STASIS IN MUSIC AND THE FORMATION OF MUSICAL STATES

and

A PORTRAIT OF AN INFANT (ON COMING INTO BEING)

By

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A Dissertation submitted to the

Graduate School-New Brunswick

Rutgers, The State University of New Jersey

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

Graduate Program in Music

written under the direction of

Dr. Gerald Chenoweth

and approved by

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New Brunswick, New Jersey

May, 2012

ABSTRACT OF THE DISSERTATION

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The perception of structure in music is frequently based upon a theoretical understanding of the musical elements. This basis tends toward stylized analysis of a specific element of the music, for instance, pitch, form, rhythm, et cetera, with the goal of revealing the tendencies or development of this element throughout the piece. Not frequently discussed is the function and significance of stasis in perceiving the structure of music. A “moment” of stasis, as Stockhausen called it, can alternatively be understood as a “state of existence.” A static section of music can give a sensation of inactivity often comprehended as a slowing of the music’s forward momentum, or temporality, as contrasted with more dynamic states. A musical state is reliant upon a particular treatment of its internal elements, incorporating varying degrees of limitation and change. Analysis of both dynamic and static states is considered in an endeavor to further understand the function of musical stasis in the structure of a composition.

ACKNOWLEDGEMENT

The author would like to thank all of the members

of his dissertation committee,

Dr. Richard Chrisman, Dr. Christopher Doll, Dr. Reiko Füting,

and particularly Dr. Gerald Chenoweth.

The author would also like to thank his friend and colleague Josh Booth

for his insight and perspective.

This thesis is dedicated to my wife, Emily, for her continued support and love,

and to my son, Joshua, for his inspiration.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF MUSICAL EXAMPLES

LIST OF REPERTOIRE EXAMINED

Beethoven, Ludwig van	*Sonata in A♭ major*, Op. 110 (1821)
Boulez, Pierre	*Le marteau sans maître, “Avant ‘l’artisanat furieux’”* (1954, 1957)
Chopin, Frederick	*Prelude in B♭ major*, Op. 28, No. 21 (1839)
Debussy, Claude	*Jeux (1912)*
Debussy, Claude	*Préludes, Book I*, *Voiles* (1909)
Feldman, Morton	*Bass Clarinet and Percussion* (1981)
Feldman, Morton	*Crippled Symmetry* (1983)
Feldman, Morton	*Piano and String Quartet* (1985)
Ferneyhough, Brian	*Second String Quartet* (1982)
Glass, Philip	*Two Pages (for Steve Reich)* (1968)
Grisey, Gerard	*Prologue* from *Les Espaces Acoustiques* (1976)
Lachenmann, Helmut	*Guiro* (1969)
Ligeti, György	*Piano Étude No. 1, Book I, Désordre* (1985)
Ligeti, György	*Piano Étude No. 3, Book I, ‘Touches Bloquées’* (1985)
Ligeti, György	*Lux Aeterna* (1968)
Mozart, Wolfgang A.	*Sonata No. 17 in B♭ major*, KV 570 (1789)
Reich, Steve	*Piano Phase (1967)*
Reich, Steve.	*The Desert Music (1984)*
Schoenberg, Arnold	*Five Orchestral Pieces* Op. 16, No. 3 (1909)
Stockhausen, Karlheinz	*Kontakte (1960)*

Tenney, James	*Spectral Canon for Conlon Nancarrow* (1974)
Tenney, James	*Swell Piece No. 2* (1971)
Varése, Edgar	*Intégrales* (1925)
Webern, Anton	*Symphonie*, Op. 21 (1928)
Woodward, Craig	*In Utero: From Week 37 to Birth* from *A Portrait of an Infant (On Coming into Being)* (2009-2011)
Woodward, Craig	*Meditations on the Perceived Stasis of Light* (2011)
Woodward, Craig	*Occasional Places* (2008)
Xenakis, Iannis	*Okho* (1989)

STASIS IN MUSIC AND THE FORMATION OF MUSICAL STATES

CRAIG HEALEY WOODWARD

INTRODUCTION

The idea that actual stasis exists within music seems to be implausible, given that music exists within time, where all musical elements are in motion and rely on time to achieve a sense of forward propulsion. However, it is not exact clock (ontological) time that a musical work is perceived within, but rather a combination of the psychological time of the listener and the musical time created by the piece itself that influence how the music is heard. Jonathan Kramer writes 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".[1] Ultimately, this means that the perception of a work is highly prejudiced by the psychological, physiological and subjunctive natures of the listener, which can then be influenced by the type of musical time that is being heard.[2] In other words, vastly different elements will change how a listener processes what is heard, from *a priori* knowledge of classical formal structures to a bias for or against the performer or composer, to a heart condition or emotional imbalance. The composer Gérard Grisey writes:

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[1] Kramer, Jonathan. *The Time of Music*, New York and London: Schirmer Books (1988), p. 6.
[2] Musical time is the time a listener perceives the music to exist within, or the apparent temporality defined by musical elements flowing forward.

> "It is in fact the listener who selects, who creates the changing angle of perception which will endlessly remodel, perfect, sometimes destroy the musical form as the composer dreamed it. In turn, the listener's sense of time is in correlation with the multiple times of his native language, social group, culture and civilization."[3]

The conscious processing of a piece of music is then highly impacted by the moment of perception, which is influenced directly by the listener involuntarily. Phenomenologist Alfred Pike defines perception itself in relationship to music:

> Perception not only embraces external, but internal experience. It consists of actually given sense qualities [that] on the basis of earlier experience are ascribed to the object. Perception is the source of mental activity underlying musical experience. It moves along with the tonal events and cognizes, to a certain extent, what it encounters. Musical perceptions are interpreted and assimilated as they are experienced. The perception of musical events, their relationships, and meanings takes place through the intuitive cognition of human experience as such.[4]

The perception of music is then a highly subjective experience based on an objective source, that of sound.[5] The cognitively interpreted experience that the listener undergoes during and after a musical listening is distorted by both *memory* and emotion. Grisey writes that one's memory of music may be seen as a "temporal perspective moving from the present to the past which progressively degrades sounds, those furthest away in time being the most indistinct."[6] This is counterbalanced with a listener's ability to recall musical events that are

[3] Grisey, Gérard. "Tempus ex Machina: A composer's reflections on musical time" in *Contemporary Music Review, Vol. 2 (1987)*: 239-275, p. 273.
[4] Pike, Alfred. "The Phenomenological Approach to Musical Perception" in *A Phenomenological Analysis of Musical Experience and other related essays*. St. John's University (NY): St. John's University Press (1970), p. 8.
[5] Ibid, p. 9.
[6] Grisey, Gérard. "Tempus ex Machina: A composer's reflections on musical time" in *Contemporary Music Review, Vol. 2 (1987)*: 239-275, p. 272.

repetitive, salient, or sequential in nature.[7] The relevance of musical anticipation, a result of remembering musical events and consequentially expecting their recurrence, is discussed later within the "Temporal Boundaries" section. Kramer writes of "the 'distortion' of absolute time by minimally or maximally filled intervals", alluding toward experiences that are perceived as being boring or exciting and thus felt as longer or shorter durations.[8] In essence, what is generally perceived as time is not the same as what is *understood* as time, nor is it the same as how a listener perceives music existing *within* time, nor is the perception of musical time the same as a *recollection* of musical time after the fact.[9]

In regard to the processing of information, the brain has a marked tendency toward categorization, a subject typically explored in the field of cognitive psychology.[10] During the first experience of a musical work, a listener's tendency will most likely be to immediately categorize what is heard, as a way to comprehend the musical details. Psychologist Stephen McAdams writes that musical meaning can be extracted through the conception of separable, easily distinguished musical items (prototypes), and states that "these discrete identities

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[7] Ibid, p. 273.
[8] Kramer, Jonathan. *The Time of Music*, New York and London: Schirmer Books (1988), p. 331.
[9] While time may be absolutely understood as ontological and chronometric time, the perception of time refers to the subjective sensation that time moves faster when more events fill it, and slowly when less events fill it.
[10] Categorical perception explores the mind's perception of within-category and/or between-category differences (see Harnad, Stevan. "To Cognize is to Categorize: Cognition is Categorization" in *Handbook of Categorization in Cognitive Science* (2005) and Ibid. *Categorical Perception: The Groundwork of Cognition* (New York: Cambridge University Press, 1987). Jerome Bruner explores how categorization influences learning (known as 'concept learning') Bruner, Goodnow, & Austin. *A study of thinking*. New York: Science Editions (1967).

[musical motives] are essential for the building of complex syntax and structure."[11] This can be understood as *macro-listening*, leading to a top-down cognitive grouping of similar musical elements, that may be understood as themes, transitions, repetitions, rhythmic patterns, and so on. For example, when listening to a Mozart sonata, macro-listening allows one to first identify the genre type (classical music) followed by an organization of present instruments and timbres, and continuing on to large contrasts in texture or sections, and then to smaller and less obvious details. For the uneducated listener, macro-listening may take place almost entirely at the subconscious level, leading to a grouping of all songs classical, or bluegrass, or classic rock. The more experience and *a priori* knowledge the listener has, the more readily the new piece will make sense on the conscious level. A learned musician may even be able to maintain awareness of macro-listening down to the motivic layer. In other words, the more experience a listener has with a certain genre of music, the more details will immediately be categorized by the brain upon a first listening.

In his book *Music in the Moment*, Jerrold Levinson generalizes this type of listening even further: "a comprehending listener is conscious of motion, direction, force, tension, and so on in the succession of tones reaching his ears".[12] In other words, a person who "grasps musical movement and its embodied content" is "tracking" the piece of music.[13] Levinson suggests that

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[11] McAdams, Stephen. "Music: A science of the mind?" in *Contemporary Music Review, Vol. 2* (1987): 1-61, p. 55.
[12] Levinson, Jerrold. *Music in the Moment*, Ithaca: Cornell University Press (1997), pp. 23-24.
[13] Ibid, pp. 23-24.

tracking may occur while listening to a piece for the first time, and that internal tracking deepens as the listener's familiarity for the piece grows, resulting in a "sensitivity to divergences from the proper course of the piece."[14] He further submits that a listener may lack an *a priori* understanding of musical designs, and that "irrespective of any architectonic awareness…a piece of music coheres for a listener from moment to moment and is followed absorbedly and responsively as it unfolds." He continues:

> A piece typically "makes no sense" to a listener when he is unable to find it coherent on a small scale, when he is unable to perceive local connections…when he cannot become absorbed in the music's developing present. A listener might, on the other hand, find the large-scale organization of such a piece intelligible, even readily apparent on listening, but that will be of no consequence if the music never congeals for him on a moment-to-moment basis.[15]

In other words, listening to the moments of a piece of music, that "following the development of events in real time", could potentially lead to a conception that the music itself existed *purely* in the moment.[16] To be able to perceive music as a collection of moments is significant, because it frees the listener from the obligation to understand music analytically.[17] Nonetheless, the conscious mind is unable to disengage while actively listening to music, and still tends to categorize events as they occur. In order to accomplish this with music, the brain must

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[14] Ibid, pp. 23-24.
[15] Ibid, pp. 23-24.
[16] Ibid, p. 29.
[17] Levinson concludes this himself, stating that "no reflective analysis of or theoretical grip on musical architecture can substitute for the real-time apprehension of a musical work…", and that analysis is not required for a listening that yields musical comprehension (Ibid, p. 175). It is my opinion that form congeals based on at least a partial understanding of the musical details. While listening, the brain often compacts details together in generalizations, allowing 'real time' listening to continue.

function with a cognizance of time on some level, although the listener may be entirely unaware of how they interpret this sensation of time. As Kramer states:

> We are aware of approximately how much time has elapsed in various sections of a composition. Without this awareness we could not perceive or understand a work's proportions. 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?[18]

To answer Kramer's question, a sense of musical timelessness could be alternatively viewed as a disorientation of the 'regular' musical time that one comes to expect when listening to Beethoven or Bach. Music that is "temporally undifferentiated" lacks phrasing, "results in a single present stretched out into an enormous duration, a potentially infinite "now" that nonetheless feels like an instant."[19] Thus, Kramer's "vertical time" exists in music that lacks "temporal articulation" and presents a "total consistency" of sound.[20] Musical stasis is therefore a result of a particular treatment of both temporality and texture. While listening to a static piece of music, the psychological effect may actually be a sensation that the conscious imagination is entering a condition of vertical time, and even while knowing that true stasis is illusory, the intellectual brain does not have enough temporal information to create a familiar musical time, and is thus forced to process the individual moments of the piece as they occur. Whether this is done as macro-listening or moment-to-moment tracking, it is clearly a very

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18 Kramer, Jonathan. *The Time of Music*, New York and London: Schirmer Books (1988), p. 7.
19 Ibid, p. 55.
20 Ibid, p. 55.

different way of listening to music.

It must be stressed that a determination of *exactly* how or what a listener processes from music is yet unknown. Essentially, enough is not yet known about the brain's full ability to apprehend, associate, and interpret music. What is known is that these strings of notes, timbres and rhythms produce emotional and intellectual responses, demanding simultaneous processing by both hemispheres of the brain. Any understanding of musical perception is further complicated by the fact that processing musical sensation is subjectively interpreted, and thus prejudiced by the individual's musical and non-musical experiences, which experiences are directed by cultural and societal factors.[21]

DISCUSSION OF STATES

Macro-listening allows the listener to understand music at its most basic level, that is, whether a sense of directed motion is present in the music or not. The degree of activity, whether dynamic or static, is best defined as existing in *states*, where a state is defined as "the particular condition of something in a specific time"[22] and "a mode or condition of being."[23] A state of existence in music is therefore determined by the boundaries, or consistent elements, which

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[21] For an insightful exploration of the difficulties in the field of musical perception and psychology, read chapter 11, *The Perception of Musical Time,* in Jonathan Kramer's book *The Time of Music.* He discusses the need to analyze the *whole* musical listening experience, and postulates that a major problem in this discipline is the psychologists' "simplistic understanding of music", in addition to their lack of awareness regarding current theoretical positions (pp. 322-324). For a study of the complexities arising with musical stimulus and the brain, read Oliver Sacks' *Musicophilia* (New York, Toronto: Alfred A. Knopf, Inc., 2007).

[22] Apple Dictionary, version 2.0.3 (51.5), Apple Inc., 2005-2007, "state"

[23] Merriam-Webster's Collegiate Dictionary, Springfield, Massachusetts: Merriam-Webster Inc. (1998), p. 1799.

maintain it essentially as static or dynamic in character, such as a drone or ostinato compared with a transitional passage. In physics, a dynamic process is one that is described as characterized by constant change, usually relating to forces producing motion. By contrast, stasis concerns bodies at rest or forces in equilibrium, as in a suspension bridge.[24] Equilibrium within an organism manifests itself as homeostasis, a regulator that preserves a constant body temperature or red blood cell count. Pierre Boulez describes these processes using music-specific terminology:

> …there are two kinds of local structures: what we call *static* structure and *dynamic* structure… In what sense can a structure be called static? In the sense that it presents–statistically speaking–the same quality and the same quantity of events in its unfolding. This *static* quality is entirely independent of the *number* of events, whose constant density is their important feature. Static structure may admit of a large range of all kinds of note values, or a small range; it may be based on extreme, though constant, selectiveness or on a complete absence of selectiveness–but all these criteria must of course remain virtually constant. On the other hand, *dynamic* structure presents as an evolution, sufficiently large to be perceptible, in the density of the events that succeed each other, and in their quality. This *dynamic* quality, like the static quality mentioned above, is entirely independent of the frequency, the number of these events; dynamic structure involves a selectiveness that may vary in strictness, but is always evolving, i.e. the criteria of this selectiveness are perceptually changing.[25]

Therefore, the degree of dynamic process may be seen in proportion to the evolution or development that the music undergoes, which is often directly tied to patterns in temporality, linear and vertical continuity, and rhythmic and motivic elements. Areas of static music may be marked by repetition, most often

[24] Apple Dictionary, version 2.0.3 (51.5), Apple Inc., 2005-2007, “stasis”
[25] Boulez, Pierre. “Form” in *Orientations*, Trans. Martin Cooper. London: Faber and Faber Limited (1986, 1990), p. 91.

extreme, and usually an audible limitation of pitch, register, or rhythmic figuration.

Several principles derived from Boulez's comments merit emphasis. First, that a constancy of density is necessary in order to define the quality of the state. Second, that the quantity of elements or events is unimportant, as long as its constancy is maintained. Once a state has been identified with these criteria, a third aspect must be dealt with, regarding the effect of change on a state. To become aware of change, one must first be aware of the particular area, or *boundary*, within which the change occurs. For example, a state is a generalized formal boundary; the degree of activity of the state determines whether it is perceived as static or dynamic. Conscious awareness of time and the perception of musical time and temporal events result in a sense of *temporal* boundaries, of which there are three specific divisions: the section, the phrase and the motive.[26] When phrasing is clear, this temporal unit helps create clear relationships among the other musical elements. When phrasing is blurred due to either ambiguity or lack of change in musical elements, temporal disorientation results. This clarity or confusion directly affects the ability to interpret a state. In other words, the perception of dynamic or static states is determined by the condition of the temporal boundaries, and these boundaries are directly correlated to how the internal elements are organized. The internal elements then, however they may be configured, allow the perception of temporal boundaries, and thus the

[26] Lerdahl and Jackendoff propose that these three temporal units define the musical segmentation that comprises grouping structure in *A Generative Theory of Tonal Music* (Cambridge, MA: MIT Press, 1983).

perception of a state.

Texture is the result of a combination of all internal musical elements. These musical elements are pitch, register, rhythm, dynamics and timbre. While dynamics have the potential to define dynamicism or stasis, their influence is often superseded by that of pitch, register and rhythm. In other words, a crescendo from *piano* to *forte* is a dynamic process that may exist in either a dynamic or static state. While one could say that a crescendo makes a static state more dynamic, a single dynamic across an entire dynamic state does not make the state more static. Dynamics may therefore be considered an inconsistent element with regard to influencing a state's consistency, and may or may not support the particular state type. Where pitch is concerned, invariance and modality contribute to a perceived boundary, discussed below in terms of a *pitch class collection*. A particular pitch collection allows one to hear a tonal piece and distinguish movement from a minor mode to a major mode, to understand the difference between a stable thematic area and an unstable chromatic transition. Robert Morgan discusses this phenomenon in terms of the pitch orientation creating a "tonal space", which allows a listener to move from one event to another, and "distinguish between simultaneous musical events."[27] Of course, this is not to say that any of the musical elements are *free* of a reliance on time, but rather that the musical elements, being connected synergistically,

[27] Morgan, Robert P. "Musical Time/Musical Space." In *Critical Inquiry, Vol. 6, No. 3 (Spring, 1980)*: 527-538, p. 528.

create a substructure that supports the overall musical state. Morgan notes that when “the substructure is solely defined by its content….all relationships must be defined contextually by the composition itself” (and not by preordained relationships). The result may is often that the relationships among elements are “defined by surface emphasis…particularly repetition”. In cases such as this, Morgan states, “the structure seems ‘frozen’. It is as if a distinct segment of musical space is carved out for the purposes of a particular musical statement, which seems to hang motionless within it.”[28] Morgan’s observation of internal elements functioning on a more surface level and thus resulting in a “motionless” structure is a perfect example of a how a static state operates. The opposite is also true–internal elements that contribute toward overall dynamic motion and function on both surface and background layers will result in a dynamic state. In essence, there is a direct relationship of the small parts to the whole when it concerns the nature of a state.

In addition to pitch and dynamics, the other internal boundaries that make up the substructure of a state are register, with specificity to its limitation, timbre, which may function in a similar manner as dynamics do, and rhythm, which exists within the temporal boundary as well. Because of the dualistic positioning of rhythm, it can serve to connect the internal elements to temporality, even when phrasing is blurred or non-existent. The argument herein is that a musical state is defined at the substructural boundary level predominantly by pitch, with the other

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[28] Ibid, p. 534.

substructural elements supporting or opposing the pitch structure. Obviously, pitch does not exist without reliance on timbre, dynamics and register, which are themselves reliant on a connection to sound itself, regardless of whether this sound be pitch-based or not. Pitch can, however, exist without a reliance upon rhythm, and it is in this sense that pitch is potentially temporally free. Fred Lerdahl discusses this concept as tonal hierarchies:

> A tonal hierarchy…embodies the hierarchical relations that accrue to an entire tonal system beyond its instantiation in a particular piece. Such a hierarchy…represents more or less permanent knowledge about the system rather than a response to a specific sequence of events. This knowledge arises from listening experience. Within bounds, exposure to a different musical idiom gives rise to a different tonal hierarchy.[29]

Lerdahl differentiates between tonal and atonal pitch structures, with the latter being “flat” due to the lack of “stratified distinction between harmonic and non-harmonic tones, or, more generally, between stable and unstable structures”.[30] Pitch hierarchies may thus be understood as the space in which a certain constancy is achieved. Because the presence of pitch constancy (or the lack thereof) directly effects an aspect of the music not directly tied to temporality, it is this substructural element that is given priority when the determination of a state type is concerned. A chart of these boundaries and their relationships is depicted below in Table 1. Here the arrows represent the incorporation of one boundary level into another, e.g. the internal elements contribute to the perception of temporal units, which in turn produce a state.

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[29] Lerdahl, Fred. *Tonal Pitch Space.* Oxford and New York: Oxford University Press (2001), p. 41.
[30] Ibid, p. 344.

Table 1 – Boundaries that contribute to a State

STATE (Boundary)

⇧

TEMPORAL UNITS (Boundaries)

Section	Phrase	Motive

⇧

INTERNAL ELEMENTS (Substructural Boundaries)

	Pitch		
Register	Rhythm	Timbre	Dynamics

PRECEDENTS OF MUSICAL STASIS

Prior to the era of common-practice tonal music, i.e. the Medieval and Renaissance periods, both dynamic and static music can be found. The principles of dynamic music were expressed through goal-oriented linearity, while static music was linear but not necessarily goal-oriented. The era of tonal music was principally an era of dynamic music, where the tonic and some other diatonic harmony, usually the dominant, stabilized music hierarchically at fore- and background levels. Within this system, individual pitches were either non-chord tones or chord tones, and imparted a sense of directed resolution. This was accompanied by period phrase structures, a harmonic foundation, and an underlying regular meter, combining to produce the classical forms. Morgan writes that “the entire nineteenth century had witnessed a progressive weakening of its constructive force, along with corresponding shifts in compositional esthetic."[31] Composers brought about change that impacted all musical elements. Pitch shifted both harmonically and melodically, resulting in a focus away from the circle of fifths and toward third and second harmonic relationships, while melodic tendencies moved toward a greater use of the semitone, as semitones avoided resolution and bred a greater level of instability. In discussing Mahler's use of half steps, Richard Taruskin writes: "for purposes of ordinary harmonic navigation half steps continued their progress toward domination–a progress that can be traced back to Schubert, and that had reached a previous peak in Wagner and Bruckner, Mahler's most immediate mentors."[32] In addition to pitch, musical shifts occurred in the areas of form, rhythm, and timbre, resulting in a move away from dynamic music informed by hierarchical structures and temporal clarity. At this point in history, moments of musical stasis began to appear, because the need for a type of stabilization was apparent. Of course, the shift toward composing stasis in music was not immediate, nor has it been all-inclusive.

Four composers spring to mind who, in certain compositions, entertained the notion that stasis could exist music, and whether this was purposeful of not, these composers left a mark that was both striking and influential. The first of these is Claude Debussy; the second, Arnold Schoenberg and his Op. 16, No. 3, of the *Five Orchestral Pieces* (1909); next, Edgar Varèse and his exploration of sound mass; and last, Karlheinz Stockhausen and his theory of moment form.

[31] Morgan, Robert. *Twentieth-century music*. New York and London: W.W. Norton and Company (1991), p. 1.
[32] Taruskin, Richard. *Oxford history of western music: 4, Music in the Early Twentieth Century*. Oxford and New York: Oxford University Press (2010), p. 16.

Debussy moved away from the 19th century conception of form and pitch structure as much as his contemporaries Schoenberg and Varèse did. In his search for techniques that would help him avoid the Austro-German tradition of narrative, Debussy found inspiration in the Impressionist painters and Symbolist writers.[33] As Paul Griffiths describes, Debussy broke with the formal expectations of diatonic harmony by using modes, particularly the whole tone collection, but his work was not atonal in detail, as was Schoenberg's.[34] Griffiths continues, "the unacceptable thought is [for Debussy], as in a dream, clothed in acceptable images."[35] As Taruskin writes of the whole-tone scale, "there is nothing to establish 'attraction' between the harmonic elements: neither circle-of-fifth progressions nor leading tones are possible….instead, everything coexists in relative harmoniousness, in what seems a single extended instant of time."[36] Taruskin's choice of examples has one of the longest sections of stasis in Debussy's music: the piano solo *Voiles* (*Préludes, Book I*, 1909) maintains the same whole tone scale (unordered PC set 10,0,2,4,6,8)[37] for the first forty-one measures, with the exception of one measure (PC 1 and 7 are added).[38] This does not mean that *Voiles* is completely static–both melodic and motivic aspects create a sense of directed motion. However, this "sense of unfolding is achieved

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[33] Griffiths, Paul. *Modern Music, A Concise History*, Revised Ed. New York: Thames and Hudson (1994), p. 11-13.
[34] Rather than working with modes, Schoenberg wrote with a focus on intervals.
[35] Ibid, p. 47.
[36] Taruskin, Richard. *Oxford history of western music: 4, Music in the Early Twentieth Century*. Oxford and New York: Oxford University Press (2010), p. 75.
[37] Throughout this paper pitch classes (PC) are given as unordered sets for the ease of identifying relationships, where C=0. Single pitches may be referred to as either PC number or letter name.
[38] Ibid, p. 74.

not through harmonic variety but by an accumulation of melodic ideas (motifs)”,[39] and it is exactly the repetition of motifs, rather than their development, that increases the static nature of the piece. A pedal B♭ also exists in all but eleven of sixty-two bars, a definitively static component that also functions as a grounding element. While most of Debussy’s works are not quite this static, his idiosyncratic approach to form, pitch and phrasing opened up the possibility of a music defined by abstract and ambiguous criteria.

