# TIMELESSNESS IN MUSIC

by

HALLEL ANNE SCHELL

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Student: Hallel Anne Schell

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This dissertation has been accepted and approved in partial fulfillment of the requirements for the Doctor of Philosophy degree in the School of Music and Dance by:

| | |
|---|---|
| Stephen Rodgers | Chairperson |
| Jack Boss | Core Member |
| Loren Kajikawa | Core Member |
| Alejandro Vallega | Institutional Representative |

and

| | |
|---|---|
| J. Andrew Berglund | Dean of the Graduate School |

Original approval signatures are on file with the University of Oregon Graduate School.

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DISSERTATION ABSTRACT

Hallel Anne Schell

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This study explores the experience of timelessness in music by examining the musical parameters that are in play and how those musical parameters affect and are affected by memory and expectation. I propose three types of musical timelessness that are derived from specific perceptual transitions and based on my analytical findings in music within the indie-rock, post-rock, and electronica/experimental music scenes.

# CURRICULUM VITAE

NAME OF AUTHOR: Hallel Anne Schell

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene
Idaho State University, Pocatello

DEGREES AWARDED:

Doctor of Philosophy, Music Theory, University of Oregon, 2014
Bachelor of Music, Piano Performance, Idaho State University, 2006

PROFESSIONAL EXPERIENCE:

Piano Instructor, The John G. Schedd Institute for the Arts, 2010-2012

Book Indexer, Dr. Steve Larson, 2011

Piano Instructor, Self, 2008-2010

Studio Piano Teacher, University of Oregon Piano Pedagogy Department, 2006 2008

GRANTS, AWARDS, AND HONORS:

Graduate Teaching Fellowship, University of Oregon School of Music and Dance, 2006-2012

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I dedicate this document and all that was poured into it first and foremost to the G-d of Abraham, Isaac, and Jacob and also to my parents and husband for their unrelenting support.

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# CHAPTER I

## TIMELESSNESS IN MUSIC

Eternity, stasis, unchanging, everlasting, infinity, perpetuity—all are synonyms to timelessness. Timelessness is that quality which is outside of time, beyond time, above time, unaffected by time, unchanged by time, lasting forever. What exactly is timelessness? It is a divine quality—and beyond that, it is difficult to say. I can tell you what timelessness is *not*. Timelessness is most definitely not temporal. Or is it?

At face value, timelessness seems to be bound to eternity and to the unchanging because we understand time as a succession of events or states of being. To put it another way, we recognize time as becoming or as process. We define temporality as becoming, and timelessness simply *is*. The central question this study seeks to explore is: *How can we as temporal beings, through listening to a temporal art form, experience timelessness?* Just as our understanding of real time in life is bound to successions of events, our understanding of musical time is bound to successions of musical elements—meter, harmonic rhythm, tonality, phrase structure, formal structure, melodic contour, orchestration, etc. These elements act as the primary "time-markers" that create or confirm our expectations for musical motion, making music what it is: a succession of sound events. We know, feel, and are otherwise aware of time moving because we remember what just happened while experiencing what is currently happening. In this way, the musical past and the musical present are strung together in a meaningful context. However, at any moment, we may accidentally find ourselves experiencing something like timelessness in the midst of our daily, time-centric lives.

Let's consider an every-day example from life. Say you're driving home from work. You start thinking about making dinner and what you need to pick up from the grocery store on your way home. Before you know it, somehow you are in your driveway! How did you get there? Your body continued the act of driving and took you home out of habit (now you have to turn around to go get your groceries!). Somehow, you did not notice the stop signs and you wonder if you even stopped at all! You went right past the neighbor's ghastly cluttered lawn that you always notice. None of these things called your attention to what you were doing. Driving—a conscious act—became subconscious and in a very eerie way, you somehow made it home. You know you went through all the steps it takes to get home, but it's as though you never did according to your memory! In a moment you simultaneously feel the reality of where time has brought you (to your driveway) and the sensation that you somehow missed all that because you were inattentive to it and basically did not expect to find yourself at your house so soon. In a moment you realize that you just moved through space and time but were completely inattentive to it. You feel a sense of being suspended above time or outside of time. This is timelessness.

## **Introduction: Timelessness in Music**

The central focus of this study is timelessness *in music*. Just as in our example above, we can find that our sense of temporality becomes disturbed in such a way that we feel suspended above time, outside of time—we feel *timelessness*. The question is *how*? In an effort to more fully grasp the mysterious and perplexing nature of musical

timelessness, we will briefly explore the two premises implicit in our guiding question concerning human temporality and musical temporality in the next chapter. But since this study is primarily focused on the *how* of our question, we will briefly examine some of the necessary elements to musical timelessness by way of introduction.

How musical timelessness is ever possible has to do with three fundamental ingredients: memory, expectation, and how "the facts of music"[1] that create musical motion (primarily rhythm and meter, but also pitches, harmonies, musical layers, etc.) influence our memories and expectations. The entire exchange between our memory, expectations, and the musical material is a picture of temporality: our memories are the storehouses of our *past* perceptions; our expectations are attempts to predict the *future* events based on our memories of past patterns; the musical material is the reality of the *present moment* as it unfolds before us. When we embark on a listening experience, we naturally hold within us a giant bundle of expectations—some musical and some extra-musical, some learned and some intrinsic, some formed previously and others formed in the moment, some reasonable and some absurd, some conscious and some subconscious. The music we hear can either confirm or challenge our bundle of expectations. More specifically, *some* layers or parts of the music can either confirm or challenge *some* or all of our expectations to varying degrees and in different ways.

At any moment in the course of listening to music, we can find ourselves in a state that I call *perceptual consonance*: a climate of general ease and stability because our expectations are not being challenged in any significant way by the music we hear; or we can find ourselves in the exact opposite state, what I call *perceptual dissonance*: a climate

[1] A term I adopted from my dissertation advisor, Dr. Stephen Rodgers.

of instability and uncertainty because our expectations are being challenged overall by what we are hearing. In other words, a basic definition is *perceptual dissonance happens when our bundle of expectations is challenged; perceptual consonance happens when our bundle of expectations is confirmed.*[2]

Perceptual consonance and perceptual dissonance do not necessarily directly correspond to musical consonance and dissonance, although they often do. The shift between either climate can be the product of the music shifting between musical consonance and musical dissonance—thus provoking us into perceptual consonance or perceptual dissonance; or our shifting can be the product of our perception changing; or the shifting can be a combination of musical realities and our perception as they are indirectly shaped by the music. Sometimes, the music will be clear and musically consonant overall, but we can still find ourselves in a perceptually dissonant state for reasons we will explore in the pages and chapters that follow. Conversely, the music can be largely ambiguous and dissonant, but we are in a perceptually consonant state because we have grown used to those ambiguities, for example. But most often, our perceptual climate is derived and influenced directly from the musical material. For this reason, a perceptual climate that is derived from its musical equivalent is stronger and is often sustained for longer periods of time.

Musical timelessness is experienced in the moment of transition from one perceptual climate to the other. It is possible that we will shift at least once within the course of a single listening experience depending on how the music unfolds and interacts

[2] We will discuss my terms, *perceptual consonance* and *perceptual dissonance*, in much greater detail in Chapter II.

with our expectations. In order to understand how the shifting between perceptual consonance and perceptual dissonance creates timelessness, let's consider an example: Imagine you are listening to a song you've never heard before, but you are generally familiar with the band's musical output. You have no reason to expect anything other than a steady beat, discernible meter, clear tonality, and a coherent harmonic syntax. You naturally and, most likely, subconsciously expect these things. Let's say the piece you listen to begins with an introduction that is completely devoid of meter and you can't even feel a beat. All you hear are ethereal harmonic shifts—simultaneities that are sustained for a while then slowly morph into other simultaneities. Within the first few moments of listening, you find yourself shifting in your seat, trying to adjust yourself to what you are hearing, subconsciously searching for a beat or at least the ability to know when to expect the next chord change. At this moment, you are in a perceptually dissonant state that was catalyzed by the musical ambiguity, metric ambiguity to be exact. Your subconscious expectations for metric clarity have been challenged by the musical material. Depending on the nature of the musical ambiguity and how long it lasts, you may grow used to it, even to the point of coming to expect it. At this, you find yourself back in a climate of perceptual consonance even though the music continues to be ambiguous. Now let's imagine that after about a minute of this musically ambiguous climate, the drums enter the texture and instantly, you hear a clear beat and you can discern the meter. Furthermore, all that you were hearing before suddenly becomes clarified and you can feel how the initial material fits within the metrical structure of the drum's beat. The meter is consonant and clear, but you momentarily find yourself in a

perceptually dissonant climate because the musical material that you had grown used to —with all its ambiguity—is suddenly recontextualized in a clear metrical structure. For an instant, you feel the perceptual consonance from being used to the ambiguity (a climate derived from perception), but also the perceptual dissonance derived directly from the musical ambiguity that had existed and is now clarified (a climate derived from the musical material). Simultaneously feeling perceptual consonance and perceptual dissonance creates an added sensation: settled and at the same time unsettled, grounded in expectation yet suspended above expectation, surprising and familiar at the same time—timelessness. The point is that at any moment we shift from perceptual consonance to perceptual dissonance or vise versa, we can potentially find ourselves simultaneously feeling the remnants of one climate while experiencing the other—*and this moment is when we experience timelessness.*

The purpose of this study is to explore and dissect such experiences by (1) examining some specific musical and perceptual elements that facilitate the experience of musical timelessness and (2) proposing three types of musical timelessness in order to (3) develop a set of parameters for discovering and discussing timelessness in music. Much of my approach to this study is indebted to the work of three authors: Jonathan Kramer, for his detailed discussion of musical time and for his proposition that music can create different types of time in *The Time of Music* (1988); Justin London, for his exploration and demonstration of how human beings are biologically designed to entrain rhythm and meter in *Hearing in Time: Psychological Aspects of Musical Meter* (2004); and David Huron, for his thorough exploration of musical expectation in *Sweet Anticipation: Music*

*and the Psychology of Expectation* (2006). My research has been largely grounded in the field of music theory and analysis on rhythm and meter, perception-based studies on rhythm and meter, and musical expectation. I will also occasionally draw upon the field of existential philosophy to provide a backbone for our discussions on temporality. Even though many other fields such as music psychology and ethnomusicology could easily be incorporated into my study on timelessness in music, I will not rely on these fields much beyond the degree to which my primary sources have included them.

Using the writings of Kramer, London, and Huron as the primary springboard for my discussions, analyses, and conclusions, I wish to examine some of the musical and perceptual elements that generate the experience of timelessness in six songs drawn from indie-rock, post rock, and electronica/experimental music: "Almost Always is Nearly Enough" by Tortoise, "Race: In" by Battles, "Pyramid Song" by Radiohead, "Panda Panda Panda" by Deerhoof, "Tornado" by Jónsi, and "Gong" by Sigur Rós. Although, this study focuses on timelessness in this particular repertoire, music timelessness does exist elsewhere and in differing ways. However, these particular bodies of musical literature have been unexplored by theorists and I have found that the examples of musical timelessness in these styles—specifically, in these pieces—are particularly interesting because the musical elements that create musical timelessness for the listener[3]

[3] I wish to note here, that by "listener," I mean anyone who is involved in the act of listening to any one of these pieces in any way. The listener can include those who composed, performed, or were otherwise involved in the making of the piece. The listener can have any degree of familiarity and/or experience with the music in question, or with any music at all. In short, the listener can be any human being capable of receiving the aural stimuli provided by the piece(s) of music in question. At the same time, I am making an assumption that the audience to which I am speaking generally comes from a background of western tonal culture similar to my own. The degrees to which my assumption is accurate I do not wish to explore in this study.

are distilled and highlighted within a short amount of real time.[4] These pieces do not use overarching stasis or exaggerated length to create the effect of musical timelessness (as might otherwise be expected). In fact, all the music for this study lasts less than ten minutes and, at face value, most of these pieces seem to unfold in an unassuming manner. Whatever explorations of musical timelessness that the academy has noted have largely relied on an assumption that the presence of musical stasis (or near-stasis or a predominance of stasis) is necessary and is regarded as *the element* that creates musical timelessness.[5] For this reason, the majority of music-theoretical discussions of any sort of temporal phenomena that could be considered musical timelessness are bound to pieces that are lengthy, avant garde, and usually an expressed attempt by the composer to create such an effect. Found especially in minimal or process music, attempts to alter time perception are overt. However, when it comes to the pieces of this study, the effect seems to be an outgrowth of an artful combination of musical elements.

To some extent, it is true that musical timelessness requires some degree of stasis. However, I intend to argue that stasis is not *what creates* timelessness in music. Instead, I wish to show how timelessness in music is the *moment* of shifting between perceptual consonance and perceptual dissonance, and is completely packaged within memory and expectation. In this way, it is not uncommon to experience a flicker of timelessness in standard Western musical literature where the composer might use, say, a hemiola. But in the pieces particular to this study, the flicker of timelessness is relatively pronounced and prolonged when compared to the overall length and gestalt of the piece, and in some

[4] By "real time," I mean time that is quantifiable, such as the ticking of seconds.

[5] See, for example, Blandino (2006).

cases, as we will see in the chapters that follow, the timeless "moment" actually has the potential to last for the entire piece.

**Overview**

The remainder of this chapter will examine the validity of this study and its contribution to the field of music theory. I will highlight how the writings of Kramer, London, and Huron have been especially helpful, and also where my work diverges from or adds to their writings. Since rhythm and meter play a primary role (not the only role) in facilitating musical timelessness, my literature review will be comprised of comparisons and contrasts between my study and other rhythm and meter studies.

Chapter II will lay the foundation to my analytical approach by examining some of the concepts that are crucial to exploring timelessness in music. First, I will examine the validity of the two premises that form the backbone to the central question of this dissertation: 1) temporality is central to human existence, and 2) music is temporal. Second, in order to better understand the role rhythm and meter play in creating musical timelessness, and also the role other musical factors play, I will explore the meaning of "musical time." Third, I will focus on memory and expectation as the mechanisms of time; fourth, I will explain how timelessness in music is possible by defining and exploring in detail the interchange of *perceptual consonance* and *perceptual dissonance*; and finally, I will name and define three types of musical timelessness that will become the taxonomy I use in my analyses of timelessness in music: Perceptual Consonance *becomes* Perceptual Dissonance (C-->D), Perceptual Dissonance *becomes* Perceptual

Consonance (D-->C), and Perceptual Consonance *is* Perceptual Dissonance (C<=>D).

The next three chapters will contain the largest analytical portion of my study. Chapter III will demonstrate examples of the first type of musical timelessness, Perceptual Consonance becomes Perceptual Dissonance (C-->D). We will examine my transcriptions of "Almost Always is Nearly Enough" from *TNT* (1998) by Tortoise and "Race: In" from *Mirrored* (2007) by Battles. "Almost Always" operates within an interesting temporal continuum where, although the music is undeniably filled with motion and punctuated by sectional shifts, the piece is fundamentally nonlinear.[6] In other words, "Almost Always" creates no desire or expectation for a goal. The music is indeed full of motion and pulse, the beats are clear and grounded to a metrical structure, but the listener quickly gains the sense that the music could quite possibly continue into infinity because of the seemingly arbitrary nature of its organization. It's almost as though the music is confined to a room, in which it is forever going, and we just happened to walk in during these two minutes and forty-four seconds worth of time. The sectional shifts act as frames by which the music moves. The first thirty seconds contian a particular group of sounds, while the next fourteen seconds contain another set of sounds and aesthetics, and so on. Some sounds from the previous frame may bleed over into the next frame. A piece which operates in this manner, punctuated by discontinuities, is what Kramer refers to as *moment form*: "there is no fundamental linearity and yet the music is still markedly discontinuous... Moments then are self-contained sections, set off by discontinuities, that are heard more for themselves than for their participation in the progression of the music.

[6] I am adhering to Kramer's definition of musical nonlinearity as, "the determination of some characteristic(s) of music in accordance with implications that arise from principles or tendencies governing an entire piece or section" or "a structural force" (20). We will discuss this concept in great detail in the chapters that follow.

If a moment is defined by a process, that process must reach its goal and must be completed within the confines of the moment" (50). The content within each frame of "Almost Always" is for the most part perceptually consonant, but the arbitrary nature of the frame's overarching organizational scheme and the fact that no goal-direction is ever created (by its potential to go on into infinity) causes the piece to be perceptually dissonant as it progresses, and thus demonstrates my first type of musical timelessness, C-->D. "Race: In" is similar with "Almost Always" in that it too demonstrates process, but could go on into infinity based on the arbitrary nature of the frames. However, the sectional divisions of the frames for "Race: In" are less obvious. When compared to "Almost Always," the frames of "Race: In" are smoothed out and blurred into each other, creating a more elusive form of C-->D.

Chapter IV will explore the second kind of timelessness, Perceptual Dissonance becomes Perceptual Consonance (D-->C). We will analyze and discuss Radiohead's "Pyramid Song" from *Amnesiac* (2001) and Deerhoof's "Panda Panda Panda" from *Apple O'* (2003). In both of these cases, the music is so temporally disturbed that the overarching climate is strongly perceptually dissonant. In both pieces the metrical and/or harmonic nonalignment is pronounced and prolonged, and yet we are periodically "tempted" to hear metric clarity and alignment, only to again find ourselves within a piece that has a vague metrical context. In some pieces that are so vague, we can either grow accustomed to the lack of temporal resolution and eventually expect it or, as the musical ambiguities that initially created the perceptually dissonant climate are maintained, an additional part or parts can enter the musical texture and metrically clarify

all or most of what came before. In these cases, we will then remain in a perceptually consonant state for the rest of piece.[7] However, we will find with our case studies in Chapter IV that the music only tempts us into moments or peaks of perceptual consonance, and the net result is that for most of the piece, we are in a state of perceptual dissonance.

Chapter V will focus on the most elusive timelessness: Perceptual Consonance is Perceptual Dissonance (C<=>D). "Tornado" from Jónsi's debut album, *Go* (2010), will provide the most in depth exploration of this type of musical timelessness. I will show how C<=>D timelessness provides the listener the greatest amount of listening choice due to the way in which the musical layers overlap into seemingly misaligned periodicities. Although the piano and the bass drum do not seem to align metrically, the starting-points of their periodicities do coincide. Therefore, we have the option to hear the musical time of the song as synchronized based on the occasional alignment of periodic beginnings (hypermetrical downbeats); or the listener may be so aware of how the internal meter of the parts seems misaligned that the music creates perceptual dissonance. In other words, at any moment, depending on how we listen to "Tornado," we are presented with a set of options that will enable us to hear the music as either metrically aligned or metrically misaligned—both possibilities have grounding in musical facts. The presence of both possibilities gives us the ability to toggle back and forth between these options, providing us with the third type of timelessness.

I will also discuss the introduction to "Gong" by Sigur Rós in two ways: first as

[7] We will see an example of this in the introduction of the studio recording of "Gong" by Sigur Rós. However, because we will also examine the live recording of "Gong," which functions differently, and compare it to the studio version, discussion of this piece will appear in Chapter V instead of Chapter IV.

the piece was performed during their 2007 live tour recording in *Heima* Exclusive Extras ; and second, as the piece appears on their 2005 album, *Takk*. In the second case, the musical element that creates perceptual dissonance is retained only for the introduction. In the live recording, however, this same dissonant element is kept for the duration of the piece. I will show how the difference between these two versions of "Gong" alters the type of timelessness experience we may have. In the first case, the experience is closer to that of C-->D, because the material presented at the beginning creates no perceptual dissonance. It is only when an additional part (the guitar) is added do we find ourselves disoriented for a moment. Once we have come to accept the misalignment, the drums enter the texture and disrupt our perception of musical time all over again. The effect is two sets of D-->C. In the second version (the live recording), the experience is C<=>D because the material that is presented at the beginning of the piece continues through the entire performance. The periodicities of the string quartet, the guitar, and the drums occasionally overlap such that their starting points occasionally coincide. It is this particular version that provides us more listening choice, giving us the ability to toggle between either perceptual climate at any moment.

Finally, Chapter VI will conclude my study with reflections on the three types of musical timelessness and what the use of each can do for musical analyses in general. I will discuss how such concepts can distill an otherwise embodied and purely perceptual experience and aid us in our attempt to understand how a temporal art can create an experience of timelessness for a temporal being.

**Literature Review**

More than any other work, Jonathan Kramer's *The Time of Music* (1988) has fueled my study. The primary reason for this is because Kramer, more than any other, carves a space for the experience of timelessness in music. The body of his work is focused on the presence of linearity and nonlinearity in music and how each can establish different types of musical time. He defines linear music as "the determination of some characteristic(s) of music in accordance with implications that arise from earlier events in the piece" or "a process," and nonlinear music as "the determination of some characteristic(s) of music in accordance with implications that arise from principles or tendencies governing an entire piece or section.' Nonlinearity is basically a structural force" (21). He views music as a set of temporal possibilities: "I am saying that music creates many kinds of time, only some of which are similar to what we narrowly think of as ordinary time.... It is only because of our habit of thinking of literal succession as the sole reality of temporal order, only because we allow ourselves to be ruled by the clock, that we may question multiple manifestations of musical time" (6).

Kramer approaches the matter of time in music largely from a perceptual point of view. He writes:

> In the following chapters I postulate many types of musical time. To do so becomes possible once I accept the notion that *music creates time*...I am not content to say that some music suggests that its *events* may be ordered in several different ways. Such a formulation would be too tame to connote the powerful experience of multiple directedness. I am saying that *time itself can (be made to) move, or refuse to move, in more than one 'direction': not an objective time out there, beyond ourselves, but the very personal time created within us as we listen deeply to music.* (6, italics his)

Kramer proposes four types of musical time residing within a spectrum of linear to

nonlinear music. As far as the possibility for musical timelessness is concerned, my study mostly resides within the realm of his nonlinear types of time—moment time and vertical time.[8] Kramer is especially willing to assert that timelessness or something like an experience of timelessness is possible with music containing vertical time:

> In one kind of music, however, there are no proportions, because time does seem to be suspended. This most radical species of musical time is vertical time: the static, unchanging, frozen eternity of certain contemporary music. Is listening to this music really a timeless experience? Certainly the time of bodily processes marches on (even if slowed down by the inducement of a mental state akin to that transcendental meditation); certainly our watches indicate that some kind of time had elapsed during the performance. But there is a kind of musical time, not measurable by clocks or bodily processes, that is suspended by intense listening to vertical compositions. (6)

However, where I hope to take the subject of musical timelessness further than Kramer is to suggest that musical timelessness is not only a matter of stasis because, in reality, nothing in our realm of physical understanding is truly and finally static. As he himself admits in the quote above, certainly some time passes in reality even if we experience something like timelessness during a listening experience. Just as we can't literally be timeless (even for a moment), so too music can't be literally static because at some point, the piece began or we began listening to it, and at some point, all that will stop. Instead, I wish to show how, on a much deeper level, musical timelessness is a matter of our memory and expectations as they are shaped by the musical events that we hear. Because the way we relate to temporality has to do with our memory of the past as it informs our

[8] Kramer defines “moment time” as forms that “verticalize one’s sense of time within sections, render every moment a present, avoid functional implications between moments, and possible displaced beginning and endings of multiply-directed time, a composition in moment time has neither functional beginning or ending” (202). “Vertical time” is defined as “the most radical of the new temporalities I have outlined. Vertical music is that in which nonlinearity predominates over linearity, that which differs most from traditional Western music...The context of vertical music allows the listener to make contact with his or her own subjective temporality. It is music of subjectivity and individuality” (57).

expectations concerning the future, the role memory and expectation play in listening to music and experiencing musical timelessness is central. I have briefly demonstrated this in the previous sections, and will demonstrate it in detail throughout the discussions and analyses that follow.

Another area of departure from Kramer's writings has to do with the musical literature from which I draw my conclusions. Kramer does make a concession that there are some special types of vertical time where the pieces are not static in and of themselves, but the process by which they unfold is so elongated and prolonged that the effect of listening to such a piece is stasis:

> Like moments in moment time, vertical time may be defined by process as well as stasis. There is a special type of vertical music, which is sometimes called 'process music,' sometimes 'trance music,' more often 'minimal music.'...Compositions are constantly in motion, perhaps toward a goal or perhaps without one, into infinity (as in Reich's *Come Out*, 1966). One might think of such works as purely linear, but listening to them is not a linear experience, *despite their internal motion*. Because in such pieces the motion is unceasing and its rate gradual and constant and because there is no hierarchy of phrase structure, the temporality is more vertical than linear. *The motion is so consistent that we lose any point of reference, any contact with faster or slower motion that might keep us aware of the music's directionality. The experience is static despite the constant motion in the music.* (57, italics his)

There are certainly plenty of examples where the motion and prolonged process create an experience of timelessness. A good example of this is Reich's *Music for Eighteen Musicians* which is roughly an entire hour of constant sound and unrelenting pulsation. Because Kramer seems to suggest that musical timelessness is a matter of stasis or prolonged and elongated process, the musical material through which he makes his claims concerning experiencing timelessness relies heavily on pieces of exaggerated length, stasis, and avant-garde compositional processes often with an expressed purpose

for temporal distortion of some kind. Since I wish to show that musical timelessness is not purely a matter of stasis or exaggerated length and prolonged process, we will examine pieces that are no longer than ten minutes, are dynamic, and are certainly not the product of avant-garde compositional processes, yet still produce the experience of timelessness in such a way that the musical and perceptual elements facilitating such an experience may be highlighted and discernible.

Also a cornerstone to my work is Justin London's *Hearing in Time* (2004), which dives deeply into the realm of time perception. The entire premise of London's work is that "meter is a particular kind of a more general behavior... As such, meter is not fundamentally musical in its origin. Rather, meter is a musically particular form of entrainment or attunement, a synchronization of some aspect of our biological activity with regularly recurring events in the environment" (4). Here, he positions himself against Christopher Hasty's move to unite rhythm and meter into one process (which Hasty calls "projection"), and instead views meter as the way in which listeners "synchronize their perception and cognition with musical rhythms as they occur in time" (1997, 5). More than any other theorist, London is able to distill the idea that *perception* guides the notions of consonance and dissonance, not tonality or meter. Furthermore, as he makes the connection between the entrainment of meter and anticipating (or expecting) events, the connection I wish to make between musical timelessness and rhythm and meter becomes apparent. He writes, "But the idea that meter is related to, and may be a complex form of, entrainment behavior is a central hypothesis of this book. *Musical meter is the anticipatory schema* that is the result of our inherent abilities to

entrain to periodic stimuli in our environment" (12, italics mine). If we accept that the mind is able to operate outside of absolute time, and that meter is a form of entrainment which operates as a function through which we form expectations, we can also accept that rhythm and meter play a central role in experiencing musical timelessness.

London also develops a Taxonomy of Metric Ambiguity (85-86) that can provide some additional clarity for our purposes here. After all, in the case of the second and third types of timelessness, Perceptual Dissonance becomes Perceptual Consonance and Perceptual Consonance is Perceptual Dissonance, we will see that metric ambiguity and multiple metric layers have the primary role in prompting a switch from one perceptual climate to another. Based on London's definitions, our case studies involving the first type of timelessness, Perceptual Consonance becomes Perceptual Dissonance, "Almost Always" and "Race:In" demonstrate examples of London's *unambiguous metric context,* which involves pitch/durational patterns that strongly tend to project a single meter and are readily maintained by the listener even in a deadpan performance (86-87). "Pyramid Song" and "Panda," our examples of Perceptual Dissonance becomes Perceptual Consonance, are examples of London's *vague metric context,* which involves the absence of one or more normative levels of metrical structure. In contrast to a metrically ambiguous context in which there are two or more plausible and determinate patterns of metric organization, in a metrically vague context, no determinate pattern ever emerges (86-87). "Tornado" and the live version of "Gong," our examples of Perceptual Consonance is Perceptual Dissonance, reflects London's *truly ambiguous metric context,* which involves pitch/durational patterns that give rise to different metric construals on

different listening occasions. This includes polyrhythms in certain tempo ranges, complex textures in which different voices/layers project different metric organizations as well as metrically malleable passages in a strict, deadpan performance. Each construal is nonetheless determinate: on each occasion a listener can hear the passage in terms of a particular metrical organization (86-87). Even though his taxonomy is based on temporal perception and may be useful in helping us define and quantify the details of the metrical issues that can catalyze an experience of musical timelessness, what London does not offer is a specific focus on the experiential effect of such metric contexts—in particular, an exploration of how musical elements, metric ambiguity in particular, are capable of producing musical timelessness. In this study, we will focus our attention on the experience resulting from each metric context and examine how certain musical elements allow musical timelessness to manifest.

The final springboard to my work comes from David Huron's writings in *Sweet Anticipation: Music and the Psychology of Expectation* (2006). Huron begins his discussion by examining how human beings exist by making predictions from a survival standpoint. At a base level, our existence and survival is contingent upon making certain successful predictions about the future (such as how to find food, where there might be danger, and so on). As he states, "The principal assumption will remain: the biological purpose of memory is to prepare us for the future, and so memory forms the physiological foundation for expectation" (238). Because the act of making predictions consciously or subconsciously is part of our very fiber as human beings, we carry this act into everything we do in order to make sense of the world around us. It stands to reason,

then, that we make musical predictions in order to understand the music we hear. Huron's sense of expectation arising from survivability and making sense of the world around us is filtered into all of his discussion concerning the vast array of musical issues he addresses. Even in dealing with the perceptual issues that surround rhythm and meter, he says, "Once again, accurate expectation facilitates action and perception. In the case of perception, accurate expectations about *when* a stimulus might occur helps the listener in resolving the *what* of perception. Notice also that the process is entirely unconscious" (177-178, italics his).

Although Huron's view of expectation comes from more of a biological/survival point of view whereas I am mostly interested in musical expectation as a means through which we perceive musical time, his discussion of *musical* expectation concerning any musical category is closely related to temporality in music at a basic level. Huron essentially makes my point—that temporality is central to human existence—when he argues that we as human beings are temporal by nature because we exist and survive by making accurate predictions about the *future*, which is increasingly possible by the use of our memory of *past* patterns.

Huron is able to depict the landscape of expectations in general, that there are visceral responses to confirmed and challenged expectations (a hallmark of perceptual consonance and perceptual dissonance), that the origins and characteristics of our expectations are innumerably varied, and that our bundle of expectations is not only informed and shaped by the music we listen to, but that our perception of the music we listen to is informed and shaped by our bundle of expectations. His following statement

captures the foundation I stand on when it comes to the interaction of memory and expectation where music—and most especially musical timelessness—is concerned:

> When a future event is highly probable, listeners experience a strong sense of the inevitability of that outcome—an experience we can call the 'feeling of anticipation.' Anticipating events leads to changes of attention and arousal whose physiological concomitants are akin to stress. The amount of tension experienced is proportional to the predictability of the ensuring event. The most predictable events evoke the strongest feelings of tensions. If the outcome conforms to the listener's prediction, there ensues a strong positively valenced prediction response. When musicians speak of 'tension and release' or 'tension and resolution,' much (though not all) of what they are speaking of can be understood as anticipation followed by a positively valenced prediction response. Such tension-and-release experiences are most likely to occur when musical events are highly predictable. In Western music, examples of such highly predictable event sequences include the movement of chromatic tones to neighboring diatonic pitches, commonplace embellishments like anticipations and suspensions, and highly stereotypic cadences. (328)

Another major contribution of his work is that he builds a taxonomy of different types of surprise (expectations that are challenged) in relationship to the different modes of memory and he connects them to musical situations.[9] In the analytical chapters of this study, we will make use of his taxonomy in order to examine the nature of our challenged expectations in any given moment. However, where this study diverges from Huron is in my specific intention to examine the *transition* between what we feel when experiencing a confirmed expectation to what we feel when experiencing a challenged expectation or vise versa. Where Huron's purpose is to define types of musical expectations that are challenged, I intend to demonstrate and highlight the transitions between challenged and confirmed expectations in a single listening experience and show how those transitions are the seat of the timelessness moment.

[9] I will disclose the details of Huron's taxonomy and how it specifically connects to musical timelessness in Chapter II.

In general and especially where older schools of thought are concerned, other theoretical writings on rhythm and meter tend to focus exclusively on definitions of rhythm and meter, often pulling the discussion of rhythm and meter so far outside of its musical context that any application of it to the discussion of real human experience is difficult. Maury Yeston's *Stratification of Music Rhythm* (1976) is a good example of this. As he seeks to ask the appropriate questions that will enable him to begin a theory of rhythm and meter, he purposefully separates pitch elements from rhythmic elements. He is largely interested in approaching rhythm hierarchically—similar to Schenkerian analysis. The rhythmic structure that is "characterized by levels of meaning" is what he calls rhythmic stratification. His analyses depend on the premise that pitch-to-rhythm methodology (where rhythmic significance is derived from pitch function) and rhythm-to-pitch methodology (where the significance of the pitch is derived from its rhythmic placement) should not be a circular logic.

> This distinction between the two analytical procedures avoids a logical trap. Finding a pitch to be important because of its rhythmic placement and, at the same time, stipulating that the same rhythmic moment is important because an important pitch coincides with it is to reason in a circle. Keeping the two analytic approaches separate assures that the importance of a rhythmic moment will not both determine and be determined by the significance of a coinciding pitch event. (5)

I heartily disagree. It is true that the importance of a rhythmic moment both determines and is determined by the significance of a coinciding pitch event. I argue that pitch significance and rhythmic significance do actually form a closed loop and we need not fear such a logic if we are to be interested in the interaction of music with human perception. By and large, Yeston's treatment of rhythm and meter is separated from its

musical context and is not a study guided by or based on human perception.

Some of the reasoning behind Yeston's move to separate pitch from rhythm may have to do with clearing a space to differentiate musical elements, a similar choice Christopher Hasty makes a when developing his theory of metrical projection in *Meter as Rhythm* (1997). Hasty utilizes uninterpreted rhythms to dissect multiple aspects of rhythm and meter by forming extremely precise distinctions between "an event" and that event's "projective potential" (84-85). However, unlike Yeston, Hasty's distinctions gained through using uninterpreted rhythms are quickly reinserted back into a *perceptual* context of understanding musical time—and it is here that the two theorists' approaches cease to be similar. The entire thrust behind Hasty's work is to develop an explanation of how musical time is *perceived*. He does not seek to separate his discussion of musical time from the perception of it like Yeston does. Instead, he argues that rhythm and meter are united under *one process* of metrical projection, where the theorist is focused on "process" rather than objects and "dynamic becoming" instead of static being (i). Hasty's work is substantially supported by existential-philosophical discussions, so much so that when he focuses on the idea of the "eternal 'now' moment"—where we might find a discussion on the experience of timelessness in music—he turns to several existential writings both by philosophers and avant-garde composers. Although he presents a great deal of useful information, his discussions in these passages are left largely disconnected from music.[10]

[10] Hasty discusses the "now" moment as a sort of perceptual impossibility. In his earlier chapters, he states that "If now is never past and never future, it cannot itself be an event and cannot in this sense be present. And yet, if now is continually new, it can only be an awareness of becoming, and if it is to be conceived as awareness, it cannot be a durationless instant. And because this is an awareness of and for (present) becoming, I shall continue to call now a "present awareness" (76). I agree with Hasty's statements on the collapse of the past and present into a "now" where the best we can do is call the

Since the 1980s, rhythm and meter studies have shifted away from purely theoretical/formulaic approaches toward perception-based studies. However, many writings remain focused on goal-directed, process-oriented, fundamentally linear music—mostly within the standard repertoire—and are nearly devoid of any discussion on the experience of musical timelessness. With exception to Kramer's work on nonlinear musical time (1988), anything close to timelessness in music is treated more as a subcategory to metrical or rhythmic asymmetry within a linear and symmetrical context, rather than as its own temporal phenomenon, worthy of exploration.

As the title suggests, Lester's *The Rhythms of Tonal Music* (1986) focuses on building a taxonomy of definitions applicable to western tonal music as a linear experience. He even goes so far as to say that listening to music is a chronological experience: "A pair of melodic pitches, or even the beginning and end of a single pitch, can only be perceived successively, not synoptically" (1). What Lester fails to consider is the mind's ability to not only remember and retrieve information (ie. past patterns) in an *unordered* manner, but also the mind's ability to perceive stimuli in such a way that the ordering of events in absolute time does not translate into an ordered perception of those events *as they are being received in the moment*. Kramer takes this point further when he argues that the human mind is biologically equipped to transcend time and to sense a "prolongation of the present" which can be provoked through drugs, mental illnesses, "vertical music," etc. (section 12.2).

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"now" a "present awareness" of the future flipping into the past. Again, in the final section of his book, he states that "the spatialization of time and the autonomy of a present freed from becoming are products of conceptualization" (297). In other words, the experience of timelessness can only be captured through conceptualization (as we try to discuss it), to which I agree. However, there is a lack of written material on the matter, especially directly applied to musical analyses.

Harald Krebs's widely known work on rhythm and meter, *Fantasy Pieces* (1999), continues the trend of building taxonomies based on perception. Krebs is mainly concerned with rhythmic hierarchy and types of dissonance based on the interaction of pulse-layers within the context of a given piece. Unlike Lester, however, Krebs does assert that listeners have the ability to perceive music in a nonlinear or unordered manner where harmony allows the listener to grasp displacement dissonance retroactively, or by "listening backwards" (35). Where Krebs's work is most helpful to music theory at large is also where he tends to fall short for my study. He provides a working system of classifications and types of dissonances that enable us to discuss nonalignment and even nonlinear moments in music—terminology we will use in our analyses and discussions in the chapters that follow. However, all of his designations are based on an unspoken assumption that metrical alignment is always the canvas upon which such nonalignments can exist. In short, he, like so many others, seems to examine all perceptual temporal phenomenon (ie. nonalignment of layers) as a deviation from the otherwise metrically consonant climate of the piece. In short, linearity, goal-direction, metric symmetry, and functional tonality are always the starting places. The trouble then, is how can we discuss pieces that do not have such a metrically stable backdrop? Indeed, the fact that Krebs is primarily concerned with music of the Romantic Era, supports and makes his approach completely reasonable. As we will see in Chapter II, however, if we can free the terms "dissonance" and "consonance" from being exclusively tonal and/or metric concepts and instead apply them to our perceptions as the totality of what we expect from a piece of music or from a listening experience based on what we remember, then any musical

elements can be better understood as materials that can be twisted and turned to produce all sorts of experiences for the listener, including musical timelessness.

Yonatan Malin's *Songs in Motion: Rhythm and Meter in the German Lied* (2010) approaches rhythm and meter from a perceptual—if not biological—standpoint. However, his treatment of nonlinear moments in music is fairly similar to the other writings discussed thus far in that he essentially refines Krebs's taxonomy of metric dissonance, basing most of his work on a schematic system of analysis designed to explore expression, meaning, and motion in German lieder. What can be gained from his work, however, is his exploration of how we are biologically designed to entrain meter:

> The distinction between sensory and working memory is worth keeping in mind since it correlates with the difference between basic entrainment and metric groupings with spans that are two seconds or longer. The implication, in other words, is that while we still experience periodicities longer than two seconds metrically, we do so indirectly, through a process of metric grouping. (46)

**Chapter Summary**

In summary, my study is focused on a certain experience—timelessness—and what is musically involved in order to create that experience. If we examine how temporality is central to human existence, and how music is temporal by nature, we can see the paradoxical mystery behind such an experience. We must consider that musical timelessness is not only a matter of rhythm and meter, but is more deeply a matter of *human perception*. Human perception is shaped by certain musical elements and the way those elements play out with each other and interact with our expectations. Instead of limiting ourselves to standard repertoire—where such timeless moments are brief and considered mere anomalies, or where the temporal disturbance is the expressed purpose

of the composers whose pieces utilize exaggerated compositional length, prolonged process, and stasis as techniques for such achievements, we will examine alternative literature within the indie-rock, post rock, and electronica/experimental music scenes where we find the timeless moments distilled and pronounced even though at face value they may seem to exist within a linear, goal-directed context. Through examining the musical and perceptual elements that facilitate the experience of timelessness in music and by proposing three types of musical timelessness in order to develop a system of parameters for discovering and discussing timelessness in music, we can answer the question: How can we as temporal beings, through listening to a temporal art form, experience timelessness?

