique, his use of these musical ideas in a video game also problematizes avant-garde ideology. The unambiguously emotive function of this

⁷² See David Weissman, *Eternal Possibilities: A Neutral Ground for Meaning and Existence* (Carbondale: Southern Illinois University Press, 2008), p. 141.

music can only be seen as a further rejection of the blank palette Penderecki himself eventually rejected. Yet at the same time, the ideas of non-linear structure that aleatory techniques prefigure—mobile form and dynamic music systems—are employed to create the underscore during gameplay. This non-linear music is, then, particularly appropriate for the most “playful” moments of video game form—when the player is in control and “feels out” the boundaries of the game’s form, they are also dynamically “feeling out” the music. In this way, *Dead Space* goes further than *Alien* in realizing the aesthetic potential of aleatory music.

Yet ironically, it is the incongruous deployment of music in the “classical style” that most unsettles players. What this tells us is that music continues to function in the myriad of different ways it did prior to modernist anti-expressive ideologies. Furthermore, it seems that ideas generated from non-linear musical systems have been absorbed as an additional aspect of musical potentials. In this sense, it surpasses *The Shining* as a response to Adorno and Eisler, and demonstrates the potential to silence their pessimism. The *Dead Space* series exemplifies the tensions felt across the videogame industry in collapsing the space between high and low art forms, and the reception of the game is indicative of the narrowing of the gap in terms of audience expectations and desires.

Conclusion

The game plays the user just as the user plays the game, and there is no message apart from the play.

—Espen Aarseth¹

Allan F. Moore's simple but effective justification of the study of rock music was that it is valuable 'to explore any human activity as fully as possible, from any angle that may hold promise, especially since, with this activity [...] so many pairs of ears are involved.'² Quoting Moore, Tim Summers too focuses on the size of the videogame audience, as well as the depth of audience engagement with videogame music, 'In these respects, the situation is identical for game music. Musicology can no longer afford to overlook a form of music that reaches the ears of millions of listeners, in a dynamic and interactive medium.'³ This is not to deny the value of studying music with smaller audiences, but rather it emphasizes that work in this area has inherent cultural significance and value.

However, it is also important to look beyond this justification to recognize the broader cultural and theoretical significance of studying videogame music. Roger Moseley states that,

There is growing recognition that the twenty-first-century media landscape has been profoundly shaped by the rise of digital games to an unprecedented level of cultural prominence. Most commonly registered through its seismic impact on the economic terrain of the entertainment sector, the digital game has also transformed the stock of symbolic and social capital in which global popular culture has traded since the late 1970s. In recent years, moreover, digital games have opened up new modes of representation, expanded the critical lexicon, and stimulated distinctive contributions to debates surrounding music, the visual arts, film, literature, and new media.⁴

¹ Aarseth cited by Kirkpatrick, p. 48.

² Allan F. Moore, *Rock: The Primary Text* (London: Open University Press, 1993), p. 17.

³ Timothy Summers, *Video Game Music – History, Form and Genre* (PhD Thesis, University of Bristol, August 2012), p. 4.

⁴ See Roger Moseley, 'Music, Visual Culture, and Digital Games,' in *The Routledge Companion to Music and Visual Culture*, eds. Tim Shephard and Anne Leonard (London: Routledge, 2013), pp. 376–384, p. 376.

The impact of videogames, and videogame music specifically, on society and culture need not be expressed solely in terms of their socio-economic status as mass culture. Indeed, the growing literature on videogame music has already contributed considerably to critical debates in musicology and media studies, as demonstrated in the preceding chapters. One example is the impact ludomusicology is making in both the critical and pedagogical contexts of performance studies. For instance, David Roesner's exploration of the experience of music-based videogames, such as *Guitar Hero* or *Rock Band*, has several important implications to the current understanding of the act of music as performance beyond the context of videogames. He argues that such games should not be so readily dismissed as 'low grade simulation' rather than a form of musical performance.⁵ Furthermore, he situates these games in the context of the educational theory and practice of music, challenging the stifling of creativity in rigid pedagogical systems.⁶

Moseley concludes by noting the interdisciplinary challenges posed by ludomusicology,

While digital games can simulate—and even enact—the nefarious dynamics of globalized corporate empires, they can also enable marginalized voices to contribute to a vibrant discourse that sustains creative resistance and self-expression. For musicologists, art historians, and other scholars of audio-visual culture, the strategic challenge of coordinating interdisciplinary approaches to digital games thus poses both daunting risks and exciting opportunities.⁷

The diversity of experiences provides fertile ground for the emerging discipline, and it is clear that a considerable range of approaches, including psychology, history, and philosophy, is necessary to advance the understanding of games as a critical component of contemporary culture. Yet the size of the videogame market and its economic foundation appear to be inexorably noteworthy.

⁵ See David Roesner, 'The Guitar Hero's Performance,' *Contemporary Theatre Review* 21/3 (2011): 276–285.

⁶ Roesner is also Principal Investigator of the recently founded AHRC network, 'Guitar Heroes in Music Education? Music-based Video-Games and their Potential for Musical and Performative Creativity'. See the related *Videogames – Music – Creativity – Education* Blog at <<http://music-games-creativity-network.blogspot.co.uk>>, accessed 16/06/2015. Other work on using these games as a tool in music education includes Jan T. Claussen, 'Guitar Games: Limits and Possibilities of Instrumental Teaching Through Video Games,' at *Ludomusicology Conference 2015* (Conference Paper, Utrecht University, 9–10 April 2015).

⁷ Moseley, p. 384.

Videogames are valued as mass culture first, and justification for the study of games (or game music) is invariably set in such terms. This is in no small part due to the dogged perseverance of the mass culture and its *other* binary, Andreas Huyssen's 'Great Divide.'⁸ This theme has never been far from the discussion in previous chapters because the aesthetic theory of videogame music presented, and ludomusicology more generally, provides a new and significant perspective.

The Aesthetics of Videogame Music

The focus of this thesis has been on the musical aesthetics of single-player (and with the exception of Chapter 2) narrative-based games. Chapter 1 presented *Crysis* as a poly-aesthetic accommodation of both mobile form—a non-linear aesthetic form—and traditional linear harmony. The music system in the game engine connects the music closely to the player's actions, but both player freedom and musical structure are subject to the macro structure of the narrative. This coupling of ludic and musical form shows how closely music is embedded within the videogame aesthetic; by playing the game, the player simultaneously feels out the form of both the ludic constructs and the musical structure, creating an aesthetic experience. Chapter 1 also demonstrated the ways in which the player might play with meaning through topic theory, but ultimately, I suggested that both form and meaning are functions of play.

The *Chime* case study in Chapter 2 provided a very different genre of game, and enabled a focused discussion on issues of player attention, and the work concept. I argued that the mobile form minimalist music in *Brazil* (which is, in this sense, representative of the rest of the music in the game) is neutralized by the ludic attention required of the player. Although the player may be distracted from engaging in the activity of play in terms of the musical form, at times, there is

⁸ See Andreas Huyssen, *After the Great Divide: Modernism, Mass Culture, Postmodernism*, Theories of Representation and Difference, ed. Teresa de Lauretis (Bloomington and Indianapolis: Indiana University Press, 1986).

scope for the player to play with musical meaning. I presented *Chime* as a poststructural Text, with the player as an active Reader, and clarified that although authorial authority over meaning may be dispersed by the practices of modern industry, authored meaning continues to be significant. Nicholas Cook's emphasis on the emergent construction of meaning in multimedia contexts alongside his argument that musical meaning is about communication embodies this paradox well.⁹ Cook's provocative idea that *all* musical meaning stems from the interaction between different media is particularly pertinent, provided one does not fall into the trap of attributing music or media its own meaning-generating agency (which Cook does not do). My analysis therefore also drew on Agawu's concept of semiotic play as the activity between extroversive and introversive semiotic poles: the active play of the listener/audience/player constructs meaning from the authored, or composed, media. Agawu's concept of play can be aligned to Chapter 1's playing with meaning.