Rather than avoid the old traditions, Schoenberg was determined to continue and revolutionize them. One of his relatively early ideas, that of *Klangfarbenmelodien*, was explored in his Five Orchestral pieces, Op. 16 (1909). Taruskin describes the music of the third piece, “Farben” (later published in 1949 under the title “Summer Morning by a Lake (Colors)” in both German and English),[40] as consisting of “very slowly changing harmonies [that] shimmer with dovetailed instrumental voicings, cause the timbres of sustained tones to shift subtly.”[41] This shifting of orchestral coloration at once clouds the effect of melodic motion while imparting its own timbral momentum. Overall, the piece is not really static because of the amount of change present; one could categorize it as somewhere between dynamic and evolutionarily static music. The success of the piece, in terms of its contribution to stasis, lies in its “blurring” capacities. The

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[39] Ibid, p. 75.

[40] For a full list of title changes, see Charles Burkhart’s “Schoenberg’s Farben: An Analysis of Op. 16, No. 3” in *Perspectives of New Music, Vol. 12, No. 1/2 (Autumn, 1973 – Summer, 1974)*: 141-172.

[41] Ibid, p. 339.

division between color and tone become obscured, and as Dahlhaus states, "instrumentation becomes *Klangfarbenmelodie* not because the pitch melody dwindles to monotony but because a balance is achieved between instrumentation and pitch melody in place of the usual predominance of the latter."[42] Rather that pursue this uniquely singular movement toward the possibility of a more static music, Schoenberg's obsession with discovering a new pitch language led him in a different direction, which he filled with a pitch-dense twelve-tone composition.

Richard Taruskin writes of Varèse's music of the 1920s and 1930s of being "out of joint with its time…he [Varèse] was nurturing, or trying to nurture, the complementary spirits of neoprimitivism and futurism", and attempting to continue the conceptions of Busoni.[43] Varèse developed the idea of 'sound-masses', which he lectured about in 1936:

> When new instruments will allow me to write music as I conceive it, the movement of sound-masses, of shifting planes, will be clearly perceived in my work, taking the place of the linear counterpoint. When these sound-masses collide, the phenomena of penetration or repulsion will seem to occur. Certain transmutations taking place on certain planes will seem to be projected onto other planes, moving at different speeds and at different angles.[44]

An examination of the piece *Intégrales* (1925), one of the principal works

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[42] Dahlhaus, Carl. "Schoenberg's Orchestral Piece Op. 16, No.3 and the concept of *Klangfarbenmelodie*" in *Schoenberg and the New Music*, trans. by Derrick Puffett and Alfred Clayton. Cambridge and New York: Cambridge University Press (1987), p. 142.

[43] Taruskin, Richard. *Oxford history of western music: 5, Music in the Late Twentieth Century*. Oxford and New York: Oxford University Press (2010), p. 185.

[44] Varèse, Edgard. "The Liberation of Sound" in *Contemporary Composers on Contemporary Music*, Schwartz, Elliott, and Barney Childs, Eds. New York: Holt, Rinehart and Winston (1967), p. 197.

exploring sound-mass, reveals an A♯ that is maintained on the music's surface for the first 1:40 minutes. While various percussion sounds and chords both perforate and create the overall resultant texture, there is no doubt that a generally static state exists. These types of 'transformational' states, made up of both fixed and unfixed elements, continues for the duration of *Intégrales*. Varèse discussed this idea of fixed elements, using the designation "zones of intensities", where differentiation in timbres and dynamics would help delineate formal layers.[45] John Strawn writes the following analytical remarks:

> *Intégrales* was created from a defined repertoire of organized sound masses, each of which is to be heard as a three-dimensional entity moving through space, appearing, disappearing, and re-appearing in the course of performance. The "framework" of this composition, the non-rigid "crystal form", is given by the number and frequency of such recurrences. The masses, in turn, are constructed from a fixed number of elements, which are exchanged between simultaneously and/or successively appearing masses. The masses are not bound to each other in an immobile stasis, since the motion of the masses in space also participates in the formal process by allowing for a dynamic exchange of elements.[46]

Varèse then, with his ideas of sound masses, shifting planes, and space,[47] was composing music of semi-static states long before Stockhausen conceived of moment form. It is not surprising that both composers ended up at the forefront of the *musique concréte* movement.

In a lecture given in 1971, Stockhausen discussed the concept of moment form in the following way:

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[45] Ibid, p. 197.
[46] Strawn, John. "The Intégrales of Edgard Varèse Space, Mass, Element, and Form" in *Perspectives of New Music, Vol. 17, No. 1 (Autumn-Winter, 1978)*: 138-160, pp. 157-158.
[47] Varèse, Edgar. "The Liberation of Sound" in Schwartz, Elliott, and Barney Childs, eds. Contemporary Composers on Contemporary Music. New York: Holt, Rinehart and Winston (1967), p. 197.

> When certain characteristics remain constant for a while–in musical terms, when sounds occupy a particular region, a certain register, or stay within a particular dynamic, or maintain a certain average speed–then a moment is going on: these constant characteristics determine the moment. It may be a limited number of chords in the harmonic field, of intervals between pitches in the melody domain, a limitation of durations in the rhythmic structure, or of timbres in the instrumental realization. And when these characteristics all of a sudden change, a new moment begins. If they change very slowly, the new moment comes into existence while the present moment is still continuing.[48]

Stockhausen's elucidation of moment form is also a fairly accurate description of a state. It can be said that a moment is a static state in time, a "concentration on the Now–on every Now–makes, as it were, vertical sections which penetrate across the horizontal portrayal of time to a state of timelessness, which I call Eternity."[49] Kramer, who designates the conception of stasis as existing in 'vertical' time (obviously connected to Stockhausen's use of the word 'vertical' from the above quote), writes the following, which clarifies moment form even further:

> Because moment forms verticalize one's sense of time within sections, render every moment a present, avoid functional implications between moments, and avoid climaxes, they are not beginning-middle-end forms….a composition in moment time has neither functional beginning nor ending. Although the piece must start for simple practical reasons, it does not begin; it must stop, but it does not end.[50]

Stockhausen explored moment form in works such as *Kontakte (1960)*, *Momente*

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[48] Stockhausen, Karlheinz. Compiled by Maconie, Robin. *Stockhausen on music: lectures and interviews.* London and New York: Marion Boyars Publishers (1989), pp. 63-64.

[49] Cited in Harvey, Jonathan. *Music of Stockhausen.* Berkeley: University of California Press (1975), p. 85. Originally published: Stockhausen, Karlheinz. "Momentform" in *Texte zur elektronische und instrumentalen Musik* (vol. I), Köln: Verlag M. Dumont Schauberg (1964), 189-210, p. 199. It is interesting to note that Kramer uses the same word, vertical, to define these timeless, static slices of music.

[50] Kramer, Jonathan. *The Time of Music*, New York and London: Schirmer Books (1988), pp. 202-203.

(1961-1972), and *Mikrophonie I (1964)*. Upon listening to the opening of *Kontakte* (Struktur I: Beginning, in the electronic-only version), Stockhausen's first conscious moment-form piece, one is struck by the idea that an awareness of very basic parameters guides the composition of each moment.[51] The opening two minutes seem filled with micro-moments that come and go, and this is in great contrast to the following Struktur II, which is slow and unified in sound definition. Jonathan Harvey describes a middle section of *Kontakte*, perhaps Struktur X: "it [the sound] starts as a 'bass voice' and ends as a 'drum'. Pitch and timbre (partials) become rhythm and pitch when slowed down below sixteen fundamental impulses per second."[52] It is perhaps even this focus on the electronic manipulation of pitch and timbre that led Stockhausen to the conception of moment form. These "individual, implicit eternities" differ from a state in one substantial aspect: Stockhausen's moments are fundamentally static in nature, and whether that stasis is directed toward some transformation or not, it is still predominantly static.[53] A state, on the other hand, may be either static *or* dynamic, and as will be discussed below, may incorporate transitional elements as well. Whether or not Stockhausen realized that moments could envelope areas of both activity and inactivity, he was nevertheless an innovator, whose ideas about sound, notation and time had a significant impact on composers and the music of his era.

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[51] Ibid, p. 201.
[52] Harvey, Jonathan. *Music of Stockhausen.* Berkeley: University of California Press (1975), p. 30.
[53] Griffiths, Paul. *Modern Music and After.* Oxford and New York: Oxford University Press (1995), p. 145.

THE STATIC-DYNAMIC SPECTRUM

In order to better categorize the various states that exist, it is helpful to create a continuum whereupon state types may be compared. This continuum, designated the 'static-dynamic spectrum' and seen Table 2, has at its center dynamic states, which are best associated with classical music.

Table 2 – The Static-Dynamic Spectrum

STATE TYPES:				
Drone Stasis	Evolutionary Stasis	Dynamic	Disintegrative Dynamicism	Saturated Stasis
Little change	Less change	Selective change	Greater change	Maximum change
Phrases disappear	Phrases blurred	Individual phrases clear	Phrases blurred	Phrases disappear
Sections may disappear	Sections may be clear or blurred	Sections clear	Sections may be clear, blurred or may disappear	Sections may disappear
No goals	Perhaps long-range goal	Definitive goals	Some goal tendency	Goals, if any, heard in retrospect
Drones. LaMonte Young, James Tenney	Minimalism: Steve Reich, Philip Glass	Classical music: Haydn, Mozart, Beethoven	Selected music of György Ligeti, Iannis Xenakis	Much Pierre Boulez; some Milton Babbitt

As an example, within a sonata form of Haydn or Beethoven there is customary movement between themes and transitions within an overall three-part sectional scheme. The type of music associated with a theme is typically more stable than the music of a transition, and these two types of music may be said to exist as different dynamic states. From a telescopic point of view, the exposition and recapitulation may both be understood as being more stable than the conjoining development. One could then view each of these three sections as an overall state within which smaller states exist (this concept is discussed further in the section “Layers of Existence”). Dynamic states, whether classical or not, are associated with a degree of selective change in the substructural elements (pitch, register, and rhythm), and clarity in the demarcation of the phrase and sectional temporal units. Dynamic states also incorporate definitive goals, often existing in both melodic and harmonic aspects of phrases and sections (the concept of goals is further discussed in the section “The Impact of Goal-Orientation”). In classical music, the practice of progressing through triadic harmonies creates an obvious dynamic effect; in conjunction with the weight and magnetism that exist between the tonic and dominant chords, a homogeneity of intention may result in the fore, middle and background layers, the mere mention of which brings to mind Heinrich Schenker and his theory of “Ursatz” (fundamental structure).[54]

The static-dynamic spectrum progresses in either direction from dynamic to more static states. These states, entitled “evolutionary stasis” and “disintegrative dynamicism”, bridge the gap between the two types of static music and their connection to the dynamic center. Evolutionary stasis is defined by less change (by comparison to dynamic change) in the substructural elements, by a blurring of phrases and perhaps sections, and sometimes the appearance of a long-range goal. Short-term goals are usually non-existent, due to the blurring of phrases. Minimalist composers, such as Steve Reich and Philip Glass, write music that is often of the evolutionary stasis type. In this music there still exists multiple states, but the progression from state to state is substantially slowed–

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[54] Dahlhaus, Carl. “Schoenberg and Schenker” in *Proceedings of the Royal Musical Association, Vol. 100 (1973-1974)*, pp. 209-215.

one state may last up to ten minutes or longer. Each state also communicates a sense of progression, simultaneous to and within the overall condition of relative inactivity.

On the opposite side of the continuum is “disintegrative dynamicism”. In music of this type, connected to selected music by the composers György Ligeti and Iannis Xenakis, among others, the substructural elements are marked by greater change in comparison to dynamic music. A focus on only the internal musical elements may convey an immediate sense of dynamic progression, but it is really the treatment of temporal boundaries that gives music of this category its partially static status. Phrases are blurred, often achieved through disintegrative or mutational compositional techniques, as exemplified by Ligeti’s *Piano Étude No. 3, Touches Bloquées*. Sectional boundaries may or may not be blurred, and goals may also be present or not. Though often felt as dynamic on the surface, the overall density of the elements leaves a background sensation of stasis achieved through saturation. In fact, it is the specific treatment of density within time that imparts this sensation, as Brian Ferneyhough discusses in his Darmstadt lecture of 1988:

> We perceive discrete events as being of a certain density, translucency, as moving with a greater or lesser degree of dynamicism relative to the amount of information contained. If the perceived potential for informational substance is rather high, the time frame required for the efficient reception and absorption of that information is usually more expansive, so that if the time frame is deliberately compressed a sense of pressure, of "too little time" emerges as a major factor conditioning reception–something which leads the listener to categorize the musical

flow as "fast."[55]

And when the density of a piece overwhelms the time-flow of the music, a state of "saturated stasis" will occur. In this state, substructural elements are defined by maximum change, as seen in the music of Pierre Boulez and Milton Babbitt. Interestingly, Ferneyhough's music, due to its dynamic and linear qualities in additional to its density, seems to fall somewhere between the disintegrative dynamicism and saturated stasis categories. Temporal boundaries in saturated stasis states may often completely disappear, and goals, if any, are most likely heard in retrospect, or understood with the help of analysis.

At the opposite end of the spectrum lies "drone stasis". It is rare that an entire piece is made up of states exclusively of this nature, but works such as Giacinto Scelsi's *Pranam I* (1972), John Cage's *Seventy-Four for Orchestra* (1992), Stockhausen's *Stimmung* (1968), and many of the works by LaMonte Young and James Tenney come close. In drone stasis, the substructural elements exhibit little change, phrases and sections may disappear or be blurred, and goals are most often lacking. This does not mean that a work consisting of static drone states does not have multiple states, but rather that these states are similar in composition.

The static-dynamic spectrum is not created in order to compartmentalize a composer's oeuvre, but is rather an aid for evaluating the type of states that may be found. As with any music, analysis often reveals a complexity that extends

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[55] Ferneyhough, Brian. "The Tactility of Time (Darmstadt Lecture 1988)" in *The Perspectives of New Music, Vol. 31, No. 1 (Winter, 1993)*: 20-30, p. 22-23.

beyond complete categorization. In approaching the delineation of music by its states, multiple and diverging states will often be found within one composition. When the music of composers such as Ferneyhough and Morton Feldman defies classification, it is an indication of music's transcendent qualities. Here the application of the static-dynamic spectrum will nonetheless reveal aspects of the music that would otherwise have remained obstructed.

SUBSTRUCTURAL ELEMENT: PITCH

Pitch constitutes the primary of the five internal elements that influence the establishment of a state. Because of the immediate orientation that may take place within a listener–for example, categorization of diatonic versus chromatic and tonal versus atonal–pitch is considered as being a more significant element than register.[56] Register is, of course, an indispensable element that both correlates to and influences pitch significantly. This may also be said of rhythm, although both rhythm and pitch equally effect the musical surface. In terms of temporality, the characterization of a state's type is based on the time frame in which new pitches enter. A musical state is similar to an organism, being made up of many interlocking parts to form a conception of the whole. It may therefore be said that the substructural elements define how a state is perceived (and thus, what type of state exists), and the consistency of these elements also define the temporal boundaries.

[56] Acknowledging, of course, that the same pitch–i.e., an "A"–existing in two different registers yields two different frequencies, say A at 440 Hz and A at 880 Hz. For the purposes of this paper, pitch will be treated as independent of register, as pitch classes that create an overall collection.

Consistent pitch class use within a state results in an audible and limited *pitch class collection*, subsequently referred to as a PCC. A state's PCC constitutes a set of primary tones, against which the introduction of additional tones will either be perceived as changing tones (CT) or inconsequent tones (IT). If a new tone is a changing tone, the PCC will be altered, causing a new state to come into existence.[57] If the new tone is an inconsequent tone, the PCC and the state are not altered. Whether a tone is perceived as a changing tone or an inconsequent tone depends on the treatment of these pitches.[58] Steve Reich's *Piano Phase* (1967) is an explicit example of this. The initial PCC of *Piano Phase* consists of five primary tones (4,6,11,1,2) and span ten semitones, as seen in Example 1.

Example 1 – Steve Reich, *Piano Phase*: States, Durations, PCC and RL content

State:	**S1**: patterns 1-16	**S2**: patterns 17-25	Transition (pattern 26)	**S3**: patterns 27-32
Duration:	0:00-10:27 = **10:27**	10:28-16:40 = **6:12**	16:41-16:51 = **0:10**	16:52-20:24 = **3:32**

PCC:	(4,6,11,1,2)	(4,6,8,11,1,2)	(4,8,11,2)	(8,11,2,4)
RL:	10	12	12	7

Phasing between the two pianos causes new intervals to occur, but the PCC of the state itself is not changed for almost ten minutes. This consistency results in the formation of State 1. In pattern 15, Piano II drops out and the initial loop of pattern 1 is repeated in Piano I, creating a textural change that anticipates the

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[57] As will be seen, a CT may also cause result in a mutating PCC within a single state.
[58] In music examples, primary PCC tones are represented with white note heads. changing tones are indicated by a black note head possibly CT, and inconsequential tones are indicated by black note heads and possibly IT. A slur indicates that a CT has become apart of the PCC.

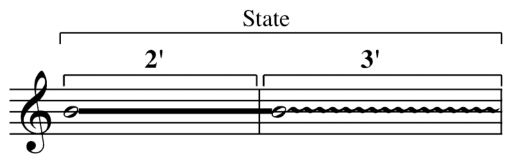
change to a new state, which is made clear in pattern 17, where Piano II introduces the pitch A. The reiteration of this new pitch, simultaneously altering the previous PCC and reinforcing the creation of a new state, causes it to be perceived as a changing tone that becomes apart of the new PCC of State 2. Piano II also introduces a higher octave E in pattern 17, but this tone is seen as an inconsequent tone because it does not substantially alter the current PCC (although it does have registral impact, as will be discussed in the next section).

A musical state can be said to exist within several perceivable (or unperceivable) temporal boundaries. When the individual pitches are in constant motion within these temporal units, how does one account for and measure the effect of change on a state? As Stockhausen said, "the degree of change is a quality that can be composed as well as the characteristic of the music that is actually changing....and then I can decide, as a composer or as the person who has this experience, how quickly and with how great a degree of change the next moment is going to occur."[59] Let us consider a sine wave drone consisting of a single pitch, without undulation in frequency. The drone would be heard as the current "state of existence" for the piece, and the longer the drone continued, the larger (or longer) the state would become. If, after several minutes of constancy, the sine wave drone were altered by introducing undulation (e.g. vibrato or irregular quarter-tone differentiation), the listener would have the sensation that a

[59] Stockhausen, Karlheinz. Compiled by Maconie, Robin. *Stockhausen on music: lectures and interviews.* London and New York: Marion Boyars Publishers (1989), p. 63.

change had occurred, but it would most likely not be perceived as a new state because of the insignificance of change (see Example 2a).

Example 2a – Sine wave drone example and possible state

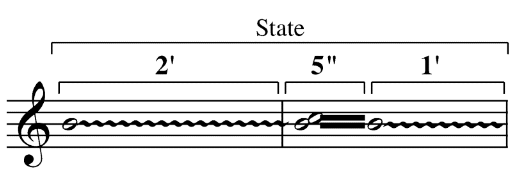


In this case, it would be incorporated into the fabric of the current texture. The drone, existing in a state of stasis, has a fixed fabric that consists of severe limitations in pitch, register and rhythm. Such a small change may modify the fabric of a state, but will not cause a change to a new state. An example of this is heard in James Tenney's *Swell Piece No. 2* (1971), where a drone on the pitch A is maintained for over ten minutes, with the only changes being intermittent occurrences of quarter-tones and silence.

To return to our sine wave drone example: let us consider that, after three minutes of the now-undulating drone, a second pitch class was introduced in addition to the drone. This event raises the following question: how much change is allowable while still maintaining a static state, and at what point is a new state achieved? Because the drone example has thus far consisted of only one pitch class, the added pitch would be perceived by the listener as a change of greater import in comparison to the undulation. This is because *the significance of a change is proportionate to the density of the number of normative current events.* As Jonathan Kramer writes, "the threshold of perceiving stasis depends on context. If there are large contrasts between sections, a moderately high degree of internal motion or contrast will not disturb the perceived (relative) stasis. Where the contrast between sections is small, the perception of stasis within sections will not tolerate much motion or contrast."[60] The interruption of a second pitch class, even if not incorporated generally into the overall texture, has irreparably changed the listener's perception of what is possible in the piece. The cessation of this new pitch would only intensify this feeling. Now, whether the addition of the second pitch would result in a new state is dependent on how long the two pitch classes are maintained without significant further change.

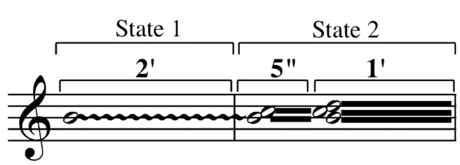
Examples 2b-d – Sine wave drone examples and various possible states

Example 2b

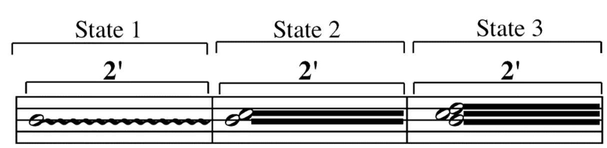


Example 2c

Example 2d



Example 2e



If the new pitch were hardly sustained at all, it would most likely be considered a version of the previous quarter-tone pitch additions (see Example 2b above). However, if both pitches were maintained, a new state would be established (see

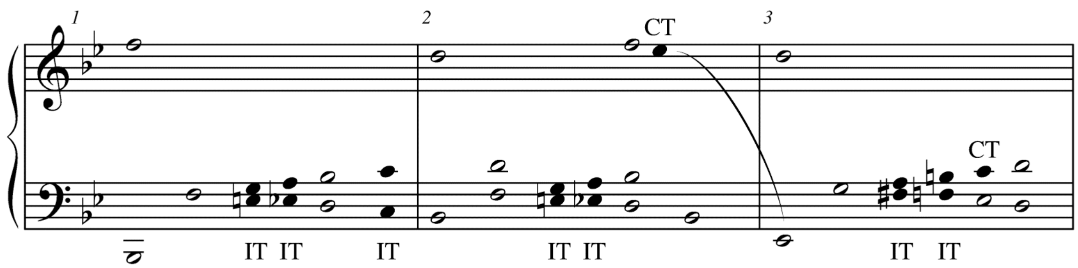
[60] Kramer, Jonathan. *The Time of Music*, New York and London: Schirmer Books (1988), p. 201.

Example 2c above). If a third pitch class were added to the first two within a short time-span relevant to the addition of the second pitch, this change would be felt as less significant than the previous addition, because the ratio of normative to new pitches was now smaller and thus less impactive (see Example 2d above). That is to say, the introduction of the second pitch is in a sense prepared the possibility of a third event. This would not be the case however, if the state with two pitch classes were maintained for a significant duration, in which case the introduction of a third pitch class would then be a salient event (see Example 2e above). Understanding the interplay that occurs between pitch and its reflection of (or in) temporality is critical for the determination of a state.

In tonal classical music, the seven notes of the diatonic scale are the assumed pre-compositional PCC for a tonal piece, and these notes relate to each other hierarchically. Non-chord and chromatic tones that function as suspensions, neighbor or passing tones, are non-essential to the primary PCC, and thus inconsequent tones. When a chromatic tone functions within a secondary dominant to bring about a modulation, it becomes a changing tone, because it conveys movement to a new PCC, usually another diatonic collection. One of the reasons that the minor mode is typically considered less stable than its major counterpart is because of the raising and lowering of the sixth and seventh scale degrees. These modifications force the diatonic minor PCC to include tones that sometimes function as primary tones, or may act as inconsequent tones or changing tones. In the diatonic major PCC, there is a much stronger division between chromatic tones, fully outside of the PCC, and non-chord tones, that may function momentarily as inconsequent tones based on the current harmony. As tonal music is characteristically marked by frequent harmonic change within the temporal units, tonal music is consequently composed of dynamic states. The breakdown of tonality could thus be understood as relating to the more consistent inclusion of non-chord and chromatic tones into diatonic PCCs, thus weakening the diatonic hierarchical and harmonic structures. Of course, this is only one possibility that may be seen in the works of tonally-connected composers such as Wagner and Richard Strauss. Others, such as Debussy and Fauré, simply used non-diatonic PCCs in their music.

Chopin's *Prelude in B♭ major*, Op. 28, No. 21 (1839), demonstrates how the addition of chromaticism does not cloud the sense of "where one is" harmonically. The use of strong beat placement of principal tonal chord-tones in the bass allows one to recognize what is apart of the diatonic PCC and what functions as inconsequent tones. In measure one, for example, even though there are seven pitch classes present, only three (the B♭ tonic chord) are primary. One can see in Example 3 how this works: the primary tones of the PCC are shown as white note heads; inconsequent tones (IT) do not contribute a sense of function toward or away from the primary tones, while changing tones (CT) eventually become primary tones as the harmony changes. Both IT and CT are shown as black note heads.

Example 3 – Chopin, *Prelude No. 24 in B♭ major*, Op. 28, No. 21: bars 1-3



PCC: B♭ major triad (10,2,5)
In B♭: I
Overall PCC of State 1: B♭ major (10,0,2,3,5,7,8)

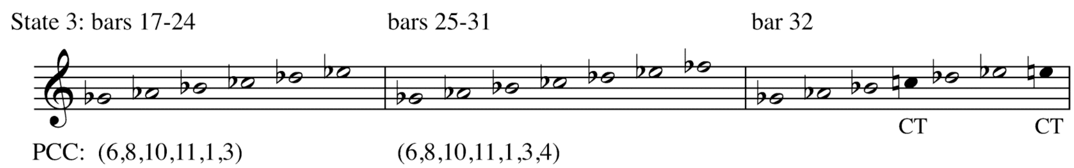
E♭ major triad (3,7,10,2)
IV7

In the case of this Chopin prelude, the first state is dynamic due to harmonic change within an overall PCC of B♭ major (10,0,2,3,5,7,8). The state is actually determined by the eight-bar phrase, which is determined by melodic and harmonic cadential design. The harmonic movement within the PCC creates segmental primary tones that determine the relative inconsequent and changing tones. For example, in bar 1 and 2 the E♭ in the bass is an IT, because it is a passing tone. In bar 2, the treble E♭ is considered a CT because it leads toward an E♭ triad, and in bar 3 the E♭ is now a primary tone. Therefore: when primary tones segment from the overall PCC (as is found in tonal music), a PCC tone may sometimes function as an IT or CT.

