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UNIVERSITY OF CALIFORNIA

Los Angeles

*Mise en Abyme:*

Musical Diegesis and Simulated Reality in Film

A dissertation submitted in partial satisfaction

of the requirements for the degree

Doctor of Philosophy in Music

by

Andreas Foivos Apostolou

2023

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2023

# ABSTRACT OF THE DISSERTATION

*Mise en Abyme:*

Musical Diegesis and Simulated Reality in Film

by

Andreas Foivos Apostolou

Doctor of Philosophy in Music

University of California, Los Angeles, 2023

Prof. Ian Krouse, Chair

The purpose of this dissertation is to shed light on the diegetic role of music in simulated reality films. The analytical focus of this dissertation will be on three films from the '90s: *Total Recall* (1990), *The Truman Show* (1998), and *The Matrix* (1999). I am particularly interested in musical strategies employed by composers to enhance *mise en abyme* storytelling and differentiate between reality and illusion.

Film music in simulated reality movies acts as a powerful immersive tool that enhances 'reality vs illusion' *mise en abyme*. In this research, I will be analyzing the original score and source music in *The Truman Show*. Each layer of reality in this film is represented by a different musical style. In fact, two different composers are credited on the original soundtrack of this film:

Philip Glass for the non-diegetic score and Burkhard Dallwitz for the reality show music within the film. I will also analyze scenes with works by Mozart that are used to intelligently transition between diegetic spaces. I will also be comparing the scores of Jerry Goldsmith (*Total Recall*) and Don Davis (*The Matrix*), particularly in their portrayal of illusion. On one hand, Goldsmith evokes a general atmosphere of ambiguity, and on the other hand, Davis highlights the central theme of ‘reality vs simulation’ in a very methodical way, by using *leitmotifs* associated with important characters and screen actions.

Finally, I will begin by exploring different types of *mise en abyme* in film, music, painting, and literature. Filmmakers in the late ’90s were inspired by this technique and embraced a complexification of storytelling originating from science fiction literature and philosophical theories of the ’60s. Furthermore, I will show how recurring Hollywood themes about A.I., simulation theory and techno-dystopias are better understood as reflexive narratives that express a societal ‘future shock’ for new technologies.

This research is accompanied by my original score for a fifty-minute excerpt from *Total Recall* (1990). In my score, I am applying compositional techniques from my analysis to effectively portray ‘illusion vs reality’ *mise en abyme*.

The dissertation of Andreas Foivos Apostolou is approved.

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2023

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## METHODOLOGY

My pitch set analysis is based on Allen Forte's *The Structure of Atonal Music*<sup>1</sup> and Joseph N. Straus' *Introduction to Post-Tonal Theory*.<sup>2</sup> When describing pitch sets, I will be using prime form in parentheses, followed by the corresponding Forte catalog number. If I refer to the same pitch set a second time, I will not restate its Forte number. When I want to show ordered pitches, I will use numbers to indicate the octave tessitura, i.e.: [C1, C2, C3].

When describing modes, I will be using interval sequences of minor seconds 'm2', major seconds 'M2', and so forth, within curly brackets, i.e.: the Lydian mode is {M2, M2, M2, m2, M2, M2, m2}. When describing modes as pitch sets, I will be using normal brackets.

For octatonic collections, I will be using following labels:

- 1) OCT (0,1) for [C, C#, D#, E, F#, G, A, Bb]
- 2) OCT (1,2) for [C#, D, E, F, G, Ab, Bb, B]
- 3) OCT (0,2) for [C, D, Eb, F, F#, G#, A, B]

For hexatonic collection labeling, please go to Chapter 3.2.3, Figure 3.6.

When analyzing the score of Jerry Goldsmith's *Total Recall* and Don Davis' *The Matrix* (1999), I will be referring to the official score by OMNI Music Publishing using the following

---

<sup>1</sup> A Forte, *The Structure of Atonal Music*, Reprint, Yale [Paperbacks] (New Haven and London: Yale University Press, 1977), <https://books.google.com/books?id=j9aV2JYHY4AC>.

<sup>2</sup> J N Straus, *Introduction to Post-Tonal Theory: Fourth Edition*, 4th ed. (London: W.W. Norton, 2016), <https://books.google.com/books?id=AwZ4DAAAQBAJ>.



format: (music cue title)/ (measure number), i.e.: 2M1/ m.1–8. For *The Truman Show* (1998) there is no official score and I had to transcribe excerpts by ear.

All of the score figures are my original reductions made with Sibelius notation software and include notes created with Illustrator. I use a consistent color coding of red, green, purple, and blue.

For passages with tertian harmonies, I will be using the following chord id labels.

C maj	C, E, G
C min	C, Eb, G
C <sup>o</sup>	C, Eb, Gb
C <sup>#4maj7</sup>	C, F#, B
C <sup>7</sup>	C, E, G, Bb
C <sup>maj7</sup>	C, E, G, B
C <sup>min7</sup>	C, Eb, G, Bb
C <sup>o7</sup>	C, Eb, Gb, Bbb
C <sup>o7</sup>	C, Eb, Gb, Bb
C <sup>add#2</sup>	C, D#, E, G
C <sup>9</sup>	C, E, G, Bb, D
C <sup>min<sup>6</sup>add<sup>9</sup></sup>	C, D, Eb, G, A
C <sup>7b9</sup>	C, E, G, Bb, Db
C <sup>o7b9</sup>	C, Eb, Gb, Bb, Db

Table 1: Chord identification.

## INTRODUCTION

*Mise en abyme* is an ideal analogue for simulation narratives, where a hyperreal, fabricated world mirrors the real world. This dissertation will focus on the role of music in simulated reality films and how it can add more layers of meta-reference, self-reference, and part-to-whole-similarity. Film music is a powerful tool for immersion; composers like Jerry Goldsmith, Don Davis, and Philip Glass are able to reinforce the association between nested filmic realities and distinct emotional tones.

Hollywood directors in the '90s embraced the layering of realities by interweaving stories within stories into a more complex tale. I chose to analyze three films with different types of *mise en abyme*. In the *Truman Show* (1998) there is a clear physical separation of inner and outer story, whereas in *The Matrix* (1999), the inner story and the outer story share the same diegetic space. In *Total Recall*, the embedded structure is character-centric and the story blurs the line of reality and memory.

The theoretical framework of simulated reality movies of the '90s originates from science fiction literature and philosophy of the '60s. Ideas found in the writings of Philip K. Dick, William Gibson, Michel Foucault, and Jean Baudrillard formed the theoretical foundation for simulated reality films. In order to clearly demonstrate how film music is able to enhance simulation meta-narratives, I will briefly explore the above literary origins.

Despite the fairly recent history of *mise en abyme* (130 years), its applications in film music are incredibly diverse. One of my initial concerns was that writers and artists used this term to

describe different techniques. This is the reason why I dedicated Chapter 1 to outlining the history and main functions of *mise en abyme* in storytelling, music, painting, and film.

In Chapter 2, I will be analyzing the original score and source music on Peter Weir's *The Truman Show*, where each layer of reality is represented by a different musical style. Philip Glass composes the non-diegetic score, whereas Burkhard Dallwitz writes music in the style of the fake reality show within the film. I will also analyze scenes with works by Mozart that are used to intelligently transition between diegetic spaces.

In Chapters 3 and 4, I will be comparing the scores of Jerry Goldsmith (*Total Recall*) and Don Davis (*The Matrix*), particularly in their portrayal of illusion. On one hand, Goldsmith evokes a general atmosphere of ambiguity, and on the other hand, Davis highlights the central theme of 'reality vs simulation' in a very methodical way, by highlighting important characters and screen actions with *leitmotifs*.

# 1. *Mise en Abyme*

## 1.1. Origins

*Mise en abyme* (“putting [something] into an abyss”) is a device of self-similarity within a work of art, literature, music, or in film, animation, and other visual media.<sup>3</sup> This technique denotes a “special relationship within an embedding structure” that involves a mirroring of parts or a whole, or embedding a higher level of a semiotic complex (e.g. text, film, and musical work) into a distinct lower level (e.g. play-within-a-play, simulated reality in film, and music quoting music).<sup>4</sup> Differentiating between higher and lower levels is important in understanding simulated reality films, such as *The Truman Show*, *Total Recall*, and *The Matrix*, where the storytelling superimposes multiple reality constructs in the form of simulation, social experiments, and dreams. A common trait between simulated reality films in the late 1990s and early 2000s is an underlying sinister quality in how “lower level” narratives are portrayed, as for example in the case of Neo and Truman, who are faced with escaping dystopian, voyeuristic, and totalitarian societies. The increasing popularity of these sci-fi narratives coincides with the growing power of mass cyber-surveillance and the exploitation of global user data being traded for ad revenue by tech companies. An ‘abyss’ is, therefore, a fitting metaphor for both embedded narration and the theme of dystopia.

---

<sup>3</sup> Werner Wolf, “Metareference across Media: The Concept, its Transmedial Potentials and Problems, Main Forms and Functions.” in *Metareference across Media: Theory and Case Studies*, Werner Wolf (Amsterdam- New York: Rodopi BV, 2019), 56.

<sup>4</sup> Ibid.

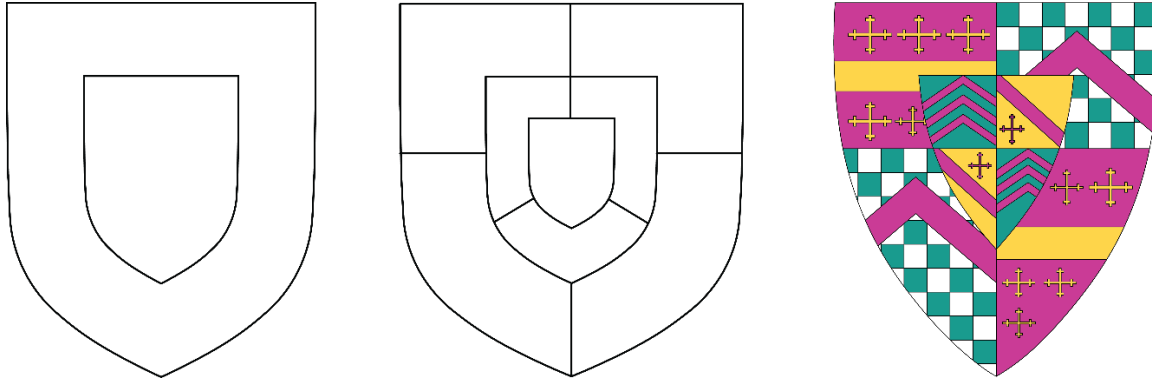


Figure 1-1: Gide's *mise en abyme* shield emblem in various levels of complexity.

The term *mise en abyme* was first coined by André Gide in 1893, who borrowed the concept from a technique in medieval heraldry, where shield emblems had a design of a small shield in the center of a larger one.<sup>5</sup> “*En abyme*” is an expression for superimposing or embedding one surface into another (Figure 1-1).<sup>6</sup> Gide, a French writer and Nobel laureate, used this concept as a literary device for transferring an overarching theme or plot point from the main narrative (macro) to the reality of the characters (micro).<sup>7</sup> He provides a few examples of this technique, such as Velasquez’ painting *Las Meninas* (1656) and Shakespeare’s *Hamlet* (1601). In Velasquez’ painting (Figure 1-2), we are presented with a scene from the Spanish court: Margaret Theresa, daughter of King Philip IV, is in the center and she is surrounded by her entourage. Velasquez himself is working on a very large canvas, and he is looking away from the pictorial space, towards the viewer, as if he is in the process of making a portrait of us (painting-within-a-painting).<sup>8</sup> In the background

<sup>5</sup> André Gide, *The Journals of André Gide, Vol. I [1889-1915]*, ed. J. O’Brien (New York: Vintage Books, 1956), 17.

<sup>6</sup> Marcus Snow, “Into the Abyss: A Study of the *Mise En Abyme*” (London Metropolitan University, 2016), 219.

<sup>7</sup> Gide, *The Journals of André Gide, Vol. I [1889-1915]*, 17.

<sup>8</sup> Madlyn Millner Kahr, “Velázquez: The Art of Painting,” *The Art Bulletin* 57, no. 2 (1975), 225.

wall, there is a second painting-within-a-painting of a bright framed canvas depicting the Spanish royal couple.



Figure 1-2: Left, Velásquez – *Las Meninas* (1656).<sup>9</sup> Right, *Las Meninas* – mirror detail, A.I. upscale.

Gide’s second example, Shakespeare’s *Hamlet*, is an example of duplication, where Hamlet stages a play, *The Murder of Gonzago* (also known as *The Mousetrap*), for Horatio, Ophelia, Polonius, Gertrude, and his uncle, King Claudius. Hamlet suspects his uncle of killing his father to claim his throne and the play-within-a-play serves as a trap to provoke Claudius by depicting his own crime and to give Hamlet irrefutable proof of his guilt.

Eventually, Gide dismissed both examples as not ideal,<sup>10</sup> because the play-within-a-play in *Hamlet* and the painting-within-a-painting in *Las Meninas* are not representations of the works

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<sup>9</sup> Velásquez, Diego. “Las Meninas,” 1656, Oil on canvas, 318 x 276 cm, Madrid, Museo del Prado. Accessed December 26, 2023. [https://commons.wikimedia.org/wiki/File:Diego\\_Vel%C3%A1zquez\\_Las\\_Meninas\\_Die\\_Hoffr%C3%A4ulein.jpg](https://commons.wikimedia.org/wiki/File:Diego_Vel%C3%A1zquez_Las_Meninas_Die_Hoffr%C3%A4ulein.jpg).

<sup>10</sup> Lucien Dällenbach, *The Mirror in the Text*, trans. Jeremy Whiteley and Emma Hughes (Cambridge: The University of Chicago Press, 1989), 11.

themselves as a whole. In retrospect, the vagueness in his description is a testament to the ambiguity of *mise en abyme* and the beginning of a long discourse in critical theory, aesthetics, and ontology. Writers Marcus Snow and William Nelles have both pointed out that this concept is easier to illustrate than to define.<sup>11</sup>

*Las Meninas* has been immensely influential throughout art history and reinterpreted by countless artists, Picasso alone created 45 variations in 1957. The painting has also been the subject of countless debates in critical art theory and philosophy, particularly on the issue of whether the frame in the background is a painting or a mirror. As mentioned earlier, Gide considers the idea of two paintings-within-a-painting: 1) the large canvas, probably depicting “us” and, 2) the background painting of the Spanish royal couple. Another popular interpretation by Foucault is that the illuminated frame in the background is a mirror reflecting the royal couple, who are sitting “outside” the painting, where we are standing, and Velasquez is painting them. Indeed, the brilliance and lighting on that frame is significantly different from other darker paintings in the background, as if the sun's rays reflected onto that particular spot from a window on the right side (not visible to us). Video artist Eve Sussman reconstructed a 3d model of the points of view in *Las Meninas* showing how this interpretation might be plausible.<sup>12</sup> But, how can the painter in the painting of *Las Meninas* be at the same time represented in his own painting and gaze upon what he is portraying? Foucault, in his book *The Order of Things*, analyzes the painting from the viewer’s perspective, as spectacle: “We are looking at a picture in which the painter is in turn

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<sup>11</sup> Snow, “Into the Abyss: A Study of the *Mise En Abyme*,” 9. David Herman, Manfred Jahn, and Marie-Laure Ryan, *Routledge Encyclopedia of Narrative Theory-Routledge*, 1st ed. (London and New York: Routledge, 2005), 312.

<sup>12</sup> “Las Meninas, and Other Mirror(s) of Velásquez,” *Art mirrors art*, 2011, <https://artmirrorsart.wordpress.com/2011/03/27/las-meninas-and-other-mirrors-of-diego-velazquez/>.

looking out at us.”<sup>13</sup> At the same time he views it in terms of representation; the painter signifies a “threshold of two incompatible visibilities:” to “be seen on the picture where he is represented,” and to “see that upon which he is representing something.”<sup>14</sup> Foucault considers them incompatible, because *Las Meninas* is an aesthetic model for the classical episteme,<sup>15</sup> in which pure representation,<sup>16</sup> the artwork and the relation between subject and representation itself, are an abstraction of objective reality. Velasquez could have intended to evoke cognitive dissonance by layering contradicting points of view: the painter’s, the Meninas’, the spectators’, the models’, and the observers’. *Las Meninas* can also be viewed as a precursor to Modern representation, contrary to Foucault’s claims.<sup>17</sup> Through a network of visibilities, Velasquez superimposes different kinds of *mise en abyme*: part-to-whole-reference (painting of the royal couple within the painting of Las Meninas), self-reference (painter-within-his-painting),<sup>18</sup> and meta-reference (painting about painting).

The concept of *mise en abyme* was further developed by Lucien Dällenbach in his book *Le Récit Spéculaire*. Inspired by Gide’s emblematic original definition, he expanded its use as a

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<sup>13</sup> M Foucault, *The Order of Things*, ed. Taylor& Francis, Routledge Classics (London, New York: Routledge, 2005), 5.

<sup>14</sup> Ibid, 4.

<sup>15</sup> Foucault associates classical episteme with the ‘Classical Age’, which he defines as beginning “roughly half-way through the seventeenth century” with Descartes and Leibniz. This is followed by the emergence of the ‘Modern Age’ around the mid-19<sup>th</sup> century, with Kant. Ibid. xxiv, 269.

<sup>16</sup> Ibid, 17.

<sup>17</sup> The painting exhibits ‘Modern Age’ traits by Foucault’s own standards, which is why his praise of *Las Meninas* as a pinnacle of Classical representation has been questioned by critics. Gugleta Zdravka has criticized Foucault’s definition of ‘Classical representation’ as a tautological structure. Gugleta Zdravka, “Michel Foucault’s (Mis)Interpretation of Las Meninas: Or, Pure Representation as the Tautologous Structure of the Sign,” *FACTA UNIVERSITATIS Series: Linguistics and Literature* 9, no. 1 (2011): 1–12.

<sup>18</sup> Oana Șerban, “Portraying the Unrepresentable: ‘The Methodical Eye’ of the Early Modern Meta-Painting. ‘Las Meninas’, from Velazquez to Picasso,” *Annals of the University of Bucharest (Philosophy Series)* LXII (2013), 41.



narratological device denoting a certain part of a story (internal mirror) that reflects the whole of the narrative “by simple, repeated, or paradoxical duplication.”<sup>19</sup>

A hundred and thirty years have passed since Gide’s first description of *mise en abyme* in his 1893 memoirs and it is now extremely common to use it as a synonym for ‘infinite regression’, ‘self-reference’, ‘meta-reference’, and ‘reflexivity’. Writers such as André Gide, Lucien Dällenbach, and Werner Wolf devised systematic approaches for the literary and artistic applications of this reflexive technique. Their research points out contradictions in the use of the term in critical studies of the past century and attempts to revise and refine Gide’s original concept. Essentially, *mise en abyme* has been used historically to describe any of the following terms: part-to-whole similarity, self-reference, meta-reference, and intra-medial reference.<sup>20</sup> In this chapter, I will demonstrate how these different types of *mise en abyme* are used in literature, art, music, and film.

## 1.2. Different types of *Mise en Abyme* in Homer’s *Iliad*

One of the earliest examples of *mise en abyme* can be found in Homer’s *Odyssey* Book 8, where a blind bard, Demodocus, is recounting three songs in front of the protagonist, Odysseus.<sup>21</sup> The first song-within-song acts as intra-medial reference: a musical dialogue between two epic poems, the *Odyssey* and *Iliad*. His song is a brief retelling of the *Iliad*, outlining Odysseus’ role and comparing him to Achilles, while also celebrating both men’s glories:

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<sup>19</sup> Dällenbach, *The Mirror in the Text*, 36.

<sup>20</sup> Snow, “Into the Abyss: A Study of the *Mise En Abyme*,” 11.

<sup>21</sup> Yoav Rinon, “*Mise En Abyme* and Tragic Signification in the *Odyssey*: The Three Songs of Demodocus,” *Mnemosyne* 59, no. 2 (2006): 208–25, <https://doi.org/10.1163/156852506777069673>. 210.

*“When they were satisfied, the Muse  
prompted the bard to sing of famous actions,  
an episode whose fame has touched the sky”*<sup>22</sup>

The phrase “famous actions” is a recurring theme in the *Iliad* and also mentioned in a song-within-a-song by Achilles in Book 9:

*“Therewith was he delighting his soul,  
and he sang of the glorious deeds of warriors;”*<sup>23</sup>

The phrases “glorious deeds” from Achille’s song in the *Iliad*, and “famous deeds” from Demodocus’ song in the *Odyssey* are the same in ancient Greek (“*klea andron*”),<sup>24</sup> and therefore function as cross-reference within the same medium of epic poetry.

Demodocus’ second song functions as a part-to-whole-similarity *mise en abyme* of the *Odyssey*’s story. He tells the tale of the goddess Aphrodite, who had an affair with Ares while being married to Hephaestus. The latter devised a clever trap to catch Ares in the act, by setting up invisible chains around his bed.<sup>25</sup> The song entertains the Phaeacian guests, but brings tears to Odysseus’ eyes, who groans and wails deeply as he listens (Figure 1-3).<sup>26</sup> Demodocus’ song deals with the theme of infidelity, which has been a main theme in the epic from the beginning and a main threat to Odysseus’ successful homecoming. In Book 1, Zeus recounts the story of

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<sup>22</sup> Emily Wilson, *The Odyssey* (New York: W. W. Norton & Company, 2017), Book 8, Line 73–75.

<sup>23</sup> Homer, “Homer’s *Iliad*,” Tufts University- Perseus Digital Library, 1987, <http://www.perseus.tufts.edu/hopper/text?doc=Perseus:text:1999.01.0133>. Book 9, Line 188–189.

<sup>24</sup> Literal translation: “glories of men.”

<sup>25</sup> Wilson, *The Odyssey*, Book 1, Line 32–43.

<sup>26</sup> *Ibid*, Book 8, Line 86, 92, 93, 95.

Clytemnestra, who was unfaithful to Agamemnon while he was fighting in Troy.<sup>27</sup> She eventually conspired with her lover, Aegisthus, to kill Agamemnon and claim his throne as king of Mycenae. In Book 8, Odysseus eventually meets Agamemnon in the underworld, who explains how he died at the hands of his wife's lover.



Figure 1-3: Francesco Hayez– *Odysseus at the Court of Alcinous* (1815).<sup>28</sup>

This theme of infidelity in Homer's *Odyssey* can be encapsulated by Dällenbach's idea of an internal mirror that reflects a whole story with repeated duplication (Chapter 1.1). In a broader sense, part-to-whole similarity is a special type of 'self-similarity,' a technique used throughout the art world. In the play *As You Like It* (1599) Shakespeare explores the pastoral genre, which traditionally involved themes of chivalric romance and conflict of high- and low-class status.<sup>29</sup>

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<sup>27</sup> Ibid, Book 1, Line 32–43.

<sup>28</sup> Oil on canvas, Royal Palace of Naples. Public domain. Hayez, Francesco. "Odysseus at the Court of Alcinous," 1815, Oil on canvas, 381 x 535 cm, Naples, Royal Palace of Naples. Accessed December 26, 2023. [https://commons.wikimedia.org/wiki/File:Francesco\\_Hayez\\_028.jpg](https://commons.wikimedia.org/wiki/File:Francesco_Hayez_028.jpg).

<sup>29</sup> Judy Z. Kronenfeld, "Social Rank and the Pastoral Ideals of *As You Like It*," *Shakespeare Quarterly* 29, no. 3 (1978): 333–48.

Four couples<sup>30</sup> progress through the play somewhat in parallel but are distorted by their differing statuses. Even though characters in these couples represent unique virtues that go against conventional pastoral representations of class, they are all connected through a repeated tension of ‘baseness vs nobility of spirit’ and ‘baseness vs nobility of rank.’<sup>31</sup> Self-similarity is also used intelligently in other Shakespeare plays, such as *Midsummer Night’s Dream* (1599).

In the *Odyssey*, Demodocus’ second song not only acts as part-to-whole-similarity, but also as meta-reference on its poetic form.<sup>32</sup> Both the narrator and Alcinous, ruler of the Phaeacians, explicitly describe the blind poet’s performance:

*Alcinous: “Let someone bring the well-tuned lyre  
from inside for Demodocus—go quickly!”*<sup>33</sup> [ . . . ]

*Narrator: “The poet strummed and sang a charming song”*<sup>34</sup>

Epic poems like the *Odyssey* would be originally recited by singing and improvising on a 4-string lyre (phorminx),<sup>35</sup> therefore having a character that is also singing and playing the lyre within the story is a meta-reference on epic poetry as an artform.

The third song has been suggested by Yoav Rinon to be an intricate meta-referential *mise en abyme*, viewing the *Odyssey* as an act of communication between narrator and audience, reflected in the communication between Demodocus and Odysseus.<sup>36</sup> His emotional reaction to the

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<sup>30</sup> Rosalind—Orlando, Celia—Oliver, Audrey—Touchstone, Phoebe—Silvius

<sup>31</sup> Kronenfeld, “Social Rank and the Pastoral Ideals of As You Like It.” 348.

<sup>32</sup> Rinon, “Mise En Abyme and Tragic Signification in the Odyssey: The Three Songs of Demodocus.” 208.

<sup>33</sup> Ibid, Book 8, Line 254–255.

<sup>34</sup> Wilson, *The Odyssey*, Ibid, Book 8, Line 265.

<sup>35</sup> M L West, “The Singing of Homer and the Modes of Early Greek Music,” *The Journal of Hellenic Studies* 101 (September 9, 1981): 113–29, <http://www.jstor.org/stable/629848>. 114–115.