Chapter 3 investigated philosophical aspects of temporality, a central feature of the videogame aesthetic due to the nature of the interactive medium. Specifically, I pointed to a paradigm shift in conceptions of temporality, and demonstrated that the experience of videogame aesthetics increasingly reflects these new, non-teleological modes. *The Witcher 2* was presented as a non-linear narrative that apparently prioritizes artistic goals over commercial resources. Its music is subordinate to the flexible narrative structure that can render large amounts of musical material redundant. In *BioShock Infinite*, the experience of linear narrative is disrupted by musical anachronisms that draw attention to the game's core themes. The game is self-reflective and provides a commentary on the nature of freedom of choice within the videogame medium. The music in both games signals what is most significant about them—the aesthetic experience of postmodern temporalities. I remarked at the end of the chapter that it is no coincidence that these sorts of games are often used to present the case for videogames as

⁹ See Nicholas Cook, *Analysing Musical Multimedia*, p. 97.

art. This could be applied to many of the main examples discussed in this thesis, because they all provide aesthetic experiences that are appropriately tailored to the peculiar nature of the medium, specifically, interactive or performative audio-visual experiences.

In *Skyrim*, the focus of Chapter 4, the aesthetic sense of an epic Nordic saga is conditioned by the stasis generated by the music. Its *Naturklang* aesthetic is arguably more important to the game's success and identity (what the player remembers of their experience playing) than the construction of the fictional narrative and lore. The analysis of the role of music in the game's geopolitical landscape suggests another fertile territory for ludomusicologists. Furthermore, the construction of this landscape by the player is another form of aesthetic play. The game's popularity is frequently ascribed to how immersive it is, but I suggest that the more significant reason for the game's successfulness is its integral and appropriate aesthetic experience, and this experience is largely contingent on the game's musical aesthetics. Indeed, the musical aesthetic of *Naturklang* parallels the game's ludic aesthetic experience (the rhythm and pacing of the player's exploration and action), and both are metaphorically connected to the fictional mythology. Like the games in Chapter 3, this coming together of multiple elements attracts claims of art status.

Chapter 5 investigated the relationship of videogame music to both Hollywood and modernist avant-garde music, through the case study of *Dead Space*. The game's dynamic music system remixes static elements of aleatory-inspired avant-garde music. This music is presented as alien otherness to the security of the otherwise neoromantic score. Yet, this musical style soon becomes normalized and the greatest musical disturbance comes instead from a traditional nursery rhyme. The adoption of modernist avant-garde music—explicitly antithetical to mass cultural forms such as Hollywood film, or the videogame—but through the filter of Hollywood seems to be only for the purposes of utilizing a well-established topic or sign. However, taking into account the additional complexity of the mobile form provided by the music engine, the

game achieves a complex synthesis with its own logic and integrity. In this way, the *Dead Space* series demonstrates the potential of games to surpass *The Shining* as Barham's retort to Adorno and Eisler, and exemplifies the tensions felt across the video game industry in collapsing the space between art and mass culture.

All of these examples highlight that (non-)linearity, whether abstract/structural or phenomenological/temporal, is crucial to the videogame aesthetic because of the relationship between the interactive nature of the medium and aesthetic play. I have suggested that the player feels out the aesthetic form of these games regardless of the degree of freedom offered. Players also (re-)construct or play with musical form and meaning in videogames. Playing with form and playing with meaning (I have provided analytical examples invoking topic theory, harmonic expectation analysis, semiotics, and narratology) are often thought of as separate categories of experience, and separate modes of engagement. However, the preceding chapters collectively highlight the importance of the activity of play to both. The diversity of the videogame medium exhibits the engendering of meaning in a plethora of ways. This thesis has aimed to shed light on the entangled strands of signification and phenomenological layers of aesthetic experience in videogames. Players actively engage with the meaning in games in a multitude of different modes: semiotic, emotional, narrative and inter-textual. Yet they also play with games as aesthetic objects as well as Texts. While I concur with Kirkpatrick's characterization of videogames as aesthetic objects, I have refined his conception of videogame aesthetics through a more sophisticated consideration of the role of music within videogames, and through a direct comparison with theoretical aspects of musical aesthetics. The tangible element of play provides an aesthetic experience through the navigation of form that is temporally conditioned (as demonstrated in Chapters 3 and 4) and therefore, the role of music within the videogame aesthetic, and musicology's own theoretical apparatus, provide crucial points of comparison. The 'meaning dynamics' of the videogame aesthetic can be characterized as an 'internal dissonance'

not simply between play and meaning but rather, playing with form and playing with meaning. Both are types of play that entail an actively engaged subject.

Videogame Aesthetics and ‘The Great Divide’

This conception of active play is crucial in understanding the role of videogames in contemporary culture. In fact, the notion has been considered a distinguishing feature of Huyssen’s ‘Great Divide.’ Peter Franklin extended Bertolt Brecht’s description of the ‘peculiar doped state’ of bourgeois opera audiences to include Hollywood movies, adding that this state of enjoyment is assumed to be ‘passive and uncritical.’¹⁰ This could certainly be stretched further to encompass certain videogames. By inviting the audience to play and participate in their own quests and sagas, there is a danger that in accepting this superficial power and agency, they can become more thoroughly enslaved. The supposedly meaningful and consequential choices touted in *The Witcher 2*, for example, are a sophisticated façade for an ultimately controlled and limited experience. In this way, the industry plays its players. Of course, in the context of film music, Franklin critiques this one-sided vision by nuancing the key concepts on which it rests, effectively dismantling reductive and simplistic binaries by highlighting their polarizing gendered language. He demonstrates that although Modernist polemic set the Romanticism/Late-Romanticism of Hollywood film music on the ‘mass culture’ side of the divide, this music already had a complex history occupying the spaces on both sides. Kirkpatrick too, argues that games do not simply pacify their audience as Adorno feared. However, he goes further to state that videogames are a call to action. I would agree that certain self-conscious games like *BioShock Infinite* draw attention to the characteristics and limitations of the medium, and in doing so, cannot be described as mindless entertainment that pacifies an unthinking audience. Yet at the same time, Kirkpatrick’s

¹⁰ See Peter Franklin, *Seeing Through Music: Gender and Modernism In Classic Hollywood Film Scores* (Oxford: Oxford University Press, 2011), p. 44.

claim seems naïve in suggesting that this might be the case for all games. The breadth and diversity of games explored throughout this thesis only reflects a small proportion of the creative eclecticism now available, and to generalize about the medium as Kirkpatrick does sets up a reductive false dichotomy where there is a whole spectrum of possibilities.