## CHAPTER II

## MEMORY, EXPECTATION, AND PERCEPTION

Remember the central question of this study: How can we as temporal beings, through listening to a temporal art form, experience timelessness? The experience of timelessness in life, and especially in music, is extraordinarily and wonderfully perplexing when we consider the centrality of time to human existence and to music. Our lives are punctuated by "mile-markers" and life-cycle events as we grow older, our bodies are naturally attuned to the rising and setting of the sun, our entire existence is organized into a succession of seconds turning into minutes which eventually add up to years, and even our own heartbeats act as ever ticking clocks. Try to imagine anything—a conversation, a day, a meal, movement, *anything*—without time. The entirety of our lives is the spinning out of events in succession. In a similar way, music is a succession of sound events through time. For this reason, music, perhaps more than any other art form is temporal by nature. After all, a painting can remain the same for minutes, hours, days, and years on end. A symphony, on the other hand, is experienced as it happens, as sound events through time. Therefore, the questions I seek to explore in this study are based on these two premises:

temporality is central to human existence

and

music is a temporal art form

In order to better grasp both the concrete and illusory details of musical timelessness, let us first consider further these two premises, each in turn.

**Temporality Is Central to Human Existence**

It seems that the essential way human beings live life is through time and space. Regardless of how time and space are perceived, it is through these two modes of existence that we think, feel, experience, and are generally conscious of our own lives and identities. We cannot be everywhere at once, or live all the days of our lives at once, or experience the totality of every conversation all at once, or really anything all at once.

Much of existential philosophy is focused on time and space concepts because they are central to our understanding of human existence in general. For example, Maurice Merleau-Ponty, in *Phenomenology of Perception* (2005, trans. Colin Smith), claims that "existence is spatial" (293) and "since every conceivable being is related either directly or indirectly to the perceived world, and since the perceived world is grasped only in terms of direction, we cannot dissociate being from oriented being" (295). Martin Heidegger's *Being in Time* (1962, trans. Macquarrie and Robinson) is primarily focused on showing that an understanding of temporality is necessary to gaining an understanding of existence. Or in other words, to discuss existence is to discuss time. At the outset of his work, he writes, "Our aim in the following treatise is to work out the question of the meaning of Being and to do so concretely. Our provisional aim is the *Interpretation of time as the possible horizon for any understanding whatsoever of being*" (1, italics mine).

Time is largely comprehended in our memories of past patterns and predictions we make concerning the future. Whatever we may experience as the present moment is really only understood within a past-future reasoning. In *The Phenomenology of Internal*

*Time-Consciousness* (1964, trans. J. S. Churchill), Edmund Husserl makes this point when he describes the nature of time as a continuum of retentions, which are subject to modification. In other words, every "now" moment is instantly a past moment that our minds retain and likely modify.

> Since a new now is always presenting itself, each now is changed into a past, and thus the entire continuity of the running-off of the parts of the preceding points moves uniformly 'downward' into the depths of the past...There results, therefore, a stable continuum, which is such that every subsequent point is a retention for every earlier one. And every retention is already a continuum. (50)

Similarly, Jean-Paul Sartre, in *Notebooks for an Ethics* (1992, trans. David Pellauer), describes temporality using a "future-past" concept when he states "the past is a future state defenseless against the decrees of a freedom that slips into the heart of the absolute present" (477). We can understand this if we try to grasp "now" by saying "Right.....*NOW*!" The instant we say, "NOW!" the "now" moment is already in the past. In other words, we do not have the ability to literally exist within that "now" moment before it becomes the past. The spatialization of time and the "temporalization" of space is intrinsic to existential philosophy. Over and over those philosophers who have dedicated their pursuits to working out the details of human existence build their entire discourses on the foundation of space and time and upon such a cornerstone we can accept the premise that *temporality is central to human existence*.

**Music Is Temporal**

In the introduction of Chapter I, I made the claim that music, perhaps more than any other art form, is temporal. Stating that music is temporal and taking such a statement

for granted can be easy, but having the ability to understand the entailments of such a statement is much more challenging. In order to fully grasp the depth of this study here, we must consider some of the intricacies of music when we accept music as a temporal art form. Christopher Hasty makes a similar remark in his preface to *Meter as Rhythm,* when he writes:

> The challenge of taking this temporal nature [of music] into account lies in finding ways of speaking of music's very evanescence and thus of developing concepts that would capture both the determinacy and the interdeterminacy of events in passage. Stated in this way, such an enterprise appears to be loaded with paradox. However, much of the paradox disappears if we can shift our attention from objects to *process* and from static being to *dynamic becoming.* (preface, italics mine)

Aural acts are tightly bound to temporality because we can only receive the information to the degree at which it is presented to us. I doubt anyone would disagree that music, in and of itself, is experienced through listening. It is an aural act.[11] As such, any content that we experience as we listen to music is bound to temporality because the music has a beginning and an ending ("dynamic becoming"), and within that we understand it as a succession of sound events ("process"). In order to understand this point, let's consider visual art for a moment. Imagine that you are looking at a painting. You may choose to focus your eyes first at the use of color, then you notice the shadowing, then maybe the various brush-stroke techniques the artist used and so on. However, at any moment, you have the ability to enjoy the painting as a whole (as an object) by simply changing your physical orientation to it. You step back so your eyes can take in the entire picture. You have this ability because the product was presented to you

[11] I am purposefully excluding any visual art that includes music as an accompaniment—such as dance or cinema.

as an entirety ("static being"). If you waited another ten minutes in front of the painting, it would remain the same in and of itself. The painting will not produce another scene or different colors than what is already there. The act of viewing the painting is temporal and can be process-oriented (you may notice things within that painting you did not notice before), but the painting itself—as a work of art—is not temporal. The painting itself does not change, but is instead presented as a finished work, able to be perceived as a whole. With music, on the other hand, the entire work is presented to our ears bit by bit and we are not able to behold the entirety of the work simply by changing our orientation to the sounds. In her article, "Memory and the Perception of Rhythm" (1993), Candace Brower makes this same observation: "As listeners we have no choice but to take in musical events at the rate at which they are presented to us" (19). We can only receive each bit, moment by moment, because that is how music operates. Can you imagine if some how, all the instruments of an entire orchestra were able to play all the notes of a symphonic work at one time? Even if that were possible, it would be nothing more than a cacophony and certainly would not clearly represent the symphony in a meaningful, coherent way. And even still the cacophony is temporal because it has a beginning and an ending. At some point, the music starts, and eventually it will stop. And within a piece of music, there are pitch beginnings and endings, phrase beginnings and endings, and movement beginnings and endings—all filled out with successions of sounds that string together into meaningful ways. Since we can only receive music bit by bit, music has the ability to create different kinds of musical time. As Kramer states in the beginning of his book:

> In the following chapters I postulate many types of musical time. To do so becomes possible once I accept the notion that *music creates time*...I am not content to say that some music suggests that its *events* may be ordered in several different ways. Such a formulation would be too tame to connote the powerful experience of multiple directedness. I am saying that *time itself can (be made to) move, or refuse to move, in more than one "direction": not an objective time out there, beyond ourselves, but the very personal time created within us as we listen deeply to music.* (6, italics his)

Once we accept that music is temporal, however, a few more questions must be asked: first, what is musical time? and, second, what factors shape the *perception* of musical time? It may be tempting to define musical time as a system measuring attack points. In other words, we may be tempted to say that musical time is meter and rhythm. However, I wish to suggest that musical time is musical motion. Not only do rhythm and meter play a role in creating musical motion,[12] but so do tonality, melodic contour, orchestration, and many other elements. Any musical element that contains energy (such as the magnetic pull[13] of a suspension, the trajectory of the rise and fall of a melodic line, the progression of harmonies further away from the tonic) creates musical motion.

The perception of musical time (musical motion) has to do with our expectations

[12] Kramer states that we feel meter as motion because it highlights significant timepoints in a constant flow: "Just as there are an infinite number of points between any two points in geometric space, so there is an infinite number of timepoints between any two successive timepoints in music, no matter how closely together they occur. Not all these intervening timepoints are important, however. Meter singles out certain timepoints from the infinite succession and marks them for musical significance. It is because of the constant flow of timepoints of varying degrees of accentuation that we can feel meter as motion. This infinite series of timepoints is what Zuckerkandl calls the 'metric wave'. This patterned succession of accented timepoints, then, is meter" (83). However, a little later he says, "Rhythm is a force of motion, while meter is the resistance of that force" (84). The point Kramer is trying to make is that because meter is cyclic and always returning to the same point, meter does not in and of itself possess any quality of movement forward. I disagree, however, because internal motion is still motion —even if it is only captured within a measure and not across measures.

[13] Steve Larson's Theory of Musical Forces explores resolutions as a result of musical forces acting on pitches much the same way that gravity, magnetism or inertia act on matter in our physical world. The language I use here (ie. "magnetic pull" of pitches toward their resolutions where pitch proximity is close) is grounded on the theories presented by Larson in *Musical Forces: Motion, Metaphor, and Meaning in Music* (2012).

for directional movement. The body of music forming what has been referred to as "Western music"[14] is based on of a system of linearity where music is composed in a sort of cause-effect manner based on hierarchy: our chord progressions are goal-directed, pitches have gravitational pull toward their resolutions, and meter is organized as a system of "weaker" or unaccented beats moving to "stronger" or accented ones. As Kramer states, the western tonal system is "the quintessential expression of linearity" (23). He writes, "Tonal listening is a learned behavior, just as the predominantly nonlinear arts of other cultures can reveal to us" (26). Many of us who have been brought up in this hierarchic, functionally tonal system tend to think and listen with a beginning in mind and a desire for a specific outcome or goal—this is goal-direction. And linearity is the establishment of a goal. In *Repeating Ourselves: American Minimal Music as Cultural Practice* (2005), Robert Fink goes even further to say that the invention of tonality creates a uniqueness in music, such that "Western music has been uniquely concerned with constructing desire and subjectivity through its control of temporality and expectation" (71). Again, as Kramer states, "We wait for an 'explanation.' This waiting is the essence of linearity" (26). It is here that I must make a very important point: musically speaking, the "goal" is not necessarily pitch resolution or a return to the tonic

[14] If we consider where most of our performance and analytical energies have been spent throughout the history of music academics—essentially, Bach to present—, I think it's safe to say that the majority of the repertoire is tonally functional to at least some degree. I am not necessarily equating "tonally functional music" to "linear music" because linearity and nonlinearity can be expressed through rhythmic syntax, and processes related to pitch-class sets, (etc.) as well. Nonetheless, it seems reasonable to suggest that people west of the Middle East seem to operate within an overarching linear view of time in general (ie. cause and effect, memory and prediction). Kramer makes this observation and connects it directly to the linearity of functionally tonal music (23) and I am making similar connections between cultural understandings of time (as predominantly linear) and the body of music from Bach to present (as predominantly tonally functional). At the same time, I do also acknowledge a shift in the musical academy where repertoire falling outside this boundary is gaining attention. In fact, a large reason for this shift may be due to an unstated (or perhaps stated) affirmation that our lexicon for discussing such music must be broadened, especially within music analysis.

key. The goal may be as simple as an end to the music or a change in the music. *Any sort of expectation can be a goal*, even if that expectation is not reached in reality. Therefore, our perception of musical time has everything to do with our expectations—expectations that are based on our memory of past patterns. In other words, *expectations establish a goal, change produces musical motion,*[15] *and musical motion is musical time*.

Insofar as we remember that rhythm and meter are not the only means by which musical time is created, we can acknowledge that rhythm and meter typically play the largest role in shaping musical time. After all, rhythms are attack-points with durational value and meter measures and groups those attack-points. Meter essentially organizes the successions of sound events we hear. As Huron writes: "Returning to the phenomenon of meter, we find that meter provides a recurring temporal template for coding and predicting event onset" (198). In other words, the nature of meter is one of predictability (which generates expectation) because it organizes events into patterns.

The entire premise of Justin London's *Hearing in Time: Psychological Aspects of Musical Meter* (2004) is that "meter is a particular kind of a more general behavior...As such, meter is not fundamentally musical in its origin. Rather, meter is a musically particular form of entrainment or attunement, a synchronization of some aspect of our

[15] I believe it is also possible to have musical motion without goal-direction because even where there is no goal-direction, the listener can perceive change (motion) retroactively. This fact is essentially how Kramer is able to argue for a type of musical time that is not linear or goal-directed. "Like moments in moment time, vertical time may be defined by process as well as stasis. There is a special type of vertical music, which is sometimes called "process music," sometimes "trance music," more often "minimal music."...Compositions are constantly in motion, perhaps toward a goal or perhaps without one, into infinity (as in Reich's *Come Out*, 1966). One might think of such works as purely linear, but listening to them is not a linear experience, ***despite their internal motion***. Because in such pieces the motion is unceasing and its rate gradual and constant and because there is no hierarchy of phrase structure, the temporality is more vertical than linear. *The motion is so consistent that we lose any point of reference, any contact with faster or slower motion that might keep us aware of the music's directionality.* ***The experience is static despite the constant motion in the music***" (57, bold and italics his).

biological activity with regularly recurring events in the environment" (4). He views meter as the way in which listeners "synchronize their perception and cognition with musical rhythms as they occur in time" (5). He goes on to write: "it is the *differentiation of expectation*, rather than any tonal or durational criteria, that gives rise to different degrees of metric accentuation and the subjective sense of a pattern of strong versus weak beats" (17, italic mine). Yonatan Malin provides even more clarity in *Songs in Motion: Rhythm and Meter in the German Lied* when he writes:

> The distinction between sensory and working memory is worth keeping in mind since it correlates with the difference between basic entrainment and metric groupings with spans that are two seconds or longer. The implication, in other words, is that while we still experience periodicities longer than two seconds metrically, we do so indirectly, through a process of metric grouping. (46)

Our ability to metrically group anything is due to our expectancy of such groupings based on the memory that those patterns have existed previously.

To summarize, we can accept the premise that music is temporal because it has beginnings and endings and because it is a series of sound events through time. Since we can only receive music at the rate it is presented to us, we can also say, as Kramer does, that music creates time, or more specifically music creates musical time. We can understand musical time as musical motion which is most often produced by goal-direction as an established expectation. All these statements are laying the foundation for our understanding of how it is ever possible that music could create an experience of timelessness. What we see so far is that music is characteristically and essentially temporal—as are we. The possibility that music can produce timelessness seems a mystery. The key to this mystery lies deeply within the mechanisms of time perception:

memory and expectation.

**The Mechanisms of Time: Memory and Expectation**

The human experience of time in any sphere, musical or otherwise, is really a matter of perception centered on memory and expectation. Remember Candace Brower's statement concerning how we receive music bit by bit: “As listeners we have no choice but to take in musical events at the rate at which they are presented to us.” She goes on to ask, “How, then, do we hear rhythmic relationships [or any other relationships] among widely separated musical events?” Her response: “The answer, of course, is memory. Memory plays an essential, if not relatively unrecognized, role in music perception.” (19). We view the past based on our memory and we view the future based on predictions (expectations) formed from our memory of past patterns. David Butler makes this point in *The Musician's Guide to Perception and Cognition* (1992). He states:

> Our senses give us access to music through a very narrow audible ‘now.’ If important acoustical events take place, say, every 10 milliseconds or so, or even if our perceptual sense of the present spans as much as 5 seconds, we have direct perceptual access to less than 3 percent of a 3-minute popular song or less than 1 percent of a 10-minute symphonic movement. *The rest of the music exists in our memories and in our expectations.* A growing number of perceptual theories are suggesting that memory and expectation are closely connected to one another and to the way we perceive: our memory guides our attention, influencing our perceptions; these perceptions reshape our memory, and the cycle continues. (166, italics mine)

As modern psychology, science, and even music theory can tell us, there are different types of memory stores and each type of store can play a specific role in forming musical expectations and in generally shaping musical perception. Candace Brower writes: “Memory combines mechanisms that store perceptual information in

different ways and for varying lengths of time. Psychologists account for these differences by describing memory as consisting of sensory, short-term, and long-term stores" (21).[16] She explains that sensory memory (called "echoic memory" in the case of auditory stimuli) and short-term memory (or "working memory") have limited capacities, whereas long-term memory is essentially unlimited (21-22). Long-term memory is divided into two types: semantic, which is based on conceptual knowledge, and episodic, which is based on the memory of specific events within a piece.

When it comes to experiencing timelessness in music, we will see how specific memory stores as described by Candace Brower play significant roles in allowing us to transition between perceptual consonance and perceptual dissonance. She states, "At lower levels, the memory trace of one event is still in echoic memory by the time we hear the next. This allow us to keep track of where we are within a metric grid by literally *feeling* the distance between successive events" (26, italics hers). In other words, as we are experiencing what is happening in the moment, we are still in the process of retaining what just happened and what happened several moments ago—a concept that is central to understanding how the transition between perceptual consonance and perceptual dissonance creates a moment of musical timelessness. This scenario of experiencing the moment while feeling the remnants of the past through echoic memory describes what happens anytime we transition between perceptual consonance and perceptual

[16] Candace Brower's main purpose for writing her article is to make some connections between the different types of memory stores and the different hierarchic levels of rhythm. She makes the claim that, although reductive analytical techniques are not exactly representative of what we hear as listeners, the validity of reductive analysis can be argued by the fact that, through the memory, we are still able to make connections between temporally separated events: "The boundary between foreground and middleground corresponds to the shift from echoic and short-term memory, and the boundary between middleground and background corresponds to the shift from short- to long-term memory" (23).

dissonance. Furthermore, “it is our ability to bring back traces of earlier events from episodic memory that allows us to relate the psychological present to the past and thus to perceive large-scale patterns...Therefore, information stored in episodic memory serves as a basis not for recollection, but for *recognition*” (22-23, italics hers).

Similar to Candace Brower, David Huron suggests that specific types of expectations arise from specific types of memory and as part of his work in *Sweet Anticipation: Music and the Psychology of Expectation* (2006), he builds a taxonomy of such connections: schematic expectation comes from long-term (semantic) memory, veridical (based on reality that might not be knowable) expectation arises from episodic memory, dynamic expectation arises from short-term memory and intermediate memory, and conscious expectation arises from working memory (237-238).

> If my taxonomy is correct, then it implies that there are at least four types of surprise. A schematic surprise occurs when events do not conform to common place musical patterns such as stylistic norms. A veridical surprise occurs when events do not conform to a musical work (or specific musical pattern) that is familiar to the listener. A dynamic surprise occurs when events do not comply with expectations that have been evoked in the course of listening to the work itself. Finally, conscious surprise occurs when events do not conform to explicit thoughts or conjectures about what will happen. (237-238, italics his)

Huron's musical “surprise” is essentially his terminology for experiencing the unexpected. In this study, we refer to such experiences as perceptual dissonance.

Even before the music has a role in shaping our expectations, we as listeners naturally carry a host of expectations into a listening experience. These expectations can both shape and be shaped by the listening experience. Huron explores this concept when he writes:

Listening experiences are approached with default schemas that are activated even

> before any sound is heard. Once the music begins, listeners are adept at switching rapidly between schemas—although some changes of schema are more common than others. The repertoire of schemas available to the individual listener is a product of that listener's unique listening history. (217)

A few pages later, he writes: "Expectations of future events are not merely the product of schematic or veridical patterns that have been learned over a lifetime of exposure. Expectations can also arise from comparatively brief periods of exposure. *As the events of a musical work unfold, the work itself engenders expectations that influence how the remainder of the work is experienced"* (227, italics mine). There are two points being made here: 1) the listener naturally has expectations before hearing a single note, and 2) the listener can readjust those expectations as influenced by the reality of what is being heard once the musical work begins. Huron distills these two points when he writes:

> Even one minute of exposure is long compared to the rapidity in which listeners can adapt their expectations to some new stimulus sequence...A listener would begin the listening experience with expectations reflecting broad or generalized probabilities arising from a lifetime of musical exposure. But as the musical piece progressed, the listener would tailor expectations that are engendered by events in the work itself. In contrast to schematic or veridical expectations, which require some coding in long-term memory, these dynamic expectations exploit short-term memory to form expectations about likely future events. (228)

So, as we listen, we can readjust our expectations based on what we are hearing as the musical work unfolds in the moment.

By examining how the listener's expectations unfold and are reshaped based on what is stored in the memory (long-term or short-term), Huron hints that the perception of music is still a temporal issue. He says, "The biological purpose of memory is to prepare us for the *future* and so memory forms the physiological foundation for expectation" (238, italics mine). If we remember that memory is the storehouse for *past*

events, his statement not only explains the role memory has to play in forming expectations, but his statement also makes abundantly clear the fact that memory and expectation work together as the mechanism by which our perception of musical time operates. In summary, then, we see that musical time (or any time, for that matter) is the product of our expectations—which are built from past patterns retained in our memory—interacting with our perceptions of reality. Our expectations comment on the future, but have their grounding in our memory of the past. We perceive the moment (the present) through our memory and expectations.

**Perceptual Consonance and Perceptual Dissonance**

In music theory, the terms *consonance* and *dissonance* generally refer to musical elements conforming or not conforming to specific predetermined schemas such as tonality and meter. We say a pitch is consonant if it fits within a key center, or if it fits within a chord structure, or if it makes a certain interval with another. We say a rhythmic motive is dissonant if it works outside the standard metrical structure of the piece (think of a hemiola, for example.) Of course, schematic prescriptions can be shaped by the overall style or gestalt of the piece. For example, a chord cluster could be considered dissonant in a Schubert art song, but consonant in an Eric Whitacre choral work. However, for the sake of this study, I wish to broaden the terms "consonance" and "dissonance" even further to not only refer to predetermined analytical schemas of tonality, meter, or the stylistic norms of a piece, but to also encapsulate *all conscious and subconscious schemas* that we hold inside our brains—default schemas that may or not

have anything to do with functional tonality or metrical structure, but that have everything to do with the infinitely varied past experiences (musical and otherwise) of listeners who intrinsically have and form sets of expectations at the outset of a listening experience. Any expectation—conscious or subconscious, musical or extramusical, grounded in reality or absurd, recent or from the distant past, derived from the moment or the product of previously established schemas—has a role in shaping how we experience listening to music as we hear what we expect or do not expect. Therefore, we have perceptual consonance when we experience something (a listening experience) that fits overall within our giant body of expectations. We have perceptual dissonance when we experience something that does not fit overall within our giant body of expectations.

In a way, all I am really saying is that things which are perceptually consonant are those things we expect or that fit into our bundle of expectations or does not challenge our bundle of expectations. Perceptual dissonance is essentially experiencing the unexpected. But the visceral quality of experiencing what we expected or did not expect is not captured by simply using the terms "expected" and "unexpected," as it can be with "consonance" and "dissonance." Where we would describe something as musically consonant or dissonant—such as the gut-wrenching sensation of an out-of-tune violin or the sigh of contentment at the resolution of a suspension—the *visceral quality* of musical consonance and dissonance is included in our understanding of the terms. Thusly, we have freed consonance and dissonance from purely musical parameters and have also mapped those same musical parameters, along with the notion of sensation and experience, onto what we do with our minds concerning music, memory, and expectation.

We can assert that there is a feeling that is associated with consonance and dissonance not just musically, but also with those things that are not directly musical, but still a part of the listening experience—for example, the jarring effect we experience when a man quite small in stature opens his mouth to reveal that he is in fact a powerhouse contrabass (perceptual dissonance) or the lulling effect of white noise (perceptual consonance). As Huron writes, "We don't just *think* future possibilities. We *feel* future possibilities" (8, italics his). He goes on to say:

> When a future event is highly probable, listeners experience a strong sense of the inevitability of that outcome—an experience we can call the 'feeling of anticipation.' Anticipating events leads to changes of attention and arousal while physiological concomitants are akin to stress. The amount of tension experienced is proportional to the predictability of the ensuing event. The most predictable events evoke the strongest feelings of tension. If the outcome conforms to the listener's prediction, there ensues a strong positively valenced prediction response. When musicians speak of 'tension and release' or 'tension and resolution,' much (though not all) of what they are speaking of can be understood as anticipation followed by a positively valenced prediction response. Such tension-and-release experiences are most likely to occur when musical events are highly predictable. In Western music, examples of such highly predictable event sequences include the movement of chromatic tones to neighboring diatonic pitches, commonplace embellishments like anticipations and suspensions, and highly stereotypic cadences. (328)

In other words, expectations not only carry in them a perceptual readiness, but also a physical readiness. As Huron says, "Preparing for an expected event typically involves both *motor preparation (arousal)* and perceptual preparation (attention)" (9, italics mine).To put it more simply, perceptual consonance and perceptual dissonance are the *feelings* associated with the outcomes of our perceptions during listening experiences as they interact with the totality of our expectations.

Since most of our musical expectations are not intellectually contemplated or even

consciously recognized, it follows, then, that the experience of timelessness in music is often a subconscious one as well. As such, we can *feel* the sensation of timelessness without ever discussing it or understanding it. Such a point is an important point to remember: to experience musical timelessness is one thing; to discuss it is another matter entirely. The ability to discuss musical timelessness requires a great deal of care because discussion of it can easily remove the experience from its context altogether.[17] For this reason, we must continually remind ourselves that the experience of musical timelessness that we are discussing is, in reality, something we can contemplate only in retrospect, but is nevertheless bound to or the product of the musical elements (such as pitch, rhythm, meter, formal structure and so on) that happen in the moment. I do not wish to downplay the role that musical elements play in forming, confirming, or challenging our musical experiences. In fact, without the musical elements, we can have no musical experience to speak of. I only wish to emphasize that timelessness in music is not *only* formed out of expectations that find their basis in musical elements, but also out of extramusical expectations as well, and the experience of musical timelessness first happens as *an experience*—one of a visceral quality.

[17] Kramer would seem to suggest that the mind must be even more intensely involved and focused than usual in order for the listener to be capable of experiencing musical timelessness: "The 'swarm of activity' that the mind creates is not exclusive to timeless music. Rather, the more 'timeless' the music is, the more the mind is at work in imagination and perception...Anyone who cannot or chooses not to listen creatively and intensely (whose consciousness, in other words, does not participate actively) cannot make sense of nonteleological music" (378). To some extent, I agree that conscious activity is required because Kramer is drawing from lengthy, avant-garde repertoire as his basis for this statement. Even lengthy compositions such as J.S. Bach's *The Goldberg Variations* can require extra mental effort to stay focused on receiving the music. Furthermore, to "make sense" of anything implies an intellectual involvement and a sort of follow-up dialog, but it does not necessarily negate the possibility that the *initial experience* (of which Kramer is trying to make sense of) requires nothing more than simply perceiving (receiving) the stimuli—in this case, musical sounds. In other words, I still find that the experience musical timelessness starts as pure sensation, and does not require conscious awareness of it in order to be experienced.

**How Musical Timelessness Works**

So, how is timelessness in music created? Remember our example of driving home from work in the previous chapter: we saw that the sensation of timelessness took place in the moment we simultaneously feel the reality of where time has brought us and realize that we somehow missed time passing because we were inattentive to some or all of the details that ordinarily tell us time is passing. It's important to understand that experiencing timelessness isn't necessarily "checking out" or being "lost in thought"—although these kinds of inattentiveness can also produce an experience of timelessness. By attentiveness and inattentiveness musically speaking, I am referring specifically to being attuned in some way to the elements (musical and extramusical) that remind us that musical time is passing.

Attunement to the time-marking musical elements can be conscious or embodied. Remember, as Justin London states, "meter is a particular kind of a more general behavior...As such, meter is not fundamentally musical in its origin. Rather, meter is a musically particular form of entrainment or attunement, a synchronization of some aspect of our biological activity with regularly recurring events in the environment" (4). The point is that in music, there is almost always some kind of time-marking element—often, the most pronounced and overt time-marker is metrical rhythm—and inattentiveness to it opens the door for a timeless experience.

Timelessness in music is not exclusively a matter of stasis, as most scholars suggest. Rather, musical timelessness is a matter of the ability we possess as listeners to selectively entrain some things and not others. Music, in its vast complexity and varied

nature, can be static by degrees or it can be static *and* dynamic at the same time and to varying degrees depending on what you are examining. Rhythm and meter are not the only time-marking elements in music. Harmonic syntax, tonality, melodic contour, texture and formal structure can be tools through which music is propelled forward. In fact, the most basic form of all time-markers is *change*. For this reason it can be tempting to claim that timelessness is only a function of stasis. At the most basic level, this is true. Kramer's most radical type of musical time, vertical time, relies heavily on stasis. Yet, even within his discussions of stasis, he emphasizes that the sort of stasis he speaks of is not necessarily a total lack of musical motion or a lack of change. He says,"I am concerned not with absolute stasis but with stasis *relative to context*, with sections that appear static because their degree of internal activity is considerably less than the degree of contrast between them" (210, italics mine). He makes my point even more securely when he states that stasis can be sustained and prolonged *motion* found in certain genres and types of music, such as process music: "The motion is so consistent that we lose any point of reference, any contact with faster or slower motion that might keep us aware of the music's directionality. The experience is static despite the constant motion in the music" (57). I doubt anyone would claim that J. S. Bach's *Goldberg Variations* is by and large static because the piece is filled with change: harmonic, melodic, and rhythmic motion, not to mention the constant development of the theme. However, because the change is constant and prolonged, stasis on some level is demonstrated. It's demonstrated in the unchanging change. The notes just keep coming. And coming. And coming. Constancy of change is a form of stasis. For one listener, the experience of listening to

the *Goldberg Variations* is a study in artful development. For another, listening to the *Goldberg Variations* is a test of attention span.

The role that perceptual consonance and perceptual dissonance plays is this: *timelessness is created by shifts between perceptual consonance and perceptual dissonance*—or more accurately, in the very moment(s) that both the expected and the unexpected are perceived (where one is real and the other is imagined or remembered, but *both are felt in a single moment*) because we become simultaneously aware of a cognitive perception that contradicts some kind of temporal-positioning reality. Something in the music pulls your attention back into what you were hearing and still are hearing. As London states, "Entrainment leads us to focus our attention to the most salient temporal locations for events; attention is, by its very nature, selective" (14). Perceptual consonance and perceptual dissonance can both lull us into temporal inattentiveness and jar our attention back to temporal awareness.

There definitely can be a spectrum of perceptual consonance and perceptual dissonance within a piece and even within a moment of the piece, but we do not literally remain in both climates the entire time. We flip from one to the other. In cases where perceptual consonance and perceptual dissonance possess equal weight in their presence (Perceptual Consonance is Perceptual Dissonance), we have the ability to flip back and forth at an even faster rate and at a higher frequency. In speaking of meter, London's claims concerning a listener's inability to hear multiple meters *as different meters at the same time* is part of my point here. He writes:

> This research shows that when confronted with complex polyrhythmic stimuli, listeners use one of two metric strategies. They will either (a) extract a composite

> pattern of all of the rhythmic streams present and then match it to a suitable metric framework; or (b) focus on one rhythmic stream and entrain to its meter while treating the other rhythmic stream(s) as 'noise.' The choice of strategy is correlated with the relative tempos of the component streams. These studies also ndicate that while on any given presentation we tend to hear a passage under one and only one metric framework, it is also possible to reconstrue the same figure or passage under a different meter on another listening occasion. (50)[18]

The same is true concerning the perceptual flip between perceptual consonance and perceptual dissonance.

Metric complexity is one of the primary vehicles for our ability to be in a perceptually consonant climate at one moment and then to flip to a perceptually dissonant climate at another when the musical material is not necessarily changing. If the layers of a piece (metrical or otherwise) suggest multiple climates, or even literally contain multiple climates, our ability to transition back and forth between perceptual consonance and perceptual dissonance is enhanced. We can flip back and forth more often, and thus we can experience timelessness more often because *it is the transition between perceptual consonance and perceptual dissonance that creates timelessness in music*. London's comparisons between our perceptual flips in music (especially where rhythm and meter are concerned) and other places we find perceptual flips can be additionally helpful:

> Unlike Western music, in African drumming performances these complex rhythmic textures are repeated many times, and thus the pattern of conflicting

[18] London's statements here have been especially controversial among music theorists. For example, in her talk during the 2012 West Coast Conference of Music Theory and Analysis, "Sesquialteran Rhythms and the Question of Dual-Metricality in Andean Dances," I witnessed Jane Clendinning take issue with London's claim that we are unable to entrain polyrhythm. I wish to be clear that I heartily agree with London's claim that we don't entrain polyrhythm as multiple simultaneous rhythmic streams, but instead we either 1) entrain all the streams as a single conglomeration, or 2) entrain a single stream while counting the others as "noise." I think where the confusion may lie is that it is possible for seasoned listeners to flip back and forth between the rhythmic streams so quickly that it may seem like they are entraining multiple streams at the same time.

> cues persists longer than in the case of a local hemiola. This persistence gives the istener the opportunity, once he or she has latched onto a particular metrical framework, to then reconstrue the meter. Locke has aptly termed this reconstrual a 'gestalt flip.' We can do this in much the same way we can visually reconstrue visual figures such as Wittgenstein's famously ambiguous duck/rabbit figure or the perspectival orientation of a Necker cube, as the characteristic repetition of rhythmic patterns in African drumming performances keeps them in our perceptual field long enough to allow both an initial perception, and then subsequent reorientation that leads to a difference in those that are metrically vague. If a passage has no discernible periodic organization at all, it is simply nonmetric. By contrast, in metrically vague situations there is a discernible sense of regularity, but the listener is stymied when he or she tries to construe any particular metrical organization. (85-86)

Part of our exploration in the analyses that follow will delineate the ways in which the potential for these flips exists. A passage (or piece) is not necessarily perceptually consonant *at the exclusion of* perceptual dissonance or vise versa. In other words, entire pieces and even musical moments can be perceptually consonant and perceptually dissonant by degrees and we will explore how this is possible in the chapters that follow.

## The Three Types of Musical Timelessness

We understand that perceptual consonance and perceptual dissonance describe the outcome of the interaction between the music, our perceptions of the moment, and our expectations (in totality, based on our memory of the past). Also, we experience timelessness in the exact moment of transitioning from perceptual consonance to perceptual dissonance or vice versa. Because of these understandings, we can identify and codify three specific types of musical timelessness: Perceptual Consonance becomes Perceptual Dissonance (C-->D), Perceptual Dissonance becomes Perceptual Consonance (D-->C), and Perceptual Consonance *is* Perceptual Dissonance (C<=>D).

Most often, musical consonance produces perceptual consonance and musical dissonance produces perceptual dissonance—though not always. For most of us who come from a Western tonal musical tradition, at least initially, anytime there is a musical dissonance, we will experience some amount of perceptual dissonance, because what is musically dissonant falls outside of some portion or all of our bundle of expectations—especially those expectations that have been formed out of learned listening behavior and schemas that are based on our musical upbringing. The same is true with musical consonance and perceptual consonance. Where the connection between musical consonance/dissonance and perceptual consonance/dissonance becomes particularly confusing is when the musical dissonance ceases to be perceptually dissonant and becomes perceptually consonant, or the musical consonance ceases to be perceptually consonant. This can happen in the following ways: In the case of musical dissonance becoming perceptually consonant, we can 1) grow used to the musical dissonance(s) if they are prolonged (D-->C); or 2) as the musical dissonance continues, something else is added to the musical texture that clears up the ambiguity and "makes consonant" the dissonance even though the original musical dissonance continues to exist within the stream of sound. Musical consonances can also be perceptually dissonant insofar as the musically consonant layers can be combined in such a way that the effect is perceptual dissonance in the broader musical context. This is what happens in the live version of "Gong." There are two musically consonant layers (the string quartet and the guitar) whose combination creates perceptual dissonance either because together they are musically dissonant to some degree or because their order of entries create a momentary

ambiguity. Let's examine each type of musical timelessness in more detail in order to better understand the musical parameters by which these types of musical timelessness tend to operate.

*Perceptual Consonance Becomes Perceptual Dissonance*

Pieces that have Perceptual Consonance becomes Perceptual Dissonance timelessness (C-->D) are typically linear, goal-directed, and contain fairly common phrase structure within sections or moments, yet have no relationship between the sections or no clear or meaningful system of overarching organization from section to section. Kramer defines the temporal structure of these pieces as moment time:

> There is no fundamental linearity and yet the music is still markedly discontinuous... Moments then are self-contained sections, set off by discontinuities, that are heard more for themselves than for their participation in the progression of the music. If a moment is defined by a process, that process must reach its goal and must be completed within the confines of the moment. (50)

Instead of calling them moments, I call the sections of these pieces *frames*, because of their self-contained nature.

Most of the time we spend listening to these pieces we are within one frame or another. The frames last for minutes on end while the switch between frames is almost instantaneous and the consideration of the switch is retroactive. So for much of the piece, we hear and even feel linearity, metrical structure, and other expected elements because for much of the piece we are inside a frame. Without paying conscious attention to the groove of the piece, we settle into it within each frame. However, as the piece continues, we experience a discontinuity—an abrupt switch rather than a smooth transition out of

one section and into another and our listening is punctuated (unpredictably) by sudden switches in groove, sound texture, and content. In other words, most of the time, we are within a musically and perceptually consonant climate. Yet as we experience the discontinuities, we sense an arbitrariness or an inability to expect the contents or nature or characteristics of the next frame, or even when the next frame will take place. The overarching effect is nonlinearity, and the discontinuities that punctuate the switch from frame to frame create a moment of perceptual dissonance. There are typically, though not always, one or two sounds (as is the case with "Almost Always") or one or two melodic motives (as is the case with "Race: In") that bleed from one frame into the next, hinting at process and making the self-containment of each frame slightly less overt, and all the while, the pulse remains consistent. So on the one hand, we feel the piece has simply progressed "just as it should have" because we never lost our beat, we always find ourselves in some state of groove that fits within the meter and the phrase structure of the piece, and occasionally, we still hear familiar material from previous frames—all entailments of perceptual consonance. On the other hand, there are moments where so much changes suddenly and in a seemingly arbitrary manner, that we never quite feel at ease within our expectancy. There are moments when we think we grasp a process, or something that exists within one frame that dictates the contents of the next frame, but then we find ourselves unable to even come close to predicting what follows or when the next frame will start. In other words, within each frame, C-->D pieces are perceptually consonant either due to local process or repetition. However, as we move from one frame into the next and as the piece is perceived as a whole, we find that these types of pieces

become perceptually dissonant at specific moments. In other words, we basically find ourselves within a perceptually consonant climate with peaks of perceptual dissonance.

*Perceptual Dissonance Becomes Perceptual Consonance*

Pieces that demonstrate Perceptual Dissonance becomes Perceptual Consonance timelessness (D-->C), the second type of timelessness, are extremely interesting because our expectations that exist within us before a single millisecond of the piece is heard are clearly set into play. The hallmark of these pieces is overt metric ambiguity—even to the point of causing us to question if there is meter at all. In the pieces specific to our study, overarching metric ambiguity is not the only ingredient involved in creating musical timelessness. There is also a lack of clear synchronization between the voices involved in the texture. By varying degrees, it almost sounds like each singer or instrumentalist is doing his or her own thing and they just happened to all be in one room when some one pressed the record button. The truth of this statement is most apparent with “Panda” because the disparity of synchronization between the performers is enhanced by brief moments when the music of the drums and guitar actually *do* fit together in literal unison. Yet, for nearly all the time, they just aren't playing together. It sounds very similar to the members of a symphonic band all independently practicing their parts to the same piece. We can hear that there is a relationship that exists between the parts because we are hearing various snip-its of the same work, but the parts are all being played at different times and at various tempos.