The tonal harmonic motion found here is coupled with linear, goal-oriented phrasing and predictable temporal blocks (two eight-bar phrases that create a period). This permits a clear understanding of the first part of the piece. In addition to a perceptible temporality, the harmonic and melodic movement all support the establishment of two dynamic states. What is prominent about this piece occurs at measure 17, where the use chromatic inconsequent tones is temporarily suspended while a G♭ major chord is prolonged over 16 bars.

Example 4 displays the PCC content of State 3 (with disregard to specific register), the two preceding dynamic states being made up of the two initial phrases (bars 1-8 and bars 9-16).

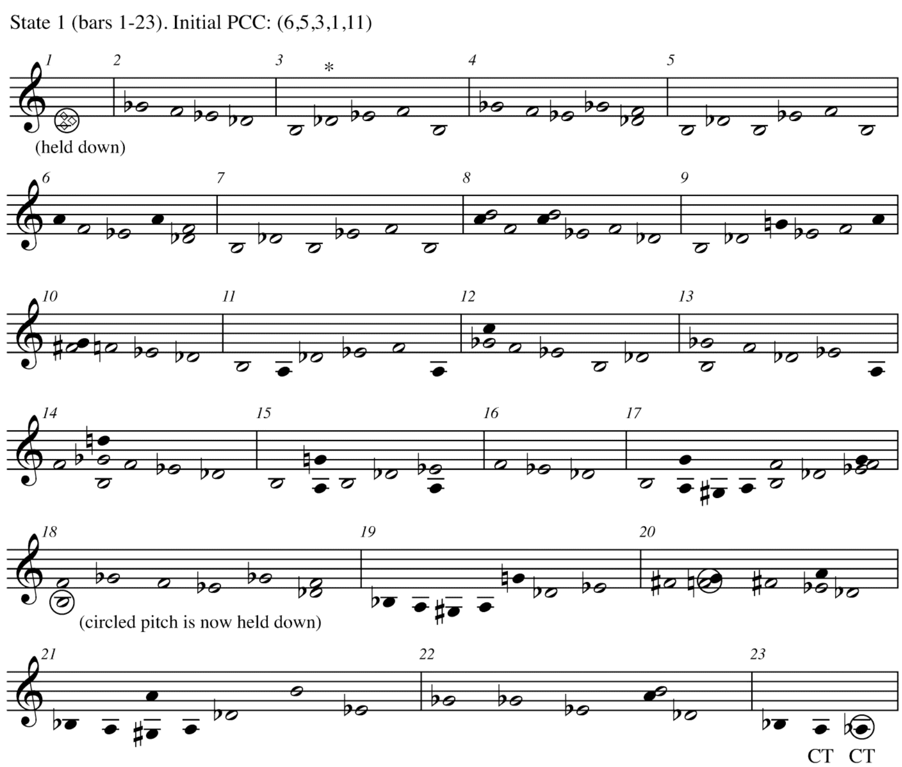
Example 4 – Chopin, *Prelude No. 24 in B♭ major*: State 3 PCC



From bars 17-24, the PCC consists of six pitches from G♭ major (6,8,10,11,1,3). From bars 25-31, the PCC expands slightly to include an F♭, and in bar 32 the F♭ is respelled as an E♮ and a C♮ replaces the C♭. The E and C combine with G♭ and B♭ to produce an augmented sixth chord; considered a modulatory chord in tonal practice, the E and C may also be regarded as changing tones, aiding in the transition from the static state of G♭ major to the dynamic state of B♭ major (with IT and CT chromaticism present). From the perspective of a tonal piece, it is perhaps surprising to find such a static point in the music, especially given the harmonic relationship of G♭ to the B♭ tonic. From the viewpoint of music consisting of multiple states, whether tonal or not, the Prelude's use of both static and dynamic states support an overall picture of dynamic process, corresponding to the composition's era, when dynamic music was normative.

Not all music demonstrates such extreme limitations of pitch and register as are exhibited by Tenney's *Swell Piece No. 2* or Reich's *Piano Phase*, compositions that respectively fall into the drone stasis and evolutionary stasis categories quite well. The above analysis of Chopin has yielded a further understanding of dynamic states, where segmented primary tones may occur within a state's PCC. The question thus arises: in music of disintegrative dynamic or saturated stasis states, how does one interpret which pitches are primary, changing or inconsequent, when lack of consistency or the presence of *too much* change makes it difficult to hear a clear PCC and registral limitations (RL)? This occurs In György Ligeti's *Piano Étude No. 3, 'Touches Bloquées'* (1985), an example of disintegrative dynamicism (as seen in Example 5).

Example 5 – Ligeti, *Piano Étude No. 3, Touches Bloquées*: State 1

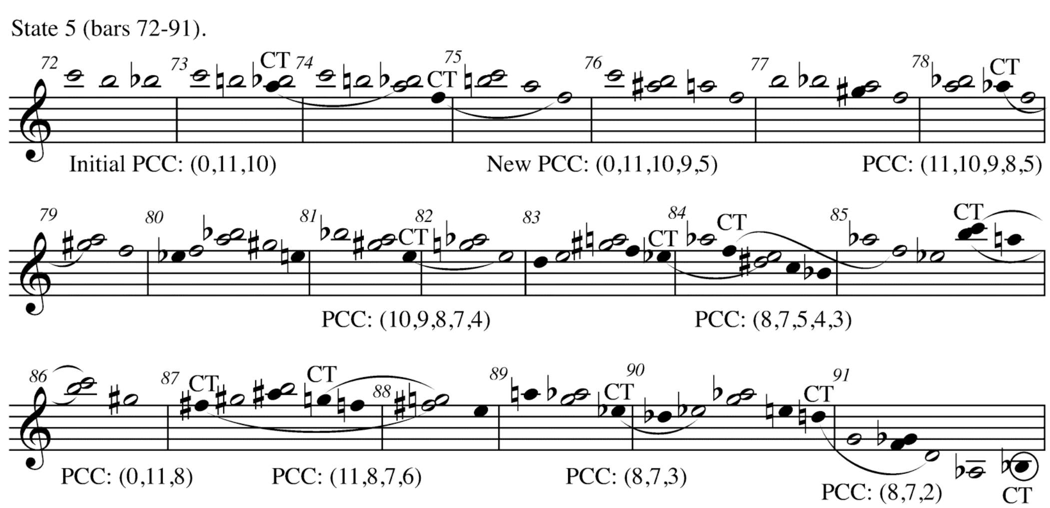


* Ligeti spells the ascending D♭ and E♭ as C♯ and D♯. For clarity here they remain flats.

The repetition of five pitch classes (6,5,3,1,11) over the first four audible measures (bars 2-5; bar 1 is silent) initially establishes the PCC. The stability of the PCC is immediately put into question as the addition of new pitches rapidly occur: in bar 6 the G♭ is replaced by an A, in bar 8 a B is added to the A, in bar nine a G♮ is added, and in bars 10 and 11 the F♯ is added to the G♮ while the A is displaced to a lower octave–all this while the PCC is maintained. If these first additions were to be considered changing pitches (CT), a moment-to-moment regeneration of the PCC would result. While PCCs (and the resulting states) may change frequently in a disintegratively dynamic state piece, one must refer to the temporal boundaries and other guides when ascertaining a state. In *Touches Bloquées*, one finds that the sectional boundary is quite clear–in addition to attacked pitches are sustained, ‘blocked’ tones that function according to an additive procedure. The piece begins with three silent (blocked) tones, and as the music progresses, three tones are added to these. In bar 23, the accumulation of held pitches is halted and begun again with a single held pitch. The process continues as this new blocked pitch is joined by subsequently sustained pitches. In Example 5, depicting State 1, pitches that become held down are encircled. One will notice that two of the three additional blocked pitches are B and F, pitches that comprise the initial PCC. This, in combination with the repetition of pitches outside of the PCC, suggests that there is a metamorphosis transpiring in this state. The reader will notice that, in observing Example 5, all black note heads have been left unmarked of CT and IT labels, with the exception of the last obvious two notes. This is because the determination of exactly *when* an IT becomes a CT, and when a CT then becomes a part of the current state's PCC, is subjective and unmeasurable. One could postulate that the four reiterations of the pitch A4 (if C4 is middle C) are heard as IT, but they prepare the ear for the entry of the lower A3 in bar 11. One could also suggest that the B♭-A-G♯-A figure in bar 19, when heard in bar 21, becomes apart of the PCC through its repetition. And looking ahead toward the concept of registral limitations, one cannot discount the C5 and D4 of bars 12 and 14 as being completely inconsequent, as they do expand the RL upward.

These questions as to the exact nature of each pitch are perhaps a signature of the PCC treatment in a disintegrative dynamic state. It is the presence of uncertainty and evolution in the music that leads to the sensation that the music is simultaneously disintegrating *and* mutating, as the state in Example 6 exemplifies.

Example 6 – Ligeti, *Piano Étude No. 3, Touches Bloquées*: State 5



Here a possible solution to the addition and subtraction of pitches is explored: reiterated pitches move from CT to primary tones, generating a new PCC every few measures.[61] An examination of Table 3 (below) suggests that a transformational pattern may lie at the foundation of the PCC mutation, resulting in the focus on certain pitch classes, such as PC 8 (G♯).

Table 3 – PCC Evolution for State 5 of *Touches Bloquées*

Measure	**PCC mutation**											
	0	1	2	3	4	5	6	7	8	9	10	11
72	0										10	11
75	0					5				9	10	11
78						5			8	9	10	11
81					4			7	8	9	10	
84				3	4	5		7	8	9		
86	0								8			11
88							6	7	8			11
90				3				7	8			
91			2					7	8			

It is also interesting to note that, when venturing to differentiate primary from inconsequent tones, certain pitches, such as the PC 5 modulate from being within the PCC in bars 75-80, to being outside in bars 83-84, and possibly in bar 87. Given the myriad of options when attempting to trace a mutating PCC, one can confirm that any subjective process will yield arbitrary results, and is therefore unique to the perception of the listener.

One final category remains in the examination of pitch treatment: that of saturated stasis. To establish the scope of extreme saturation in sound, let us

[61] Jonathan Bernard proposes an analytical method for interval transformation in Ligeti's music based on the 'immutability of intervals' in his article "Ligeti's Restoration of Interval and Its Significance for His Later Works" (*Music Theory Spectrum, Vol. 21, No. 1 (Spring 1999)*: 1-31).

turn to white noise as an example. Undeniably static, white noise is achieved because many hundreds (or thousands) of frequencies exist in a given registrally-limited space, where frequencies, attacks, continuations, and lengths interchange in seemingly chaotic fashion. White noise may be defined as “including two parts: amplitude, which is uniformly distributed (as in a bell curve), and frequency, which is uniformly distributed (equally represented across the entire audio range).”[62] While music does not usually exhibit the total sonic effect of white noise, it does saturate a given registral space. A fitting musical example at this end of the stasis spectrum is the first movement of Pierre Boulez’s *Le marteau sans maître, “Avant ‘l’artisanat furieux’”* (1954, 1957). Here the pitches encompass the aggregate in all registers, combining with a kaleidoscopic succession of dynamics, articulations, and arhythmic attack points. Only through pauses in the music does one perceive a larger sense of temporal phrasing, but where these pauses will occur is completely unpredictable (see the Temporal Boundaries section for a further discussion of the use of silence in this piece).

Example 7 below depicts pitch content for the first state of *“Avant ‘l’artisanat furieux’”*. The reader will notice that a PCC has not been identified. This is because the work, stylized by a highly defined approach to serialism, duplicates certain pitches within a short time frame, but not others. The resulting ‘PCC’ is so saturated that one does not actually perceive a limited pitch criteria, in terms of the duplication or absence of pitches.

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[62] Madden, Charles. *Fractals in Music: Introductory Mathematics for Musical Analaysis*, Salt Lake City: High Art Press (1999), p. 99-100.

Example 7 – Boulez, *Le marteau*, *"Avant 'l'artisanat furieux'"*: State 1

State 1 (bars 1-10).

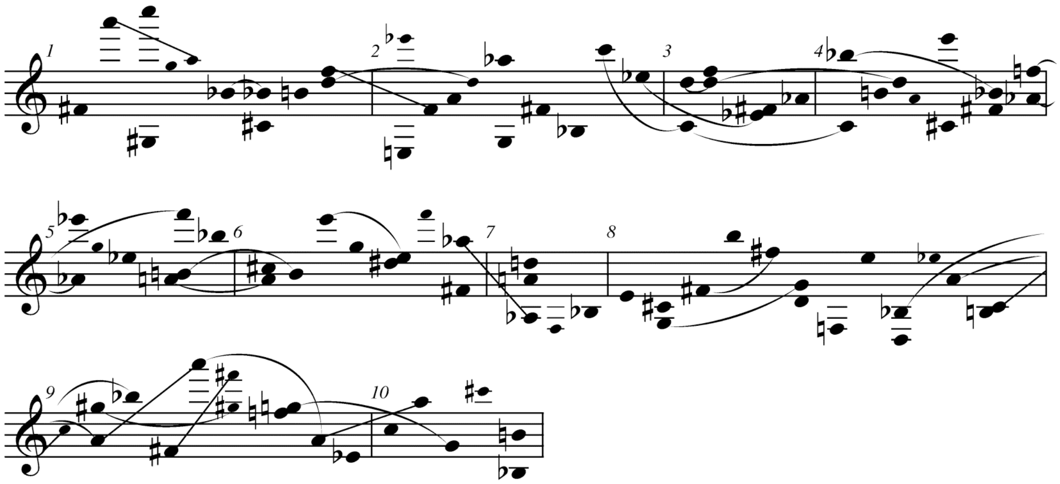

Table 4 – Repeated pitches in State 1 of *"Avant 'l'artisanat furieux'"*

Measure	Repeated pitch classes
1	9 10
2	5 2
3	0 2 3
4	0 2 10
5	8 5
6	9 11 4
7	8
8	5 7
9	0 9 9 6 9
10	9 7

The lines and slurs in Example 7 connect pitches that almost immediately repeat. The listener may not be able to perceive these, and many duplications are octave transfers that become subsumed by other pitches. What one finds in observing these repeated pitch classes (shown in Table 4 above) is that PC 1 is not repeated, and PC 9 is present in bars 1, 6, 9 and 10, repeating four times in the last few bars.

Table 5 – Possible PCC mutation for State 1 of *"Avant 'l'artisanat furieux'"*

Measure	**PCC mutation**
1-2	2 5 9 10
3-4	0 2 3 10
5-6	4 5 8 9 11
7-8	5 7 8
9-10	0 6 7 9

By segmenting every two bars, *new* PCCs could exist based on only the repeated pitches, displayed in Table 5. The PCCs of Table 5 are purely conjectural. There are two concepts, however, that support the breaking down of bars 1-10 into smaller segments. The composer Stefan Wolpe discussed the following idea:

> "every pitch constellation smaller than the all-chromatic circuit [the aggregate] is either a delay in completing the whole, or is an autonomous fragment which can exist outside of the total circuit….Since the chromatic totality of pitches is an assumption of complementary conditions, fragmentary units either strive to restore the all-chromatic equilibrium, or may strive for a more gradual restoration, possibly delayed and possibly interrupted."[63]

[63] Wolpe, Stefan. "Thinking Twice" in *Contemporary Composers on Contemporary Music*, Schwartz, Elliott, and Barney Childs, Eds. New York: Holt, Rinehart and Winston (1967), p. 287, 292.

In the saturated *Le marteau*, the repetition of pitches delays a complete aggregate, and while Boulez is not working with a simple row-by-row statement, the PCC mutation extrapolated in Table 5 could function as pitch constellations that delay aggregate completion, or total saturation. The second concept is by theorist/composer Joshua Booth, who describes a 'broken drone' phenomenon existing in *"Avant 'l'artisanat furieux'"*. The 'broken drone' is based on the premise that select pitches that demonstrate registral invariance repeat throughout the movement, and that the repetition points create a pattern of "temporal activation".[64] These pitches–particularly F, F♯, E♭ and A♭ (5,6,3,8)–help define primary PC sets, thus creating a foundational network or "polyphonic web" capable of guiding the listener's ear throughout the piece.[65] It should be added that repeated listenings of even a complex work such as *Le marteau* would increase the listener's ability to 'track' the piece, thus conveying the perception that the piece is easier to comprehend. And in fact, it would be, albeit subjectively. Table 6 summarizes the pitch treatment of each state type.

Table 6 – Model for Pitch Treatment in State Types

Drone Stasis	Evolutionary Stasis	Dynamic	Disintegrative Dynamicism	Saturated Stasis
Sustained PCC, often comprised of a single PC	Repetition of a limited PCC	Selective change within a limited PCC	PCC mutation, with great surface change in PC combinations	Saturated PCC, with maximum surface change in PC combinations

[64] Booth, Joshua. "Broken Drone in Boulez's *Le Marteau*". Unpublished (2011), p. 5.
[65] Ibid, p. 1.

SUBSTRUCTURAL ELEMENT: REGISTER

This use of octave transfer in Reich's *Piano Phase*–E4 is added to E3 in the PCC of State 2–leads to the following question: because E4 is a duplication of pitches already found in the PCC, does it have significance? This is a question of registral boundaries, perhaps more appropriately understood as *registral limitations* (RL). As in PCCs, which are formed through the reiteration of select pitch classes, an RL is understood in retrospect. For example, even though a listener may generally be aware of the musical use of high, middle and low registers, they are not generally aware of the impact of an RL as long as the PCC of the state maintains itself within a projected limited registral space. As Boulez writes,

> A listener is more aware of the absence of some part of the register from a given passage than he is of the phenomenon 'register-minus-something'. And this awareness is such that when the composer, as it were, lifts the ban on that 'something', the listener experiences the introduction of that 'something' as a *positive* action, because it involves the appearance of something of which he had been formerly *deprived*, in the literal sense of the word.[66]

The RL, a distinct portion of available registral space, functions as the space into which the PCC is mapped.[67] As an RL applies to a state, an inaudible transformation (made between states) of the RL will reinforce the creation of a new state; an audible transformation (made within a state) of a RL will result in the perception of the current state as being a transformational state, either

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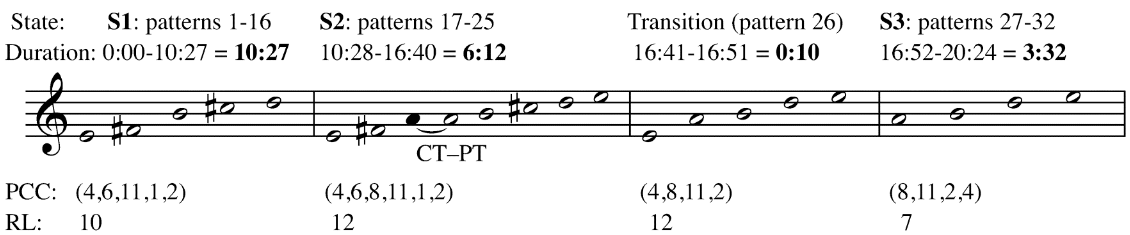
[66] Boulez, Pierre. "Form" in *Orientations*, Trans. Martin Cooper. London: Faber and Faber Limited (1986, 1990), p. 91.
[67] Registral space is equivalent to pitch space (p-space), as discussed by Robert Morris in *Composition with Pitch-Classes: a Theory of Compositional Designs* (1987).

'evolutionarily static' or 'disintegratively dynamic'.

To continue an examination of *Piano Phase* (reproduced from Example 1 in Example 8 below): the high E in pattern 17 does extend the register slightly from the previous state.

Example 8 – Steve Reich, *Piano Phase*: States, Durations, PCC and RL content



State 1 spans ten semitones, and the addition of E4 results in State 2 spanning twelve semitones. The simultaneous addition of the new pitch class A overshadows this RL expansion.

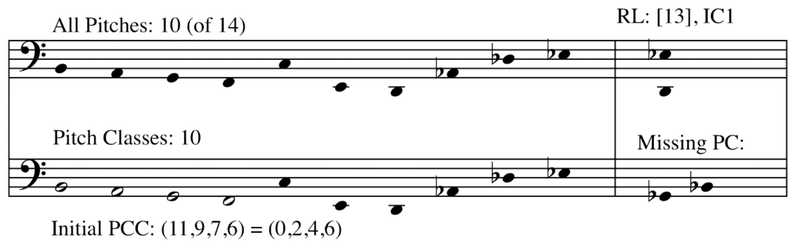
At pattern 26, however, there is a simultaneous transformation in both the RL and PCC. Here Piano I drops out, resulting in the deletion of the F♯ and C♯ from the PCC. At pattern 27 Piano II eliminates the lower E3, leaving four tones (8,11,2,4). This new PCC spans seven semitones, and one becomes aware that a significant contraction in the RL has occurred. Because of the minimal duration of pattern 26 (only ten seconds), it could be viewed as functioning as a transition to State 3, rather than being its own state. State 3 then marked by the change in the RL rather than the change in PCC. The temporal duration of each state in *Piano Phase* is perhaps surprising: the piece contains only three states over twenty minutes of music, with roughly a 5:3 ratio existing between States 1 and 2 as well as States 2 and 3.

An awareness of a state's registral treatment provides clarification on several levels. First, understanding RL movement can illuminate the presence of goal tendency; second, it may help define the relationship of one state to another, as is seen in *Piano Phase*; third, it is often a comprehensible substructural element, even when pitch and rhythm are seemingly impenetrable. This latter case applies to Ligeti's *Touches Bloquées.* Where the PCC content of each state is subjected to several mutations, the registral element has one objective: to expand as the state progresses.

Example 9 – Ligeti, *Touches Bloquées*: PCC and RL of States 1-7

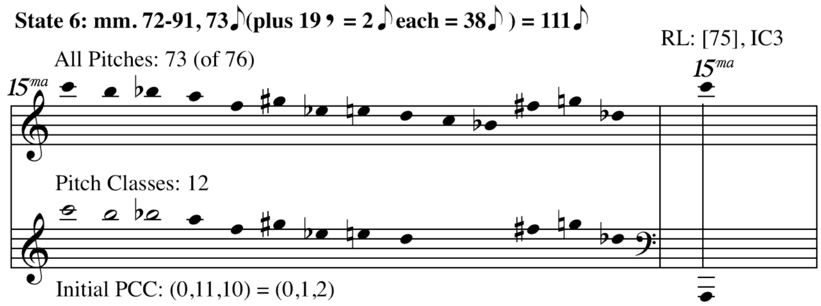
Example 9 continued:

State 4: mm. 52-64, 73♪

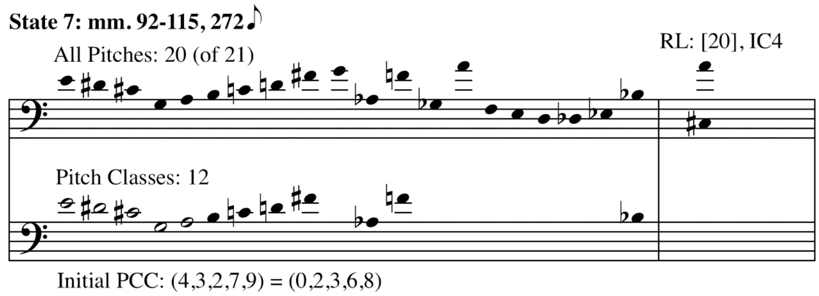


State 5: mm. 65-71, 38♪

State 6: mm. 72-91, 73♪(plus 19 𝄾 = 2♪each = 38♪)) = 111♪



State 7: mm. 92-115, 272♪



The RL expansion found here supports that each of the seven states of the etude are disintegratively dynamic. The initial PCC and RL of each state is presented in Example 9 above, along with the unfolding of all pitches as they occur (including duplications at the octave, but excluding repetitions), and a reduction below of new pitch classes. This allows the saturation level to be understood: States 1-3 use 11 pitch classes, State 4 uses 10, and States 5-7 use all 12 pitch classes. Comparison of each state's initial PCC leads one to believe that the PC set 013 plays a vital role at the structural level. And the RL, initially quite compressed and presented with only the initial PCC of each state, expands significantly in several states. Table 7 reproduces the initial PCC and RL, the total RL expansion (in semitones), and the amount of intervallic change.

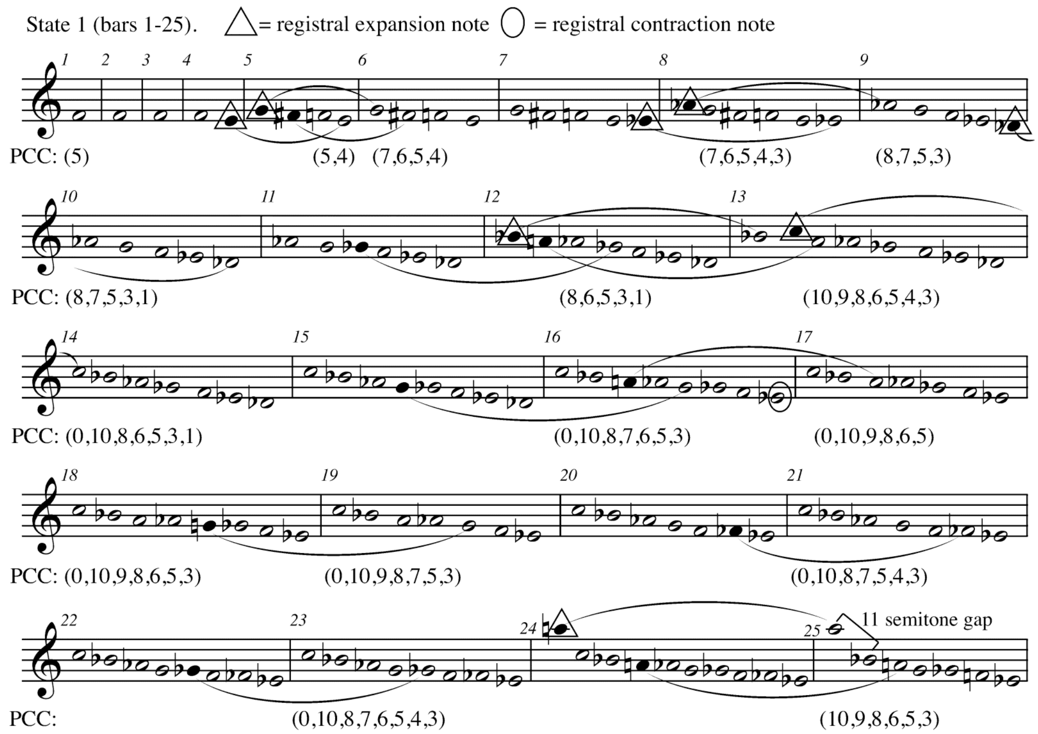
Table 7 – Registral expansion and change for *Touches Bloquées*

State	Initial PCC & RL	RL expansion	Total RL change
1	(01357) = RL [7]	[18]	[11]
2	(0134) = RL [4]	[16]	[12]
3	(013) = RL [3]	[21]	[18]
4	(0246) = RL [6]	[13]	[7]
5	(013) = RL [3]	[30]	[27]
6	(012) = RL [2]	[75]	[73]
7	(02368) = RL [9]	[20]	[11]

In this case, the registral expansion does not appear to have a goal (other than expanding), and is fairly unpredictable.