Contrasting the aesthetic pleasure of traditional art with the products of the culture industry, Adorno warned about the replacement of ‘freedom and the genuinely new’ with consumerism and (Marxist) reification. The charge of “pseudo-individualization” can certainly be levelled at many games. We saw evidence of personalizable versions of the same metanarrative clichés in *Skyrim*, but also efforts to move beyond such limitations in *The Witcher 2* and *Bioshock Infinite*. The distinctiveness of *Skyrim* is primarily based on the player’s aesthetic experience of the game, rather than the specific narrative and lore, which is not only essentially the same for all players, but also follows the metanarrative of all Scandinavian sagas. This pseudo-individualization masks the standardization of products and arguably diminishes the extent to which audiences are conscious of their own condition and socio-economic status. By way of contrast, complex and abstract modernist art resisted the culture industry by experimenting with and problematizing the order/disorder spectrum. Modernist art derives much of its content from its abstract form, and in turn, its ultimate meaning and significance stems from the way its form reflects (and perhaps reflects *upon*) the complex organized chaos of contemporary life. As we saw in Chapter 5, avant-gardism tends to destabilize itself, as it is unable to escape its historicity just as it is unable to sustain its newness. However, the postmodern temporalities explored in Chapter 3 express neither total order nor complete chaos. There may be choice, or at least an illusion of choice, but there can also be narrative and authorship.

Lash and Lury’s more optimistic description of the contemporary participatory culture (what they call ‘getting ontological’) is applicable to videogames, Kirkpatrick argues, because the

interactive nature of play counters pacification.¹¹ However, Lash and Lury's *Global Culture Industry* rests upon a number of false (or at best, contestable) dichotomies, such as the categorical separation of "goods" and "culture", and the opposition of economic infrastructure with cultural superstructure. Beryl Langer questions whether Lash and Lury's "thingification" of culture 'necessarily precludes or diminishes the continuing operation of ideology, symbols and representation'—the facets of Adorno and Horkheimer's now rebranded 'Classical Culture Industry.'¹² Jameson says that postmodern culture transformed culture itself into a product, but there is no evidence in this thesis that denies the continuing relevance of ideological, symbolic or representational discourse.¹³ However appealing the utopian ontological turn of the *Global Culture Industry*, I not only question Kirkpatrick's assertion that gameplay always stimulates action, but also argue that many videogames seem to fulfil Adorno's vision through all-the-more subtle manipulation—the line between 'getting ontological' and 'pseudo-individualization' is a blurry one.

Kirkpatrick's suggestion that the autonomous aesthetic principles of modernist art are relocated to videogames seems to be corroborated by the presence of mobile form in the music and narrative structure of games like *Crysis*, *The Witcher 2*, and especially by the use of avant-garde aleatoric music in *Dead Space*. He presents the videogame aesthetic as an inversion of the modernist artwork in that games usually appear 'readily intelligible' by masking form, while avant-garde art appears deliberately confusing by bringing form to the surface.¹⁴ Yet both offer

¹¹ Shigeru Miyamoto, 'the father of modern videogames' and Senior Managing Director for Nintendo, has recently expressed dissatisfaction with the passivity of the "casual" videogame market. This has been hailed as a significant reversal of strategy for Nintendo whose successes in recent years have been based on the casual gameplay prevalent on their Wii console. See Seth G. Macy, 'Miyamoto Looking to shift focus away from Passive Gamers,' on *Imagine Games Network* (27/08/2014), retrieved from <<http://uk.ign.com/articles/2014/08/27/miyamoto-looking-to-shift-focus-away-from-passive-gamers>>, accessed 30/08/2014.

¹² See Beryl Langer, 'Review: *Global Culture Industry* by Scott Lash and Celia Lury,' *Journal of Consumer Culture* 8/3 (2008): 425–427.

¹³ See Frederic Jameson, *Postmodernism, Or, The Cultural Logic of Late Capitalism* (London: Verso, 1991), p. x.

¹⁴ Kirkpatrick, p. 37.

aesthetic experiences as form emerges from play. Kirkpatrick's generalization of the masking of form in games is contestable, especially in non-narrative puzzle games such as *Chime*, which arguably surfaces its form. In Chapter 2, I demonstrated that the competitive aspect of play could dominate the player's active focus on other modes of experience. However, the opposition of ludicity to meaning is not necessarily an unproductive or undesirable conflict. Examples of performer virtuosity throughout music history, and the theoretical validation of drastic as well as gnostic modes of knowledge, are testament to alternative focal modes for artistic experience. Kirkpatrick views the videogame as a paradox that, like modernist art, dialectically maintains its aesthetic autonomy by the very fact of its necessarily heteronomous existence. Heteronomy, in Kant's parlance, is subordination to the influence of an outside force. Only by participating in and deferring to the cultural marketplace can aesthetic objects like videogames have any political effect—their autonomy is contingent on, and justifiable in terms of, their presence within the marketplace.¹⁵ This is why, as music history demonstrates, art has always been product and artwork simultaneously; the commercial/artistic conflict is not new, and it is a productive and necessary one.

Although I have avoided direct engagement with the debate on the art status of videogames, my findings do help to situate the cultural form in a framework pertinent to that discussion. Following both Adorno and Kant, Kirkpatrick maintains that aesthetic form is not limited to so-called “highbrow” cultural activities.¹⁶ Indeed, he notes that aesthetic art has always contained a fundamentally vulgar element of playfulness—what Adorno referred to as the ‘plebeian element.’¹⁷ Videogames have the potential to diminish modernism's distancing of high and low. In the context of postmodern culture, such categories no longer hold the power they once did, as Kramer noted in his list of the features of postmodern music (see Chapter 3). In

¹⁵ See Kirkpatrick, p. 36.

¹⁶ Kirkpatrick, p. 40.

¹⁷ Adorno cited by Kirkpatrick, p. 40.

Chapter 2, I argued that although the videogame industry complicates authorship, videogames are purposive—they are deliberately crafted. Of course, they are not purposeless, as they serve the social function of entertainment, and more decisively, commercial interests invariably predominate. If Hollywood film music straddles the “Great Divide” between Modernism and Mass Culture in its nuanced relationship to Romanticism/Late-Romanticism/Popular Modern music—music from the “high art” side of the divide in one context being considered mass cultural (and feminine) in another—then videogame music’s complex engagement with both Hollywood and Modernist music (particularly as discussed in Chapter 5) occupies a similar space. My notion of play dialectically resolves Kirkpatrick’s theoretical dissonance between aesthetics and meaning, not by subtly shifting it to a new level, but through recognition of the significance of play to both. The aesthetics of videogame music draw attention to play as the crucial feature of aesthetic objects; high art and mass culture are not mutually exclusive.

THE AESTHETICS OF VIDEOGAME MUSIC

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Volume II: Appendices

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Glossary

This glossary is an alphabetically arranged compilation of core terminology marked in bold on first instance in the main text. The definitions or explanations are my own, unless otherwise stated, and are intended to provide clarity to the nomenclature employed in the main text, rather than a more protracted consideration of problematic definition.

AAA – games developed for popular platforms with the largest production and marketing budgets.

action/adventure game – generic videogame genre of predominantly narrative and combat oriented games.

AFK – shorthand notice to other players in online games: ‘away from keyboard’.

backmasked – a recording technique that reverses the play direction of audio waves.

buffs – skills or powers that one player uses to improve the power attributes of an ally (usually in MMORPG games).

casual game – catchall category that includes anything from card games (such as Solitaire) to “Social Games” (such as *Farmville*, on the Facebook application platform).

cooldown – a timer linked to a particular player skill (or set of skills) that prevents that skill from being reactivated until a specified countdown is complete.

cutscene – cinematic scenes that interrupt normal gameplay, sometimes pre-rendered.

demo – demonstration software, usually made available for free.