<sup>36</sup> Rinon, “Mise En Abyme and Tragic Signification in the Odyssey: The Three Songs of Demodocus.” 217–224.

bard's song is a mirror of the *Odyssey* as poetic form and our reaction to it. Demodocus is asked to sing about the wooden horse<sup>37</sup> that led to the complete destruction of Troy, which is a central theme in the *Iliad* and mentioned earlier in the *Odyssey*.<sup>38</sup> He begins his improvised song by describing a scene where the Athenians burn a Trojan camp, leave the wooden horse, and sail away. Then, Trojan soldiers carry the horse filled with Odysseus' men in the agora. Demodocus then describes preceding events, when the Trojans were discussing about whether they should bring the horse in their city. The bard's choice of reversing the chronological order in the narration (analepsis) is carefully chosen, because while the Trojans were deliberating, the outcome of their fate had already been preordained: "for it was their fate to perish."<sup>39</sup> Ultimately, it is not the present decisions of the Trojans that affect their future, but their past mistakes. Demodocus presents events in a tragic manner that outlines the inevitability of fate ("aisa") and how the human will to power is illusive and can cause destruction. He portrays Odysseus and the Greeks as heroes fighting against the Trojans and returning victorious. Despite being flattered, Odysseus is brought to tears once again, after understanding that even his own success is "merely an illusion of victory in a world where every human being is at the mercy of potent and cruel powers."<sup>40</sup> Both Demodocus' poem and the *Odyssey* emphasize painful aspects of human life and the audience has to reflect on the connection between the fictional lives of the protagonists and their own.<sup>41</sup>

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<sup>37</sup> In the original Greek text of *The Odyssey* the horse is mentioned as the "wooden horse" ("δούρειος ἵππος") and not the "Trojan horse." Wilson, *The Odyssey*, Book 8, Line 494.

<sup>38</sup> Homer, "Homer's Odyssey," Tufts University- Perseus Digital Library, 1987, <http://www.perseus.tufts.edu/hopper/text?doc=Perseus:abo:tlg,0012,002:8>. Book 4, Line 265–289.

<sup>39</sup> "ἅϊσα γὰρ ἦν ἀπολέσθαι" Ibid, Book 8, Line 511.

<sup>40</sup> Rinon, "Mise En Abyme and Tragic Signification in the Odyssey: The Three Songs of Demodocus." 219.

<sup>41</sup> Ibid, 223.

### 1.3. Self-Reference in Painting and Music

*Mise en abyme* has also been used to describe self-reference in media. I will focus on two types of self-reference in visual art and music: 1) the technique of including the artist-creator of a work within it (*Las Meninas*), and 2) self-duplicating structures such as infinite regression.

A simple way to illustrate the first type of self-reference is through Norman Rockwell's *Triple Self-Portrait* (1960). The American illustrator was commissioned to create the cover art for the magazine *The Saturday Evening Post*.<sup>42</sup> Rockwell depicts himself in the process of making a self-portrait, while looking at himself at the mirror (Figure 1-4). The portrait-within-a-portrait is of a man in his prime, with a pipe coming out of his mouth at a 90° angle and without glasses, even while the painter-within-the-portrait is old, with a pipe at a dejected 140° angle and wearing glasses. Several smaller self-portraits by Rembrandt, Van Gogh, Picasso, and Dürer can be seen pinned on top of his canvas. This painting is both self-referential (painter-within-portrait, self-portrait-within-a-portrait) and meta-referential (4 self-portraits of famous painters within a portrait). As opposed to earlier historical examples of *mise en abyme*, like *Hamlet*, *Las Meninas*, or Homer's *Odyssey*, Rockwell's obsessive layering of reflections transcends the purpose of a mere technique and becomes an end to itself.

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<sup>42</sup> Michele H. Bogart, *Artists, Advertising, and the Borders of Art*, University of Chicago Press (Chicago, 1995).



Figure 1-4: Norman Rockwell – *Triple Self-Portrait* (1960).<sup>43</sup>

Musical self-reference can be as simple as a composer reusing their own themes or techniques. Arguably, all composers have unintentionally self-referential works that repeat their own patterns. Musical cryptograms are a technique of assigning notes to letters and have been commonly used by composers to refer to a ciphered version of their name, e.g.: ‘BACH’ in Bach’s *The Art of The Fugue*, BWV 1080 (1742-1749), ‘SCHA’ in Schumann’s *Carnaval* Op. 9 (1834-1835), and ‘DSCH’ in Shostakovich’s *String Quartet No. 8* (1960).

A more absurdist type of musical self-reference can be found in Berio’s *Sinfonia* (1968-1969) for orchestra and eight amplified voices. In the work, one of the singers speaks about a newspaper review for the concert that is going on. Berio also quotes other musical works by Berlioz, Mahler, Debussy, Hindemith, Schoenberg (intra-medial reference) and also literary works by Beckett, Lévi-Strauss (meta-reference).

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<sup>43</sup> Low resolution image. Fair use for visual identification and discussion of the object in a dissertation. Norman Rockwell, “Triple Self-Portrait,” 1960, Oil on canvas, 88 cm × 113 cm, Indianapolis, The Saturday Evening Post, February 13, 1960. Accessed December 26, 2023. [https://en.wikipedia.org/wiki/File:Triple\\_Self-Portrait.jpg](https://en.wikipedia.org/wiki/File:Triple_Self-Portrait.jpg).

The second type of self-reference, infinite regression, is a recursive process of perpetual self-duplication. The easiest way to illustrate its function is to observe images with a Droste effect. In the figure below (1.5), a picture is infinitely duplicated into itself, like the infinite reflections from a mirror facing another mirror. Visualizations of mathematical fractals like the Mandelbrot set are also self-referential and self-duplicating, like the Droste effect. Although infinite regression is a type of *mise en abyme*, similar to Andre Gide's shield emblem theory (Figure 1-1), it usually doesn't involve a change in hierarchical levels.



Figure 1-5: Droste effect.<sup>44</sup>

Douglas Hofstadter, in his book *Gödel, Escher, Bach: an Eternal Golden Braid* (Pulitzer Prize), proposed a system of cognition that arises from hidden neurological mechanisms. Hofstadter's theory of the *strange loop* combines the concepts of *mise en abyme* and infinite regression: "it is an abstract loop in which, in the series of stages that constitute the cycling-around, there is a shift from one level of abstraction (or structure) to another, which feels like an upwards movement in a hierarchy, and yet somehow the successive 'upward' shifts turn out to give rise to

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<sup>44</sup> Image created with Midjourney, Photoshop, and Easydroste software.



a closed cycle. That is, despite one's sense of departing ever further from one's origin, one winds up, to one's shock, exactly where one had started out. In short, a strange loop is a paradoxical level-crossing feedback loop.”<sup>4546</sup> In an extensive explanation of this concept in *Gödel, Escher, Bach*, Hofstadter references musical works by Bach and artworks by M.C. Escher to demonstrate how a layering of seemingly ‘meaningless’ elements that are structured isomorphically can give rise to meaning and, ultimately metacognition.

In music, infinite regression can take the form of ad infinitum repetition, as in Chopin’s *Mazurka* in F minor, Op.68, No.4 (1849). This is a deeply poetical mazurka and the last one Chopin composed before his death in the same year. The work ends with the words “D.C. al segno senza fine,” instructing the pianist to go back to the beginning and repeat it without end.



Figure 1-6: Infinite regression in Chopin’s *Mazurka* Op.68, No.4.

Infinite regression in music can also take the form of a Shepard Tone, where pitches endlessly rise or fall. This sound design effect creates the auditory illusion of an infinitely rising or falling tone. Cognitive scientist Roger Shepard invented this effect by superimposing sine waves

<sup>45</sup> Douglas Hofstadter, *I Am A Strange Loop* (New York: Basic Books, 2007). 101–102.

<sup>46</sup> In music, this idea can be represented in the relationship between pitch and pitch-class: one can ascend chromatically from C to B, only to arrive at the starting point, while at the same time somehow farther away from where one started (in a different octave).

separated by octaves that *glissando* in a loop. In a rising Shepherd tone, the lower pitch starts off soft and gradually gets louder as it slides up, whereas the higher pitch starts loud and gets softer as it slides up. After each pitch completes a slow rising octave *glissando* octave, it loops, tricking the brain into hearing a single tone that smoothly rises ad infinitum.

Bach's endless canon from the *Musical Offering* BWV 1079 is another example of infinite regression. *Canon 5 a 2 per tonos* is notated in two parts: 1) an embellished upper theme given to him by Frederick the Great, and 2) a lower counterpart, consisting of a canon with two clefs for indicating the transposition of each entrance. The bass clef voice begins with the *Thema*, whereas the alto clef begins when the canon arrives to the repeat sign in measure 2 (Figure 1-7). In measure 8/beat 3, the three voices (*Thema*, *Canon 1*/bass, *Canon 2*/alto) outline a first inversion  $C\#^{o7}$  chord functioning as a  $vii^{o7}$  that resolves a whole-step up in the tonic of D minor. This process is repeated by moving through the following minor keys: C minor, D minor, E minor, F# minor, G# minor, Bb minor, and back to C minor. The way this canon modulates through ascending keys and cycles every six repetitions is similar to a rising Shephard Tone. If Bach's canon is repeated more than seven octaves, the frequency range of the notes would exceed 20kHz, the threshold of human hearing.

*Canon 5. a 2 per Tonos* \*)

Figure 1-7: Infinite regression in Bach's *Musical Offering* BWV 1079.

Musical infinite regression can also be used in dodecaphonic pitch sets. The Mallalieu 12-tone row has a unique self-embedding property where the 12-tone row is always contained in itself when transposed.<sup>47</sup> In music production, a commonly used technique that is capable of infinite regression is resampling.<sup>48</sup> In 1969, Alvin Lucier wrote a sound art piece titled *I am Sitting in a Room*, where he recorded himself narrating a text that is then played back and recorded again. This process of acoustic *mise en abyme* is repeated until the sound becomes so saturated that the original recording is unrecognizable. What was originally Lucier's voice gradually transforms into the resonant frequencies of the room he recorded himself in.<sup>49</sup> Steve Reich also used a similar process in *Come Out* (1966). Nowadays, resampling is used in music production as explicit musical quotation, usually with some added processing (FX, EQ, compression), or as sound design, where the processing is destructive, as in Lucier's piece. It was an important technique in the evolution of hip hop and lo-fi, where producers like J Dilla, Madlib or Nujabes re-processed jazz recordings into beats, by chopping them to create different rhythms and phrases.<sup>50</sup> Another interesting use of resampling is in Karplus-Strong string synthesis,<sup>51</sup> where a short waveform is passed through a delay, then a low-pass filter, then back into the delay creating a positive feedback loop that results in a plucked string sound. This technique applies physical modeling synthesis to any short burst

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<sup>47</sup> David S. Lefkowitz incorporates this row in his *Prelude and Fugue in Ab* for piano (2021). He describes the Mallalieu Row as a pitch set that embeds itself twelve times. When the following pitch set [014295B38A76] is transposed by 1 semitone, [1253A6049B87] it contains itself every other note starting with the second note. Similarly, if it is transposed it by 2 semitones, [2364B715A098] it contains itself every fourth note starting with the fourth note. This process cycles after twelve transpositions.

<sup>48</sup> Resampling can also refer to a change in sample rate. This type of resampling will not be discussed in this dissertation.

<sup>49</sup> E Strickland, *Minimalism: Origins* (Bloomington: Indiana University Press, 2000), 281.

<sup>50</sup> Jordan Booth, "The History, Ingredients, and Techniques behind Jazz Hop," Splice, 2021, <https://splice.com/blog/jazz-hop-history-ingredients-techniques/>.

<sup>51</sup> Kevin Karplus and Alex Strong, "Digital Synthesis of Plucked-String and Drum Timbres," *Computer Music Journal* 7, no. 2 (November 26, 1983): 43–55, <http://www.jstor.org/stable/3680062>.

of sound (sine wave, white-noise, frequency sweep) by transforming it into a completely new timbre.

In his work *Concerto for Four Guitars and Orchestra*, Op. 36 (1995), Ian Krouse uses a type of heterophonic self-duplication where a melody embeds itself within a single melodic line, like a musical fractal. The following excerpt is from a 6-part concentric mensuration canon that unfolds in the woodwinds, guitars and strings. In Figure 1-8 the melismatic cue-sized notes in flute 2 are juxtaposed with regular-sized notes (green circles) that imitate violin 1+2. At closer examination, the violin melody is also imitated in diminution (*Phrase a*), therefore embedding itself simultaneously in two different temporal rates of heterophony.

Figure 1-8: Self-duplicating heterophony in Krouse’s *Concerto for Four Guitars and Orchestra*.

#### 1.4. Meta-reference and Intra-medial Reference in Music

Meta-reference in music refers to any technique that causes the audience to reflect about the artform itself. A creative use of this technique in choral music is Glenn Gould’s choral fugue “*So You Want to Write a Fugue?*” (1963), where singers are parodying the rules of composing a fugue:

*“So you want to write a fugue?”*

*You have the nerve to write a fugue? [. . .]*

*For a canon in inversion is a dangerous diversion  
And a bit of augmentation is a serious temptation.  
While a stretto diminution is an obvious solution”*

In instrumental music, meta-reference is a puzzling area of research, because of the abstract nature of non-verbal musical sound. ‘Absolute’ music<sup>52</sup> is not a descriptive art, like for instance literature or painting, and therefore perceiving a change in semiotic levels becomes very difficult. At first glance, instrumental music cannot be explicitly meta-referential, but only intra-medially referential, because it can only reference other musical ideas. One type of intra-medial *mise en abyme* is musical quotation, like the aforementioned example of Berio’s *Sinfonia*, or Charles Ives’ *Putnam’s Camp, Redding, Connecticut* from *Three Places in New England* (1911-1914), where he borrows over twenty themes from American patriotic tunes and Wagner’s *Ride of the Valkyries* (1856). The *cantus firmus* is also a type of musical quotation in polyphonic music (12<sup>th</sup> century–today) consisting of a pre-existing melody, usually a Gregorian chant or a Latin hymn, that becomes the basis of a new musical work. Historical compositional forms like the sonata and the fugue, or harmonic-metric schemes like the *folia* and 12-bar blues are also examples of intra-medial reference, because they are based on pre-existing works of music.

Sampling is an intra-medially referential technique commonly used in musical production, where a portion of a sound recording is reused. This technique has been utilized by experimental composers of *musique concrète* since the invention of tape in the ’40s and became available for commercial use during the development of the first synthesizers and samplers in the ’60s

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<sup>52</sup> In my use of the term ‘absolute’ music, I am excluding extra-musical parameters, such as stage performance or acting.

(Mellotron, Fairlight CMI). Both sampling and resampling can be used explicitly as reference of an original source of music, or destructively for the purpose of sound design.

In his article *Generic Titles: On Paratextual Metareference in Music*, Hermann Danuser points out how verbal titles of musical works and other artforms can suggest a foregrounded meta-referentiality and a hierarchy of meta-level and object-level.<sup>53</sup> For instance, Ravel's *La Valse* (1920), is deliberately titled as "The" waltz, in a rather humorous and pompous manner. Other composers of the same period, like Chopin or Strauss, never felt inclined to compose a single waltz with a definitive article. In an autobiographical sketch, Ravel mentions how he composed it as an "apotheosis" of the Viennese waltz. The title suggests an homage to the waltz genre, but the composition diverges from conventional expectations of dance<sup>54</sup> with dissonant harmonies and a virtuosic ending. As a result, audiences that are familiar with mainstream waltzes have to reflect on the nature of the genre itself. Other works with this type of paratextual meta-reference include Mozart's *Musical Joke* K. 552 (1787) and Berio's *Opera* (1969 – 1970).<sup>55</sup>

Musicologist Werner Wolf also believes that there can be cases of 'implicit' meta-reference in instrumental music when a work is able to make the educated audience ponder about the musical process itself.<sup>56</sup> In this broad sense of meta-reference, we can include groundbreaking works like Biber's *Battalia à 10* (1673), Bach's *Kleines Harmonisches Labyrinth* BWV 591 (1714), Ornstein's *Wild Men's Dance* (1913), Stravinsky's *Rite of Spring* (1913), John Cage's *4'33''*

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<sup>53</sup> Hermann Danuser, "Generic Titles On Paratextual Metareference in Music." in *Metareference across Media: Theory and Case Studies*, Werner Wolf (Amsterdam- New York: Rodopi BV, 2019), 193.

<sup>54</sup> Ibid, 198–199.

<sup>55</sup> Ibid, 202.

<sup>56</sup> Werner Wolf, "Metafiction and Metamusik: Exploring the Limits of Metareference." in Winfried Nöth and Nina Bishara, "Self-Reference in the Media" (Berlin- New York: Mouton de Gruyter, 2007).

(1948), or Ligeti's *Poème Symphonique for 100 Metronomes* (1962). All these works are composed in a way that challenges the audience's expectation of what music is supposed to be, and therefore result in an internal dialogue about music itself.

*Mise en abyme* as meta-reference has been used effectively in songs, opera, and musicals. As opposed to 'absolute' instrumental music, vocal music is capable of conveying different levels of 'metaization' through the use of language and stage acting. Like in Shakespeare's *Hamlet* (play-within-a-play), meta-operas contain embedded diegesis of an opera-within-an-opera. Examples of meta-operas include Wagner's *Die Meistersinger von Nürnberg* (1867), Richard Strauss' *Ariadne auf Naxos* (1912) and *Capriccio* (1941), in which a composer and a poet argue over setting words to music and decide to write an opera. Andrew Lloyd Weber's musical *Phantom of the Opera* (1986) also incorporates meta-references to other musicals and operatic styles. In the 2004 film version of the musical, the cinema audience "is able to observe not only the 'operas,' but also the opera 'audience' within the production."<sup>57</sup>

### **1.5. Simulated Reality Films: Dystopias and 'Future Shock'**

*Mise en abyme* techniques in simulated reality films usually involve meta-reference or part-to-whole-similarity. Simulated reality is a concept that refers to any form of virtual or artificial reality that mimics or simulates the real world. As opposed to virtual reality, it does not necessarily require the use of futuristic technology. It can be as simple as a board game modeled after reality

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<sup>57</sup> David Urrows, "Phantasmic Metareference: The pastiche 'Operas' in Lloyd Webber's *The Phantom of the Opera*." in *Metareference across Media: Theory and Case Studies*, Werner Wolf (Amsterdam- New York: Rodopi BV, 2019), 259.

(Scotland Yard, Monopoly), or as complex as an A.I.-generated world that simulates an entire world (*The Matrix*).

Simulation themes in late '90s' Hollywood movies are better understood as reflexive narratives that express a societal 'future shock' for new technologies.<sup>58</sup> Simulated reality narratives in Hollywood films have taken inspiration from '60s science fiction novels by writers such as Philip K. Dick, Isaac Asimov, Daniel F. Galouye, and Stanislaw Lem. Perhaps the most influential of them is Philip K. Dick, because he wrote novels encompassing a wide range of topics, from A.I., machine learning algorithms, to simulation theory, and meta-narratives. In his books, he envisions plausible techno-dystopias where humanity develops new technologies for the purpose of exploitation and mass surveillance. Many of his novels were successfully adapted into films like *Blade Runner* (1982, 2017), *Total Recall* (1990), and *Minority Report* (2002). The futuristic concepts depicted in these films resonated with audiences in the '00s and become increasingly relevant,<sup>59</sup> as new technologies more and more give the impression of resembling some of older science fiction literature's dystopic predictions. For example, predictive algorithms for crime prevention shown in *Minority Report* mirror contemporary software like COMPAS, a decision tool for U.S. courts that analyzes the likelihood of recidivism rate in defendants.<sup>60</sup>

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<sup>58</sup> 'Future shock' was coined by Alvin Toffler, who defines it as a state of anxiety, caused by rapid social change, such as the invention of new technologies. Alvin Toffler, *Future Shock* (New York: Bantam Books, 1970).

<sup>59</sup> Alex Paterson, Gabby Bush, and Jeannie Paterson, "Technodystopia: Are We Heading towards a Real-World Blade Runner?," University of Melbourne, 2022, <https://pursuit.unimelb.edu.au/articles/technodystopia-are-we-heading-towards-a-real-world-blade-runner>.

<sup>60</sup> "DOC COMPAS," Department of Corrections- State of Wisconsin, accessed November 27, 2023, <https://doc.wi.gov/Pages/AboutDOC/COMPAS.aspx>.



In some cases, simulated reality science fiction has influenced the creation of new technologies. The virtual reality gloves used by Tom Cruise in *Minority Report* were designed by MIT graduate John Underkoffler,<sup>61</sup> who later developed the platform g-speak, which incorporates gesture-control gloves in corporate conference rooms.<sup>62</sup> This technology is now commonplace in game controllers for Xbox, PlayStation, and Wii consoles. Another example is *The Truman Show* (1998), which was screened a year before the first mainstream reality TV show, *Big Brother* (1999). Even though the original creator never claimed to be influenced by the *Truman Show*, Rainer Laux, the director of a German spin-off (*Big Brother* 2000) has credited it as a model.<sup>63</sup> The movie also inspired psychiatrists Joel Gold and Ian Gold, who used the term ‘Truman syndrome’ to refer to a delusion where patients believed they were being documented for the entertainment of others. In a recent interview for BBC Culture (2023), McGill Professor Ian Gold mentioned that *The Truman Show* “captured a salient moment in the history of technology, and resonated with the experience of many people.”<sup>64</sup>

Contemporary software can mirror Hollywood science fiction dystopias and contribute to societal ‘future shock’. In his book *Infoglut* (2013), Mark Andrejevic warns readers about automated algorithms used by corporations and governments, as in *Minority Report*, and how

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<sup>61</sup> Darren J. Clarke, “MIT Grad Directs Spielberg in the Science of Moviemaking,” MIT, 2002, <https://news.mit.edu/2002/underkoffler-0717>.

<sup>62</sup> Rob Matheson, “Manual Control Oblong Industries Brings Gesture-Control Technology from Hollywood to Corporate Conference Rooms,” MIT, 2014, <https://news.mit.edu/2014/startup-oblong-industries-gesture-control-interface-0905>.

<sup>63</sup> Mike Leidig, “Big Brother Builds ‘Truman Show’ Village,” The Guardian, 2004, <https://www.theguardian.com/media/2004/oct/22/realitytv.broadcasting>.

<sup>64</sup> Emily Maskell, “The Truman Show: Has a Film Ever Predicted the Future so Accurately?,” BBC, 2023, <https://www.bbc.com/culture/article/20230531-the-truman-show-has-a-film-ever-predicted-the-future-so-accurately>.

imperfections in their design can lead to catastrophic results for society.<sup>65</sup> Andrejevic's view of such technologies as far-from-perfect is justifiable. COMPAS, the aforementioned software for calculating recidivism rate, has been scrutinized by a ProPublica study (2016)<sup>66</sup> for racial biases ingrained in its algorithm.<sup>67</sup> Other automated algorithms, like chatbots that are able to post online after gathering large data sets from internet users, have also had a negative impact on online communities. Within sixteen hours, Microsoft's Tay had to be shut down, because it started tweeting overly racist and sexist statements.<sup>68</sup> Microsoft blamed online users for attacking their bot and influencing its machine learning system.<sup>69</sup> Cases like these reveal significant vulnerabilities and flaws in automated systems. Therefore, 'future shock' is not only based on Hollywood science fiction, but also on 21<sup>st</sup> century reality.

As shown in the tables below (Tables 2–4), filmic depictions of utopias and dystopias became increasingly popular in the '90s and '00s. In this era, Hollywood directors reject classical storytelling techniques<sup>70</sup> and embrace complex meta-narratives. To demonstrate how simulated reality films use *mise en abyme*, I list different types of world dualities that depict a main conflict

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<sup>65</sup> Mark B. Andrejevic, *InfoGlut: How Too Much Information Is Changing the Way We Think and Know* (New York and London: Routledge, 2003).

<sup>66</sup> Pro-publica is a non-profit organization for investigative journalism.

<sup>67</sup> Lauren Kirchner Julia Angwin, Jeff Larson, Surya Mattu, "Machine Bias - ProPublica," ProPublica, 2016, <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>.

<sup>68</sup> Rob Price, "Microsoft Is Deleting Its AI Chatbot's Incredibly Racist Tweets," Business Insider, 2016, <https://web.archive.org/web/20190130071430/https://www.businessinsider.com/microsoft-deletes-racist-genocidal-tweets-from-ai-chatbot-tay-2016-3>.

<sup>69</sup> Paul Mason, "The Racist Hijacking of Microsoft's Chatbot Shows How the Internet Teems with Hate," The Guardian, 2016, <https://www.theguardian.com/world/2016/mar/29/microsoft-tay-tweets-antisemitic-racism>.

<sup>70</sup> Warren Buckland, *Puzzle Films Complex Storytelling* (West Sussex: Blackwell Publishing, 2009). 1–6.

of ‘real vs simulated’ settings. I also indicate whether these films are inspired by science fiction literature.

Movie	Simulated Setting	Real Setting	Based on
<i>Total Recall</i> (1990)	Implanted memory of Quaid	Mars: Totalitarian dystopia, high-tech future, blurs the line of dream vs reality	Philip K. Dick – <i>We Can Remember It for You Wholesale</i> (1966)
<i>Star Trek-Frame of Mind</i> (1993)	Alien mental asylum in the subconscious mind of Riker	Enterprise spaceship, distant future	
<i>Johnny Mnemonic</i> (1995)	‘BRT online’: VR cyberspace (minor plot point)	High-tech corporate surveillance dystopia, near future	William Gibson – <i>Johnny Mnemonic</i> (1981)
<i>The Truman Show</i> (1998)	‘Seahaven island’: New urban utopia inside a reality TV show	Consumerist surveillance dystopia	
<i>Pleasantville</i> (1998)	‘Pleasantville’: Black-and-white ’50s sitcom	USA in the late ’90s	
<i>Dark City</i> (1998)	Alien hive-mind simulation of an anachronistic world	Totalitarian alien surveillance dystopia	
<i>Serial Experiment Lain</i> (1998)	‘Wired’: Virtual realm of network communications	Suburban Japan in the late ’90s, blurs the line of virtual vs real	

Table 2: Simulated reality films (1990-2010), Part 1.