In contrast to this erratic type of registral expansion is Ligeti's *Lux Aeterna* (1968). The piece begins with a single pitch (F4) that is sustained by alto and soprano voices for several seconds. This is followed by additional women's voices entering on the same pitch for several seconds, resulting in an undulating surface (e.g., there are nine attack points on F in bar 2). In bar 4, the pitch E4 is added, and in bar 5 G4 and F♯4 are added. The quick succession of new pitches in a short timeframe is consistent with a disintegratively dynamic state. Rather than an established PCC, the continued addition (and occasional subtraction) of pitches results in a succession of mutating PCCs, as was seen in *Touches Bloquées*.

Example 10 – Ligeti, *Lux Aeterna*: State 1, PCC and RL transformation



Example 10 displays the PCC transformation and expanding RL, focusing on pitches that contract or expand the RL. State 1 lasts until the arrival of A5 in bar 24 (roughly 1:43). The high A is a climatic point for several reasons. It is not that this pitch class has been avoided, as it is found in six of the measures preceding bar 24. Rather, all registral expansion has been currently made by step, and the introduction of the high A–by a leap–creates a gap of eleven semitones between it and the other pitches in the RL. Also, it is at this point that the tenor voices enter, expanding the timbral sphere.

<u>SUBSTRUCTURAL ELEMENT: TIMBRE</u>

Of all the musical elements, timbre is the most amorphous, particularly in terms of its perception. This is partially due to the fact that timbre, like texture, is a synthesis of several elements, those of pitch, register, and instrumental color. Boulez writes of timbre:

> Timbre exists aesthetically when it is directly bound to the constitution of the musical object. On its own timbre is nothing, like a sound on its own is nothing. Obviously a sound has an identity; but this identity is not yet an aesthetic phenomenon. Aesthetic identity only appears if there is utilization, language and composition. Unless one has arrived at this stage, objects exist by themselves, available, but empty of meaning. In the same way, a spot of color is definable as being blue, or red; but it does not induce in us any sense of a pictoral world.[68]

Each individual pitch is a result of many partials combining at various amplitudes, which may be a part of a harmonic or inharmonic spectrum. When instruments sound in combination, their partials mix and result in the creation of a new timbre. The level of timbral complexity of an instrumental combination is relative to the similarity or dissimilarity of each instrument's harmonic spectrum. Thus, the combination of a clarinet and oboe will sound more dissonant than will the combination of a trumpet and trombone. Timbre can also be easily complicated if each combining instrument presents a unique envelope of amplitude, attack, sustain and decay. The numerous instrumental combinations available in an orchestral setting may result in the listener's inability to cognitively process each new timbral sound, thus perceiving general timbres through macro-listening. In

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[68] Boulez, Pierre. "Timbre and composition – timbre and language" in *Contemporary Music Review, Vol. 2* (1987): 161-171, p. 166.

addition, a listener does not only view timbre from an abstract perspective, but also from an intuitive one. As Lerdahl posits, a listener can "*feel* timbres becoming more dissonant or consonant,"[69] a concept that suggests that the listener's perception of timbre is subjectively linked to their awareness (educated/uneducated bias) of consonance and dissonance.

Timbre may often aid in the perception of continuity in a composition, but it is actually timbral discontinuity that will contribute to the perception of change. With the other substructural elements, little or no change yields a state of drone or evolutionary stasis. This is not the case where timbre is concerned. For example, Reich's *Piano Phase* is completely timbrally static because it is played entirely on two pianos; likewise, the thirty-two Beethoven sonatas are also played on the piano, but the Reich and Beethoven works are composed of contrasting state types. The basic instrumentation of a work does not then necessarily support the state types of a work. For timbre to become an element that indicates a state type, the composer must approach this element with the same aesthetic bias that is taken in the treatment of the other elements. Boulez's *"Avant 'l'artisanat furieux'"* is an example of this type of compositional awareness. Just as the pitch and rhythmic content support saturated stasis, the movement's four instruments (flute, vibraphone, guitar and viola) overlap each other in all registers (as is possible due to each instrument's range), each playing various degrees of short and long sustained sounds in a seemingly chaotic organization. The result

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[69] Lerdahl, Fred. "Timbral hierarches" in *Contemporary Music Reivew, Vol. 2 (1987)*: 135-160, p.142.

is an extremely intricate sound, due also in part to Boulez's use of timbral liaisons, the linking of one instrument to another by means of similar resonance, attack, or timbre.[70]

Most pieces do not display cohesion between timbre and the other musical elements. James Tenney's *Swell Piece No. 2*, alternating simply between a drone on the pitch A and moments of silence, is actually timbrally dynamic. The work's instructions indicated that five or more different sustaining instruments fade in, crescendo and decrescendo, and fade out, each with rhythmic independence from the other performers. The result is a dynamic rhythmic scheme, with players overlapping entrance and exit points, and a dynamic treatment of both timbre and amplitude. This is in juxtaposition with the static nature of both the pitch and registral content, which are severely limited. The question arises: since the substructural elements present both dynamic and static characteristics, how will the overall state be perceived? Are the dynamic attributes in rhythm, amplitude and timbre enough to offset the pitch and registral stasis? The answer lies in the repetition of the states themselves. As states are defined by a combination of temporal and substructural boundaries, the states of *Swell Piece No. 2* can be delineated by the silences that break up the drone at multiple points throughout (the use of silence is discussed in greater depth in the section "Temporal Boundaries"). This yields ten identical states; the repetition of these states emphasizes the static elements in the work, and suggests that the

[70] Boulez, "Speaking, Playing, Singing" in *Orientations*, Trans. Martin Cooper. London: Faber and Faber Limited (1986, 1990), p. 340.

dynamic aspects found in the substructural elements are superficial in relation to the whole.

The first movement of Webern's *Symphonie*, Op. 21 (1928) is an intriguing example of timbral use. As Robert Morgan discusses, the pitches of the row have been registrally assigned, a designation that modulates as the states change. In the opening state (bars 1-24), the only pitch duplication is PC 3, which has been assigned to two registers.[71] The movement is structured based on a pair of canons operating simultaneously and overlapping in both register and time.[72] To contradict the potential clarity created by a fixed-pitch RL and the canons, Webern avoids timbral consistency on any given pitch; it is the fluctuation of timbre that supports a categorization of the *Symphonie* as being disintegratively dynamic. The effect is disorienting, and the listener is forced to focus on what is subjectively perceived as the music's surface, whether this is the recurrence of a certain register, pitch, rhythm or timbre. Because Webern applies the same pitch to register treatment in the second movement of the *Variations for Piano*, Op. 27 (1936) and the *String Quartet*, Op. 28 (1938), one might initially believe that the registral pitch assignments would be more audible.[73] While this aspect is more transparent than in the *Symphonie*, the homogenous timbral nature of each piece equally confuses what instrumental ambiguity clouds in Op. 21.

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[71] Morgan, Robert. (1991). *Twentieth-century music*. New York and London: W.W. Norton and Company (1991), p. 205.
[72] Ibid, p. 205.
[73] Taruskin discusses these three pieces from the perspective of pitch-to-register fixation in Chapter 12 of *Oxford history of western music: 4, Music in the Early Twentieth Century* (2010).

One may conclude that the degree of stasis or dynamicism is proportionate to both the speed and predictability of timbral change, as is expressed in Table 8.

Table 8 – Model for Timbral Treatment in State Types

Drone Stasis	Evolutionary Stasis	Dynamic	Disintegrative Dynamicism	Saturated Stasis
Very slow timbral change to none	Slow and predictable timbral change	Moderate and predictable timbral change	Moderately fast and unpredictable timbral change	Very fast and unpredictable timbral change

When timbre is treated without aesthetic compositional forethought, it may or may not contribute toward the dynamic or static inclination of the musical state. This idea is complicated because composers who follow in the tradition of orchestrating to support a work's formal structure make aesthetic decisions about timbre. In these cases, timbre will most likely emphasize the sectional temporal boundaries, but will not necessarily support the state types delineated by the temporal boundaries. This reveals a further obfuscation about timbre: it is a substructural element that may often play an important role in the identification of temporal boundaries, which are themselves typically established by the configuration of the substructural elements.

SUBSTRUCTURAL ELEMENT: RHYTHM

Rhythm is both a substructural element and an aspect of temporality. When it is treated motivically, a rhythmic cell results.[74] The repetition of a rhythmic cell will create an audible pattern, especially when combined with fixed pitch elements (hereafter simply called a 'cell'). When the repetition of a cell is continuous and with little or no change, a state of evolutionary stasis occurs, most often labeled minimalism. When the repetition is fragmented and broken with great change, a state of disintegrative dynamicism occurs. In states of drone stasis or saturated stasis, motivic patterns either do not exist at all or are impossible to hear, due to extremes of maximum or minimum change. In dynamic states, motivic cells tend to be compositionally structural, as seen in Beethoven, Brahms, and Mozart. The classical motive in a dynamic state is simply a part of a more general and fluidly diverse rhythmic schema; it does not repeat enough to create the sense of constant surface-level transformation. The mutation of cell is most perceived within states of either evolutionary stasis or disintegrative dynamicism because it contributes to an audible surface change, thus reshaping a perception of the music's texture.

Stockhausen gives the following insight: "what we perceive as rhythm from a certain perspective, is perceived at a faster time of perception as pitch….the continuum between sound of fixed pitch and noise is nothing more than that

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[74] Kramer (*The Time of Music*, 1988), Lerdahl and Jackendoff (*A Generative Theory of Tonal Music*, 1983), and Cooper and Meyer (*The Rhythmic Structure of Music*, 1960) have written on and defined the concept of rhythmic "groups", which I call a cell for its structural function in patterned music. Kramer points out that the problem with rhythmic group analysis is explaining how polyphonic groups interact, but not the delineation of concurrent groups (Kramer, p. 112).

between a more and a less stable periodicity: the noisiest noise being the most aperiodic."[75] The analysis of rhythm then, as a slower form of frequency, is best approached from the standpoint of periodicity versus aperiodicity. Minimalism, which projects states of evolutionary stasis, also projects periodic and regular patterns. The pattern in *Piano Phase* does not change within State 1. Instead, Piano 2 phases out of and back in to synchronization with Piano 1, shifting through twelve cycles of realignment. Each arrival point projects "its own rhythmic and melodic sub-patterns"[76], causing the perception that a rhythmic change has occurred, when rather the intervallic density has merely shifted.

Another minimalist example is Philip Glass' *Two Pages (for Steve Reich)* (1968), in which a measure, containing a rhythmic cell consisting of pitches in a continuous eighth-note rhythm, is repeated a large number of times. The next measure (and cell) adds or subtracts part of the previous cell, thus resulting in a sensation that the tempo of the piece has accelerated or decelerated, depending on the amount of pitches to be played before the cell repeats (the piece is incredibly fast). From a perspective of states, it is interesting that the pitch and registral content from cell to cell do not necessarily change, but the alteration to the cell's size results in a temporal fluctuation, and thus a change in state. That this process is more transparent than Reich's phasing technique does not mean that the music is any less static. Morton Feldman's *Crippled Symmetry* (1983) is

[75] Stockhausen, Karlheinz. Compiled by Maconie, Robin. *Stockhausen on music: lectures and interviews.* London and New York: Marion Boyars Publishers (1989), pp. 92-93.
[76] Heisinger, Brent. "Minimalism in the 1980s" in *American Music*, *Vol. 7, No. 4 (Winter, 1989):* 430-447, p. 436.

also composed of cells that change their patterning relatively slowly. *Crippled Symmetry* is written so that the parts do not align metrically. Each instrument changes meter irrelevant to the others, shown in Table 9 below, meaning that there are actually four continuous cells occurring simultaneously: the three individual cells of each instrument and the overall resultant sound mass, as the listener hears it. At the end of bar 4, the flute will have played for 39 sixteenth-notes, the vibraphone for 26 sixteenth-notes, and the piano for 36 sixteenth-notes.

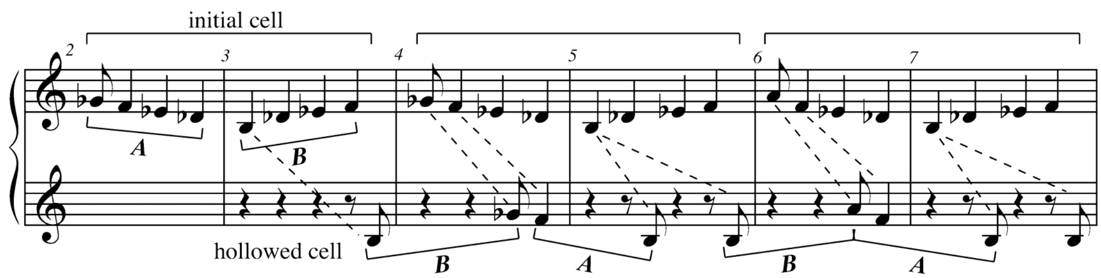
Table 9 – Feldman, *Crippled Symmetry*: Meter in bars 1-4

Instrument	Bar 1	2	3	4
Flute	4/8	5/8	9/16	3/4
Vibraphone	5/16	6/16	7/16	8/16
Piano	3/4	3/8	3/4	3/8

The other transformational state, disintegrative dynamicism, also utilizes the reiteration of cells, but applies a greater degree of change to these cells. The accelerated mutation generates a dynamic sense. For example, in Xenakis' *Okho* (1989, for three djembés), the initial cell consists of two percussive 'tones', one low, one high. These tones are repeated over a steady sixteenth-note beat, but the groupings of beats perpetually change due to irregular accents, resulting in a constant regeneration of the cell. At the point where an audible 'patterning' is heard, tones are added or subtracted (each djembé has three low and three high tones), thus creating the sense that disparate states are simply juxtaposed with each other.

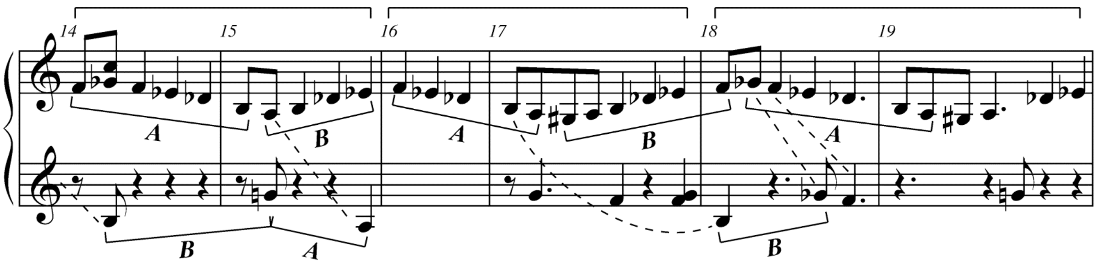
In Ligeti's *Touches Bloquées*, the change transpires organically from an initial cell, which is established in bars 2-3. Displayed in Example 11 are the *audible* note values (as Ligeti notates both sounding and unsounding ('blocked') eighth-notes, the score appears as strands of running eighth-notes).

Example 11 – Ligeti, *Touches Bloquées*: Cell mutation in bars 2-7



The initial cell is divided into two fragments: fragment A projects a descending contour while fragment B projects the opposite (brackets identify both cell types in the example). In bar 3 a 'hollowed' cell begins, consisting of the upper and lower pitch parameters (G♭ and B, respectively) of the initial cell, but with the inner pitches (E♭ and D♭) missing. Were these missing notes included, a canon would result. Without them, it is difficult to perceive the hollowed cell; rather, the initial cell seems to fragment through the reiteration of select pitches, indicated with dashed lines. Even here, one sees in bars 5 and 7 that the pitch B is reiterated twice, rather than once, breaking the brief pattern created in bars 3-4. Example 12 below presents bars 14-19, where a mere six bars after Example 11, the mutation has drastically altered the composition of both types of cells.

Example 12 – Ligeti, *Touches Bloquées*: Cell mutation in bars 14-19



One can see that the initial cell has been expanded by additional eighth-notes at either end. With this expansion, emphasis moves from the five initial pitches (the PCC) of bars 2-3 to the contour of the fragments, which maintain an audible periodicity. The regularity of how the initial cell fragments connect is also preserved, as fragment B still succeeds fragment A. The hollowed cell fragments are now interrupted by pitches that are *not* reiterations, as seen especially in bar 17, where the G in the lower staff is not preceded in the upper staff of bar 16. This means that the hollowed cell has evolved beyond connection to the initial cell. Essentially, change of a repetitive pattern can be seen in three primary locations: 1) the initial cell and its pitch parameters, or the placement of pitch within rhythm; 2) the succession and ordering of fragments that make up a cell; and 3) periodicity, produced either by the contour of fragments or the pitch-rhythm properties of the cell.

TEMPORAL BOUNDARIES

To repeat a key point made in the section “Discussion of States”, the perception of dynamic or static states is determined by the condition of the temporal boundaries, and these boundaries are directly correlated to how the internal elements are organized. The configuration of the internal elements allows the perception of temporal boundaries, and thus the perception of a state. A temporal unit is a "hierarchically ordered network of sounds, motives, phrases, passages, sections, movements, etc.–i.e., time-spans whose perceptual boundaries are largely determined by the nature of the sounds and sound configurations within them."[77] James Tenney's "temporal gestalt" theory focuses on connecting pitch and attack points to a series of temporal levels, for the purpose of explaining micro and macro compositional structural integrity. While the concept of perceptual temporality is certainly apropos to a musical state, it is not the explicit application of temporal gestalts that I would like to invoke here. Rather, the temporal units that are most relevant to a state are threefold. First, at the smallest level, a motive may become important given a certain amount of apparent repetition. This does not separate a motive from its structural value in theoretical analysis, as explored by Nattiez or Morin.[78] A motive creating a temporal boundary must be *heard* as contributing to the temporal evolution of the work. As has been discussed previously, this type of motive doubles in function as a substructural rhythmic cell. The second temporal unit is the phrase. Perhaps the most important temporal boundary, a phrase may exist in short or long partitions, may be connected to other phrases or not, and is easily heard in both static and dynamic musical states. Here the definition of a phrase will

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[77] Tenney, James, and Larry Polansky. "Temporal Gestalt Perception in Music" in *Journal of Music Theory, Vol. 24, No.2 (1980)*: 205-241, p. 205.
[78] A discussion of Nattiez's *Fondements d'une semiologie de la musique* (Paris, 1975), and Morin's *Essai de Stylistique Comparée* (Montreal, 1979) is presented in Nicholas Cook's *A Guide to Musical Analysis* (New York, 1987), pp. 151-182.

expand to include the period and phrase group, which are simply larger distinctions of how phrases relate. What is important is how the phrase (or phrase group) functions temporally in defining a state. The third boundary is the section, which is characteristically made up of multiple phrases (or phrase groups). These considerations can also apply to classical structures, where states are clearly differentiated by similar or disparate sections. A change from section to section may often be associated with a change in texture, density, thematic material, and very often, the nature of the state itself (see Table 1 on page 13).

Temporal boundaries not only define the music-time canvas within which the state exists, but the particular *treatment* of the temporal boundaries greatly influences the quality of the state. For example, the clear antecedent-consequent phrases of a Mozart sonata help to demarcate where themes end and transitions begin. One may argue that the harmonic cadential formula typically found at the phrase ending reveals this information also; this is of course a significant factor, but the phrase structuring alone will suffice as a boundary. This is because a phrase is more or less syntactically balanced (and classically is completed by one or two additional phrases, thus creating a period). Wallace Berry states that "a phrase is marked by a distinct beginning, a clear course of continuation, and an ending (cadence), however tentative. It thus manifests, melodically and harmonically, integral unity in a controlled course of action…"[79] The phrase and

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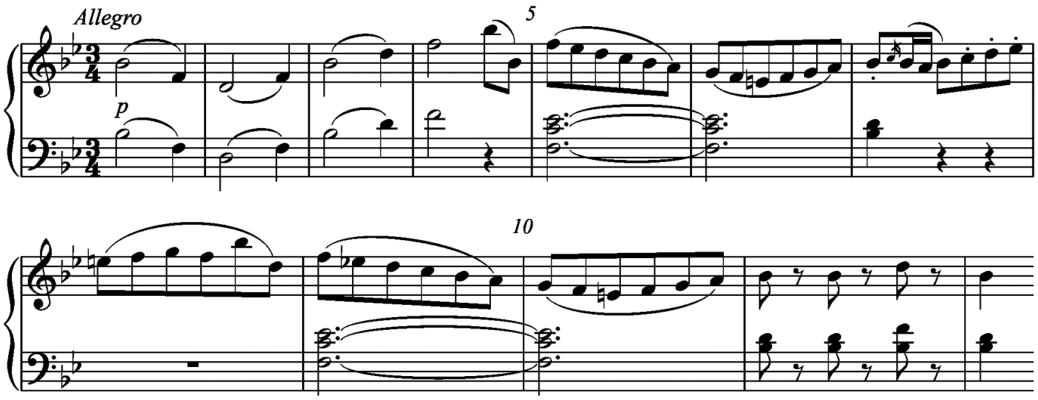
[79] Berry, Wallace. *Form in Music*. Englewood Cliffs: Prentice Hall, Inc., 2nd ed. (1986), p. 11.

its periodic extension essentially define the symmetrical qualities of classical form. Because balanced phrases contribute to the internal makeup of a section, *a priori* knowledge of classical structure is inherently based on clear temporal boundaries existing at all levels. Awareness of motivic underpinning, balanced phrase groups and clear arrival points at new sections create a certain classical continuity, which, being based on cause and effect, is therefore considered stable.

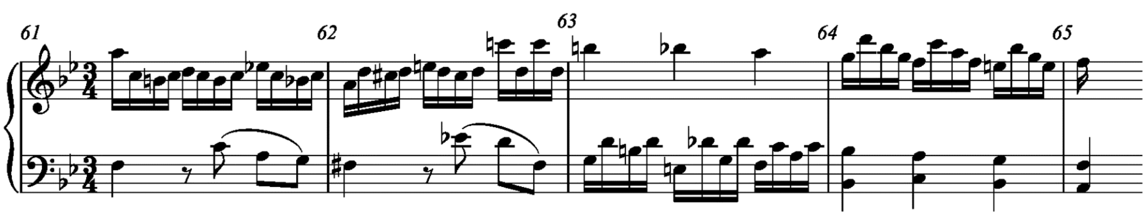
This may lead to the question of what makes a theme recognizable as a theme. A theme may generally be defined as containing a subject, or carrying the initial musical argument. This is usually defined as a melody. A tonal melody should be stable in pitch content, based on harmonic triads derived from an overall diatonic PCC. A tonal theme is also generally based upon a motive, or at least, rhythmic cells are an integral part of the melodic construction. A balanced contour is usually projected, and often accompanied with a registral or melodic goal. A theme may also prolong the tonic or dominant chord at the preclusion of other harmonies. From this perspective, some themes may be perceived as being less dynamic harmonically; however, themes are almost always melodically dynamic. To examine Mozart's *Sonata No. 17 in B♭ major*, KV 570 (1789), one finds that Theme I (bar 1 to the downbeat of bar 12, displayed in Example 13) is composed of two contrasting melodic elements, while harmonically the tonic is prolonged twice with the dominant.

Example 13: Mozart, *Sonata No. 17 in B♭ major*: Theme I



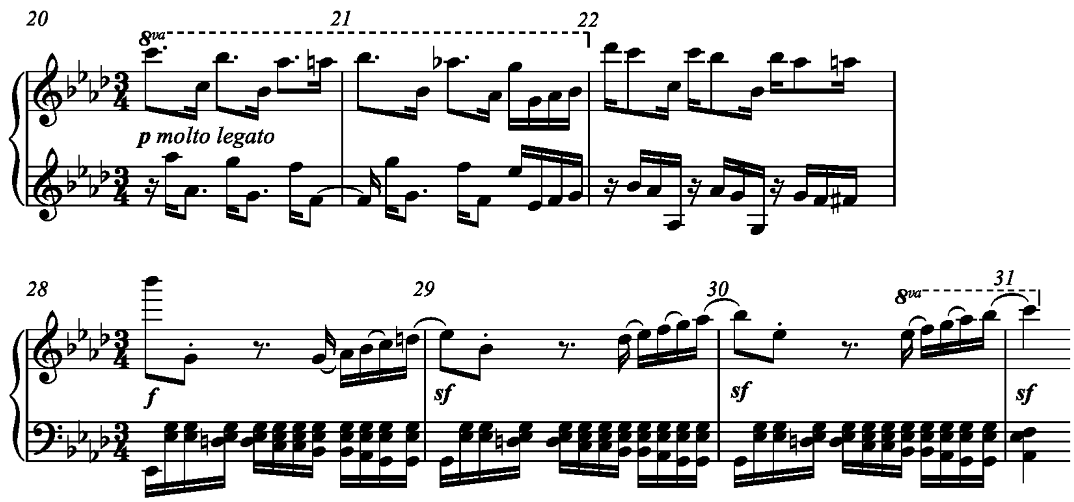
Where themes are typically stable, a transition is by nature unstable. Transitions exhibit a diatonic PCC that is clouded with chromatic tones. They can be harmonically dense, and are goal-oriented as they modulate toward a new key area (as in tonal music) or to a contrasting state. To this end they are the epitome of a dynamic state, however unstable they might be considered from the perspective of hierarchical tonality.

Example 14: Mozart, *Sonata No. 17 in B♭ major*: a fragment from a transition



Example 14 depicts a fragment of a transition shortly after the above theme. One can see that the amount of chromaticism, a result of the sequential treatment, yields a highly unstable and very dynamic phrase. In fact, a transition with this degree of change would be considered a disintegrative dynamic state.