DPS – ‘damage per second’. Damage is applied over time (usually in RPG games).

dungeon – primarily a term relating to RPGs, designating a particular area within a game, often loaded separately into the system memory.

Easter egg – hidden clues or extras for the benefit of eagle-eyed players.

fighting/beat ‘em up – martial arts/boxing games.

first-person shooter (FPS) – 3D firearm combat game played primarily in first person perspective.

griefing – the act of deliberately disrupting the gameplay or immersion of other players (predominantly in online games).

grind(ing) – the process a player must take in order to gain experience and other rewards through the completion of repetitive tasks.¹

healer – RPG role dedicated to healing other players or NPC allies.

hit points – numerical measure of a character's health, usually out of 100.

HUD – 'heads up display'. Interface overlay that displays information such as health and ammunition.

incidental – short audio cue that provides supplementary diegetic underscoring.

instance(d) – a demarcated virtual zone in online games that is only persistent for a particular player (and potentially their allies), usually only for the duration of the current quest.

level up/levelling – an event (or goal) which marks progress. Players must gain sufficient experience or complete certain objectives in order to reach higher levels, and thereby access more content in the game and greater skills or powers. Usually a mechanism employed in RPGs.

level – usually refers to a specific map or chapter. Game engines traditionally load one level at a time into memory so that the assets are available for the player. Some modern games avoid loading levels by employing continuous data streaming techniques.

licensed – copyright music licensed for use in a particular game.

macros – short and relatively simple software scripts that automated particular processes or actions. Players can write their own macros and then 'map' or 'bind' them to particular keys or buttons.

massively multiplayer online game (MMO) – usually comprise large-scale persistent online virtual worlds in which players interact and socialize through their avatars. Can be a multiplayer version of any of the above genres, but is most commonly associated with the RPG (MMORPG).

middleware – software that is designed to process specific tasks, such as dynamic or interactive music systems, or physics simulations. Usually licensed by developers and then integrated into their game engine.

mod(ding) – mods are player-created modifications to the game content. Usually made freely available to the player community.

multiplayer – games designed for multiple players, either with a split-screen and separate controllers, turn-based with shared controllers, or online with completely separate gaming systems.

non-playable characters (NPCs) – all characters in games that are controlled by the game, either with scripted actions or through an artificial intelligence (AI) engine.

¹ See Neil Sorens, 'Rethinking the MMO,' on *Gamasutra*, (26/03/2007), retrieved from <http://www.gamasutra.com/view/feature/1583/rethinking_the_mmo.php?page=3>, accessed 21/06/2013.

- open world** – a virtual world in which the player(s) has considerable freedom of choice to explore.
- persistent** – in MMO games, changes or assets that are permanent on the main servers and therefore made available to all players (sometimes limited to specific instances or servers).
- pre-rendered** – a cut-scene or animation that has been recorded as a video rather than being rendered in real time.
- quest** – a specific mission for the player to complete, usually with clearly defined objectives (some of which may be optional).
- questline** – a series of related quests that must be completed in a specified order, each one unlocking the next.
- racing game** – a sub-genre of sport, could include any form of racing, although generally refers to motorcar racing games.
- role-playing game (RPG)** – often a third-person perspective action/adventure game that involves developing a character's "statistics" (such as health) whilst exploring their story in a virtual world.
- sandbox** – a closed environment within which there is relative freedom.
- server** – a computer connected to the internet that serves content in the form of websites or databases. Players connect to game servers that store their profiles and track their movements within multiplayer games.
- simulation** – games that tend to emphasize realism by simulate specific real-world scenarios, such as city building/management or aviation.
- single player** – games (or game modes) designed for one player only.
- skill rotation** – a particular sequence of skills to be executed (usually in MMORPGs). Players debate the merits of specific rotations in different scenarios.
- soundbank** – a data collection of various sound files, often in wave format.
- sport game** – virtual representation of any sporting competition/activity.
- stinger** – a very short audio cue, sometimes comprising just a single chord or note, and often used in television shows to mark scene transitions.
- strategy game** – further divided into the subcategories of real-time (RTS) and turn-based (TBS) games, these are most similar to board games such as RISK, and chess, usually providing large-scale bird's-eye overviews.
- tank** – an RPG role dedicated to absorbing enemy damage.
- waves/.wav** – standard uncompressed audio file format sometimes used in production and even the final products games. Audio files are often collated into soundbanks, and are sometimes encrypted so that they cannot be extracted (easily) from the game data.

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This bibliography is organized into three sections:

1. Bibliography
2. Scores, compact discs, films, videogames and related software
3. Interviews, resources, and miscellaneous multimedia

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Appendices

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Appendix A

Chapter 1: *Crysis* Themes by Level

Level	Themes	
1. Contact (island.cry)	1. travel 2. rescue_graveyard 3. island_up 4. island 5. rescue_boatride	6. island_meeting_barnes 7. rescue_swamp 8. riverbattle 9. rescue_sniper
2. Recovery (village.cry)	1. mine_kyong 2. mine_nodule 3. motivation 4. village_infiltrate 5. resolution	6. rescue_sniper 7. village_driving 8. travel 9. stream
3. Relic (resue.cry)	1. village_driving 2. stream 3. rescue_graveyard	4. rescue_swamp 5. riverbattle
4. Assault (harbour.cry)	1. village_driving 2. riverbattle 3. Harbor_inside 4. Harbor_squad_battle 5. island 6. mine_kyong	7. motivation 8. airfield_terminal 9. reinforcements 10. stream 11. village_infiltrate
5. Onslaught (tank.cry)	1. motivation 2. rescue_boatride_slow 3. level_loads 4. reinforcements 5. resolution	6. rescue_sniper 7. rescue_graveyard 8. rescue_swamp 9. village_driving 10. tank_open_valley
6. Awakening (mine.cry)	1. incidental_areas 2. rescue_sniper	6. mine_nodule 7. motivation

	3. Harbor_squad_battle 4. village_driving 5. mine_kyong	8. nexus_fast_drums 9. reinforcements 10. village_infiltrate
7. Core (core.cry)	1. entry 2. sewers 3. hangar	4. nexus 5. scavenger 6. level_loads
8. Paradise Lost (ice.cry)	1. ghosttown 2. level_loads	3. nexus 4. sphere_battle
9. Exodus (sphere.cry)	1. camera_jungle	2. camera_ambush
10. Ascension (ascension.cry)	1. vtol 2. level_loads	3. airfield_battle 4. scout_bridge
11. Reckoning (fleet.cry)	1. reactor_fast 2. airfield_fighting 3. nexus_fast_drums 4. airfield_battle 5. camera_vtol 6. reactor_slow 7. camera_river_battle 8. motivation 9. sphere_battle 10. vtol 11. ghosttown	12. pyrrhic_victory 13. menu 14. capture 15. flightdeck 16. fleet 17. Harbor_inside 18. rescue_graveyard 19. mine_kyong 20. sphere_alien_jungle 21. resolution

Appendix B

Chapter 1: *Crysis* Themes from ‘Contact’