The lack of synchronicity in “Pyramid Song” is quite different than “Panda”

because all the parts are constructed in such a way that vagueness of the meter and beat is so vague that even the vagueness can be questioned. In one moment, we are certain there is no meter. In another moment, we wonder if we're hearing something as simple as some kind of swing rhythm in 4/4. The piano chords which form the backbone of the entire piece may or may not project a meter and it sounds like the drum beat is consistently behind or that the piano chords are consistently rushing. The band never "sounds together," yet the lack of "togetherness" remains so consistent that it's clearly purposeful. Radiohead's lack of synchronicity is synchronized! Timelessness can be experienced at the very outset of listening to these pieces if we are naturally expecting metric stability and textural clarity (and would actually demonstrate C-->D because we begin the listening experience in a perceptually consonant climate). Within the first few seconds of listening, however, we find our preconceived expectations overtly challenged. The perceptually dissonant state is maintained either through the vague metric context or through brief moments of synchronicity—both of which tempt us to hear a solution to the metric puzzle, when the existence of a solution is under question altogether.

Perceptual dissonance makes its transition to perceptual consonance in one of two ways: 1) we grow so accustomed to the musical dissonance created by the metric ambiguity that we come to expect it and thus find ourselves in a perceptually consonant climate; or 2) an additional musical layer(s) enters the texture and somehow clarifies all or most of the ambiguity so that the music is consonant, catalyzing perceptual consonance for us. With the first, we adjust to the perceptually dissonant climate and before we know it, we find that we are expecting the very ambiguities that we did not

expect! D-->C demonstrates what Huron is referring to when he states:

> Expectations of future events are not merely the product of schematic or veridical patterns that have been learned over a lifetime of exposure. Expectations can also arise from comparatively brief periods of exposure. As the events of a musical work unfold, the work itself engenders expectations that influence how the remainder of the work is experienced. (227)

In the case of the second, when an additional part enters the texture and clarifies some or all of the ambiguities from before, the increase of musical consonance is what catalyzes the shift to perceptual consonance. However, with the pieces in our case study, we will see that the music continues to "reinsert" us back into a perceptually dissonant climate even though we experience peaks of perceptual consonance.

*Perceptual Consonance Is Perceptual Dissonance*

The third type of musical timelessness, Perceptual Consonance is Perceptual Dissonance (C<=>D) is the most complicated form of musical timelessness. In any listening experience, there is a certain span of time within which a piece will play. In C-->D and D-->C, we are either in a perceptually consonant *or* perceptually dissonant climate overall. Of course, the piece itself can go back and forth between the two climates (as it does with "Always" and "Race:In" by the sectional arbitrariness—where the perceptual dissonance is very brief because it exists at sectional divisions); or the piece can remain in a perceptually dissonant climate but we grow used to that climate (as we tend to do with "Pyramid Song" and "Panda"); or the piece can begin with a perceptually dissonant climate and then become perceptually consonant when some musical element enters the texture and clarifies the ambiguities (as happens right when

the drums enter the texture in the live recording of “Gong”).

However, in C<=>D, both climates exist both musically and perceptually at the same time and we can transition from one to the other at any moment. We have two types of sustained perceptual layers which may or may not be the direct result of musical consonance or dissonance: a perceptually consonant layer (based on the metric consonance of the drum beat) and a perceptually dissonant layer (based on the musical ambiguity of the piano pulse layer and the interaction of that layer with the drums), as in Jónsi; or both layers are musically and perceptually consonant but the way they interact with each other is perceptually dissonant, as in Sigur Rós. So neither of the perceptual layers are primary or secondary, nor is the conglomeration of the two perceptual layers primary or secondary to each layer individually. When it comes to C<=>D moments or pieces, we can at any moment toggle between either perceptual climate. There is no overarching climate. No one climate overrides the other at any point. The line between perceptually consonant and perceptually dissonant climates is not so clearly defined, and at any moment we can find ourselves switching from one to the other.

Pieces that produce C<=>D are ambiguous *and* clear in multiple ways. In one moment we may find ourselves saying that the meter is ambiguous, then we might suddenly feel that it's not ambiguous at all. In one moment, we may wonder what key center is at work, but then suddenly feel that we were silly to even wonder. At any turn, we are never really sure of anything—is there a clearly defined key or not? Is there a clearly defined metrical structure or not? Is there clearly defined phrase structure or not? Such pieces may cause us to ponder more shocking questions such as: can there be

hypermeter without meter? Is it possible to be *precisely approximate* as an ensemble? In these pieces, what we find is an overarching synchronicity where we can make accurate predictions on a larger level and we can account for local level details, but at the same time we can't sort out the details of the internal organization of those bits which are resulting in the larger whole. Specifically, we can hear that there are ten pulses and a pause and we can recognize a pulse cycle (as is the case in "Tornado," for example), but we can't determine the meter or exactly how those beats and pauses factor into the pulse cycle we hear; we can hear hypermetrical organization but we can't discern downbeats; we can hear mediant relationships between triads, but we can't settle on a key center; we can hear approximate phrase beginnings and endings, but we can't pin-point definitive phrase boundaries. Most importantly, we sense schematic organization, and we feel a consistent rise and fall with the music, but we are unable to pin-point exactly where the consistency of the musical motion is coming from.

**Further Considerations Pertaining to the Types of Musical Timelessness**

Based on all that we have discussed pertaining to the three types of musical timelessness, some questions might arise. First, I have claimed that timelessness happens in the *moment* of transition between perceptual consonance and perceptual dissonance, when we are simultaneously aware of the musical reality at present and the visceral memory of the past. But what about D-->C? These pieces maintain overarching ambiguity (which creates a perceptually dissonant climate), and over time we can grow used to the ambiguity and thusly find ourselves in a perceptually consonant climate. But

since this process is just that—a process—, it seems that D-->C doesn't have that moment of transition, and can't really be timelessness at all. In other words, can we have such a "moment" in *gradual realization* as we do in sudden realization? The answer is YES. We can have such a moment in D-->C if we find ourselves remembering how what we are hearing had been perceptually dissonant to us initially, but are at the same time feeling the perceptual consonant climate of being used to the ambiguities. In a sense we are tempted to actually be in perceptual dissonance again because we "re-remember" that what we've gotten used to was something we weren't used to. If this is the case, then this transition (and moment) is actually C-->D on a superficial level. It would look like this:

[C] D---------->C(-->D)---------->C(-->D)---------->C etc.

The thing that truly sets D-->C timelessness apart from the other two types is exactly what begs the question: that on a larger level, there is one transition that is process-oriented and not momentary. But under the surface, the music can remind us of the other state. In both "Pyramid Song" and "Panda," the overarching transition is made possible by the listener growing accustomed to the ambiguities that remain prevalent. However, in both cases, the music in some way compels us to continually re-examine or "re-feel" the fact that the music is dissonant. In other words, we have grown used to the musical dissonance or hear it momentarily resolved, and therefore find ourselves in a perceptually consonant climate, but the nature of the music can cause us to question such a perspective because the musical dissonance that first created our perceptual dissonance

continues. Even though we are able to remain in perceptual consonance, the musical dissonance prevails in reality and may tempt us into perceptual dissonance again.

"Panda" literally contains very brief moments of musical consonance which enhance the dissonant quality of the ambiguous sections. These brief consonant moments cause us very brief periods of perceptual consonance which is based on musical consonance. But just as soon as we have accepted the stability of the music, it all falls apart again and we are propelled (perhaps even more strongly) into a state of perceptual dissonance. In this way, the music itself reminds us over and over that we are by-and-large in an intensely ambiguous place musically, and are utterly unable to rest in our musical expectations at any moment. For a time we may flip back and forth between perceptual dissonance and perceptual consonance, and herein we experience the moments of timelessness. However, it is possible to grow used to the overarching, musically dissonant climate of the piece and even the temptation to perceptually flip back and forth with the brief musically consonant moments ceases to be tempting. Instead, we expect musical dissonance and ambiguity overall and leave it at that. As ironic as it sounds, we finally accept the musical dissonance and become securely in a state of perceptual consonance.

"Pyramid Song" tempts us to hear musical consonance (which actually reinforces perceptual dissonance) more subtly. The vague metric context is maintained so perfectly and consistently throughout the entire song, that we may think we should be able to settle into a groove, but just can't quite get there. We may even start to wonder if the performers really do have a meter in mind. We may find ourselves thinking things like, "How do

they do that? How are they able to stay together even though they sound off from each other?" So, at moments, and for only moments, we may feel that some level of musical stability must exist—and as we will see in Chapter IV, many listeners hear "Pyramid Song" within some sort of specific meter. But even in these cases, and especially without such a confidence in the metric context of the piece, the musical dissonance that we might grow used to can suddenly sound dissonant to us all over again and can again become jarring. Simultaneously, we can know that the music is dissonant yet we've grown used to it, but wonder if there is musical consonance that we just aren't grasping, and thus the perceptual dissonance of the music is reinforced.

In a piece that is strongly ambiguous and filled with musical dissonance, any time there is a brief moment of musical consonance or stability, whether it is real or implied, we can abandon our perceptually consonant state (which was made possible through the process of growing accustomed to the ambiguity of the music) and enter into a state of perceptual dissonance all over again. So, in a moment, we simultaneously feel perceptual consonance repeated through exposure and also the reality that the music is *still* dissonant and we could feel it that way. This possibility of flipping back and forth between perceptual states may seem identical to what we experience in C<=>D, but it is different because the music does not actually contain multiple climates. In pieces that generate D-->C, the piece is truly and assuredly dissonant when it comes to musical parameters. In pieces that have C<=>D, there are multiple musical layers that actually are consonant along with some that actually are dissonant in reality, and the combination of which can be musically dissonant and consonant to some degree and in various ways. Thus, in

C<=>D, our perceptual state at any moment has a strong grounding in musical reality and is more tightly informed by the musical dissonances and consonances to which our perceptions respond.

I have already stated that the listening experiences are infinitely varied from person to person and because of this, we must always leave room for alternative experiences of any musical moment. Different people have different sets of expectations. What most find perceptually consonant, one might find perceptually dissonant or vise versa. Even in this study where I might claim and demonstrate that a particular piece or moment has a perceptually dissonant climate, another might find the climate to be perceptually consonant. The primary thrust of my study is not to impose any sort of specific listening experience on anyone. My purpose is to first acknowledge that something like an experience of musical timelessness exists and then to present *interpretations* of those experiences whenever and however they might occur. Through my analyses, I wish to suggest reasons for their occurrence and to propose a working taxonomy for discussion of those experiences. Even still, correlations among listeners are generally acknowledged and we can assume that for the most part, there are experiences held in common among listeners. In presenting his taxonomy for musical surprise (237-238), Huron makes a similar assumption—that there are surprises in music and that most people feel them. I will say here that there is something like timelessness in music, and most people have or can experience it.

In summary, we have expanded “consonance” and “dissonance” beyond musical schematic terms to refer to embodied concepts that include the totality of expected

experiences mixed with reality. We have defined perceptual consonance as those feelings associated with the outcome of our perceptions during listening experiences that do fit overall within the totality of our expectations and perceptual dissonance as those feelings associated with the outcome of our perceptions during listening experiences that do *not* fit overall within the totality of our expectations. We have discussed how timelessness in music is created in the moment of shifting from a perceptually consonant climate to a perceptually dissonant one or vise versa. Finally, we have named and defined three types of musical timelessness, C-->D, D-->C, and C<=>D based on how musical elements produce perceptually consonant or dissonant climates and cause us to shift from one to the other.

**Chapter Summary**

The primary purpose of this chapter has been to lay a strong foundation for our analyses by deeply exploring all the ingredients of that foundation: the temporality of human beings and music; the interaction of memory and expectation with our perception of the musical moment; exactly what perceptual consonance and perceptual dissonance are and the role they play in creating musical timelessness; the three specific types of timelessness created by the specific directions of the shifts between perceptual consonance and perceptual dissonance as they are catalyzed, informed, or challenged by the musical realities; and how the three types of musical timelessness can function in music specific to our musical case studies.

We have first established that temporality is the foundation upon which we

understand our own existence and it is also the nature of music. The musical elements specific to musical time—meter and rhythm—are the primary tools through which musical motion is experienced and where there is metrical complexity or ambiguity, our expectations interact with the music in such a way that there is the potential for transitioning between perceptually consonant and perceptually dissonant climates. By expanding our understanding of common musical theoretical terminology, we can highlight the fact that consonance and dissonance carry embodied meanings for us, and so perceptual consonance and perceptual dissonance speak to the visceral quality of musical timelessness allowing us to understand musical timelessness firstly as *an experience*, and then secondly as a concept. Furthermore, by developing a taxonomy that organizes the types of perceptual flips we can experience between perceptual consonance and perceptual dissonance, we can more quickly recognize and more deeply explore musical timelessness in our analytical discussions in the chapters that follow.

## CHAPTER III

## C-->D TIMELESSNESS

The first type of musical timelessness, Perceptual Consonance becomes Perceptually Dissonant (C-->D), is the subject of this chapter. We will examine "Almost Always is Nearly Enough" by Tortoise and "Race: In" by Battles as our two case studies. We will explore in detail how C-->D timelessness operates and which musical conditions are necessary for it. In the previous chapter, I stated that C-->D timelessness typically occurs in pieces that are either process-oriented (linear, goal-directed, and contain fairly common phrase structure) or static (repeating or sustaining the same material) *within sections or moments*, yet have no relationship between the sections or no clear or meaningful system of overarching organization from section to section. In other words, *C-->D pieces are by-and-large perceptually consonant and punctuated by moments of perceptual dissonance.*

C-->D timelessness hinges on two central things: discontinuity and fundamental nonlinearity.[19] The type of temporality Kramer defines as moment time is particularly helpful for our understanding of how discontinuity and fundamental nonlinearity work in music. Remember that he describes moment time as music where: "there is no fundamental linearity and yet the music is still markedly discontinuous" (50). Kramer's use of Sesame Street is particularly clear and simple, capturing the nature of moment time concisely: "Consider the program, 'Sesame Street,' a formative influence on children

[19] Kramer defines nonlinear music as: "the determination of some characteristic(s) of music in accordance with implications that arise from principles or tendencies governing an entire piece or section.' Nonlinearity is basically a structural force. Grasping nonlinearity can also be problematic for Westerners, because the only way we know how to describe nonlinearity is through a linear fashion. As Kramer states, "Nonlinearity is mainly a right-brain phenomenon, yet our discussion of it inevitably utilizes left-brain logic" (21).

in the United States. It exhibits extreme discontinuities, as one short scene leads without transition or logic to a totally different short scene. Truly a moment form!" (71) The conditions of Kramerian moment time, discontinuity and fundamental nonlinearity, are also the same conditions that produce C-->D timelessness. Before we dive into the analysis and details of each piece, we must consider the parameters of discontinuity and fundamental nonlinearity and their role in producing C-->D timelessness in general.

**Three Fundamental Similarities between "Almost Always" and "Race: In"**

1. A perceptually consonant climate with peaks of perceptual dissonance (discontinuity): Musical discontinuities are sudden and unpredictable switches or changes between musical frames (sections). When a discontinuity occurs, we most likely find ourselves in a state of perceptual dissonance. As I stated in the previous section, C-->D timelessness is most often the condition of music that is overall perceptually consonant during each frame (what Kramer calls the moment), with occasional peaks of perceptual dissonance between each frame. The material of each frame is perceptually consonant—either because the frames are sheer repetitions (as is the case with "Almost") or because they are process-oriented (as is the case with "Race: In"). As Kramer says,"The self-containment of moments is *provided either by stasis or by process*" (207) and the moments are set off by discontinuity. In general, the frames of "Almost" are static, which provides a musically consonant atmosphere. The discontinuities are the results of textural and timbral changes and alterations to the groove. In "Race: In," the frames are process-oriented. The discontinuities are caused by switching between interpretations of the beat's

subdivision. In both pieces, the discontinuities are sprinkled throughout a generally musically and perceptually consonant climate.

It is important to understand that discontinuities interrupt a *perceptually* consonant climate, not necessarily a musically consonant one. Although most often perceptual consonance is the direct result of musical consonance (tonal regularity, harmonic syntax, and metric clarity), we can experience perceptual consonance even when the music is not musically consonant overall, mostly due to familiarity through repeated exposure. This point is demonstrated by the second musical case study of this chapter, "Race: In." The binding logic behind "Race: In" has to do with grouping dissonances on a micropulse level[20] where duple and triple beat subdivisions are juxtaposed, and the discontinuities are characterized by the sudden switches between beat subdivisions from one frame to another. In one frame, an overarching triplet beat subdivision is prominent. In another frame, an overarching duple beat subdivision is prominent, or there is equal presence of both. Where there are both duple and triple beat subdivisions at the same time, there is musical dissonance. But perceptually, the music is still overall consonant because the specific metric dissonance of duple against triple is maintained during any given frame and we grow used to it through repeated exposure. So, once the initial perceptual "shock" (the peak of perceptual dissonance) of the switch to a new frame has subsided, we find ourselves perfectly situated within a perceptually

[20] In *Fantasy Pieces* (1999), Harald Krebs developed the term "grouping dissonance." He defines grouping dissonances as: "when dissonances are formed by the association of at least two interpretive layers whose cardinalities are different and are not multiples/factors of each other; in other words, it arises from the association of nonequivalent groups of pulses" (29). Even though the beat (or pulse) of "Race: In" does align, the subdivisions (what Krebs would call "micropulses") within each beat do not align. I am applying Krebs's concept of nonequivalent groups of pulses to nonequivalent groups of subpulses.

consonant climate again, even where the musical dissonance continues. Furthermore, the majority of the musical content of "Race: In" is musically consonant due to both process-oriented musical language (musical consonance), such as four-bar phrases, tonality, and harmonic syntax, and also due to sheer repetition and the consistent beat where the grouping dissonances (musical dissonance) are concerned. The beat remains the same and is continually reinforced by the other musical material. Similar to "Almost," we simply grow accustomed to the groove of each frame, and then when the frame switches, for a brief moment we have to reorientate ourselves to a slightly different groove.

The discontinuities that interrupt the perceptually consonant climate of the piece can create sudden peaks of perceptual dissonance because they disturb our expectations. Remember, as I stated in Chapter II, musical timelessness is generated by the transition between one perceptual climate to the other. In C-->D, anytime there is a discontinuity, there can be perceptual dissonance because our expectations, which are first established by the characteristics of each frame, are suddenly challenged. Every discontinuity marks the potential for C-->D timelessness in that moment.

2. Seemingly arbitrary schematic organization overall (fundamental nonlinearity): Some musical sections are more self-contained than others and do not discernibly influence or directly generate the musical material that follows. Seemingly arbitrary organization of sections, material, or sound events is another way in which our expectations can be challenged, especially if the material within a section is perceptually consonant. C-->D pieces can be mostly linear and processes-oriented on a local, moment

by moment level, like “Race: In.” But each process is confined within that moment. The overarching organization of each piece is unpredictable because the contents of each frame are not the direct results of previous frames.

3. A “nonlinear logic” behind fundamentally nonlinear pieces: We must remember, however, that frames can be self-contained *by degrees* and that *musical linearity and nonlinearity exist within a spectrum*. One piece can be more or less nonlinear than another piece and the expression of fundamental nonlinearity can be nuanced. There can be common threads that run throughout the whole piece, even though the connection from section to section is basically nonexistent. As Kramer states, “The degree of discontinuity between sections in moment time can be considerable. The contrast between moments must all but annihilate any comparison to any incidental contrasts within moments. Yet the moments must still seem to belong to the same piece: There must be a nonlinear logic binding them together” (51-52).

As we will see in the paragraphs that follow, the nonlinear logic that binds “Almost” together is textural and timbral layering. The entire piece is a kaleidoscope of shifting sound effects operating percussively. Every frame has at least one timbre or voice that bleeds into the next. Such a detail would seem to hint at process or schematic organization. However, nonlinearity has more to do with overarching structure where the contents or direction of sections (if there are any) are not the *results* of previous sections. “Nonlinear principles may be revealed gradually, but they do not develop from earlier events or tendencies. A work’s or section’s nonlinearity is present from its beginning. The dynamic of comprehending a work's nonlinearity is learning its immutable relationships”

(21). Aside from the steady beat, I hear nothing in any frame of "Almost" that sets up an expectation for the contents of the next frame even though a sound or two may bleed from one frame into another. In other words, we have no way of knowing ahead of time which sounds will bleed into the net frame and which ones will not.

The nonlinear logic behind "Race: In" is slightly more nuanced because "Race: In" is more process-oriented overall when compared to "Almost." There are melodic phrases, harmonic progressions, and motivic developments that not only exist within the frames, but also return at later moments of the piece. In this way, the frames of "Race: In" are much less self-contained and some of their boundaries may even be blurred altogether. What characterizes the nature of each frame and binds the piece together in a fundamentally nonlinear way more than anything else, though, is how the beat is subdivided, and it is *this* detail that is seemingly arbitrary. In one moment, we hear a duple subdivision of the beat. In the next, we may continue to hear a duple subdivision, a triple subdivision or some kind of combination. There seems to be no discernible pattern dictating which type of subdivision we can expect and it is the interpretation of the beat that characterizes the perceptual climate of each frame.

All in all, then, both "Almost" and "Race: In" contain frames of perceptually consonant musical material that are set off by discontinuities, although the frames of "Race: In" are less self-contained. The binding logic behind "Almost" is textural and timbral layering while the binding logic of "Race: In" is metric dissonance—in the form of grouping dissonances—on a micropulse level. Both pieces are fundamentally nonlinear, but "Race: In" is less so. The discontinuities momentarily place us within a

perceptually dissonant climate. In “Almost,” most of the discontinuities are the result of unexpected changes to the groove and timbral texture. There are two places where metric dissonance—in the form of displacement dissonance—also plays a role. In “Race: In,” the discontinuities are the result of switching between beat subdivisions and mixing beat subdivision which produces grouping dissonances on the micropulse level. The transitions between the overarching perceptually consonant climate of the frame and the peak of perceptual dissonance at each discontinuity is the moment where we can experience C-->D timelessness. The following table charts how the fundamental similarities exist in each piece (Table 3.1):

Table 3.1: Fundamental Similarities in “Almost” and “Race: In”

| | “Almost” | “Race: In” |
|---|---|---|
| Overarching Perceptually Consonant Climate | Created by:<br>1. sheer repetition *within each frame* (stasis)<br>2. steady pulse that never changes<br>3. discernible meter (most of the time) | Created by:<br>1. repetition of beat subdivision *within each frame*<br>2. steady pulse that never changes<br>3. discernible meter (most of the time)<br>4. melodic trajectory<br>5. harmonic syntax |
| Peaks of Perceptual Dissonance (Discontinuity) | Created by:<br>1. sudden and unpredictable changes to sound texture by addition or deletion of timbres<br>2. change to the groove through different expressions of beat subdivisions | Created by:<br>change to the groove though sudden and unpredictable reinterpretations of beat subdivision, where duple and triple beat subdivision are juxtaposed |
| Fundamental Nonlinearity | Result of:<br>unpredictable changes to groove through the removal or addition of timbres to sound texture | Result of:<br>unpredictable changes to groove through the reinterpretation of beat subdivision |
| Nonlinear Binding Logic | constant stream of percussive sounds/timbres | reinterpretation of beat subdivisions from frame to frame |

**Case Study #1: "Almost Always Is Nearly Enough" by Tortoise**

The band, Tortoise, has been refered to as a "progressive rock" group deeply entrenched and overlaid with electronic enhancements. "Almost" comes from the group's 1998 album, *TNT*, and is perhaps the most electronically enhanced and percussive piece of the set. On a superficial level, the piece may even strike us as nothing more than dance grooves thrown down by a DJ.[21] However, "Almost" operates within an interesting temporal continuum where, although the music is undeniably filled with motion and punctuated by sectional shifts, the piece is fundamentally nonlinear. The music is indeed full of motion and pulse, the beats are clear and grounded, but we quickly gain the sense that the music could quite possibly continue into infinity and we have no clear understanding of the piece's internal direction.

*The Musical Components of "Almost": The Sounds*

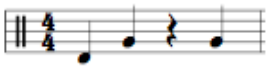
"Almost" is all about the beat, the sounds, and the groove. In total, "Almost" has twelve distinct sounds that are mostly percussive in nature.[22] They layer on top of or into each other, switching their various combinations like rotations of a kaleidoscope at each

[21] In actuality, the dance grooves in electron dance music (EDM) are complex and is capturing the attention of music theorists and ethnomusicologists. See, for example, Butler (2006) and Danielsen (2006).

[22] Some of the sounds in "Almost" are sounds that we know, or at least timbres similar to sounds derived from familiar musical instruments. Such sounds include: harmonic progression, drone, rim-shot, bass drum with distortion, snare, and percussion with distortion. The reader can assume that his or her imagination of these sounds is close to accurate based on general familiarity to them. The remaining sounds might require a little description because they are not familiar to our regular sound environment derived from musical instruments. I have imposed names based on sounds that are similar to things we hear in extramusical sound contexts. The "ticking" is similar to a ticking clock. The "whisper" sounds similar to a person whispering and is slightly pitched. The "purr" is a pitched purring sound, close to what we associate with a cat's purr. The "cricket" sounds like a cricket chirping. The "panting" sounds like a person mimicking the sound of a panting dog. And the "raindrop voice" is a pitched sound that suggests some kind of vocal box effect applied to a human voice.

new frame (section). Each frame is characterized by certain combinations of sounds that fill out the texture. For most of the piece, each sound has its own rhythmic or melodic pattern that repeats over and over either eventually or right away.[23] For example, any time the "Rim-shot" participates in the sound texture, it repeats the same (slightly pitched) rhythmic motive (see Figure 3.1):

Figure 3.1: "Rim-shot" Motive



For the sake of clearly depicting the sonic building blocks of "Almost," I have listed each sound and the rhythmic and/or melodic motive it repeats in the following chart (Table 3.2). In many cases, the sound immediately begins the cycle it repeats. Such sounds include the Drone, the Rim-shot, the Ticking, the Whisper, the Purr (both versions), and the Raindrop Voice. Other sounds may take a bit before they begin the cycles they repeat. In these cases, I have enclosed the cycle each sound eventually repeats in a dotted-line box. Such sounds include the Distorted Bass Drum and the Panting. I have additionally included a visual sketch of "Almost" (Figure 3.2). The entire piece can be grasped at a glance through a color-coded graphic representation of the various ways all the sounds

[23] The exceptions to this statement where the sound is not characterized by repetition but instead by process are: the Harmonic Progression found at the beginning, the Ticking sound, the Cricket sound, and the Snare. The harmonic progression simply unfolds as such and does not repeat. The other three sounds become rhythmically more active over time, thickening the overall musical texture. These sounds eventually thicken into a constant stream of sound. For example, the Cricket sound starts as a set of sixteenth notes in the first beat, then becomes a set of thirty-second notes in the second and third beats, and then becomes so active that the precise rhythmic structure is not only indistinguishable, but the effect ceases to be rhythmic and turns into a wash of sound. See Table 3.2 for more clarity.

layer on top of each other. Figure 3.2 will also be useful for the discussion that follow.

Table 3.2: List of Sounds in “Almost”

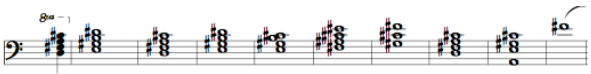
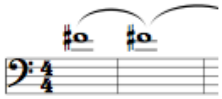
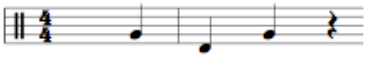
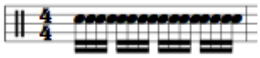
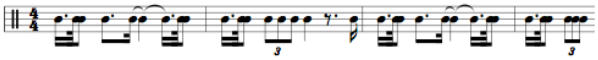
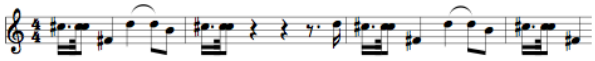
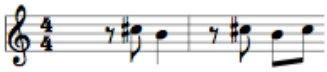
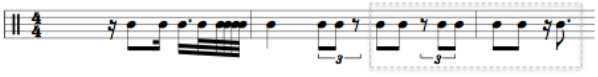
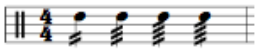
| Sound Name | Repeated Motive | Exact Location | Location in Piece (Frames) |
|---|---|---|---|
| Harmonic Prog. (not repeated) |  | 0:00-0:30 | 1 |
| Drone |  | 0:30-0:41 | 2 |
| Rim-shot |  | 0:14-1:40, 2:03-2:13 | 1, 2, 3; 5 |
| Ticking | (gradually enters texture)  | 0:25-1:40 | 1, 2, 3 |
| Whisper |  | 0:33-1:40 | 1, 2 |
| Purr |  (altered version from Frame 6)  | 0:33-1:40, 2:13-2:40 | 1, 2; 6 |
| Distorted Bass Drum |  | 0:44-1:40 | 3 |
| Cricket | (grows thicker, cluttered)  | 1:00-2:13 | 3, 4, 5 |

Table 3.2 continued

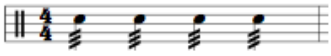
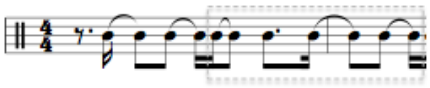
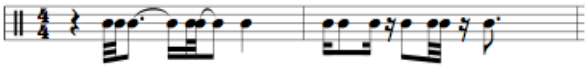
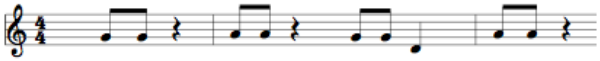
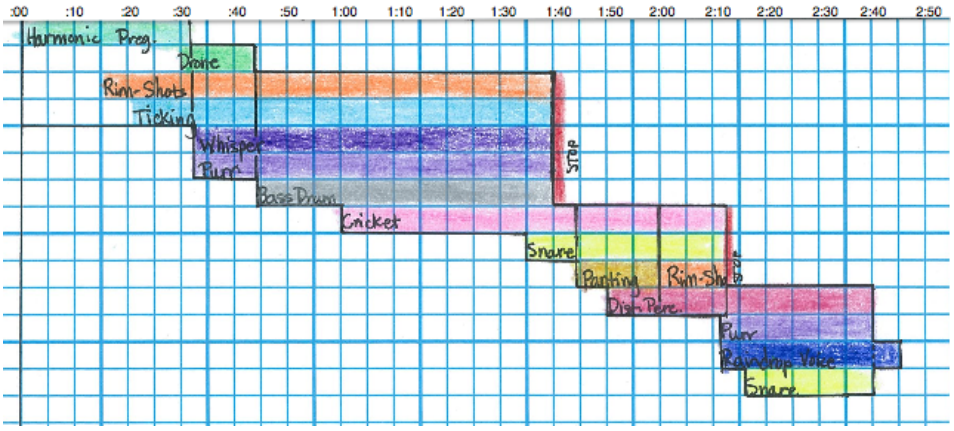
| Sound Name | Repeated Motive | Exact Location | Location in Piece (Frames) |
|---|---|---|---|
| Snare | (grows thicker, cluttered)  | 1:33-2:13; 2:15-2:40 | 3, 4, 5; 6 |
| Panting |  | 1:42-2:00 | 4 |
| Distorted Percussion |  | 1:50-2:13; 2:15-2:40 | 4, 5; 6 |
| Raindrop Voice |  | 2:13-2:44 (end) | 6 |

Figure 3.2: A Color-coded Graphic Representation of "Almost"




*The Frames of "Almost"*

The majority of the musical material comprising the frames of "Almost" is both musically and perceptually consonant. The pulse is the most dominant musical

component in “Almost” and nearly everything related to it in terms of pulse and meter is clear and predictable. The beat is almost always present and the meter is easily discernible, an *unambiguous metric context* where the music is comprised of “patterns that strongly tend to project a single meter and are readily maintained by the listener” (86). As we will see in the analyses that follow, there are only three places where we *might* not be confident of the beat or meter: in the beginning of Frame One before the Rim-shot enters the texture, in Frame Five where the most salient voice is highly metrically dissonant, and possibly in Frame Six where one sound maintains the original downbeat and another sound suggests a new downbeat. Even in these cases, though, the musical dissonance created by the metric ambiguity and dissonance is quickly clarified (as happens in Frame One) or there is at least one additional sound that still maintains the original pulse and meter all along (as happens in Frame Five and Six). Otherwise, the majority of the music is so clearly in quadruple time, and the beat is so strongly punctuated that “Almost” is almost always in a state of musical and perceptual consonance when it comes to the beat and meter.

Perceptual consonance is further reinforced by the repetitive nature of each frame. Remember, the entire internal structure of “Almost” is frames of repeating material. Each sound repeats a specific rhythm or motive over and over. Both Frames Two and Five do not even receive a single new sound once the frame starts. Even in the other frames where there are new sounds added after the frame begins, the addition(s) play a supportive role to the material that is already repeating in that moment and are not strong enough in and of themselves to change the original musical and perceptual climate of the

frame.[24]

Some of the sounds, in combination with other musical factors, have the ability to alter the general "sound world" or character of each frame and knock us into a new "sound world." Remember, the greatest consistency or binding logic behind "Almost" is the consistent pulse and the layering of sounds in a random way. All the frames have the beat and textural uniqueness in common. But what they do not have in common is the specific sounds textures or the specific rhythmic dissections of the beat into specific grooves. Each frame has its own sound texture and its own groove. Each frame is self-contained. Each frame does not suggest anything about the next frame, even if the next frame happens to contain some of the same sounds and rhythmic patterns.

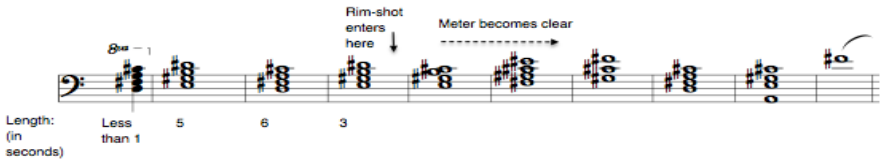
In the next several pages, we will explore "Almost" frame by frame. Within each section, we will first examine the musical contents that create the specific "sound world" of each frame, focussing on (1) the specific musical elements that characterize each frame, and (2) how perceptual consonance is maintained for the frame's duration. Second, we will examine the transition of each frame into the next frame, keeping in mind the following questions: When does the discontinuity take place? How is the peak of perceptual dissonance created? How might we experience musical timelessness?

Frame One 0:00-0:33

[24] Frame One is the only exception to this statement because the entry of the Rim-shot and Ticking do change the perceptual climate of the piece. However, they do not marking the beginning of a new frame because they are in service to the Harmonic Progression, bringing metric clarity to the otherwise ambiguous quality of the simultaneities. We will explore the ramifications of the role of the Rim-shot and Ticking in the detailed analysis and discussion of Frame One in the paragraphs and pages that follow.

Frame One is the most unique of all the frames in "Always" because it is the most process-oriented, and because the two sounds that enter the texture after it has already begun greatly effect the overall character of the frame. Frame One is the only frame that is characterized by a harmonic progression, and each subsequent sound that is added into the texture during this frame provides the rhythmic and metric foundation of the entire piece. Oddly enough, despite the metric clarity that characterizes the majority of "Almost," the beginning is where there is the highest level of metric ambiguity. At first, all we hear are sustained chords and we are unable to distinguish a beat or meter. It is truly a *latently ambiguous metric context*.[25] The first three sounds we hear are not uniform in their durational length whatsoever (see Figure 3.3).

Figure 3.3: Harmonic Progression




The latently ambiguous metric context, although it is not technically musically dissonant, can create a perceptually dissonant climate for us because we don't know when (or what) the next chord will be. If we are in a state of perceptual dissonance, once the beat and meter become clear through the entry of the Rim-shot and the reinforcement of the Ticking, we can experience a brief moment of musical timelessness as that ambiguity

[25] London describes a latently ambiguous metric context as, "metrically malleable pitch/durational patterns that have the potential for ambiguity" (86). These contexts become quickly clarified, and we see this in "Almost."

disappears and we enter into a state of perceptual consonance through metric regularity and consistency. The beat and the meter only become clear through the entry of the Rim-shot at the end of the fourth simultaneity. The Rim-shot immediately organizes the chord changes into four-beat measures through a repeating pattern of three quarter notes and a quarter rest. Even though the Rim-shot's cycle begins on the fourth beat of every measure, the downbeats of each measure are made clear. The lowest pitch of the Rim-shot coincides with every chord change (see Figure 3.4). In other words, where the Rim-shot is concerned, beat one sounds like beat one. Four and a half measures later, the Ticking gradually enters the texture by starting very quietly and is soon heard at its full volume as straight sixteenth-notes. So, by the ninth measure, we are provided with a spectrum of subpulses, beats, and measures that are maintained for the entire piece (see Figure 3.4 below).

The first discontinuity takes place when the Harmonic Progression dissolves into a Drone and the Purr and Whisper begin at the beginning of Frame Two. We can experience musical timelessness as the result of perceptual dissonance in the following ways. First of all, the element that drove the first frame and suggested a musical concept for the rest of the piece (harmony) is suddenly gone. The element that takes its place, the Drone, is easily relegated to the background and is not heard as the driving force or primary “idea” of Frame Two. There is no musical motion in it, but there is more and *new* musical motion in the Purr and Whisper. Secondly, the Purr and Whisper are strongly emphasized because their parts are tightly paired to one another, their sounds are unique and overt, and their rhythms are complex compared to what we've heard so far (see

Figure 3.5).