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Movie	Simulated Setting	Real Setting	Based on
<i>The Matrix</i> Trilogy and <i>Animatrix</i> (1999-2003)	' <i>The Matrix</i> ': A.I. simulation of late 90's utopia, mass delusion	Totalitarian A.I. surveillance dystopia, post-apocalyptic	Jean Baudrillard – <i>Simulation and Simulacra</i> (1981), William Gibson – <i>Neuromancer</i> (1984)
<i>eXistenZ</i> (1999)	' <i>eXistenZ</i> ': VR biotech game:	High-tech society of religious fanatics, near future, blurs the line of game vs reality	
<i>Thirteenth Floor</i> (1999)	Simulation of 1937 Los Angeles inside a simulation of late '90s LA	High-tech society, near future, peaceful utopia	Daniel F. Galouye – <i>Simulacron-3</i> (1964)
<i>The Cell</i> (2000)	Consciousness of a serial killer	High-tech society, near future	
<i>Virtual Nightmare</i> (2000)	AR disguising reality as a world in the '50s, mass delusion	High-tech post-apocalyptic corporatist world, blurs the line of virtual vs real	Frederik Pohl – <i>The Tunnel Under the World</i> (1955)
<i>Avalon</i> (2001)	Military VR shooter game	High-tech dystopia, post-apocalyptic near future	
<i>Vanilla Sky</i> (2001)	Lucid dream	'Life extension': cryonic suspension	Alejandro Amenábar – <i>Abre los ojos</i> (1997)
<i>Minority Report</i> (2002)	VR room, AR personalized ads (minor plot points)	Mass surveillance, totalitarian dystopia	Philip K. Dick – <i>Minority Report</i> (1956)
<i>Solaris</i> (2002)	Planetary consciousness materializing astronauts' memories as physical simulacra	Solaris space station, distant future	Stanislaw Lem – <i>Solaris</i> (1962)

Table 3: Simulated reality films (1990-2010), Part 2.

Movie	Simulated Setting	Real Setting	Based on
<i>Paprika</i> (2006)	Shared dreams	High-tech society, blurs the line of dream vs reality	Yashitaka Tsutsui – <i>Paprika</i> (1993)
<i>Smallville – Labyrinth</i> (2007)	Mental asylum in the subconscious mind of Clark Kent	Earth in the DC universe	
<i>Synecdoche, New York</i> (2008)	Theatrical production simulating the director’s life	New York city, blurs the line of fiction vs reality	Jean Baudrillard – <i>Simulation and Simulacra</i> (1981)
<i>Bolt</i> (2008)	‘Bolt’: TV show	New York City in 2008	
<i>Cargo</i> (2009)	‘Rhea’: a simulated planet designed to create false hope for humanity	Space station orbiting post-apocalyptic earth, distant future	
<i>Inception</i> (2010)	Shared dreams, 5 levels of dreams-within-dreams	High-tech corporate society, blurs the line of dream vs reality	
<i>Tron Legacy</i> (2010)	VR game, cyberspace, totalitarian dystopia	High-tech corporate society	Steven Lisberger – <i>Tron</i> (1982)
<i>Repo Men</i> (2010)	Computer generated dream world of a comatose patients’ mind	Big pharma dystopia, near future	Eric Garcia – <i>The Repossession Mambo</i> (2009)

Table 4: Simulated reality films (1990-2010), Part 3

## 2. *The Truman Show* (1998)

### 2.1 Techno-voyeurism and the Illusion of Autonomy

*The Truman Show* tells the story of Truman ('true'-'man') Burbank, a character living a neat, idyllic life in the town of Seahaven, a stereotypical white America suburb that replicates a 1950s American urbanist dream. Unbeknownst to him, he is being recorded and watched as the central character of a reality show, thoroughly objectified as a human experiment and even as product himself, advertised by his close friends. After witnessing several strange, panoptic situations, he becomes increasingly suspicious and paranoid of his surroundings. Truman's world is shattered when he realizes that there is an invisible observer and powers of hegemony that he cannot control. The film ends with Truman coming to terms with the futility of his life and walking away from a symbolic theatrical stage.

The director, Peter Weir, is able to achieve a fusion of European auteur genre with New Hollywood American auteur genre. He creates a very powerful political critique of cyber-culture and the inevitable implications of identity diffusion and alienation. Weir fulfils this vision by juxtaposing realist and reflexive textual systems, much as in Elia Kazan's *A Face in the Crowd* (1957), as well as a diegetic and meta-diegetic voyeuristic spectacle. In fact, both Weir and Kazan were successful in foreseeing the future of commodity-driven mass entertainment.

*The Truman Show* resonated as a powerful story with worldwide audiences and was a critically acclaimed success. Peter Weir was able to bring to life a highly complex script full of metaphors. One of the most essential metaphors in the film is the 'spectacle'. Truman's life is

continuously orchestrated by the director Christof, who has autocratic control over the final visual product. It is helpful to think about *The Truman Show* in terms of Guy Debord's spectacle theory. In his book *The Society of the Spectacle* (1967), he proposed that social reality is visually organized, and that the modern media spectacle dispossesses humans of their powers of creative praxis and immerses them in a "wraparound imagistic consumerist environment that alienates them from real life."<sup>71</sup> When Truman finds out that he is living in an enormous dome/TV stage and his life is being observed as a spectacle, he immediately dissociates himself from this reality. As discussed in Chapter 1.5, psychiatrists Joel Gold and Ian Gold described a type of delusion named after the movie, 'Truman syndrome', where patients think they are being secretly watched for the entertainment of others.<sup>72</sup>

The clever cinematography of *The Truman Show* constantly reinforces a voyeuristic peeping-Tom-like fetish that renders us paranoid. Seahaven is filled with microscopic state-of-the-art cameras that are positioned in any place imaginable, in order to provide multiple angles of Truman's life. Camera shots where the field of view is narrow or seen through glasses and other materials give the impression of undercover CIA surveillance tech. Even Truman's most intimate moments are juxtaposed with voyeuristic shots from hidden cameras. During a fight with Truman and his wife, Meryl, the scene cuts to Truman shouting at her, as seen from a camera hidden inside her earring. All the footage recorded by these tiny invisible cameras is then compiled and processed within the omni-cam ecosphere, a giant control room within the fake moon of Seahaven. This room is essentially a highly advanced cyber-voyeuristic panopticon and serves as a meta-critique of

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<sup>71</sup> King, *The Spectacle of the Real: From Hollywood to Reality TV and Beyond*.

<sup>72</sup> Maskell, "The Truman Show: Has a Film Ever Predicted the Future so Accurately?"

directing, where Christof is Peter Weir, something the director himself confirmed: “I probably see something of myself in the director.”<sup>73</sup>

## 2.2 Truman as a Panopticon Subject

Foucault’s panopticon is a great tool to describe Christof and the omni-cam control center as a whole. Originally coined by Jeremy Bentham in 1785, panopticon is a system of surveilling prisoners; such an “architectural structure would function primarily through the inability of any one inmate to not be seen as a consequence of the strategic placement of the guards/observers in centralized and elevated positions.”<sup>74</sup> This system of discipline is most effective when prisoners know they are being watched, but are unaware of the precise angle or vantage point from which they are being watched. This uncertainty lies within Truman’s paranoia, as well as our panoptic postmodern surveillance society. With observers virtually everywhere, one cannot assume that they are in a private sphere at any time, and thus, Bentham theorized, “the prisoners would begin to self-regulate, producing a self-propelling machine of fear, paranoia, and watchedness.”<sup>75</sup> Foucault, used this theory as a basis in his influential book *Discipline and Punish* (1977), where he investigates systems of power through the panopticon. He concluded that those in charge of institutions of power have an ultimate goal to maximize subservience and to minimize protest and unruliness.

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<sup>73</sup> Peter Weir, “Peter Weir on ‘The Truman Show’ and Music’s Role in Film.,” Classical KUSC, 2018, [www.kusc.org/podcast/peter-weir-on-the-truman-show-and-musics-role-in-film](http://www.kusc.org/podcast/peter-weir-on-the-truman-show-and-musics-role-in-film). 32:04.

<sup>74</sup> Dusty Lavoie, “Escaping the Panopticon: Utopia, Hegemony, and Performance in Peter Weirs The Truman Show.,” *Utopian Studies* 22, no. 1 (2011): 52–73.

<sup>75</sup> Ibid.



Truman is a panopticon subject, only not as a prisoner. He hasn't committed any crime, but was subjugated at birth to live a Sisyphean life with no inherent meaning. In a way, his predicament is very similar to ours. In the cyberage internet users unwittingly share their tracking data and other information about their preferences. This data is then traded for ad revenue and profit. Mark Andrejevic calls this phenomenon 'free labor,'<sup>76</sup> because data generated by an individual is exploited by companies for profit. Internet users are panopticon subjects, much like Truman. The true nature of who is watching us is also unclear, especially considering how Big Data, global user data, is so immensely huge that Silicon Valley companies need intricate algorithms to interpret it. Edward Snowden exposed the NSA program Prism, which is a precursor of mass surveillance algorithms. Seahaven is a great allegory for the virtual construct we live in today.

The diegetic audience in *The Truman Show* is a crucial element in Truman's life. It embodies the modern Leviathan that keeps the show running and also us, an audience witnessing this intrusive voyeurism. We are passively participating in Peter Weir's meta-commentary.

### **2.3 Diegetic or Non-diegetic?**

One of the most fundamental principles in film music is the dichotomy of narrative function into 'diegetic' and 'non-diegetic'. The term 'diegetic' describes music that is part of the film's story and can be heard by a main character. 'Extra-diegetic' music consists of company logo themes that usually precede the movie. 'Non-diegetic' music exists outside the narrative world of the film and can only be heard by the audience, usually this is the original score. On the contrary, car radio music or a character singing are examples of diegetic music. As discussed earlier on

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<sup>76</sup> Mark B. Andrejevic, "Surveillance and Alienation in the Online Economy," *Surveillance & Society* 8, no. 3 (2010): 278–87.

Chapter 1.5, complex narratives became increasingly popular in Hollywood films of the '90s–'00s. Embedding stories within stories as *mise en abyme* was a technique used in sci-fi movies like *The Matrix*, *Thirteenth Floor* (1999), and *Inception* (2010), but also in drama and crime movies ranging from *Pulp Fiction* (1994), *Truman Show* (1999), to *Oldboy* (2003) and *Synecdoche, New York* (2008). These types of ‘puzzle films’ reject classical storytelling techniques<sup>77</sup> and, as Steffen Hven points out, embrace “non-linearity, time loops, and fragmented spatio-temporal realities.”<sup>78</sup> In the figure below, the hierarchy of musical diegesis in standard storytelling and embedded storytelling are compared.

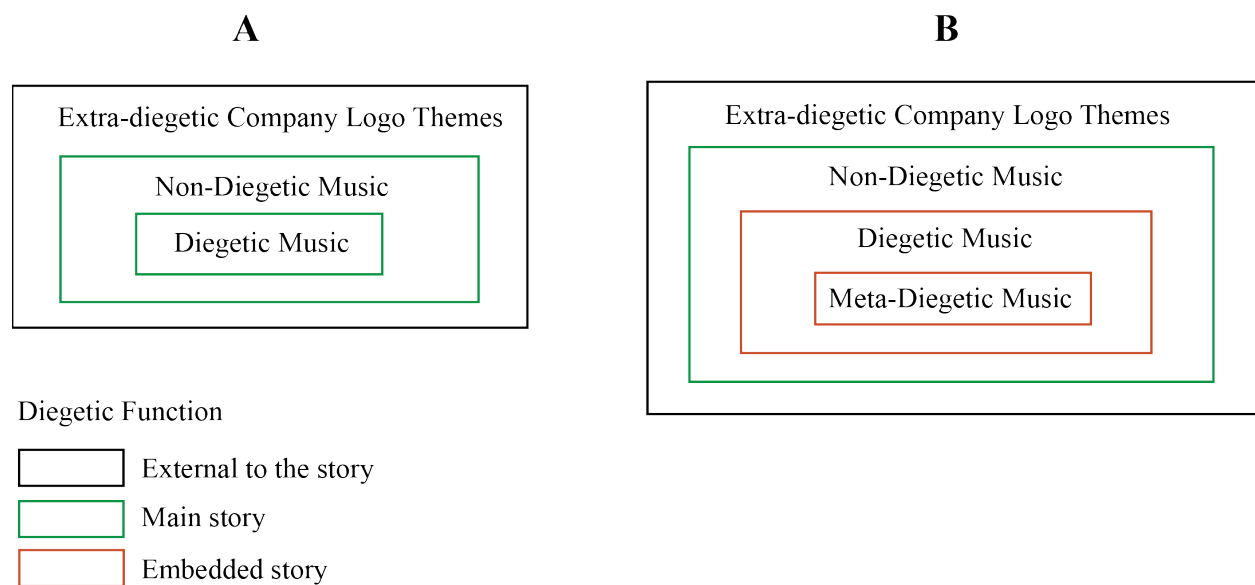


Figure 2-1: A, Standard musical diegesis. B, Embedded musical diegesis.

<sup>77</sup> Buckland, *Puzzle Films Complex Storytelling*.

<sup>78</sup> Steffen Hven, *Cinema and Narrative Complexity* (Amsterdam: Amsterdam University Press, 2017).

The ambiguity and unreliability of filmic reality can cross over to the realm of film music, when a soundtrack blurs the line of diegetic and non-diegetic. An early example of this can be found in *King Kong* (1933), where 25 minutes into the movie a film crew sailing through the fog hears music that is simultaneously diegetic and non-diegetic. As Max Steiner's music starts with mysterious harp arpeggios and timpani, a crew member of the ship asks: "can you hear the drums?" Even though there is no orchestra on the ship, the characters seem to be able to hear it. When the crew lands in Skull Island, they realize that the source of those drums is a tribe playing music and dancing for a ritual. However, the musicians of the tribe are all playing traditional instruments, whereas the music is in a clearly French impressionist orchestral idiom. *King Kong* is the first soundtrack in film history that is non-diegetic, with Max Steiner experimenting with the idea of music 'geography'. What is the real source of music the sailors are hearing? Is it the diegetic tribe musicians, or the non-diegetic orchestral musicians that recorded the soundtrack?<sup>79</sup> Robynn Stilwell, in her article *The Gap between Diegetic and Non-Diegetic* (2007), coined the term 'fantastical gap' to describe the liminal space where music blurs the line of diegetic and non-diegetic. Sometimes this music is also referred to as 'trans-diegetic'.<sup>80</sup> In this chapter, I will demonstrate how *The Truman Show* is a movie that explores meta-music reflective of its own process, and trans-diegetic techniques that seamlessly move between levels of embedded musical narration.

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<sup>79</sup> Another example of a trans-diegetic soundtrack is David Raksin's *Laura* (1944).

<sup>80</sup> Robynn J. Stilwell, "The Fantastical Gap between Diegetic and Nondiegetic," *Beyond the Soundtrack: Representing Music in Cinema*, 2007, 184–202, <https://doi.org/10.1525/9780520940550-013>. 187.

## 2.4 Music Analysis

In the *Truman Show*, director Peter Weir made the unconventional choice of hiring two composers: Philip Glass and Burkhard Dallwitz. His intention was to have two musical programs<sup>81</sup>, one for the “film itself”, the other for *The Truman Show*.<sup>82</sup> The minimalist style of Philip Glass represents the ‘real’ non-diegetic narrative as a dystopia, whereas the synth-based orchestral style of Dallwitz represents the embedded narrative as corporate pseudo-sentimental music (reality show music). Sometimes, Weir breaks his own rules and uses Glass’ music inside the *Truman Show*’s *mise en abyme*. Classical music by Mozart is a third genre that is used consistently throughout the film to enhance Truman’s world as a bourgeois utopia.

### 2.4.1 Types of Musical Diegesis

For the sake of clarity, I would like to delineate different types of musical diegesis in *The Truman Show* with distinct narratological terms. Minimalist music by Philip Glass and Wojciech Kilar is always non-diegetic, as it is external to the movie and TV show-within-the-movie and can only be heard by the audience and Christof. As a result of the *mise en abyme* structure, the music within the embedded story can be diegetic or meta-diegetic. Meta-diegetic music consists of works by Mozart that are heard by Truman on his car radio and TV speakers. Another instance of meta-diegetic music is when we see a flashback of Truman in college, where Marlon is playing the trumpet in a marching band. The music composed by Dallwitz is always part of the *Truman Show*-

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<sup>82</sup> Weir, “Peter Weir on ‘The Truman Show’ and Music’s Role in Film.” 27:35.

within-movie and is therefore diegetic. Mozart’s *Rondo alla Turca* and *Allegro* movement from *Horn Concerto No. 1* are used in five scenes and mainly function as meta-diegetic music (car radio, TV). In two occasions analyzed in this chapter, Mozart’s music is also used to blur the lines of its own diegetic function by transitioning between levels of diegesis, through the use of dynamics and EQ. This special feature of crossing diegetic realms makes Mozart’s music trans-diegetic (Figure 2-2).

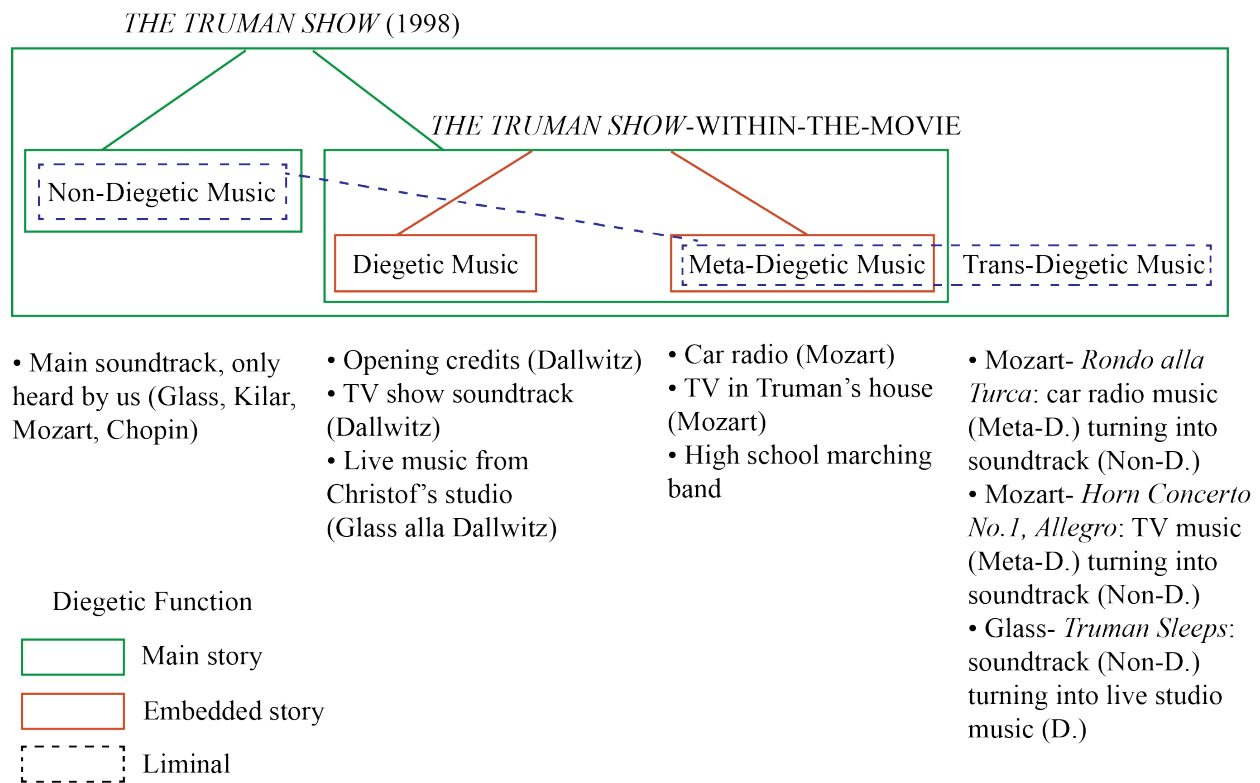


Figure 2-2: *The Truman Show* – levels of musical diegesis.

Musical diegesis also relates to individual characters and whether they can hear a source of sound. As shown in Table 5, there are four levels of listeners: Truman, the TV show’s audience, Christof, and us. For example, the opening credits (*It’s a Life*) and the music played live in

Christof's studio are inaudible for Truman, non-diegetic for the TV audiences, diegetic for Christof who conducts the studio mixer, and meta-diegetic for us. Christof has an important role as a high-level observer and world architect, who supervises the *Truman Show*'s soundtrack and handpicks the music played through the radio and TV. His omnipresent control over Truman is a meta-commentary of mass surveillance and a self-reflexive critique of directing.

Listener	Source of Music		
	Car radio, TV	TV show-within-film	Film Score
Truman	Diegetic	Inaudible	Inaudible
TV show audience	Diegetic	Non-Diegetic	Inaudible
Christof	Diegetic	Diegetic	Inaudible
Film audience (us)	Meta-Diegetic	Diegetic	Non-Diegetic

Table 5: *The Truman Show* – who can hear the music.

#### 2.4.2 Opening Credits: *Mise en Abyme* and Parody

Right from the start, Peter Wier immerses the viewer in the embedded diegetic world by skipping the extra-diegetic company logo themes and diving into the embedded narration of the reality show.<sup>83</sup> The actors are credited with fictional names instead of their real ones, i.e.: Jim Carrey's title is "Truman Burbank as himself." Multiple cuts of TV screens are a second visual

<sup>83</sup> Guido Heldt, "Beyond the Moment:," in *Music and Levels of Narration in Film* (Intellect, 2013), 195–242, <http://www.jstor.org/stable/j.ctv9hj7vv.8>.

hint that we are watching *The Truman Show* through someone else's eyes. The stylized musical score of Dallwitz also enhances the perception of *The Truman Show* as *mise en abyme*. His musical cue, titled *It's a Life*, combines piano, synth pads, synth strings and percussion sounds. All the synthesized elements and piano effects are deliberately outdated and clichéd. The theme played by the piano is in E major and is accompanied by a repeated note motive (E3) in the synth strings, which are processed with slapback delay and reverb. Simple 2-bar phrases are repeated continuously with incredibly bland triadic harmony consisting of tonic and subdominant chords (E major, A major). *It's a Life* was composed to sound like a simple tune for a run-of-the-mill '90s sitcom, essentially a parody of sentimental, pseudo-inspirational electronic film scoring. The main theme bares many similarities with Vangelis' *Chariots of Fire* (1981) soundtrack, which by the early-mid '00s had crossed into the realm of kitsch and was featured in Hollywood movies as a meta-reference for comedic relief.<sup>84</sup> *It's a Life* and *Chariots of Fire* both share repeated note motifs, pianos with delay/reverb effects, multitimbral analog synth patches,<sup>85</sup> simple triadic harmonies, and melodic turns (Figure 2-3). As a result, Dallwitz's score functions as meta-music that is evoking an association with a musical genre (Vangelis' synth orchestration in *Chariots of Fire*), and as self-referential music with a corny outdated style that immerses viewers to the *mise en abyme* of *The Truman Show* (TV show tune-within-film music).

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<sup>84</sup> It was used as parody (of itself) in the following movies, amongst others: *Bruce Almighty* (2003), *Old School* (2003), *Kicking and Screaming* (2005), and *Madagascar* (2005).

<sup>85</sup> Vangelis used a Yamaha CS-80 synthesizer for these patches in *Chariots of Fire*.

### Burkhard Dallwitz- *It's a Life* (1999)

Melodic turn

Piano, synths

*mf*

Repeated note ostinato

### Vangelis- *Chariots of Fire* (1981)

Melodic turn

Piano, synths

*mf*

Repeated note ostinato

Figure 2-3: Burkhard Dallwitz – *It's a Life* and Vangelis' *Chariots of Fire* (1981).

## 2.4.3 Mozart as Daily Routine and Distraction

In the beginning of the film, we see a large studio light falling from the sky and crashing on the ground next to Truman. Initially he is afraid to approach it, but after inspecting it, he looks up wondering where this strange object came from. As Truman gets into his car to drive to work, a radio announcer tries to cover up the incident of the fallen light by saying it was an aircraft shedding parts while flying over Seahaven. In the following exchange, the radio announcer has a conversation with Truman, who seems oblivious to the absurdity of the situation.

Radio announcer: How do you feel today?

Truman: Mmm-mmm [nods with apathy]



Radio announcer: That's good. You thinking of flying anywhere?

Truman: Nope.

Radio announcer: O-o-oh good! So, why don't you forget about the perils of flying?

Settle back and let this music calm you down. [cues Mozart – *Rondo alla Turca*]

The radio announcer is audibly concerned about Truman getting suspicious and potentially escaping, so he plays Mozart to calm him down. When Truman gets out of his car, the *Rondo* transitions from meta-diegetic radio music to a non-diegetic soundtrack of Truman's mundane daily routine: buying the newspaper, greeting customers, and walking to his office. Therefore, Mozart's music becomes associated with images of conformity and complacency.<sup>86</sup> In this scene, the first 24 bars of the *Rondo alla Turca* are looped and modified: sections ABA' are played with repeats, then B returns, then ABA' is played again with repeats (Figure 2-4). The hypnotic quality of this music suggests that Christof is using Mozart to subtly brainwash Truman into a peaceful state of mind. All the diegetic music is in a happy, bland mood that perfectly portrays Truman's comfortable life in an idealized bourgeois utopia. On the surface, Mozart's *Rondo* is the underscore of Truman's daily routine and artificially civilized life, but in reality, Christof programs this music on the radio to distract Truman from the fake world he lives in.<sup>87</sup>

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<sup>86</sup> Marie Bennett, "The Music of Mozart : Representing ' Otherness ' in Film," *Otherness: Essays and Studies* 5, no. 1 (2005). 164.

<sup>87</sup> Another film that uses Mozart as an element of culmination in a similar way is Alfred Hitchcock's *Vertigo* (1958)

Figure 2-4: Mozart – *Rondo alla Turca* from Piano Sonata No. 11, K.331.<sup>88</sup>

The idea of having Christof play Mozart to subconsciously calm down Truman could have been inspired by the so-called “Mozart effect” – the positive effect of listening to Mozart’s music on mental clarity and focus, a popular idea among the intellectual elite in the 1990s.<sup>89</sup> This theory

<sup>88</sup> Wolfgang Amadeus Mozart, *Rondo Alla Turca* (Drew Weymouth, 1791). This score is from IMSLP and is in the Public Domain.