Theme: Travel (travel)	
Mood: action	
Pattern Set	
Main Layer	travel_3_main
End Layer	travel_3_end
Mood: ambient	
Pattern Set	
Main Layer	travel_1_main
Incidental Layer	travel_1_inc1 travel_1_inc2 travel_1_inc3 travel_1_inc4
Stinger Layer	travel_1_stinger1 travel_1_stinger2 travel_1_stinger3 travel_1_stinger4 travel_1_stinger5
End Layer	travel_1_end
Mood: incidental	
Pattern Set	
Main Layer	travel_silence_incidental
Incidental layer	travel_incidental_01 travel_incidental_02 travel_incidental_03 travel_incidental_04 travel_incidental_05 travel_incidental_06 travel_incidental_07 travel_incidental_08
Stinger Layer	travel_incidental_stinger1 travel_incidental_stinger2
Mood: middle	
Pattern Set	
Main Layer	travel_2_main
End Layer	travel_2_end
Mood: silence	
Pattern Set	

First heard:	island.cry
MusicThemeSelector:	travel

Main Layer travel_silence Stinger Layer travel_silence_stinger1 travel_silence_stinger2 travel_silence_stinger3 travel_silence_stinger4 travel_silence_stinger5
Mood: travel_resolution1
Pattern Set Main Layer travel_resolution1

Theme: Graveyard (rescue_graveyard)
Mood: action
Pattern Set Main Layer graveyard_3_main End Layer graveyard_3_end
Mood: ambient
Pattern Set Main Layer graveyard_1_main End Layer graveyard_1_end
Mood: cortez_radio_death
Pattern Set Main Layer cortez_radio_death_main End layer cortez_radio_death_end
Mood: drums_low
Pattern Set Main Layer graveyard_1_drums_main End Layer graveyard_1_drums_end
Mood: drums_mid
Pattern Set Main Layer graveyard_2_drums_main End Layer graveyard_2_drums_end
Mood: incidental
Pattern Set Main Layer rescue_graveyard_incidental_silence Incidental Layer rescue_graveyard_incidental_inc1 rescue_graveyard_incidental_inc2 rescue_graveyard_incidental_inc3 rescue_graveyard_incidental_inc4

First heard: island.cry
 MusicThemeSelector_grave
 yard

rescue_graveyard_incidental_inc5 rescue_graveyard_incidental_inc6 rescue_graveyard_incidental_inc7 rescue_graveyard_incidental_inc8 rescue_graveyard_incidental_inc9 Stinger Layer rescue_graveyard_incidental_stinger1 rescue_graveyard_incidental_stinger2 rescue_graveyard_incidental_stinger3
Mood: middle
Pattern Set Main Layer graveyard_2_main End Layer graveyard_2_end
Mood: silence
Pattern Set Main Layer rescue_graveyard_silence Stinger Layer rescue_graveyard_silence_stinger1 rescue_graveyard_silence_stinger2 rescue_graveyard_silence_stinger3

Theme: Island Up (island_up)	
Mood: action	
Pattern Set Main Layer island_up_3_main Start Layer island_up_3_start End Layer island_up_3_end	
Mood: ambient	
Pattern Set Main Layer island_up_1_main Incidental Layer island_up_0_inc1 island_up_0_inc2 island_up_0_inc3 Stinger Layer island_up_0_stinger1 island_up_0_stinger2 island_up_0_stinger3 Start Layer island_up_1_start End Layer island_up_1_end	
Mood: incidental	
Pattern Set Main Layer island_up_silence_incidental Incidental Layer	

First heard: island.cry
 MusicThemeSelector_island

	island_up_incidental_01 island_up_incidental_02 island_up_incidental_03 island_up_incidental_04 island_up_incidental_05 island_up_incidental_06 island_up_incidental_07 island_up_incidental_08 island_up_incidental_09
Stinger Layer	island_up_incidental_stinger1 island_up_incidental_stinger2 island_up_incidental_stinger3 island_up_incidental_stinger4 island_up_incidental_stinger5
Mood: middle	
Pattern Set	
Main Layer	island_up_2_main
Incidental Layer	island_up_1_inc1 island_up_1_inc2 island_up_1_inc3
Start Layer	island_up_2_start
End Layer	island_up_2_end
Mood: silence	
Pattern Set	
Main Layer	island_up_silence
Stinger Layer	island_up_silence_stinger1 island_up_silence_stinger2 island_up_silence_stinger3 island_up_silence_stinger4 island_up_silence_stinger5

Theme: Island (island)	
Mood: action	
Pattern Set	
Main Layer	island_shore_3_main
Start Layer	island_shore_3_start
End Layer	island_shore_3_end
Mood: ambient	
Pattern Set	
Main Layer	island_shore_0_main
Incidental Layer	island_shore_0_inc1 island_shore_0_inc2

First heard: island.cry
MusicThemeSelector_island_low

	island_shore_0_inc3
Stinger Layer	island_shore_0_stinger1 island_shore_0_stinger2 island_shore_0_stinger3
Start Layer	island_shore_0_start
End Layer	island_shore_0_end
Mood: incidental	
Pattern Set	
Main Layer	island_silence_incidental
Incidental Layer	island_incidental_01 island_incidental_02 island_incidental_03 island_incidental_04 island_incidental_05 island_incidental_06 island_incidental_07 island_incidental_08 island_incidental_09
Stinger Layer	island_shore_incidental_stinger1 island_shore_incidental_stinger2 island_shore_incidental_stinger3 island_shore_incidental_stinger4 island_shore_incidental_stinger5
Mood: middle	
Pattern Set	
Main Layer	island_shore_1_main
Incidental Layer	island_shore_1_inc1 island_shore_1_inc2 island_shore_1_inc3
Start Layer	island_shore_1_start
End Layer	island_shore_1_end
Mood: motivation1	
Pattern Set	
Main Layer	island_motivation1
Mood: resolution1	
Pattern Set	
Main Layer	island_resolution1
Mood: silence	
Pattern Set	
Main Layer	island_shore_silence
Stinger Layer	island_shore_silence_stinger1

island_shore_silence_stinger2 island_shore_silence_stinger3 island_shore_silence_stinger4 island_shore_silence_stinger5
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Theme: Island Boat ride (rescue_boatride)	
Mood: action	
Pattern Set	
Main Layer	boat_ride_fast_3_main
Start Layer	boat_ride_fast_3_start
End Layer	boat_ride_fast_3_end
Mood: ambient	
Pattern Set	
Main Layer	boat_ride_fast_1_main
Incidental Layer	boat_ride_fast_1_inc1 boat_ride_fast_1_inc2
Stinger Layer	rescue_boatride_fast_1_stinger1 rescue_boatride_fast_1_stinger2
Start Layer	boat_ride_fast_1_start
End Layer	boat_ride_fast_end_1
Mood: incidental	
Pattern Set	
Main Layer	boatride_fast_silence_incidental
Incidental Layer	boatride_fast_incidental_01 boatride_fast_incidental_02 boatride_fast_incidental_03 boatride_fast_incidental_04 boatride_fast_incidental_05 boatride_fast_incidental_06 boatride_fast_incidental_07 boatride_fast_incidental_08
Stinger Layer	boatride_fast_incidental_stinger1 boatride_fast_incidental_stinger2 boatride_fast_incidental_stinger3 boatride_fast_incidental_stinger4 boatride_fast_incidental_stinger5
Mood: middle	
Pattern Set	
Main Layer	boat_ride_fast_2_main
Incidental Layer	boat_ride_fast_2_inc1 boat_ride_fast_2_inc2