Figure 3.4: Frame One

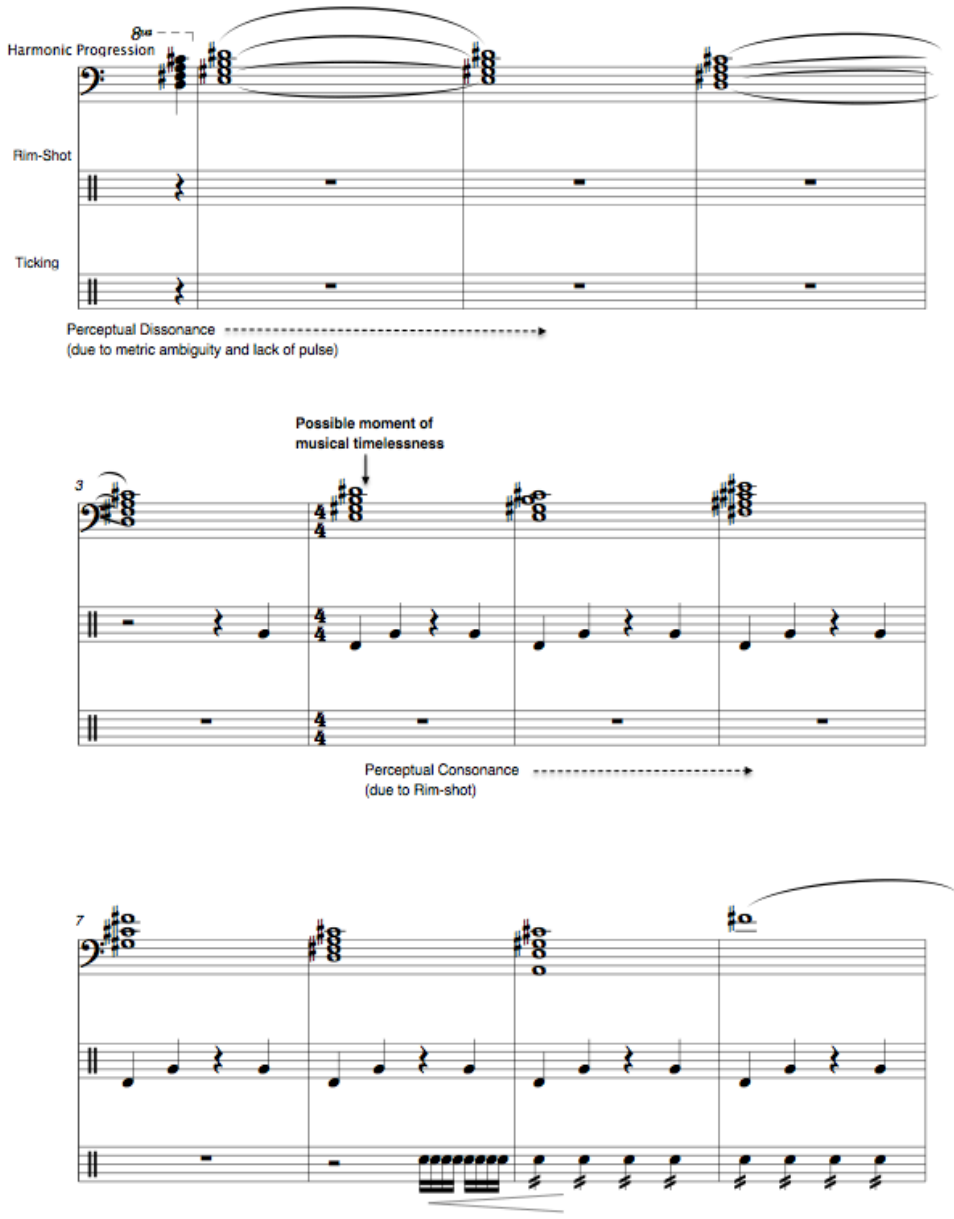
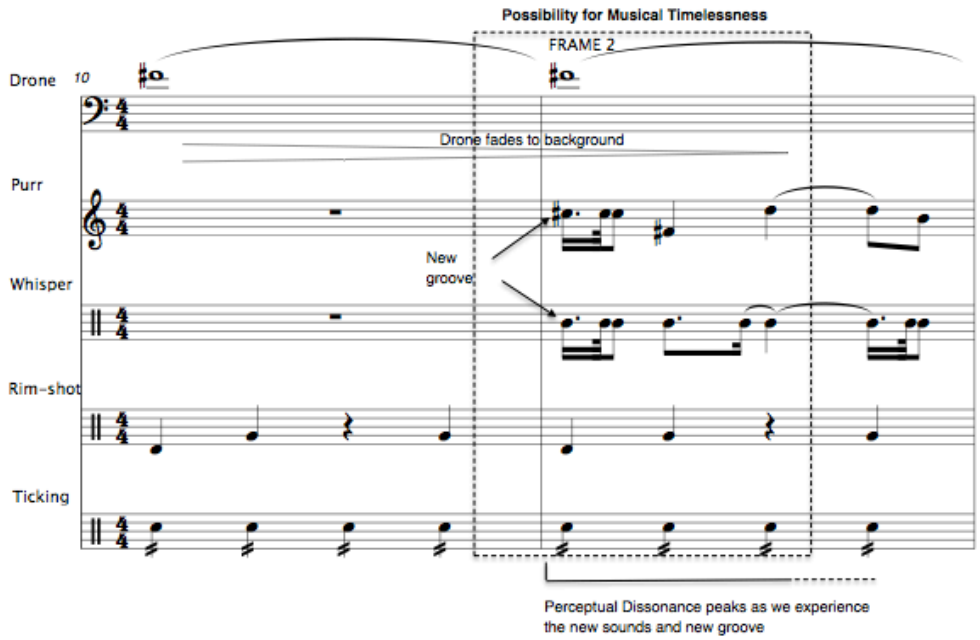



Figure 3.5: Transition from Frame One to Frame Two

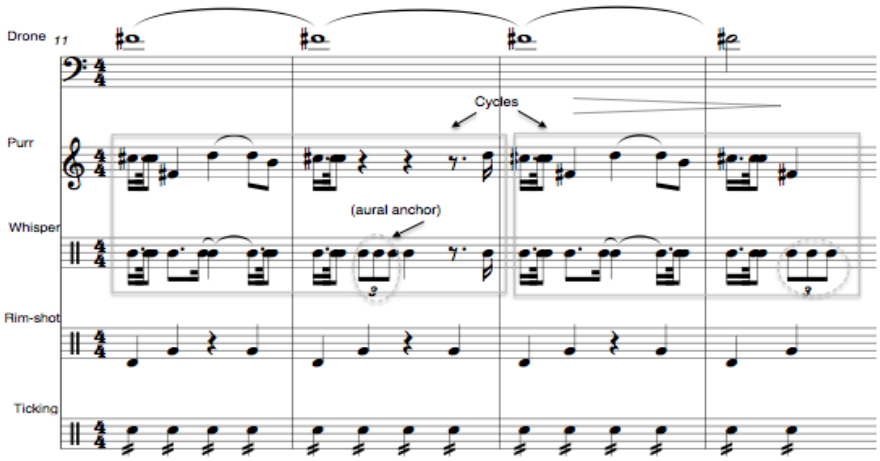



We can experience perceptual dissonance within the first few moments of Frame Two because the new material we hear is unexpected, but clearly emphasized. There was nothing in the music preceding the second frame that would give us any reason to expect the timbres of the Whisper and the Purr or their pitch and rhythmic content. And so, for a brief moment when the Harmonic Progression is suddenly gone, the Drone has taken its place but is pushed to the textural background, and entirely unexpected material is emphasized, we can find ourselves in a climate of perceptual dissonance. In this moment we can experience musical timelessness as we are readjusting to the new sounds and new groove of Frame Two.

Frame Two 0:33-0:44

The second frame appears to be a repetition of a two-measure cycle (as indicated by the grey boxes in Figure 3.6). The complex rhythms of both the Purr and the Whisper repeat. During the act of listening, it is not probable that we will catch every single attack-point, but we are likely to hear the triplet rhythm (circled) of the Whisper pop out of the texture because this subdivision, based on a division of the beat into three rather than some multiple of two, is new to the piece. The triplets act as an anchor for our ears and we are likely to naturally attune to their presence amidst the complex percussive and textural activity. Furthermore, the quarter note and dotted-eighth rest that follow the triplets also anchor our ears because we wait for one and three-fourths of a beat before we hear another attack-point. Where the rhythmic activity is otherwise substantial in the Whisper, a delay for this amount of time between attack-points is stark and provides another anchor for our ears.

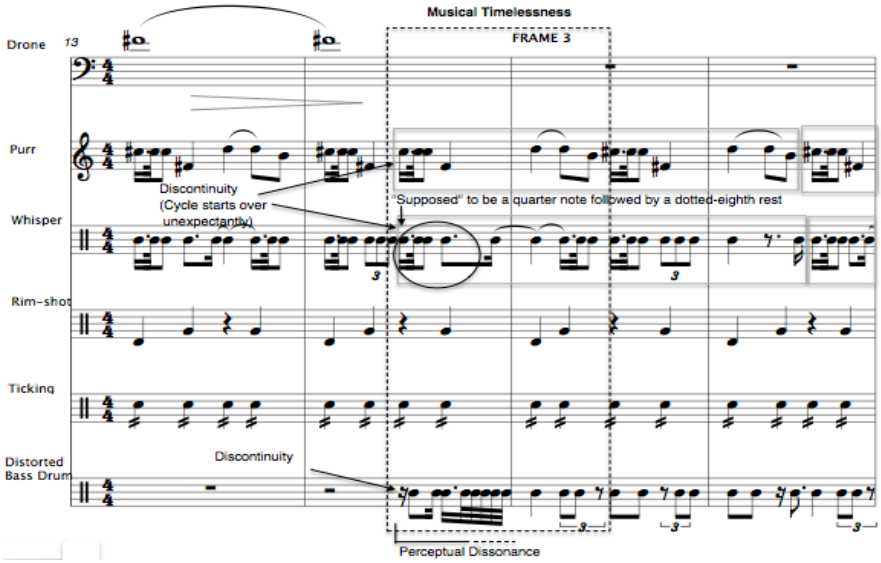
Figure 3.6: Frame Two




If our ears are drawn to attend to the triplet rhythm followed by a quarter note and

dotted-eighth rest, we will be nicely set up to experience another moment of musical timelessness at the transition between Frame Two and Three. Measure 13 is an exact repetition of m. 11, suggesting a two-measure cycle. Based off of the length of the cycles set up by Frame Two, we can unintentionally (or intentionally) expect to hear a set of triplets on the second beat and a quarter note followed by a dotted-eighth rest on the third and fourth beat of every other measure (mm. 12 and 14). We certainly hear a set of triplets on beat two of m. 14, as expected, but these triplets are not followed by a quarter note on beat three. Instead, the Whisper's (and Purr's) cycle immediately starts over (see Figure 3.7).

Figure 3.7: Transition from Frame Two to Frame Three




Where we expected a moment of rhythmic inactivity in the Whisper, instead we hear an increased level of activity. At the exact same time, a brand new timbre—the

Distorted Bass Drum—enters the texture as a pick-up into Frame Three. This one moment at the third and fourth beats of m. 14 is extremely unexpected and marks another peak of perceptual dissonance. In this moment, as we are feeling what we expected to hear and simultaneously experiencing what we did not expect, we can experience musical timelessness.

Frame Three 0:44-1:42

The quality that distinguishes Frame Three from anything we've heard up to this point in the piece is an increase in momentum. The increase is partially the result of even more complex aggregate rhythms and partially the result of overlapping motivic cycles between the Whisper and the Distorted Bass Drum. In the case of rhythmic complexity, the Distorted Bass Drum repeats a 4-beat pattern of eighth-notes alternating with triplets, while at the same time, the Ticking sustains sixteenth-notes. The Distorted Bass Drum's presence is so sudden and so strong that we can't help but be momentarily surprised before we become quickly delighted in the robust and energetic groove it instantly establishes. It has more presence of sound than anything else we have heard so far: it is louder, more rhythmically energetic, and lower in pitch. It instantly moves the music to an entirely new energy level. Occasionally, the Whisper (and the Purr) highlight the four-against-three beat subdivision which enhances the overall increase in rhythmic complexity and the increase in momentum overall (refer back to Figure 3.7).

More subtle, but perhaps more deeply attuned to at a subconscious level on our part, is the overall momentum increase due to overlapping cycles between the Distorted

Bass Drum's pattern and the Whisper's pattern. In Frame Two, it seemed the Whisper's cycle was a two-measure pattern that was interrupted in m. 14. However, as Frame Three unfolds, the same effect keeps happening: we hear a two-measure pattern in the Whisper that is cut short every other time. The first iteration of the cycle is eight beats, then the second is only six beats, then eight, then six, and so on. Meanwhile, the Distorted Bass Drum's pattern is consistently four beats all the way through. The triplet anchor keeps shifting its placement within the measure and overall, the downbeat is never strongly emphasized because the Distorted Bass Drum's pattern always begins on the third beat of every measure. The overall affect is that the music can sound like it keeps tripping forward every three and a half measures. The initial interaction between the cycles of the Whisper and Distorted Bass Drum is expressed notationally in Figure 3.8. The entirety of Frame Three can be quickly grasped in the graphic sketch of Figure 3.9 where the nature of cyclic overlapping is made visually clear.

Figure 3.8: Whisper and Distorted Bass Drum Cycles

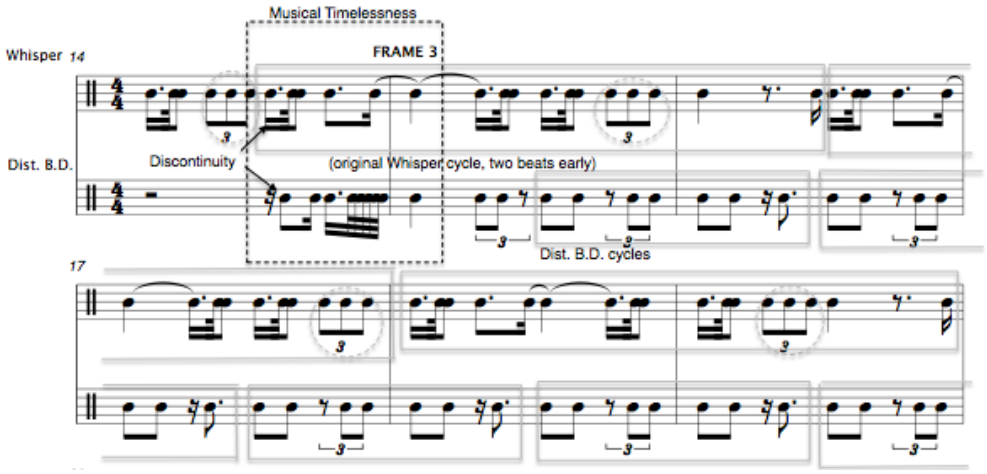
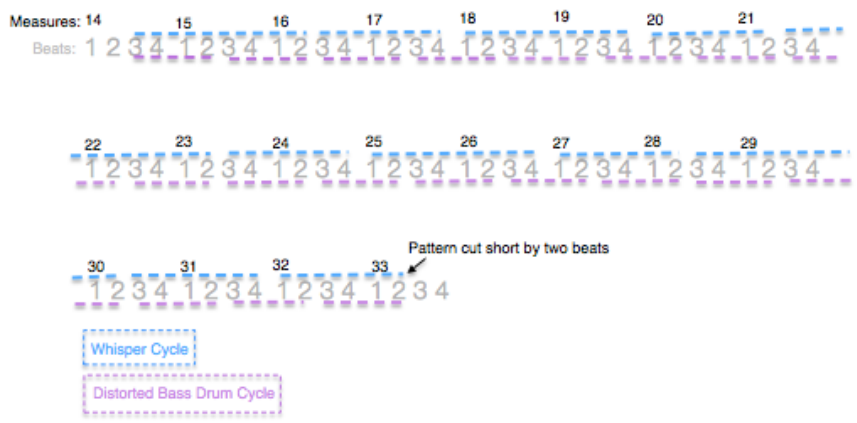


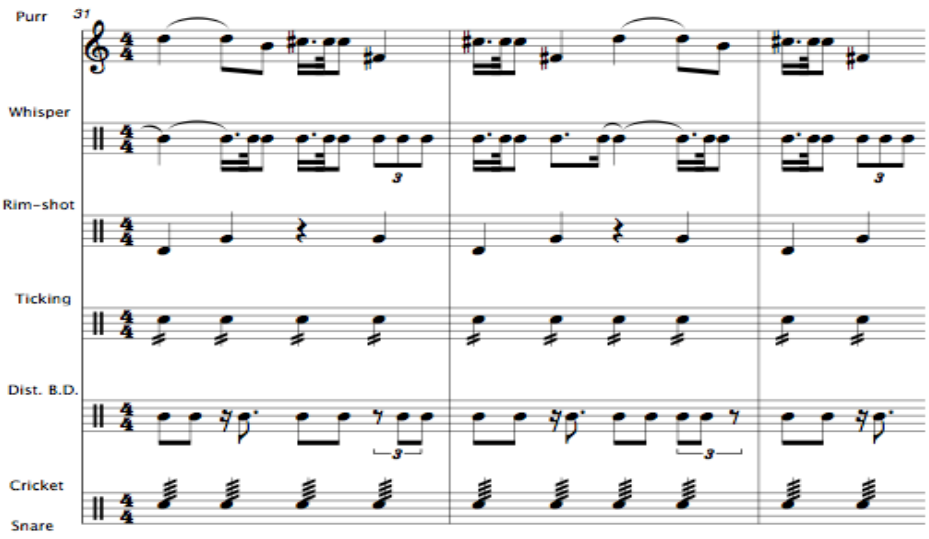
Figure 3.9: Frame Three, Whisper and Distorted Bass Drum Cycles (in beats)




As the rhythmic momentum increases, the timbral texture also increases. The addition of the Cricket and the Snare do not mark the beginning of a new frame because they do not dominate the sound texture or change the groove of the Distorted Bass Drum upon their entries. Instead, they both gradually grow into the texture only to thicken it (see Figure 3.10). On the downbeat of m. 20, the Cricket begins—first as a set of sixteenth notes, then as sets of thirty-second notes, and finally as a wash of sound. The attack-points of the Cricket's rhythm grow in frequency, reinforcing the general increase of momentum. Eventually, the Cricket's rhythms are so fast that they become a sustained sort of static that permeates the musical texture. Within m. 31, a Snare roll creeps into the sound texture and grows for two measures. By m. 32, there are seven distinct sounds in play: the Rim-shot, the Ticking, the Whisper, the Purr, the Distorted Bass Drum, the Cricket, and the Snare. At this moment, the timbral and rhythmic texture is at its thickest, The first five sounds repeat their various cycles while the Cricket and the Snare are build the overall volume and thickness of the frame.

The moment between beat two and beat three of m. 33 is one of the greatest discontinuities in “Almost.” In that single beat, we experience one of the most profound discontinuities of the piece—from the highest volume of sound and the thickest texture we've experienced thus far to an instant dropping-out of nearly all the parts. Five of the seven sounds instantly stop. Nearly everything that was carrying the music forward with strength and propulsion is instantly, and unexpectedly gone. For a split-second, the momentum seems entirely lost, and then quickly remerges as the roll of the Snare and Cricket dramatically crescendo, carrying us into the downbeat, marking the beginning of Frame Four.

Figure 3.10: Thickening of Timbral and Rhythmic Texture (mm. 31-32)



Frame Four 1:42-2:03

Although the discontinuities that transition us from Frame Three into Frame Four are perceptually dissonant because they are so unexpected, they are musically consonant. Once Frame Four starts, however, we are likely to remain in a state of perceptual dissonance for a different reason: musical dissonance brought on by metric ambiguity. There is no attack-point on the downbeat of Frame Four aside from the wash of sound within the Snare and Cricket.

The nature of Frame Four is suspension above or transcendence from the pulse. The stark contrast between Frame Four and the rest of the highly pulse-driven piece is largely how we are able to feel such a suspendedness. It's not that the pulse is completely gone in reality. In fact, the pulse is held within the Snare and Cricket, later to be joined by the Distorted Percussion.

The grounded nature of “Almost” is missing because the pulse is far less emphasized when compared to the highly pulse-driven context of the rest of the piece (see Figure 3.11). Even more so, the new sound that enters the texture, the Panting sound, is extremely metrically dissonant in and of itself. It is a series of grouping dissonances that form asymmetrical sets of dotted-eighth notes, beginning on an offbeat (see Figure 3.12).

Figure 3.11: Transition from Frame Three to Frame Four

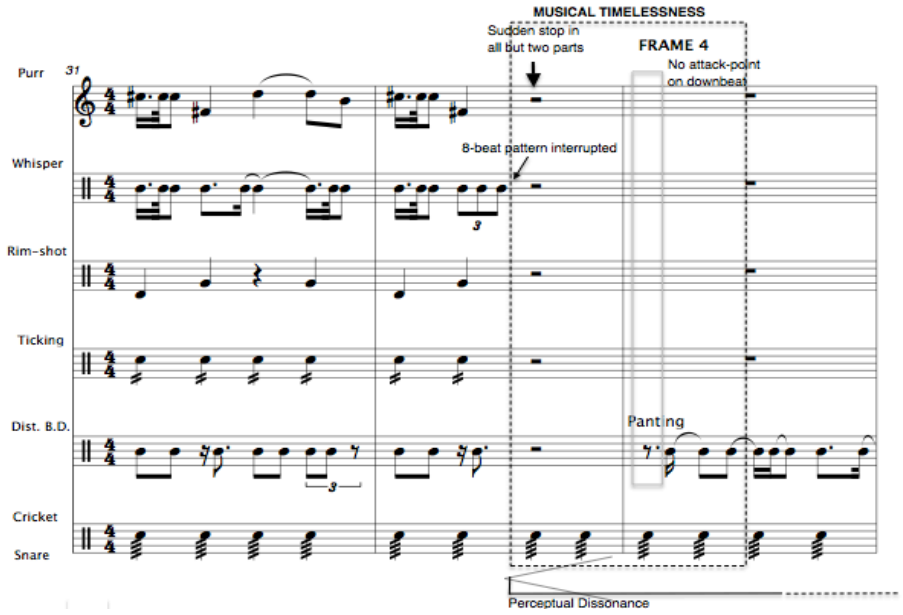
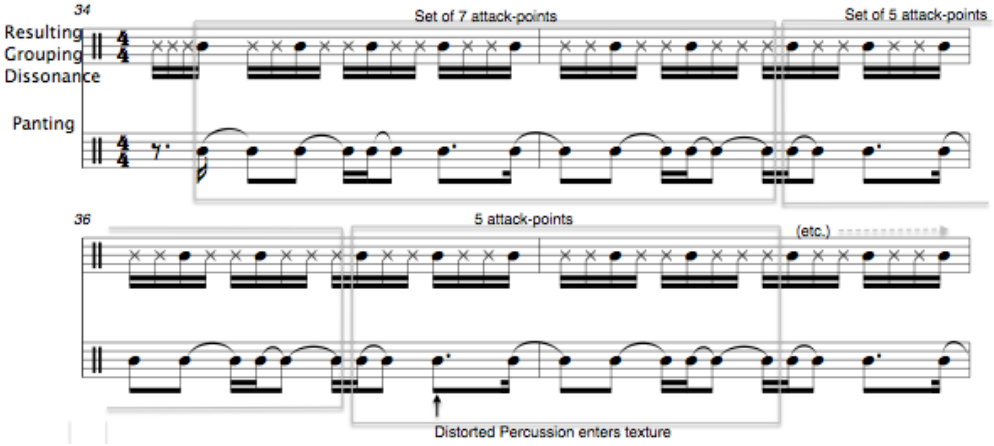



Figure 3.12: The Grouping Dissonance of the Panting Sound




Typically, musical timelessness happens within a very brief moment as we transition from one perceptual state to the other. In this case, the timeless moment is prolonged because we are experiencing perceptual consonance and perceptual dissonance in equal degrees—

both of which are brought on by the musical reality and not held exclusively within the imagination or memory. In Frame Four, the beat is still present in the music (perceptual consonance), but it is encased within a general wash of sound (perceptual dissonance). The Panting technically fits within subdivisions of the beat (perceptual consonance), but the attack-points express off-beats (perceptual dissonance). It is consistent and even predictable (perceptual consonance), though asymmetrical (perceptual dissonance). However, the general affect of the Panting sound is that it is not grounded to the beat at all (perceptual dissonance) because none of the attack-points fall on a hierarchically significant beat. The asymmetry of the Panting's pulse cycles is perceptually dissonant because it is couched within a symmetrical metrical context. In the setting of a 4/4 meter, with subdivisions of multiples of two, any quintuple grouping will be perceptually dissonant unless it is maintained long enough that we grow accustomed to it. The net affect of this particular frame is a prolongation of musical timelessness (in the form of C<=>D timelessness, to be discussed in Chapter V).

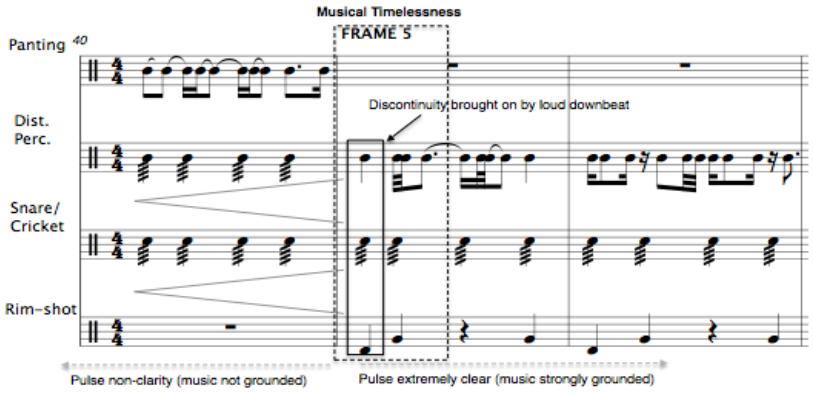
Frame Five 2:03-2:13

The Distorted Percussion plays a key role in creating the discontinuity that sets off Frame Five. It enters in the fourth beat of m. 36 with a roll—similar to the entry of the Snare that brought on the beginning of Frame Four. Although the sonic presence of the Distorted Percussion is upfront, it does not lock into a rhythmic pattern until the downbeat of Frame Five. Instead, it builds the texture through rolls and accents.The texture and volume thickens, ending Frame Four similarly to how it began: with a

crescendo. This time, though, the roll is strengthened by the presence of the Distorted Percussion and results in a loud downbeat[26] on m. 41.

The downbeat of m. 41 is *the* discontinuity that starts Frame Five and where we can experience musical timelessness. Remember, the entire affect of Frame Four was suspension or prolonged timelessness because the music was not grounded to the beat. Frame Five is just the opposite and that grounding to the beat is instantly and strongly expressed (see Figure 3.13). Not only does the roll of the Snare, Cricket, and Distorted Percussion result in a punctuation of the downbeat of m. 41, but the downbeat also marks the return of the Rim-shot and locking into the Distorted Percussion's rhythmic cycle.

Figure 3.13: Transition from Frame Four to Frame Five




The exchange between the Panting and the Rim-shot is especially important to understanding how perceptual dissonance is made possible in this moment. The Panting is the only sound in the piece that is clearly metrically dissonant. The Rim-shot, on the

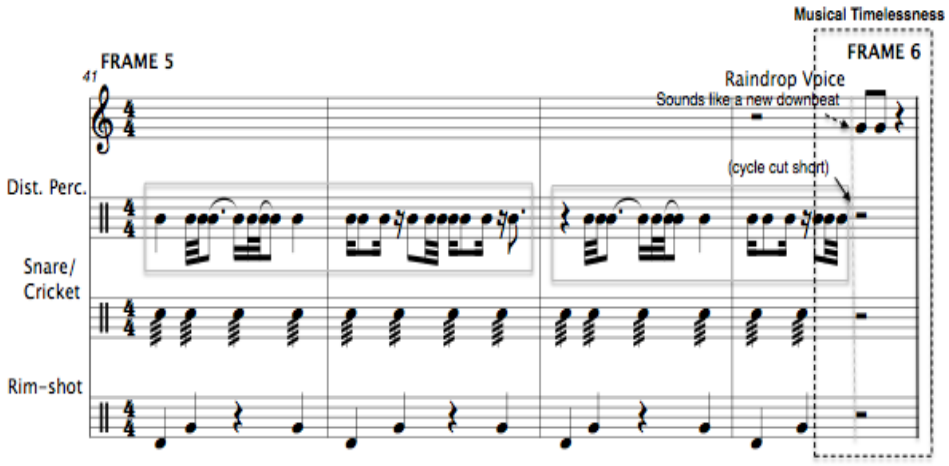
[26] "Loud downbeat" is not referring specifically or exclusively to volume, but to significance. When I say "loud downbeat," I am meaning a downbeat that is strongly emphasized as beat one and given substantially more structural weight metrically than any of its surrounding beats.

other hand, is the strongest metrically consonant sound because it was *the* part that first established the pulse and meter in the beginning, and it has been a part of the piece for the longest amount of time. Its very structure not only expresses the beat, but also expresses the meter by emphasizing beat one. So, in one moment (at the end of Frame Four), the beat is not emphasized and we feel suspended above it. In the very next moment, on the loud downbeat that starts Frame Five, the beat is strongly emphasized, the meter is made clear again by a truly familiar sound, and we are strongly grounded again. We go from extreme non-clarity to extreme clarity in a single moment. We go from musical dissonance to musical consonance in a single moment, but the perceptual effect might be the opposite if we had quickly grown accustomed to the musical dissonance created by the Panting in Frame Four. Even if we did not specifically grow used to the metric dissonance created by the Panting, and even if we didn't grow used to the sense of being suspended above the beat during Frame Four, the contrast between Frame Four and Five is so strong, and it comes on so suddenly, that we will still experience the unexpected at the downbeat of Frame Five. As we are re-orientating ourselves to musical consonance while still feeling the "echo" of the musical dissonance and the suspended climate that we were just in and to which we had perhaps grown accustomed, we can experience musical timelessness.

Similar to Frame Two, the entirety of Frame Five is an exact repetition of a two-measure cycle, except for one interesting detail: the last measure of the last cycle is cut short! The salience of the Raindrop's voice coupled with the instant drop-out of the other parts makes it sound as though beat three becomes beat one! However, at the downbeat of

m. 45, the Distorted Percussion and the Rim-shot continue their patterns and maintain the original metric structure (see Figure 3.14).

Figure 3.14: Transition from Frame Five to Frame Six



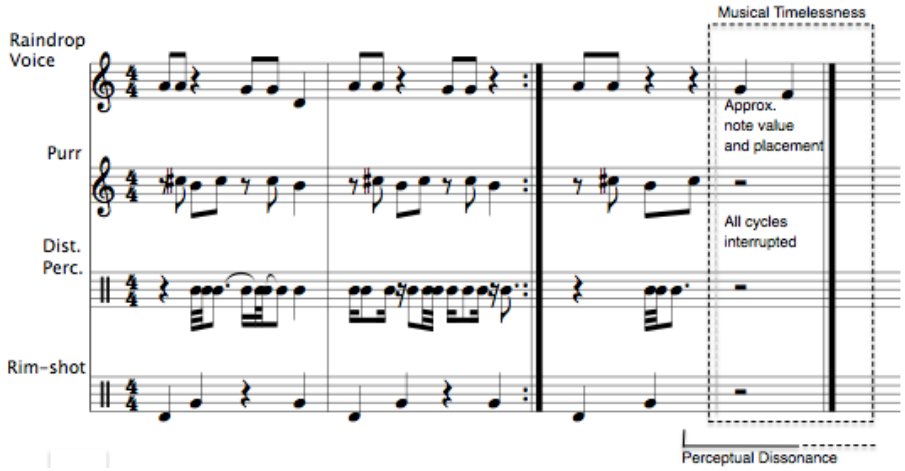

Frame Six 2:13-2:40

Frame Six is the only frame that repeats material verbatim without any alterations or additions for such more than four measures. All the sounds participate in a two-measure cycle that repeats four times. The fact that the cycle is so short, situated perfectly within a two-measure span beginning on a downbeat, and repeated four times allows us to really anticipate and expect future events. More than ever, we are likely to be in a state of perceptual consonance during Frame Six as the same material repeats over and over and over. We come to expect it and our expectations prove accurate.

The end of "Almost" comes just as suddenly and randomly as the beginning, and this is where the last discontinuity lies. The character or sound world of Frame Six is maintained for almost half a minute as the two-measure cycle is repeated four times. By

the fifth repetition, we have every reason to expect more repetitions of the cycle, but two beats into the first measure, everything drops out again, and the Raindrop Voice ends the piece with two notes that seem unrelated to anything from before. They are not a part of the Raindrop Voice's regular motive, the Fb (the second pitch) is the only Fb in the entire piece, and if the two notes are to be considered quarter-notes, they are slightly slower than the beat that was maintained for the entire piece up to this point. We experience perceptual dissonance because we expect the cycle to at least complete itself if not repeat again, but it doesn't, and before we can even adjust to what we are hearing, the music stops. The ending is the last discontinuity of "Almost." What we now adjust to is the fact that the piece is over (see Figure 3.15).

Figure 3.15: Frame Six




*The Role of Expectation in "Almost"*

As I have stated in previous chapters, musical timelessness is a function of our expectations. We are in a perceptually consonant climate when our expectations are not

challenged, and we are in a perceptually dissonant climate when our expectations are challenged. If we take into account all of the repetition that comprises the contents of each frame in "Almost," and also at the same time consider the unpredictability of the changes in texture and timbre at each frame transition, we can understand how "Almost" provides a climate of perceptual consonance that is interrupted by perceptually dissonant moments. The internal structure of each frame is driven by a consistent beat and a groove specific to the sounds and rhythms within that frame. In fact, the pulse is so strong, the meter is so clear, and the metric entrainment is so easily embodied and so pleasurable that each frame of "Almost" nearly constantly pushes us into some kind of a groove-state where we most likely subconsciously "flow" along with the piece. Yet, there are five places (or six, if we include the end of the piece) when we are knocked out of a perceptually consonant state because of unpredictable changes to the sound texture and groove.

It is important to keep in mind that with "Almost," there are two aspects to the fundamental nonlinearity that knock us out of a perceptually consonant state: the *what* of each transition and the *when* of each transition. We've examined both in detail. Specific sounds, rhythms, and texture combinations work together to instantly change the overall character or aesthetic of the frame. The most noteworthy transitions are between Frame Two and Three where the momentum is increased through the sound quality of the Distorted Bass Drum, its rhythmic complexity, and by the complexity generated through the overlapping cycles between the Whisper and the Distorted Bass Drum; between Frames Three and Four where the music seems oddly suspended above the grounding of

the beat through the Panting Voice; and between Frame Four and Five where the immense contrast between metric non-clarity and clarity is emphasized at the exchange of presence in the Panting Voice and Rim-shot. We have also seen that the unpredictability of *when* the transitions happen plays a large role in the fundamental nonlinearity of "Almost." There is nothing in a frame that predicts the when (or what) of the next frame. If we look at "Almost" from a hypermetrical sort of organizational scheme, this becomes very clear. Considered as a whole, the entire scheme of the durational lengths of each frame is completely random. Specifically, the durational lengths of Frames One, Three, and Four are not multiples of four (which means they can't be heard in terms of a four-bar phrase structure),[27] and the durational lengths of Frames Three and Four are entirely asymmetrical (see Table 3.3):

Table 3.3: Duration of Each Frame

| Frame | Durational Length (in measures) |
|---|---|
| 1 | 10 |
| 2 | 4 |
| 3 | 19 |
| 4 | 7 |
| 5 | 4 |
| 6 | 8 |

Every peak of perceptual dissonance indicates where we have an expectation that is challenged by the musical reality. Where there is a discontinuity, there can be a peak of

[27] I am at all not suggesting or implying that there are phrases in "Almost." However, most of us are naturally expect some kind of change-up or section shift every four or eight measures because much of Western music does this—whether we're speaking of Bach or Beck.

dissonance if we didn't expect the discontinuity. If the discontinuity challenges our expectations, then we find ourselves in a perceptually dissonant moment. Every type of challenge to our expectations described in Huron's taxonomy of expectations (237-238) may play a role in creating the opportunity for experiencing musical timelessness in "Almost," though some types of expectations play a greater role than others. Remember from Chapter II, Huron describes four types of musical "surprises" or challenged expectations based on four different types of expectations connected to different types of memory:

> A *schematic surprise* occurs when events do not conform to commonplace musical patterns such as stylistic norms. A *veridical surprise* occurs when events do not conform to a musical work (or specific musical pattern) that is familiar to the listener. A *dynamic surprise* occurs when events do not comply with expectations that have been evoked in the course of listening to the work itself. Finally, *conscious surprise* occurs when events do not conform to explicitthoughts or conjectures about what will happen. (237-238, italics his)

Let's discuss each type and how it relates to "Almost" in detail.

"Almost" as a whole can (and likely does) challenge our schematic expectations for how the music will generally sound based on a large portion of our past listening experiences. We will likely expect a melody of some sort, harmonic language rooted in western tonality, metric organization, four-bar phrases, and a formal structure that displays a process of development. The sound palette used in "Almost" is likely uncommon to the sounds used in the majority of our past listening experience. Some sounds are probably new experiences altogether. The structure of "Almost" would challenge an expectation for a process-oriented format comprised of phrases and cadences. Of course, the more we know about the creators and the piece, the less likely it

is that we will experience a challenge to our schematic expectations. If we are familiar with electronic music, minimal music, or jazz we may not find our schematic expectations so challenged. Furthermore, if we are familiar with moment form, the structure of "Almost" may fit into our schematic expectations. Most of all, if we are familiar with the band, Tortoise, and know that generally the band's output relies heavily on electronic enhancements and displays influences from jazz and minimal music, our schematic expectation might not be challenged at all. In other words, the more familiar we are with the overarching facts about the piece, or the more familiar we are with the band or the piece itself, the less our schematic expectations will be challenged.

Similar to a schematic expectation, veridical expectations relate to our past listening experiences on a more general level. Even if we are familiar with electronically enhanced music and moment form, the way in which the frames suddenly switch or the way in which the sounds layer on top of each other can still produce a challenge to our veridical expectations. For example, if we are used to music that is electronically enhanced, but mostly through voice box techniques or distortion, many of the sound timbres in "Almost" will still catch us by surprise. Or if we are generally used to overtly synthetic sounds in electronic music, something that sounds like a chirping cricket or the ticking of a clock—sounds that do exist in the natural world—may come as a surprise. If we are experienced with moment form only as it is expressed through self-contained, *process-oriented* sections, the sustained repetition of the frames in "Almost" will challenge our veridical expectations.

Most of our challenged expectations come from our dynamic expectations that are influenced by the music directly and it is these sorts of expectations that play the greatest role in creating musical timelessness in "Almost," or in most other pieces for that matter. No matter what we might know of the piece or expect concerning the nature of the music, the musical details of "Almost" keep us returning to moments of perceptual dissonance where our dynamic expectations are challenged. The simple fact that there is so much repetition within the self-contained frames instantly produces dynamic expectations for more repetition. When listening to "Almost," we may be able to and likely do subconsciously expect that something will change eventually, but the *when* or *what* of the change remains entirely unexpected. And remember, as Huron states, "In the case of perception, accurate expectations about *when* a stimulus might occur helps the listener in resolving the *what* of perception" (177-178, italics his). The suddenness and randomness of the discontinuities at the outset of each frame reveal the dynamic expectations we were holding. We may have expected to hear another repetition of a motivic cycle because the music is inherently repetitive, but instead a new frame starts. Or we may have expected a change at any moment because we were growing accustomed to the random and sudden changes as they are established by the piece, but the change doesn't happen precisely when or how we expected.

If our consciousness is involved at any point in our perception of what we are expecting as we listen to "Almost," we have a conscious expectation. The groove-oriented nature of "Almost" is what encourages us to remain in a fairly subconscious interaction with our expectations and memory because the groove is such an embodied

aspect of music. However, if we find ourselves consciously predicting future events and consciously noticing that our expectations were not met (or maybe they were), we are dabbling in the realm of conscious expectation. A truly strange, and perhaps unfortunate side effect to this study is that any expectation for the reader will most likely be umbrellaed into the conscious realm because the whole purpose of this study is to analyze and discuss the experience of timelessness in music. Any moment we might possibly experience musical timelessness has been consciously highlighted. Nevertheless, the other types of challenged expectations can still be recognized and felt even if they are noticed consciously.

*Summary of "Almost"*

As we have seen, "Almost" is constructed of six frames that are self-contained by degrees and perceptually consonant by internal repetition (stasis) and an overarching unambiguous metric context. The frames are set off by discontinuities that create a brief, perceptually dissonant climate due to random and often sudden changes in the sound texture and groove. Each discontinuity is the musical element that generates a perceptually dissonant climate. Anytime our expectations are challenged within a perceptually consonant climate, especially when those challenges have to do with our expectations concerning rhythm and meter, we may find ourselves within a perceptually dissonant climate. Any time we transition from perceptual consonance to perceptual dissonance, we can experience a moment of musical timelessness. Put simply, every time a new frame begins in "Almost," we can experience musical timelessness.