Example 15: Beethoven, *Sonata No. 31 in A♭ major*: two options for Theme II



It is intriguing to examine Beethoven’s late works, such as the *Sonata in A♭ major*, Op. 110 (1821). Here Theme I (bars 1-4) is treated much like an introduction, and Theme II (bars 20-27), while displaying a significantly contrasting character to Theme I, does not anchor the expected dominant harmony–or rather, the tonic triad of the new key. In fact, bars 20-27 sound so much like a transition that it is possible to instead believe that the arrival of the dominant at bar 28 is *actually* Theme II, and not a closing section to the entire Exposition. The beginnings of both Theme II options are given in Example 15.

The music in both phrases (bars 20-27 and 28-33) is initially harmonically stable, but the sequential treatment lends to the sensation that both are modulatory. Later in the piece, the arrival of the Recapitulation at bar 56 is *not* prepared with a dominant prolongation, and Theme I appears juxtaposed with a transitional motif from the opening (the thirty-second-note arpeggio figure). What Beethoven has done is to *blur* the boundaries between a theme and a transition.

He has, in a sense, asked the listener to question if the traditional definition of a theme should be re-examined.

In much music of the 20th century, the composition of thematic music has frequently been abandoned–or significantly rethought–first as an attempt to renounce Romantic conventions, and later as an attempt to renounce early 20th century practices. This does not mean that the new music necessarily ceased to be dynamic. As holds true for Mozart and Beethoven remains true for dynamic state modern music: the phrase unit and often the motivic and sectional units are clear, thus revealing audible temporal boundaries. As music moves toward either end of the static-dynamic spectrum and away from dynamic states, the temporal boundaries become blurred and the listener becomes unable to determine *exactly* which changes are important.[80] As an example, both Chopin and Boulez utilize notated rubato in their music, but "where Chopin's flexible surface still implied an essentially stable underlying meter, Boulez's rhythms often float on an unstable flux."[81] And Debussy's *Jeux (1912)* continually blurs what is heard as the motif versus the phrase by constructing phrases out of motif-based fragments.[82] In combination with the sixty-plus tempo changes throughout the piece, *Jeux* maintains a flexible temporality, maintaining "the appearance of movement on several planes at once, where focus shifts from one to another."[83]

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[80] This is characteristic of much of Wagner's music.

[81] Gable, David. "Boulez's Two Cultures: The Post-War European Synthesis and Tradition" in *Journal of the American Musicological Society, Vol. 43, No. 3 (Autumn, 1990)*: 426-456, p. 437.

[82] An example of this can be found in bars 9-42 (rehearsal markers 1-4).

[83] Griffiths, Paul. *Modern Music, A Concise History*, Revised Ed. New York: Thames and Hudson (1994), p. 47.

Gérard Grisey's *Prologue* from *Les espaces acoustiques* (1976) presents an intriguing treatment of temporal units. The work opens with a five-note cell, followed by a two attacks on the pitch B2 (the low C-string detuned). The cell repeats, slowly expanding in size (both pitch content and length), all the while returning to the two attacks on B2. These attack points function as an anchor, placing a continual marker for the end of the state. As the phrase lengthens, what was once a cell evolves into a phrase, and eventually into a section made up of multiple phrases, all derivative of the initial statement. Where a sense of tempo change from state to state was achieved in Glass's *Two Pages*, the expansion between anchor points causes an elongation of the temporal space of each state in the *Prologue*. Tables 10 and 11 below display timings from two segments of the piece for the beginning points of phrases and the B2 anchors, in order to facilitate an understanding of the anchor's evolution in time (as there are no barlines, pages and systems are given).[84] In the first several minutes of the composition, one finds that there are roughly one to three phrases per anchor point, with eight single anchor points existing. From minutes eight to ten one finds only three anchor points separated by fifty and forty seconds respectively, and that these have expanded to include multiple anchor repetitions. The number of phrases between anchors has increased, with up to nine phrases between each anchor. This treatment continues for twelve minutes, until the B is retuned up to a C.

[84] Based on the recording: Grisey, Gérard. *Les espaces acoustiques*. Compact Disc, Kairos, B0007UY4S2 (2008).

Tables 10 and 11 – Grisey, *Prologue*: Evolution of phrase and anchor occurrence

Page / System	Phrase number	Phrase beginning point	B2 anchor attack point (each 2 notes)
1 / 1	1	0:03	0:09
1 / 1	2	0:15	0:20
1 / 1	3	0:26	
1 / 1	4	0:33	0:38
1 / 1	5	0:43	
1 / 1	6	0:48	
1 / 1	7	0:56	1:01
1 / 1	8	1:05	
1 / 1	9	1:11	1:14
1 / 2	10	1:19	1:24
1 / 2	11	1:28	
1 / 2	12	1:35	1:42
1 / 2	13	1:49	1:58

Page / System	Phrase number	Phrase beginning point	B2 anchor attack point (each 2 notes)
2 / 7			8:07 (3 times)
2 / 7	72	8:12	
2 / 7	73	8:17	
2 / 7	74	8:21	
2 / 7	75	8:28	
2 / 8	76	8:32	
2 / 8	77	8:37	
2 / 8	78	8:43	
2 / 9	79	8:49	
2 / 9	80	8:54	8:58 (1 time)
2 / 9	81	9:03	
3 / 1	82	9:08	
3 / 1	83	9:14	
3 / 1	84	9:20	
3 / 1	85	9:24	
3 / 2	86	9:30	
3 / 2	87	9:34	9:37 (2 times)

When phrase or section clarity is weakened, temporal blurring results, and continuity is then created by events or changes in the texture and states of a piece. It is exactly these temporal boundaries that exhibit the most disintegration in a static state. So how does one then perceive time in a static piece? If temporal boundaries are blurred, there will be no recognizable reference points, such as a theme or transition within a sonata form. Given the lack of temporal clarity, the listener's unconscious tendency for macro-listening will move toward a cognitive continuity where the musical events themselves become temporal reference points. Kramer writes that "events can and do imply later events; probabilities do exist for what will follow a given sequence of events. It may not be possible to calculate these probabilities objectively, but we do feel their force."[85].

Table 12 – Stages of Macro-Listening in Static-State Music

A. Piece begins	B. State	C. Next state(s)	D. Expectant Time	E. Continuation
Listener initially becomes aware of musical events, and possible time events.	Repetition emancipates time, and now the *state* itself defines time.	New states are determined by changes in texture, and established through repetition.	After many states, the listener develops an expectation for one state to be succeeded by another. This establishes a temporal understanding, or *expectant time.*	In longer pieces, continued repetition and transformation of states again emancipates time for the listener (i.e. Feldman, Reich, Glass)

Anticipating a musical event may be understood as "expectant time", because the expectation exists based upon a sense of established musical elements within an established musical time. In musical terms, Table 12 approximates how a listener may process a static-state piece, based on listening to musical events. In an application of Table 12 to Steve Reich's *The Desert*

[85] Kramer, Jonathan. *The Time of Music*, New York and London: Schirmer Books (1988), p. 23

Music (1984), the listener must immediately process multiple timbre groups repeating chords: pianos, marimbas, and strings linked with a choir. A five-chord progression unfolds simultaneous with the establishment of a recurring crescendo-diminuendo envelope (column A). A state is established (column B) by the looping of the chord progression, and eventually the repetition emancipates a sense of time. At 2:50 (at Rehearsal 22), within the fifth loop, the texture thins and a melodic string motif emerges, which through phasing creates a new state (column C). The choir is now separated from the strings, and supports its own melody (singing the text "Be my friend").[86] A third state is established at 4:55 (at Rehearsal 35), where the texture and harmony both change, in addition to the text the choir sings (now "for you can not, you may be sure"). At this point in the piece, the listener has most likely achieved a sense of *expectant time*.

Expectant time allows the listener to establish a feeling of continuity by linking an awareness of events in time, with changes in concurrent states. Expectant time may also be achieved in tonal, dynamic music, but in this situation, it is usually based upon harmonic tension and its consequent resolution. Levinson's 'tracking' will also result in expectant time, but on a deeper level. As the listener has multiple listening experiences, their expectation for a certain musical occurrence magnifies. Expectant time is focused not on the result of recurrent listening, but on how a listener might respond to a new piece of

[86] Based on the recording: Reich, Steve. *The Desert Music.* Compact Disc. Nonesuch, 7559-79101-2 (1985).

music *for the first time*.[87] In a static-state piece such as *Desert Music*, the blurred temporal boundaries will ultimately destabilize expectant time, as states progress from one to another, continually transforming while maintaining stasis. The listener may begin to switch from expectant time to emancipated time freely, as long as a goal does not present itself. In the case of *Desert Music*, which is approximately fifty minutes long, both text and texture changes are principal catalysts for changes in states. It is possible to follow the changes from state to state, but the lack of a *specific* goal generates ambiguity, and thus a greater sensation of stasis.

Listening to static music, and thus static states, forces the listener to hear the music from either a moment-to-moment or an expectant time standpoint. In most cases, the listener will randomly switch between these two and the imagination as the mind searches for something to latch onto. Listening to an hour-plus Feldman work, such as *Piano and String Quartet* (1985), will likely result in the listener's attention changing orientation quite frequently, and possibly attenuating as the experience continues. On the other hand, the amount of dynamic music in a Wagner opera will engage the mind even *without* the visual components. Music at the extremes of the static spectrum embodies either too little or too much change, and the average listener, unable to fathom the full spectrum of musical detail, will latch onto modifications to the music's surface, such as a drastic shift in orchestration or a period of silence.

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[87] It must be added that the separation of listening experiences by months or even years may render the same piece virtually 'new' on a recurrent listening.

This is exemplified by two examples. In Tenney's *Swell Piece #2*, the static single drone could have been considered one large state lasting ten minutes, were it not for interrupting points of silence throughout. Represented in Table 13 are the durations of each state and the ensuing silence.[88]

Table 13 – Tenney, *Swell Piece No. 2*: Durations of States and Silences

State	Duration of State	Duration of Silence
1	0:00-1:19 = **1:19**	1:20-1:32 = **0:12**
2	1:33-2:23 = **0:50**	2:24-2:44 = **0:20**
3	2:45-3:29 = **0:44**	3:30-3:38 = **0:08**
4	3:39-4:20 = **0:41**	4:21-4:26 = **0:05**
5	4:27-5:46 = **1:19**	5:47-6:04 = **0:17**
6	6:05-6:48 = **0:43**	6:49-7:00 = **0:11**
7	7:01-7:47 = **0:46**	7:48-7:50 = **0:02**
8	7:51-9:10 = **1:19**	9:11-9:15 = **0:04**
9	9:16-9:36 = **0:20**	9:37-9:39 = **0:02**
10	9:40-10:08 = **0:28**	(10:09-10:18 = **0:09**)

While there are no phrases or rhythmic motives present, the use of silence cuts through the stasis of the drone and creates audible sections. Of particular interest are the seemingly random silence durations, and equally the three states that all time out at 1:19 (States 1, 5 and 8).[89] The last silence duration has been put in parenthesis, as it was present on the track, but in a live performance it might actually be longer than nine seconds.

One remembers that on the complete opposite end of the static-dynamic spectrum, Boulez's first movement of *Le marteau sans maître* also uses silence

[88] Based on the recording: Tenney, James. *Postal Pieces,* Compact Disc, New World Records 80612-2 (2004).
[89] One could note that the durations of these silences correspond to non-consecutive elements of the Fibonacci Series, be it by coincidence or design.

to divide phrases, albeit much smaller durations of silence. Here as in the Tenney, temporal boundaries must be perceived through a large change, and sectional divisions are found at points where sound is absent. Tables 14 and 15 below display timings for states and silences from two recordings for *Avant 'l'artisanat furieux'.* Recording A[90] is significantly faster, and thus shorter, than Recording B[91], though both are conducted by Boulez. The initial and only given metronome marking, quarter-note equals 208, is the speed taken in Recording A. Recording B is taken at a slightly slower speed, at quarter-note equals 184. In all instances, the silences (denoted by two types of fermate in the score, and sometimes occurring at the end of a *ritard*) are less than one second in duration. Recording B lacks two silences, those that occur at bars 21 and 95 for Recording A, resulting in Recording B having two *fewer* states than the former. The reason for the two missing silences is simple: these points are accompanied with a *poco ritard*, but with no fermata (fermate exist at all other silence points for Recording B), and Boulez simply has the instruments sustain longer and begin earlier. The concept that a composition is musically malleable is not new, nor is the idea that the same composition under the same conductor could result in disparate interpretations. What is salient is that this finding redirects one's attention back toward the importance of perceiving music in the moment, as previously discussed in reference to Levinson. In other words, musical moments,

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[90] Boulez, Pierre and Oliver Messiaen. *Le marteau sans maître; Sonatine; 7 Haïkaï.* Compact Disc. Disques Adès 14.073-2 (1964, 1971).
[91] Boulez, Pierre. *Le marteau sans maître*. Compact Disc. Sony, MK 42619 (1989).

notwithstanding their subjective nature, may carry as much weight as musical notation.

Tables 14 and 15 – Boulez, *Le marteau, "Avant 'l'artisanat furieux'"*: Durations of States and Silences of Two Recordings

Recording A (1:29 in duration): Boulez conducting (1964)

Measures	State	Duration of State	Duration of Silence
1-10	1	0:00-0:08 =**0:08**	At 0:08 = **0.005**
11-20	2	0:09-0:17 = **0:08**	At 0:16 = **0.005**
21-41	3	0:18-0:34 = **0:16**	At 0:35 = **0.008**
42-50	4	0:36-0:42 = **0:06**	At 0:43 = **0.005**
50-52	5	0:44-0:45 = **0:01**	At 0:46 = **0.005**
53-80	6	0:47-1:09 = **0:22**	At 1:10 = **0.005**
81-94	7	1:11-1:21 = **0:10**	At 1:22 = **0.003**
95	8	1:23-1:24 = **0:01**	1:24-1:29 = **0:05**

Recording B (1:50 in duration): Boulez conducting (1989)

Measures	State	Duration of State	Duration of Silence
1-10	1	0:00-0:10 = **0:10**	At 0:11 = **0:005**
11-41	2	0:11-0:45 = **0:34**	At 0:46 = **0:005**
(21-41)			
42-50	3	0:47-0:55 = **0:08**	At 0:55 = **0:003**
50-52	4	0:56-0:58 = **0:02**	At 0:58 = **0:003**
53-80	5	0:59-1:27 = **0:28**	At 1:27 = **0:005**
81-95	6	1:28-1:45 = **0:17**	1:46-1:50 = **0:04**

THE IMPACT OF GOAL ORIENTATION

The presence of a goal within a musical state effects the overall composition–and thus perception–of the musical state. Goals may be melodic (in voice-leading) or harmonic arrival points (such as the resolution of a dominant to its tonic), the release of tension from a transition into a theme (movement from a less stable state to a more stable one), the arrival at rhythmic clarity, the arrival at a certain dynamic after a *crescendo* or *diminuendo*, or the arrival of a registral expansion or contraction. Kramer aligns goal orientation with linearity, or the understanding that one event succeeds another, creating a chain of antecedent-consequent relationships.[92] Linearity does not equate simply with a change following a change: most music does not stay at an exactly fixed point of reference regarding the constancy of the quality or quantity of its elements. Linearity is then the *arrival* of some event that connects to a previous event directly in time, a progression from one goal to another, and linear connections aid in the prediction of goal arrivals.[93]

Within a state, the presence of a goal creates an unavoidable dynamic linearity. This is easy to understand with tonal music and its hierarchical, harmonic goals, where dynamic states are the norm. In music that approaches either end of the static-dynamic spectrum, musical goals become more oblique, and often disappear. It is necessary to emphasize that the perception of a goal is the perception of linearity. If a goal is understood as an arrival point *when it arrives*, it functions as a significant event. Whether or not a listener is cognitive of the function of a dominant chord, a prolongation on this chord creates a given amount of tension (which tension is most often supported by other musical elements), and the *resolution* of this tension is felt, and thus identified, as the

[92] Kramer, Jonathan. *The Time of Music*, New York and London: Schirmer Books (1988), p. 22-23.
[93] Ibid, 331.

goal arrival. If a goal is understood only in retrospect, or realized during the listening experience, the goal arrival point is lessened because one cannot expect it. In Reich's *Piano Phase*, one quickly learns that the goal is the alignment of the attacks of each piano. Similarly, in Glass's *Two Pages,* one comes to expect the expansion or contraction of the rhythmic cells, though this expectation is not specific to what will happen. Kramer writes of music that exhibits a consistency in texture or surface, as is often found in the composition of tonal preludes (e.g. Bach and Chopin): "eventually the expectation for consistency turns into virtual certainty…but in retrospect we realize that an unchanging principle of organization, not a progressive linearity, has been determining the texture and surface rhythm since the opening of the piece."[94]

This does not preclude that a goal grasped in retrospect does not exist. In Ligeti's first Étude of Book I, *Désordre* (1985), the dense texture is almost unchanging in complexity and volume for its two-plus minute duration. Yet, despite the saturated texture, several dynamic processes exist that propel the piece forward. Most transparent of these is the ascent of the material in the right hand, which is directly opposed by a descent of the left hand material. Also, continual phasing and mutation of the initial pattern causes the octaves to separate from their initial alignment, thus increasing a sensation of density. Finally, there is a point (at roughly 1:20 in bar 99) where a 'lifting' occurs, which corresponds with the removal of the lower register. The piece ends with a stream

[94] Ibid, 42.

of notes that trail off into the piano's extreme upper register, giving the illusion that the piece has been expanding upward continually since the 'lifting' moment. The upward ending and removal of the bass are both background extensions of the reiterated cell (that consists simply of rising eighth-notes and octaves), and create the illusion that a goal of upward registral expansion exists. Kramer states that a "vertical", or static state piece, "does not exhibit large-scale closure…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…"[95] As any "event does not depend on any other event, an entire composition could be heard as simply one large event."[96] This is certainly true of Reich's *Piano Phase* and Glass's *Two Pages*, both evolutionary stasis state compositions, where the 'goals' are pattern-based expectations. The drone stasis of James Tenney certainly does not move toward a goal, and neither does the saturated stasis of Boulez's *Le marteau.*

However, while *Désordre* may have the surface effect of being only one state and texture, it has background 'goals' that support an overall compositional scheme. This is not unlike the Schenkerian middle- and background goals that exist in in tonal music. The disintegrative dynamicism state exists because a delineation needs to exist between dynamic and saturated state music. While the goals in Ligeti and Xenakis (such as in *Pleiades*, 1979) are not transparent or sensed as strongly as the goals in Mozart or Beethoven, they do project a

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[95] Ibid, 55.
[96] Ibid, 55.

direction that functions at a deeper level. As a transition within tonal music is directed toward a more stable state, the states within a disintegrative dynamic state piece may *all* be said to be transitory. The lack of arrival at a stable state does not remove the sense of focused direction–or goal orientation–from these disintegrative states. Whether a sense of linearity is imparted, or whether the particular goal is heard is dependent upon the actual musical treatment. In Ligeti's *Touches Bloquées* for example, there are seven states, each determined by a 'resetting' of the PCC correspondent with a resetting of a relatively small RL. Each state progresses by simultaneously expanding the RL and the PCC (see Table 7 and Example 9 on pages 44-46 for a summary of the RL expansion). As each of the states of *Touches Bloquées* acts in the same way, an expectation is arrived at. Regardless of the fact that this is not an exact application of Kramer's goal orientation, it can be understood that compositional patterns often drive a piece. And if, as in Reich and Ligeti, the realization of these patterns can be heard as yielding structural arrival points, then a parameter other than the surface of the music is effecting the how the state type is established.

SUBSTATES AND LAYERS OF EXISTENCE

Listeners who are trained to listen to common practice music are trained to listen in dynamic, developmental, motivic and thematic ways. They have learned to perceive classical music as existing in a hierarchical structure of space. In a sonata form, for example, a theme, its initial development and transitional phrases may be grouped generally as a 'first thematic area', and the first, second and closing themes and transitions all exist within the exposition. The exposition itself plays a harmonic role within the form, usually moving from the tonic to the dominant. This concept applies to states as well: local states, or substates, may be imbedded within larger states. States are often configured and related to each other, whether in Debussy, Mozart or Boulez. The grouping of substates within an overall state allows the focus of a state to be based on large-scale texture and timbre change, meaning that changes to the substructural elements (pitch, rhythm and register) will influence the substates.

This is certainly possible with works such as *Le marteau* or *Piano Phase*, where a persistent texture is sustained for the duration of the work. One could thus understand Piano Phase as consisting of three states, *or* one overall state with three substates. Morton Feldman's *Bass Clarinet and Percussion* is a fitting example of states with substates. The first state consists of the clarinet playing sustained tones (1,2,3,4) interrupted by rests while the percussion plays tremolos on cymbals and gongs. Easily considered one overall state, the clarinet modulates from one register to another, yielding four substates differentiated by registration. The relationship of these substates does not necessarily need to be linear, as in State 1 of the Feldman work above, as long as a consistency of texture is found in the overall state. A full analysis of the states and substates of *Bass Clarinet and Percussion* is given in Appendix A in Tables 15 and 16.

While the hierarchical relationship of tones and harmonies is usually lost when moving away from tonality, what remains are 'layers' of existence (Varèse used the term ‘planes’). Depending on the listener’s perspective, substates may be interpreted as musical layers, or vice versa. Eric Clarke writes the following (describing musical layers as “levels”):

> While structural levels in music are defined in terms of the principles of musical structure, those same levels are also considered to have psychological reality. Perceptual and cognitive processes operate at various levels of abstraction, and can therefore, in principle, be ‘tuned’ to pick up information at various structural levels.”[97]

Understanding how layers of existence relate to each other gives insight into the character of each state type. To discuss layered states within a composition, the terminologies *surface layer*, *intermediate layer* and *background layer* will be utilized. Layers of existence directly relate to the temporal units, as these units are made up of substructural elements. The surface layer is made up of musical elements that will be immediately apparent. This layer is connected to the temporal unit of the motive, and has the fastest perceivable temporality. The intermediate layer is the musical layer defined by local level changes in the temporal unit of the phrase. It is in this layer that substructural elements combine to yield a phrase unit. Here temporality may be perceived as being slower than in the surface layer. The background layer, connected to the temporal unit of the section, is where large contrasts in texture and temporal proportions exist. These changes often determine state divisions, as exemplified by the contrast of silence

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[97] Clarke, Eric. “Levels of structure in the organization of musical time” in *Contemporary Music Review, Vol. 2 (1987)*: 211-238, p. 212. Clarke defines temporal low-level structure as being connected with expression, middle-level structure as embodying rhythm and meter, and high-level structure as relating to form. He also writes that as much contemporary music weakens or avoids “a clear distinction between structure and expression”, a need exists for a model that explores the psychological and temporal aspects of such music (pp. 234-236).

with sound in both Boulez's *Le marteau* and Tenney's *Swell Piece #2*. It is in this layer that temporality may be perceived as being the slowest, by comparison to the surface and intermediate layers. Table 16 portrays the static-dynamic spectrum and the types of states that exist in each layer.

Table 16 – Layers of Existence and the Static-Dynamic Spectrum

	Drone Stasis	Evolutionary Stasis	Dynamic	Disintegrative Dynamicism	Saturated Stasis
Surface layer	Static	Static	Dynamic	Dynamic	Static
Intermediate layer	Nonexistent or Static	Static	Dynamic	Static	Nonexistent or Static
Background layer	Nonexistent or Dynamic	Static	Dynamic	Dynamic	Nonexistent or Dynamic

A piece comprised of drone and saturated stasis states will tend to each have a static surface layer, with too little or too much change. The intermediate layer of these states is usually nonexistent and therefore static, because phrases are not found in these states. The background layer is either nonexistent or–perhaps surprisingly–dynamic. This is because the high degree of stasis in these states needs a large change, such as silence, for a section (and therefore state) to be determined. The evolutionary stasis state piece, as exemplified by *Piano Phase*, is comprised of static states in all three layers. This is because phrases are blurred (often due to phasing or repetition), the surface elements do not change often, and sections are either blurred or of immense duration. In contrast to this is the dynamic state piece, where all layers are made up of dynamic states, as seen in Mozart and Beethoven. This is due in part to the existence of harmonic motion at each level. Finally, the disintegrative dynamicism state, as exemplified by

Touches Bloquées, has a dynamic surface, though the amount of substructural change gravitates toward being almost static. The intermediate layer is static, because even though phrases are present, they are often blurred beyond aural recognition. The background layer of this state is dynamic, as sections are usually well-defined.

James Tenney's *Spectral Canon for Conlon Nancarrow* (for player piano, 1974) presents a fascinating example of layers of existence. The piece progresses from single repetitions of a low A to a multiplicity of pitches across the entire range of the piano. The addition of pitches moves from the lowest to highest partials based on the harmonic spectrum of A. This progression occurs simultaneously with a continual acceleration of the tempo, yielding rhythmic patterns that evolve as pitches are added. Once all pitches are present and the register is saturated, the tempo acceleration becomes indistinguishable as a dynamic process and all rhythmic patterning becomes inaudible. It is at this point that a saturated stasis state seems to come into existence (at roughly 2:40 of the work's total time of 3:37).[98] The surface of *Spectral Canon* is comprised of the dynamic elements of pitch addition, registral expansion and tempo acceleration. The intermediate layer combines the substructural elements, which can be seen in the rhythmic patterning; these pattern changes are dynamic. There is a distinct sense that this piece falls into the disintegrative dynamic state category, where the additive process is so extreme that it ultimately results in a mutation of the

[98] Based on the performance found on http://www.youtube.com/watch?v=hUrfKBnQ9a4, accessed March 30, 2012.

state itself. However, different perspectives may be taken with regard to the background layer. One may perceive that the use of a single harmonic spectrum is analogous to the limited pitch use found in drone stasis (though the piece is clearly not a single pitched drone). This idea may be contrasted with the overall nature of constant change that occurs throughout the piece in a temporal boundary that is clearly a single section. Perhaps the saturated stasis that exists at the end of *Spectral Canon* is merely a result of the limitations of both human perception and the instrument itself. In any case, the analysis is aided by thinking in terms of the layers of existence.