<sup>89</sup> Clémentine Beauvais, “The ‘Mozart Effect’: A Sociological Reappraisal,” *Cultural Sociology* 9, no. 2 (November 13, 2014): 185–202, <https://doi.org/10.1177/1749975514557096>.

was formulated in a 1993 study (Rauscher et al) that exposed pre-school children aged 3–4 years to 10 minutes of hearing Mozart’s *Sonata for Two Pianos K448* and noticed improvements in their spatial reasoning skills.<sup>90</sup> Even though other studies showed similar results (Jenkins 2001),<sup>91</sup> this purported effect has now been replicated many times and a meta-analytical study of 40 papers (Pietschnig 2010) concluded that there is “little evidence left for a specific, performance enhancing Mozart effect.”<sup>92</sup> According to the meta-analytical study, Mozart indeed had a positive effect on spatial performance, but so did other enhancing musical stimuli compared to no musical stimuli.

After the first flashback scene of Truman meeting Sylvie, we see him in his room piecing together a collage of her face made out of magazine cut-outs. As he is driving to his job, he switches on the radio, and we hear the announcer’s voice slowing down like a worn-out tape. Truman changes the station, and we hear a female voice: “West on Stewart. . . he is making a right on Holden. . .” Truman glances up and notices he is driving by the exact same streets mentioned by the mysterious voice on the radio. When it becomes obvious that he is suspicious, the radio frequency suddenly switches to the usual classical program. The announcer sounds stressed and tries to distract Truman from the events that had just occurred by playing some ‘classical’ music. This time, instead of Mozart, we hear a strange track<sup>93</sup> composed in a modern polystylistic idiom. It starts with piano arpeggios over a violin melody and the harmony moves in parallel major chords outlining roots from a D# minor pentatonic scale. Truman listens to the music for a few seconds

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<sup>90</sup> F H Rauscher, G L Shaw, and K N Ky, “Music and Spatial Task Performance.,” *Nature* (England, October 1993), <https://doi.org/10.1038/365611a0>.

<sup>91</sup> J S Jenkins, “The Mozart Effect.,” *Journal of the Royal Society of Medicine* 94, no. 4 (April 2001): 170–72, <https://doi.org/10.1177/014107680109400404>.

<sup>92</sup> Jakob Pietschnig, Martin Voracek, and Anton K Formann, “Mozart Effect–Shmozart Effect: A Meta-Analysis,” *Intelligence* 38, no. 3 (2010): 314–23, <https://doi.org/https://doi.org/10.1016/j.intell.2010.03.001>.

<sup>93</sup> Peter Weir, *The Truman Show* (USA: Paramount Pictures, 1998).30:19. There is no information about this track in literature, online, or in interviews. It is not part of the official soundtrack and was probably put together by the Music Editor.

and turns it off. The music perfectly reflects Truman's visible confusion and enhances the realism of this scene; maybe the stressed radio programmer made a mistake and started playing the wrong 'classical' music.

The *Rondo alla Turca* is also used near the end of the movie, when Truman realizes he is being watched and pretends to go about his daily life routine, while preparing for his escape. As in earlier scenes, Mozart's *Turkish March* is associated with routine and conformity.

In another scene, the *Allegro* movement from Mozart's Horn Concerto No. 1 is played over Truman finding out his wife, Meryl, is not really who she appears to be. At 38:54, Truman is comfortably sitting in his home watching TV and browsing through his wedding photos. The announcer on the TV starts playing Mozart, and as the camera focuses on Truman's puzzled facial expression, the music crescendos and transforms from meta-diegetic to non-diegetic underscore. Truman notices that, in one of the wedding photos, his wife is crossing her fingers while kissing him. As soon as we see his magnifying lens focusing on Meryl's crossed fingers, we hear the Horn concerto's orchestral exposition transitioning into the second theme (m.12, Figure 2-5), through a half cadence in A major (m.11). The music is trans-diegetic, because it starts as part of the TV show Truman is watching and turns into non-diegetic underscore. This horn concerto has only two movements and is the shortest out of Mozart's four concerti. Marie Bennett in her article *The Music of Mozart: Representing 'Otherness' in Film* draws a comparison between the incomplete structure of Mozart's Horn Concerto No.1 and Truman's own incomplete human condition, as he hasn't yet fully realized he is living in an artificial *mise en abyme* world.<sup>94</sup>

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<sup>94</sup> Bennett, "The Music of Mozart : Representing ' Otherness ' in Film." 163.

The image shows a musical score for the Allegro exposition of Mozart's Horn Concerto No. 1 in D major, K.412. The score is arranged in two systems. The first system includes staves for Oboe, Bassoon, Violino I, Violino II, Viola, and Basso. The Oboe part begins with a long note and an 8-measure rest. The Bassoon, Violino I, and Basso parts have dynamic markings of *p* and *f*. The Violino II and Viola parts have a dynamic marking of *p*. The second system starts at measure 11 and continues with the same instruments, showing further development of the musical themes.

Figure 2-5: Mozart – *Allegro* exposition from Horn Concerto No. 1 in D major, K.412.<sup>95</sup>

## 2.4.4 Minimalist Dystopia

In the '90s, there was a trend in Hollywood to produce scores in Philip Glass' minimalist style. In fact, when Glass denied access to his music, “people simply [stole] it anyway [...] by

<sup>95</sup> Wolfgang Amadeus Mozart, *Horn Concerto No. 1 in D Major K. 412*, ed. Franz Giegling (Kassel: Bärenreiter-Verlag, 1987). This score is from IMSLP and is in the Public Domain.

hiring someone to make a soundalike.”<sup>96</sup> His concert music was associated with gravitas and became a “mandatory sonic decoration for all serious, classy or would-be serious, would-be classy American movies.”<sup>97</sup>

In an interview, Weir mentions that he didn’t want to hire the composer he usually collaborates with, Maurice Jarre, and wanted to try a “new sound” for *The Truman Show*.<sup>98</sup> By the time he was filming *The Truman Show*, he was still indecisive about choosing a composer.<sup>99</sup> He was drawn to Glass’s soundtracks for *Powaqqatsi* (1988) and *Mishima: A Life in Four Chapters* (1985), and used them to temp his entire film. After contacting Glass, they both met in a school hall, where Weir presented a rough cut of the film, while playing Glass’ music through a boombox like a live DJ temping his own film.<sup>100</sup> This amused Glass, who agreed to compose music and “replace himself.”<sup>101</sup> He ended up writing some original tracks for the film which Weir thought were not as effective, so he ended up licensing several preexisting works by Glass.<sup>102</sup>

The first time Truman becomes suspicious, after hearing the mysterious radio conversation in his car, he gets out of his car and aimlessly walks around the town square. This is the first time we hear the ‘real’ non-diegetic soundtrack, Philip Glass’ *Anthem Part 2* for orchestra, which was originally composed as a soundtrack to Godfrey Reggio’s film *Powaqqatsi* (1988). The cue starts

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<sup>96</sup> Rebecca Marie Doran Eaton, “Unheard Minimalisms: The Functions of the Minimalist Technique in Film Scores” (University of Texas, 2008).

<sup>97</sup> Ibid.

<sup>98</sup> Weir, “Peter Weir on ‘The Truman Show’ and Music’s Role in Film.” 24:40.

<sup>99</sup> Ibid, 25:30.

<sup>100</sup> Ibid, 26:00.

<sup>101</sup> Ibid, 26:26.

<sup>102</sup> Ibid, 26:40.

with a march from measure 7 of *Anthem Part 2*. The snare drum, cellos, reed organ, and Hammond organ play a rhythmic ostinato, in a composite meter of 5/8 + 7/8, with the following rhythmic groupings: 3+2, 3+2+2. Horns, trumpets trombones, bass trombone, and tuba sustain triads over a D pedal tone played by a rotary organ and a synth (Figure 2-6). The harmony shifts from D major, to G minor, to G major, and then to E minor. This musical material plays throughout the scene where Truman becomes suspicious of everyone around him.<sup>103</sup> Its repetitive structure enhances the idea that Truman's world is an artificial *mise en abyme*.

Figure 2-6: Glass – *Anthem, Part 2* ostinato.

As the brass chorale sinks to a lower register, Truman finds more clues about his illusive world. He enters a building at random and follows a woman entering an elevator. Upon opening

<sup>103</sup> Weir, *The Truman Show*. 30:40.

the doors, he sees actors sitting on folded chairs next to a table with refreshments (timecode: 34:50). The guards quickly drag him out of the building and Truman runs away. As the music gets louder, the chorale is orchestrated as a dialogue between different instrumental combinations. Flutes and trumpets alternate between tonic and dominant chords in D major. This is answered by pan flutes and horns that move from D major to G major via an F# diminished chord (vii<sup>o6</sup>– I<sup>6</sup>): D major– A major– F#<sup>o</sup>– G major (Figure 2-7, m.3–4). The joyful atmosphere evoked by high winds and pan flutes functions as an absurdist satire of Truman, who finally realizes he has been completely oblivious to his surroundings.

Truman runs away

The image shows a musical score for two instruments: Pan Flute (top staff) and Trumpet (bottom staff). The time signature is 5+7/8. The key signature has one sharp (F#). The Pan Flute part begins with a rest, followed by a series of chords. The Trumpet part plays a series of chords. The dynamics are marked *mf* (mezzo-forte). The score is labeled "Truman runs away" in a box above the Pan Flute staff.

Figure 2-7: Glass – *Anthem, Part 2* wind chorale.

*Anthem Part 2* is used again in a similar context later in the movie (1:18:16'), when Marlon goes to Truman's house to find out that he has escaped. After getting scolded by his producers, Christof orders a search party to find Truman. As a result, the reality show has to stop for the first time in 29 years. Here, Philip Glass' minimalist music serves as the real nondiegetic underscore, highlighting Truman's triumph over his dystopia. This time, the comical character of the music is satirizing the actors searching for Truman, who are wearing different costumes and night vision goggles. Weir's choice to match the tempo of the march and timpani hits with the pacing of the actors, is an interesting comedic touch.



In simulated reality movies, when a protagonist finally overpowers their dystopian world, the soundtrack is usually heroic and dramatic. Goldsmith's soundtrack in *Total Recall* and Davis' soundtrack in *The Matrix* both portray victorious moments with powerful dramatic string and brass gestures. Even though *The Truman Show* is not an action movie, it displays equally terrifying dystopic elements as the aforementioned movies. The use of cheerful minimalist music that lacks boldness and intensity is a reflection of Truman as an anti-hero. He is not the typical masculine hero, like Quaid or Neo, but just a common upper middle-class man who, despite his average intelligence, was finally able to outsmart his captors.

#### **2.4.5 *The Truman Show* as Meta-critique**

The most powerful use of diegetic music in the film is when Truman meets his thought-to-be-dead father. In reality, Truman's real parents are never revealed, but it becomes clear that he was initially adopted by Christof and then raised by an actor pretending to be his biological father, Kirk Burbank. When Truman was young, his dad supposedly died in a sailing accident caused by a sea storm. However, this was part of Christof's plan to instill thalassophobia in Truman's mind, so that he doesn't escape Seahaven. Kirk's character is deep and complex: on one hand, he is an actor, but on the other hand, he raised Truman from a toddler and has real feelings for him. He is a tragic character who was forcefully separated from his adopted son. When father and son finally reunite, we hear Philip Glass' cue titled *Reunion*. This time, Glass is not composing in a minimalist nondiegetic style, but is imitating the cheesy pseudo-sentimental diegetic style of Dallwitz.

The music cue starts in C minor with cellos and basses sustaining single notes over a slow descending piano melody. When Truman approaches his father and says, "I never stopped believing" (timecode: 59:41), the music outlines a dramatic C major harmony. The expressive

piano melody is harmonized with a bittersweet C maj– F min chord (Figure 2-8). Images of Truman hugging his father are juxtaposed with Christof directing the film crew and live musicians. When Truman hugs his father, Christof raises his hand like a conductor and instructs the live pianist to “fade up music.” The piano theme is now accompanied by sustained strings with slow dramatic swells. A 4-bar phrase is looped with the following harmonic structure: C major– F minor– Eb major– G major. Glass moves between the keys of C major (m.1, 4, 5, 8) and F dorian (m. 2, 3, 6, 7) to portray this emotional reunion in an effective way. As the strings and piano crescendo to the C major harmony in measure 1, Christof conducts the live mixer and pianist with big gestures and tears in his eyes. Essentially, this entire scene is a meta-critique of directing, as Christof is a heightened version of Peter Weir himself, but also a meta-reference of the media’s control over people’s lives.

Christof: "Fade up music"

The musical score is presented in two systems. The first system covers measures 1 through 4, and the second system covers measures 5 through 8. The piano part (Pno.) is written in a 4/4 time signature. The right hand plays a melodic line, and the left hand plays a rhythmic accompaniment of eighth notes. The string part (Str.) is written in a 4/4 time signature and features sustained chords with a slow swell. Dynamics range from piano (p) to forte (f). The score is in the key of C major (one sharp) and the key signature changes to F minor (two flats) in measure 2.

Figure 2-8: Glass – *Reunion*.

In another scene, Weir casts Philip Glass himself as a cameo playing his own music. At around 1:08:40', we see Lauren watching Christof giving an interview on live TV saying that Truman's wife will be leaving in the next episode. We see Lauren touching Truman's figure on the monitor, as she is still in love with him. Glass' piano track *Truman Sleeps* fades into non-diegetic music. The scene cuts to Christof in his studio watching Truman sleep through a giant monitor. At his side, we see Philip Glass playing a keyboard, indicating that we have moved from non-diegetic music to diegetic. Glass' music is in his characteristic minimalist style, with a looping 4-chord progression in F minor: F min – Db maj – Ab maj – C maj (Figure 2-9). There is a nostalgic and intimate quality in this music cue that captures Lauren and Truman's unfulfilled love. This music cue is complex in terms of diegetic function, as it is trans-diegetic, moving from non-diegetic soundtrack to diegetic reality show music, and self-referential, because the composer of the movie is playing his own piano work.

TV: Truman sleeping

Figure 2-9: Glass – *Truman Sleeps*.

Reality shows were not as popular before the *Truman Show* and so Peter Weir's movie is quite prophetic. Despite the movie's cautionary message about reality TV becoming a panopticon dystopia, it became a model for new TV shows like Big Brother. Rainer Laux, the director of the German *Big Brother* (2000), said he wanted to make a reality TV show that is a "cross between *The Truman Show* and *Disneyworld*."<sup>104</sup> Many social media users in the present day are willfully subjecting themselves to a techno-voyeuristic spectacle that resembles Truman's dystopia.

## 2.5 Conclusion

*The Truman Show* is a forward-thinking film that predicted the rise of techno-voyeuristic entertainment. Peter Weir's effective storytelling immerses viewers in a *mise en abyme* microcosm with visually stylized shots, where characters are seen through hidden camera lenses. Each diegetic layer is represented by a different musical style: minimalist music by Glass is non-diegetic, cheesy '80s synth music by Dallwitz and Glass is metadiegetic, and classical music by Mozart is diegetic. Usually, clashing film music idioms within a movie can distract audiences from the storytelling, but in *The Truman Show* this is effective, as each filmic reality has a distinct visual aesthetic: Seaside is a New Urbanist town, Christof's TV studio is a dystopian dome megastructure, and the diegetic audiences appear frequently in spaces with a cozy '90s' interior design look. Weir goes beyond this level of complexity by reinforcing a self-referential *mise en abyme*, where Glass plays his own piano music as cameo for the show-within-the-movie. Finally, the scene where Christof conducts live musicians on set is a pinnacle of *mise en abyme* as it is both self-referential, with Christof representing Weir as director, and meta-referential of film music as a creative process.

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<sup>104</sup> Leidig, "Big Brother Builds 'Truman Show' Village."

### 3. *Total Recall* (1990)

#### 3.1 Ambiguity of Reality

Paul Verhoeven's *Total Recall* was released on June 1<sup>st</sup>, 1990 by Tristar Pictures and Carolco Pictures. Michael Wilmington of the LA Times described *Total Recall* as an "ingenious" combination of "action movie cliché" and "psychological terror."<sup>105</sup> Robert Ebert, a reviewer for the Chicago-Sun and a Pulitzer Prize winner, described it as "one of the most complex and visually interesting science fiction movies in a long time."<sup>106</sup>

The screenplay was based on Philip K. Dick's science fiction novelette *We Can Remember It for You Wholesale* (1966). Even though after a certain point the film diverges from its source material, the story remains faithful to the thought-provoking writing style of Dick. Verhoeven, the movie's director, earned his PhD in Mathematics from the State University of Leiden,<sup>107</sup> aspired to make the film "as realistic as possible."<sup>108</sup> While the film was highly unrealistic in terms of the science behind it, its underlying theme of 'reality vs dream', more specifically 'reality vs implanted memory', provided a nuanced quality to an otherwise cliché action-packed film with a muscular hero saving the world.

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<sup>105</sup> Michael Wilmington, "Review & Premiere of 'Total Recall,'" *Los Angeles Times*, June 1, 1990, <https://www.rarenewspapers.com/view/645647>.

<sup>106</sup> Roger Ebert, "Total Recall Review," *Chicago Sun-Times*, 1990, <https://www.rogerebert.com/reviews/total-recall-1990>.

<sup>107</sup> Pat Bauer, "Paul Verhoeven," *Britannica*, 2023, <https://www.britannica.com/biography/Paul-Verhoeven>.

<sup>108</sup> "AFI Catalog of Feature Films: Total Recall," AFI, accessed November 27, 2023, <https://catalog.afi.com/Catalog/moviedetails/67086>.

The film follows a character named Douglas Quaid, who is both the protagonist and secondary antagonist of the film. Starting as a construction worker, he reveals that he had been having recurring dreams of going to Mars and meeting a mysterious woman. On his way to work, Quaid sees an advertisement for *Recall* Incorporated, a facility which offered implanted memories of ideal vacations that were indistinguishable from reality. He decides to visit the facility and receive a memory implant of a secret agent that visits Mars, meets his ideal significant other, and saves the world. Everything that follows this point in the film can be interpreted either as a simulation or reality. Quaid is constantly chased by agents and his own wife turns against him, confessing that his original identity has been erased and replaced by a new one, which included her as imposter-wife.

At some point, Quaid realizes his consciousness is a memory implanted by *Recall* and he used to be a man named Hauser, who had been a spy working for a ruthless autocratic dictator, Coahaagen. He then met the woman in his dreams, Melina, and joins the mutant resistance in order to liberate Martians from Coahaagen, who has a monopoly on air ventilation. Quaid and Melina find an alien reactor capable of producing cheap breathable air but are stopped by Coahaagen's men. After beating them, Quaid turns on the reactor and saves the Martian mutants. The film ends with Quaid wondering if it was all a dream and Melina responding, "kiss me before you wake up."

Verhoeven's film ends with a question mark. Was it all real? In an interview, the director verifies that the last scene of the film fades to white, after Quaid kisses Melina, in order to create the illusion that everything was an implanted memory, and the protagonist is getting

lobotomized.<sup>109</sup> This ambiguous distinction between reality and memory is carried over from the plot to the music via modal, harmonic, and timbral ideas.

### 3.2 Music Analysis

When Jerry Goldsmith (1929–2004) was signed to be the composer of the film, he had already been an established composer for over 40 years. Some of his most famous soundtracks include *Star Trek: The Motion Picture* (1979), *Planet of the Apes* (1968), *Alien* (1979) and *The Omen* (1976), which was awarded an Oscar. His compositional style ranges from Americana to avant-garde. Goldsmith's brass and timpani orchestration for *Lonely Are the Brave* (1962), and the *Universal Logo Theme* (1997) have hints of Aaron Copland's *Fanfare for the Common Man* (1942). In *Freud* (1962) and *Planet of the Apes*, he embraced serialism as a technique for both melodic and harmonic structures. *The Omen* was praised for its effective use of atonality and its clever central theme, which incorporates an ominous chant (“Sanguis Bibimus, Corpus Edimus”) harmonized in dissonant minor ninths and semitones. In an interview with Allan Bryce in 2008, he mentioned Igor Stravinsky, Béla Bartók and Alban Berg as influences. Goldsmith has also mentioned film composer Leonard Rosenman as another notable influence, in particular his dodecaphonic score for *The Cobweb* (1955).

Initially, Jerry Goldsmith wanted to score the film as “straight ahead action,” but it was Paul Verhoeven's idea to address the central conflict of reality vs dream, in order to “make it more interesting.”<sup>110</sup> He asked Goldsmith to “find something that would give the music this ambiguity

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<sup>109</sup> Ethan Alter, “Director's Reel: Paul Verhoeven on Arnold's Fate in 'Total Recall,' That Sharon Stone 'Basic Instinct' Scene and More,” Yahoo! Superfan, 2016, <https://www.yahoo.com/video/paul-verhoeven-directors-reel-214013472.html>.

<sup>110</sup> Jerry Goldsmith, *Jerry Goldsmith: Total Recall*, ed. Timothy Rodier (Los Angeles: Omni Music Publishing, 2016)..

where you would never know exactly what you see is true or part of the memory that was implanted in Arnold’s head [. . .] That was the challenge, but he solved that by finding a theme that could express that.”

### 3.2.1 Quartal Cells Representing Ambiguity and Heroism

In the opening, Goldsmith realizes this idea of uncertainty and haziness through tonal ambiguity, primarily with quartal cells and hexatonic modes. The opening sequence begins with open intervals in the flutes and violins, harmonized in perfect fourths and perfect fifths (D-G and G-D) over a rhythmic ostinato in cello, contrabass, harp, timpani and synths. A long sustained main melody, Theme 1 (Figure 3-1), played in *fortissimo* unisons by the brass, outlines a perfect fourth followed by a major second. The 4-note motive D–G–A–C forms a (0257) 4-23 that will be used throughout. The fifth note of the melody (Bb, m.19), played by horns and trumpets, is the first time where G minor is firmly established. The ending note, F, creates an interesting symmetry as the first and last three notes are (027) 3–9 trichord cells: [D, G, A] and [C, Bb, F]. Another way to think about this motive is as a sequence of sus4 and sus2 triads.

Opening Sequence, Theme 1

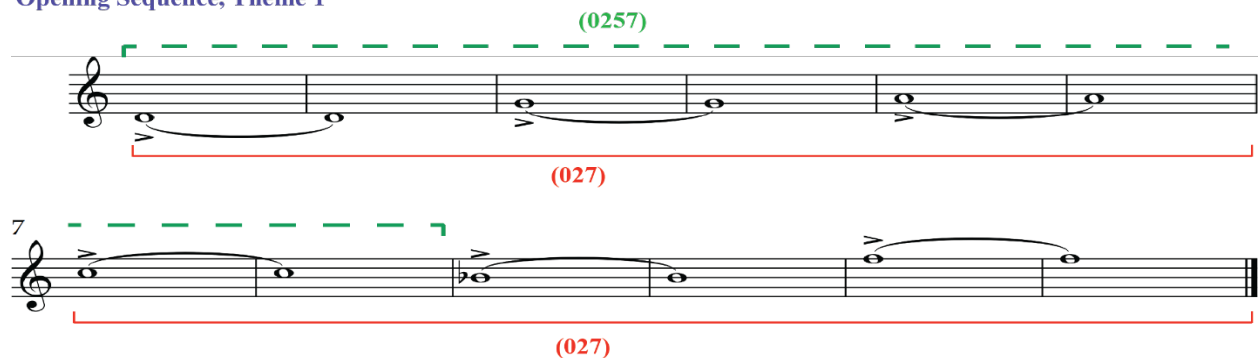


Figure 3-1: *Total Recall* – opening Theme 1, 1M1/ m.11–22.



While this melody unfolds, an ostinato (Figure 3-2), played by the harp, piano, viola, cello, and synths (“slapstick”), provides a rhythmic 8<sup>th</sup>-note pulse through a moto perpetuum of repeated notes. Some notes contain accents that are doubled by bassoon, timpani, contrabass and a synth (“wood bass”). The accent pattern is a 2-bar phrase that loops throughout this first cue. Goldsmith finds here a simple yet effective way to introduce syncopation and groove.

Harp, Piano, Cello, Viola, Synth (slapstick)

Rhythmic Ostinato: accent reduction

Bassoon, Timpani, Contrabass, Synth (wood bass)

Figure 3-2: *Total Recall* – opening ostinato, 1M1/ m.7–8.

The secondary theme, *Theme 2a* (Figure 3-3), is introduced over the title credits and is a heroic theme starting in C Dorian. The melody is tripled in octaves by flutes, oboes, clarinets, violins and violas, over the same ostinato, now in C. As opposed to Theme 1, the intervallic range this time is much narrower, a minor seventh (Eb-Db). Off-beat dotted quarter-notes propel the music forward and synchronize with the ostinato syncopation. Phrase structure-wise this is a 16-bar period divided into two 8-bar phrases, marked ‘a’ and ‘b’ in Figure 3-3. Both phrases use perfect fourth intervals and the trichord cell (025) 3–7, which is a subset of the (0257) tetrachord from Theme 1: [G4, A4, C5]. *Phrase a* is harmonized in triads that move in parallel over the C pedal: Eb/C (Cmin7) – F/C (F<sup>6/4</sup>). In *Phrase b*, the repeating C pedal ostinato in the bass and percussion remains unchanged, while the inner voices in winds and harp constantly alter the harmonic context. A harmonic scheme of modal mixture is at play: antecedent *Phrase a* remains in C Dorian, while consequent phrase b moves from F major to an F min<sup>6add9</sup> and a Bb<sup>9</sup> chord in C

minor (C pedal), to a Db major chord in the C Phrygian mode (or Neopolitan chord in C minor), and finally returns to the ‘tonic’ of C minor.

Goldsmith is shifting between Dorian, Phrygian, and minor modes, thus transforming the heroic melody into something more complex and unsettling. This could be said to reflect Quaid’s inner conflict and identity crisis, as he is both a hero and a villain. As a whole, this opening sequence is very effective at capturing the central elements of *Total Recall* and materializing the director’s vision. On one hand, Theme 1 evokes the ambiguity of reality and tonality; on the other hand, *Theme 2* expresses the conflict of ego (“Quaid vs Hauser”) and modality.