**Case Study #2: "Race: In" by Battles**

Battles could be considered an experimental rock group with an undeniable penchant for minimalism and jazz. Their music is often described as highly cerebral, "a musical Sudoku of metallic clangs, motorik beats and pixie vocals, it really should come labelled 'PARENTAL ADVISORY: Contains Music That Will Turn Your Cerebral Cortex Inside Out'" (Jonze, par. 3). "Race: In" is the first track of their first full-length album and hit, *Mirrored*, released in 2007. Pitchfork's review of the album describes the band's technology-driven creativity:

> It's like a skills-exchange workshop where mechanically minded krautrockers are encouraged to share their knowledge with remedial class glam bands only interested in big beat thrills....easing you into the album's mix of over-the-top whimsy, extreme analogue rhythms that are often as much jazz-fusion as IDM as tech-metal, vocals that would do Roger Troutman proud, and vise-tight, 'live or laptop?' musicianship connected as much by USB ports and Firewire cables as the improvisatory interplay of four dudes just jamming. In fact, Battles may be the first band to really play with the way that 21st century software can extend and distend the sound of a rock band in real time; *Mirrored* moves in ways that Battles' first two instrumental EPs--post-rock played with the locked-down seriousness of modern techno--only suggested. Early Battles shows could sound like a metal band performing Steve Reich's *Music for 18 Musicians*, and *Mirrored* spurns solos, favoring a caffeinated maximalism where compositions are built out of 100 microscopic parts. The guitarist/keyboardists string together tracks out of riffs that crisscross with the careful preplanning of a subway system/ (Harvell, par. 2)

"Race: In" is a "caffeinated maximalism...built out of 100 microscopic parts." The piece is high energy, comprised of fragments upon fragments of musical material, layered and looped over themselves to create a captivating and—especially for our purposes here—timeless experience. "Each instrument on opening track 'Race In'-- Stanier's military-precise massed snares, the guitars tensely climbing up and down a few notes, what sound like synthetic tubular bells-- is added with the deliberate patience of a Terry Riley

composition. The song feels nervously repetitive, like it's suffering from OCD" (Harvell, par. 2). "Race: In" is not comprised of a lot of musical material. The piece is essentially only a handful of musical ideas that are altered, layered, looped, and repeated. Much of the material that is there is reused through fragmentation, variation, or phase shifting over an unrelenting guitar line and rhythmic drive from the drum kit.

Some General Statements about Musical Timelessness in "Race: In"

Musical timelessness in "Race: In" has everything to do with how the beat is subdivided. Just like "Almost," the beat drives the piece, is the common element between all the parts, and is at the same time what creates the platform for perceptually dissonant peaks. With exception to the first frame (lasting only eleven seconds), "Race: In" maintains the same pulse the entire way through and it is easily heard. The primary musical concept that allows "Race: In" to be an example of C-->D timelessness is the switch between duple beat subdivisions and triple beat subdivisions. Harald Krebs defines the pulse layer of a piece of music as "the most quickly moving pervasive series of pulses, generally arising from a more or less constant series of attack on the musical surface" (23) and micropulses as "more quickly moving layers... [that] may be intermittently woven into the metrical tapestry of a work as coloristic embellishments." The pulse layer of "Race: In" never changes. The same pulse is maintained throughout the entire piece as it is constantly emphasized as a point of coalescence and accentual strength. The realm of the micropulse is where there is grouping dissonance in "Race: In." Krebs defines grouping dissonance as "dissonances [that] are formed by the

association of at least two interpretive layers whose cardinalities are different and are not multiples/factors of each other; in other words, it arises from the association of nonequivalent groups of pulses" (31). Ordinarily, even this concept of varying beat subdivisions I don't believe is salient enough to necessarily provoke musical timelessness in most ordinary cases, but the way the two types of beat subdivisions are presented and retained in this piece creates an occasional uncertainty or shift in our embodied experience of the micropulse. Even as we embody the pulse, it is the micropulse that can change how the beat feels. And in "Race: In," this change opens the door for musical timelessness.

The musical discontinuities of "Race: In" are more varied in their strength and saliency than they were in "Almost." The musical means by which they come is also more varied. In "Almost," we saw that the discontinuities were basically the result of two things: a change in groove and in texture and these two types of changes happened at every frame transition. In "Race: In," not every frame transition contains a strong discontinuity. Some discontinuities are stronger than others because some completely switch from one micropulse to another. But others, most in fact, switch from a mixture of beat subdivisions to a single beat subdivision, or from one to a mixture. Anytime a mixture between duple and triple beat subdivisions is expressed, both are retained in the musical material to some degree. So, switching from a duple beat subdivision, for example, into a mixture that still retains the duple subdivision is not as stark as switching from a purely duple subdivision to a purely triple subdivision. There is really only one place, maybe two, in "Race: In" where we switch from one pure micropulse environment

into the other.

Another avenue by which musical discontinuity is created in “Race: In” is by a profound textural change—both in timbre and in rhythmic complexity. This sort of discontinuity only happens twice in the piece: between Frames Nine and Ten, and between Frames Thirteen and Fourteen. In both, the music suddenly shifts from comparatively thick timbral and rhythmic textures to luminously thin textures. In the second example, between Frames Thirteen and Fourteen, the switch is additionally unexpected because it happens after Frame Thirteen has repeated six times and also because Frame Fourteen contains a sound totally unique to that frame: sleigh bells. Again, we will examine these discontinuities is in far greater detail in the next section.

Even though “Race: In” is a fragmented collage of repeating material, the piece is still far more process-oriented than “Almost.” We will examine “Race: In” as a set of fifteen frames. We must remember that many of those frames are internally linear, containing melodic phrases and some semblance of harmonic structure. The relationship from frame to frame is also more linear than “Almost” in that the overarching organization of “Race: In” hints at a process of development over time because familiar material returns in fragments or with variation. Nonetheless, the frames are still self-contained by nature, sounding more like a collection of musical thoughts and ideas for that moment, rather than a part of a larger-scale narrative of musical development. Any process of development and variation that takes place over time in “Race: In” seems to be more from a natural outgrowth of creativity in the moment rather than from prescriptive planning. Even though “Race: In” is less like moment form than “Almost,” we can still

examine it under Kramer's description if we remember that fundamental nonlinearity exists within a spectrum. “Race: In” is just more on the “linear side” of that spectrum.

*The Key Players in “Race: In”*

Our strategy to examining “Race: In” will be to focus on the strongest discontinuities by highlighting the “key players” or those parts that play the greatest role in facilitating peaks of perceptual dissonance rather than examining each frame in turn as we did with “Almost.” In “Race: In,” not every frame transition marks a strong discontinuity as it did in “Almost.” Sometimes, there's very little in the music that would likely create a peak of perceptual dissonance. There are, however, a handful of frame transitions that are especially musically discontinuous. We will examine each part in turn, discussing in detail why its rhythmic structure creates peaks of perceptual dissonance at various points in the piece. Not every musical moment of “Race: In” will be represented in the figures and discussions that follow, but only those that I feel are directly involved in creating the opportunity for musical timelessness through peaks of perceptual dissonance.

There are four main parts that are central to “Race: In” where musical timelessness is concerned: the Drum Kit, the first guitar (Guitar 1), the melodic themes, and the second guitar (Guitar 2). The first two, the Drum Kit and Guitar 1, are foundational to the piece, always present save for a mere ten seconds toward the end of this nearly five minute piece, and they create the landscape upon which both perceptual consonance and perceptual dissonance can play. They are insanely repetitive, but oddly

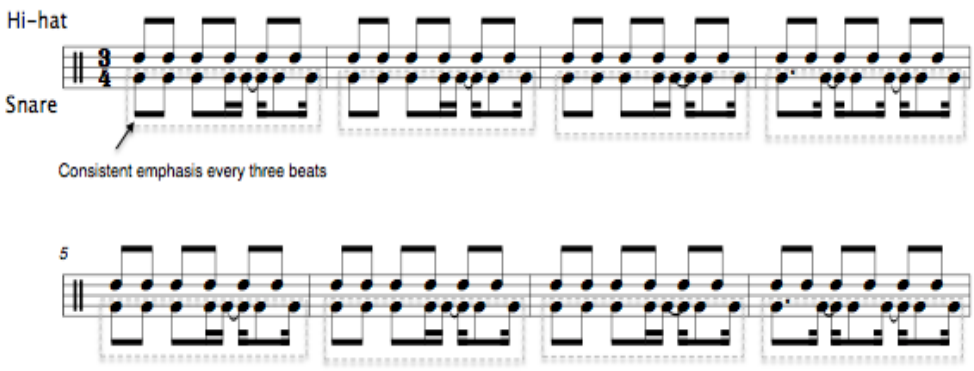
enough, their rhythmic structures are constructed in such a way that they seem to be able to fit into more than one metric context. The last two parts, the melodies and the Guitar 2, are ornamental and act as reinforcements for specific interpretations of the beat subdivision. Depending on when and how they are placed within the musical texture, their presence at specific points in "Race: In" plays a role in buttressing the juxtaposition between a felt or remembered groove from the recent past and the new groove from the present reality.

The Discontinuity between Frames One and Two

The pulse and energy that characterizes "Race: In" is heard right from the get-go. The Drum Kit is the only instrument we hear in Frame One. Eighth-notes are militantly pounded out on the hi-hat. We can quickly and easily find ourselves tapping our foot to every other eight-note, embodying a system of beats at a brisk tempo of 138 to the quarter-note, with subdivisions at the eighth-note (see Figure 3.16).[28] Over the straight eighth-notes of the hi-hat, we hear a set of rhythms played on the rim of the snare. Even though the Snare's rhythms are extremely fast, we can feel an emphasis every three beats where the basic rhythmic pattern starts over.

[28] In *A Generative Theory of Tonal Music*, Lerdahl and Jackendoff discuss our tendency to impose binary structures on unaccented rhythmic streams, calling it a Metric Preference for Binary Regularity. In other words, any time there is a stream of regularly recurring attack-points, such as a stream of eight-notes, we will naturally impose a quarter-note interpretive layer onto it, grouping every two eight-notes, thus emphasizing every other eight-note (101).

Figure 3.16: The Drum Kit in Frame One




The first frame transition in "Race: In" has the strongest discontinuity of the piece. Although the pattern itself never changes, the pulse we hear and the meter in which we hear it is not the true pulse or meter for the rest of the piece. We do not hear the true beat until Frame Two. Right in between what would be the first and second beat of the next measure (m. 9), a guitar (Guitar 1) jumps into the texture and immediately wreaks rhythmic havoc on what we have entrained. This is the moment of our first discontinuity. In this moment, we experience an intensely high peak of perceptual dissonance because what we had naturally entrained sounds immediately "wrong" and as we try to grasp any sort of rhythmic pattern. Initially, the rhythms of the Drum Kit were still most likely in a climate of perceptual consonance because the pulse was so easily felt and the meter was discernible. However, once the guitar jumps into the texture at Frame Two, the pulse clarity of the Drum Kit is distorted and disfigured, any perceptual consonance disappears, and we find ourselves in momentary state of metric confusion.

The peak of perceptual dissonance at the transition of Frame One to Frame Two is

the result of two things brought into the mix by Guitar 1: the "real" pulse of the piece and a beat subdivision of triplets (see Figure 3.17). The exact way the Drum Kit and Guitar 1 fit together musically in those first few seconds can be seen in Figure 3.18, but it is important to note that during the actual experience of listening to "Race: In," the notational details of this particular moment is very difficult to decipher. The perceptual effect is dissonance.

Figure 3.17: Guitar 1 in Frame Two

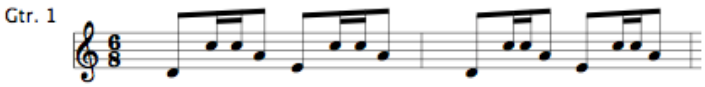
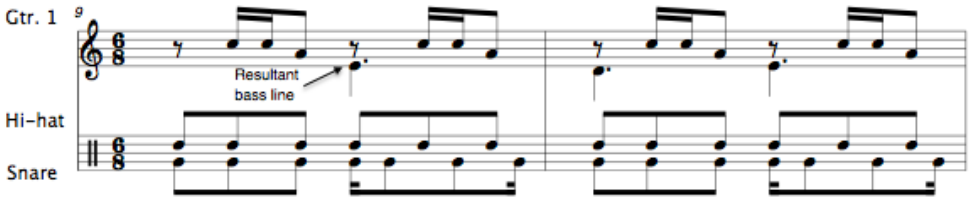



Figure 3.18: Transition from Frame One to Frame Two

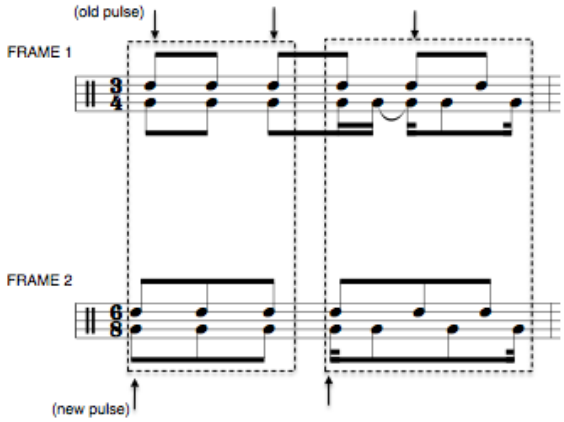



What is much more important than understanding the precise notation of the Guitar 1 entry is that it takes a moment for a new pattern to emerge. After a moment of strong perceptual dissonance, a new pattern emerges from the combination of the Drum Kit and Guitar 1 and we find ourselves again relaxing into a perceptually consonant climate.

Although the pattern in Guitar 1 is provided by a single performer,[29] the lowest note of the pattern aurally pops out of the texture almost as its own line, acting as a metric anchor. This may be simply due to the fact that it is the lowest pitch we hear (thus taking on the role of a bass line), or it may be that Battles purposefully split the layers of the guitar's input into different speaker channels—a technique for which the band is notorious. Either way, the resultant bass line in Guitar 1 plays a very important role in defining subdivisions of the beat later on in the piece.

If we examine the original sets of rhythms in the Drum Kit from Frame One, we can see the same specific set of rhythms repeated in a new context where the beat is not every two eight-notes but every three eight-notes (see Figure 3.19). Comparing the initial felt pattern of the Drum Kit (as a fast 3/4) and the resulting pattern in Frame Two (as a slower 12/8), we can see how the pulse is shifted from what we originally interpreted.

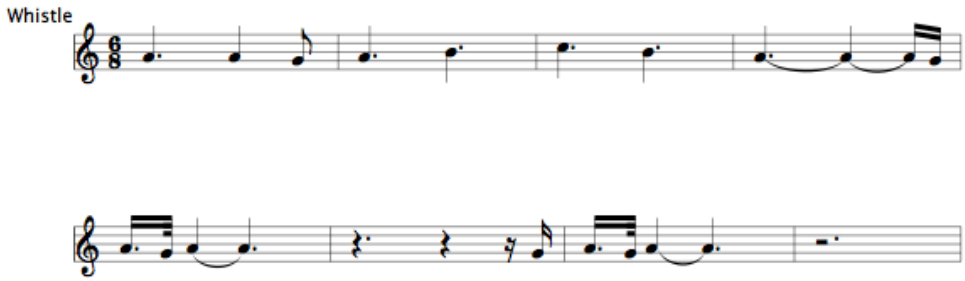
Figure 3.19: Drum Kit Rhythmic Pattern Recontextualized




[29] This is a conclusion I came to after viewing several live performances of "Race: In." See the list of YouTube live performances, all last accessed on August 3, 2014: https://www.youtube.com/watch?v=MKFzRhAtqiA, https://www.youtube.com/watch?v=FFzI2keKYXs, https://www.youtube.com/watch?v=-qNqS6G9LlA, https://www.youtube.com/watch?v=GqPCpAFQRWQ, https://www.youtube.com/watch?v=B-TlQT9J068.

The overall pervading subdivision structure of Frame Two is triplets. The same is true of Frame Three and thus, we do not really experience any musical discontinuity between Frame Two and Three. All that is added to Frame Three is a melodic line (A) that completely conforms to the triplet subdivision of the beat (see Figure 3.20). Everything seems to move in forms of triplets at this moment.

Figure 3.20: Melody A (Frame Three)

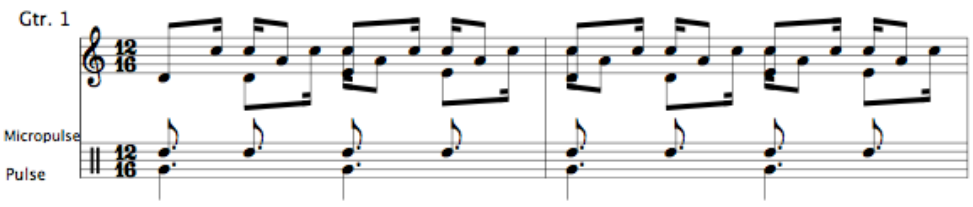



The Discontinuity between Frames Three and Four

The environment of purely triplet beat subdivisions heard in Frame Three becomes mixed at the outset of Frame Four. Precisely on the downbeat of Frame Four, the melody drops out, the repeating motive of Guitar 1 is layered on top of itself, and the resulting bass-line pattern of dotted quarter-notes in a compound duple context turns into evenly spaced divisions of the dotted quarter-note beat, sounding very much like measures in 2/4. As far as the rest of the line in Guitar 1 is concerned, it sounds almost too cluttered to distinguish. However, through listening and watching various live performances of "Race: In," I am suggesting here that the repeating pattern of Guitar 1 (as it appears in Frame Two and Three) is looped and phase-shifted at precisely a half-

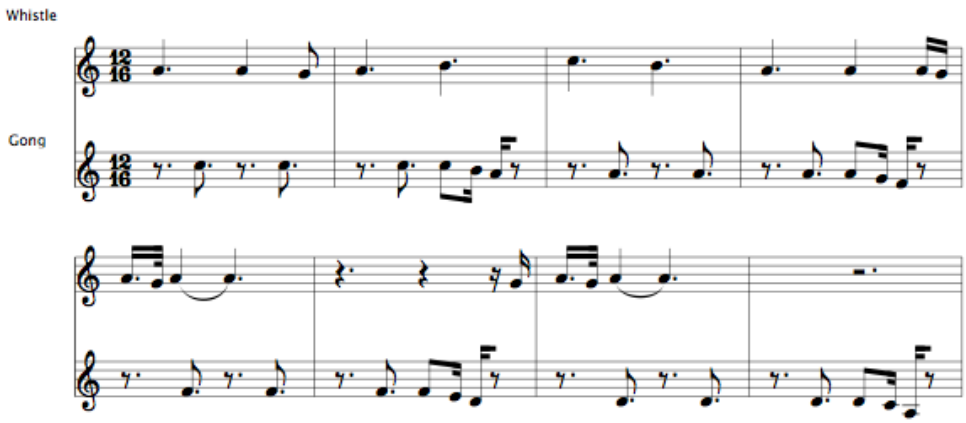
beat's distance. If this is the case, then technically, there is still a triplet subdivision embedded deep in the line of Guitar 1 in Frame Four. We may even be able to hear or feel it if the timbral texture of the moment isn't too thick. Regardless, the pervading effect is a reinsertion of duple subdivisions of the beat through Guitar 1 at this moment, but still encased in the same dotted quarter-note pulse (see Figure 3.21). In other words, while the same patterns are repeating at the same intervals in the Drum Kit and Guitar 1, an additional repetition of the same Guitar 1 pattern is repeated such that the pervading pulse is divided in half rather than in threes. Yet, because the same Drum Kit pattern and Guitar 1 pattern is repeating at the same intervals and the beat is divided in half, we can start to grasp that all parts, meters, and subdivisions are glued together at the sixteenth-note level. Except for Frame One, the entire piece has the same pulse and same measure-span of two beats. Additionally, every measure contains six hit-hat hits, equaling twelve sixteenth-notes. The different subdivisions of the beat are essentially expressions of the different ways those twelve sixteenth-notes can be grouped together. When we hear what sounds like a simple duple meter (as we do beginning in Frame Four), what we are really hearing is 12/16 where the sixteenth-notes are grouped into four groups, three sixteenth-notes each (again, see Figure 3.21).

Figure 3.21: Guitar 1 Phase-Shifted (Frame Four)



Frame Five reinforces the duple subdivision of the beat. A second melodic line (melody B) acts as a counterpoint to melody A, dividing the beat in half instead of in threes while melody A continues to maintain the original subdivision of the beat (see Figure 3.22).

Figure 3.22: Melody A and Melody B (Frame Four)



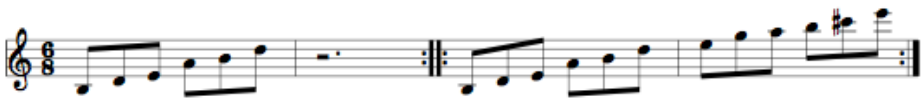

A triplet beat subdivision was purely maintained for the duration of Frames Two and Three. The Drum Kit, the Guitar 1, and melody A—all elements that formed (or conformed to) such a micropulse pattern—continue or resume in Frame Five. Nonetheless, by Frame Five, the duple subdivision of the beat becomes predominant because not only does the phase-shifting of Guitar 1 created a duple division of the beat, but the melody B also does so and none of the other parts are strong enough in their rhythmic structures to override the overarching duple subdivision. The Drum Kit's rhythms can easily fit into either context, and melody A only has one tiny moment where a triplet subdivision of the beat is emphasized (refer to the sixth beat of the first measure

in Figure 3.20). If Frame Four is heard as a predominantly simple duple context where the beat is divided into two, we will experience a discontinuity at the transition between Frame Three and Frame Four. And even if we can hear remnants of a triplet subdivision of the beat (embedded in the Guitar 1 loop and/or in the Drum Kit's rhythms), we will still likely experience some perceptual dissonance at the mixture of beat subdivisions. Either way, there is a moment of musical timelessness at the transition of Frame Three into Frame Four which is reinforced at Frame Five.

Frames Six through Nine

The next four frames can be heard in the same way—as either predominantly a setting of duple subdivisions of the beat, or as a mixture between duple and triple subdivisions. The musical material of Frame Six simply continues to enhance the grouping dissonances at the micropulse level. A new part, Guitar 2, enters the texture as a set of fills that sweep upward in sets of triplets in a compound quadruple context (see Figure 3.23). When thrown into the rhythmic mix, the Guitar 2 reinforces a triplet beat subdivision within a pervasively duple beat subdivision context. The Guitar 2 simply adds to the micropulse grouping dissonances already in play.

Figure 3.23: Guitar 2 (Frame Six)



Remember that musical dissonance does not always directly influence perceptual dissonance. Through repeated exposure to a specific musically dissonant climate, we can come to expect those musical dissonances, thus finding ourselves in a perceptually consonant climate. I believe this is most likely what we experience during Frames Five, Six, Seven, and Eight, and therefore why I do not consider any of the frames transitions within that span of time to contain discontinuities strong enough to produce peaks of perceptual dissonance. In essence, we've grown used to the mixture of beat subdivisions and come to expect them.

Although the mixture of micropulse layers is retained in Frame Nine, the frame is worth noting. For the first time since the piece began, the Drum Kit strongly and unquestionably reinforces duple beat subdivision by entering into a rock beat[30] *while at the same time* maintaining the high-energy multiply-interpreted rhythmic pattern we've been hearing all along. Similar to the sweeping fills of Guitar 2—but on the other side of the spectrum in favor of duple beat subdivisions—the Drum Kit reinforces the mixed quality of the beat subdivisions, and also reinforces the pervading sense of a simple quadruple meter overall—a point that will prove important to remember for our discussion in the next section. By Frame Nine, most of the parts in play are expressing a duple subdivision of the beat, the strongest being the resultant bass-line in Guitar 1 as evenly spaced eighth-notes and the rock beat in the Drum Kit.

[30] In his dissertation, "From EDM to Math Rock: Metrical Dissonance in the Music of Battles" (2014), Ryan Matthew Brown describes a rock beat as containing four basic ingredients: simple duple time, repeated eighth-notes on hi-hat or ride cymbal, kick drum attacks on the first and third beats of every measure, and snare attacks on beats two and four (26).

The Discontinuity between Frames Nine and Ten

Remember that musical timelessness is a matter of transitioning between perceptual climates. What came before the moment of musical timelessness has just as great (if not greater) a role in establishing a moment of musical timelessness than what is happening directly in the moment of musical timelessness. We must remember or imagine a recent past perceptual climate while at the same time experiencing the opposite climate in reality. In this way we transition between the perceptual climates.

Technically, at the end of Frame Nine, there is a mixture of duple and triple micropulse layers. However, most of what we hear (whether it is by sheer quantity in parts, by volume of sound, or by weight of saliency) is duple beat subdivisions, especially due to the resultant bass line of Guitar 1 as straight eighth-notes. At this point, the Drum Kit has added a rock beat. It is most likely that we will lean toward hearing Frame Nine (if not the last several frames) as a form of simple duple. If we do, then we will experience a peak of perceptual dissonance at the transition of Frame Nine into Frame Ten.

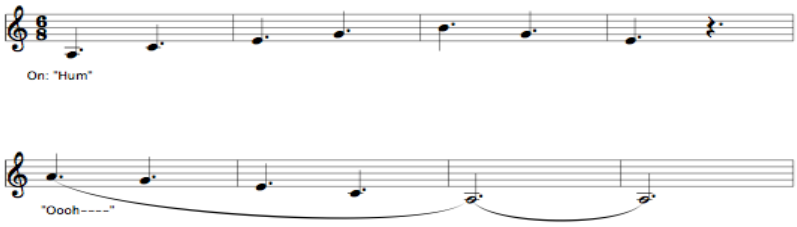
Frame Ten is basically a repetition of Frame Two. Everything but the drum kit (minus the rock beat) and the Guitar 1 drop out. We are suddenly in a purely compound duple meter again, hearing only triplet subdivisions of the beat. The phase-shifted loop of the Guitar 1 has stopped, the rock beat of the Drum Kit is gone, and we simply hear a figure of triplets with a resultant bass-line over the snare's fast-paced rhythms as we did in the beginning in Frame Two. It is an exact repetition of Frame Two (refer to Figure 3.18).

The Discontinuity between Frames Eleven and Twelve

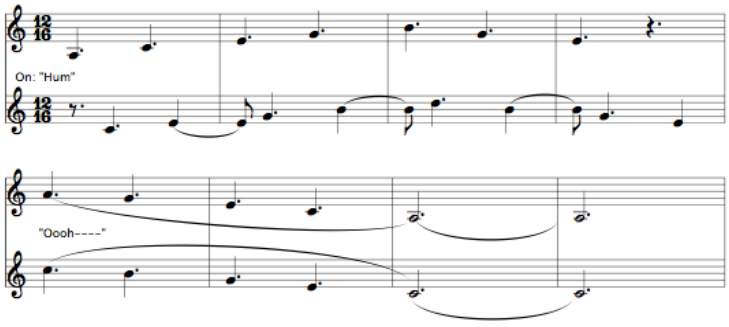
Frame Eleven is also related to Frame Three in that it too introduces a four-bar melody (C). This time, however, it is not whistled, but sung (as “Hums” and “Oohs”). Additionally, this melody does not have any rhythmic value smaller than that of the pulse level. In other words, it can easily be heard as dotted quarter-notes in 6/8 meter where the beat is subdivided into triplets (see Figure 3.24a) or as dotted quarter-notes in 12/16 meter where the beat is subdivided into duplets. However, the very next frame repeats melody C precisely, but with an echo that is offset by dotted eighth-notes (Figure 3.24b), expressing duple subdivisions.

Figure 3.24: Melody C

a. In Frame Eleven




b. In Frame Twelve with Echo



It is at this moment, between Frames Eleven and Twelve, that we may experience another peak of perceptual dissonance because we have just shifted from a pure triplet beat subdivision environment into a predominantly duple beat subdivision environment. In Frame Eleven, melody C was seated within a pure triplet subdivision environment. Remember, Guitar 1 and the Drum Kit had returned to their original triplet forms that they had at the beginning. As soon as Frame Twelve begins, melody C is echoed at an eighth-note distance, and Guitar 1 returns to its eighth-note displaced loop.

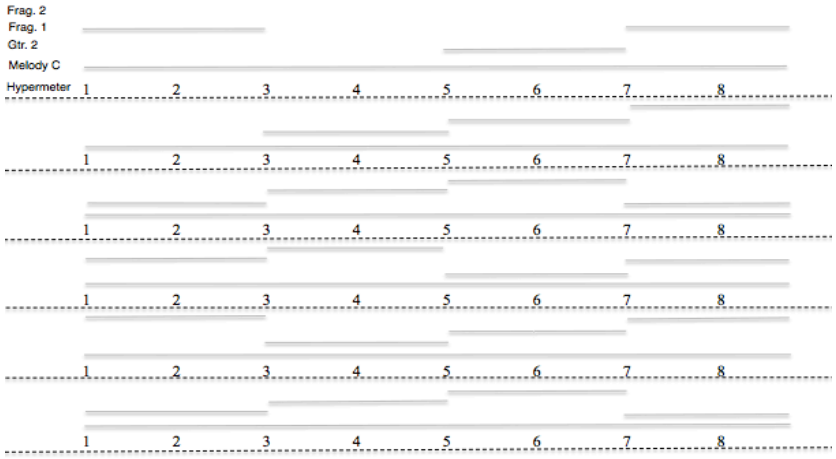
The Discontinuity between Frames Thirteen and Fourteen

The discontinuity between Frames Thirteen and Fourteen is the last and most unique discontinuity in all of "Race: In." It may also be one of the strongest because it employs a change in beat subdivision through a profound shift in texture—the most profound, in fact. Frame Thirteen is characterized by (1) rhythmic and textural thickness, and (2) prolongation of repetition within that thickness. Nearly everything we've heard in "Race: In" up to this point is now released into the musical texture all at once: the Drum Kit maintains its original high-energy rhythms *and* again employs the rock beat, the Guitar 1 is continuing its repetition of the phase-shifted motive, melody C and its echo continue to repeat, and the sweeps from Guitar 2 are added into the texture but are now sextuplets instead of triplets. In addition to all that we've heard, two melodic fragments based on previous melodic material are inserted into the mix.

Examining the hypermetrical placement of all the parts in play will allow us to easily see how the texture is at its fullest at this moment in the piece. The eight-bar phrase

structure of melody C and its echo is the hypermetrical backbone of this frame. Melody C is constantly repeating every eight measures for the duration of Frame Thirteen—a total of six repetitions. The rock beat and additional rhythmic cycle of the Drum Kit repeat every measure. The phase-shifted loop of Guitar 1 also repeats every measure. The upward sweeps in Guitar 2 repeat every six measures, beginning two measures before Frame Thirteen. The first melodic fragment also repeats every six measures, and starts on the first measure of Frame Thirteen. The second melodic fragment repeats every six measures, too, and does not begin until the second beat of the sixteenth measure. Between the Guitar 2 sweeps and the two melodic fragments, there is constant activity over and above the repetitions of the Guitar 1, Drum Kit, and melody C. The hypermetrical structure in Frame Thirteen can be seen below in Figure 3.25.

Figure 3.25: Hypermetrical Structure of Frame Thirteen




Frame Thirteen is also the longest frame in "Race: In," a total of forty-eight measures. All of the other frames are generally about ten seconds in duration, but

certainly lasting no more than twenty seconds. Frame Thirteen, however, is an entire minute and three seconds long! By the end of Frame Thirteen, we are experiencing the thickest and most prolonged moment of the piece. The comparative length of this frame allows us to grow quite accustomed to what we are hearing, so much so that we begin to anticipate a change in the musical context long before it happens.

After the lengthy Frame Thirteen, Frame Fourteen begins with impact. It instantly sounds different. For the first time since the piece began, the Guitar 1 and Drum Kit parts are completely gone. Everything from the previous frame disappears except the rock beat! At the same time, we hear melody B in the Gong (refer to Figure 3.23) as we did in Frames Five and Seven, but without melody A. And we also hear a new sound that replaces the steady eighth-notes of the hi-hat: sleigh bells! Frame Fourteen is perhaps the most unique, surprising, and fun moment of "Race: In." It is certainly a moment where we can experience musical timelessness because almost all of our expectations, as they were established by the previous four minutes and three seconds worth of material, are challenged!

Frame Fourteen is also the first and only time we hear *pure* duple beat subdivision. Indeed, most of the frames in "Race: In" are predominantly duple subdivision environments, but there was always at least the permissibility of mixture (if not clear mixture) due to the phase-shifted structure of Guitar 1. In this frame, since there is no Guitar 1, and all other parts are strongly duple subdivisions of the beat, there is no question as to the purity of it. In summary, the transition between Frame Thirteen and Fourteen marks a set of stark transitions from rhythmic thickness to simplicity, from

textural thickness to thinness, and from a mixture of beat subdivisions environments to purity.

The final frame transition between Frames Fourteen and Fifteen might suggest a discontinuity, but it is very weak. Frame Fifteen is a repetition of Frame Fourteen—a conglomeration of all the sounds we had heard before. Even though the transition from Frame Fourteen to Frame Fifteen is just as contrasting a move as Frame Thirteen to Frame Fourteen, the discontinuity is not as strong because we have already heard the material of Frame Fifteen (as it was in Frame Thirteen) and most of all because we heard it only seconds ago. Frame Fourteen lasts only long enough for one eight-bar phrase. The memory of Frame Thirteen has not had enough time to be truly displaced by the contents of Frame Fourteen. When we hear the material return again in Frame Fifteen, it sounds so familiar that, even though it is very contrasting to Frame Fourteen, it is truly familiar and does not create much of a peak in perceptual dissonance.

*Summary Discussion of "Race: In"*

As we have seen, "Race: In" is a collage of fragments and high-energy rhythms all bound together by a common pulse, expressed in fifteen frames. The same two beats define every measure and the common denominator between every frame is the sixteenth-note. However, musical timelessness is experienced as the transition of perceptual consonance to perceptual dissonance through unexpected switching or mixture of beat subdivisions on the micropulse level. Micropulses shape the general groove of the piece and the nature of the beat subdivisions—how they are introduced, maintained or retained

—characterizes most frames and is the musical means through which we experience musical timelessness. Remember, even where there is musical dissonance through the metric grouping dissonances generated on the micropulse level, we can still be in a state of perceptual consonance either because we have grown accustomed to the musical dissonance through repeated exposure, or because the musical dissonance is overriden in its salience by other musical elements. This case is most commonly where there is a mixture of beat subdivisions. In all cases, the duple beat subdivision is most prominent.

Unlike “Almost,” not all frame transitions mark a moment of musical timelessness because “Race: In” is more process-oriented. In some cases, the same beat subdivision or a mixture is retained from frame to frame and the musical discontinuity, if there is one, is extremely weak. There are five particular frame transitions, however, that contain discontinuities strong enough to knock us out of a perceptually consonant state and into a moment of musical timelessness as we transition into a state of momentary perceptual dissonance. These transitions are between Frames: One and Two, Three and Four, Nine and Ten, Eleven and Twelve, and Thirteen and Fourteen. The discontinuity between Frame One and Two is not only a matter of switching from a pure duple beat subdivision to a pure triple beat subdivision, but also of re-establishing the beat of the piece. The Drum Kit's initial beat structure suggests a fast duple subdivision, but is recontextualized into a triplet subdivision at a slower pulse. Between Frames Three and Four, the pure triplet beat subdivision turns into a mixture of duple and triple when the motive of Guitar 1 is phase-shifted at the distance of half a beat. The resultant bass line of Guitar 1 turns from dotted quarter-note values in a compound duple context to evenly

spaced dotted eighth-notes in a 12/16 context, sounding very much like simple duple. The transition between Frames Nine and Ten mark the move from a mixture of beat subdivisions (though, predominantly duple) into pure triple beat subdivision. The material from Frame Two is repeated exactly, returning the Guitar 1 to its original triplet structure. The discontinuity between Frames Eleven and Twelve is a matter of shifting again from a pure triplet beat subdivision to a mixture (again, predominantly duple) when melody C is echoed at a dotted eighth-note's distance and Guitar 1 returns to its phase-shifted form. Finally, the most unique and perhaps one of the strongest discontinuities is between Frames Thirteen and Fourteen where the musical texture is at its thickest in terms of rhythm and timbre. The textural thickness can be seen by the sheer quantity of parts in play, and also by the overlapping and asymmetrical hypermetrical structure between the parts. The prolongation of this thickness through repetition heightens the intensity of the discontinuity. The mixture of beat subdivisions that is the conglomeration of parts in Frame Thirteen suddenly disappears in favor of a pure duple beat subdivision in Frame Fourteen.

Similar to “Almost,” all of Huron's challenged expectations (“surprises”) may be at work in our ability to experience musical timelessness in “Race: In.” However, I believe that most of the challenged expectations we face in the course of listening to “Race: In” fall largely into the category of the *dynamic surprise* (when events do not comply with expectations that have been evoked in the course of listening to the work itself). The musical discontinuities that exist within “Race: In” are very nuanced and particular. Even the concept of switching between a duple and triple beat subdivision isn't

really anything special. We can hear this switch many times in plenty of other contexts and we will not experience any sort of perceptual dissonance. However, I find that the most fundamental way "Race: In" challenges our expectations is at an embodied level. The music is temptingly groove-oriented. When the beat subdivision of the frame is purely duple (as is the case with Frames One and Fourteen), we easily embody the music as such. When the frame beat subdivision is purely triple (as is the case with Frames Two, Three, Ten and Eleven), we also easily embody the music. A mixture between the two beat subdivisions dominates the piece overall (encompassing Frames Four, Five, Six, Seven, Eight, Nine, Twelve, Thirteen, and Fifteen), but even still the duple beat subdivision tends to pervade the sound texture overall. Again, we can easily embody this type of rhythmic structure whether it is through prolonged or repeated exposure, or because there is a pervasive duple subdivision overall. In other words, the music establishes a specific groove quickly and convincingly. But then the groove switches seemingly randomly and without musical reason. When the groove switches, it remains just as convincing and easily embodied as any of the others—including the musically dissonant groove where there is metric dissonance. It is the switch itself that creates musical discontinuity. As we saw with "Almost," musical discontinuity is where we are likely to experience peaks of perceptual dissonance. And it is the transitions from one perceptual climate to the other that allows us to experience timelessness in music.

**Chapter Summary**

In both our case studies, “Almost Always is Nearly Enough” by Tortoise and “Race: In” by Battles, I have demonstrated that C-->D musical timelessness happens when there is an overarching perceptually consonant climate punctuated by peaks of perceptual dissonance. These peaks are the result of musical discontinuities that mark frame transitions, placing both case studies within Kramer's moment form structure where the pieces are fundamentally nonlinear, bound together by a nonlinear logic. Both pieces are fundamentally nonlinear due to musical discontinuities at frame transitions and also due to the self-contained nature of each frame. The internal structure of the frames can either be process-oriented (like “Race: In”) or static (like “Almost”). Either way, they are mostly perceptually consonant, even where they may be musically dissonant.

The specific musical elements that provided a general backdrop of perceptual consonance in both “Almost” and “Race: In” was the consistent and commanding beat. The peaks of perceptual dissonance were created by discontinuities having to do with textural changes in “Almost,” and with changes to the groove in both “Almost” and “Race: In.” Fundamental nonlinearity was expressed through our inability to predict the future changes in those specific frame characteristics—the sound textures or general groove structure in “Almost,” and the beat subdivision in “Race: In.”