Of special interest are certain pieces that do not fit cleanly into a state category. Appendix A deals with two composers, Morton Feldman and Brian Ferneyhough. Certain pieces by Feldman, such as *Bass Clarinet and Percussion* (1981) or *Piano and String Quartet* (1985), exhibit a tendency toward both disintegratively dynamic and evolutionarily static states. Much of Ferneyhough's music also expresses ambiguity in terms of state categorization, being both dynamic and saturated. This is seen in works such as *Cassandra's Dream Song* (1970), *Unity Capsule* (1976) or the *String Quartet no. 2* (1980). It is especially with pieces like this that a 'zooming out' of each individual state and examining at the intermediate and background layers may be helpful in identifying how the piece is generally perceived, in terms of its static or dynamic qualities.

CONCLUSION

To paraphrase Jonathan Kramer, it is undeniable that music exists in time, and time within music.[99] Where a listener's perception of time may be skewed by the amount of adrenaline in their system or the amount of events existing in a given time span, a sense of musical time is further distorted as each individual listener comes from a disparate musical experience. For example, a first listening of Stravinsky's *Le sacre du printemps* is different if it occurs at age twelve or age fifty, or if it is preceded by an understanding of Bartók and Debussy, or of primitive drumming techniques, or if the listener has already heard Boulez's *Le marteau sans maître* or Reich's *Music for 18 musicians*. Additional listenings to Stravinsky's *Le sacre* will deepen the ability to 'track' the piece, and therefore better grasp what is heard. To analyze, conduct or perform this work would only augment the sensation that the music was fully internalized, 'digested', as it were. Concepts such as macro-listening and the development of 'expectant time' as a result of event or state listening may aid the listener in approaching a new piece music for the first time, whether it be Vivaldi, Scelsi or the Beatles. Where macro-listening implies a certain cognitive categorization and generalization of all musical aspects, expectant time is based on a listener's sense of anticipating musical events. To accurately compare how two individuals understand a new piece of music upon a first listening is impossible. Even if each listener has had the same musical background, and thus commands the same *a priori* knowledge

[99] Kramer, Jonathan. *The Time of Music*, New York and London: Schirmer Books (1988), p. 1.

of music, the specific pieces of music (within various genres and eras) that each individual has heard will have created distinct neurological pathways, meaning that each listener will have a unique perception of what they hear. Memory complicates the matter of musical cognition even further. *A priori* knowledge will support a deeper understanding of musical elements, and thus their mental categorization and the ability to recall them. A salient or repetitive musical event will be easily recollected, but as more time and new events occur between points of repeated events, the memory of such an event may degrade. Grisey writes that sound events that are barely differentiated from each other will be "virtually impossible to memorize."[100]

> With no prominent event making an impact on our consciousness, the memory slips. It has nothing to latch on to–hence the effect of intense fascination or hypnosis–and all that emerges is a hazy memory of the contours of the sound's evolution. Time past is no longer measurable: I would call this process psychotropic, or better still chronotropic.[101]

This statement may be applied to Grisey's *Prologue*, where the lack of distinct change between similar musical events results in an amorphous temporality. The perception of stasis will therefore increase when there is a decrease in the perception of temporal boundaries, and this decrease of temporal perception may result in the inability to understand hierarchical structure at the surface level.

As much contemporary music blurs substructural and temporal

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[100] Grisey, Gérard. "Tempus ex Machina: A composer's reflections on musical time" in *Contemporary Music Review, Vol. 2*: 239-275, p. 273.
[101] Ibid, p. 273.

boundaries, listeners, even trained in classical music, are often left wondering *how* to listen to a new composition. Analysis and the subsequent designation of states in terms of their relative static or dynamic qualities, in combination with the observation of how the layers of existence are either static or dynamic, can considerably assist in an understanding and perception of music, whether static or dynamic, tonal or otherwise. Music can be said to exist then in terms of its momentum within time, and the amount of density or the number of events that exist within that timeframe contribute to the state type. These states are comprised of certain limitations in the substructural elements of pitch, timbre, dynamics, register and rhythm. The configuration of these internal elements contributes to the perception of a state's temporal boundaries. A surface comparison of the introduction of Stravinsky's *Le sacre du printemps* (particularly Rehearsal markers 5-11) and Boulez's *Avant 'l'artisanat furieux'* from *Le marteau sans maître* yields that both are composed of dense counterpoint. However, the texture of each piece is not *sensed* as being of the same density. This difference is primarily a consequence of the compositional treatment of the substructural elements: Stravinsky uses dynamic and timbral separation, pitch and registral limitation, and motivic repetition to create clarity, whereas Boulez works to blur any audible patterning within the substructural elements. The Stravinsky excerpt will be heard as dynamic and the Boulez as static, though both pieces express a similar texture.[102]

[102]One is reminded of Stravinsky's later trend toward a more aggregate-saturated music, occasionally writing moments of saturated stasis, such as the 12-part polyphonic sections in the *Variations in Memoriam Aldous Huxley* of 1964.

It is not always the case that a focus on the substructural elements will clarify a state. Both dynamics and timbre will often suggest a disparate state type by comparison to other substructural elements. Timbre may clarify temporal boundaries or confuse the function of the pitch and registral aspects, as was seen in Webern's Op. 21. Given the multifaceted and potentially ambiguous nature of timbre and the limited scholarship that exists on this element, it is clear that more research could be done in support of a timbral-based analytical approach to music.

Further, since noise has unquestionably been integrated into the current compositional world's timbral palate, one must question whether a musical state model that emphasizes pitch over the other substructural elements is sufficient. In Helmut Lachenmann's *Guiro* (1969), for example, at no point does the pianist actually depress the keys, but instead plays with fingernails on the spaces between the keys and tuning pegs. The closest 'pitched' sounds come from occasional pizzicati on the strings between the tuning pegs and felt strips, but these sounds are so high that they are equally as much attack as they are pitch. Ironically, two pizzicati on the normal strings end the piece. Because pitch has been subjugated to noise, it would be fitting to focus on the sound's registral placement and dispel with a pitch analysis. An understanding of the composite texture would also be essential in determining a state type for *Guiro*. One could imagine that a gradient scale of noise timbres, with relationship to the inclusion of focused or unfocused sound, could also replace the need for pitch analysis in such pieces.[103]

Given the complexity of the human mind and its relationship to time and sound, the issue of how one perceives musical structure remains a fruitful area for ongoing research. What is certain is that the listener chooses–be it consciously or unconsciously–what to listen for, and though this choice is somewhat arbitrary, it results in a siphoning of a particular part of the music. By approaching music in terms of its various state types, the listener may gain insight as to how the music functions, specifically by correlating substructural elements as they relate to a given temporality. Using this model, the listener may even embark on a type of perceptual analysis, where the listener's aural comprehensions and cognitive impressions immediately suggest a way in which the music exists. Currently we do not fully apprehend how we understand what we hear, but perhaps this is because what we hear is a combination of our perception, our imagination, our emotions, and our previous musical experiences.

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[103] This would be essential when approaching the music of Chaya Czernowin, who mixes noise and pitch together in various degrees. Composers of the Darmstadt School and composers working with electronic and musique concrète also come to mind, as well as much of my own music.

APPENDIX A:
TWO COMPOSER STUDIES–FELDMAN AND FERNEYHOUGH

It is both paradoxical and fitting that music exhibiting static and/or dynamic qualities does not always submit to exclusive categorization into the state types of the static-dynamic spectrum. That music is not easily branded attests to its multifarious and illusive qualities, whether notational, aural, or constructional. The music of Morton Feldman and Brian Ferneyhough demonstrates a tendency toward disparate kinds of state ambivalence. This appendix identifies how equivocal qualities create this ambivalence and therefore can present qualities of multiple states simultaneously.

A full state analysis of Feldman's *Bass Clarinet and Percussion* (1981) is presented in Table 17. The first observation is that several of the states have been broken into substates.

Table 17 – Feldman, *Bass Clarinet and Percussion*:
Complete States and Substates

State	Substate	Measures	Time Point	Duration	Event	Clarinet Register
1		C: 1-*61* P: 1-*64*	0:00-*3:12* 0:00-*3:20*	3:12 3:20	C: sustained tones & rests. P: single tremolo on gongs/cymb.	**1,2,3**
	1A	1-15	0:00		"	1
	1B	16-30	0:48		"	2
	1C	31-45	1:36		"	3
	1D	46	2:25		"	1
2		C: *61-90* P: *65-95*	*3:12-4:52* *3:21-5:07*	1:40 1:46	C: each note in new register. P: 2-instrument tremolo	**1,2,3,4**
3		C: *91*-135 P: *96*-135	*4:52*-6:51 *5:07*-6:51	1:59 1:44	C: sustained tones & rests. P: Timpani repeated attacks, Marimba tremolos	**1,2,3**

State	Substate	Measures	Time	Duration	Event	Clarinet
	3A	91-99	4:52		“	2
	3B	100-108	5:21		“	3
	3C	109-117	5:39		“	2
	3D	118-126	6:06		“	2
	3E	127-135	6:25		Timpani: 1-note	1
4		C: 136-*177* P: 136-*180*	6:52-*8:33* 6:52-*8:45*	1:41 1:54	C: descending chromatic scale. P: changing Xylophone chord clusters	**1,2,3,4**
Clar.	4A1	136-142	6:52		descending	1
	4B1	143-147	7:11		“	2
	4C1	148-151	7:22		“	3,4
	4D1	152-155	7:28		“	2
	4E1	156-160	7:36		“	3
	4F1	161-170	7:46		each note in new	1,2,3,4
	4G1	171-177	8:14		descending	1,2,3
Xylo	*4A2*	*136-144*	*6:52*		*chord:*	
	4B2	*145-153*	*7:16*		*chord T-1*	
	4C2	*154-162*	*7:38*		*chord T-1*	
	4D2	*163-171*	*8:00*		*chord T-1*	
	4E2	*172-180*	*8:25*		*chord T-1*	
5		C: *178*-226 P: *181*-226	*8:34*- 10:41 *8:46*- 10:41	2:06 1:55	C: 3-note pattern. P: Timpani repeated attacks Marimba tremolos	**2**
	5A	181-207	8:46		“	2
	5B	208-216	9:56		Timpani: 2-note	2
	5C	217-225	10:17		Timpani: 1-note	2
6		226-270	10:42- 12:54	2:12	C: repeated notes & rests. P: Timpani & Marimba tremolos	**2**
	6A	226-253	10:42		“	2
	6B	254-270	12:09		Gong tremelo	2
7		C: 271-*285* P: 271-*289*	12:55- *13:36* 12:55-	0:41 0:57	C: each note in new register. P: single tremolo on cymb.	**1,2,3,4**
8		C: *286*-315 P: *290*-315	*13:37*- 15:04 *13:53*-	1:27 1:11	C: repeated notes & rests. P: Vibraphone	**3**
	8A	286-297	13:37		“	3
	8B	298-306	14:15		new Vibe. chord	3
	8C	307-315	14:39		new Vibe. chord	3
9		316-360	15:05- 17:18	2:13	C: repeated notes & rests. P: 2 Timpani, tremolos (unaligned)	**2**
	9A	316-351	15:05		“	2
	9B	352-360	16:51		Timpani align	2

C = Clarinet **Register 1 = high, Bb5-B4** **Register 3 = low, A3-A2**
P = Percussion **Register 2 = middle, B4-A3** **Register 4 = G#2-D1**

These substate divisions are based on either changes in the clarinet's register (and thus changes to the RL), modifications of the rhythmic patterning in either percussion or clarinet, and sometimes a change in the PCC. For example, in State 4 the clarinet plays descending chromatic scales that 'reset' in a new register. These registral resetting points have determined the states as seen in Table 15 (substates 4A1-4G1). In opposition to this linear movement, the xylophones play cluster chords with PC 1,2,4,5,7,8,10,11 (omitting PC 0,3,6,9) starting in bar 136. After nine bars (at bar 145) this collection changes to 0,1,3,4,6,7,9,10 (omitting PC 2,5,8,11). Every nine bars the pitch clusters are altered, shifting down by a semitone transposition. These changes to the percussion's PCC outline alternate substates, identified as *4A2-4E2*. This non-alignment of the substates is consistent with another aspect of the piece: the percussion and clarinet often change to a new state independent of the other instrument's state change. For example, State 1 lasts three bars longer in the percussion than in the clarinet. This results in a misalignment of the beginning of State 2, in which each instrument ends at a different point. The effect of this instrumental independence blurs the temporal unit of the section. Given that the phrase is either not present or also blurred, and the motivic unit is also blurred by the irregularity of the repetitions, with the result moving between an aural focusing and unfocusing. The misaligned states are identified with italicized duration and bar numbers in Table 17. As an alternative, the substates divisions could be considered as multiple states existing on separate layers of existence.

Table 18 presents the PCC and material used for the states of *Bass Clarinet and Percussion* in connection to the states, substates, and joint or separate duration.

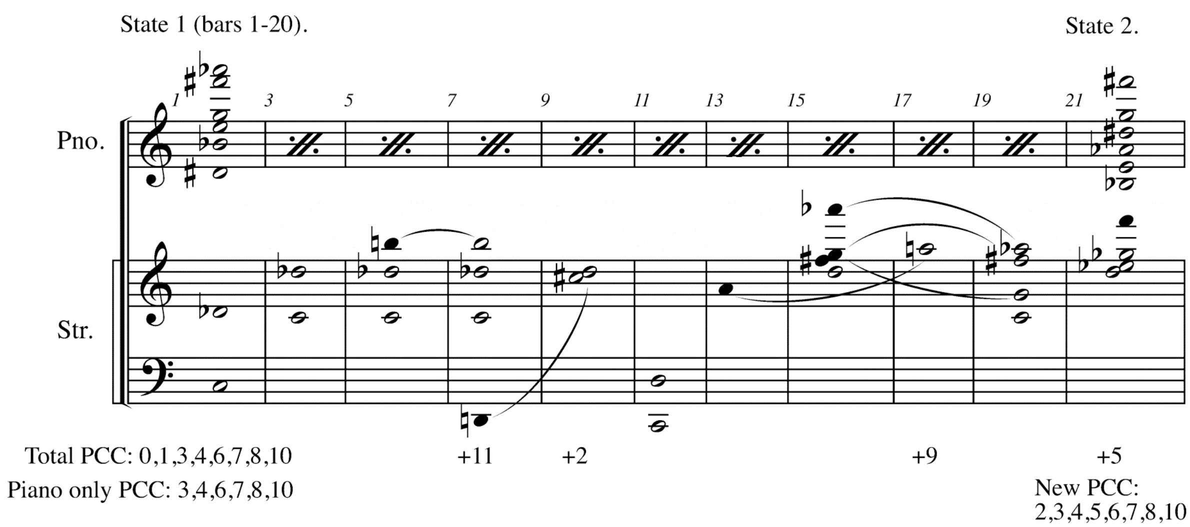
Table 18 – Feldman, *Bass Clarinet and Percussion*: State PCC and material distribution

State & (substates)	**PCC** Regular = Clarinet only *Italics* = Perc. only **Bold** = Shared PC	**Duration** CL – Joint – Perc.	**Material Used** Clarinet – Percussion
1 - (4)	1 2 3 4	3:12	A X
2 - (0)	1 2 3 4	1:40	A' X'
3 - (5)	0 1 9 10 **11**	1:59	B Y
4 - (7)	**0 1 2 3 4 5 6 7 8 9 10 11**	1:41	CBC Z
5 - (3)	1 2 *10* 11	2:06	D Y
6 - (2)	*10* 11	2:12	Y" Y'
7 - (0)	0 1 2	0:41	B X
8 - (3)	*0 1 3 5 6 7 8 10* 11	1:27	Y" Z'
9 - (2)	8	2:13	Y" X

State 4 stands out, as it is the only state that has an aggregate-saturated PCC. Here both instruments also share all pitch classes; the only other shared pitch class exists in State 3. One can correspond the independence of the instrumental state change to the independence of the PCC use. However, the treatment of the material in State 4–scales and cluster chords–does not yield the same effect as the saturation of *Le marteau*, due to its simple textural nature. Likewise, the rhythmic activity of State 9 does not feel as static as the drone in Tenney's *Swell Piece #2.* Rather, this piece falls into a grey area, positing simple ideas in a complex fashion. The lack of immediate goal-orientation (from state to state) and the use of repetitive motivic elements resembles an piece composed of evolutionary stasis states, while the complexity of internal change in the states and substates bears semblance to a disintegrative dynamic state.

One final example of ambiguity in Feldman is taken from the opening of *Piano and String Quartet* (1985). The pitch content for the first twenty-one measures is displayed in Example 16.

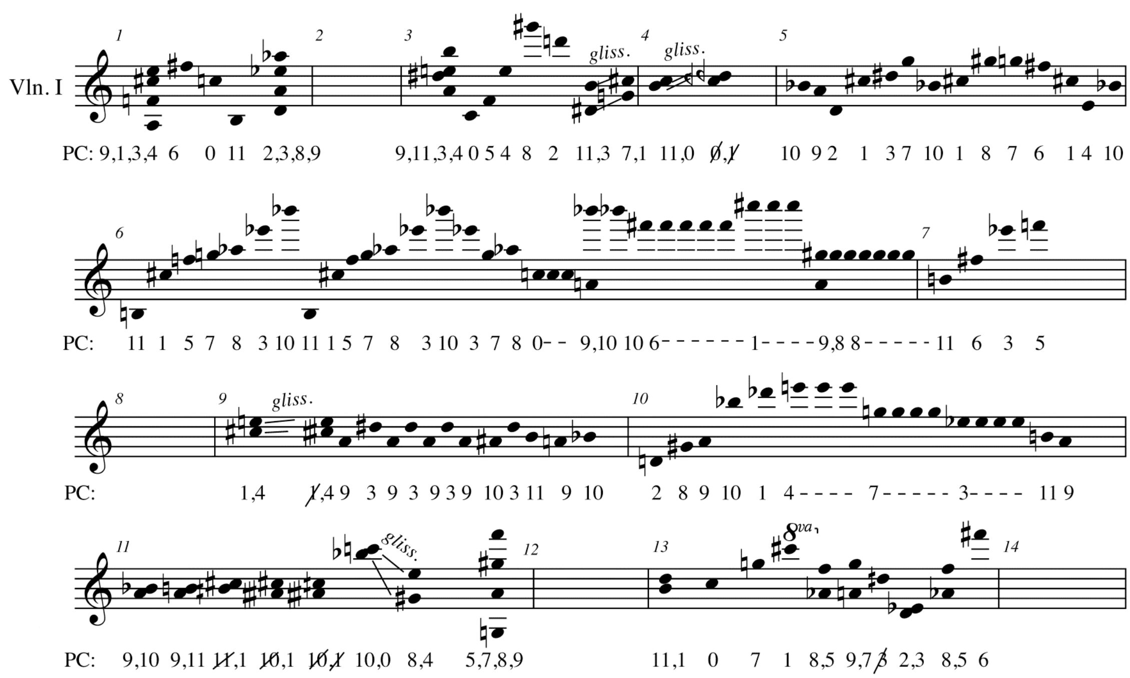
Example 16 – Feldman, *Piano and String Quartet*: PCC for State 1 into 2



Here the piano rolls one chord every odd bar for the entire state, while the strings sustain pitches from the PCC (all even bars are silent). The strings introduce new PCs, initially identified as black note heads and then added to the PCC as they are continued. In measure 21, the introduction of PC 5 signifies the presence of the aggregate over bars 1-21. This suggests that Feldman is aware of either withholding or allowing the aggregate to present itself. It is at the point of aggregate completion that the piano's PCC (3,4,6,7,8,10) is reordered. This reordering may be heard as a musical development, though it is actually static in nature. This overall sense is that the state is static, though buried within it are dynamic aspects.

To examine the music of Brian Ferneyhough, one is left with a different sense of ambiguity. Constant change yields an undeniably dynamic effect, while the amount of saturation and complexity present may often result in a sound reminiscent of a saturated stasis state. The saturation is anything but static however, and is found in all parameters: dynamics, structure, pitch, noise, register, articulation and rhythm. This may be seen in his *Second String Quartet* (1982). Example 17 displays the PCs, including all repetitions, of bars 1-14 (quarter tones have been indicated by a slash through the numeral).

Example 17 – Ferneyhough, *Second String Quartet*: Present pitches of State 1



Ferneyhough writes that this work “consciously sets out to conceal its generational methodology under successive layers of relatively straightforwardly evocative gesture intended to divert the ear away from this structural framework concurrently with allowing this latter to ‘shade-in’ further dimensions in a less palpable, but possibly more all-pervasive manner.”[104] He continues: “I was aiming at the suggestion of a ‘super instrument’ – starting with one violin, then successively adding the second violin, viola and cello. The effect was to render transition points almost imperceptible, at least at the outset, where articulation between participants is closely coordinated.”[105] While transitional points may be blurred, one can still define the initial four states by the entry of each instrument. Delineating states after all instruments have entered becomes much more difficult. Ferneyhough notes that it is “only in the pitch domain” that the instruments differentiated initially, as they are rhythmically homogenous.[106] Table 19 below displays the distribution of pitch material per bar for Violin I in State 1. Here one can see number of attacks per PC per measure as well as any absent PC (defined by grey boxes). Missing PCs are also notated on the right of the grid, as well as the duration of each bar in eighth-notes. This duration is important, as the work not only changes meter frequently, but also tempo, resulting in a flexible temporality.

[104] Ferneyhough, Brian. “Second String Quartet” in *Brian Ferneyhough–Collected Writings*, Boros, James and Richard Toop, Eds. Singapore: Harwood Academic Publishers (1995), p. 118.
[105] Ibid, p. 119.
[106] Ibid, p. 119.

Table 19 – Ferneyhough, *Second String Quartet*: PC distribution for State 1

	PC													
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**Missing PC**	**Bar duration in 8th notes**
Bar 1	1		1	2	1		1		1	2		1	1,5,7,10	1
2													All	5
3	3	2	1	2	2	1		1	1	1		3	6,10	3
4	2	1										1	All	3
5		3	1	1	1		1	2	1	1	3		0,5,11	2
6	3	5		3		2	5	2	9	2	3	2	2,4	8
7				1		1	1					1	0,1,2,4,8,9,10	1
8													All	5
9		2		4	2					5	2	1	0,2,5,6,7,8	3
10		1	1	3	3			4	1	2	1	1	0,5,6	4
11	1	3			1	1		1	2	3	4	2	2,3,6	2
12													All	2
13	1	2	1	2		2	1	2	2	1		1	4,10	5
14													All	6

The ratio of pitch reiteration to bar length appears to be consistent, as may be seen by comparing bar 6, which has a high density over eight eighth-notes, to bar 7, which has a low density over a single eighth-note. That the state has a saturated pitch content is obvious. What is not obvious is whether a PCC is in effect; a pattern does not appear, with the exception of the bars of rest. The lack of patterning in the pitch domain forces the listener to focus all the more on the gestures present. When the texture and gesture takes precedence apart from clear pitch and rhythmic features, generalization in these substructural areas may be made.[107] Ferneyhough has essentially stripped pitch of its connotative importance, just as he has done with temporality. What is left for the listener is an

[107]Ferneyhough writes that working with a complete textural homogeneity obtains "a total freedom on the part of the listener to move at will inside and through textures, transferring from level to level with a minimum of difficulty and adapting a maximum of previous structural categories to articulate the new context." (Ibid., p. 7.)

immediate sound experience; as structural and substructural elements are treated in a blurry manner, the idea of a state is replaced with event-by-event linearity. The resemblance to saturated, dynamic and disintegratively dynamic states is appropriate because it supports the ambivalence that exists in the music.

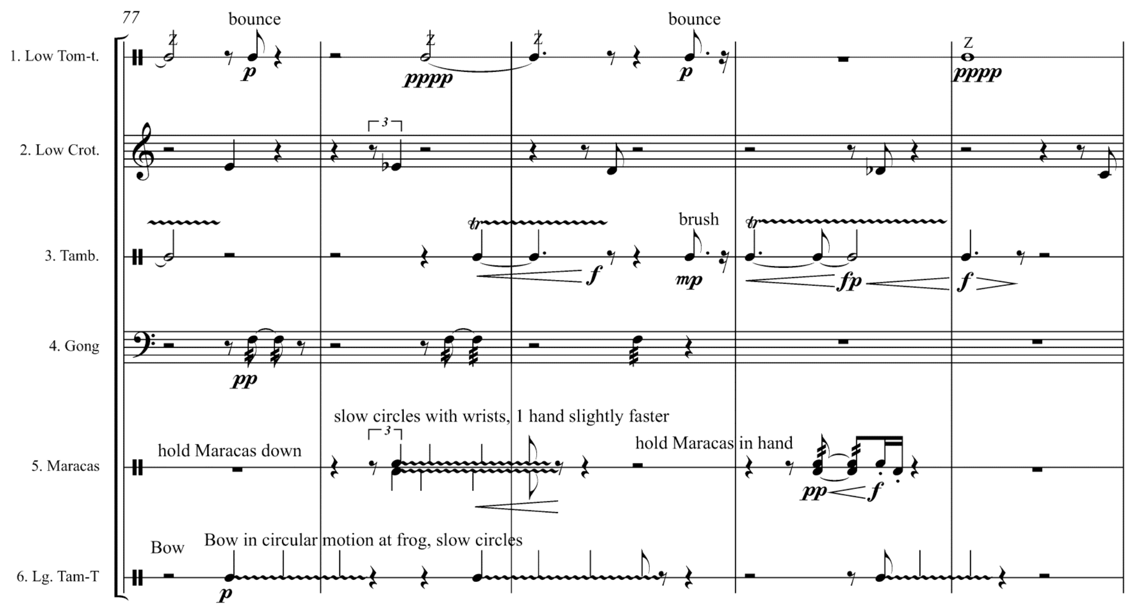
APPENDIX B: THE COMPOSITIONAL APPLICATION OF STATES–WOODWARD

The genesis of musical states was influenced not only by readings from Kramer, Boulez and others, but also by an analytical look at my own compositional process and the musical result. Several early models of musical states presented themselves indirectly, through a preoccupation with another idea. For example, the percussion sextet *Occasional Places* (2008) is written based on the idea of ‘streams’ defined by both timbral and rhythmic aspects. Each stream is assigned to a specific instrument while displaying a unique rhythmic gesture or regularity. These streams are treated in juxtaposition with each other, as currents within a river. Each percussionist commands a station of three to four instruments. As independent layers cannot be clearly differentiated within a river, the concept for *Occasional Places* was to replicate this musically by moving through various timbral combinations without ever achieving a stable sense of arrival. This is achieved by having percussionists change instruments independent of each other; their independence contributes to movement toward or away from a state that is defined by its timbral qualities. A dichotomy is created: on the one hand, direction toward a new state is goal-directed, but if an arrival at the state is never felt, the goal is eluded. A similar type of treatment is found in Feldman's *Bass Clarinet and Percussion*, where temporal blurring results in substates and unclear boundaries. Example 18 displays a transitional point in *Occasional Places* where shifting from one state to another occurs.