The image displays a musical score for the opening of Theme 2A in *Total Recall*. It is divided into two phrases:

- Phrase a (8 bars):** Indicated by a green dashed line. The melody begins with a 'Title Appears' box. The piano accompaniment is in C Dorian mode, with chords Eb/C, F/C, Eb/C, F/C, Eb/C, F/C, and Eb/C. A pink highlight covers the final two bars of this phrase, with the annotation '(025)' below it.
- Phrase b (7+1 bar of rests):** Indicated by an orange dashed line. The melody starts at measure 8. The piano accompaniment shifts to C minor mode, with chords F/C, Fmin<sup>6add9</sup>/C, Bb<sup>9</sup>/C, C phrygian: Db, and Cmin. A pink highlight covers the first two bars of this phrase, also with the annotation '(025)' below it.

Figure 3-3: *Total Recall* – opening Theme 2A, 1M1/ m.22–37.

The second half of the secondary theme, *Theme 2b* (Figure 3-4), modulates to G Dorian and follows a similar phrase structure to *Theme 2a*, but the ending is cut short. *Theme 2b* consists of a 14-bar period that can be divided into two shorter ones: *Phrase a* (8 bars) and *Phrase b* (6 bars). The latter phrase is shorter, in order to synchronize on screen with the production credits. Both phrase harmonizations, played by the woodwinds, brass, and harp, are literal transpositions of *Theme 2a* in G Dorian, only this time the melody of *Phrase a* is altered to include a (0257) tetrachord, [D5, G5, C6, A5] derived from the first four notes of *Theme 1*. The melody of *Phrase b* is transposed a fourth down from C Dorian to G Dorian. One direction from Verhoeven to create a theme that expresses ambiguity, ‘reality vs dream’, was enough for Goldsmith to come up with a quartal motif that binds together all the thematic sections in the opening.

**Opening Sequence, Theme 2b**

The image displays a musical score for the opening sequence of Theme 2b, consisting of two staves of music in 4/4 time. The first staff, labeled 'Opening Sequence, Theme 2b', contains the first 8 bars. A green dashed box labeled 'Phrase a (8 bars)' encompasses the first 8 bars. The melody in the first four bars is G4, A4, Bb4, C5. The last four bars of the phrase feature a tetrachord (0257) highlighted in a pink box, with notes G5, A5, Bb5, C6. The harmonic analysis below the staff is: G dorian: Bb/G, C/G, Bb/G, C/G, Bb9/G, C/G, Bb/G. The second staff, starting at bar 8, contains the next 6 bars. An orange dashed box labeled 'Phrase b (6 bars)' encompasses the first 6 bars of this staff. The melody in the first four bars of this phrase is G4, A4, Bb4, C5. The last four bars of the phrase feature a tetrachord (025) highlighted in a pink box, with notes G4, A4, Bb4, C5. The harmonic analysis below the staff is: G minor: Ebmaj7#11/13 /G, G phrygian: Ab, G minor: neopolitan IIb, Gmin.

Figure 3-4: *Total Recall* – opening Theme 2b (written 8va lower), 1M1/ m.38–52.

### 3.2.2 Harmonic Unpredictability and Otherworldly Timbres

As Mars appears on screen, the rhythmic ostinato stops for the first time as a dreamy choral section emerges. In this *Largamente* section (Figure 3-5), as the camera pans through the red, rocky terrain, the brass (*tutti*), cello, and contrabasses swell in sync. Goldsmith's harmonic language evokes a menacing feeling befitting Mars' inhospitable atmosphere. Tertian triads modulate via chromatic mediant and major-minor alterations: F# min – F# maj – Eb min – C maj – A min – A maj – F# min – Eb maj. An otherworldly synth is introduced with a unique timbre resembling flutes and clarinets. This bizarre tone is processed through a tremolo effect and a long reverb that enhance the imagery of the vast and desolate Martian canyons in Quaid's dream. Repeating 16<sup>th</sup>-note patterns diversify the simple triadic choral and switch between four different modes: major-minor, hexatonic, octatonic, and Mixolydian. In m.2, F# major is embellished with a trichord melodic cell [Bb5, F#5, A5] or (014) 3–3, which contains minor and major third intervals. As will be shown later, Goldsmith uses this trichord cell to form hexatonic modes. The following chord, Eb minor, uses a tetrachord cell [Bb5, F#5, A5, G5] or (0134) 4–3, containing major and minor thirds (F#, G) as a subset of the octatonic mode OCT (0,1). In m.4, the melodic cell [Bb5, G5, A5] or (013) 3–2 contextualizes the C major harmony to C Mixolydian. This motif is transposed a whole step up [C6, A5, B5] and woodwinds, violin, and violas join the harmony sustaining an A minor chord. In m.6, the (014) melodic cell returns in A major-minor. The penultimate F# minor chord reuses the (013) melodic cell in the same octatonic mode as m.3. Finally, the (013) 16<sup>th</sup>-note pattern from m.7 keeps repeating in m.8, now harmonized with Eb major in an Eb Mixolydian context. Another interesting feature of this section is that the first note of every four 16<sup>th</sup>-note group in the synth, outlines octatonic mode OCT (0,1), used in m.3 and 7 (green circles).

Verhoeven's theme of 'reality vs dream' and ambiguity are portrayed musically through a combination of harmonic and melodic devices. Goldsmith uses unpredictable harmonic progressions related through chromatic mediants with 2 common tones (m. 2–3, 6–7), one common tone (m. 7–8), or no common tones (m. 3–4). This unpredictability evokes a sense of mystery and eeriness. At the same time, he consciously includes minor-major and octatonic dissonances that conflict with the harmony and render it tonally ambiguous.

**Mars Landscape Appears** (013) (014) **Couple Appears In Distance** (0134)

Synth

Brass, Vc, Cb

**F# minor** **F# major- minor** **Eb minor- octatonic, OCT (0,1)**

**Cut to Couple**

woodwinds, vln, vla

**C major- mixolydian** **A minor** **A major- minor'**

**Theme 2**  
**Synth brass**

**F# minor- octatonic, OCT (0,1)** **Eb major- mixolydian**

Figure 3-5: *Total Recall – Largamente* section, 1M1A/ m.1–8.

### 3.2.3 Hexatonic Modes Representing Mystery

In the following excerpts, hexatonic modes are a central component of Goldsmith's harmonic and melodic language. The main hexatonic mode used in this score uses the following sequence of intervals: {m3, m2, m3, m2, m3, m2}. As shown in Figure 3-6, this mode is built from a series of (014) trichords and is a truncation of Messiaen's third mode of limited transposition.<sup>111</sup> As a result of the symmetric intervallic structure of this mode, there are only 4 possible transpositions.

- 1) Hex (0,3): [C, D#, E, G, Ab, B]
- 2) Hex (1,4): [Db, E, F, G#, A, C]
- 3) Hex (2,5): [D, F, Gb, A, Bb, C#]
- 4) Hex (3,6): [D#, F#, G, A#, B, D], shown below.

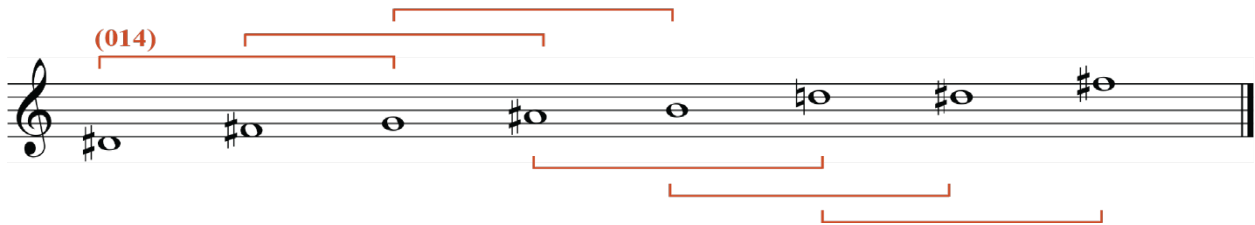


Figure 3-6: Hexatonic mode and (014) trichord cells.

<sup>111</sup> Messiaen's third mode of limited transposition is the following: [C, D, Eb, E, F#, G, Ab, Bb, B]. If each note is a number, then Hex (0,3) consists of the following truncation: [1,3,4,6,7,9], i.e.: [C, Eb, E, G, Ab, B]. Olivier Messiaen, *The Technique of My Musical Language*, ed. John Satterfield, Alphonse L (Paris, 1956).60–61.

This mode can be used to form minor and major triads, chromatic mediant relationships, as well as 12-note aggregates, by transposing a hexatonic mode by a whole-step up (T2) or down (T10), i.e.: by combining Hex (0,3) and Hex (2,5). It can also be used to form two augmented triads a semitone apart — [D#, G, B] and [D, F#, A#] — creating an air of mystery.

A hint of this hexatonic mode is already present in the *Largamente* section that was analyzed earlier, where Goldsmith includes major-minor (014) trichord melodic cells (Figure 3-5). In the opening scene of *Total Recall*, Arnold Schwarzenegger falls from a cliff, his mask is punctured and, as toxic Martian air seeps through, his eyes and veins burst out violently. This grotesque scene is marked *Aggressivo* in the score (Figure 3-7), with ascending sextuplet gestures in strings, woodwinds, and horns, outlining the thematic (0257) tetrachord and chains of quartal intervals transposed by minor thirds. By combining quartal dyads transposed by minor thirds, Goldsmith forms an octatonic mode OCT (0,1). The ascending quartal figures transfer from low to high strings/woodwinds and end with a big dissonant hexachord in horns and trumpets. This chord combines G major and D-sharp minor triads to form the hexatonic scale Hex (3,6). Upper woodwinds, brass, strings, harp, and piano alternate between each chord as a tremolo that swells to *fff*. As Arnold wakes up from his terrible dream, the polychordal tremolo stops abruptly.

Goldsmith recycles the same hexatonic idea from the *Largamente* section when we see Mars for the first time, but here, instead of evoking psychological ambiguity, he builds tension by saturating pitch density with hexachords. The use of anvil, bass drum, and suspended cymbal tremolo enhances the progressive tension in the rising melodic figures played by horns, strings, bassoons, and clarinets. It is very impressive how, in this *Aggressivo* passage, Goldsmith manages

to condense together all the harmonic ‘tricks’ from the opening (quartal harmony, octatonic and hexatonic collections), as well as the (0257) tetrachord derived from *Theme 1* (Figure 2-1).

Quaid Slips

**Agressivo** (♩=72)

Horns

Cb, Vc, Vla, Bn, Cl

Tbn, B.Tbn, Tuba

Anvil, Gran Casa

Cut To Broken Facemask

Cut To Quaid Walking Up

Fl, Ob, Cl, Hp, Pno

Vln, Vla

Hn, Tpt

Susp Cymb

Hexatonic

G D#

G+D#

Quartal, OCT (0,1)

f ff fff

molto

med. mallets

Figure 3-7: *Total Recall* – *Aggressivo* section, 1M1A/ m.14–19.



When we first see Quaid (Arnold Schwarzenegger) working in construction, he is having a conversation with his co-worker Harry (played by Robert Costanzo) about the memory implanting facility *Recall* and how there are rumors about people being lobotomized against their will. This is an element of foreshadowing, because in the end of the movie we are left to believe that all the events transpiring after a certain point (‘schizoid embolism’ scene) have been an implanted memory and Quaid is getting lobotomized, hence the fade to white. The lack of music in this scene is probably due to the very loud sound design of drilling and construction. Despite Harry’s warning, Quaid decides to visit *Recall*. On his way to the facility, we hear a combination of brief mysterious and creepy gestures interspersed with longer anticipatory melodies. Goldsmith’s use of the former gestures hint at the film’s central theme of ‘reality vs implanted memory’, while the latter is supporting the general pacing of the scene.

The music begins *Lento e misterioso* and is scored with a smaller ensemble omitting brass and most of the woodwind section (Figure 3-8). We hear a ghostly gesture of descending major third dyads in Synth 1 (“playful woodwind patch”). The pitch material outlines dyads derived from hexatonic mode Hex (0,3): [C, Eb, E, G, G#, B]. Viola and violin 2 are sustaining a C4/G4 dyad pedal drone *con sordino*. On top, violin 1 divisi and oboe à 2, are playing a repeating melodic fragment [E, Eb] that wavers between C major-minor and varies in timing. This is doubled by oboes with repeating 8th-note figures and by synth 2 (“Light wet harp”) with second inversion C major and C minor triads that are broken up in pairs of two 8<sup>th</sup> notes. Clarinets à 2 and harp provide another doubling layer accentuating certain notes from the melody. Here, Goldsmith is recycling musical ideas of conflicting major-minor sonorities and hexatonic modes from previous sections. While Quaid is walking, a quasi-brass synth sound brings back *Theme 2*. Originally this melody

was harmonized in C Dorian, but now it unfolds in a more ambiguous C major-minor context. There is also a return of quartal triad voicing on m.7 in the synthesizers playing [Ab3, D4, G4] over a [C4, G4] dyad, suggesting an Ab<sup>#4maj7</sup> harmony. On top of this harmony, the tail end of *Theme 2* (see Figure 3-3) is developed in C minor, the rising perfect fourth [Ab5, Db6] has now been inverted to a descending perfect fifth [Ab4, Db4]. As the melody concludes with [Ab4, Db4, C4] synths and strings are harmonizing a Phrygian-infused plagal cadence, Db major to C minor, or bII– i (Figure 2-8, m.8–9). This cadential scheme originates from the tail end of *Theme 2* in the opening. Overall, the frequency range of this section is limited to 2 octaves, [C4, C6].

Cut To Quaid Walking

The image displays two systems of musical notation for the piece "Cut To Quaid Walking".

**System 1:** Includes parts for Synth 1, Synth 2, Violin 1, 2 con sord., and Oboe Viola con sord. A pink box highlights a "playful woodwind patch" labeled "Hexatonic Hex (0,3)". A green box highlights a "harp patch". A red line above the staves indicates "Theme 2, C dorian", with a "quasi brass patch" also noted. The overall context is labeled "C major-minor".

**System 2:** Includes parts for Snth.1, Snth.2, Vln.1, 2, and Ob. Vla. A red line above the staves indicates the "tail end of Theme 2 in C minor, inverted ending (falling 5th)". A green box highlights a "quartal" voicing. The harmonies are labeled as "Ab<sup>#4maj7</sup>" and "Db major".

Figure 3-8: *Total Recall* – *Lento e misterioso*, 1M4–2M1/ m.1–8.

In the next scene, we are transferred to the waiting room of *Recall* facilities, where a secretary tells Quaid to wait until the salesman arrives. Instead of composing a predictably minimal and ambient soundtrack, Goldsmith chooses to synchronize certain movements to mysterious musical gestures ('Mickey-Mousing'). In Figure 3-9, the scene cuts to the *Recall* secretary, who is painting her fingernails with a futuristic device. As we see her nails transform to a red tint, with impressive CGI effects for the time, we hear eerie, magical gestures that transfer from woodwinds to strings. By evoking a bizarre and uncanny atmosphere, both the director and composer impose a subliminal association; that something is wrong with this place (*Recall*). Furthermore, the 'Mickey-Mousing' of the secretary's movements, while using her futuristic nail polish, briefly highlights the mysterious and sinister aspect of futuristic tech in the film. Goldsmith combines octatonic and hexatonic cells from the *Aggressivo* and *Largamente* sections in new, interesting ways. In m. 10, there is a return of the hexatonic Hex (0,3) material from m.1-2, now inverted both in melodic direction (descending vs ascending) and interval doubling (thirds vs tenths). Clarinets à 2, Oboe 2+3 are doubling the lower voice, while Flute 1+2, Oboe 1, double the top voice. Occasionally, the pitch material of Flute 1 and Oboe 1 deviates from the hexatonic mode, specifically the notes A4 and D5. These pitches can be interpreted as part of a new hybrid octatonic mode [C, D, Eb, Fb, G, Ab, A, B], which includes a hexachordal subset [Ab, A, B, C, D, Eb] from Octatonic mode OCT (0,2). 7 out of the 8 notes of this octatonic mode are included in the harp *glissando* (m.10–11).

As the secretary's fingernail color turns red (m.11), violin 1 is playing a rising and falling 8<sup>th</sup>-note pizzicato gesture in the Hex (0,3) mode, while violin 2 is doubling this texture with pitches that derive from the same hybrid octatonic mode as m.10 (flute, oboe, harp). Viola 1 and 2 play

arco tremolo 8<sup>th</sup> notes that descend chromatically in major thirds, while in the bass the bassoon, cello, and contrabass sustain a C major chord. The rest of this waiting room scene continues in the same vein, by overlaying *Theme 2* in the violins over pointillistic major third dyads stemming from the hexatonic Hex (0,3) mode and played by the flute, clarinet, and synth 1 and 2.

The musical score is divided into two sections: "Cut to Fingernails" and "Color Changes".

- Cut to Fingernails:**
  - Flutes a2, Oboes 1:** Play an **Octatonic OCT (0,2)** mode, indicated by blue shaded boxes. The notes are G4, A4, Bb4, C5, D5, Eb5, F5, G5.
  - Flutes a2, Oboes 1:** Play a **Hexatonic Hex (0,3)** mode, indicated by purple shaded boxes. The notes are G4, Bb4, D5, F5, Ab5, C6.
  - Harp:** Plays a **Combination of Hex and Oct** mode, indicated by a green shaded box. The notes are G4, Bb4, D5, F5, Ab5, C6, G5, F5, D5, Bb4, G4.
  - Oboes 2, 3, Clarinets a2:** Play a **Hexatonic Hex (0,3)** mode, indicated by a pink shaded box. The notes are G4, Bb4, D5, F5, Ab5, C6.
  - Violins, Violas:** Play a **Hexatonic Hex (0,3)** mode, indicated by a pink shaded box. The notes are G4, Bb4, D5, F5, Ab5, C6.
- Color Changes:**
  - Violins 1, 2 pizz.:** Play a **Hexatonic Hex (0,3)** mode, indicated by a pink shaded box. The notes are G4, Bb4, D5, F5, Ab5, C6.
  - Violas:** Play **Chromatic major 3rds**, indicated by an orange shaded box. The notes are G4, Bb4, D5, F5, Ab5, C6, G5, Bb5, D6, F6, Ab6, C7.
  - Cellos, Contrabasses:** Sustain a C major chord (C4, E4, G4).

Figure 3-9: *Total Recall* – *Lento e misterioso*, 1M4–2M1/ m.10–11.

During a conversation with the *Recall* salesman, Quaid is initially skeptical, but is eventually persuaded to undergo the operation, because he can fulfill his fantasy of being an undercover agent who meets a beautiful ‘exotic’ woman. The following quote from the salesman is a perfect summary of the movie’s overarching plot, as well as its recurring ‘macho’ cliches:

*“I do not wanna spoil it for you Doug, but you rest assured, by the time this trip is over you get the girl, kill the bad guys, and save the entire planet!”*

This phrase reflects Quaid’s story arc, who is indeed a secret agent who eventually meets an ‘exotic’ woman, Melina, and saves the world from Cohaagen and his evil entourage. Therefore, this phrase acts as a clever *mise en abyme*.

Goldsmith scores over the dialogue between Quaid and the *Recall* salesman with a light ensemble of flutes, vibraphone, synthesizers and strings con sordino (Figure 3-10). A repeating ostinato in synthesizer 3 (bouncy woodwind timbre from opening) outlines groups of four 16th notes [G#5, D#5, E5, B4] over a second inversion G# minor triad drone played by Violin 1 and 2, which suggests a G# minor tonic. An element of ambiguity and mystery is introduced with brief hexatonic *mezzopiano* tremolo chords in flute, vibraphone and synth 1 (reusing the quasi-woodwind timbre from the opening credits). These six-voice polychords stem from Hexatonic collection Hex (0,3) and combine E major/G# major triads, and E minor/G# minor triads. The cello and contrabass briefly interject with sustained dyads in the lower register, [G#1, D#2]. Fragments of *Theme 2* are echoed in synth 1 (clean brassy timbre) and clash with the G# minor ostinato (synth) and pedal chords (strings), because the theme is in G# Dorian and creates diminished octave dissonances (m.2–3/ blue circles [E#4/E5]).

Cut to Quaid: "Secret Agent, How Much Is That?"

Violin 1, 2 *pp* **G# minor ostinato**

Synth Winds *p*

Synth Flute **Brassy Synth**

Flutes *mp* **Hexatonic Hex (0,3)**

**Theme 2 G# Dorian**

cello, contrabass

3

Violin 1, 2

Synth Winds

Synth Flute **Synth Flute, Vibra**

Flutes **Hexatonic Hex (0,3)**

Figure 3-10: *Total Recall* – *Recall* salesman scene, 2M5/ m.1–5.

### 3.2.4 Americana Music and Quaid’s Identity Conflict

The next music cue takes place in the operating room, where Quaid is being sedated by the doctors. As he closes his eyes, Goldsmith recycles the descending major thirds from the *Lento e misterioso* section, transposed to the Hexatonic Hex (3,6) mode and played by synth woodwinds

and piano.<sup>112</sup> After losing consciousness, Quaid has a ‘schizoid embolism’, which causes his ‘real’ self, Hauser, to emerge. He suddenly grabs the nurse by the throat and screams “You blew my cover!” This is the first scene that introduces the audience to Quaid’s identity conflict and the theme of ‘reality vs illusion’. Goldsmith scores this as a fast action cue in 5/8, where most of the melodic and harmonic material stem from quartal cells and the octatonic mode OCT (0,2). The composer repurposes musical ideas that were initially associated with heroism and ambiguity in a frenzied Americana style that represents the ferocity of Hauser. By the time Goldsmith composed the *Total Recall* soundtrack, he was already well-known for writing themes inspired by American folk music in movies like *Star Trek: The Motion Picture* (1979), and *Star Trek V: The Final Frontier* (1989).

When Schwarzenegger grabs the nurse’s throat, musical momentum comes to a brief halt with strings holding a 3-note cluster [D5, E5, F5], deriving from the three first notes of *Theme 2*.<sup>113</sup> Over this cluster, the horns (unison à 6) and cellos are playing a melody comprised of the same three notes transposed a half-step up, [Eb4, F4, Gb4], where the last note is sustained, creating a tetrachord [Gb4, D5, E5, F5]. The latter harmonic cell is in a different octatonic mode than the rest of the music cue: OCT (1,2).

Just as the camera cuts to the sedative syringe, action resumes with orchestral *tutti* and a return to octatonic mode OCT (0,2) (See Figure 3-11). The woodwinds, horns, harp, and strings play a 5-note melodic motif [Eb6, F6, Eb6, Ab6, F6] that exhibits C minor pentatonic and Americana characteristics. The bassline consists of repeating (014) trichord cells, [A3, F#3, F3],

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<sup>112</sup> Goldsmith, *Jerry Goldsmith: Total Recall*. 2M6/ m.14.

<sup>113</sup> *Ibid*, 2M6/ m.64.

and octatonic 5-note cells [A3, F#3, G#3, A3, F#3]. An additional layer of *sforzando* chordal ‘stabs’ is played by the trumpets and piano, which are based on stacked perfect fourth and augmented fourth intervals, i.e.: [A4, D#5, G#5].

The image shows a musical score for the 'schizoid embolism' scene from *Total Recall*. The score is in 5/8 time and features two staves: a treble clef staff for Woodwinds, Horns, and Harp, and a bass clef staff for cellos, contrabasses, bassoon, and contrabassoon. The music is primarily based on the C minor pentatonic scale (C, D, E♭, F, G) and an octatonic scale (0,2). The score is divided into sections: a pink-shaded section labeled 'C minor pentatonic, OCT (0,2)' for cellos, contrabasses, bassoon, and contrabassoon; a green-shaded section labeled 'Quartal' for Woodwinds, Horns, and Harp; a section labeled 'Multiple Injections' for Trumpets and Horns; and another pink-shaded section labeled 'OCT (0,2)' for the same instruments as the first pink section. The bass staff has labels '(014), OCT (0,2)' and 'OCT (0,2)' at the beginning and end of the piece respectively.

Figure 3-11: *Total Recall* – ‘schizoid embolism’ scene, 2M6/ m.73–76.

### 3.2.5 Red Pill Scene and ‘Reality vs Illusion’

Perhaps the most influential scene in *Total Recall* is when Quaid meets Dr. Edgemar, a corrupt doctor working with Coahaagen, and is offered to swallow a little red pill to return to ‘reality’. Dr. Edgemar, played by Roy Brocksmith, attempts to trick Quaid into believing this is all a dream and to suppress his personality, so that the hidden identity of Hauser can resurface. The red pill and its symbolic representation of ‘reality vs simulation’ was later to be used in *The Matrix*, in the famous scene where Morpheus offers Neo a red and blue pill. For a comparison of compositional devices in pill scenes from *Total Recall* and *The Matrix*, see Chapter 4.3.6.



The way Goldsmith scores this crucial interaction between the protagonist and minor antagonist is very methodical and directly reflects Quaid's complex emotions and internal conflict. He treats the central theme of 'reality vs illusion' as an exponential progression of harmonic density in four musical phases. Each 'phase', or musical section, represents different psychological states with subtle non-sentimental gestures and distinct compositional techniques. *Phases 1* and *2* reflect Quaid's confusion about what is real and contain techniques that have already been established thematically as ambiguous, such as (0257) tetrachords, octatonicism, and chromatic mediant progressions. In *Phase 3* and *4*, Quaid's confusion turns into disbelief, and finally rage, escalating into his shooting the doctor. This emotional arc is musically portrayed as a gradual saturation of pitch content starting with a major second dyad, then a chromatic pentachord, and finally leading to 9-note and 8-note clusters that are built from interval classes 1 and 6.

*Phase 1* of this interaction (Figure 3-12) starts when Quaid enters Dr. Edgemar's office, threatening him at gunpoint.<sup>114</sup> The starting tempo is slow, 60 bpm on the quarter note, and *molto tenuto*. A completely new sampled sound is introduced, imitating the timbre of an ocarina with reverb that is unique in having each note bend up at release. Goldsmith scores this very lightly to avoid interfering with the dialogue. Each melodic note played by the ocarina sample is intentionally placed between Schwarzenegger's breaths. The ocarina synth develops the *Theme 1* tetrachord (0257) cell in D with two added notes in the tail end that outline an ascending perfect fourth: [D5, G5, A5, C6, Bb5, Eb6]. In the next entrance of this phrase, the tail end portion is changed to a descending fourth: [D5, G5, A5, C6, B5, F#5, C5]. Violins *con sordino* sustain a

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<sup>114</sup> Paul Verhoeven, *Total Recall* (USA: TriStar Pictures, 1990).

pyramid (013) trichord cluster, where each note is played with staggered entrances [D5, C5, Eb5]. The harmony and melody suggest C Dorian as a center.