Both pieces display London's unambiguous metric context by-and-large, but Frame One in both pieces is a latently ambiguous metric context that becomes clarified (“Almost”) or challenged (“Race: In”) in the frames that immediately follow it. Furthermore, we can see how Huron's full taxonomy of surprises (challenged

expectations) is at work in our experience of listening to both pieces, but the challenge to dynamic expectations plays the greatest role in creating the moments of musical timelessness in “Almost” and “Race: In.”

## CHAPTER IV

## D-->C TIMELESSNESS

When we listen to pieces that are perceptually dissonant overall with peaks of perceptual consonance—perceptual dissonance that becomes perceptually consonant—we can experience the second type of musical timelessness, D-->C, which is the subject of this chapter. Our two musical case studies will come from Radiohead's "Pyramid Song" from *Amnesiac* (2001) and Deerhoof's "Panda Panda Panda" from *Apple O'* (2003). As I stated in Chapter II, *the hallmark of D-->C pieces is sustained and overt metric ambiguity*. The pieces of our study sustain overt metric ambiguity in two primary ways: (1) through rhythmic/metric structure as a *truly vague metric context*[31] as we will see in "Pyramid Song," and (2) by a lack of synchronization among the parts in play as we will see in "Panda."

### One Precondition for D-->C Timelessness

It is important to understand that D-->C timelessness is not and does not function as the exact opposite of C-->D timelessness. It might be tempting to make such an assumption. After all, the musical climate of C-->D pieces must be overall perceptually consonant and we can assume that much of the perceptual consonance is the result of musical consonance. Indeed, as we saw in the last chapter, the majority of the musical consonance we experienced was through a steady beat and repetition of

[31] London defines a vague metric context as, "[involving] the absence of one or more normative levels of metrical structure. In contrast to a metrically ambiguous context in which there are two or more plausible and determinate patterns of metric organization, in a metrically vague context, no determinate pattern ever emerges" (87). We will discuss in greater detail the application and implications of London's terminology to our case studies in the paragraphs that follow.

parts/rhythms/motives. In the pieces of this chapter, we will see that perceptual dissonance is mostly the result of musical dissonances that are matters of sustained metric ambiguity. However, this is where the correlation between the two types of musical timelessness as opposites of each other ends in how they function. As we saw in the last chapter, C-->D pieces are marked by discontinuities (which produce perceptually dissonant peaks), have a musically nonlinear logic that binds the piece together, and are fundamentally nonlinear (as a result of those discontinuities and the nonlinear binding logic). Pieces that produce D-->C do not need any such preconditions. They can be fundamentally linear or nonlinear and they can be discontinuous or the outflow of organic development.

The only precondition for D-->C timelessness is a sustained perceptually dissonant climate overall. In other words, there must be something (or multiple things) in the music that continues to challenge listener expectations regularly and saliently. The catch is that the piece must somehow remain perceptually dissonant *overall* even though we naturally and quickly readjust our expectations according to what we hear in the moment. Remember, Huron points out that, "Expectations of future events are not merely the product of schematic or veridical patterns that have been learned over a lifetime of exposure. Expectations can also arise from comparatively brief periods of exposure. As the events of a musical work unfold, the work itself engenders expectations that influence how the remainder of the work is experienced" (227). Even if the same musically dissonant "trick" is sustained throughout the entire piece, it is very likely that we will grow used to it and come to expect it, making the musical dissonance perceptually

consonant—something we saw in the last chapter with "Race: In" during frames of mixed and metrically dissonant beat subdivisions. After growing accustomed to the sustained musical dissonance, we will simply continue listening in a perceptually consonant state even though the dissonant musical events continue. A question arises, then: *How can a piece maintain a perceptually dissonant climate, and still present peaks of perpetual consonance, without eventually pushing us into a permanently perceptually consonant state for the remainder of the piece?*

There are two ways a piece can sustain perceptual dissonance overall while still leaving room for occasional peaks of perceptual consonance: (1) the musical dissonances are sustained and do not change for the entire piece and yet are so artfully vague in their construction that we are repeatedly tempted to "solve" a puzzle that might actually be irresolvable; or (2) the musical conditions of the piece change regularly in such a way that, in one moment, the musical dissonances seem resolved/clarified/obsolete, then in the next moment, they are again resurrected as musical dissonances that hold anew the saliency to push us back into a perceptually dissonance climate. Put another way, in the first case, the musical facts don't change but our perception of those facts as dissonant or consonant shifts back and forth; in the second case, the musical facts change often and lead us back and forth between perceptual states. "Pyramid Song" demonstrates the first way of sustaining perceptual dissonance overall. "Panda" demonstrates the second.

Both "Pyramid Song" and "Panda" sustain perceptual dissonance through metric ambiguity—specifically through a vague metric context—and for this reason, we will take a focused view of meter in this chapter and its particular role in shaping and

sustaining perceptual dissonance. We have already seen cases when a musical moment has an ambiguous metric context (in the fourth frame of "Almost," for example). Some times the metric context can become so ambiguous that it is actually vague. London defines a vague metric context as: " the absence of one or more normative levels of metrical structure. In contrast to a metrically ambiguous context in which there are two or more plausible and determinate patterns of metric organization, in a metrically vague context, no determinate pattern ever emerges" (87). In other words, an ambiguous metric context can eventually become perceptually consonant to us if we are able to hear a metric pattern and stick with it. In a vague metric context, we may be able to attempt a metric construal, but we will abandon it quickly because it is not determinate—we lose it in the course of listening because it doesn't fully apply to what we are hearing. Understanding the difference between an ambiguous metric context and a vague metric context is important because if there is a determinate metric pattern that can emerge (as is the case with an ambiguous metric context), then it is likely that once we hear that pattern, we can maintain it for the rest of the piece and we will be in a perceptually consonant state.

**General Characteristics of "Pyramid Song" and "Panda"**

Both "Pyramid Song" and "Panda" sustain perceptual dissonance by maintaining a vague metric context, but each song does so in a different way. "Pyramid Song" is the epitome of London's vague metric context. So vague, in fact, is the meter that many scholars have focused their attention on this piece, acknowledging it as a vehicle for

multiple listener interpretations. Most noteworthy is Nathan D. Hesselink's article, "Radiohead's 'Pyramid Song': Ambiguity, Rhythm, and Participation" (2013), who compiles, organizes, and (in some cases) notates the vast scope of meter and beat interpretations that listeners hear. Everything from "no meter" to some form of swung 4/4 is offered as a possible metric interpretation. Like Hesselink, I have no desire to propose any particular metric organization over any other. Instead, this study is focused primarily on how such a vague metric context—that never changes—can produce multiple perceptions where, in one moment, "Pyramid Song" sounds as though it does not have any meter at all, then in the next moment, as though it *must* have a meter; how in one listening (or in one listener's point of view) the meter can sound like a complex series of alternating meters and in another like a simple pattern of dotted quarter-notes and half-notes within 4/4; how for a single moment we can be tempted to hear the puzzle as "solved" and feel perceptual consonance while the musical dissonance continues in both strength and presence. In "Pyramid Song," the timeless effect for some may only contain one perceptual transition, where perceptual dissonance truly becomes perceptually consonant through repeated exposure. But I suspect for most, the perceptual affect is a continual uncertainty occasionally punctuated by near-certainty of the meter. In this case, the ability to experience musical timelessness is increased, possible whenever a shift from perceptual dissonance to perceptual consonance occurs.

"Panda" does not necessarily *have* a vague metric context, but *creates* one through a breakdown in synchronicity among the parts. In one moment, the guitars, the bass, and drum kit sound perfectly in sync with each other projecting a simple triple meter, and in

the next moment, the drum kit is suddenly accenting the “wrong” beats, or seems entirely off the beat altogether. In one moment, the singer is in one tempo, and in the next she seems to suddenly slow down while the other parts do not. In one moment, the lead guitar is flying through the same melodic phrase we've heard over and over, and in the next moment, it sounds as though the guitarist has never played a guitar in his life, fumbling over notes and rhythms. In one moment, the main melody was in 3/4, but in the next moment, the meter is 4/4. Where “Pyramid Song” was metrically vague in every moment due to the rhythmic structure of certain parts, “Panda” is metrically vague overall because the parts—though they are metrically clear—are misaligned so as to create a vague metric context in the course of listening to the piece.

Fundamental linearity and nonlinearity can exist within a spectrum, and either is acceptable for a D-->C environment. “Pyramid Song” is more on the linear side of the spectrum and “Panda” is more on the nonlinear side, though both pieces exhibit some traits in the opposite directions. Remember from the previous chapter that we are accepting Kramer's definition of nonlinearity as “the determination of some characteristic(s) of music in accordance with implications that arise from principles or tendencies governing an entire piece or section” or “a structural force” (21). Additionally, we will accept Kramer's definition of linearity as “the determination of some characteristic(s) of music in accordance with implications that arise from earlier events in the piece” or “a process.”

We will see that for the most part, “Pyramid Song” unfolds as sets of phrases that form a verse, which is repeated twice, and framed by instrumental interludes. The

melodic phrases have a clear rise and fall, the music exhibits sections that contain momentum toward resolutions, and the piece overall exhibits an arch form where the center builds to an apex of textural thickness, volume, and expressivity. There is internal phrase direction and closure as well as an audible process of development that unfolds over the course of the piece. However, where "Pyramid Song" might seem less linear is in the piece's chord structure. The same basic chords repeat over and over in the piano with little change to their pitch content and no change to their rhythmic content. Although the chord structure of "Pyramid Song" is only one aspect of the piece, it is perhaps the most important aspect for our discussion here because the metric structure of the chords is what sustains the vague metric context for the entire song, making D-->C timelessness not only possible, but highly probable.

The musical material in "Panda" is almost insanely simple and repetitive. The song basically has three sections to it: the guitar melody which is repeated a half-step higher after its first iteration, the vocal line which is repeated a half-step lower after its first iteration and lyrics that are almost exclusively "Panda, panda, panda," and a three-note guitar riff which is only a fragment of the original guitar melody. Fundamental nonlinearity is expressed in "Panda" similarly to how it is expressed in Kramerian moment form in that the three parts or sections seem to have no relationship to each other. However, these "moments" are not really self-contained either. They just are. There's nothing in the melodies, the lyrics, the drums, or anything else that expresses any kind of trajectory or orientation toward a musical resolution. The music sounds much like a few measure's worth of ideas repeated over and over. Of all the pieces we have studied

or will study, the temporal structure of "Panda" comes the closest to what Kramer calls *vertical time*:

> A vertically conceived piece, then, does not exhibit large-scale closure. It does not begin but merely starts. It does not build to a climax, does not purposefully set up internal expectations, does not seek to fulfill any expectations that might arise accidentally, does not build or release tension, and does not end but simply ceases. It approaches zeroth-order Markov music. No event depends on any other event. Or, to put it another way, an entire composition is just one large event. A vertically conceived piece defines its bounded sound-world early in its performance and stays within the limits it chooses. (55)

The only thing that might suggest a linear aspect to the piece is that there are phrases and that at the very end of song, the guitar picks up the vocal melody, suggesting some kind of musical closure or at least some kind of relationship across sections.

All in all, both "Pyramid Song" and "Panda" sustain perceptual dissonance through overt metric ambiguity: "Pyramid Song" maintains the same vague metric context throughout the entire piece, but the structure of the rhythms in that context tempts us to hear possible "solutions;" "Panda" on the other hand perpetually changes the musical conditions which constantly shift our perceptual climates. Both songs display a vague metric context: "Pyramid Song" does so moment by moment by the very rhythmic and metric structure of the chords; "Panda" creates a vague metric context overall through a breakdown of anything metrically stable. Finally, both songs produce peaks of perceptual consonance amidst a musically dissonant climate: "Pyramid Song" does so through the structure of the chords and perhaps more so in their relationship to the drum kit once it enters by tempting us to hear a particular kind of meter, though we are never certain of it; "Panda" produces peaks of perceptual consonance by reverting back to metrically stable and simple but *brief* moments that have quickly become familiar to us

through their simplicity and high frequency of repetition. Table 4.1 organizes the general characteristics of "Pyramid Song" and "Panda" as examples of D-->C timelessness, and will be useful to keep in mind for the remainder of this chapter.

Table 4.1: General Characteristics of D-->C in "Pyramid Song" and "Panda"

| | "Pyramid Song" | "Panda" |
|---|---|---|
| Sustained Perceptual Dissonance through Metric Ambiguity | By the rhythmic structure of the piano chords; the chords are sustained, but our perception of their metrical structure can shift | By the lack of synchronicity between the parts |
| Contains a Vague Metric Context | Every moment contains a vague metric context because the rhythmic structure of the chords never change | Created by the metric breakdown when the parts cease to align |
| Produces Peaks of Perceptual Consonance | By sounding as though there *might* be a projected meter | By momentarily returning to a metrically stable and simple context |

**Case Study #1: "Pyramid Song"**

Radiohead is the oldest band of all the bands sampled in this study and probably the most well-known. The group has been around since 1985 and is still comprised of its original members. Their music has been the subject of numerous studies, finding its way into formal discourse on everything from ethnomusicology[32] to sociology.[33] Initially making their mark as post-rockers, they soon integrated elements of experimental and krautrock into their music at the release of their 2001 album, *Amnesiac*. Over a decade later, the question of meter in "Pyramid Song" continues to be a topic of debate across a

[32] Such as Roth (2010).

[33] Such as Thames & Hudson (2009).

broad scope of musically trained listeners and non-musicians alike (as is demonstrated by the fairly recent publication of Hesselink's article on the subject). In order to retain our bearings for our analyses and discussion at large, we will first discuss the formal structure of "Pyramid Song"; then we will examine the specific rhythmic structure of the chord cycles and their relationship to the drum kit once it enters, exploring how a vague metric context is retained regardless of attempted metric construals; and finally, we will discuss the way in which D-->C timelessness operates as a result of the vague metric context that characterizes "Pyramid Song."

*General Formal Structure of "Pyramid Song"*

The entire formal structure of "Pyramid Song" can be understood as slightly varied iterations of the same chord cycle. Generally, the form of "Pyramid Song" is: introduction (instrumental), verse, interlude (instrumental), verse (with refrain repeated two times), closing (instrumental). The introduction is made up of four iterations of a ten-chord cycle,[34] and the harmonic material of the other two instrumental sections are derived from these initial cycle iterations. Each iteration is nearly identical to all the others, only slightly altered by a matter of a single pitch or chord (see Figure 4.1a). The instrumental interlude is essentially the third and fourth iteration of that cycle, repeated three times (see Figure 4.1b). The last instrumental section is the first iteration repeated four times (with the top voice of the first chord altered to a G-natural instead of F-sharp;

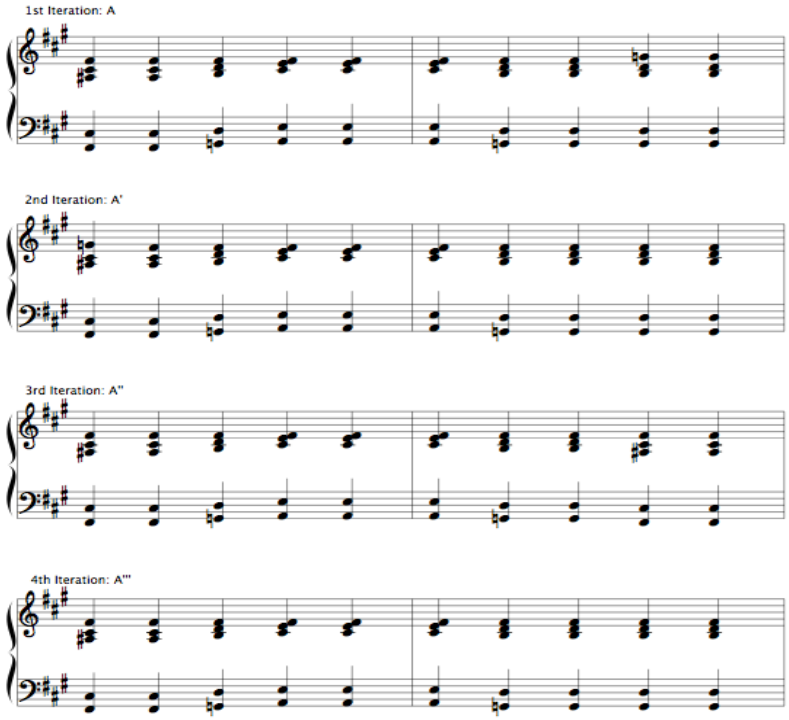
[34] My transcriptions resemble Hesselink's in the following ways: 1) I apply no metric value to the notes because I am more interested in showing the harmonic and general formal structure of the chord cycles; 2) I organize the ten chords into two "measures" of five chords each because the placement of the pauses/longer chords is symmetrical and easier to follow (taking place on the third chord of every "measure); and 3) I also call each two-measure set of the instrumental chord cycle an iteration because each two-measure set is basically a variation of the first chord cycle.

see Figure 4.1c).

The two verses are nearly identical to each other as far as lyrics, pitch content, and rhythmic structure is concerned. However, the second iteration of the verse has a great deal more expressive intensity behind it. The chord cycle of the verse is double the length of the instrumental chord cycle, and it is repeated four times for each verse exactly the same way every time (see Figure 4.2a), with a repeated refrain at the end of the second iteration of the verse (see Figure 4.2b).[35]

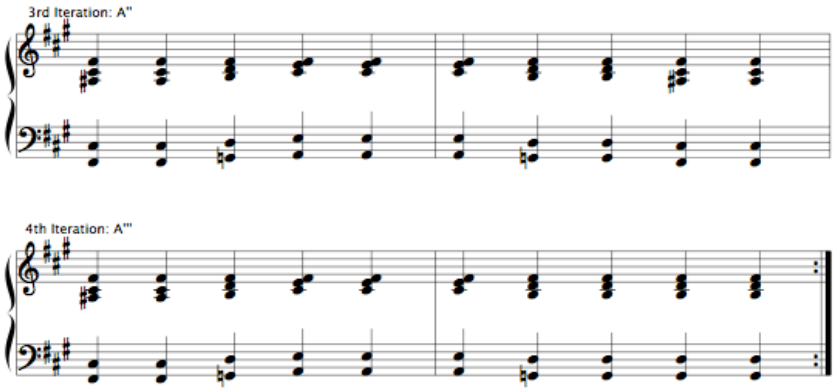
Figure 4.1: Chord Cycle in Instrumental Sections

a. Introduction (four iterations)




[35] It should be noted that the first two "measures" of B are identical to A", but because the full four "measures" of B are repeated exactly as a cycle throughout both verses, it is more logical and consistent to regard the chord cycle of the verses as a double the length of the instrumental chords cycles.

b. Interlude (third and fourth iteration)




c. Closing (first iteration, slightly altered)

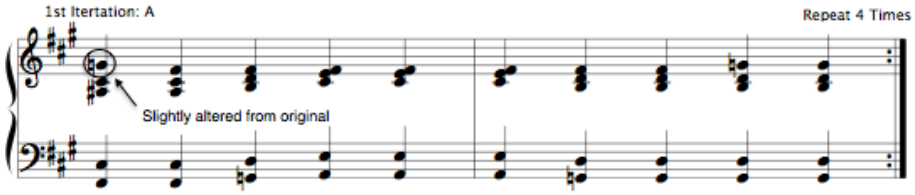
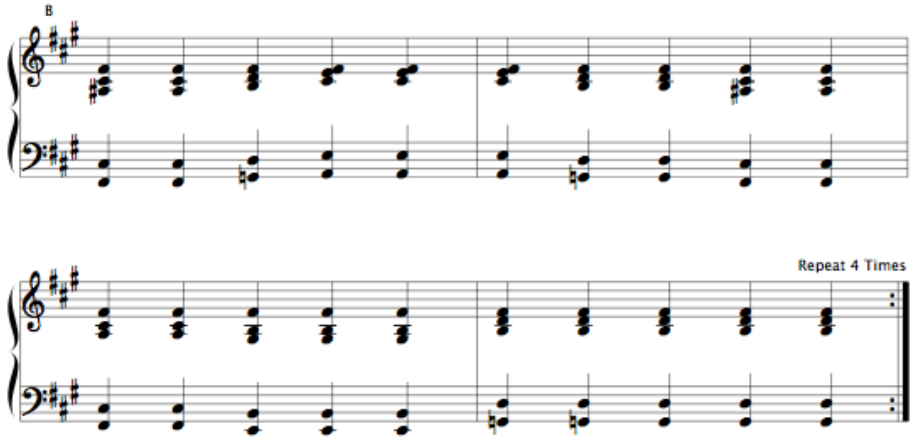
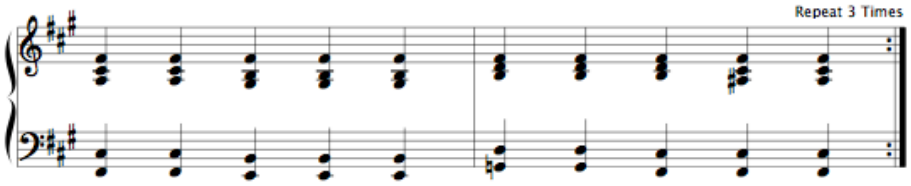



Figure 4.2: Chord Cycle in Vocal Sections

a. The Cycle

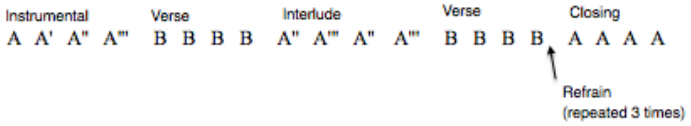


b. Repeated Refrain




In order to keep our bearing for the remainder of the analysis of "Pyramid Song," we will refer to the instrumental chord cycles as: A, A', A", A'"; and the vocal chord cycles as B. The general formal structure of the song is charted below (Figure 4.3):

Figure 4.3: The General Form



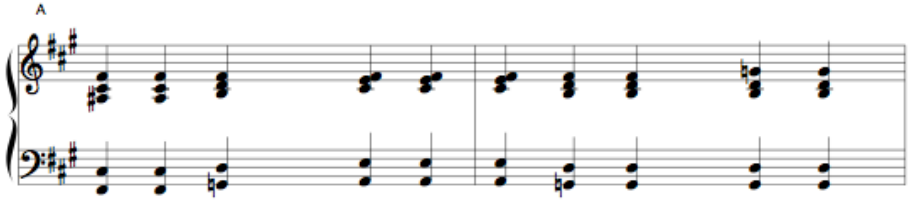

*"Pyramid Song" and a Vague Metric Context*

The experience of listening to "Pyramid Song" is a memorable one because the vague metric context it maintains is overt. At the very beginning, all we hear at the beginning is the first and second iteration of the chord cycle in the piano. There are no other sounds, no other parts, no other voices. Right away, there is no metric clarity at all. Anyone who is inclined to tap along or sway to the groove of a song will be confounded by this opening. Even with the addition of the voice by the third iteration, when the lead

singer enters the texture singing softly on “oooh,” there is no clarity or really even any change to the quality of the metric vagueness. The same is true once the verses start.

Over and over, what we hear are sets of chords that cycle. The first two chords sound like they are about the same durational length. However, the third chord we hear has a slight pause in comparison to the first two. Next, we hear five more chords, all seeming to be about the same durational length. The eighth chord has another slight pause like the third chord. Finally, we hear two more chords without pauses before the cycle starts again (see Figure 4.4). The rise and fall of the bass line, as well as the general repetition of the chords pitch-for-pitch, allows us to hear that there are sets or cycles of chords, ten chords each (or twenty during the verse), that start over, but there is no expressed beat or clear metric pattern. Even the durational relationship between the chords without pauses and the chords with pauses is unclear. All we can hear for certain is that a few chords seem slightly delayed and the others do not.

Figure 4.4: Chord Cycle A with Pauses Spatially Expressed




Because the placement of the chords is so consistent throughout every iteration of the chord cycle, even once the singer enters the texture, it is very likely that our ears will naturally attempt to apply some kind of metric structure to what we are hearing. It is in

our very nature to try to make sense of what we are hearing by applying some kind of metric scheme to it in order to accurately anticipate what is coming next. As London says, "The idea that meter is related to, and may be a complex form of, entrainment behavior is a central hypothesis of this book. Musical meter is the anticipatory schema that is the result of our inherent abilities to entrain to periodic stimuli in our environment" (12). Furthermore, metric entrainment is a primary way we attempt to understand what it is we are listening to and how to pay attention to it:

> For meter is not just a part of the 'representation of reality,' a means of temporally indexing musical events. Rather, meter is one of the ways in which our senses are guided in order to form representations of musical reality. Meter provides a way of capturing the changing aspects of our musical environment as patterns of temporal invariance… Perception is not only for deriving representations of reality; perception also serves to guide our behavior, and this includes perceptual behavior, motor behavior, and social behavior. (London, 5)

The majority of Hesselink's article is focused on the variety of metric construals that listeners hear or attempt to hear. Whether one person can hear only one construal (and is able to continue hearing it throughout the piece) is not my concern here. The documented fact is that there are *so many* metric interpretations,[36] which is the entire point to Hesselink's work. The variety of metric interpretations automatically demonstrates that "Pyramid Song" can be considered metrically vague, even if a few people do not find it metrically vague at all. We can safely imagine, if we don't already experience, that any metric construal we are tempted to impose on "Pyramid Song" will be imposed without

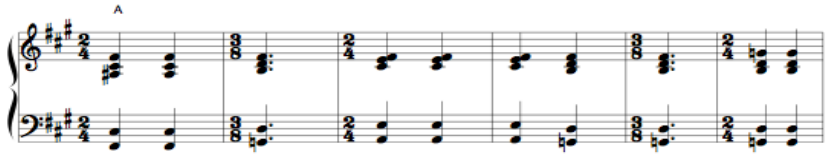
[36] Hesselink gathered easily over a thousand listener responses from websites, print publications, and web entries that address the issue of meter in "Pyramid Song." Some heard no meter, some heard "Pyramid Song" as two separate songs from before the drums enter to when the drums enter, some heard types of non-isochronous meters (such as combinations of 2+2+3+2+2 over 8), some hear purely asymmetrical meters (11/8), some heard changing meters (such as 7/8, 3/4, 5/8, 2/4), some heard compound meters (such as 12/8), some heard mixed compound meters (such as 9/8, 9/8, 6/8), some heard 4/4 with swung eighth notes, and some heard straight 4/4 (with patterns of dotted quarter-notes and half-note values).

complete and total certainty. And we may find ourselves abandoning our construal even faster than we imposed it!

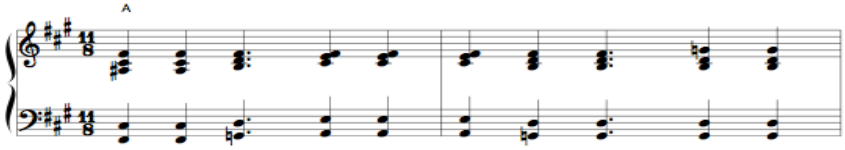
It is likely that we will hear the first two chords as durationally identical, especially once we hear the elongated third chord. Our tendency to group the first two chords as the same durational length demonstrates Lerdahl and Jackendoff's first metric preference rule for parallelism, "Where two or more groups or parts of groups can be construed as parallel, they preferably receive parallel metrical structure" (75). The same concept can be applied across the entire chord cycle structure, regardless of the specific rhythmic values we might infer. In other words, if we are prone to hear the first two chords as two quarter-note values and the third as a dotted quarter-note, then we may (consciously or subconsciously) attempt to project the following possible rhythmic values and meters onto the metric surface where, for example, all the "shorter" chords are quarter notes and all the elongated chords are dotted quarter-notes (see Figure 4.5):

Figure 4.5: Possible Metric Projections that Express Parallelism

a. Mixed Meter



b. Asymmetrical Meter



The issue we face when listening to the first half of "Pyramid Song" is that it is difficult to confidently know the length of the pause in relationship to the duration of the first two chords. In other words, we don't know what the micropulse is or how it is grouped. Without any additional clarity, the chord structure can easily be heard as micropulse groupings in: 2+2+3+2+2, 2+2+3+2+2, or 3+3+4+3+3, 3+3+4+3+3, or some other type of grouping. The micropulses could conceivably be anything from eighth notes, to thirty-second notes, to quarter notes. Based on the variety of possible micropulse values and how they are grouped, the meters we could possibly construe are also varied.

We can't even be certain that the first two chords are expressions of the pulse, though we are likely to assume so because of our preference to hear initial events as accented and metrically significant, an example of Lerdahl and Jackendoff's second metric preference rule "Strong Beat Early" (76). Huron explains this tendency as a matter of hypermeter:

> Listeners probably expect tone onsets to occur at the strongest metric positions. However, I don't know of any research that directly establishes this (probably because researchers assume that this must be the case). Nevertheless, a wealth of research has established that temporal events can be coded hierarchically. Other research has established that tone onsets coinciding with the most common metric positions are judged as 'better fitting' with an antecedent metric context, and also that hierarchical mental coding of meter occurs. (179)

Or, to put it another way, most of us default to hierarchic listening right away and our tendency to apply greater structural significance to an initial event is an expression of such a default. So for the first half of the song, although we can quite possibly construe various meters onto what we are hearing, we really are certain of nothing. We don't know what the beat is, what the micropulses are, or how any of the metrical layers are grouped.

The vague metric context of "Pyramid Song" continues from the beginning in much the same way until about halfway through the song when the drum kit enters the texture during the second iteration of the verse (refer to Figure 4.3). Ordinarily, we could assume that the addition of percussion would clarify the vague metric context. However, the reality is that the addition of the drum kit rhythms causes the meter to become more perplexing than ever! The drum kit clearly sinks into a consistent pattern of rhythms that sound metrically organized and stable. The hi-hat maintains a steady pulse (or micropulse) and we hear occasional snare hits that create a pattern of three and two hi-hat hits that are punctuated with a single snare hit at the end (see Figure 4.6). In other words, after the first two hi-hat hits, we hear a snare hit, then after the next three hi-hat hits, we hear another snare hit. The basic pattern of hit-hat hits is 3-3-2, 3-3-2, where each number represents the number of hi-hat hits we hear, and each number is followed by a snare hit. The drum's rhythms project either some kind of swing pattern where the hi-hat hits are subdivided by two (Figure 4.7a) or compound meter where the hi-hat hits are subdivided by three (Figure 4.7b).

Figure 4.6: Drum Rhythm

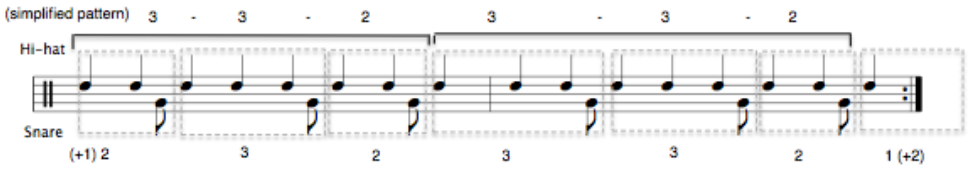
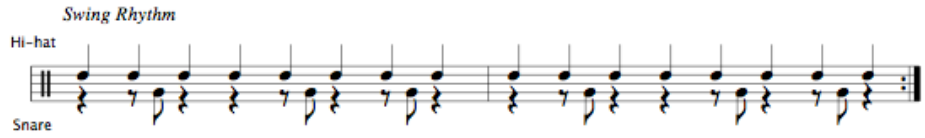
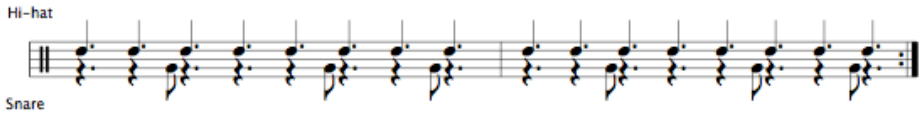


Figure 4.7: Relationship of hi-hat to snare

a. As duple subdivisions

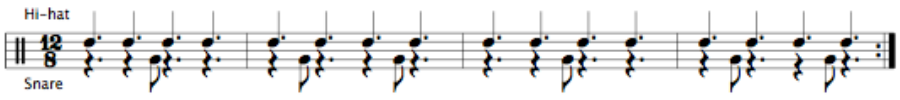



b. As triple subdivisions



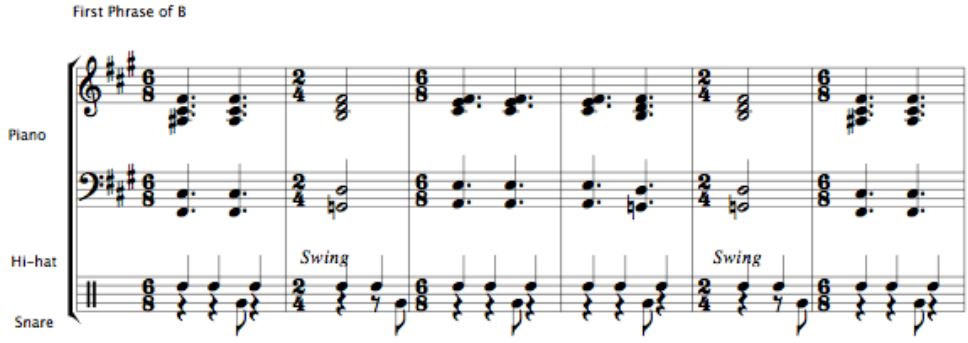

Even with an aural understanding that the drums seem to project either a swing meter or a compound meter, we still do not gain a clear sense of the meter. Are the hi-hat hits the pulse? Or are they an expression of another micropulse layer? Perhaps they are an interpretive layer? The answer to these questions, I believe, has everything to do with where we focus our aural attention. If we focus mostly on the rhythmic structure of the drums, we might be able to get away with feeling the piece in 12/8 where the hi-hat hits are dotted quarter notes (see Figure 4.8) and we can hear that such a construal reflects the phrase structure of the melody and the chord cycles on a hypermetrical level.

Figure 4.8: Compound Meter Based on the Drums



However, if we tend to focus more so on the chord cycles, we may find ourselves attempting to entrain to some kind of multiple meter construction, which would likely reflect some remnant of how we were tempted to hear the first half of the song before the drums entered the texture. If, for example, we heard the chords as micropulse patterns of 3+3+4+3+3 (repeated), then we might construe the following metric interpretation (Figure 4.9).

Figure 4.9: Mixed Meter Based on Chord Cycle

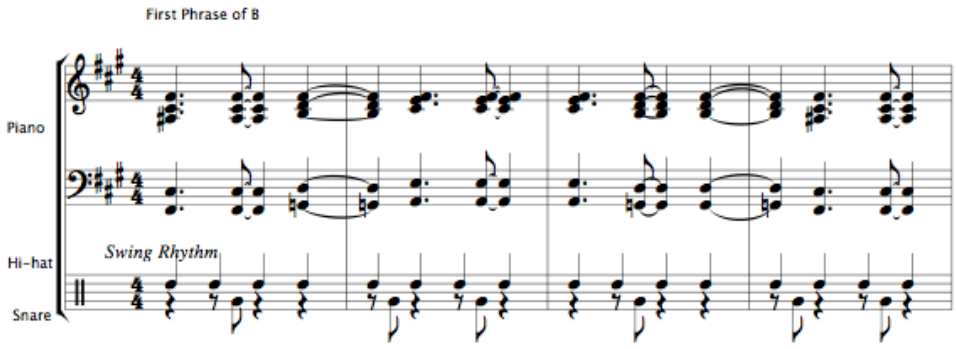



If we tend to focus on the net affect of all the parts, we might be able to construe a meter where the hi-hat has the pulse and the chords are grouped on offbeats in a 4/4 metrical context (Figure 4.10).

These construals are just some of many possible construals. And any construal can quickly become obsolete if we slightly change our aural orientation to the piece. The point is that occasionally, we may be able to construe some kind of metric organization, but we are likely to never settle on one because of the vague metric context. Even on a subconscious level, without thinking about beats and time signatures, we are likely to *feel*

the desire to "normalize" the patterns we are hearing into a system that is easy to entrain and predict. In fact, this feeling at its most basic level is all we need in order to demonstrate how "Pyramid Song" provides us opportunities to experience D-->C timelessness.

Figure 4.10: Simple Meter Based on the Whole




*D-->C Timelessness in "Pyramid Song"*

Every time we feel the ambiguity of the metric construction of "Pyramid Song," or anytime we sense that there might not be any meter at all, or anytime we abandon a possible metric construal we thought would work, we will experience perceptual dissonance. We can find ourselves in any of these situations at any point during the song. Furthermore, I believe most of us are likely to remain in any one of these situations for prolonged periods of time. In other words, the total amount of real time we may spend feeling as though we might know the meter of "Pyramid Song" is far less in comparison to the total amount of real time we spend feeling rather uncertain of the meter. We will find ourselves in a mostly perceptually dissonant climate when listening to "Pyramid Song." Of course, there is always the possibility that some listeners may simply grow

used to the vague metric context and have no internal urge to “solve” the metrical puzzle. Yet, when we consider what London says about our natural tendencies to construe meters in order to make sense of the musical world we find ourselves in, those who remain in a perceptually consonant climate due to prolonged exposure of metric dissonance and ambiguity to such a degree are not the norm. Most of us will perceive dissonance most of the way through.

Any time we might hear a solution to the metric puzzle, we enter into a perceptually consonant state. At any moment, though, we are likely to abandon any solution we come up with because, if we shift our listening orientation even a little bit (such as focusing our attention on different parts or different rhythmic streams), our solution becomes much more difficult to hear. The very moment we abandon any potential solution is the moment we enter back into a state of perceptual dissonance, and when we are likely to experience musical timelessness. Even if we are able to continue to hear that solution, any amount of uncertainty can still push us back into a perceptually dissonant state. In fact, if we can continue to hear a possible metric construal even after we've deemed it obsolete, we'll likely experience a stronger moment of musical timelessness because we are able to very clearly feel both perceptual consonance and perceptual dissonance at the same time. Remember, the reason why we experience musical timelessness at the transitions between perceptual climates is because, for a brief moment, both can be felt simultaneously.

We shouldn't forget that, even in “Pyramid Song,” when we transition from perceptual dissonance to perceptual consonance (as the result of momentarily hearing a

metric solution), we also experience musical timelessness. There is one particular moment where we are most likely to experience this particular shift: at the entry of the drums. No matter how brief the moment, if we felt even for an instant that the drums would clarify (or did clarify) the meter of "Pyramid Song," we experienced a shift from perceptual dissonance to perceptual consonance. We experienced a moment of timelessness. Then, the moment we realize that the meter is more vague than ever because more than ever it sounds like it *should* be clear, but isn't, we enter back into a climate of perceptual dissonance, thus experiencing another moment of musical timelessness. We can repeat this same perceptual situation over and over.

In conclusion, "Pyramid Song" demonstrates D-->C timelessness through its vague metric context that is constructed in a such a way that multiple construals are possible, but none are determinate. Overall, when listening to "Pyramid Song," we will find ourselves in a perceptually dissonant climate that renews its strength as such every time we realize we are unable to confidently entrain to any meter. The construction of the rhythmic streams, with the chord cycles as the backbone of everything, is such that we are often and repeatedly tempted to hear solutions or near-solutions to the metric puzzle. The temptation to hear metric clarity is at its strongest when the drums first enter the musical texture, but no sooner that the drums enter the texture do we likely hear the rhythmic climate as more perplexingly vague than ever. Every transition between perceptual dissonance to perceptual consonance, and from perceptual consonance to perceptual dissonance marks a moment of musical timelessness. We can experience these shifts about as often as we slightly change our listening orientation to the piece. Although

the entire discussion of our tendency to construe metric structures from a vague surface has been conscious and extremely cerebral, the reality is that much of this is done subconsciously and felt at a visceral level. In fact, in most cases, I believe the initial subconscious but embodied experience of our inability to confidently entrain a meter while listening to "Pyramid Song" is the catalyst to most discussions of it. We must not forget, musical timelessness is first an experience. Then it is a concept.

