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*

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 history—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

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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.

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\(^5\) 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).

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.

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**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. 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’. 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.’ 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

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

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.’ 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.  

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

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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,

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’:

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...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.)

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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.

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\(^{26}\) 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 available\(^2\)), 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

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\(^2\)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

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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-

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.

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,

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:

<table>
<thead>
<tr>
<th>Minimalist</th>
<th>Aleatory</th>
</tr>
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<tbody>
<tr>
<td>1. Backing track is process-driven.</td>
<td>1. Macro structure (length) determined by timers and how long the player can keep it going for.</td>
</tr>
<tr>
<td>2. Algorithmic process employs quintessentially minimalist material: small repeating tonal sections/cells.</td>
<td>2. Medium layer structures, cues added at will of player, combinations add more layers.</td>
</tr>
</tbody>
</table>

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

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\(^{32}\) 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.\textsuperscript{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.\textsuperscript{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.\textsuperscript{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

\textsuperscript{34} See, for instance, Edward T. Cone’s The Composer’s Voice (Berkley, LA: 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).
\textsuperscript{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.
Cage⁴⁷), and not least due to the perception that minimalist music (and art) originated there.⁴⁸

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.’⁴⁹ (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.

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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 Olympiad, 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.

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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. 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.’

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. 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

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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. 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.

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, 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

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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).


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.

\(\text{This was a triumph.}\)
\(\text{I'm making a note here: HUGE SUCCESS.}\)
\(\text{It's hard to overstate my satisfaction.}\)

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


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  
(Chorus 3)  
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.
Anyway, this cake is great:  
It’s so delicious and moist.  
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

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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 players musical input is neutralized due to the increased ‘entropy’—a term Ligeti employed to describe precisely this phenomenon.\textsuperscript{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.’\textsuperscript{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

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. 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 enchained role 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 partners) 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. 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. 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.’

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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?t=22464145>, accessed 23/06/2011.