Figure 3-12: *Total Recall* – pill scene Phase 1a, 7M4/ m.1–8.

In the next cut, the door opens and Quaid’s imposter wife Lori (Sharon Stone) walks in. In a subtle underscore, fragments of *Theme 2* return in G Dorian, played by a synth horn solo that is accompanied by string choral and a return of the ‘bouncy woodwind’ synth ostinato from the opening.+ Also, the ocarina melody continues playing *Theme 1* (0257) tetrachord throughout the beginning of this cue, transposed to different pitch centers, such as B: [B4, E5, F#5, A5].

As the camera cuts to Lori’s reaction, the cellos bring back the tetrachord cell (0257) from *Theme 1* transposed in E, [E2, A2, B2, D3], and F#, [F#2, B2, C#4, E4]. Dr. Edgemar attempts to confuse and flatter the protagonist:

*Dr. Edgemar: “Stop punishing yourself, Doug, you are a fine upstanding man, you have a beautiful wife that loves you, your whole life is ahead of you. But you’ve got to want to return to reality!”*

*Quaid: “Suppose I do. . . then what?”*

In the soundtrack, the ocarina sample brings back the (0257) tetrachord melodic cell transposed in D [D4, G4, A4, C5] over a sustained Bb minor<sup>maj7</sup> chord played by violins 1 and 2 with *divisi* and *senza vibrato* (Figure 3-13). The otherworldly timbre of the ocarina combined with a mystifying bitonal harmony (Bb minor and D sus/minor) evoke a sense of hesitation that highlights Quaid’s visible curiosity.

Ocarina Synth **Theme 1 (0257), D<sup>7(sus4)</sup>** Dr. Begins Dial

**Bb minor<sup>maj7</sup>**

Violins 1, 2  
*senza vibr, div*

Figure 3-13: *Total Recall* – pill scene Phase 1b, 7M4/ m.38–40.

*Phase 2* (Figure 3-14) of the musical cue starts in the next cut, where the doctor takes out a pill from his pocket and tries to trick Quaid:

*Dr. Edgemar: “Swallow this”*

*Quaid: “What is it?”*

*Dr. Edgemar: “It is a symbol of your return to reality. Inside your dream you’ll fall asleep”*

Slow repeating phrases in 3/4 exude a sense of mystery and fatigue. The form consists of a four-bar phrase (Figure 3-14, *Phrase a*) that is transposed three times: first a major second down, then a major third up, and finally a minor third up. *Phrase a* begins with a descending fourth melody in the lower register of the flutes [A4, E4] that is harmonized by clarinets with an F# min<sup>b11</sup> followed by an A minor chord. This is always followed by a major third dyad [C2, E2] played as a soft 8<sup>th</sup>-note tenuto by bassoon, contrabassoon, trombone, bass trombone, tuba, timpani, and gran casa. The first measure of *Phrase a* is repeated three times and ends with stopped horns playing a C minor triad. In the opening *Largamente* section, Goldsmith used similar mediant progressions with minor chords that descend by minor thirds, whereas here the harmony moves in ascending minor thirds: F# min<sup>add#2</sup> to A minor to C minor. The pitch material throughout these 16 measures covers all three possible octatonic modes: the first 4-bar phrase is in OCT (0,1), the second is in OCT (1,2) and the two last ones are in OCT (0,2). Each transposition increases in dynamic level and expressivity, as Quaid puts a gun to Dr. Edgemar's head. He tries to talk his way out of this situation by warning the protagonist to 'wake up' back on Earth, or else he will be lobotomized. The harmonic skeleton of this section can be summarized as follows:

- 1) F# min<sup>add#2</sup>, A min, C min: OCT (0, 1)
- 2) E min<sup>add#2</sup>, G min, Bb min: OCT (1, 2). Bass dyad [C2, E2] is not transposed.
- 3) Ab min<sup>add#2</sup>, B min, D min: OCT (0, 2)
- 4) B min<sup>add#2</sup>, D min, F min: OCT (0, 2)

"Swallow this"

**phrase a, OCT (0,1)** **Transp. -M2, OCT (1,2)**

Fl, Cl Hn

x3 + x3 +

Bn, Cbn, Tbn, Btbn, Tba, Timp, G.C.

**F#min<sup>add#2</sup> A min C min Emin<sup>add#2</sup> G min Bb min**

**Transp. +M3, OCT (0,2)** **Transp. +m3, OCT (0,2)**

5 x3 + x3 +

**Abmin<sup>add#2</sup> B min D min Bmin<sup>add#2</sup> D min F min**

Figure 3-14: *Total Recall* – pill scene, Phase 2: octatonic sequences, 7M4/ m.45–60.

In the following cut, Quaid takes the pill and Dr. Edgemar tells him to swallow it. Here, the dialogue stops, and the camera focuses on the doctor’s accumulating sweat. He is trying to keep it together, while Quaid slowly realizes this is a trap. This tension build-up is reflected in the music with chromatic pitch saturation and sparse heartbeat rhythms that become gradually more regular. *Phase 3* is in double tempo, marked “with increasing tension.” There is a return of the ocarina sample bringing back the (0257) tetrachord cell from *Theme 1* transposed in G [G4, C5, D5, F5]. Because the melody is in 8<sup>th</sup> notes and a faster tempo, the ocarina doesn’t bend upwards on every note release like before, but only at the end of phrases. After this theme is played, a synthesized

metallic effect that uses a stereo slap-back echo plays a brief rhythmic heartbeat motif in 16<sup>th</sup>-note triplets. Violas and cellos sustain a major second dyad, [F3, G3], with touch fourth harmonics that are doubled by synthesized strings with subtle modulation.

A few measures later, violins join the sustained harmony with double octaves [F#4, F#6] that form a chromatic (012) 3–1 trichord. After this material is repeated once, a new texture is added in the flutes (with a breathy articulation), vibraphone, and harp. Groups of three 16<sup>th</sup> notes outline F# with a descending octave leap [F#6, F#5, F#5]. At first, they are repeated sparsely and as the scene goes on they become more regular, restarting every half note. The combination of this gesture with the metallic echo under it gives the impression of an accelerating heartbeat. While these sharp melodic bursts occur, oboes enter with [F5, G5] in unpredictable rhythmic groupings of 8<sup>th</sup> notes, and the sustained string choral outlines a (0124) 4–2 tetrachord, [F, G, G#, A], that is voiced in a wide open spacing.

Throughout *Phase 3*, Goldsmith enhances the psychological tension between Quaid and Dr. Edgemar, by transforming the pitch material from diatonic to chromatic. The spatial notation figure below condenses the pitch material of a long section to show gradual chromatic saturation: (0257) → (01257) → (0123) → (01234) Figure 3-15 → (012345678) Figure 3-16.

The image shows a musical score for the pill scene in Phase 3 of *Total Recall*. It is divided into two systems. The first system features three staves: Synth Winds, Synth Strings, and Viola/Cello. The Synth Winds staff has a melodic line with a box labeled "Pill in mouth" and the timecode "(0257)". The Synth Strings and Viola/Cello staves have sustained chords with a box labeled "touch 4 harm". Below the Viola/Cello staff, there is a section labeled "metallic synth, heartbeat" with a rhythmic pattern. The second system features a grand piano with four staves. It has two boxes labeled "(0123)" and "(01234)". A green bracket above the piano staff is labeled "Rhythmic activity increases". The score includes various musical notations such as notes, rests, and dynamic markings.

Figure 3-15: *Total Recall* – pill scene, Phase 3: chromatic saturation, 7M5–8M1/ m.1–13.

In the next cut, Quaid shoots Dr. Edgemar in the head as the music reaches its climax. *Phase 4* continues the process of pitch saturation with a chromatic 9-note chord that is spaced out over 5 octaves (Figure 3-16). Here, Goldsmith uses ‘pyramid chords’, a technique of stacking multiple sustained pitches to form a tone cluster.<sup>115</sup> As soon as the gunshot is heard, a pyramid chord unfolds with staggered instrumental entrances from the bottom-up: contrabasses/celli/tubas/bass trombones/horns 4–6/bassoons/timpani/gran cassa/tam-tam,

<sup>115</sup> Rodier, Timothy, editor. *Don Davis "The Matrix" Full Orchestral Score*. Omni Music Publishing, 2014. pg. iii.

trombones, horns 1-3/trumpets, violins/violas/oboes/harp, and finally piccolo/flutes/glockenspiel. All instrument entrances except violins, harp, and upper woodwinds, are marked “violently!” After the gunshot, a second pyramid chord is played by strings, bassoons, and synthesizer. It starts with a (0257) tetrachord in C, [C2, F2, G2, Bb2], played by cellos and contrabasses, and leads to 32<sup>nd</sup>-note tremolos in violins and violas. The pitch and intervallic content of these two chords can be summarized as follows:

- 1) (012345678) 9–1, [C, F#, C#, B, A#, F, E, D#, D]. Interval classes (in descending order of regularity): 1, 6, 5, 2.
- 2) (01235689) 8–18, [Eb, D, F#, C, F, Ab, B, G]. Interval classes (in descending order of regularity): 1, 6, 4, 5, 3.

When comparing these two dense chords, an intervallic relationship emerges, where interval classes 1 and 6 seem to have a primary role in the structure of these sonorities.

The figure displays two systems of musical notation. The top system, labeled 'Gunshot', shows a melodic line in the treble clef and a bass line in the bass clef. A vertical orange bar highlights a specific chord. Above the staff, green brackets and lines indicate interval classes: a '6' bracket spans the first two notes, and '1' brackets span subsequent pairs of notes. The label '(012345678) 9-1' is written in red above the staff. The bottom system, starting at measure 5, shows a similar structure. A pink box highlights a tetrachord labeled '(0257)'. A vertical orange bar highlights another chord. Green brackets and lines indicate interval classes: '1' brackets span pairs of notes, and '6' brackets span larger intervals. The label '(01235689) 8-18' is written in red above the staff.

Figure 3-16: *Total Recall* – pill scene, Phase 4: interval class pyramid chords, 7M5–8M1/ m.14.



### 3.3 Conclusion

*Total Recall* is a film with unusually complex storytelling that utilizes part-to-whole similarity *mise en abyme* as an expression of Quaid's identity conflict. As opposed to *The Truman Show*, there is no clear distinction of diegetic layers, as the *mise en abyme* is character-centered (Quaid-within-Hauser) and visually presented as unreliable linear narration. Jerry Goldsmith was tasked by Verhoeven to musically represent the central conflict of 'reality vs illusion' as ambiguity, because it is never resolved in the film. In order to achieve that, Goldsmith uses a combination of hexatonic and octatonic modes, quartal harmonies, and otherworldly processed samples (bouncy woodwinds, ocarina) to evoke tonal and atmospheric ambiguity. Furthermore, chromatic mediant chord progressions are used to create an overall ambiance of mystery. Goldsmith demonstrates great flexibility in underscoring with subtle chamber orchestration, as well as scoring action scenes with his well-known powerful symphonic style. In a way, this film score combines all of his musical elements in one: americana, atonality/chromaticism, lyricism, ethnic instrumentation, heavy percussion sections, and synthetic timbres.<sup>116</sup> It is no surprise that Goldsmith considered *Total Recall* as one of his best soundtracks: "*Total Recall* was some of the best music I've written for a film. I was really impressed with myself, even though I rarely listen to what I've finished. I'd written enough notes in that score for a Bruckner symphony!"<sup>117</sup>

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<sup>116</sup> Perhaps the only characteristic Goldsmith style that is omitted in this score is jazz, which he embraced in movies like *Chinatown* (1974), *Under Fire* (1983), and *L.A. Confidential* (1997).

<sup>117</sup> Daniel Schweiger Luc Van de Ven, "Jerry Goldsmith on Scoring Basic Instinct," Soundtrack: The CinemaScore & Soundtrack Archives, 2013, <https://cnmsarchive.wordpress.com/2013/06/25/jerry-goldsmith-on-scoring-basic-instinct/comment-page-1/>.

## 4. *The Matrix* (1999)

### 4.1 Reality as Shared Delusion

In the late '90s there is a sudden boom in film productions that center on simulated reality and mass surveillance. Movies like *Dark City* (1998), *The Truman Show* (1999), *eXistenZ* (1999), *The Matrix* (1999) and *The Thirteenth Floor* (1999) depict a duality of worlds: the hyperreal and the real.

In *The Matrix*, the real world is set in a post-apocalyptic future dominated by arthropod machines that have enslaved humanity to farm humans for the electrical energy produced by their brains.<sup>118</sup> The hyperreal world, or matrix, is a virtual reality created by A.I. to simulate everyday life as humans knew it before *The Matrix*, whereas in reality they live in pods functioning as “breathing batteries.”<sup>119</sup> Once humans inside *The Matrix* become aware of their reality as a shared delusion, they are able to jump in and out of the simulation. Neo, the protagonist, is a genius hacker turned into a Promethean savior, who is destined to start a revolution and free humanity from its machine oppressors. Similarly, Truman Burbank, from Peter Wier’s *The Truman Show* (1998), is the clueless protagonist of a reality TV show who realizes his entire life has been staged and tries to escape from it by literally punching a hole through the fabric of his artificial world. A more unorthodox version of the ‘reality vs simulation’ duality is Cronenberg’s *eXistenZ* (1999), where videogame designer and cyberspace guru, Allegra Geller, creates a biotechnological VR gaming console. After being nearly killed by fanatics who wanted to destroy her game, *eXistenZ*, Geller

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<sup>118</sup> Vincent Mosco, *The Digital Sublime: Myth, Power, and Cyberspace* (Cambridge, London: The MIT Press, 2004).

<sup>119</sup> *Ibid*, 48.

embarks on bizarre adventures inside the simulation and ends up destabilizing her own sense of reality and self.

Keanu Reeves, in the documentary *The Matrix Revisited*,<sup>120</sup> mentions how the Wachowskis asked him to read *Simulation and Simulacra* (1985) by Jean Baudrillard, *Out of Control* (1994) by Kevin Kelly, as well as *Evolutionary Psychology* (1999) by Dylan Evans. This ‘light’ reading was required of him in order to adapt to his role as Neo. *Simulation and Simulacra* is Jean Baudrillard’s critique of postmodern society and late capitalism. In a nutshell, the mass production and commodification of products inevitably led to a loss of authenticity, because copies threaten to replace real prototypes.<sup>121</sup> At some point, modern media became so saturated with imagistic copies of reality, that we see a new type of representation emerging: the *simulacrum*, a model depicting something of “no origin or reality: a hyperreal.”<sup>122</sup> Baudrillard has a pessimistic outlook of the future and warns about the dangers of consumerism, which can cause a homogenization of culture that deprives individuals from cultivating individuality and self-determination<sup>123</sup> and will reduce all traces of contaminative otherness.<sup>124</sup> Once a powerful global hyperreality is formed, humanity cannot go back. When the real is “no longer what it used to be, nostalgia assumes its full meaning.”<sup>125</sup> Baudrillard also predicts that society will react to this predicament through a

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<sup>120</sup> Josh Oreck, *The Matrix Revisited* (USA, 2001).

<sup>121</sup> Paul Hagerty, *Jean Baudrillard: Live Theory* (London: Continuum, 2004).49–68.

<sup>122</sup> Jean Baudrillard, “Simulacra and Simulations,” ed. and Philip Beitchman Paul Foss, Paul Patton, Semiotext[ (Los Angeles, 1983).

<sup>123</sup> Douglas Kellner, “Jean Baudrillard,” Stanford Encyclopedia of Philosophy, 2019, <https://plato.stanford.edu/entries/ baudrillard/>.

<sup>124</sup> Dean Lockwood, “Teratology of the Spectacle.” in Geoff King, ed., *The Spectacle of the Real: From Hollywood to Reality TV and Beyond* (Bristol, Portland: Intellect, 2005).

<sup>125</sup> Baudrillard, “Simulacra and Simulations.” 12-13.

“proliferation of myths of origin and signs of reality; of second-hand truth, objectivity and authenticity. There is an escalation of the true, of the lived experience [...] and there is a panic-stricken production of the real and the referential.”<sup>126</sup>

Baudrillard’s idea of a post-spectacle mythos<sup>127</sup> is reflected in Wachowskis’ *The Matrix*, where characters’ names originate from mythology and religious scripture. Morpheus, portrayed by Laurence Fishburne, is a prophetic figure that helps Neo ‘wake up’ and join forces with the Resistance. His name is a reference to the ancient Greek god of sleep and dreams. Persephone’s character, played by Monica Bellucci, is married to Merovingian, an unfaithful man driven solely by lust who is also the owner of Club Hel. Persephone’s character is a direct reference to the Greek goddess of vegetation, who was married to Hades, God of the underworld. In another scene from *The Matrix*, Neo meets a cheerful chain-smoking lady sitting on a three-legged stool named ‘The Oracle’. She appears to have psychic powers and prophesizes the coming of a messianic figure, ‘The One’, who will save humans and destroy *The Matrix*. This is a clear hint at Pythia, the ancient Greek high priestess of the Oracle of Delphi, who was commonly depicted as sitting in a three-pronged throne chewing and inhaling the fumes of a hallucinogenic oleander plant.<sup>128</sup> Other character names in *The Matrix* draw inspiration from a combination of Christianity (‘Trinity’), Judaism (‘Zion’), Hinduism (‘Sati’), and ancient Egyptian polytheism (‘Osiris’).

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<sup>126</sup> Ibid.

<sup>127</sup> Guy Debord’s theory of the spectacle is talked about in Chapter 2.1.

<sup>128</sup> Haralampos V Harissis, “A Bittersweet Story: The True Nature of the Laurel of the Oracle of Delphi.,” *Perspectives in Biology and Medicine* 57, no. 3 (2014): 351–60, <https://doi.org/10.1353/pbm.2014.0032>.



Figure 4-1: Left, vase of the Oracle of Delphi, 440–430 BC.<sup>129</sup> Right, oracle from *The Matrix*.<sup>130</sup>

The concept of *The Matrix* reproduces tropes from earlier literature, like works by William Gibson’s novel *Neuromancer* (1984). Director Vincenzo Natali (Cube [1997], Splice [2009]), who was rumored to direct a film adaptation of the book in 2013,<sup>131</sup> has pointed out striking similarities between *The Matrix* and *Neuromancer*. “One of the obstacles in the selling of this movie to the industry at large is that everyone says, “Oh, well, *The Matrix* did it already.” Because *The Matrix* – the very word ‘matrix’ – is taken from *Neuromancer*, they stole that word, I cannot use it in our

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<sup>129</sup> Painter, Kodros. “Oracle of Delphi: King Aigeus in front of the Pythia,” 440–430 BC, Attic vase, British Museum, London. Accessed December 27, 2023. [https://en.m.wikipedia.org/wiki/File:Oracle\\_of\\_Delphi,\\_red-figure\\_kylix,\\_440-430\\_BC,\\_Kodros\\_Painter,\\_Berlin\\_F\\_2538,\\_141668.jpg](https://en.m.wikipedia.org/wiki/File:Oracle_of_Delphi,_red-figure_kylix,_440-430_BC,_Kodros_Painter,_Berlin_F_2538,_141668.jpg).

<sup>130</sup> This image is a screenshot from a copyrighted film and is not in the public domain. It is believed that the use of a limited number of low-resolution screenshots for critical commentary and discussion of the film and its contents qualifies as fair use. Source: Steven King, *The Oracle*, 2008, [https://en.wikipedia.org/wiki/File:The\\_Oracle\\_\(i\).gif](https://en.wikipedia.org/wiki/File:The_Oracle_(i).gif).

<sup>131</sup> He announced the completion of the script in 2013, but then, in 2015, dropped out from directing it. Willaim Hughes, “Vincenzo Natali Has Dropped out of Directing *Neuromancer*,” AV Club, 2015, <https://www.avclub.com/vincenzo-natali-has-dropped-out-of-directing-neuromance-1798279918>.

movie. And there are a number of other similarities. But [...] I like that movie.”<sup>132</sup> It is odd that the Wachowski sisters have never credited this book as an influence. Despite this, Gibson never begrudged them and has pointed out that he also drew inspiration from earlier authors, like Philip K. Dick.<sup>133</sup> The sci-fi novel *Neuromancer* introduces pop culture to the idea of ‘cyberspace’ and ‘*The Matrix*’<sup>134</sup> for the first time. Gibson’s matrix is like Baudrillard’s hyperreal, realized through the lens of science fiction. He envisions it as a 3D telematic electronic infrastructure that is a graphic representation of “data abstracted from the banks of every computer in the human system”,<sup>135</sup> which is very similar to Wachowskis’ version of cyberspace as a virtual world of electronic data and neural networks.<sup>136</sup> Gibson’s writing style in the *Sprawn* trilogy (1984 – 1988) was the beginning of a new trend, where “the concerns of postwar science fiction and contemporary media theory have gradually merged to the point that the two discourses are increasingly indistinguishable.”<sup>137</sup> This is certainly true when we compare depictions of simulated reality in *The Matrix* to *Total Recall*. The process of experiencing implanted memories in *Total Recall* is always ambiguous and hidden, whereas in *The Matrix*, the void becomes visible as lines of green code on a computer screen.

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<sup>132</sup> Ibid.

<sup>133</sup> Gibson, William (@GreatDismal), “Before I start getting questions re The Matrix’s similarities to Neuromancer, let me point out that Neuromancer borrows eagerly and eclectically from lots of previous works.” Twitter, August, 21, 2019, 11:18 AM. <https://twitter.com/GreatDismal/status/1164240403270270976>.

<sup>134</sup> These terms are used interchangeably in Gibson’s book.

<sup>135</sup> William Gibson, *Neuromancer* (New York: Ace Science Fiction Books, 1984).

<sup>136</sup> Jeffrey Sconce, *Haunted Media: Electronic Presence from Telegraphy to Television* (Durham and London: Duke University Press, 2000).

<sup>137</sup> Scott Bukatman, *Terminal Identity: The Virtual Subject in Post-Modem Science-Fiction* (Durham: Duke University Press, 1993).

Regardless of how plausible *The Matrix* was, the Wachowski sisters were concerned with incorporating contemporary simulation theory and evolutionary psychology in their script, whereas Verhoeven had a more superficial approach in his depiction of futuristic technology. In a 1990 review of *Total Recall* on the *Chicago Sun-Times*, film critic Roger Ebert points out how the concept of using a nuclear reactor in *Total Recall* as a device that is capable of cleaning the atmosphere to “bring about blue skies” is misleading and unscientific.<sup>138</sup>

A trope that is present in both *The Matrix* and *Total Recall* is the masculine hero (Neo and Quaid); a messianic character who fights for justice and saves the world. Stuart Klawans, in a 1999 article in the *New York Times*, compares Neo to Schwarzenegger: “he is The One, someone born to flex his brain like Schwarzeneggerian biceps, making the walls bulge with his bulky intellection”.<sup>139</sup> In the same article, he identifies an interesting juxtaposition between *The Matrix* and *Wizard of Oz* (1939). In the film adaptation of Baum’s homonymous novel, the central character, Dorothy, is an orphan girl living with her aunt and uncle in a desolate Kansas farm. After being swept away by a tornado she finds herself in the *Land of Oz*, a fantastical region ruled by Oz, a humbug wizard monarch. Dorothy embarks on a long journey to finally realize that ‘there is no place like home’ and uses her magical ruby slippers to wake up from her dream. Stuart Klawans points out how Dorothy and Alice, from Lewis Carroll’s novel *Alice in Wonderland*, feel alienated in their magical realities and are longing for home.<sup>140</sup> However in *The Matrix*, Neo doesn’t have the desire to escape from the simulation, but embraces and dominates it. Klawans

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<sup>138</sup> Ebert, “Total Recall Review.”

<sup>139</sup> Stuart Klawans, “FILM; That Void in Cyberspace Looks a Lot Like Kansas,” *The New York Times*, 1999, <https://www.nytimes.com/1999/06/20/movies/film-that-void-in-cyberspace-looks-a-lot-like-kansas.html>.

<sup>140</sup> *Ibid.*

also draws a parallel between Neo's character, a computer programmer and cybercriminal, and the rising idolization of online tech entrepreneurs who become wealthy overnight.

#### **4.2 Synergy Between Composer and Director**

Donald Romain Davis (1957) is an Emmy winning composer, born in Anaheim, California. He started playing trumpet and piano at the age of nine and started composing at the age of twelve. As his passion for music grew, he moved to Los Angeles to obtain a Bachelor of Arts degree in Music Theory at UCLA. During his studies, he performed as a trumpet player in orchestras and jazz ensembles. While originally his musical inclination was towards jazz and rock, during his studies at UCLA he became increasingly fascinated with the avant-garde.<sup>141</sup> He studied orchestration with Albert Harris and composition with Henri Lazarof.<sup>142</sup> As a film composer, he has scored over 90 films and achieved international acclaim with his influential soundtracks for *The Matrix* trilogy. Before that, he was well-known in the film industry as a conductor, orchestrator, and the composer of movies and TV shows, such as *Star Trek: The Next Generation* (1993), *Tiny Toon Adventures* (1992), and *Bound* (1996). As an orchestrator, he is credited in over 81 movies and has collaborated with Hollywood composers Randy Newman, Alan Silvestri, Michael Kamen, James Horner, and others. He is also a prolific concert composer of solo, chamber, and orchestral works. In 2010, he completed *Rio de Sangre*, an opera in three acts with a Spanish libretto by Kale Gale (original English prose) and Alicia Partnoy (translator).<sup>143</sup> His versatility as

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<sup>141</sup> Don Davis, "Don Davis: Biography," 2023, <http://www.dondavis.net/biography/>.

<sup>142</sup> Ibid.

<sup>143</sup> Joshua Rosenblum, "DAVIS: Río de Sangre," *Opera News*, July 2012.



a musician allowed him to incorporate modern compositional techniques, film music idioms, and electronics.