First heard: island.cry MusicThemeSelector_island_boatride

Stinger Layer	rescue_boatride_fast_2_stinger1 rescue_boatride_fast_2_stinger2
Start Layer	boat_ride_fast_2_start
End Layer	boat_ride_fast_2_end
Mood: resolution2	
Pattern Set Main Layer	boatride_fast_resolution2
Mood: silence	
Pattern Set Main Layer	boat_ride_fast_silence
Stinger Layer	rescue_boatride_fast_silence_stinger1 rescue_boatride_fast_silence_stinger1

Theme: Island Meeting Barnes (island_meeting_barnes)	
Mood: halo_calm	
Pattern Set Main Layer	island_halo_calm
Mood: halo_jump	
Pattern Set Main Layer	island_halo_jump motivation_island_halo_jump
Mood: halo_jump_intense	
Pattern Set Main Layer	island_halo_jump_intense
Mood: halo_land	
Pattern Set Main Layer	island_halo_land
Mood: halo_prep	
Pattern Set Main Layer	island_halo_prep
Mood: halo_tense	
Pattern Set Main Layer	island_halo_tense
Mood: hilltop_meeting	
Pattern Set Main Layer	meeting_barnes_hilltop
Mood: motivation	
Pattern Set	

First heard: island.cry
MusicThemeSelector_island_meet_barnes_silence

Main Layer	meeting_barnes_motivation
Mood: silence	
Pattern Set	
Main Layer	meeting_barnes_silence
Stinger Layer	island_meeting_barnes_stinger1 island_meeting_barnes_stinger2 island_meeting_barnes_stinger3 island_meeting_barnes_stinger4 island_meeting_barnes_stinger5

Theme: Rescue Swamp (rescue_swamp)	
Mood: action	
Pattern Set	
Main Layer	rescue_swamp_3_main
End Layer	rescue_swamp_3_end
Mood: ambient	
Pattern Set	
Main Layer	rescue_swamp_1_main
Incidental Layer	rescue_swamp_1_inc1 rescue_swamp_1_inc2 rescue_swamp_1_inc3
Mood: ambient	
Pattern Set	
Main Layer	rescue_swamp_silence_incidental
Incidental Layer	rescue_swamp_incidental_01 rescue_swamp_incidental_02 rescue_swamp_incidental_03 rescue_swamp_incidental_04 rescue_swamp_incidental_05 rescue_swamp_incidental_06 rescue_swamp_incidental_07 rescue_swamp_incidental_08
Stinger Layer	rescue_swamp_incidental_stinger1 rescue_swamp_incidental_stinger2 rescue_swamp_incidental_stinger3 rescue_swamp_incidental_stinger4 rescue_swamp_incidental_stinger5
Mood: middle	
Pattern Set	
Main Layer	rescue_swamp_2_main
Incidental Layer	rescue_swamp_2_inc1

First heard: island.cry
MusicThemeSelector_island_swim_method

	End Layer	rescue_swamp_2_inc2 rescue_swamp_2_inc3 rescue_swamp_2_end
Mood: motivation1		
	Pattern Set Main Layer	swamp_lab_motivation
Mood: silence	Pattern Set Main Layer	rescue_swamp_silence
	Stinger Layer	rescue_swamp_silence_stinger1 rescue_swamp_silence_stinger2 rescue_swamp_silence_stinger3

Theme: River Battle (riverbattle)		
Mood: action		
	Pattern Set Main Layer	riverbattle_3_main
	End Layer	riverbattle_3_end
Mood: ambient		
	Pattern Set Main Layer	riverbattle_1_main
	End Layer	riverbattle_1_end
Mood: drums		
	Pattern Set Main Layer	riverbattle_2_perc_main ¹
	End Layer	riverbattle_2_perc_end
Mood: drums_short		
	Pattern Set Main Layer	riverbattle_2_drums_short_main
	End Layer	riverbattle_2_drums_short_end
Mood: incidental		
	Pattern Set Main Layer	riverbattle_incidental_silence
	Incidental Layer	riverbattle_incidental_1 riverbattle_incidental_2 riverbattle_incidental_3 riverbattle_incidental_4

First heard: island.cry
MusicThemeSelector_riverbattle_drums

¹ [sic] Typographical Error in SB2 Database View

	riverbattle_incidental_5 riverbattle_incidental_6 riverbattle_incidental_7 riverbattle_incidental_8
Mood: middle	
Pattern Set Main Layer	riverbattle_2_main
End Layer	riverbattle_2_end
Mood: silence	
Pattern Set Main Layer	riverbattle_silence

Theme: Rescue Sniper (rescue_sniper)	
Mood: action	
Pattern Set Main Layer	rescue_sniper_2_main
Incidental Layer	rescue_sniper_2_inc1 rescue_sniper_2_inc2 rescue_sniper_2_inc3
End Layer	rescue_sniper_2_end
Mood: ambient	
Pattern Set Main Layer	rescue_sniper_0_main
Incidental Layer	rescue_sniper_0_inc1 rescue_sniper_0_inc2 rescue_sniper_0_inc3
Mood: incidental	
Pattern Set Main Layer	rescue_sniper_silence_incidental
Incidental Layer	rescue_sniper_incidental_01 rescue_sniper_incidental_02 rescue_sniper_incidental_03 rescue_sniper_incidental_04 rescue_sniper_incidental_05 rescue_sniper_incidental_06 rescue_sniper_incidental_07 rescue_sniper_incidental_08
Stinger Layer	rescue_sniper_incidental_stinger1 rescue_sniper_incidental_stinger2 rescue_sniper_incidental_stinger3
Mood: middle	
Pattern Set	

First heard: island.cry
MusicThemeSelector_sniper

<p>Main Layer</p> <p>rescue_sniper_1_main</p> <p>Incidental Layer</p> <p>rescue_sniper_1_inc1</p> <p>rescue_sniper_1_inc2</p> <p>rescue_sniper_1_inc3</p> <p>End Layer</p> <p>rescue_sniper_1_end</p>
<p>Mood: resolution1</p>
<p>Pattern Set</p> <p>Main Layer</p> <p>sniper_resolution1_short</p>
<p>Mood: silence</p>
<p>Pattern Set</p> <p>Main Layer</p> <p>rescue_sniper_silence</p> <p>Stinger Layer</p> <p>rescue_sniper_silence_stinger1</p> <p>rescue_sniper_silence_stinger2</p>

Appendix C

Chapter 3: *The Witcher 2* Music Categorized (Extracted Tracks)