**Case Study #2: "Panda"**

The band, Deerhoof, started in 1994 in of California. The band's music is typically understood as an odd-ball offshoot of pop, even as "avant-pop" rock, where the music is generally a mix of "noise and melody" (Laurence and Martin, par. 1). Deerhoof's music (and the band itself) is iconically playful, usually built from a few sets of ideas that are sort of smashed together for an effect. The group's sound is lastly typified by the sweet, childlike timbre of the lead singer's vocals. *Apple O* was released in 2003, following the band's critically acclaimed *Reveille* (2002) that pushed the group into an international spot light. "Panda" appears originally on *Apple O*, but is also featured on the group's live internet-only album, *Bibidi Babidi Boo* in 2004. The song is also a hallmark of any Deerhoof concert, as band drummer Greg Saunier told Free Williamsburg in a 2004 interview. The song is playfully chaotic, precisely a mix of noise and melody, and a guaranteed delight for the childlike repetition in the lyrics, which is little more than "panda, panda, panda."

Every performance I have ever heard of "Panda"—from *Apple O*, to *Bibidi Babidi*

*Boo*, to numerous online live recordings, to when I personally saw them in concert in Portland in 2012—is slightly different, with the same basic musical ideas as the backbone to the song. Such an approach is typical for the band where the albums are the initial storyboard to their pieces, acting only as spring boards for further development in live performance contexts. Nonetheless, the primary element that places "Panda" in our study on D-->C timelessness remains consistent from performance to performance across every version of "Panda" that I have heard, although the drama of that element may be at different intensities in different places of the song from performance to performance.

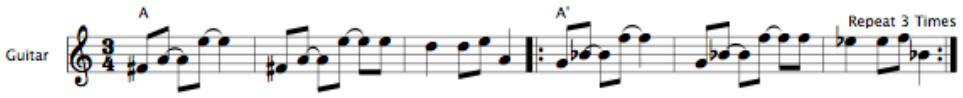
The primary musical element concerning our discussion of musical timelessness is non-synchronicity or a breakdown in synchronization between the musical parts in play. The piece constantly shifts from metric stability to breakdowns that sound like the results of sloppiness. Yet, the metric precision that the band is able to suddenly lock into not only intensifies the jarring effect of it, but also produces multiple opportunities for D-->C timelessness. We will draw our analyses, discussions, and conclusions from the song's "original" appearance on *Apple O*. "Panda" gains its musically timeless moments not from the specific structure of the parts, but in how the parts metrically breakdown over time. For this reason, we will first examine the pitch elements and formal structure of the piece only briefly; then we will explore how a vague metric context is created through the breakdown in synchronicity between the parts in play, examining each section in a play-by-play fashion; and finally, we will discuss how such breakdowns can create moments of musical timelessness.

*"Panda" Overview: The Basic Musical Ingredients*

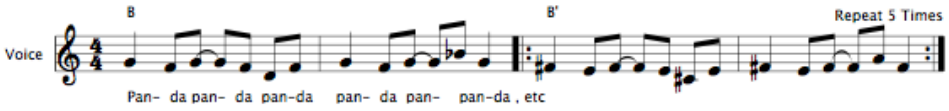
"Panda" was written for two guitars, bass, drums, and vocals. As I stated earlier, there are three basic sections: a guitar melody (Figure 4.11a), the vocal melody (Figure 4.11b), and basically a three-note guitar riff[37] based on a fragment from the guitar melody (Figure 4.11c). The meter of these melodies can be fairly easy to hear, though in some cases (especially in the first section) they may feel metrically awkward due to the contour of the melodies, the agogic accent placement, or simply due to the placement of some of the attack-points in the melody.

Figure 4.11: The Three Main Sections of "Panda"

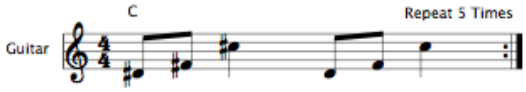
a. The Guitar Melody (A, A')




b. The Vocal Melody (B, B')




c. The Guitar Riff (C)




[37] I have chosen to simplify this part because I am most interested in showing the rhythmic/metric relationship between the parts. Although chords accompany and accent the guitar riff, the basic melody is what we are most interested in for our purposes here.

The entire form of the piece is a basic repetition of the three above sections in order, with the third and final repetition altered:

A A' B B' C  A A' B B' C  A A A B B B B

*Creating a Vague Metric Context*

In the introductory sections of this chapter, I stated that "Panda" does not *have* a vague metric context, but *creates* one instead. If we look at the basic musical material that defines each section—the melodies, in other words—we can quickly see metric patterning and simplicity. The melodic material is unquestionably perceptually consonant in as much as the other parts, the drums and bass specifically, follow the metric template outlined by the melodies, and as much as those melodies are held in tact, "Panda" does not have a vague metric context. In fact, "Panda" starts out quite metrically clear and not metrically vague in any way. At most, it is playfully awkward.

Metric vagueness is created by a metric breakdown that is executed in any one of the following ways, or as a combination: the entire band not only gradually slows down but each performer does so at a different rate, the drum kit suddenly emphasizes offbeats, the guitar parts that initially emphasize the vocal melody are slightly late, the drum kit accents a beat either slightly too early or slightly too late, or the beat subdivisions in any one of the parts or in the band as a whole are not perfectly even. All of these examples of how the metric stability breaks down may simply sound like the results of a sloppy ensemble. In fact, it truly sounds like sloppy playing when the breakdown is happening because most of the disturbances to the meter are only slight—slightly late, slightly early,

slightly off, slightly behind, etc. Oddly enough, what causes these metric disturbances to sound like a breakdown in a metrically stable context is the fact that “Panda” repeatedly returns to moments or sections of extreme metric stability and unified precision. These returns to metrically precise moments are always sudden, as though the band members are suddenly master musicians when only seconds ago they sounded like they could hardly play their instruments. The strength of the metrically stable and precise moments is exactly what causes the other moments to sound so metrically unstable and unexpected —thus rendering the entire piece as a vague metric context as a whole.

In the paragraphs that follow, we will examine each section in a play-by-play fashion. I do not find it necessary (and in some cases even possible) to notate the rhythmic deviations that occur. Many of the rhythmic disturbances are slight, matters of milliseconds. In fact, notating such rhythmic deviations may altogether prove to hinder our discussion more than help because the most important point to take away from our discussion is the perceptual affect of the various parts being slightly off from each other rhythmically. Notationally showing such slight deviations down to the millisecond is not our purpose here.

The first time we hear section A, we hear no drums, no bass, and no voice. Only one guitar plays the melody. The beat, subdivisions, and tempo are held in tact. As the guitar moves into A', the drums enter the texture with emphases on beat one and the second half of beat two. Basically, the drums place snare accents on the same attack-points that the melody has. Remember, melody A' is actually repeated three times (refer to the formal diagram in the previous section). The second time we hear A', the snare hits

sound rushed, falling in between the first and second half of beat two. The guitar continues to maintain the tempo and metric integrity as the drums start to sound "off." By the third iteration of A', the drums return to a slightly more stable pattern of accenting the same attack-points as the melody.

Even though the meter changes between A' and B, the same beat is held in tact, so the metric climate does not sound vague or even ambiguous to any degree at the outset of B. The first time we hear B, every thing drops out of the texture from before and all we hear is a voice singing "Pan-da, pan-da, pan-da." B' starts slightly slower and with the drop in the melody line by a half-step, the overall affect makes the band members sound like they are growing tired or losing energy. The meter starts to breakdown. Within this section, one guitar joins the vocal melody line and the other guitar accents the syllabic accents of the lyrics. The drums lock into a rock beat where the second and fourth beats of every measure are accented by snare hits. By the end of the second iteration of B', the guitar that joins the vocal melody starts to drag slightly. The beginning of the third iteration of B' starts to slow down again. In the next iteration of B', both guitar parts start to drag. By the time we hear the last iteration of B' in this section, the piece continues to slow down and the snare hits sound late.

The next section, C repeated five times, is suddenly metrically stable again. The original tempo is immediately regained, the drums lock into a rock beat again, and the guitars and bass play in exact metric unison. The entire section, all five iterations of C, maintains metric stability. Nothing sounds late or early and the tempo does not change to any degree. The music gains momentum forward as the rhythmic precision seems to lock

us into a metrically stable climate.

The second time we return to A, we hear the same music that we heard in the beginning: the same tempo and only the guitar playing the same melody. The first iteration of A' is also the same as it was before. The drums join the texture and provide accents that mirror the attack-points of the melody. Like before, the rhythmic pattern of the drums starts to change in the second iteration of A'. However, unlike before, the changes are astoundingly precise as the drum texture develops into fills and rolls that are solid in their placement and subdivided evenly no matter the diminution.

The second time we hear the vocal section, it also starts the same way as before: only the voice with the same pulse as A and A', but in a different meter. The only change to this subsection takes place at the very end when the bass drum accents the attack-points of the vocal line in the last beat. Again, like before, B' is slightly slower than B, the guitars emphasize the vocal line (one plays the line exactly and the other accents the syllabic accents of the lyrics), and the rock beat enters the texture again. The second iteration continues in the same way until the end when both guitars are slightly behind the voice. The first beat of the third iteration of B' is punctuated by a noticeably late cymbal crash. The guitars continue to fall behind the voice and the music slows down more and more. The last iteration of B' in this section is quite slow overall, the drums drag even further behind the voice and nearly stop altogether, and the guitars rush in one moment, then drag in the next.

We are provided a brief moment of silence before everything is regained again at the first iteration of C. Over the next four iterations of this subsection, the drums grow

increasingly complicated in a series of rolls and fills which maintain the metric stability and tempo. However, at the last iteration of C, the drums disappear from the texture after a roll that slows down while the other parts maintain the tempo.

At this point, it almost sounds as though the song can't recover from its loss in momentum catalyzed by the drums. A is heard again as a guitar solo, but this time, the melody grows slower and slower as we hear random tambourine hits that really sound more like someone bumping into the tambourine by accident rather than purposefully playing it. A is repeated again and we hear the singer singing a drawn out and nearly whispered "Pan-da." A is repeated for a third time, growing slower and slower. At this point, it sounds certain that the song is ending.

Out of nowhere, we hear the drums, bass, and two guitars playing in perfect synchronicity and at an extremely fast tempo that sounds nearly frenzied. The guitar plays the vocal melody, B, over and over as the drums maintain the rock beat. B is repeated the same way four times—fast, precise, synchronized, and metrically stable. The fifth time we hear B, the singer joins, singing "Pan-da" in perfect unison with the guitar —until the very last "Pan-da." In this single beat's worth of time, everything drops out of the texture and we hear only the voice sing the last "Pan-da." Not even a split-second later, the guitar mimics the voice, sounding as though it was noticeably late and extremely exposed. The song is over.

*D-->C Timelessness in "Panda"*

As we saw in the previous section, "Panda" creates a vague metric context overall

and is therefore perceptually dissonant overall. The destruction or breakdown of metric stability is quite unique in this case because it is not directly related to the musical material (such as pitches and rhythms) but instead a matter of what sounds like ensemble issues! Similar to "Pyramid Song," anyone who is inclined to tap their foot to the music might have a difficult time, but for completely different reasons. Where "Pyramid Song" was metrically vague at every moment, "Panda" creates metric vagueness overall through shifting the musical parameters that create or destroy metric stability. Sometimes the music is metrically stable and clear. Other times, the music seems to breakdown. We never know when the music will "pick up" again or if it will. In one moment, the piece has momentum and in the next, it sounds like it is losing energy. In one moment, the performers (especially the drummer) sound like they are extremely proficient on their instruments and sensitive to the unity of the ensemble, and in the next moment it sounds like they have no idea how to play together, or even how to play their instruments at all. The constant and seemingly random points at which the music switches from metrical stability to a breakdown is unpredictable. Furthermore, the instability is reinforced by the stable moments and vise versa.

At the very beginning, we may find ourselves in a perceptually consonant climate because the music does little to challenge our expectations. However, fairly early on in the piece (in the second iteration of A') we hear a slight metrical "error" in the drums where the established accent pattern got off somehow. This moment marks a moment of perceptual dissonance, creating a transition from one perceptual climate to the other and thus producing a moment of musical timelessness. However, if kept in isolation, this

moment is not D-->C timelessness, but is actually C-->D timelessness.

It is not until the first iteration of B' when we will likely gain a sense that there is truly something odd about the piece. This sense will grow throughout the entire vocal section as the music slows down and the parts that were kept in such unison start to fall away from their synchronicity. The moments of perceptual dissonance will continue to peak at a faster and faster rate as the metric instability of the piece becomes increasingly apparent. I believe it is likely that, by the end of the first vocal section, we will find ourselves in an overall state of perceptual dissonance that will be marked by peaks of perceptual consonance for the remainder of the song. A song that breaks down in a way that sounds like just a bunch of mistakes or sloppiness is in and of itself unexpected and we can really start to gain such an impression (even if we realize it is all tongue-in-cheek) by the end of the first vocal section.

If we do find ourselves in an overall perceptually dissonant climate, then we will likely be continually uncertain of where the music is headed. Where the moment is metrically unstable, we will likely wonder when or if the music will “normalize” again. Where the moment is metrically stable, we will likely wonder when or if the musical will break down again. In other words, regardless of the what the music is doing in reality, we are always trying to anticipate being caught off guard. And when the metric climate changes, we will still likely be caught off guard anyway. Even when the music is technically consonant, the recent memory of the perceptually dissonant moments is strongly imprinted in our brains and we're constantly aware that at any moment the music could break down again. We can remain “on edge” or in a perceptually dissonant state

even during some or all of the musically consonant moments.

At the same time, we may experience some peaks of perceptual consonance even once we find that we are in an overall perceptually dissonant climate. One particular moment that seems most likely is at the return of the guitar melody, A. The music of this subsection is basically an exact repetition of its analogous subsection and is presented in a way that might allow us to feel a little more settled about what is coming. Even though, technically, the meter could break down in this moment, the subsection is only long enough to be the same as before. In other words, the length of time we remain in a metrically stable climate and whether or not the subsection is material we've heard before are both factors in creating a peak of perceptual consonance. Every other analogous subsection is altered slightly (or overtly in some cases) in way that, though the melody and general sound texture is familiar, we remain aware that the music may lead us in the "wrong" direction, hinting at stability, then delivering instability or the other way around.

In summary, we have seen that "Panda" creates a vague metric context overall by switching the musical parameters that either create or destroy a climate of metric stability. Although the musical components that define subsections, sections, and the general whole of the piece are simple and metrically patterned, the lack of synchronicity between the parts—especially between the drums and the rest of the band—creates an overarching perceptually dissonant climate where we attempt to anticipate being caught off guard at every moment. Occasional peaks of perceptual consonance can be caused by momentary "relief" at the outset of metrically stable moments, but even more so by metrically stable analogous subsections. As is the case with every other type of musical timelessness,

anytime we transition from one perceptual climate to the other, we can experience a moment of musical timelessness.

**Chapter Summary**

The second type of musical timelessness, D-->C, is contingent upon a maintained perceptually dissonant climate that is punctuated by moments of perceptual consonance. The strongest perceptually dissonant pieces are those that maintain a vague metric context. We have seen that "Pyramid Song" has a metrically vague context through the rhythmic structure of the chord cycles. The addition of the drum kit can further complicate the matter. Even where we are able to hear some kind of metric construal, we are never truly certain of it and may abandon it just as quickly as we formed it. In this way, we remain mostly in a perceptually dissonant state where we can experience moments of perceptual consonance at the hope of hearing metric clarity, only to return again to metric uncertainty. Each perceptual transition marks a moment we can experience D-->C timelessness. "Panda" creates a vague metric context overall by continually shifting the musical parameters that establish or break down metric regularity and precisions. Even in metrically stable moments, we can remain constantly "on edge" because we never know if the music will start to break down again. We remain in a perceptually dissonant state overall, yet, there can be peaks of perceptual consonance at the initial outset of metrically stable moments or when analogous passages are short in duration and metrically stable. Again, any time we transition from one perceptual climate to the other, we have likely experienced a moment of musical timelessness.

# CHAPTER V

## C<=>D TIMELESSNESS

In this chapter, we will turn our attention to the third and final type of timelessness, C<=>D. "Tornado" by Jónsi and the live tour recording of "Gong" by Sigur Rós will be the basis of our study. We will find that C<=>D is the sort of timelessness that provides the listener more ability to toggle back and forth between perceptual consonance and perceptual dissonance because the musical basis for either climate is consistently present in the music. In the first two types of musical timelessness, we saw that a specific perceptual climate was maintained overall and only punctuated by moments of the opposing perceptual climate. However, in the case of C<=>D, the music at any moment can be heard and felt as perpetually consonant overall *and* perpetually dissonant overall, and when we do transition from one climate to the other, we do not necessarily experience the transition as a temporary peak of the opposing climate. We may actually experience it as the new overriding climate. Simply put, *C<=>D is the sort of musical timelessness where perceptual consonance and perceptual dissonance have equal weight and significance and are both equally grounded in musical facts*. *Either perceptual climate is possible to experience at any moment and for any length of time.*

### Some Preconditions

C<=>D operates through musical elements that seem paradoxical if not contradictory in at least three ways: there is equal presence of fundamental nonlinearity and fundamental linearity; there is metric ambiguity and metric clarity; and at any

moment, we are drawn to listen to the song as a larger whole where we make connections between patterns we've already heard and what we are currently hearing and we are also drawn to focus on finite details in the moment. Much of this is accomplished through the continual presence of a single strand of music that is structurally and aesthetically significant.

Both “Tornado” and “Gong” express fundamental linearity and fundamental nonlinearity is similar ways. In both songs, the single strand of musical material that repeats for the entire duration of the song is a piano chord cycle in “Tornado” and a string quartet ostinato in “Gong.” The strands gain their structural and aesthetic significance because they are the first bit of musical material we hear and also because they are held intact as a major voice the entire way through the song. Remember, Kramer defines nonlinearity as a structural force rather than a process. The strand in each case acts as such a force, acting as the foundation upon which all other musical materials are built. However, when all the other parts of both songs are considered, we can hear process at work through clear phrase structure, cadential resolutions, and a formal scheme that demonstrates organic development. With the exception of the repeated strands, the musical material of both “Tornado” and “Gong” sounds process-oriented, which is the hallmark of linearity.

Both songs can be heard as metrically ambiguous and metrically clear. Nearly all of the musical material (from the beat structure provided by the drum kit to the hypermetrical organization of the melodic phrases to the harmonic rhythm) is metrically clear and does not generally pose a challenge to our expectations. In both “Tornado” and

"Gong," the larger boundaries (such as phrase beginnings and endings and the periodicities of each strand's cycle length) are aligned with the the rest of the music, but somehow, the smaller metric boundaries (such as beats and downbeats) between the strands and the rest of the musical texture seem to be in contradiction with each other. *Only* the strands cause any such metric dissonance because of their construction and the way in which they interact with the musical whole. Their saliency and structural preeminence allow the metric disturbance they create to potentially be overt and even overpowering to our ears depending on how we are listening. In "Tornado," the strand is not only metrically ambiguous in the context of the song's whole musical texture, but it is also metrically vague by itself. We will see that the strand in "Gong" projects one pulse and one type of metrical organization, but when other parts join the texture, the pulse and meter become confounded momentarily. Even once the meter and beat are clarified, we still have the ability to entrain the metrically dissonant layers because they continue for the duration of the piece. In both cases, we will see the strands of repeating material are characterized by a metrically ambiguous relationship to the rest of the musical parts (in that their beats or pulses are not aligned), but also by a metrically clear relationship to the rest of the musical parts (in that the boundaries of their periodic cycles hypermetrically align).

Remember as we discussed in the previous chapter, there is a difference between a vague metric context and an ambiguous metric context. A vague metric context produces no *determinate* meter or beat structure. As we experienced with "Pyramid Song," for example, even if we are able to construe a meter, we will likely abandon it quickly

because we are unable to stick with it through the listening process. An ambiguous metric context, on the other hand, may express multiple construals that can remain valid throughout the listening experience. Keeping in mind that ambiguous metric contexts present us with multiple, competing, yet viable metric construals that are well informed and can be maintained, we will see how C<=>D pieces have a greater amount of perceptual possibilities.

In the case of the third precondition, both the repetition of the strands and their metric ambiguity can perpetuate shifts in our attention. In one moment, we notice the finite details of the piano chord cycle in "Tornado," for example, feeling the metric dissonance that exists between the chord cycle and the bass drum kicks, finding ourselves in a perceptually dissonant climate. Because such a musical condition exists for the entire song due to the consistently audible relationship between those parts, we can continue to hear the music as metrically dissonant, and can therefore remain in a perceptually dissonant state. However, at any moment and for any length of time, we can also hear the piano chord cycles as part of the musical whole, hearing how the hypermeter of the piano chords is congruent with the hypermetrical structure of all the other parts in play. In other words, we can experience the song with a more expanded aural landscape, connecting previously heard material to what we are currently hearing and making connections across larger spans of real time. We may even entrain a metric construal that we can maintain as we listen. We can be in and remain in a perceptually consonant state as well. In other words, at any moment we can listen to specific details and find ourselves in an overall perceptually consonant or dissonant climate depending on what we are listening

to. Conversely, we can also at any moment expand our listening to encompass more of the whole and again find ourselves in an overall perceptually consonant or dissonant state depending on how we hear the whole.

Finally, one provision must be made before we dive into our analyses. It is my opinion that, although "Tornado" and "Gong" actually do provide two simultaneous perceptual possibilities (consonance and dissonance), we can only toggle back and forth between these two climates, and cannot actually *be* in both at the exact same time as a result of receiving both as equally external stimuli grounded in musical facts. Put another way, I believe that we will find the music as either perceptually consonant or perceptually dissonant at any given moment, not both at the same time. However, my opinion on this matter becomes tedious is the transition from one perspective to the other can be so swift and the memory of the first can be retained while we are experiencing the other in musical reality. The effect of freshly remembering one thing while experiencing another is *nearly* the same as experiencing both at the same time. This why we do *feel* both at the same time. This, at its core, is the reason why we experience musical timelessness in the transition from one perceptual climate to the other.

**Case Study #1: "Tornado"**

*Go* is Jónsi's first and only album to date under this band name, although this particular group continues to develop musical creations through various multimedia projects.[38] Jónsi is actually the nickname of the lead singer, Jón Þór Birgisson, who is an

[38] Such projects include the soundtrack to the 2011 film, *We Bought a Zoo* directed by Cameron Crow, starring Matt Damon, and various other film projects reworking the material of *Go*.

undeniable embodiment of beauty and freedom in creativity. He is known for his unique way of playing his guitar with a cello bow, for his piercingly beautiful falsetto vocals, and for singing in "Hopelandic"—his form of vocalizing without meaningful lyrics in either Icelandic or English—all of which he also does as the lead singer of Sigur Rós. The music of the album as a whole is fantastically dynamic yet coherent. The following November 2011 review by Sputnikmusic describes the album best:

> The dynamic of the album expands and contracts in its mesmerizing sonic arsenal, utilizing samples, electronic drum beats, chirping woodwind accompaniment, and orchestral support. The album is always unbreakable and phenomenally sound at the core, never giving way to the child inside of it. Ferocious but gentle, the album hangs onto only threads that keep it from exploding into an uncontrollable fit of pouring, sensing, and feeling the world at large and flying in all directions. It's this control that makes the album so astonishing: disciplined, and at the same time, carefree and unwilling to fit into itself. It's always striving for something beyond it and something beyond humanity, marching to the beat of its own divine inspiration in tracks like 'Animal Arithmetic.' It's the juxtaposition of absolutely pounding drums and overwhelming textures of woodwinds and strings, cymbals, and an entire rainbow of hues and ideas with the somberness of tracks like 'Tornado,' lonely but unbelievably hopeful at the same time, that give the album character and an identity never once misplaced throughout the entire journey as it grows from the inside and bleeds itself of anything that could be mistaken for sorrow. Go always finds a way to cheer itself up, simple and pure like the child that Jónsi is (par. 4).

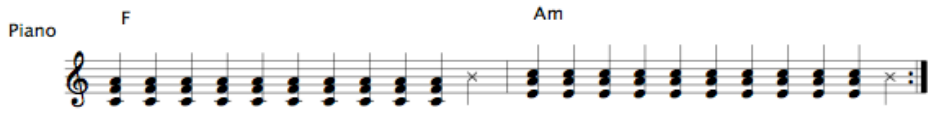
As a whole, "Tornado" can be described as the album's most stunning and intimate moment. It unfolds as a heartfelt plea for freedom, musically swelling in expressivity, volume, and textural thickness. At face value, "Tornado" might strike as musically straightforward. After all, the unique beauty of the piece is enough to captivate our attention and we might not get any further than the captivating elegance of the song. Nonetheless, the way the piano chord cycle creates a vague metric context at the outset of the piece, and the way the other parts interact to create the whole sound world of

"Tornado" makes the song a perfect example of C<=>D timelessness. We will first examine the piano chord cycle, discussing its vague metric structure. Then we will examine how the other parts in the order they appear: piano chord introduction, Verse 1 where the voice shadows the piano pulse cycle periodicity, the Chorus when the bass drum kick enters the texture, Verse 2 where the drum kit alternates between emphasizing the piano pulses and emphasizing its own beat (followed by another Chorus), the breakdown and buildup where the piano pulses drop out of the texture, and the last Chorus where the entire band incessantly emphasizes the piano pulses until the end.

*The Piano Chord Cycle :00-:25*

The piano strand begins the song, seemingly without consequence, pulsing an F major chord. We hear the chord ten times, what sounds like ten beats, and then, suddenly, we hear a pause. The length of the pause sounds off-kilter to what we just heard because it is not equal to the durational length of the other chords. It is slightly too short if we're expecting a beat of rest based on the durational length of the piano chords. The pause is followed by a new harmony, an A minor chord, pulsed in exactly the same manner as the F major chord. It, too, is also followed by a pause that is slightly too short to be a beat (see Figure 5.1, pauses are indicated by x note-heads). We hear that this same pattern of ten chords followed by a pause repeats itself, first as a set of ten F major chords followed by a pause, then as a set of ten A minor chords followed by another pause. The cycle continues for the duration of the introduction (and in fact for the entire length of the piece).

Figure 5.1: The Piano Chord Cycle




At this point, we've only listened to the first twenty-five seconds of the song, and already, a vast set of perceptual complications have arisen: first of all, what is the relationship between what sounds like the beat of the piece and the pause? All that can be heard is that the pause is a little too short to be considered just another beat. Regardless of whether or not we can assume that the pulses are also beats, the pause is not equal in duration to the pulses, nor do the pulses and pause have a perceivable subdivision in common.

Secondly, what is the metrical organization of the chord cycle? Even if the pause was the same durational length of the chords, or if there was no pause at all and all we heard were ten equal pulses followed by another ten pulses on a different chord, the meter is still not clear. If the pulses are actually beats, then we would expect there to emerge a hierarchy within those beats. Without a hierarchy—an established pattern of accented and unaccented beats—the pulses remain only pulses. Essentially, I am using the terms "beat" and "pulse" in the same manner as Hasty, who says:

> Beats are timepoints...Pulses, however, are flexible and they are rhythmic...A pulse is literally heard, but not intuited the way a beat is. Pulse is susceptible to rhythmic accent, while metric accents are applied to beats...The two may or may not coincide, but they are conceptually—and experientally—distinct. A pulse is an event in the music, interpreted by the performer and directly heard by the listener. t occurs at a timepoint. A beat, on the other hand is a timepoint rather than a duration in time. (15-16)

Assuming that the ten pulses are in fact beats, are those ten beats really just two groups of five? Five groups of two? A combination of groupings of three and four? Of four and two? There is absolutely nothing in the performance to indicate any specific kind of metrical grouping within those ten chords. The performer provides no accents or articulations to emphasize one chord over any other.

Finally, there are only two harmonies pulsed at the beginning of "Tornado" and although the harmonies are straightforward, their relationship to an overarching sense of tonality is unclear. Therefore, we can't yet discern any accent or harmonic pull based on tonal significance. Are the F major and A minor chords the tonic and the mediant of F major? The subdominant and submediant of C major? The submediant and tonic of A minor? The moment of the chord change is clearly accented by the simple fact that the harmony changes. We can definitely hear that after each set of ten chords and pause, there is some kind of metric marker, but the length of time between those initiating pulses (those chords that initiate each set of ten chords) is too long to be felt as a single measure. We probably will not hear the ten chords as the contents of a single measure. We likely feel that there must be measures *within* each set of ten chords. We just can't tell precisely *where* they are. There is a proven optimum rate at which human beings tend to feel beats (and thus organize beat structures into measures). This rate is somewhere between 0.6 and 0.75 seconds, or between 80 and 100 bmp (Huron, 175-176). If tracked with a metronome, the pulses of "Tornado" fall very close to 120 bmp. We are most likely to hear these particular pulses as beats. Second, if the pulses are not beats, we have no sense as to what the beat truly is, and at this point the ability to construe any other beat is

hindered by the vague metric context and lack of additional aural information. We will not naturally imagine the beat of the piece against the pulses that were given to us until an additional musical element or clarifier enters the musical texture.

Although the piano chord cycle is metrically vague, we can experience either perceptual consonance or perceptual dissonance at any moment of the introduction. This may come as a surprise when we consider the similarity between the introduction of "Tornado" and the introduction to "Pyramid Song." Both chord cycles have a vague metric context, but the chord cycle of "Pyramid Song" is far more complicated in pitch content and rhythmic structure. The pitch content of the chords and the durational lengths of the chords in "Pyramid Song" changed just enough to keep us in a climate of perceptual dissonance, but not so much to disable us from hearing that there was a rhythmic pattern at work even though the metric structure of that pattern was not discernible. In this case, the piano chord cycle of "Tornado" is far simpler in both pitch content and rhythmic structure. Rather than two chords of equal length, followed by a chord slightly too long, then followed by another five chords of equal length, then followed by another chord slightly too long—and so on (as we saw in "Pyramid Song"), the rhythmic structure of the chord cycle in "Tornado" is just ten chords followed by a pause, then ten more chords followed by another pause where all chords are equal length and the harmonies express sets of ten chords. Unlike "Pyramid Song," the chord cycle in "Tornado" is simple enough to allow us to retain expectations concerning the immediate future. We can expect another set of ten F major chords followed by another set of A minor chords. We can accurately anticipate the placement of the pauses. And although we

might not be able to precisely anticipate the exact placement of the first chord of each set of ten after each pause, we can come close. In these ways, we can find ourselves in a perceptually consonant climate. However, it remains true that the metric context of the piano chord cycle is vague. We will likely be unable to tap our foot to a beat all the way through the chord cycle and we have no clear sense of meter. In these ways, we can find ourselves in a perceptually dissonant climate.

*The Voice as a Shadow of the Pulse Cycle :25-:54*

After two repetitions of the pulse cycle, Verse 1 begins as the voice enters the texture. I think it would be natural to expect the vocal line to clarify the meter through some sort of beat emphasis. However, the melody and lyrics only complement the periodicity of the piano pulse cycle and do not at all clarify the metric organization within the pulse cycle. Most of the melody is comprised of sustained pitches lasting for most of each set of ten chords. Throughout the first verse, the singer never begins a phrase at the exact same moment the piano pulse cycle begins. Furthermore, the motion of the singer's melody never moves *exactly* with the individual pulses of the piano line. I say that the vocal line complements the periodicity of the piano line because, even though the voice does not synchronize itself with the piano line exactly, the melodic phrase starts over at *about* the same time that each set of ten chords begins. The relationship between the piano chord cycle and the vocal melody is approximate, not exact. But there is a relationship between the two. The voice is a shadow of the pulse cycle. In this way, the emphasis on the  hypermeter and the lack of emphasis on meter becomes instantly clear.

The way the vocal line shadows the lager hypermetrical structure of the chord cycle, though the cycle itself is a vague metric context, gives us pause to consider an important question: is it possible to have hypermeter without meter? So far, "Tornado" has provided us a foreground and background of its temporal structure (pulses and hypermeter), but we do not yet have any determinate middleground material (no beats or meter). Meter requires pulse. But pulse does not require meter. However, since a hypermeter is essentially projection of the same patterns on a higher level and the phrase boundaries that reflect harmonic progression, it stands to reason that hypermeter would require both meter and pulse.[39] However, I think that in case of "Tornado," one truly *hears* the chord cycle *as a cycle* with some unknown number of measures within it. I am not arguing that we cannot entrain a ten-beat-plus-pause periodicity as a single measure. Instead, I am claiming that this music seems to suggest that there is some sort of middle (or fore-) ground metrical layer *within* each set of ten chords because there is an optimum rate of beat entrainment, as we discussed in the previous section. Even more so with the vocal line, all that clearly stands out as structurally significant is the downbeat of each set of ten chords. What we can confidently grasp is a background metrical layer—a hyper metrical layer. In short, the chord cycle itself sounds like a pulse cycle, *not* like two-measure sets, but the contents within those sets of ten chords are too unaccented to be

[39] Most theorists will argue for a theory of meter that requires meter to have hypermeter. Such theorists include Yeston (1976), Lerdahl and Jackendoff (1983), and Lester (1986). However, Lester argues that, even though all metric levels are in existence, a metric level may not always be present or perceptible in a piece: "The listener, once he or she has recognized the pattern, internalizes the metric hierarchy. Even if a metric level is temporarily absent, that level of division or grouping remains as a latent possibility" (51). Furthermore, in her article, "Memory and the Perception of Rhythm" (*MTS* 15/1, 1993), it seems that Candace Brower would also argue that meter is required to have hypermeter. However, as she equates the structural levels of meter to the modes of memory, it seems her writing leaves room for the possibility of *perceiving* a hypermeter where no meter can be perceived.

entrained as any series of beats within any number of measures. The temporal flow of "Tornado" is still as unclear as it was at the beginning of the piece when all we heard were unaccented piano pulses. We are still presented with the same set of listening options as before—we can hear the piece as perceptually dissonant or perceptually consonant at any moment.

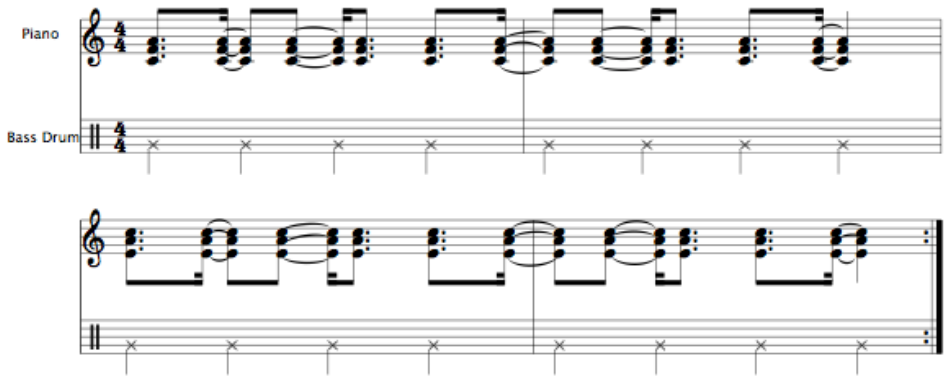
*The Bass Drum Kick: Is the Puzzle Solved? :54-1:15*

After nearly a minute into the piece, the bass drum enters the musical texture. The entry of the bass drum not only marks the beginning of the Chorus, but it also marks an increase in the number of listening choices we have to us. The bass drum provides a new pulse cycle: a set of eight, evenly spaced pulses *with no pause*. The bass drum's pulse cycle is not only periodic and every attack-point is equal in durational length, but it is also very easy to entrain because an 8-beat pulse cycle implies such a common number of sets of pulses that we can easily hear (and in fact, we naturally apply) hierarchal structure to those pulses. In other words, we tend to hear an 8-beat pulse cycle as two measures of 4/4 time. We start to hear meter. When heard in this way, the bass drum is not only perceptually periodic, but it is also perceptually consonant.

Even more remarkable, the bass drum's set of eight beats retains the same hypermetrical boundaries as each set of ten chords plus the pause—that is, they both begin and repeat at the same time. For every set of ten chords plus a pause in the piano, we hear eight evenly spaced attacked-points in the bass drum. Without hearing the specific internal relationship of the drum's beats to the piano pulses, we will find the

music metrically ambiguous—we can be tempted to entrain either to the bass drum kicks or to the piano pulses as the overriding beat structure. If we hear the beats of the bass drum as the expression of the song's meter and if we can hear the internal relationship between the pulses of the bass drum and piano chords, we will find the music more metrically clear. We will hear that the piano chord cycle is comprised of sets of evenly-spaced dotted eighth notes, except for the last chord which is actually the equivalent of a sixteenth note tied to a quarter note (see Figure 5.2).

Figure 5.2: Piano Chord Cycle with Bass Drum Kicks




Even with the metric clarity provided by the bass drum, our ability to toggle back and forth between perceptually consonant climates and perceptually dissonant ones does not decrease. It actually increases. On the one hand, where we might have experienced the piano chord cycle as perceptually consonant (due to its repetition and significance to the piece), the addition of the bass drum's opposing beats can cause us to be in a perceptually dissonant climate. Even once we hear how the bass drum and chord cycles

technically align, we may struggle to hear the piano chords as musically dissonant because we are most used to them. Additionally, it is very difficult to *hear* the metric relationship between the two pulse cycles because the bass drum is so soft. It almost sounds like a heartbeat in the background. Put another way, the grouping dissonances that mark the piano pulses might not actually sound like grouping dissonances for three reasons: entry order, prominence, and recording volume. The piano line was the first established part of "Tornado" and it was established alone. There was nothing else given to us at the outset of the piece. All we had for a full thirty seconds was the piano pulse cycle. Secondly, the piano pulse cycle has continued throughout the piece up to this point. It has retained its status as a fundamental part of the piece. Finally, the bass drum pulses are so soft and in the background compared to the other parts—and especially compared to the piano part, that one might not even hear the bass drum kicks at first.[40] For these reasons, even if the bass drum technically brings the whole of "Tornado" into a clear metric context, we can still experience either perceptual climate from multiple musical factors.

*Syncing Moments 1:15-2:03*

Matters grow even more complicated by the second "verse."[41] In the middle of the

[40] In fact, this was my experience. It was not until I listened to "Tornado" with my car's speakers that I was able to hear the bass drum kicks. Up until that point, I had only listened to the piece through my laptop. The live tour recording of 2011 Live at Lowlands illustrates just how quietly the bass drum kicks are in the studio recording. The bass drum kicks in the live recordings are much, much clearer. See http://www.youtube.com/watch?v=k6ZTEuL1BGU. Last accessed February 2013.

[41] I am hesitant to regard the musical material between the first and second chorus (1:14-2:03) the second verse. Although the material at 1:14 begins melodically and textually the same way as the first verse, the vocal line quickly embarks on a new path, not only changing the vocal line by expanding its range, but also by expanding the number of phrases in the verse. A more detailed description of the overall form of "Tornado" will be discussed further in the paragraphs that follow.