Example 18 – Woodward, *Occasional Places*: bars 47-54

In contrast with this is Example 19, where timbres have just settled. The state in Example 19 is identified by the particular instrumental sounds present, and cohesion is created through the use of similar instrumental techniques.

Example 19 – Woodward, *Occasional Places*: bars 77-81



The tambourine and maracas exhibit two types of rustling and the tom-tom and gong two types of tremolo, while the circular bowing on the tam-tam elicits an unclear pitch in contrast to the clear pitch of the bowed crotales. These similarities result in a clouding of timbral parameters. Though *Occasional Places* was not composed based on the concept of states, it may be analyzed retrospectively as an example of a disintegratively dynamic state piece.

A transitional work that sporadically uses states while furthering the idea of streams is from *A Portrait of an Infant (On Coming into Being)* (2009-2011). In the first movement, *In Utero: From Week 37 to Birth*, one finds the state beginning at rehearsal letter G based much on timbral continuity and separate rhythmic streams, causing temporal–and therefore state–blurring to occur. Three rhythmic streams from this state are displayed in Example 20.

Example 20 – Woodward, *In Utero: From Week 37 to Birth*, excerpt: Rhythmic streams for Horn 2, Timpani and Violin 2, bars 52-79

The timpani plays a pattern of rolls of five eighth-notes in duration which is interrupted by rests of four, five and six eighth-notes in duration. The pattern is broken in bar 59 when the lengths of the rests change. Also beginning in bar 52 is a pattern played by the second violins. Apart from the first duration of eighteen eighth-notes, all subsequent durations are fourteen eighth-notes long, separated by rests in the given durational pattern: 5 6 7 6 5 4 5 5 6 7. Horn 2 also has a pattern beginning at bar 52. It is presented without irregularity in its sequence: sustained notes of fourteen eighth-notes separated by eighth-note rests in a durational sequence of 5 7 9 11 13 15. It is interesting to note that while the rhythmic streams of Horn 2 and the timpani are both drones on the pitch E, the second violins play a series of dyads expanding from the pitch A. Within the context of the rest of the orchestra, most of the intricacy of these streams is lost due to the soft dynamic assigned. This is purposeful, however: the streams represent a veiled layer meant to blur surface activity. Once this activity disappears (at bar 72), the veiled layer comes into focus. These rhythmic streams are also derivative of Feldman, who juxtaposes many ‘streams’ to yield an overall static effect.

At the forefront of my compositional aesthetic is the idea that a piece of music may become a visceral sound for the listener. If the listener’s cognitive abilities are distracted by the sound itself, the mind’s tendency to analyze, track, or expect musical events is temporarily disabled, a condition that I believe opens up the possibility for imaginative listening to occur. I became aware that stasis was one way to distract the listener’s mind. My emphasis on contrapuntal techniques such as rhythmic streams shifted to a focus on how to compose stasis. This led ultimately to the creation of the static-dynamic spectrum and the defining of musical states. A recent work that consciously expresses various aspects of state composition is *Meditations on the Perceived Stasis of Light* (2011), written during the completion of this thesis.

Example 21 – Woodward, *Meditations on the Perceived Stasis of Light*: bars 1-13

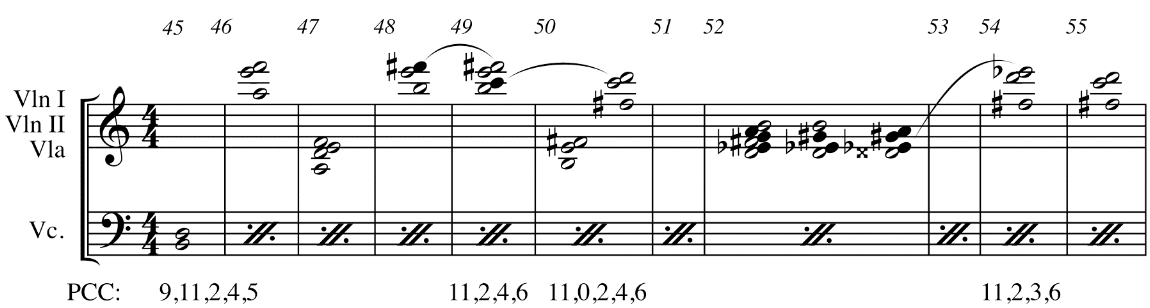
Two states from this piece will be examined. Example 21 depicts the opening state of the piece (bars 1-13), the PCC of which is 11,2,5,7,8. The PCC is expanded slightly in bars 5 and 9 by PC 7, and in bar 13 by PC 4. In bars 7 and

8, PC 3 is added and maintained in the following bars, thus altering the PCC (these pitches are identified with circles in Example 21). While the PCC is limited, each pitch is rhythmically activated, producing a kind of heterophonic texture where the PCC is present both vertically and horizontally. The activations create the sense that more change is occurring than actually is the case. The rhythmic use also suggests this, as triplet eighth-notes dominate through the occasional rhythmic blur of four against three and five against four. The RL is also limited, with all four instruments playing within the space of ten semitones. The overall result is difficult to categorize, existing between disintegratively dynamicism and evolutionary stasis.

A second example is drawn from bars 45-55, as seen in Example 22 below. Here the cello plays a pizzicato dyad (11,2) in an arrhythmic repetition through the entire state. The three upper strings alternate between harmonic trichords and pizzicati. In contrast to the static cello, the pitch content for the upper strings slowly changes, resulting in a mutating PCC. The PCC evolution may be seen in Example 23 (also below), and is not unlike the mutation seen in Ligeti's music (such as *Lux Aeterna*). Even with a mutating PCC, this state is stabilized by the repeated cello dyad, and could thus be categorized as a state of evolutionary stasis.

Example 22 – Woodward, *Meditations on the Perceived Stasis of Light*: bars 45-55

Example 23 – Woodward, *Meditations on the Perceived Stasis of Light*: PCC for bars 45-55



These types of states, as well as drone and saturated stasis states, are pervasive throughout *Meditations*, with the exception of dynamic transitions. This piece exhibits background dynamic movement from state to state, in juxtaposition with the fact that almost all the work's states have a static surface. My compositions could be currently summarized as being constructed of all state types, with a focus on disintegratively dynamic or evolutionary stasis state types. The concepts of states that fluidly evolve from one to another, while creating a false sense of goal-orientation and blurring temporal and substructural boundaries are also fundamental to my compositional language.

APPENDIX C: DEFINITION OF TERMS USED

Absolute time – Ontological, chronometric time.

Background – The musical layer defined by large contrasts in texture and temporality, and from state to state. The background layer is connected to the temporal unit of the section, where temporality may be perceived as being the slowest by comparison to the surface and intermediate layers.

Boundary – An area that separates a particular musical element and when combined yield a musical state.

Change – Change is perceived as significant when the amount of new information is proportionate to the density of the number of normative current events.

Changing tone, CT – A tone that alters a state's PCC and causes either a new PCC or a mutating PCC to come into existence.

Disintegrative dynamicism – A moderately dynamic to static state type, characterized by greater change than in dynamic states, where temporal boundaries may be blurred or absent, with some goal tendency present. This state type may be seen in selected music by György Ligeti and Iannis Xenakis.

Drone stasis – A static state type, characterized by little change, a lack or extreme obscuration of temporal boundaries with no goals. Drone stasis may be heard in the music of LaMonte Young and James Tenney.

Dynamic state – A state characterized by constant change, usually by forces producing motion. Dynamic music is based on a selectiveness from an always evolving criteria, resulting in a varying density. Goals are definitive, and temporal boundaries are clear.

Evolutionary stasis – A moderately static state type, characterized by less (though some) change, blurred temporal boundaries, and perhaps long-range goals. Such stasis is typified in the music of minimalist composers Steve Reich and Philip Glass.

Expectant time – Potentially, expectant time is the listener's experience of anticipating musical events within the perceived musical time. Expectant time is usually achieved due to the repetition of similar states or of some other repeated aspect.

Goal-orientation – Jonathan Kramer's term for the music that is driven to and from specific goals, where goals function as significant events. Goal-orientation aligns itself most often with linearity in music.

Inconsequent tone, IT – A tone that does not alter a state's PCC.

Intermediate layer – The musical layer defined primarily by local level changes in the phrase temporal unit. The point where substructural elements combine to yield a phrase unit, and temporality is perceived as being slower than the surface layer.

Macro-listening – A top-down approach to listening that is naturally led by the brain's tendency for categorical perception.

Musical states – A musical mode of being, existing within a specific time frame with consistent musical elements, which are defined within boundaries. A state is a generalized formal boundary; the degree of activity of the state determines whether it is perceived as static or dynamic. Internal elements (substructural boundaries) influence the makeup of temporal boundaries, which in turn yield an overall boundary, the state. Within this overall boundary **Substates** may be identified.

Musical time – The time a listener perceives the music to exist within, or the apparent temporality defined by musical elements flowing forward.

Mutating PCC – A PCC that changes frequently within a single state. Here temporal boundaries most likely define the state, as the inconsistency of pitches within a mutating PCC do not present a clear substructural element.

Perception of time – A subjective sense that time is moving faster or slower, dependent upon the number of events within a given time frame. The perception of time may also be influenced by psychological and physiological states.

Phrase – A phrase, or a phrase group, determines how a temporal boundary is perceived. The phrase defines the mid-level of the temporal units.

Pitch Class Collection, PCC – The particular collection that creates a pitch boundary for a state, constituted by a set of primary tones against which additional tones will either be perceived as changing tones (CT) or inconsequent tones (IT).

Primary tones, PT – Tones that combine to create a state's PCC.

Registral limitation, RL – Most often understood in retrospect, the RL is a distinct portion of pitch space (p-space) within which the PCC is mapped. The treatment of a RL can reinforce the perception of the current particular state type.

Rhythmic cell, motive – A rhythmic cell or motive is the smallest unit of a temporal boundary. A rhythmic cell is combined with other elements to create an audible pattern, that may be repeated or altered.

Saturated stasis – A static state type, characterized by maximum change which results in the perception of a static texture. Temporal boundaries are often absent, and goals, if any, will most likely be heard in retrospect. Saturated stasis may be seen in selected music by Pierre Boulez and Milton Babbitt.

Section – A section is the largest temporal unit, which is made up of multiple phrases or, when phrases are absent, is defined by a consistency of the substructural elements. A section is most often associated with a change in texture, density, thematic material, and very often, the nature of the state itself.

Static-Dynamic Spectrum – A continuum of five state types.

Static state – A state which concerns bodies at rest or forces in equilibrium. Musical stasis is then the latter, resulting in a constant density.

Substructural elements – The internal musical elements–pitch, register, rhythm, dynamics, timbre–that create boundaries for a state. The configuration of the internal elements allows the perception of temporal boundaries, and thus the perception of a state.

Surface – The musical layer made up of apparent changes that yield a static or dynamic state, as a result of the perceivable substructural elements. This layer is connected to the temporal unit of the motive, and has the fastest perceivable temporality.

Temporal boundary – A combination of musical time and temporal events within music. The section, phrase and motive are elements that make up a temporal boundary, and the perception of dynamic or static states is determined by the condition (clear, blurred, absent) of the temporal boundaries. Temporal boundaries are directly correlated to how the internal elements are organized.

Tracking – Jerrold Levinson's term (*Music in the Moment*) for how a listener gains familiarity with and sensitivity for elements of the work.

Vertical time – Jonathan Kramer's term (*The Time of Music*) for static music, music that lacks temporal articulation and presents a total sound consistency.

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<u>A PORTRAIT OF AN INFANT (ON COMING INTO BEING)</u>

FOR LARGE ORCHESTRA

CRAIG HEALEY WOODWARD

<u>INSTRUMENTATION</u>

2 Flutes (Players 1 & 3)
Piccolo
Oboe
English Horn
2 Clarinets in B♭
Bass Clarinet
2 Bassoons
4 Horns in F
3 Trumpets (1 & 2 in C; 3 in B♭)
2 Trombones (tenor)
Bass Trombone
Tuba
Timpani (32" / 28" / 25" / 23" / 21")
4 Percussion:
1. Vibraphone (F3-F6)
   - 1 Suspended Cymbal (large)
   - 2 Triangles (large, small) [movements 1 & 3 only]
   - Tam-tam (medium)
2. Glockenspiel A (F3-D6)
   - Crotales (low octave, C4-C5)
   - Wind Gong (medium)
   - 1 Tomtom (low)
3. Chimes
   - 1 China Cymbal (large)
   - Wind Gong (small to medium)
   - Gong (pitched to either E4 or E3 (E3 preferred))
   - Tam-tam (large)
4. Glockenspiel B (second instrument, F3-C6)
   - Crotales (high octave, C5-C6)
   - 2 Wood Blocks (small - pitched approximately 1 & 1/4 step apart)
   - Tam-tam (large)
   - Maracas

Strings

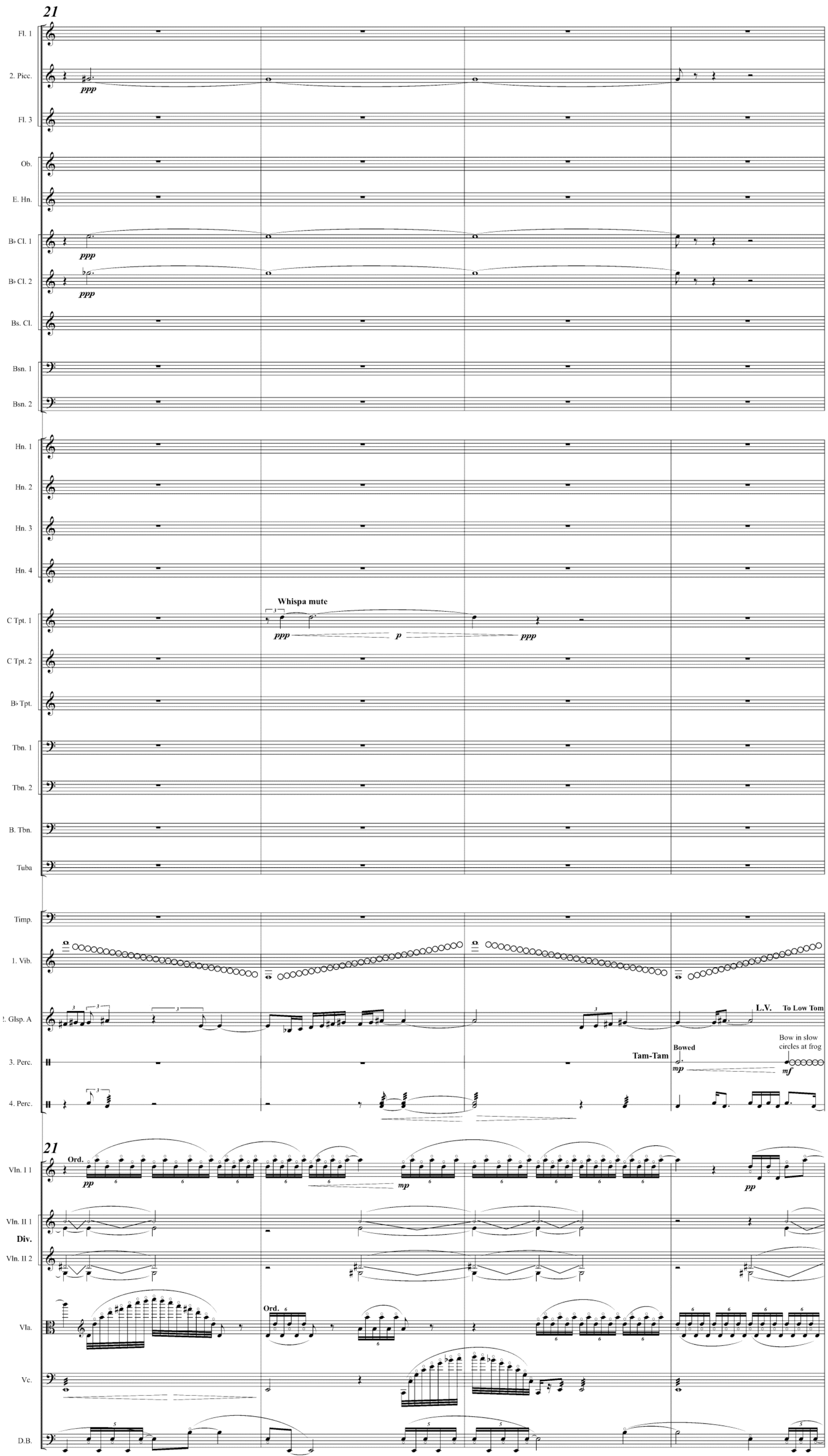
Total Duration: 33 minutes

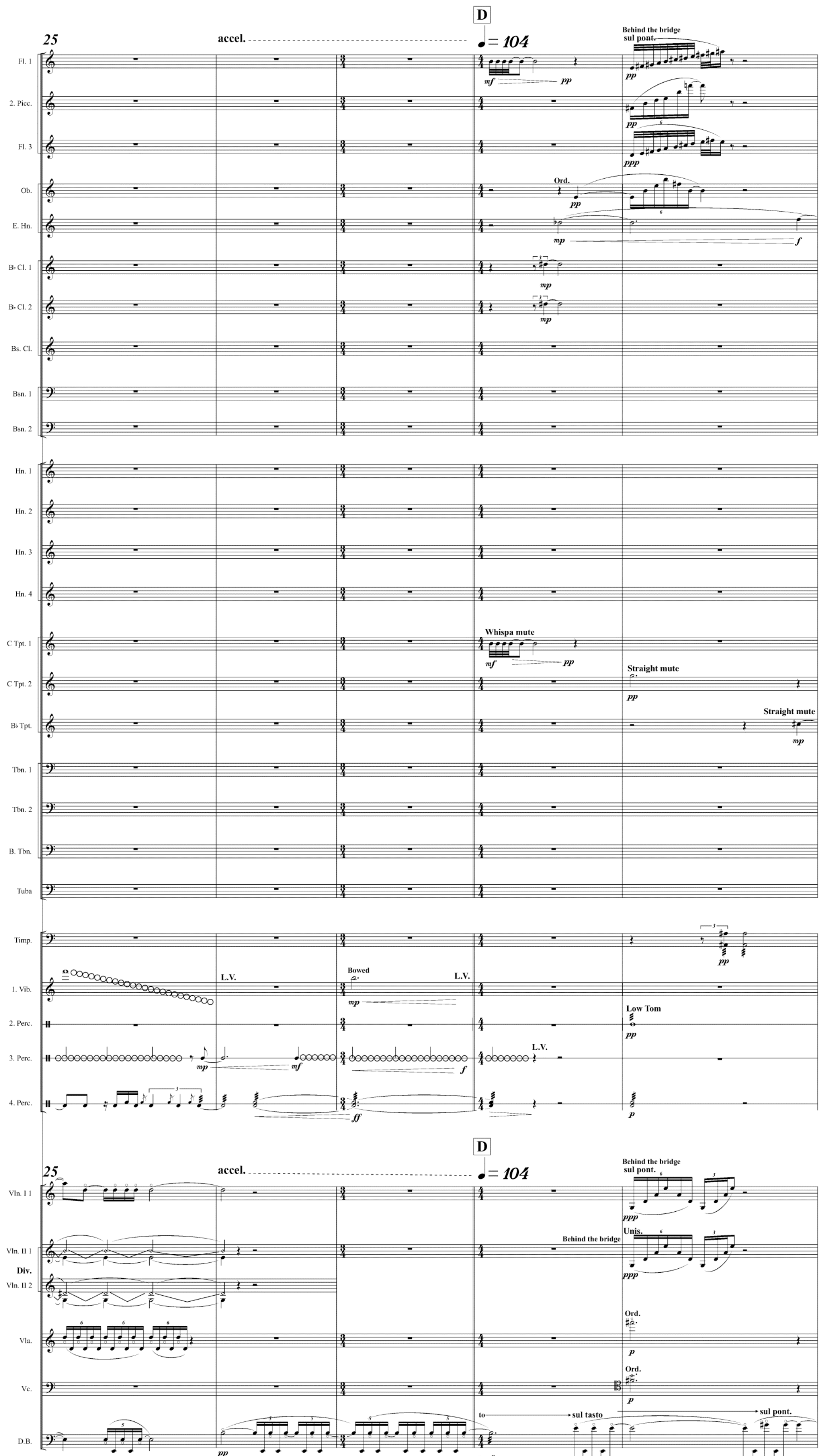
I. In Utero: From Week 37 to Birth


7
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Alternate fingerings ad lib.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Alternate slide positions ad lib.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Mallets
Tune both 25" & 23" to E.
Timp.
1. Vib.
2. Glsp. A
Gong
L.V.
To Tam-tam
3. Chimes / Gong
4. Glsp. B
7
sul pont.
harmonic partial gliss
Vln. I 1
sul pont.
harmonic partial gliss
Vln. II 1
sul pont.
harmonic partial gliss
(harmonic gliss)
sul C
sul pont.
sul D
Vla.
(harmonic gliss)
sul C
to
sul pont.
Vc.
to
sul pont.
D.B.


11 B
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Perc.
4. Glsp. B
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
Alternate fingerings ad lib.
take mute
Take Straight mute
To Maracas
sul pont.


15
C
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Perc.
4. Perc.
Vln. I 1
Vln. II 1
Div.
Vln. II 2
Vla.
Vc.
D.B.
Flutter tongue
Ord.
Alternate fingerings ad lib.
take mute
Take Whispa mute
Take Straight mute
Mallets
Swirl circles with mallets on ♯ and ♮ notes. Barely audible.
Solo
Maracas
sul pont.
pp
p
mp
mf
f
ppp
pp - p


21
Fl. 1
2. Picc.
ppp
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
ppp
B♭ Cl. 2
ppp
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Whispa mute
C Tpt. 1
ppp
p
ppp
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
L.V.
To Low Tom
Tam-Tam
Bowed
Bow in slow circles at frog
3. Perc.
mp
mf
4. Perc.
21
Ord.
Vln. I 1
pp
mp
pp
Vln. II 1
Div.
Vln. II 2
Ord.
Vla.
Vc.
D.B.


D
25
accel.
♩= 104
Behind the bridge
sul pont.
Ord.
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Whispa mute
C Tpt. 1
Straight mute
C Tpt. 2
Straight mute
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
Bowed
L.V.
1. Vib.
Low Tom
2. Perc.
3. Perc.
4. Perc.
Vln. I 1
Behind the bridge
Unis.
Vln. II 1
Div.
Vln. II 2
Ord.
Vla.
Ord.
Vc.
to
sul tasto
sul pont.
D.B.


30
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Perc.
3. Perc.
4. Perc.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
con sord.
remove mute
Straight mute
Ord.
Mallets
To Glsp.


34
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Perc.
3. Perc.
4. Glsp. B
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
Alternate fingerings ad lib.
remove mute
To Glsp.
Gspl.
Ord.


38
E
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Perc.
4. Glsp. B
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
Flutter tongue
Ord.
senza sord.
Straight mute
Gspl.
gliss.
(quasi ritard)


42
accel.
Ord.
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Chimes / Gong
Chimes
4. Glsp. B
42
accel.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


F
G
47
♩= 122
ritard
♩= 84
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
Vln. I 1
Div.
Vln. I 2
Vln. II 1
Vla.
Vc.
D.B.
Flutter tongue
Solo
Alternate fingerings ad lib.
L.V.
Tune both 25" & 23" to E.
To Gong
Gong
Ord.
take mute
gliss
con sord.
non div.
port.