Before *The Matrix*, Davis collaborated with the Wachowskis in their neo-noir film *Bound* (1996). In this film, Davis developed rhythmic and percussive techniques that carried on in his later work, specifically the ‘pile driver’. During the filming of *Bound*, the Wachowkis were fascinated with the sound of a manipulated pile driver sample in Davis’ soundtrack. For *The Matrix*, they requested him to include it along with other ‘rhythmic slams’ in his score.<sup>144</sup>

Don Davis won three *BMI Film Music Awards* for his soundtracks in *The Matrix*, *The Matrix Reloaded* (2003), and *The Matrix Revolutions* (2003). His hybrid compositional approach in *The Matrix* score pushed the boundaries of traditional scoring by using extended techniques, unusual rhythms and percussion, aleatory, twelve-tone technique, and bitonality. The instrumentation includes unconventional percussion instruments, like the transceleste, a microtonal mallet metallophone instrument made up of hollow brass tubes, or the aluminophone, a bizarre conveyor belt instrument that drops off pitched aluminum bars on an angled piece of granite. Another atypical instrument used in the soundtrack is a Styrofoam cup bowed with a bass bow.<sup>145</sup>

In an interview for the *Hollywood Reporter*, he talks about how the Wachowskis were fond of a score with a minimalist and postmodern approach.<sup>146</sup> In other interviews, Davis makes a clear

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<sup>144</sup> Marc Ciafardini, “‘The Matrix’ Composer Reveals Secrets From His Score, 20 Years Later,” *The Hollywood Reporter*, 2019, <https://www.hollywoodreporter.com/movies/movie-news/matrix-composer-reveals-one-scene-was-cut-1198353/>.

<sup>145</sup> Don Davis, “Don Davis: The Matrix,” ed. Tim Rodier (Los Angeles: Omni Press Publishing, 2014).

<sup>146</sup> *Ibid.*

distinction between minimal techniques in his music and the minimalism of Steve Reich and Philip Glass.<sup>147</sup> He describes his music in *The Matrix* as postmodern, similar to the style of American contemporary composers like John Adams, David Lang, and Michael Torke.<sup>148</sup> Don Davis' also mentions how the Wachowskis were very adamant about music highlighting actions on screen, e.g.: in the lobby shootout scene, a pile driver sample had to be synced with Neo's footsteps as he passes through a metal detector.<sup>149</sup>

### 4.3 Music Analysis

**3.1** In his score for *The Matrix*, Don Davis uses *leitmotifs* to differentiate between human and machine characters, and even *The Matrix* as a simulation program. The construction of these motifs is based on textural techniques, pitch sets, rhythmic numerical schemes, and, more rarely, melodies. His textural motifs consist of clusters, pyramid chords, polychord swells, and minimalist perpetual motion. Human characters are represented with heroic gestures and diatonic clusters, whereas machine characters, like Agent Smith and the Sentinels, are represented with chromatic clusters.<sup>150</sup>

Traditionally, *leitmotifs* are associated with melodic themes that represent characters on stage, particularly in relation to Wagner operas. Richard Wagner's *Ring* cycle is directly referenced by Davis in *Matrix Revolutions* (2003), with track titles like *Neodammerung* and *Kidfried*, which are puns for *Götterdämmerung* and *Siegfried*. Melodic *leitmotifs* have been widely used in film

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<sup>147</sup> Marc Ciafardin, "Interview...Composer Don Davis Shares Stories Plugging Into 'The Matrix,'" GoSeeTalk, 2021, <https://goseetalk.com/interview-don-davis-shares-stories-plugging-into-the-matrix/>.15:28 and 15:48.

<sup>148</sup> Ibid, 14:55.

<sup>149</sup> Ibid., 46:22- 46:32.

<sup>150</sup> Christopher James Heckman, "Taking the Red Pill: An Analysis of Don Davis' Score for The Matrix" (UCLA, 2018).

music since Max Steiner's *King Kong* (1933), Bernard Hermann's *Psycho* (1960),<sup>151</sup> and John Williams' *Star Wars* (1977), to name a few. In *The Matrix*, instead of melodic themes, Don Davis emphasizes characters with textural and harmonic *leitmotifs*, a compositional technique that goes back to Carl Maria von Weber.<sup>152</sup> Davis' musical representation of characters with dense textures, atonality, and polyrhythms conveys a mathematical, machine-like musical process. An example of such a mathematical musical process is Davis' *leitmotif* for *The Matrix* program.

#### 4.3.1 *Leitmotifs* Representing The Matrix

Whenever we see a computer screen with raining code, this is musically portrayed as a continuous stream of 16<sup>th</sup> notes or 8<sup>th</sup> notes, where each instrument varies between rhythmic groupings. Every time this motif appears it is very recognizable, because of its characteristic John Adams-esque minimalist texture. Davis refers to it as a “repetitive motivic layered device that I use quite a bit.”<sup>153</sup> This motif first appears in the opening credits, during the Village Roadshow Pictures logo and extends through the first scene of the movie, where we see a computer screen running a ‘trace program’ of green numerical code. We can hear Trinity and Cypher talking about Neo over the sound effects of a dial-up modem sound. Bass clarinets, bassoons, violas, and celli are alternating between groupings of 2, 3, 4, 5, and 6 16<sup>th</sup> notes (Figure 4-2) in the second octave tessitura. Each melodic cell outlines a partial ascending E minor scale that usually begins with the tonic (E), which acts as an anchor (green circles). The close proximity and uniformity of imitation creates the illusion of heterophony, as all voices are playing almost identical patterns with slight

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<sup>151</sup> Ibid, 18.

<sup>152</sup> In Weber's opera *Der Freischütz*, Samiel's *leitmotif* is a diminished seventh chord.

<sup>153</sup> Rayburn Wright Fred Karlin, *On the Track: A Guide to Contemporary Film Scoring* (London: Routledge, 2004). 323.

alterations. Sonically, the *leitmotif* has a distinct timbre throughout the movie; strings are usually marked *détaché* or *marcato* and woodwinds articulate each fragment *legato*. Sometimes woodwinds play repeated two-note fragments that are usually slurred together into larger groups of four or six, which are easier to perform at a fast tempo (quarter note = 132).

The image shows a musical score for the trace program leitmotif 1 from 'The Matrix', measures 8-9. The score is for a woodwind and string ensemble. The instruments listed are B.C. 2, B.C. 3, Bn. 1, Bn. 2, Vla. 1, Vla. 2, Vc. 1, and Vc. 2. The key signature is one sharp (F#) and the time signature is 4/4. The score is marked 'Matrix Code' in a box. Dynamics include 'pp' and 'pp détaché'. Red brackets above the woodwind and string parts indicate groupings of 4, 3, and 2 notes. Green circles highlight specific notes in the woodwind and string parts.

Figure 4-2: *The Matrix* – trace program *leitmotif* 1, 1M2/ m.8–9.

Another way to visualize this section is with number tables, an idea originally proposed by Christopher Heckman.<sup>154</sup> In the table below (Table 6), each number represents an ascending scale

<sup>154</sup> Heckman, “Taking the Red Pill: An Analysis of Don Davis’ Score for The Matrix.” 28.

fragment. Amongst mostly haphazard rhythmic patterns, some 16<sup>th</sup>-note groupings follow a countdown process of shortening. The bass clarinets, bassoons, and cello 1 feature a ‘countdown’ of the following rhythmic groups: 6-5-4-3-2 (blue boxes), and 4-3-2 (red boxes). The former numerical pattern of the *leitmotif* also appears in the main title music. Heckman has pointed out that the countdown could be a “signal that the end is near; *The Matrix* is getting one step closer to finding what it is looking for.”<sup>155</sup>

Matrix Code	
B. Clarinet 2	4 5 3 3 <span style="border: 1px solid red;">4 3 2</span> 5 3 6 2 2 2 5 3 <span style="border: 1px solid blue;">6 5 4 3 2</span> 4 3 <span style="border: 1px solid red;">4 3 2</span> 5 3 6 2 2 2 5 3 <span style="border: 1px solid blue;">6 5 4 3 2</span> 2 2 3 <span style="border: 1px solid red;">4 3 2</span> 5 3
B. Clarinet 3	2 2 3 3 2 2 3 3 2 4 4 2 2 3 3 6 2 2 2 4 3 3 <span style="border: 1px solid blue;">6 5 4 3 2</span> 2 4 2 2 3 3 <span style="border: 1px solid blue;">6 5 4 3 2</span> <span style="border: 1px solid red;">4 4 3 3 2</span> 4 4 2 2 4 2 2 3 3
Bassoon 1	3 2 2 3 3 2 2 4 5 3 3 <span style="border: 1px solid red;">4 3 2</span> 5 3 6 2 2 2 5 3 6 2 2 2 4 5 3 3 4 3 2 5 3 6 2 2 2 5 3 6 2 2 2 4 5 3 3 4
Bassoon 2	2 3 3 2 2 4 2 2 <span style="border: 1px solid red;">4 3 3 2</span> 4 2 2 3 3 2 2 3 3 4 4 4 5 3 4 2 2 <span style="border: 1px solid red;">4 3 3 2</span> 4 2 2 3 3 2 2 3 3 2 2 4 4 5 3 4 2 2 3 3 2
Cello 1	<span style="border: 1px solid red;">4 3 2</span> 5 3 6 2 2 2 5 3 6 2 2 3 3 6 2 2 6 3 5 4 6 2 2 2 5 3 6 2 2 3 3 6 2 2 6 3 5 4 6 2 2 2 5

Table 6: *The Matrix* – rhythmic groupings 1, 1M2/ m.8–17

In Fred Karlin’s book *A Guide to Film Scoring* (2004), Don Davis describes the overlapping of small units as a “multilayered idea of what *The Matrix* was. It’s not what it appears to be, it’s something else.”<sup>156</sup> In a way, the composer is representing the very essence of *The Matrix* as a software algorithm. In the next section, the raining code in the screen stops and the camera zooms in the center number 0. This is portrayed with a tutti minimalist section in the style of Philip Glass, with constant C major and E minor triad arpeggios, followed by bitonal combinations of Eb major and E minor.

<sup>155</sup> Ibid.

<sup>156</sup> Fred Karlin, *On the Track: A Guide to Contemporary Film Scoring*.

Davis also uses the trace program *leitmotif* and countdown pattern to musically represent the Agents (Figure 4-3). Extending the motif's dramatic function to not only characterize *The Matrix*, but also the Agents, is very effective, because of their interconnected role as gatekeepers of *The Matrix* program. Their sole purpose is to preserve *The Matrix* program's code by identifying and eradicating humans that want to escape or corrupt their code. In the scene where Neo first encounters the Agents, he is working in his office booth and receives a FedEx package with a cellphone inside. After talking to Morpheus, Neo realizes that suited agents and police officers are coming to detain him. As the Agents approach, the *leitmotif* reappears in F# minor. As in the previous example of this motif, the strings are playing *détaché* and the woodwinds have slurs over each scale fragment. The F# acts as a tonic anchor from which phrases begin, except when there is a countdown process of 16<sup>th</sup>-note groupings with a 6–5–4–3–2 or 5–4–3–2 pattern. In countdown patterns, each phrase ends with a pitch 'ceiling'. In bass clarinet 2, viola, and cello 2, the countdown motif 'ceiling' is D3, and in cello the ceiling is C#3 (green circles).

Agents Approach

B.Cl. 2, 3  
*mf*

Vla.  
*mf détaché*

Vc. 1  
*mf détaché*

Vc. 2  
*mf détaché*

Figure 4-3: *The Matrix* – trace program *leitmotif*2, 1M7/ m.26–28.

In the table below (Table 7), the trace program *leitmotif* section can be visualized as 16<sup>th</sup>-note groupings with blue boxes for 6–5–4–3–2 and red boxes for 5–4–3–2 countdown patterns. Bass clarinets are merged into one column, because they share a single melodic line. This kind of staggered breathing makes the passage easier and creates a subtle panning effect, because of the way players are positioned in the orchestra. The countdown process is more prominent than in earlier cues and is frequently imitated by all voices. Dramatically, these rhythmic strettos create a build-up of tension and urgency. When there is a cut of the Agents approaching, the countdown patterns go in and out of phase with each other, and as Neo starts running, they become aligned.

	Agents Approach		Neo Runs
B. Cl. 2, 3	1 3	<span style="border: 1px solid blue; padding: 0 2px;">6 5 4 3 2</span> 2 2 4 3 3 2 3 3 3 3	<span style="border: 1px solid blue; padding: 0 2px;">6 5 4 3 2</span> 2 2 3 3 2 4 3 3 2 4 2 3 3
Viola	3 3 2 2 4 3 3 2 2 2	<span style="border: 1px solid blue; padding: 0 2px;">6 5 4 3 2</span> 2 2 2 4 3 3 2 2 3 2 3 3 2 2 4 5 2 2 3 3	<span style="border: 1px solid blue; padding: 0 2px;">6 5 4 3 2</span> 2 4 2 2 4 3 4 3 2 4 3 3 3 2
Cello 1	<span style="border: 1px solid red; padding: 0 2px;">5 4 3 2</span> 2 2 2 4 2 3 3 3 5	<span style="border: 1px solid red; padding: 0 2px;">5 4 3 2</span> 2 4	<span style="border: 1px solid blue; padding: 0 2px;">6 5 4 3 2</span> 2 3 3 4 2 2 2 2 4 3 3 3 2 2
Cello 2	2	<span style="border: 1px solid red; padding: 0 2px;">5 4 3 2</span> 4 2 2 3 3 3 3 2 4 2 2 2 4 2 2 3 3 2	<span style="border: 1px solid blue; padding: 0 2px;">6 5 4 3 2</span> 2 3 3 4

Table 7: *The Matrix* – rhythmic groupings 2, 1M7/ m.26–38

After Neo’s powers awaken and he embraces himself as ‘The One’, the movie ends the way it began, with a screen showing lines of green code over Neo’s final monologue, challenging *The Matrix*. The minimalist trace program *leitmotif* returns in its original key of E minor with the exact same instrumentation, but this time it features imitation of longer phrases. In an interview, Davis mentions how he considers these motifs “fugal.”<sup>157</sup> In Figure 4-4, *Phrase 1* consists of 4–2–

<sup>157</sup> Ibid.

2–3–3–2–2 16<sup>th</sup>-note groupings (*Phrase 1*), where entrances occur in this order: cello 1, bass clarinet 1, bassoon 1, clarinet 1, violin 1 and viola 2, violin 2 and cello 2.

The image shows a musical score for three instruments: Bass Clarinet 2 (B.Cl. 2), Bassoon 2 (Bn. 2), and Violin 1 (Vc. 1). The score is in 4/4 time. A box labeled 'Call' is positioned above the first measure. The B.Cl. 2 staff has a red bracket labeled 'Phrase 1' above it, starting in measure 186 and ending in measure 188. The Bn. 2 staff has a red bracket labeled 'Phrase 1' above it, starting in measure 187 and ending in measure 188. The Vc. 1 staff has a red bracket labeled 'Phrase 1' above it, starting in measure 186 and ending in measure 188. Dynamics include 'pp' and 'pp détaché'.

Figure 4-4: *The Matrix* – fugal subject, 7M3/ m.186–188.

Over this texture we hear Neo talking on the phone and challenging the machines: “I know you are out there. I can feel you now. I know that you are afraid of us. You are afraid of change.”<sup>158</sup> At this point, the constant flow of numbers stops and the program shows a “System Failure” error message, as if Neo hacked it. The *perpetuum mobile* texture mirrors this change by having stretto entrances of Phrase 1 in woodwinds and strings, which culminate with a *pianissimo* E6 pedal tone in the violins (Figure 4-5). This juxtaposition of textures is very effective, as it highlights the word “change” and signifies Neo’s control over *The Matrix*. The way Davis gradually introduces more instrumental lines and compresses the space between each stretto creates an instrumental and

<sup>158</sup> Lilly Wachowski Lana Wachowski, *The Matrix* (USA: Warner Bros., 1999).



contrapuntal crescendo that enhances the idea of *The Matrix* being hacked. He also includes a countdown motif, 4–3–3–2, and for the first time its inversion, 3–4–5.

The musical score consists of seven staves, each with a different instrument: Cl.1, Bs.2, Vln.1, Vln.2, Vla.2, Vc.1, and Vc.2. The music is in 4/4 time and marked *pp* (pianissimo) and *pp détaché*. Red brackets labeled "Phrase 1" and "Phrase 1'" group the notes in each staff. Green numbers 4, 3, 3, 2 are placed above the Bs.2 staff, and 3, 4, 5 are placed above the Vc.1 staff. The score is divided into two sections: "Columns of Numbers" and "System Failure".

Figure 4-5: *The Matrix* – system failure, 7M3/ m.191–193.

Another way that Davis represents *The Matrix* is with an ostinato motif that oscillates between two dyads. It usually appears as a background texture in woodwinds, piano, harp, or strings, and is surrounded by minimalist triad arpeggios or repeating diatonic scale patterns. It is used in the scene where Neo is first introduced to *The Matrix* by Morpheus. As he touches a mirror, the image shifts and ripples like water. In a movie commentary, Davis mentions how this scene is

the first place where he felt he could use this minimalist motif to represent *The Matrix*, because of its hypnotic and repetitive nature.<sup>159</sup> The ostinato motif appears in C Aeolian, over C pedals and scale gestures, and is played *legato* and *pianissimo* by piano and clarinets (Figure 4-6).<sup>160</sup> The clarinets are playing with a breathy timbre and piano is low in the mix. Davis achieves here a mesmerizing texture that evokes a sense of wonder and magic. It is also a representation of the mirror in the scene, as the melodic direction of the upper line is inverted in the lower one.

Mirror Image Shifts

Figure 4-6: *The Matrix* – mirror leitmotif, 2M4/ m.47–48.

### 4.3.2 Diatonic Sets Representing Humans

Another way that Don Davis enhances the central duality of ‘reality vs Matrix’ is by juxtaposing humans and machines with distinct pitch sets. Although this idea was initially proposed by Christopher Heckman,<sup>161</sup> Don Davis has denied deliberately using it to represent humans and machines: “any motivic elements you’re developing in a compositional way is going to get cut up, moved around, or thrown out. So you can’t do it; you just can’t put that kind of formal stuff in there. It’s going to be chopped up until it’s meaningless.”<sup>162</sup> It is hard to believe that

<sup>159</sup> Heckman, “Taking the Red Pill: An Analysis of Don Davis’ Score for The Matrix.” 25.

<sup>160</sup> The motif is also briefly used in the opening credits. From Davis’ commentaries one can deduce that he composed the opening music cue after completing most of the soundtrack, so he can include a variety of established motifs.

<sup>161</sup> Heckman, “Taking the Red Pill: An Analysis of Don Davis’ Score for The Matrix.” 6.

<sup>162</sup> Daniel J. Willis, “‘The Matrix’ Composer Don Davis on His Influences, Hiring and Live Shows with SF Symphony,” Riff Magazine, 2022, <https://riffmagazine.com/news/don-davis-the-matrix-sf-symphony/>.

a motif that occurs at least twenty times<sup>163</sup> was a result of an audio editor ‘chopping up’ the original soundtrack. It is more likely some of these clusters and pitch sets were used subconsciously by the composer to highlight characters with different types of dissonances. Even if all of the instances of this motif were the result of music editing, I still find it an effective compositional technique that is clearly audible by the audience and can be helpful to future composers who might use it in similar contexts.

Human characters, with the exception of Cypher, are portrayed as heroes that are musically represented with diatonic sets, usually in the Aeolian, Dorian, or major mode.<sup>164</sup> On the contrary, machine characters (except the Oracle and Nebuchadnezzar) are villains that are musically emphasized with chromatic sets. Davis uses human and machine pitch sets in the form of clusters, pyramid chords, arpeggios, short melodic fragments, and scale gestures.

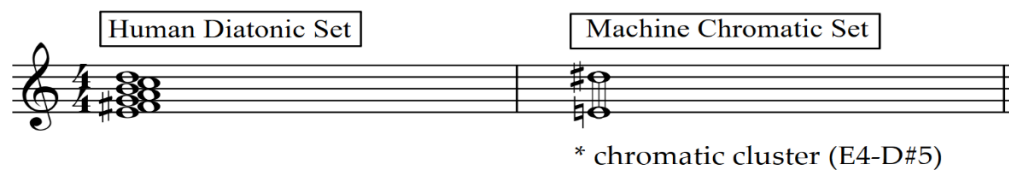


Figure 4-7: *The Matrix* – human diatonic set (E minor), machine chromatic set.

The human motif makes its first appearance early in the movie when Trinity is being chased by the police. She jumps over a rooftop and glides through the sky, as we hear polychord brass swells outlining E major and G major (Figure 4-8).<sup>165</sup> After breaking through a glass window, the action and music stop, and Trinity points her guns at the window talking to herself: “Get up,

<sup>163</sup> This number of instances is found in both Heckman’s dissertation and my own.

<sup>164</sup> Heckman, “Taking the Red Pill: An Analysis of Don Davis’ Score for The Matrix.” 7.

<sup>165</sup> Similar swells are also used in the “bullet time” scene and the opening. In these cues, the polychord is a combination of minor and major chords that are related by major thirds, i.e.: E minor and C major.

Trinity.” A heroic and courageous pyramid cluster is played by horns and trombones that are marked *forte*. The unfolding cluster is an  $F\#\text{o}7\text{b}9$  chord in closed voicing that stems from a diatonic E Aeolian pentachord [E, F#, G, A, C]. Each tone is played in ascending order with accents and a repeating rhythm of a dotted quarter-note followed by an 8<sup>th</sup> note. The stately character of the accented brass notes evokes a sense of human bravery.

Figure 4-8: *The Matrix* – ‘trinity moves’ human set pyramid, 1M2/ m.167–169.

In the last fight between Neo and Agent Smith, the former is knocked down. When Neo gets up, he appears much stronger and more confident, as he finally embraces the prophecy of ‘The One’. After exchanging blows with Agent Smith, he flies and jumps into his body causing it to explode from the inside. This moment is highlighted by a human set motif in brass and strings. The strings play *fortissimo* and tremolo with accents, and the brass play *fortissimo* with accents (Figure 4-9). As in the previous example, each note is played as an ascending pyramid chord cluster of a diatonic set, but for the first time, the human motif cluster includes all seven notes of D Aeolian. By increasing the harmonic density of the human *leitmotif*, Davis highlights Neo’s spiritual transformation and his impressive new powers.

The image shows a musical score for a string reduction in 4/4 time. The score is divided into three sections by vertical lines. Above the first section is a box labeled "Neo Moves Forward". Above the second section is a box labeled "Running". Above the third section is a box labeled "Neo Dives Into Smith". The score consists of two staves: a treble clef staff and a bass clef staff. The first section starts with a dynamic marking of *ff*. The second section features a series of notes with stems pointing downwards, some marked with a 'v' and a slur. The third section starts with a dynamic marking of *fff* that transitions to *f*. Below the bass staff, there is a green bracketed area labeled "D Aeolian cluster [D, E, F, G, A, Bb, C]".

Figure 4-9: *The Matrix* – ‘The One’ human set pyramid chord, 7M3/ m.123–126.

### 4.3.3 Chromatic Sets Representing Machines

The machine *leitmotif* is used throughout the movie to represent Agents and Sentinels. It has several functions; to enhance actions on screen (woman in red dress scene, bug scene), to signify threat (interrogation scene), and to emphasize dystopian elements (Construct scene). An example of signifying threat occurs when the Agents capture and interrogate Morpheus to extract information about the Resistance. Morpheus bravely withstands their torture frustrating Agent Smith, who asks all the other agents to leave the room. Agent Smith speaks here in a tone of voice that indicates hatred and exasperation. In this moment, a chromatic set motif appears in the strings. Violins and violas outline the heptachord [C, A, Bb, Cb, F#, G, Ab], which is a chromatic (0123456) 7–1 set in prime form. Violins and violas are playing *mezzopiano*, *divisi*, and *senza vibrato* over a bass C pedal in the cello and contrabass (Figure 4-10). The resulting eerie sonority emphasizes the interaction between agents, who act like pack animals fighting over their prey. Another orchestral element that supplements the menacing demeanor of Morpheus’ machine

tormentor is the combination of ominous percussion effects in timpani, waterphone, and tam tam. Davis utilizes an extended piano technique, where the player must use a superball mallet to rub the strings on the inside, creating a haunting sustained sound.

Agent's Reaction

The musical score for "Agent's Reaction" features several instruments and performance techniques. The percussion section includes Timp., Waterphone, Tam tam, and Chinese cymbal. The piano part uses an extended technique of rubbing high strings with a superball mallet. The string section (Violin 1,2 Viola and Cello/Contrabass) plays a chromatic sequence of notes, with the Violin 1,2 Viola part marked *mp senza vibr.* and the Cello/Contrabass part marked *p*. The time signature changes from 4/4 to 3/4. Dynamics range from *ppp* to *ff*. Performance instructions include "scrape with metal mallet" and "scrape with stick". A green box highlights a sequence of notes (0123456) in the Violin 1,2 Viola part, with an *8va* marking above it. The Cello/Contrabass part has an *8vb* marking below it.

Figure 4-10: *The Matrix* – machine set, 6M3/ m.35–36.

Another variation of the machine *leitmotif* appears after Neo's interrogation scene, when he is in the car with Trinity and she tries to extract a machine bug from his stomach. As she twists the handle, and the bug moves inside Neo, trumpets and strings play short chromatic fragments.

Each fragment is a (012) melodic cell of ascending 16<sup>th</sup>-note triplets that always begin with an accent (Figure 4-11). The strings are playing *forte* with the frog of the bow (*al tallone*) and the trumpets are *forte* and muted. Davis’ use of chromaticism and fragmentation highlight Neo’s horror as well as the mechanical bug’s erratic and disgusting movements.

The image shows a musical score for a section titled "Bug Moving". It consists of four staves: Tpt.1, Tpt.2, Vln.1, and Vln.2. The music is in 2M1/4 time and features a complex rhythmic pattern of ascending 16th-note triplets. Red brackets above the notes highlight the (012) melodic cells. Performance instructions include "f con sord." for the trumpets and "f al tallone" for the violins. The score is marked with various articulations and dynamics.