Track Number	Name	Duration	Category
1	Assassin Encounter	0:01:12	Other
2	Cave Theme	0:02:10	Area
3	Mytnik Tower	0:00:48	Area
4	Anais Prison	0:00:20	Specific
5	Battle 03 Alt. Drums FX	0:01:04	Battle
6	Elven Ruins Part 1	0:01:30	Area
7	Healing Saskia	0:01:15	Specific
8	Detmold in Kaedwen	0:00:48	Specific
9	Battle 03	0:01:04	Battle
10	Elven Ruins Part 2	0:01:40	Area
11	Geralt Backup 1	0:00:37	Other
12	Geralt Takes Shilard Hostage	0:00:12	Specific
13	Battle 16 Alt. Drums FX	0:01:08	Battle
14	Cedric Dying	0:00:50	Specific
15	Owl Battle	0:00:35	Other
16	Start Iorweth	0:01:38	Specific
17	Battle 16 Additional	0:01:08	Battle
18	End	0:00:34	Other
19	Debate Poison	0:00:29	Debate
20	Philippa Escape	0:00:48	Specific
21	Blathanna Przyciete	0:01:30	Specific
22	Iorweth Hostage	0:00:29	Specific
23	Debate Start Jingle	0:00:14	Jingle
24	Geralt and Company Enter	0:00:13	Other
25	Iorweth Roche	0:00:21	Other
26	Owl Jingle Music 10	0:00:17	Jingle
27	Radovid Against Mages	0:00:37	Specific
28	Butterfly	0:00:39	Other
29	Roche Rescue	0:00:48	Specific
30	Radovid Against Sheala	0:00:32	Specific
31	Discovery	0:00:46	Other
32	Draug Appear	0:00:26	Other
33	Debate Dragon Attack	0:00:51	Debate
34	Jingle Music 20 Theme 1 - Hard	0:00:10	Jingle
35	Opening	0:03:22	Other
36	Lodge	0:00:28	Other

37	Free Dragon	0:00:46	Other
38	Jingle Music 21 Theme 1 - Soft	0:00:11	Jingle
39	Rishon	0:00:44	Other
40	Messenger	0:01:35	Other
41	Kill Dragon	0:00:31	Other
42	Minigames	0:00:16	Minigames
43	Tentadrake	0:01:00	Specific
44	Detmold Cut	0:00:21	Specific
45	Ladybird	0:01:15	Specific
46	Oboz Henselta Day	0:01:39	Specific
47	Iorweth Returns	0:00:23	Other
48	Rishon Dead	0:00:53	Other
49	Fist Fight	0:00:49	Minigames
50	Tarma Turns into Dragon	0:00:43	Specific
51	Rishon Dead Ending	0:00:34	Other
52	Hanging Port Piana Loop	0:01:11	Piana
53	Sewers	0:03:48	Area
54	Tarma's Speech	0:01:52	Specific
55	Sneaking Conspiracy v2.5	0:02:30	Other
56	Detmold Battle	0:00:27	Specific
57	Battle 01 Alt. Drums FX	0:01:14	Battle
58	Geralt Backup 2	0:00:35	Other
59	Nilfgaard District	0:03:04	Area
60	Battle 01	0:01:14	Battle
61	Geralt Curse	0:01:06	Other
62	Battle 02 Alt. Drums FX	0:01:02	Battle
63	Priest Curse	0:01:02	Other
64	Ambient – Darker	0:04:01	Ambient
65	Battle 02	0:01:02	Battle
66	Assassination Attempt	0:00:42	Other
67	Ambient – Neutral	0:06:18	Ambient
68	Sheala Appear	0:00:31	Other
69	Slaughter House	0:00:27	Other
70	Battle 06 Alt. Drums FX	0:01:05	Battle
71	Henselt Exorcism	0:00:38	Specific
72	Battle 06	0:01:05	Battle
73	Soldiers Flee	0:00:24	Other
74	Battle 08 Alt. Drums FX	0:01:03	Battle
75	Henselt Dies	0:00:27	Specific
76	Battle 08	0:01:03	Battle
77	Witcher Spotted	0:00:13	Other
78	Battle 09	0:01:06	Battle
79	Battle 07	0:01:03	Battle

80	Battle 09 Alternate Version	0:01:02	Battle
81	Harpies' Lair	0:02:28	Area
82	Battle 10 Alt. Drums FX	0:01:02	Battle
83	Debate After Iorweth	0:01:29	Debate
84	Battle 10	0:01:04	Battle
85	Battle 11 Alt. Drums FX	0:01:00	Battle
86	Battle 11	0:01:00	Battle
87	Battle 13 Alt. Drums FX	0:01:16	Battle
88	Battle 13 Additional	0:01:16	Battle
89	Battle 12 Additional	0:01:00	Battle
90	Battle 04	0:01:16	Battle
91	Battle 17 Additional	0:01:06	Battle
92	Battle 05	0:01:04	Battle
93	Battle 14 Alt. Drums FX	0:01:19	Battle
94	Battle 17 Alternate Version	0:00:36	Battle
95	Battle 15 Additional	0:01:16	Battle
96	Forest Night	0:03:41	Area
97	Piana Zamieszki	0:04:03	Piana
98	Miasto Smoka	0:06:00	Other
99	Pola Night	0:04:19	Other
100	Port Piana	0:05:02	Piana
101	Battle 14 Additional	0:01:19	Battle
102	Tavern Piana 1	0:01:43	Piana
103	Tavern Piana 2	0:02:09	Piana
104	Maps 01 Folksowe	0:00:14	Area
105	Jingle Music 08 Dark Gravel	0:00:14	Jingle
106	Jingle Music 23 Theme 2 Soft	0:00:14	Jingle
107	Succubus Sex Crazy TW1	0:00:14	Other

Appendix D

Chapter 4: *Skyrim* Music Data Structure

The following data structure is presented in two continuous columns. The ‘palette’ tracks are predominantly ambient musical effects, with an average duration of approximately 30 seconds. Although it is not the main aim, to a certain extent, this chapter is also interested in the broader category of ‘soundscapes’—the study of acoustic ecology that includes all sorts of audio, not just that defined as music. While some of these palette tracks and other ‘stingers’ are defined as music (at least by the developers), they might be better conceived of as part of the soundscape of the game.