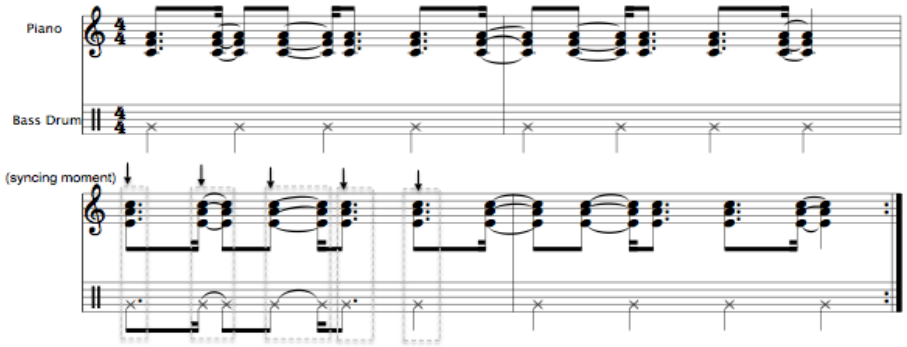
second phrase, the bass drum completely abandons its own pulse cycle and enters the piano pulse cycle. It's a jolt to our ears! Whatever perceptual climate we found ourselves in right up to this moment will likely be challenged by the fact that the bass drum (the metrically stable, but perceptually subservient element) *syncs up* with the piano pulses (the metrically vague, but perceptually dominant element). The ride cymbal also joins in the piano's periodicity, adding even more emphasis to the piano pulses.

I call these moments "syncing moments" because the pulses of all the musical parts in play not only line up at the beginning of each cycle, but are also, for the first time, perfectly synchronized with each piano pulse. The first syncing moment is brief, not even lasting for a full cycle (see Figure 5.3a). Then a second syncing moment happens (see Figure 5.3b). This time, it lasts a little longer, to the next downbeat of the bass drum. For a third time, a few seconds later, the parts sync up again, this time pulsating an entire set of ten chords (see Figure 5.3c).

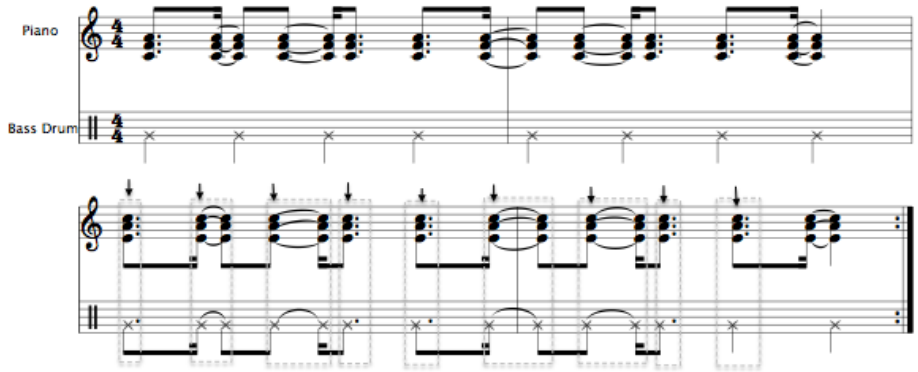
The impact these moments have on our experience of "Tornado" is nothing short of profound, regardless of how we are listening. If we found ourselves in a perceptually consonant climate (likely due to the metric clarity of the bass drum), a sudden abandonment of that clarity in favor of the metrically vague structure of the piano pulses would instantly push us into a perceptually dissonant climate.

Figure 5.3: The Syncing Moments

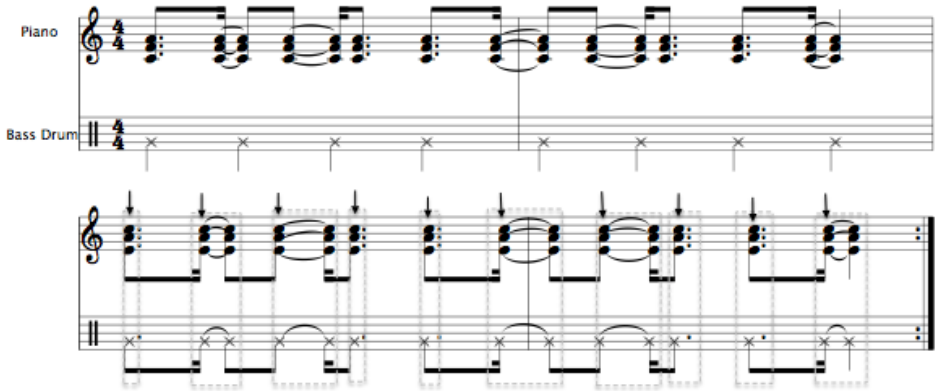
a. The first




b. The second




c. The third



If, on the other hand, we found ourselves in a perceptually dissonant climate when the syncing moments began (likely due to focusing on the metrical dissonance created by the relationship between the piano pulses and the bass drum), we might experience a sudden shift to perceptual consonance when we finally hear the bass drum align with the piano pulses. Yet, even this scenario can come as a surprise and we can continue to be thrown for a loop back into perceptual dissonance at the surprise that the bass drum is finally aligned with the piano pulses. Either way, the syncing moments will likely produce some kind of perceptual transition where we can experience more moments of musical timelessness.

*The End of "Tornado" 2:03-end*

By the entry of the second Chorus (2:03-2:24) immediately following the syncing moments), we have heard all the essential musical material that comprises "Tornado" with one exception. For a brief moment following the second chorus, the music breaks down entirely (2:24-2:48). For the first time since the piece began, the piano pulses stop and all we hear are rolled chords that emphasize the phrasing of the vocal line. Then, almost as suddenly as the piece dropped in motion and texture, it builds back up, but without the pulses of either the bass drum or the piano (2:48-3:08). Instead, all musical accents are placed on the hypermetrical boundaries while the melodic phrases of the vocal line shadow the same phrase boundaries. This transition suddenly catapults the piece into an all-band accentuation of the piano pulses at a variation of the Chorus (3:08-3:43). The piano, the bass drum, the crash cymbals, and the snare drum all beat out the

piano pulses incessantly and relentlessly until the song ends.

The shock we can experience when the entire band emphasizes the pulses of the piano chords is enhanced by how everything—including the piano pulses—dropped out of the texture only moments before. As the song reaches its most climatic moment right before the end, every twist and turn the music takes continues to produce multiple perceptual possibilities for us. The last few moments of the song (3:43-4:15), disintegrate into the most intimate moment where we hear only the singer. He asks, “I wonder if I'm allowed just ever to be.”

*“Tornado” in Its Entirety*

If we examine “Tornado” in its entirety, we can see how we are able to experience the song in multiple ways at any moment. The specific musical details that, in and of themselves can authenticate either perceptual climate (such as the piano chord cycles) and the way those musical details unfold in relationship to each other and to the song as a whole, provide even more perceptual possibilities. If we view “Tornado” through a formal graph (see Table 5.1) where each musical element is accounted for in the order it appears, we can see that in every section of the song, our perceptual climate can either be retained or changed by those musical details.

Table 5.1: Formal graph of “Tornado”

| Section | Musical Content | Description |
|---|---|---|
| Introduction | F Am F Am<br>`````````x `````````x `````````x `````````x | Piano pulses; meter unclear |
| A (verse 1) | F Am F Am<br>`````````x `````````x `````````x `````````x<br>“you grow, you rise, although disguised.<br><br>F<br>`````````x [elided into next section]<br>I know | Piano pulses with vocal line shadowing periodicity; meter unclear |
| B (chorus) | Am F Am F<br>`````````x `````````x `````````x `````````x<br>--you. You learn to know.<br>**** **** **** **** **** **** **** **** | Piano pulses continue; Bass drum kicks(*) start here; two different periodicities; meter clear in bass drum OR ambiguous in piano pulses |
| C (“verse 2”) | F Am<br>`````````x `````````x<br>you grow, you grow like tornado; you grow from the<br>**** **** **** ****<br><br>F Am<br>`````````x `````````x<br>inside; destroy every- thing through; destroy from the<br>**** **** !!!!! ****<br><br>F Am<br>`````````x `````````x<br>inside; erupt like volcano; you flow through the<br>**** **** !!!!!!!!! *** | Piano pulses and bass drum kicks continue; Syncing moments(!) happen on alternating subphrases |
| C (“verse 2”) | F Am<br>`````````x `````````x<br>inside; you kill every- thing through; you kill from the<br>**** **** !!!!!!!!!! ***<br><br>F<br>`````````x<br>inside.<br>**** **** | |

Table 5.1 continued

| Section | Musical Content | Description |
|---|---|---|
| B (chorus) | Am F Am F<br>`````````x `````````x `````````x `````````x<br>--you. You learn to know.<br>**** **** **** ***** **** **** **** **** | Same as first chorus |
| Breakdown | Dm Am C G<br>I wonder if I'm allowed ever to see,<br>Dm Am C G<br>I wonder if I'm allowed to ever be free. | Piano pulses and all other pulsing musical motion stops; the only motion is found in the voice and rolled chords |
| Build-up | Dm Am C G<br>You sound so blue, you now are gloom.<br>Dm Am C G<br>You sound so blue, you now are gloom. [repeated] | Musical motion begins to build as snare rolls move trajectory into each chord roll |
| B' (chorus) | Am F Am F<br>`````````x `````````x `````````x `````````x<br>Ahhh---<br>**** **** **** **** **** **** **** **** | Same as other two choruses, except that the vocal line is changed to "Ahh" |

Let's imagine for a moment that we took the following "listening path" as displayed in Table 5.2 (below). The possible repercussions show how musical timelessness can be experienced with each perceptual shift. I wish to emphasize that the table outlines only one of many possible ways to experience "Tornado," and this particular listening path demonstrates a fairly continual focus or attunement to the piano pulses. And even still, from the very start, it is possible to hear the piano pulses as perceptually consonant due to repetition and simplicity, rather than perceptual dissonance as in our following example. Regardless of the different ways "Tornado" can be experienced, what can be seen by tracing any listening path is that each one of the shifts in our hearing could produce a moment of C<=>D musical timelessness because at any

one of those moments, we are considering and reconsidering the same bits of musical material as perceptually consonant or perceptually dissonant, when the music either produces what we expect or creates no expectation whatsoever or goes against what we expect. What I find even more remarkable is that this entire process of shifting back and forth can be subconscious.

Table 5.2: A Possible Listening Path for "Tornado"

| **What happens in the music** | **What the listener could experience** | **Possible perceptual climate(s)** |
|---|---|---|
| Intro: piano pulse cycle (clear periodicity with vague metric context) | The pulses are considered beats with a "mistake" in the pause | Piano pulse cycle is experienced as *perceptually dissonant* because of vague metric context |
| Verse: vocal line reinforces piano pulse cycle on a hypermetrical level | The piano pulses considered beats and this experience is reinforced by the voice | Piano pulse cycle is experienced as *perceptually consonant* because of predictable periodicity and vocal reinforcement |
| Chorus: bass drums enter with a new pulse cycle which is both metrically clear and periodic | The cycles of both are synchronized, but the pulses of each are misaligned. The bass drum pulses suggest 4/4 time | The piano pulses are experienced as metric dissonances and thus *perceptually dissonant* against bass drum kicks |
| Syncing moments: the bass drum alternates between the piano pulse cycle and its own pulse cycle | The development of the bass drum's participation in the piano pulse cycle calls into question the previous perception that piano pulses were metrically dissonant | The piano pulses are heard as *perceptually consonant* because the conflicting pulse cycle has been abandoned in its favor; additional reinforcement of piano pulse cycle by the crash cymbals |
| The end: both piano and bass drum drop out and only the vocal phrasing is emphasized; sudden "rebuilding" of texture and momentum where the entire band emphasizes piano pulses | The sudden removal of piano pulses could again debunk previous listening conclusion that the piano line dictates metric organization; sudden emphasis on piano pulses can resurrect that same listening conclusion | Sudden switch to *perceptual dissonance* because the piano pulses are gone; brief moment of *perceptual dissonance* at the surprise of the overemphasis of piano pulses by the entire band, then *perceptual consonance* as piano pulses seem to regain dominance in musical texture |

Thus, "Tornado" continually provides multiple perceptual possibilities where we can, at any moment, be in either a climate of perceptual consonance or perceptual dissonance. At any moment we can transition from one climate to the other and both

climates carry equal strength. At every perceptual transition, we will experience C<=>D timelessness. The piano pulses are perceptually consonant through repetition and simplicity, but perceptually dissonant through its vague metric context. The piano pulses dominate the piece both in entry order, frequency, and aural clarity. The bass drum kicks, on the other hand, are perceptually periodic *and* metrically clear, but they retain such a subservient position to the piano pulses within the structure and texture of the piece that their metrical framework can act as an additional listening option: either as perceptual consonance through the role of clarifying the meter and the beat, or as perceptual dissonance through opposing the internal rhythm of the piano pulses. The syncing moments and the multi-faceted ending further promote, prolong, and distill our ability to transition back and forth between either perceptual climate. We can experience C<=>D timelessness every time we shift from one perceptual climate to the other.

**Case Study #2: "Gong"**

"Gong" first appeared on *Takk...*, released in 2005. Closely following that release date, the piece has been repeatedly performed in several venues and tours around the globe as recently as 2012. The primary source for our discussion, however, will be the live tour version of "Gong" from the band's *Heima* project.[42] In the discussion and

[42] In 2006, Sigur Rós embarked on the film project, *Heima* ("Homeland"), which is a documentary of the band touring through their homeland, Iceland: "The culmination of more than a year spent promoting their hugely successful *'Takk…'* album around the world, the Icelandic tour was free to all-comers and went largely unannounced. Playing in deserted fish factories, outsider art follies, far-flung community halls, sylvan fields, darkened caves and the hoofprint of Odin's horse, Sleipnir, the band reached an entirely new spectrum of the Icelandic population; young and old, ardent and merely quizzical, entirely by word-of-mouth." See http://www.heima.co.uk/. Last accessed February 2013.

analyses that follow, we will first examine this particular live version of "Gong,"[43] exploring the musical parameters that facilitate the third type of musical timelessness. We will then briefly turn our attention to the studio version of "Gong" as it appears on *Takk...* to discuss how one simple difference between the two versions alters the type of timeless experience we can have.

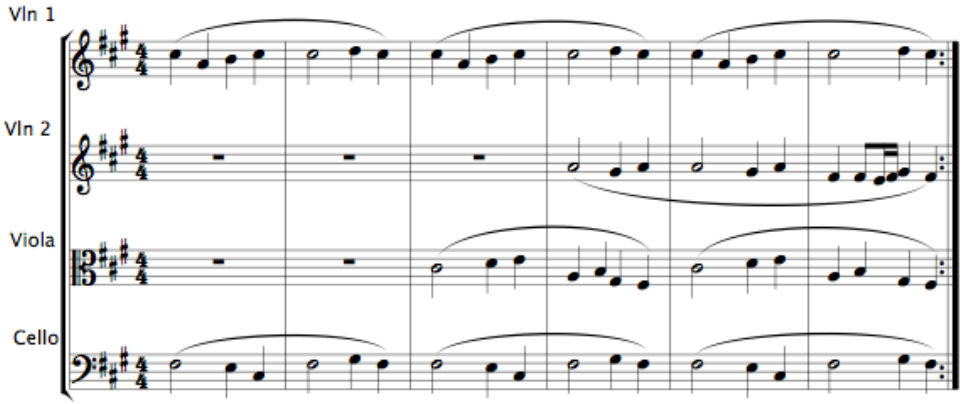
Just as timelessness in "Tornado" was a function of specific strands that interact in such a way to create multiple perceptual possibilities, specific musical strands shape our ability to experience C<=>D timelessness in "Gong." In this case, there are three strands of musical material that play the primary role in producing musical timelessness: an ostinato maintained by a string quartet, sets of duples in the electric guitar, and a sustained rock beat in the drum kit. All of these parts are introduced, one by one, within the first few measures of the piece and remain nearly constant throughout the entire piece. It is important to note that there are other musical voices included in the piece, but these parts do not play a primary role in shaping our perceptual climate. For this reason, we will spend little if any time on those parts.

[43] Most available live recordings of "Gong" are not professional recordings. As such, it can be difficult to hear the details of the piece in performance. It is primarily for this reason that I have chosen to focus on the live version from *Heima* as opposed to a live version recorded more recently. It is important to note, however, that even between the 2006-2007 live versions (primarily from the *Heima* tour) and the more recent 2012 versions (from the Live World Tour) there are slight differences. Most of these differences are found in the bass line of the string quartet ostinato. Essentially, the more recent versions simplify the periodicity of the bass line. Originally in the studio version of *Takk...*, the bass line consisted of a 3-measure cycle. In the *Heima* live tour version, the bass line consisted of a 2-measure cycle. In the 2012 Live World Tour version, the bass line consisted of a 1-measure cycle. The implications that these changes in bass line periodicity have to our discussion of timelessness will be explored in the body of the prose that follows. Other changes include the addition of brass instruments to the texture. These parts mostly (if not entirely) double what was already present in the texture of the piece and will not be discussed.

*The String Ostinato :00-:30*

The very first sound to hit our ears is a duet between a violin and a cello. Soon, the duet expands into a string quartet cycling through an ostinato. Because the rhythmic grouping patterns, the pitch patterns, and the implied harmonic motion are all so straightforward to our ears, there is really nothing within the first few measures to challenge our listening. We are likely to hear the measures *as measures* and the pulse as the beat, all within the context of 4/4. We can easily tap our foot along with the music, expecting each beat to remain metrically stable (see Figure 5.4).

Figure 5.4: The String Ostinato




The only element that might possibly sound unaligned is the phrasing that exists between the second violin and the rest of the quartet. The second violin's melodic content repeats itself every three measures instead of every two while the melodic content of all the other string parts repeats every two measures (refer to the slurs in Figure 5.4). However, every six measures all four melodic lines synchronize with each other. Although the

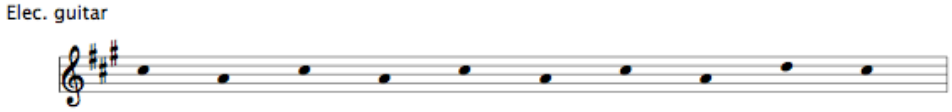
periodicities of the individual parts overlap to tiny degree between the second violin and the other three parts, the ostinato as a whole is perceptually consonant and can be considered to have a periodicity of six measures. For this reason, we will consider one full cycle of the ostinato to be six measures in length rather than two.

*The Duplets in the Electric Guitar :30-:40*

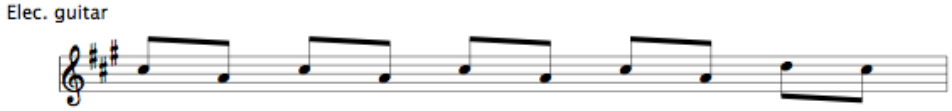
Following a complete cycle of the string's ostinato, the electric guitar enters the texture and instantly obscures the meter, creating an instantly ambiguous metric context, and likely pushing us into a perceptually dissonant climate. It is difficult to tell exactly how the guitar line fits with the ostinato at first. The guitar's line is comprised of an oscillating figure of C# and A (see Figure 5.5a). The nature of the guitar's pitches, especially when removed from the string ostinato, tempts the listener to hear a pulse on every set of two pitches (see Figure 5.5b)—on every C#, in other words. However, in context with the string ostinato, the guitar duplets obscure the ease of such an interpretation of the guitar line. If we choose to tap our foot along with the string ostinato, which highlights quadruple meter, the guitar duplets sound off. If we tap our foot along with the guitar duplets, the string ostinato sounds off. The musical motion of the guitar line is faster than the musical motion of the ostinato and it is not an even subdivision of the beats established by the strings.

Figure 5.5: The Guitar Duplets

a. Devoid of meter




b. Organized in groups of two




The effect of the interaction of the ostinato and the guitar causes us to question whether what we heard in the strings at the beginning was really the fundamental metrical structure of the song or if the fundamental metrical structure is actually displayed in the guitar's line. For a moment, as we can hear the guitar contradicting what the string ostinato established—that is, when we transition from perceptual consonance to perceptual dissonance—we can experience timelessness. At the very beginning, before the guitar entered the texture, it very likely that we could allow ourselves to naturally flow within the temporal parameters established by the ostinato because the quartet's music was so simply grounded in a metrical organization that is second-nature to us: common time. However, the sort of metric ambiguity created by the presence of the electric guitar line disrupts our ability to naturally flow along with the temporal structure of the piece. We can still remember what it felt like to so easily flow along in common time as suggested by the ostinato, while *in the moment* we are unsettled by the metrically

foreign nature of the guitar dyads. The simultaneous experience of remembering what perceptual consonance feels like and experiencing perceptual dissonance—that transition—is a moment of timelessness, C-->D timelessness, to be exact. However, in order for this piece to be more than C-->D timelessness, we must have more opportunities to transition between perceptual climates. And, indeed, we get them!

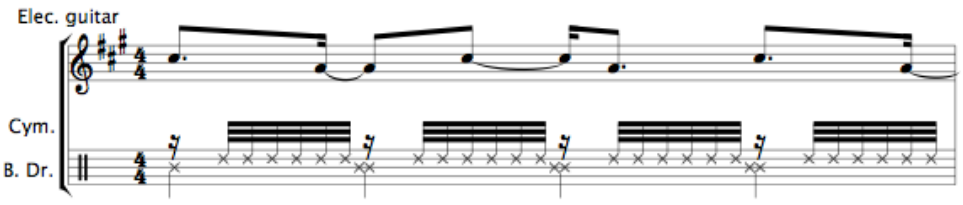
The prolongation of the metric ambiguity created between the strings and the electric guitar can cause another perceptual shift for us. We hear the string ostinato by itself for four measures before the guitar enters the musical texture. Once the guitar is added, we continue in the ambiguous metric context created by the relationship of the strings and guitar for another four measures (what would be measures if we maintained the string quartet's meter). This amount of time within an ambiguous metric context is long enough to begin hearing other metric construals. We may find ourselves entraining more and more to the guitar, finding that we hear beats on every other note (refer to Figure 5.6b). The string quartet can start to sound metrically dissonant. Or we may maintain the metric structure set forth by the string quartet. In that case, the guitar line with continue to sound metrically dissonant to us. Either way, we now have the ability to toggle back and forth between perceptual consonance and perceptual dissonance at any moment. We can, at any moment, experience C<=>D timelessness.

*The Drum Kit :40-onward*

The moment the drums start, the original meter established by the string ostinato is expressed. The drum set clarifies the metrical structure of the string ostinato as the

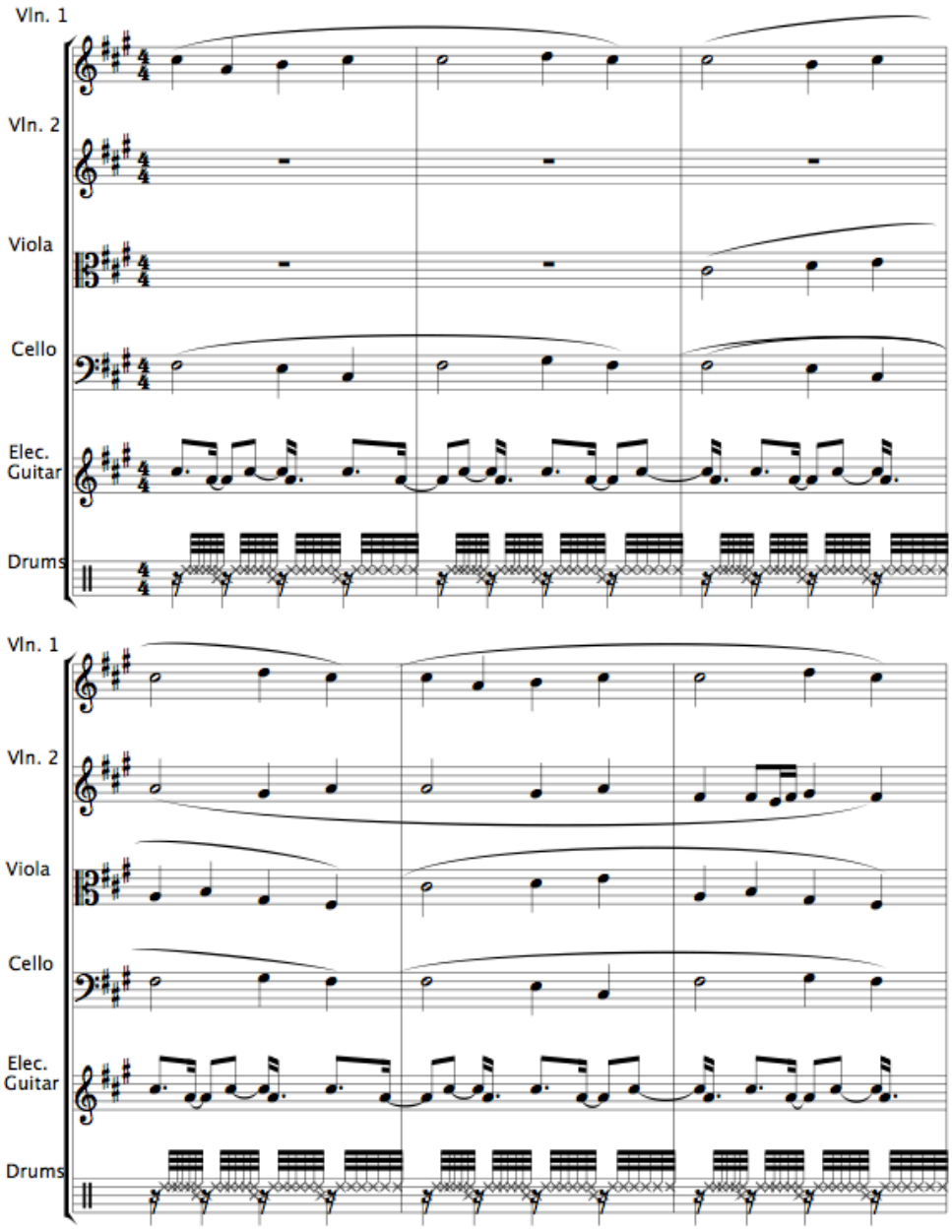
metric structure of the piece (see Figure 5.6). The drum set is able to offer us more clarity than the string ostinato ever could by the simple fact that the string ostinato contains no subdivided beats. Although the melodic motion inherently contains agogic accents, the metrical structure of the strings when pitted against the guitar dyads is not clear enough to be confidently felt as 4/4 with grouping dissonance in the guitar line. But when the drum set enters the texture, it acts as a stabilizing force because it reinforces the meter of the ostinato with beat subdivisions that are consistently and evenly divided. Through the snare, bass kick, and cymbal crashes, a full metrical hierarchy can be heard. The drum set clarifies how the dissonance-creating element, the guitar, relates to the metrical structure of the piece. The duplets are grouped into dotted eighth-notes, essentially the equivalent of two sets of quarter-note triplets that span an entire measure.

Figure 5.6: The Drum Kit (simplified) and Guitar Line




Before the drum set enters the texture, the 4-against-6 relationship is very difficult to pin-point because: (1) the motion of the string ostinato is so slow and without subdivisions, and (2) the melodic contour of the guitar duplets hint at duple groupings rather than triple. However, when the drum set enters the texture, the metrical relationship between the strings and the guitar can be reconciled (see Figure 5.7).

Figure 5.7: The Strings, Electric Guitar, and Drum Kit (simplified)




*How Is C<=>D Possible?*

Since the drum kit marks the meter so clearly in our ears, we may wonder: how can we have any ability to toggle back and forth between perceptual climates at any

moment? How is this piece an example of C<=>D timelessness? My answer to this question lies in the very fact that the metrical structure is so sure. The strings and the drums work in tandem with each other in establishing the meter of "Gong." Additionally, the vocal line and the harmonic rhythm, and practically all other parts in the piece entirely buffer the meter. The only musical element that creates any sort of disruption to the meter is the guitar line. At this, we can easily shrug our shoulders and consider the whole of "Gong" as just another example of metric dissonance where we experienced a few flickers of musical timelessness at the beginning and nothing more. Such a listening experience is certainly possible and more likely with "Gong" than it would be with "Tornado."

The only musical element that can allow us to experience "Gong" as a perpetual set of perceptual possibilities is the fact that the metric dissonance created by the guitar line continues throughout the entire piece, and though it does not gain any additional structural strength or saliency in the music, our perception of its significance or our notice of it can rise and fall. If the guitar did not continue, we would experience "Gong" as mostly perceptually consonant. If the guitar did continue but also grew in significance (perhaps by growing in volume or by reinforcement from other parts), we would likely experience "Gong" more similarly to how we experience "Tornado" where the ability to toggle back and forth between perceptual consonance and perceptual dissonance is stronger than ever. The reality is that the guitar line does continue for the entire piece, but remains somewhat in the background as driving force for the music. Nonetheless, we have the ability to, at any moment, attune to the guitar line that at some point held

structural significance when it created an ambiguous metric context upon its initial entry. If this moment when we first heard the guitar enter the piece created within us a strong visceral response (likely pushing us into perceptual dissonance at that moment), then we can, at any moment throughout the remainder of "Gong," toggle back and forth between perceptual consonance and perceptual dissonance because the visceral memory of its first impression has left an imprint.

*A Few Words Concerning the Studio Version of "Gong"*

"Gong" as it appears on *Takk...* is nearly identical to the *Heima* live version except for one major difference: at the ninth measure, when the drums enter the texture, the string ostinato stops and never returns! Keeping in mind what enabled the C<=>D timelessness in the live version, we have to ask: does such a change affect how we can experience musical timelessness? The answer is yes. In this particular version, the drum kit literally takes the place of the string ostinato in maintaining or clarifying a clear metric context of 4/4. In the live version, we saw that the drum kit reinforced the ever-present string ostinato. Still, the metric nonalignment is present through as much of this version as it is with the live version because the guitar line is the same between the two versions.

The lack of the strings may incline us to forget the metric ambiguity first presented by the guitar's entry because what that made that ambiguity most poignant—the strings juxtaposed with the electric guitar (as heard in mm. 5-8)—is no longer present in the music. In other words, even though the drums definitely instill the same meter as

the strings, we do not necessarily correlate the perceptual affect of the drums with that of the strings. The piece can still be C<=>D timelessness if we hear the drums as *the replacement* for the strings, or as reinforcing the meter the strings initially established. In such a case, the metric dissonance of the guitar can regain strength and perceptually pull us often as we shift our aural orientation to it. But if we hear the drums as *a new voice* unrelated to the strings, we are likely then to interpret the timelessness created as a D-->C timelessness with peaks of perceptual dissonance where we might notice the metric dissonance of the guitar line, rather than C<=>D where both perceptual possibilities are sustained.

In summary, we have seen that "Gong" allows us to toggle back and forth between both perceptual climates, though perhaps not quite as easily as we can when listening to "Tornado." Nevertheless, the three specific musical strands that create multiple perceptual possibilities are retained for the duration of the live version, and even though the drum kit reinforces the metric clarity of the string ostinato, the continual presence of the metric dissonance of the guitar line can at any moment shift our perceptual climate.

**Chapter Summary**

In this chapter, we have focused on the most nuanced timelessness: C<=>D. In "Tornado" we saw that multiple perceptual possibilities were constantly at work through the simultaneous presence of metric clarity and metric ambiguity through the relationship between the piano pulses and the bass drum kicks. Although the piano and the bass drum

do not align metrically, the starting-points of their periodicities do coincide. Additionally, we saw that multiple times within every section, our perceptual climate could be changed depending on whether we focus our attention on the musical details (such as the piano pulses) or on the overall affect.

Similarly, we saw in the live version of "Gong" that the musical elements which play a primary role in enabling C<=>D are maintained through out the entirety of the piece. Nearly all of the parts reinforce the meter originally implied by the string ostinato. However, the guitar line initially created an ambiguous metric context upon its entry and remains present in the song as an unceasing doorway into shifting perceptual climates. We also saw that the ability to toggle between perceptual climates in "Gong" has much to do with strength of the visceral affect we experience when the guitar first enters the texture. Even where the string ostinato does not continue (in the studio version), C<=>D is possible if we correlate the strength of the guitar's metric dissonance as it was first experienced against the string ostinato, with its dissonant relationship with the drum kit.

# CHAPTER VI

## SUMMARY

Over the course of this study, we have been exploring timelessness in music. In all the case studies we have examined, we have seen how the moment of musical timelessness takes place during a transition from perceptual consonance to perceptual dissonance or from perceptual dissonance to perceptual consonance. In the exact moment of these transitions, we are able to experience both perceptual climates simultaneously where one is the memory of what we have just experienced while the other is the reality of the moment unfolding before us. By experiencing both perceptual climates simultaneously, we feel a sense of transcending time or of being suspended above time.

We have also seen that each perceptual climate is often the direct result of musical consonance and musical dissonance, particularly of metric consonance and dissonance. Rhythm and meter play a crucial role in how we entrain music and where we focus our attention. Knowing *when* something might happen helps us in our understanding of *what* that something is. Furthermore, our expectations as listeners are primarily seated on issues of temporality. Expectations for future events rely heavily on the memory of past patterns and together, our memories and expectations help us form more expectations about what we are hearing.

Perceptual consonance and perceptual dissonance are not always the direct result of musical consonance and dissonance, however. We have also seen that our perceptions of musical material can shift depending on the frequency of repeated exposure, complexity, and surrounding musical material. As we saw in “Race: In,” metrically

dissonant beat subdivisions can cease to be perceptually dissonant because we grow used to them over time and come to expect them. As we saw in “Pyramid Song,” a vague metric context can be so artfully constructed that we are occasionally tempted to impose metric construals that may momentarily clarify the meter of the piece even though the vague metric context remains vague. And as we saw in “Tornado,” metric ambiguity can allow us to entrain to one thing over another and so where there might be musical dissonance, we can focus our attention past the musical dissonance and be in a climate of perceptual consonance.

Pieces can have an overarching perceptually consonant climate that is interrupted by peaks of perceptual dissonance, as we saw in “Almost” and “Race: In.” In such cases, the music is mostly consonant, where the beat is clear and the meter is discernible. Yet, there are places of discontinuity where the music is interrupted by sudden switches in timbre or groove, and we are unable to predict the nature or the location of those switches. These pieces exhibit the same fundamental characteristics of Kramer's moment form: marked by discontinuities, fundamental nonlinearity, and a nonlinear binding logic that holds the piece together. These pieces display C-->D timelessness where most of the time, we are in a perceptually consonant climate with occasional peaks of perceptual dissonance.

Pieces can also have an overarching perceptually dissonant climate with peaks of perceptual consonance, as we saw in “Pyramid Song” and “Panda.” The perceptual dissonance is sustained by a vague metric context that either tempts the listener to occasionally hear metric clarity or is the result of a breakdown in anything metrically

clear or stable. In both cases, we saw that a perceptually dissonant climate must be sustained overall and the listener must be blocked from growing used to it or coming to accept it. These pieces demonstrate D-->C timelessness.

Finally, there are pieces that have perceptually consonant and perceptually dissonant climates simultaneously grounded on musical consonances and dissonance that carry equal weight in significance and saliency. Such pieces allow us to hear and experience the music in multiple ways at any given moment. As we saw in "Tornado" and "Gong," we can at any moment be in an overarching perceptually consonant climate and also in an overarching perceptually dissonant climate at any moment. Because these pieces contain specific strands of musical material that act as the primary ingredient for creating paradoxical features in the music (such as linearity and nonlinearity, metric ambiguity and metric clarity, listening across the piece and listening to finite details), either perceptual climate is possible and sustainable at any moment. These pieces are examples of C<=>D timelessness.

**Justification for the Study**

The importance of this study and all our findings is two-fold. Firstly, the experience of timelessness in music is an experience that many people have acknowledged, yet few have explored in any detail. In this study, I have attempted to explore some of the perceptual and musical factors that are behind what we call a timeless experience in music. In our discussions and applications of memory and expectation, I have offered some basic concepts for understanding what musical

timelessness is: a matter of simultaneous challenged and unchallenged expectations, where one exists in our mind and the other in reality. In our applications of perceptual consonance and perceptual dissonance, I have provided some basic musical parameters and a system of categorization for understanding how the experience can take place. In short, now we have some tangible tools we can use for further discussing and exploring timelessness in music that we did not have before.

Secondly, where there has been some level of exploration or discussion on musical timelessness, I have shown that musical timelessness is not merely a matter of lengthy pieces, prolonged processes, or stasis, as has been suggested. Although these elements can play a role in creating musical timelessness, I have instead shown that musical timelessness is truly a matter of memory and expectation, regardless of how long the piece may be, or how drawn out a process might sound, or how static a piece is at its foundation. In this way, the perceptions of the listener are placed at the highest level of analytical importance and upheld as the foundation governing all resulting conclusions. For this reason, it has not been my purpose to impose any specific listening experience on the reader. Instead, I offer examples of how a piece or song *might* be perceived and from there, I apply an analytical interpretation that makes an effort to distill some of the necessary musical and perceptual elements at work in creating musical timelessness.

## **Possible Applications for the Future**

This study has been an initial attempt to distill, describe, analyze, and categorize some of the musical and perceptual parameters at work when we experience musical

timelessness. As such, several avenues for study and application have necessarily been left unexplored. One such possible avenue that may prove especially informative is an empirical study that includes data analysis. One of the strengths to such writings as London's *Hearing in Time* or Huron's *Sweet Anticipation* is that the authors are able to connect their analytical conclusions to actual findings through experimental research that corroborates those conclusions. I can envision studies that measure the frequency and placement of perceptual transitions between consonance and dissonance and cross-compare those measurements with the frequency and placement of musical consonances and dissonances. I can also imagine a study that is focused on one piece, measuring applicable data from multiple listeners across the board to examine the strength or validity of musical timelessness in the piece.

Another future application for this study might be a survey approach similar to what we found in Hesselink's article on “Pyramid Song,” were the data is more qualitative and less quantitative. A large spectrum of listeners could be surveyed in their responses to specific questions that would attempt to isolate the existence and nature of each listener's musical timelessness experience. Such an approach could easily be applied to a specific piece or to the concept of musical timelessness in general.

Even the philosophical issues that surround the concept of musical timelessness have not been fully explored, although Kramer in *The Time of Music* and especially Hasty in *Meter as Rhythm* make a pretty substantial dent in this approach. Further philosophical explorations of musical timelessness influenced by this study would likely be more focused on issues of human perception, the affect of music on human perception, and

vice versa. The value of such an approach would likely reveal other crucial factors in our exploration of musical timelessness that this study was unable to include.

Finally, even the basic concepts of perceptual consonance and perceptual dissonance that have been developed in this study could be useful and potentially immediately applicable to standard theory and analysis pedagogy. Often, music theory and analysis has been faulted for being too prescriptive, seen as more of a hinderance describing or understanding a musical moment. On the one hand, anything that is analytical by nature will likely be accused of this. However, one of the areas where the field of music theory and analysis can continue to develop is in giving credence to listener perceptions, even over and above what our Roman Numeral analysis will tell us, for example. Of course, by nature listener responses are vast and varied. Developing any type of analytical system that takes even a single aspect of listener perceptions into account can be daunting. However, part of our purposes in this study has been to do precisely that: to create some analytical tools that express listener perceptions when it comes to musical temporality.

## Closing Remarks

As I have stated multiple times throughout this study, the experience of musical timelessness is first and foremost exactly that, an *experience*. Then it is a concept. All of the concepts that we have outlined, defined, and discussed throughout the course of this study—concepts which have been necessary for our exploration and analysis of musical timelessness—must always remain subservient to the perception of each individual

listener.  At its core, this is the heart of this study. Without the experience of musical timelessness, we would have nothing to discuss. Nevertheless, as we have seen, there is a consistency in both the nature of such an experience generally and when we might happen upon it in the course of listening to a piece of music. Even after we gather all our concepts, experiences, analyses, provisions, and conclusions together, we can still stand back and marvel at the multi-faceted nature of music and of human perception—how both provoke each other and inform each other. We can still stand back and enjoy the fact that such an experience as musical timelessness, as paradoxical and mysterious as it may seem, is even possible.

# APPENDIX

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