Figure 4-11: *The Matrix* – (012) melodic cells, 2M1/ m.42–43.

#### 4.3.4 Reality vs Illusion

Davis uses his already established *leitmotifs* to effectively highlight the movie’s central theme of ‘reality vs illusion’ as a musical juxtaposition of ‘human vs machine’ *leitmotifs*. In the scene where Morpheus is training Neo inside a simulation created by Ciphur, they walk past a beautiful woman in a red dress. Morpheus then asks Neo to pay attention and, as he turns around, the woman has transformed to a Matrix Agent pointing a gun at him. The music represents the woman in the red dress with a G minor pentachord cluster in the violins, [G, A, Bb, C, D] (Figure 4-12, in green). This is followed by the representation of the evil Agent with an unfolding pyramid chord of a chromatic scale set. The transition between human and machine clusters is seamless

because the pyramid chord begins with a diatonic F# Dorian hexachord [F3, G#, A, B, C#, D#], then two (013) trichord clusters [C#, D#, E] and [E, F, G], and finally with a chromatic (012345) 6–1 hexachord, [B, C, Bb, Db, D, Eb]. As all these clusters are sustained, they crescendo to triple *forte* for a jump scare, and the final resulting chord is a 12-note aggregate (in purple). The bass cluster is orchestrated with aggressive Bartók *pizzicati* in cello and contrabass.

The musical score is divided into three measures. Above the staves are three boxes: "Woman in Red Dress Approaches", "+Piccolos, Trumpets", and "Neo Crouches".

- Measure 1:** Violins play a *p* Human Set G minor cluster. Violas/Horns play a *mp* Human Set F# Dorian cluster. Dynamics increase to *p*.
- Measure 2:** Trombones play a *ppp* (013) trichord cluster. Violas/Horns play a *ppp senza vib.* (013) trichord cluster. Dynamics increase to *molto*.
- Measure 3:** All instruments play a *fff* (0123456789te) Machine Set. The bass line (Cellos/Cbs) plays a *fff* (012345) Machine Set. Dynamics increase to *fff*.

Figure 4-12: *The Matrix* – juxtaposition of human and machine sets 1, 4M2A/ m.1–5.

Another way that Davis creates a contrast of ‘illusion vs reality’ is by juxtaposing minimalism and atonality. In the scene where Morpheus is training Neo inside the Construct, a simulation created by the Resistance, they have a philosophical conversation about reality. Morpheus turns on a TV and says the following to Neo: “This is the world that you know [...] as it was at the end of the 20<sup>th</sup> century that exists now only as part of a neural interactive simulation, that we call *The Matrix*.” To represent the human world as a shared delusion, the composer uses a



minimalist texture in C minor that starts with a sustained pyramid chord combining C minor in trombones and Ab major in horns (diatonic human set, Figure 4-13). Davis associates this polychordal swell motif with bullet time sequences; in a commentary for *The Matrix* he explains how he notated dynamics to fade in and out of two chords that create a sense of time stasis.<sup>166</sup> This is followed by a minimalist polyrhythmic idea combining sextuplet 16<sup>th</sup> notes and regular 16<sup>th</sup> notes. The flutes, clarinets, and piano are playing the *mirror motif* from Figure 4-6, while the remaining instruments outline C minor and Ab major arpeggios. Bringing back the *mirror motif* seems appropriate, since Davis uses it to represent *The Matrix* and in this scene Neo and Morpheus are in a training simulation mimicking it. An interesting aspect of this music cue is that it appears to be diegetic: starting when the TV is turned on and stopping when the TV is turned off. However, in the next scene, characters are transported inside the TV's reality the music turns non-diegetic with a completely different musical style. This trans-diegetic process was also discussed in *The Truman Show*, where music by Mozart and Glass are used to musically transition between non-diegetic to diegetic or metadiegetic (Chapters 2.4.3 and 2.4.5).

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<sup>166</sup> Lana Wachowski, *The Matrix*. Composer Commentary, 1:46:52-1:47:12.

Flowing ♩ = 140

Vintage T.V.

Mirror motif

Fl., Cl., Pno, Hrp.

C min

C min

mp

6

6

6

6

Ab maj

C min + Ab maj: Diatonic human set, Bullet time motif

Tbn., Hn.

pp

mf

p

Figure 4-13: *The Matrix* – human set minimalism, 3M3/ m.1–3.

As Neo and Morpheus teleport into the TV screen’s dystopian reality, the music becomes much more chromatic with pyramid clusters and fast descending minor scales in the strings. Suddenly, another TV screen appears inside this embedded reality, and Morpheus turns it on to show Neo a dark, deserted city. This is a moment of lengthy exposition, where Morpheus explains the following: “You’ve been living in a dream world Neo. This is the world as it exists today. Welcome to the desert of the real.” This bleak landscape is depicted with a sudden loud atonal section. Woodwinds, brass, and violins sustain chromatic pyramid chords made up of overlapping (012) trichords. Each entrance is marked fortissimo, with accents that dramatically highlight the abysmal scenery of the post-apocalyptic world shown by Morpheus. In the low register, cellos and violas are playing sextuplet *perpetuum mobile* figures with the frog of the bow (*al tallone*, Figure

4-14). The sextuplet 16<sup>th</sup> notes consist of (012) trichord cells that are harmonized in semitones to create a dissonant background texture.

The musical score for 'Bleak Landscape' is presented in five staves. The top staff is for Flute and Clarinet (Fl., Cl.), marked with a forte (*f*) dynamic. The second staff is for Horn (Hn.), with dynamics ranging from *ppp* to *fff*. The third staff is for Trombone and Euphonium (Tbn., Tba.), marked with *ff*. The fourth staff is for Violin (Vla.), and the fifth staff is for Viola (Vc.), both marked with *ff*. The score is in 4/4 time and features a complex texture of sextuplets and trichord cells (012) across various instruments. A box labeled 'Bleak Landscape' is positioned above the first staff. Red brackets labeled '(012)' indicate the trichord cells. The score includes various dynamic markings and articulation marks.

Figure 4-14: *The Matrix* – machine set chromaticism, 3M3/ m.9–11.

This inventive chromatic texture is a variation of the *machine motif* and stems from an earlier action cue (Bug Scene, Figure 4-11). Morpheus’ didactic monologue continues by saying that humans are not born but are “grown.” This is portrayed musically with chromatic *machine motif* pyramid chords, similar to the previous section, where each instrumental entrance is emphasized with loud dynamics and articulation.

#### 4.3.5 Reflection and Spiritual Awakening

Reflexivity is a central theme in the movie, as *The Matrix* is essentially a dystopian mirror of our world in the end of the 20<sup>th</sup> century. As we saw in Chapter 1, mirrors are powerful symbols

in paintings that are self-referential and meta-referential. The Wachowskis include various types of reflective surfaces in their film, such as mirrors, glasses, spoons, computer screens, phone booths, and buildings made out of glass.<sup>167</sup> In the scene where Neo meets an enlightened child with telekinetic powers, he is taught to bend spoons with his mind. As the camera focuses on the spoon's reflection, the boy mentions that "There is no spoon. Then you'll see that it is not the spoon that bends, it is only yourself."<sup>168</sup> The boy is dressed like a Buddhist monk sitting in a *Padmasana* posture and tries to help Neo gain psychic powers through self-reflection and by realizing that *The Matrix* is an illusion. Michael Brannigan, in his article "There is no spoon: A Buddhist Mirror" draws a parallel between this scene and a traditional Buddhist parable (*modo*) about three monks that are observing a flag waving in the wind. Two monks argue about whether the flag or the wind is moving, and the third one claims that "it is your mind that moves."<sup>169</sup> In *The Matrix*, this Buddhist concept applies to Neo and other humans that are able to achieve psychic enlightenment (nirvana) by breaking free from their shared delusion (samsara).

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<sup>167</sup> Heckman, "Taking the Red Pill: An Analysis of Don Davis' Score for The Matrix." 41.

<sup>168</sup> Lana Wachowski, *The Matrix*.1:12:08.

<sup>169</sup> Michael Brannigan, "There is no Spoon: a Buddhist Mirror." In William Irwin, *The Matrix and Philosophy: Welcome to the Desert of the Real* (Chicago: Open Court, 2002).102- 103.

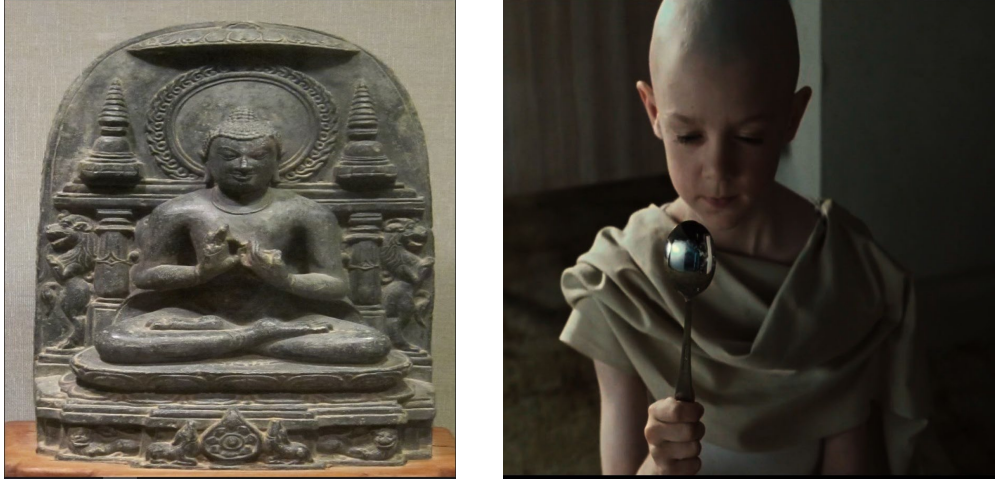


Figure 4-15: Left – Buddha's First Sermon, chlorite statue (11th century, India, Pala Dynasty)<sup>170</sup>, Right – Enlightened boy from *The Matrix*.<sup>171</sup>

In *The Matrix Revisited*, Don Davis talks about the importance of reflection in the movie and how he musically represents it in the orchestra by having “one section against the other or just a contrapuntal idea placed [one] on top of the other.”<sup>172</sup> In another interview he also refers to this musical idea as a “simple fugue.”<sup>173</sup> This contrapuntal gesture is not always used consistently like a *leitmotif*, but it emphasizes important moments such as when Neo or Morpheus break free from *The Matrix* and become more powerful. In the scene where Morpheus is captured by Agents and escapes by breaking his chain, the reflection gesture is played by violins 1 and 2. It consists of a canonic 8<sup>th</sup>-note pattern in D minor that is played *forte* and *tremolo* (Figure 4-16).

<sup>170</sup> Hiart. “Buddha’s First Sermon,” 11th Century, Chlorite statue, Honolulu, Honolulu Academy of Arts. Accessed December 26, 2023.

[https://commons.wikimedia.org/wiki/File:%27Buddha%27s\\_First\\_Sermon%27,\\_chlorite\\_statue\\_from\\_India,\\_Pala\\_dynasty,\\_11th\\_century,\\_Honolulu\\_Academy\\_of\\_Arts.JPG](https://commons.wikimedia.org/wiki/File:%27Buddha%27s_First_Sermon%27,_chlorite_statue_from_India,_Pala_dynasty,_11th_century,_Honolulu_Academy_of_Arts.JPG).

<sup>171</sup> This image is a screenshot from a copyrighted film and is not in the public domain. It is believed that the use of a limited number of low-resolution screenshots for critical commentary and discussion of the film and its contents on a PhD dissertation thesis qualifies as fair use.

<sup>172</sup> Oreck, *The Matrix Revisited*.1:48:38-1:49:33.

<sup>173</sup> Fred Karlin, *On the Track: A Guide to Contemporary Film Scoring*.

*Phrase a* is a bar and a half long and consists of two descending figures in 8<sup>th</sup>-note groupings of seven plus five. Don Davis uses this figure as a simple canon at the unison between the two violins. What is unusual about the entrance of the second voice is that it begins on the weak part of a weak beat, unlike the initial entrance, which starts on a strong beat each time. However, the second voice's shifted strong/weak relations are not a problem, as *Phrase a* contains a 5-note motif [Bb, A, E, D, A] that is repeated within the phrase with inverted strong/weak relations.

Liberating ♩ = 135.76  
Cut Morpheus

**Phrase a**

Violin 1  
Violin 2

Figure 4-16: *The Matrix* – reflection gesture 1, 6M9/ m.7–10.

Another scene where the reflection gesture is used is at the end of the movie, when Neo rises from the dead after being almost defeated by Agent Smith. This is an important moment because Neo finally realizes his full potential and transcends the limitations of *The Matrix*. The reflection motif (Figure 4-17, *Phrase a*), played by flutes and violins, consists of descending quarter-notes that are phrased in groups of 5 and 7 (*Phrase a, a'*). As in the previous example, each phrase is imitated as a simple canon at the unison. The melody is supported by a sustained Bb major triad in trombones, cimbasso, violas, cellos, and contrabasses. Pianos 1 and 2 have a minimalist ostinato containing ascending Bb major arpeggios. This musical cue loops the same

idea all the way through the iconic ‘bullet-time’ scene, where Neo stops Agent Smith’s bullets and picks them up with his hands. The unresolved C# appoggiatura in the piano 1 and the Gb in the flutes and violins obfuscate the Bb major harmony. The bittersweet modal mixture inherent in this mode, particularly the relationship of Bb major (pianos 1, 2), Bb minor (flutes/violin), evokes a mystical and inspirational atmosphere befitting of ‘The One’.

Figure 4-17: *The Matrix* – reflection gesture 2, 7M3/ m.76–80.

In the end of the movie, Davis combines minimalist arpeggios and polyrhythms (Figure 4-18, piano 1 and 2) with tertian bitonal swells to represent ‘The One’, a Promethean liberator figure

that will free humanity from their dystopian *mise en abyme*. During Neo’s revolutionary monologue scene, analyzed previously (System Failure Figure), the music starts with a trace program *leitmotif* that is interrupted by sustained sonorities. Then, bitonal swells (*bullet time motif*, red bracket) in the brass outline F major and A major chords, which are transposed a semitone below the previous figure. These harmonies are then embellished with bitonal minimalist arpeggios (pianos, violas, and clarinets) that unfold in a 3:4 polyrhythm (8<sup>th</sup>-note triplets, 16<sup>th</sup> notes). Finally, the horns enter with Db major chords to introduce a third rhythmic layer of triplet quarter-notes. By superimposing F major (blue), A major (red), and Db major (green), Davis forms the hexatonic mode Hex (1,4) [C#, E, F, Ab, A, C]. As mentioned earlier, this mode is symbolically significant in both *Total Recall* and *The Matrix* as a sonic metaphor for ambiguity and mystery.

The musical score is divided into two sections: "Rules & Controls . . ." and "Through Code".

- Horn (Hn.):** Plays sustained chords. In the "Rules & Controls" section, it features A major (red) and F major (blue) chords. In the "Through Code" section, it features Db major (green) chords. Dynamics are ppp and mp.
- Trumpet (Tpt.):** Plays sustained chords. In the "Rules & Controls" section, it features F major (blue) chords. Dynamics are ppp and mp.
- Piano 1 (Pno. 1) and Piano 2 (Pno. 2):** Play 8th-note triplets in a 3:4 polyrhythm. Dynamics are pp and mp.
- Viola/Clarinet (Vla., Cl.):** Play 8th-note triplets in a 3:4 polyrhythm. Dynamics are mp.

A red bracket labeled "Bullet time motif" spans the first three measures of the Horn and Trumpet parts.

Figure 4-18: *The Matrix* – reflection gesture 3, 7M3/ m.204–209.

The music transitions from Davis’ soundtrack to the song *Wake Up* by Rage Against the Machine, playing over Neo’s speech: “a world without rules and controls, without borders or



boundaries, [...] where anything is possible.”<sup>174</sup> Rage Against the Machine were an important band in the late '90s, particularly for combining rap and hard rock genres and for writing protest music that lyrically focuses on political dissent<sup>175</sup> and a disdain for the established social order. *Wake Up* is a song that criticizes the US ‘system’ of silencing political dissent and the civil rights movement. Zach de la Rocha’s lyrics paint a picture of mass delusion and ignorance that can only be resolved by ‘waking up’. Similarly, in *The Matrix*, humans that are plugged into the simulation experience a shared delusion while being in a constant dream-like state. Ending the movie with *Wake Up* is a powerful way to enhance the reflexive nature of Neo’s monologue, by using a popular song that young audiences subconsciously associate with social change, anti-conformism, and liberation.

#### **4.3.6 Red Pill Scenes in *The Matrix* and *Total Recall***

Illusion is an important topic in simulated reality films and directors use powerful iconography that engages viewers on an existential level. In both *The Matrix* and *Total Recall*, the protagonists are presented with the dilemma of swallowing a pill that will awaken them. Quaid in *Total Recall* is being tricked by Dr. Edgemar to believe that swallowing a red pill will bring him back to ‘reality’, while Neo in *The Matrix* is offered two pills by Morpheus: a red one representing reality and a blue one representing illusion. Pills are a symbol of the heroes’ desire to seek truth and also a subliminal device suggesting psychedelic experience. In Chapter 3.2.5, I demonstrated how Goldsmith’s music for the *Total Recall* red pill scene is composed in 4 musical phases that start out as tonally ambiguous, then become gradually more chromatically saturated and end with dense pyramid chords. Don Davis’ musical cue for the equivalent scene in *The Matrix*, although

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<sup>174</sup> Lana Wachowski, *The Matrix*.2:08:28.

<sup>175</sup> John A. Giancola Jr., “Rage From Within the Machine: Protest Music, Social Justice, and Educational Reform, a Collective Case Study” (Duquesne University, 2009).

significantly shorter in duration, utilizes similar musical ideas, in particular: 1) otherworldly timbres, 2) tonal ambiguity, 3) chromaticism, and 4) dense pyramid chords.

*The Matrix* cue begins with a diatonic cluster pyramid made up of two major seconds, [Eb, F, G] or (024) 3–6, suggestive of the human set *leitmotif* (Figure 4-19). Violins and violas start playing each note of the cluster very softly, triple piano con sordino, with an upbow articulation and no vibrato. As Morpheus warns Neo that “there is no turning back”, the sustained trichord swells to pianissimo and then fades out to niente. Here, Davis creates a brief moment of suspense and curiosity.

Morpheus Closes Pill Box

The musical score consists of three staves: Vln.1, Vln.2, and Vla. The time signature is 2M4/4. The first staff (Vln.1) begins with a cluster of notes Eb, F, G, marked 'con sord. senza vibr.' and 'ppp'. The second staff (Vln.2) begins with a cluster of notes Eb, F, G, marked 'con sord.' and 'ppp'. The third staff (Vla.) begins with a cluster of notes Eb, F, G, marked 'con sord.' and 'ppp'. All three staves have a dynamic swell from ppp to pp and then fade to 'n' (niente).

Figure 4-19: *The Matrix* – red and blue pill scene 1, 2M4/ m.1–5.

Morpheus explains what each pill does and makes a meta-reference to *Alice in Wonderland*: “You take the red pill, you stay in Wonderland and I show you how deep the rabbit hole goes.” During the rock and roll psychedelia movement of the late ’60s and ’70s, songs like Jefferson Airplane’s *White Rabbit* (1967) associated the consumption of psychedelic drugs to the dreamlike *mise en abyme* world of *Alice in Wonderland* (1865). Despite the unlikelihood that

Lewis Carroll originally intended such an interpretation,<sup>176</sup> Alice became a symbol of psychedelic experience and illusion in popular culture. The music follows this thread by incorporating otherworldly extended piano techniques. Piano 1 plays tremolo with vibraphone mallets on the bass strings, and piano 2 has been prepared with wooden objects between the strings. The piano 2 effect produces a soft hypnotic bell-like timbre, reminiscent of sections from John Cage's *Sonatas and Interludes for Prepared Piano*. A slow oscillating 8th-note trill in the prepared piano and bass clarinet is an augmentation of the *mirror motif* (Figure 4-6). Davis brings back this motif to also highlight the camera angle shot of Neo's reflection on Morpheus' glasses. The combination of eerie rumbling sounds in the prepared piano and ominous bass oscillation in piano 2 and bass clarinet highlight Neo's hesitation.

As Neo tries to decide which pill to take, a slow and dense 7-note pyramid chord, (0124589) 7–21, crescendos in the strings, horns, and harp (Figure 4-20). The notes of this cluster include a Hex (1, 4) mode with an added G, and are laid out in open voicing. As shown below, the voicing of this chord is based on interval classes 3, 4, and 1. Similarly, in *Total Recall*, Goldsmith uses dense interval class-based pyramid chords to build tension. Both Davis and Goldsmith portray the protagonists' hesitation to swallow the pill with bizarre otherworldly timbres. In the *Total Recall* red pill scene, Goldsmith uses an ocarina sample with long reverb and a glissando decay, whereas in *The Matrix* Davis uses a combination of extended piano techniques with a soft bell-like timbre.

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<sup>176</sup> "Is Alice in Wonderland Really about Drugs?," BBC, 2012, <https://www.bbc.com/news/magazine-19254839>.

**Morpheus Sunglasses**

*trem. on lowest strings with soft, vibraphone mallets*

Pno. 1 **ppp**

*Prepared Piano (wooden objects between strings)*

Pno. 2, B.Cl. **pp**

**Mirror motif**

Strings, Harp **pp** *senza vibr.*

5 **"Remember"**

Pno. 1

Pno. 2, B.Cl.

Strings, Harp

**Hex (1,4)** **(0124589)**

Figure 4-20: *The Matrix* – red and blue pill scene 2: interval class-based pyramid, 2M4/ m.6-13.

#### 4.4 Conclusion

The soundtrack of *The Matrix* is memorable for capturing a dystopian atmosphere with a distinct hybrid orchestral sound. Although there is a clear distinction of embedded worlds in the story, simulation and reality share the same diegetic space. One exception where the music and film blur the line of narration (trans-diegetic) is when Neo and Morpheus are in the Construct and they are watching humans living in the Matrix through a TV screen (Chapter 4.3.4). The diegetic music in the TV is minimalist, but in the next scene the characters are transported inside the diegetic space where the music transforms into non-diegetic with a dramatic chromatic style. Other than this particular scene, there is no separation of layered realities with different styles of narration or music.

Don Davis' soundtrack utilizes *leitmotifs* not only to highlight characters in an operatic manner, but also to symbolize important objects, visual effects, and mental powers (Neo and Morpheus). This process resembles a type of musical 'Mickey-Mousing' that synchronizes stage actions and key elements to recurring musical ideas. Davis strays away from conventional melodic themes and utilizes contemporary compositional techniques, such as pitch sets, number schemes, extended techniques, chromaticism, and interval-based atonality. The central part-to-whole-similarity *mise en abyme* is musically represented as a juxtaposition of diatonic sets, chromatic sets, and rhythmic numerical schemes resembling computer coding. This impeccably nuanced approach would not have been possible without a close collaboration between the Wachowskis and Davis. Both the film and original score stand out for their ambition in scale and complexity.

## 5. Conclusion

Simulated reality movies in the '90s, like *The Truman Show*, *Total Recall*, and *The Matrix*, mark a new era of film and music making. Inspired by complex narratives from '60s' science fiction novels and social theories, Hollywood directors became increasingly interested in *mise en abyme*, simulation, A.I., the disembodied self, unreliable narration, non-linear storytelling, techno-dystopias, and mass surveillance. Hollywood composers had to adapt to these complex narratives by representing abstract concepts musically, in order to enhance audience immersion.

Each one of those films treats the idea of simulated reality and *mise en abyme* in completely different ways. In the *Truman Show* the inner and outer stories have a distinct aesthetic both visually and musically. In *Total Recall*, the embedded *mise en abyme* structure is centered on Quaid's identity (Quaid-within-Hauser) and his memories, after undergoing surgery in the *Rekall* facility. There is no inner and outer story presented visually or musically. Verhoeven, the director of *Total Recall* (1990), wanted to blur the line between illusion and reality and to have music that evokes a general sense of ambiguity. In *The Matrix* (1999), the inner and outer stories share the same diegetic space (except in one scene, Chapter 4.3.4) and characters are able to move freely between simulation and reality. Therefore, the layered distinction focuses on the level of 'human vs machine' characters, which is represented musically with different *leitmotifs*. The simulation of *The Matrix* and reflective surfaces are also portrayed musically with rhythmic numerical schemes and contrapuntal textures.

Some effective strategies used by Goldsmith (*Total Recall*) and Davis (*The Matrix*) include using compositional techniques that stem from modern 20<sup>th</sup> century music theory, and otherworldly timbres created by sampling and audio processing. Peter Weir enhances the *mise en*

*abyme* of *The Truman Show* in the most effective way out of the three movies analyzed in this dissertation. He intelligently includes different musical styles and composers for each diegetic layer: Glass for nondiegetic music (minimalism), Dallwitz and Glass for metadiegetic music ('80s synth underscore), and Mozart for diegetic music (classical).

In the 21<sup>st</sup> century, simulated reality and dystopian science fiction movies have become part of the mainstream. Now more than ever, film composers are tasked with emulating a diverse range of styles and underscoring scenes with dense exposition. The scores analyzed in this dissertation are exemplary in terms of immersive quality and are presented as a guide for future composers and researchers that are interested in *mise en abyme* storytelling and film music. The reason why I chose to focus on simulated reality movies is because this genre inherently involves a nested layering of stories and a conflict of 'reality vs illusion'. However, the musical strategies employed by Goldsmith, Davis, and Glass can also be potentially applied to other films that have a similar dichotomy of the real and unreal, e.g.: *Being John Malkovich* (1999), *Adaptation* (2002), and *Stranger than Fiction* (2006), to name a few.

Finally, I made the realization that widely revered musical works by Bach, Beethoven, Chopin, Ravel, and other composers, share a common trait that, in my opinion, contributes to their perceived greatness: self-similarity. The technique of constructing a large work of music based on a few musical ideas that interconnect different sections as a whole is an intra-medial *mise en abyme*. By studying this technique not only in music, but also literature, painting, and film, composers can find the tools to write effective and immersive music.

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