<pre> \music mus_castle_imperial_01 mus_castle_stormcloaks mus_discover_genericlocation_01 mus_discover_genericlocation_02 mus_discover_genericlocation_03 mus_discover_highhrothgar mus_levelup_01 mus_levelup_02 mus_levelup_03 mus_sovngarde_chant_lp \music\combat mus_combat_01 mus_combat_01_finale mus_combat_02 mus_combat_02_finale mus_combat_03 mus_combat_03_finale mus_combat_04 mus_combat_04_cg mus_combat_04_finale mus_combat_06 mus_combat_06_finale mus_combat_boss mus_combat_boss_02 mus_combat_boss_02_finale mus_combat_boss_03 mus_combat_boss_03_finale mus_combat_boss_cg mus_combat_boss_finale \music\dread mus_discover_dread_01 mus_discover_dread_02 mus_discover_dread_03 mus_discover_dread_04 mus_dread_01 </pre>	<pre> \music\explore\mountain\palette\night\c mus_palette_mountain_night_c_01 mus_palette_mountain_night_c_02 mus_palette_mountain_night_c_03 mus_palette_mountain_night_c_04 mus_palette_mountain_night_c_05 mus_palette_mountain_night_c_06 \music\explore\reach\palette\day\a mus_palette_reach_day_a_01 mus_palette_reach_day_a_02 mus_palette_reach_day_a_03 mus_palette_reach_day_a_04 mus_palette_reach_day_a_05 \music\explore\reach\palette\day\b mus_palette_reach_day_b_01 mus_palette_reach_day_b_02 mus_palette_reach_day_b_03 mus_palette_reach_day_b_04 \music\explore\reach\palette\night\a mus_palette_reach_night_a_01 mus_palette_reach_night_a_02 mus_palette_reach_night_a_03 mus_palette_reach_night_a_04 mus_palette_reach_night_a_05 \music\explore\reach\palette\night\b mus_palette_reach_night_b_01 mus_palette_reach_night_b_02 mus_palette_reach_night_b_03 mus_palette_reach_night_b_04 \music\explore\reach\palette\night\c mus_palette_reach_night_c_01 </pre>
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mus_dread_02	mus_palette_reach_night_c_02
mus_dread_03	mus_palette_reach_night_c_03
mus_dread_04	mus_palette_reach_night_c_04
	mus_palette_reach_night_c_05
\music\dungeon	
mus_dungeon_01	
mus_dungeon_02	\music\explore\snow\palette\day\a
mus_dungeon_03	mus_palette_snowy_day_a_01
	mus_palette_snowy_day_a_02
\music\dungeon\cave	mus_palette_snowy_day_a_03
mus_dungeon_cave_01	mus_palette_snowy_day_a_04
mus_dungeon_cave_02	
mus_dungeon_cave_03	\music\explore\snow\palette\day\b
	mus_palette_snowy_day_b_01
\music\dungeon\fort	mus_palette_snowy_day_b_02
mus_dungeon_fort_01	mus_palette_snowy_day_b_03
mus_dungeon_fort_02	mus_palette_snowy_day_b_04
\music\dungeon\ice	\music\explore\snow\palette\day\c
mus_dungeon_ice_01	mus_palette_snowy_day_c_01
mus_dungeon_ice_02	mus_palette_snowy_day_c_02
	mus_palette_snowy_day_c_03
\music\explore	mus_palette_snowy_day_c_04
mus_explore_day_01	
mus_explore_day_02	\music\explore\snow\palette\night\a
mus_explore_day_03	mus_palette_snowy_night_a_01
mus_explore_day_04	mus_palette_snowy_night_a_02
mus_explore_day_05	mus_palette_snowy_night_a_03
mus_explore_day_06	mus_palette_snowy_night_a_04
mus_explore_day_07	mus_palette_snowy_night_a_05
mus_explore_day_08	
mus_explore_day_09	\music\explore\snow\palette\night\b
mus_explore_dusk_01	mus_palette_snowy_night_b_01
mus_explore_dusk_02	mus_palette_snowy_night_b_02
mus_explore_dusk_03	mus_palette_snowy_night_b_03
mus_explore_morning_01	mus_palette_snowy_night_b_04
mus_explore_morning_02	
mus_explore_night_01	\music\explore\sovngarde\palette\day\a
mus_explore_night_02	mus_palette_sovngarde_a_01
mus_explore_night_03	mus_palette_sovngarde_a_02
mus_explore_night_04	mus_palette_sovngarde_a_03
mus_explore_night_05	mus_palette_sovngarde_a_04
mus_explore_night_06	mus_palette_sovngarde_a_05
	mus_palette_sovngarde_a_06
	mus_palette_sovngarde_a_07
\music\explore\forestfall\palette\day\a	
mus_palette_forestfall_day_a_01	
mus_palette_forestfall_day_a_02	\music\explore\sovngarde\palette\day\b
mus_palette_forestfall_day_a_03	mus_palette_sovngarde_b_01
mus_palette_forestfall_day_a_04	mus_palette_sovngarde_b_02
mus_palette_forestfall_day_a_05	mus_palette_sovngarde_b_03
mus_palette_forestfall_day_a_06	mus_palette_sovngarde_b_04
mus_palette_forestfall_day_a_07	
\music\explore\forestfall\palette\day\b	\music\explore\tundra\palette\day\a
mus_palette_forestfall_day_b_01	mus_palette_tundra_day_a_01
	mus_palette_tundra_day_a_02

mus_palette_forestfall_day_b_02	mus_palette_tundra_day_a_03
mus_palette_forestfall_day_b_03	mus_palette_tundra_day_a_04
mus_palette_forestfall_day_b_04	mus_palette_tundra_day_a_05
mus_palette_forestfall_day_b_05	mus_palette_tundra_day_a_06
mus_palette_forestfall_day_b_06	
\music\explore\forestpine\palette\day\a	\music\explore\tundra\palette\day\b
mus_palette_forestpine_day_a_01	mus_palette_tundra_day_b_01
mus_palette_forestpine_day_a_02	mus_palette_tundra_day_b_02
mus_palette_forestpine_day_a_03	mus_palette_tundra_day_b_03
mus_palette_forestpine_day_a_04	mus_palette_tundra_day_b_04
mus_palette_forestpine_day_a_05	
mus_palette_forestpine_day_a_06	\music\explore\tundra\palette\day\c
mus_palette_forestpine_day_a_07	mus_palette_tundra_day_c_01
mus_palette_forestpine_day_a_08	mus_palette_tundra_day_c_02
	mus_palette_tundra_day_c_03
\music\explore\forestpine\palette\day\b	\music\reveal
mus_palette_forestpine_day_b_01	mus_reveal_01
mus_palette_forestpine_day_b_02	mus_reveal_02
mus_palette_forestpine_day_b_03	mus_reveal_03
mus_palette_forestpine_day_b_04	mus_reveal_04
mus_palette_forestpine_day_b_05	
mus_palette_forestpine_day_b_06	\music\reward
mus_palette_forestpine_day_b_07	mus_reward_01
	mus_reward_02
\music\explore\forestpine\palette\night\a	mus_reward_03
mus_palette_forest_night_a_01wa	mus_reward_04
mus_palette_forest_night_a_02wa	
mus_palette_forest_night_a_03wa	\music\special
mus_palette_forest_night_a_04wa	mus_intro
mus_palette_forest_night_a_05wa	mus_maintheme
	mus_special_cartintro_01
\music\explore\forestpine\palette\night\b	mus_special_wordofpower_01
mus_palette_forest_night_b_01wa	mus_special_wordofpower_02
mus_palette_forest_night_b_02wa	mus_special_wordofpower_03
mus_palette_forest_night_b_03wa	
mus_palette_forest_night_b_04wa	\music\special\failure
mus_palette_forest_night_b_05wa	mus_failure_01
mus_palette_forest_night_b_06wa	mus_failure_02
	mus_failure_03
\music\explore\mountain\palette\day\a	mus_failure_04
mus_palette_mountain_day_a_01wa	mus_failure_05
mus_palette_mountain_day_a_02wa	mus_failure_06
mus_palette_mountain_day_a_03wa	mus_failure_07
mus_palette_mountain_day_a_04wa	
mus_palette_mountain_day_a_05wa	\music\stinger
	mus_stinger_01
\music\explore\mountain\palette\day\b	mus_stinger_02
mus_palette_mountain_day_b_01wa	mus_stinger_03
mus_palette_mountain_day_b_02wa	mus_stinger_04
mus_palette_mountain_day_b_03wa	
mus_palette_mountain_day_b_04wa	\music\tavern
	mus_tavern_01
\music\explore\mountain\palette\night\a	mus_tavern_02
mus_palette_mountain_night_a_01	mus_tavern_03

mus_palette_mountain_night_a_02	mus_tavern_04
mus_palette_mountain_night_a_03	mus_tavern_05
mus_palette_mountain_night_a_04	
mus_palette_mountain_night_a_05	\music\town
mus_palette_mountain_night_a_06	mus_town_day_01
	mus_town_day_02
\music\explore\mountain\palette\night\b	mus_town_day_03
mus_palette_mountain_night_b_01	mus_town_day_04
mus_palette_mountain_night_b_02	mus_village_01
mus_palette_mountain_night_b_03	mus_village_02
mus_palette_mountain_night_b_04	
mus_palette_mountain_night_b_05	mus_village_03