53
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
remove mute
Hn. 2
remove mute
Hn. 3
remove mute
Hn. 4
remove mute
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
remove mute
Tbn. 2
remove mute
B. Tbn.
remove mute
Tuba
remove mute
Timp.
1. Vib.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
53
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


58
H
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Alternate fingerings ad lib.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
senza sord.
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
senza sord.
Tbn. 2
senza sord.
B. Tbn.
senza sord.
Tuba
senza sord.
Timp.
1. Vib.
2. Glsp. A
To Crotales
3. Chimes / Gong
4. Glsp. B
58
H
Vln. I 1
Div.
Vln. I 2
cresc.
cresc.
Vln. II 1
Vla.
Vc.
D.B.
sul pont.
sul tasto
sul pont.
sul tasto


62
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Alternate fingerings ad lib.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Chimes / Gong
L.V.
L.V. To Chimes
4. Glsp. B
Vln. I 1
Div.
Vln. I 2
Vln. II 1
Vla.
Vc.
D.B.
sul pont.
sul tasto
sul pont.
sul tasto
sul pont.
sul tasto


67
I
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
almost inaudible - felt, not heard
1. Vib.
2. Glsp. A
Crotales
3. Chimes / Gong
Chimes
4. Glsp. B
Gspl.
67
I
Vln. I 1
Vln. II 1
Vla.
Vc.
take mute
D.B.
sul pont.
sul tasto


72
accel.
J
♩= 104
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
pp
ppp
p
dim.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
remove mute
con sord.
mp

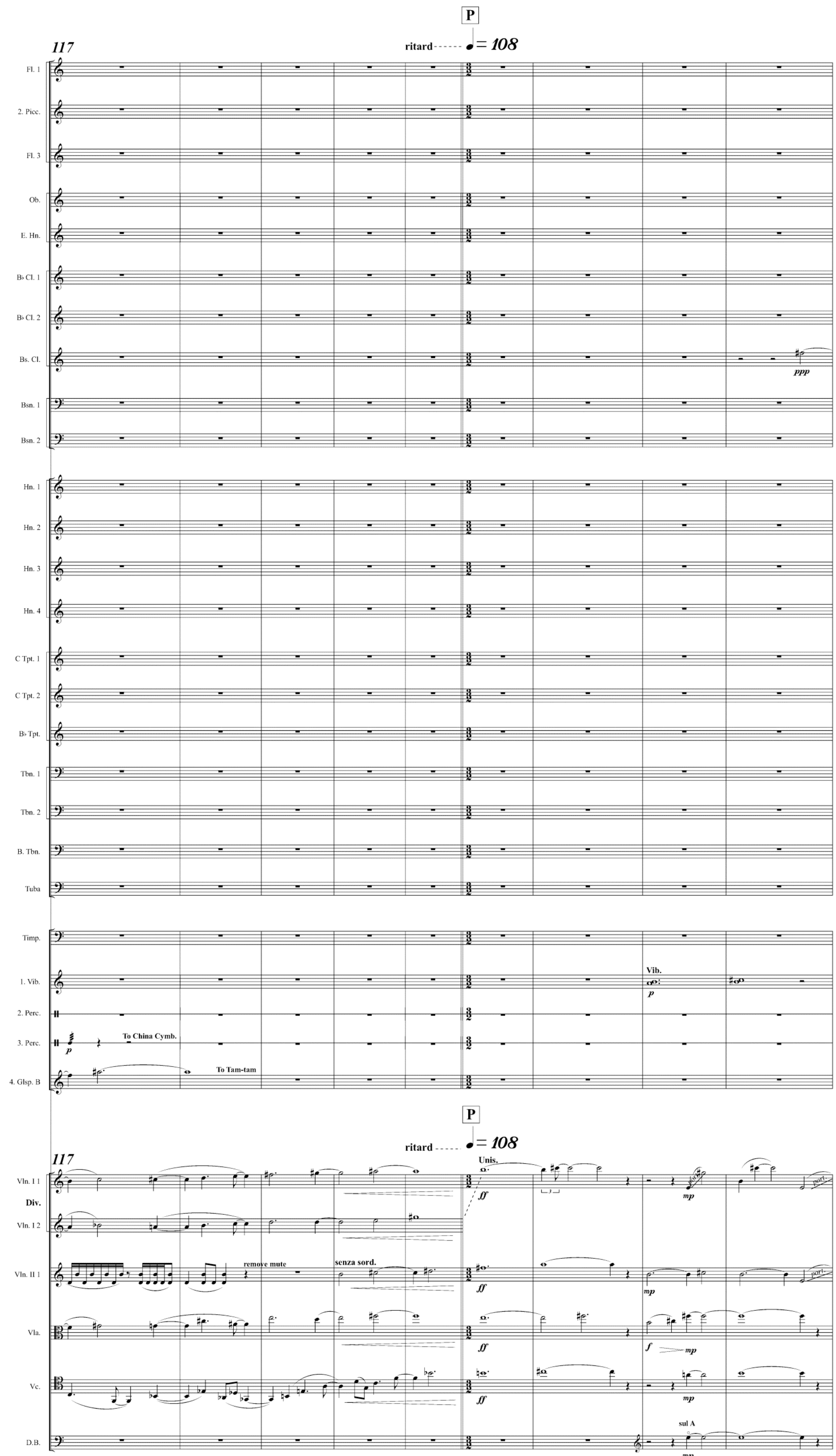

K
81
accel.
= 112
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
cresc.
f
To Crotales
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
senza sord.
ppp


L
90 accel.
♩= 122
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
senza sord.
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
To Susp. Cymb.
2. Glsp. A
3. Chimes / Gong
Crotales
struck
4. Glsp. B
L
90 accel.
♩= 122
Vln. I 1
pizz.
Vln. II 1
take mute
con sord.
pizz.
Vla.
Div.
senza sord.
Vc.
D.B.


M
99
accel.
= 134
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
senza sord.
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
Susp. Cymb.
1. Perc.
2. Glsp. A
Chimes
To Tam-tam
3. Chimes / Gong
4. Glsp. B
pizz.
arco
Vln. I 1
Vln. II 1
Div.
Unis.
Vla.
Vc.
D.B.


105
N
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Take Straight mute
Take Straight mute
Timp.
1. Perc.
2. Glsp. A
Crotales
struck
3. Perc.
Tam-Tam
4. Glsp. B
Crotales
Bowed
105
N
Vln. I 1
Div.
Vln. I 2
non div.
Vln. II 1
Vla.
Unis.
Div.
Vc.
D.B.


111
O
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Glsp. A
3. Perc.
4. Glsp. B
Vln. I 1
Div.
Vln. I 2
Vln. II 1
Vla.
Vc.
D.B.
Take Straight mute
To Vib.
To Low Tom
non div.
dim.



117
P
ritard
♩= 108
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
ppp
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
Vib.
p
2. Perc.
3. Perc.
To China Cymb.
4. Glsp. B
To Tam-tam
Vln. I 1
Div.
Vln. I 2
Unis.
ff
mp
port.
Vln. II 1
remove mute
senza sord.
Vla.
f
mp
Vc.
D.B.
sul A


Q
126
poco ritard a tempo
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Straight mute
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
To Susp. Cymb.
2. Perc.
3. Perc.
4. Perc.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
sul A
port.
gliss.


R
134
Tutti (except Horns) maintain ♩= 108
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Horns: Play slightly faster than tutti ♩= 112
hold beat 6 if necessary to align
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Straight mute
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
Susp. Cymb.
1. Perc.
Low Tom
2. Perc.
China Cymb.
3. Perc.
Tam-Tam
4. Perc.
R
Tutti (except Horns) maintain ♩= 108
134
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


S
Tutti ♩= 108
accel.
T
♩= 122
141
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Horns: A tempo (with conductor)
with tutti
stopped
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
Vib.
1. Vib.
1. Perc.
L.V.
To Vib.
Gspl.
2. Glsp. A
2. Perc.
To Glsp.
3. Perc.
4. Perc.
To Maracas
Vln. I 1
Div.
Vln. I 2
Vln. II 1
Unis.
Vla.
Vc.
D.B.


149
U
Fl. 1
2. Picc.
Fl. 3
Ob.
Solo
mf
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
ppp
Bsn. 1
ppp
Bsn. 2
ppp
Hn. 1
fp
f
p
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
pp
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
remove mute
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Perc.
L.V.
Maracas
4. Perc.
149
U
Unis.
Vln. I 1
Vln. II 1
Vla.
Div.
Vc.
D.B.


157
V
W
ritard
= 108
Solo
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
open
remove mute
Timp.
1. Vib.
2. Glsp. A
3. Perc.
4. Perc.
L.V.
To Tam-tam
Tam-Tam
to Wood Bl.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
Div.
Unis.
pizz.
sul A
arco


X
accel.
♩= 122
166
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
senza sord.
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
remove mute
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
wood sticks
3. Perc.
4. Perc.
Vln. I 1
Div.
Vln. I 2
sul tasto
Vln. II 1
Vla.
Unis.
Vc.
sul A
D.B.


174
Y
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
senza sord.
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
To Crotales
wood sticks
L.V.
To Chimes
3. Perc.
2 Wd. Bl.
4. Perc.
174
Y
sul tasto
Vln. I 1
Div.
sul pont.
Vln. I 2
sul tasto
sul tasto
Vln. II 1
Ord.
sul tasto
Vla.
sul tasto
Vc.
sul tasto
Ord.
D.B.


Z
183 accel.
♩= 134
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Chimes / Gong
4. Perc.
Crotales
Chimes
To Glsp.
Vln. I 1
Div.
Vln. I 2
Vln. II 1
Vla.
Vc.
D.B.
Ord.
Unis.


192
AA
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
To Susp. Cymb.
2. Glsp. A
To Glsp.
3. Chimes / Gong
4. Perc.
192
AA
Vln. I 1
sul tasto
non div.
Vln. II 1
Div.
Vln. II 2
sul tasto
non div.
Vla.
Vc.
D.B.


201
BB
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
Susp. Cymb.
2. Glsp. A
Gspl.
diffuse sound
3. Chimes / Gong
4. Glsp. B
Gspl.
diffuse sound
201
BB
Vln. I 1
port.
Ord.
Vln. II 1
Div.
Vln.II 2
Vla.
Vc.
D.B.
sul E
sul pont.


208
CC
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
To 2 Trgl.
2. Glsp. A
3. Chimes / Gong
L.V.
To Tam-tam
4. Glsp. B
Vln. I 1
Div.
Vln. I 2
Vln. II 1
Vla.
sul pont.
Ord.
Vc.
gliss.
D.B.


212
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Glsp. A
3. Perc.
4. Glsp. B
2 Trgl.
Tam-Tam
L.V.
stop resonance
212
Vln. I 1
Div.
Vln. I 2
Vln. II 1
Div.
Vln. II 2
Vla.
Vc.
D.B.
sul D

II. Transcendent Hours: From Birth to Hour 24


6
A
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
L.V.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


11
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
L.V.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
11
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


15
B
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
L.V.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
B
15
Div.
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


C
♩ = 146
19
accel.
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
L.V.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.
Div. a4
Div.
No dim. Maintain intensity! Bow ad lib.

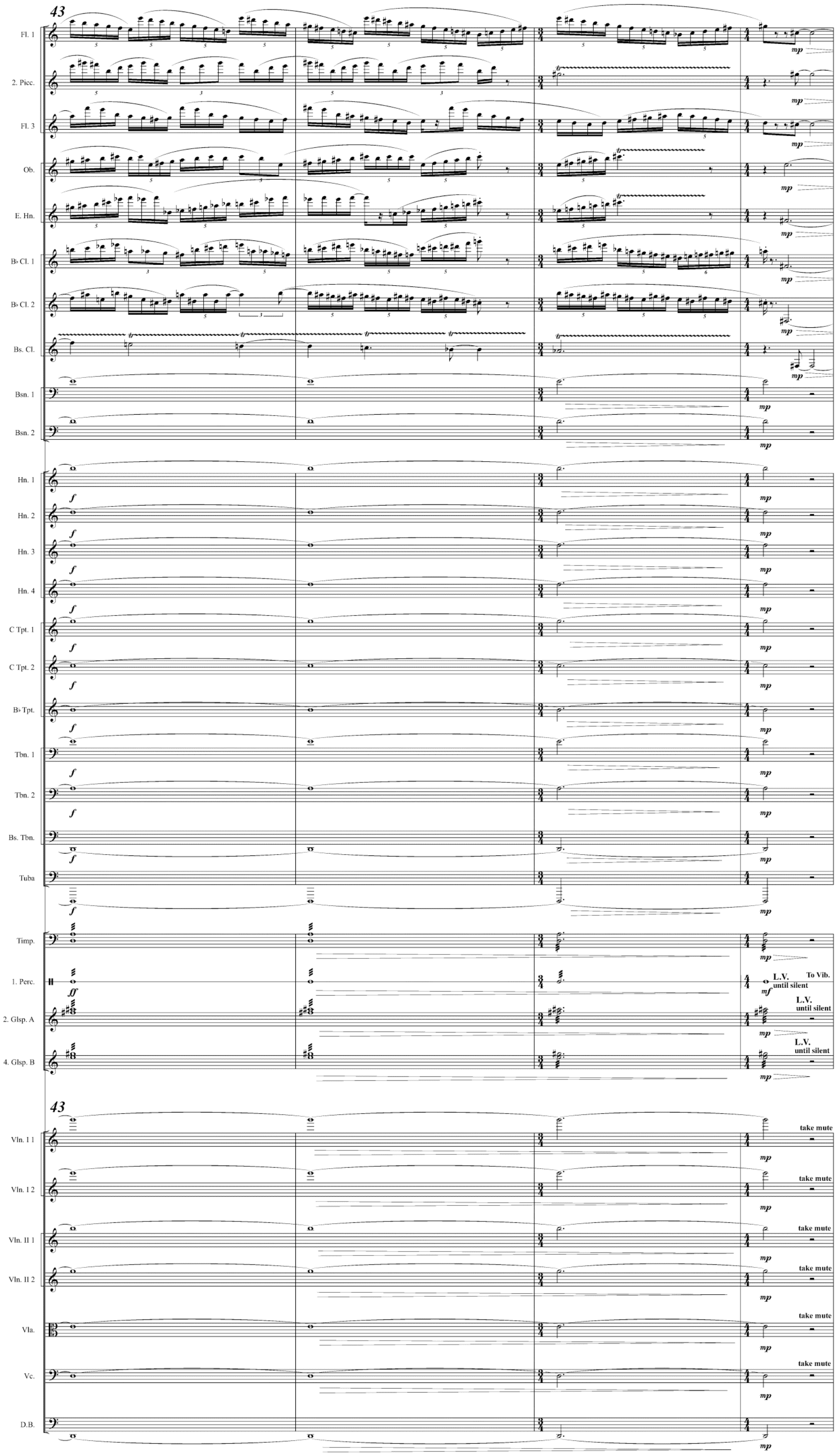

23
accel.
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
23
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


27
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
27
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


31
D
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.
Div. a2
Unis.

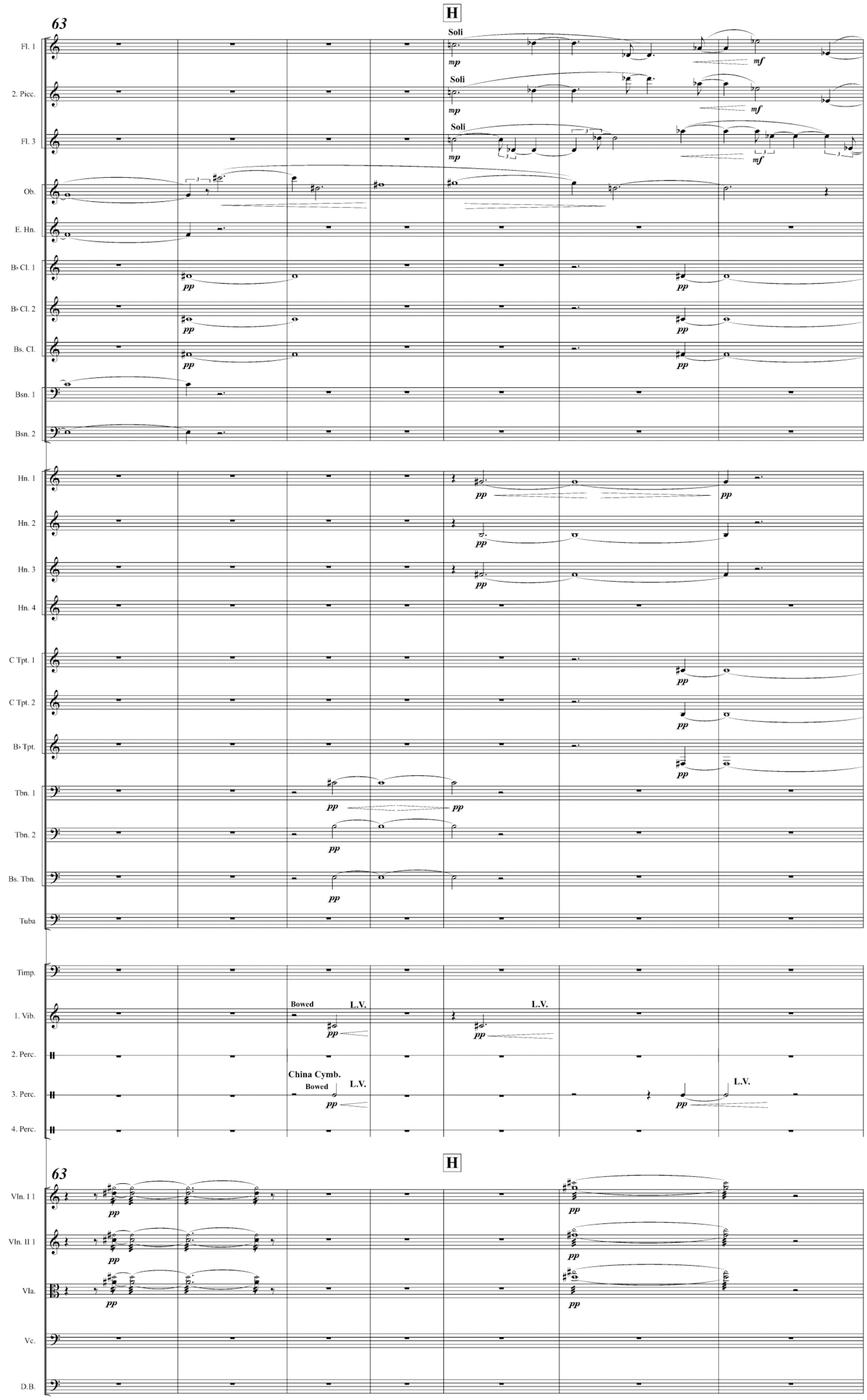

34
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
34
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


37
E
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
Dampen
2. Glsp. A
L.V.
3. Chimes / Gong
L.V.
4. Glsp. B
37
E
Vln. I 1
No dim. Maintain intensity! Bow ad lib.
Unis.
Vln. I 2
No dim. Maintain intensity! Bow ad lib.
Unis.
Vln. II 1
No dim. Maintain intensity! Bow ad lib.
Vln. II 2
No dim. Maintain intensity! Bow ad lib.
Unis.
Vla.
No dim. Maintain intensity! Bow ad lib.
Unis.
Vc.
No dim. Maintain intensity! Bow ad lib.
D.B.
No dim. Maintain intensity! Bow ad lib.


43
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Glsp. A
4. Glsp. B
L.V. until silent
To Vib.
43
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.
take mute


F
47 Transparent, Floating
ritard
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
2. Perc.
3. Perc.
4. Perc.
F
47 Transparent, Floating
ritard
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


G
56 ♩= 108
Fl. 1
2. Picc.
Fl. 3
Ob.
Solo
ppp
mp
E. Hn.
pp
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
Vib.
Bowed
L.V.
2. Perc.
3. Perc.
4. Perc.
G
56 ♩= 108
con sord.
Unis.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
p


63
H
Fl. 1
2. Picc.
Fl. 3
Soli
mp
mf
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
pp
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
Bowed
L.V.
2. Perc.
3. Perc.
China Cymb.
4. Perc.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


70
I
Fl. 1
2. Picc.
Fl. 3
Ob.
Solo
E. Hn.
B♭ Cl. 1
Soli
B♭ Cl. 2
Soli
Bs. Cl.
Bsn. 1
Soli
Bsn. 2
Soli
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
L.V.
L.V.
2. Perc.
3. Perc.
L.V.
4. Perc.
70
I
Vln. I 1
remove mute
Vln. II 1
remove mute
Vla.
remove mute
Vc.
remove mute
D.B.


J
76 ritard
♩= 84 Building in Intensity
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Solo
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
J
76 ritard
♩= 84 Building in Intensity
senza sord.
Vln. I 1
senza sord.
Vln. II 1
senza sord.
Vla.
senza sord.
Div.
Vc.
D.B.


83
K
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
Low Tom
3. Perc.
4. Perc.
83
K
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
Unis.
D.B.


90
L
With Greatness
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
Tam-Tam
L.V.
2. Perc.
Low Tom
3. Chimes / Gong
Chimes
L.V.
4. Perc.
2 Wd. Bl.
L
90
With Greatness
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


95
M
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
L.V.
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


99
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
L.V.
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


103
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
L.V.
103
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.
take mute
take mute


N
107
accel.
♩= 108 Playful, Energetic
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
take mute
Timp.
L.V.
1. Vib.
Vib.
2. Glsp. A
Crotales
Bowed
3. Perc.
Wind Gong
Bowed
4. Glsp. B
Glsp.
N
107
accel.
♩= 108 Playful, Energetic
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
con sord.
sul pont.


O
113
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Perc.
4. Glsp. B
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
Solo
Mallets
L.V.
pp
ppp
p
mf
mp


119
P
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
Solo
possible
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Alternate fingerings ad lib.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
L.V.
To Glsp.
2. Glsp. A
Mallets
3. Perc.
4. Glsp. B
119
P
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


124
Q
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Alternate fingerings ad lib.
Bs. Cl.
Solo
Bsn. 1
Bsn. 2
Hn. 1
con sord.
Hn. 2
Hn. 3
con sord.
Hn. 4
C Tpt. 1
Straight mute
C Tpt. 2
Straight mute
B♭ Tpt.
Straight mute
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
Solo
2. Glsp. A
Glsp.
3. Perc.
L.V.
4. Glsp. B
124
Q
5 Soli
Vln. I 1
Vln. I 2
Vln. II 1
Vla.
Vc.
D.B.


129
R
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
con sord.
con sord.
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
con sord.
con sord.
con sord.
Tuba
Timp.
1. Vib.
L.V.
2. Glsp. A
L.V.
3. Perc.
4. Glsp. B
L.V.
129
R
Unis.
tutti
Vln. I 1
Vln. I 2
Vln. II 1
Vla.
Vc.
D.B.


136
S
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
remove mute
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Perc.
4. Glsp. B
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


T
142
U
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
senza sord.
C Tpt. 2
senza sord.
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
Vib.
1. Vib.
2. Glsp. A
3. Perc.
Crotales
Bowed
4. Glsp. B
L.V.
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.
take mute
con sord.
Div.


148
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
senza sord.
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Soli
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Perc.
4. Perc.
148
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


153
V
ritard
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
2. Perc.
3. Perc.
4. Perc.
Wind Gong
Gong
Tam-Tam
mp
p
f
ppp
cresc.
153
V
ritard
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
con sord.
Unis.

W
159 ♩= 92 Transparent, Floating
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
remove mute
senza sord.
Tam-Tam
L.V.
W
159 ♩= 92 Transparent, Floating
Vln. I 1
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.
remove mute
Div.
Solo
senza sord.

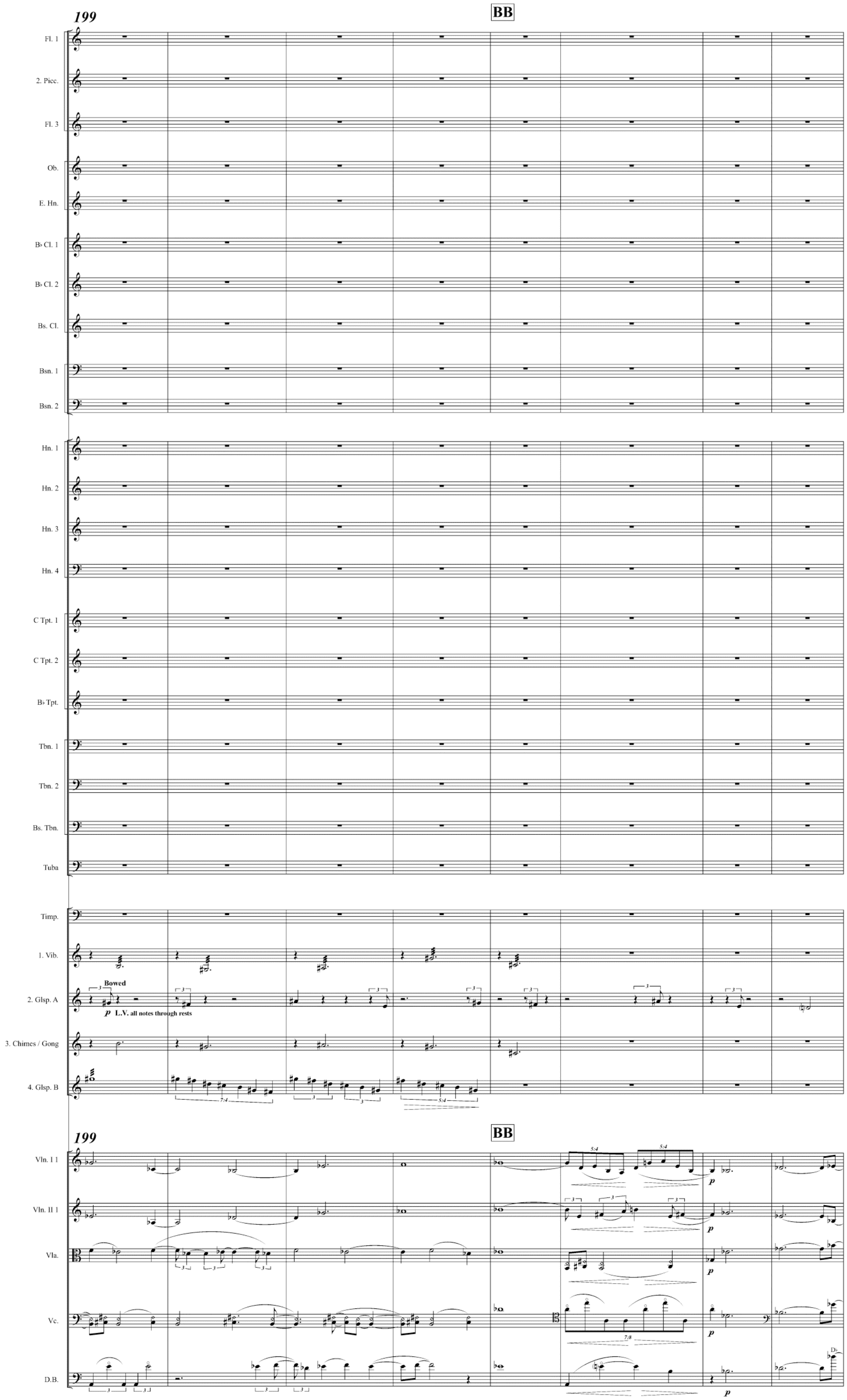

X
168
Soli
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
L.V.
Vln. I 1
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.
quasi gliss.


175
Y
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Soli
L.V.
To Vib.
To Crotales
To Maracas
Maracas
Vib.
Crotales
Bowed
175
Y
quasi gliss.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
Unis.
sul D
sul G


182
ritard
Z
♩= 66 Focused, Searching
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Perc.
4. Perc.
L.V.
To Chimes
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
Solo
remove mute
senza sord.
sul D
Div.
Unis.
sul C


190
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
190
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
sul G
D
sul A


194
AA
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
Crotales
Mallets
L.V.
Chimes
Glsp.
194
AA
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.



199
BB
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
Bowed
p L.V. all notes through rests
3. Chimes / Gong
4. Glsp. B
199
BB
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
p


207
CC
accel.
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Glsp. A
L.V.
3. Perc.
4. Perc.
4. Glsp. B
207
CC
accel.
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


DD
214 ♩= 84
accel.
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
DD
214 ♩= 84
accel.
Div.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


EE
221 ♩= 108 Tenderly, Full of Emotion
Fl. 1
2. Picc.
Fl. 3
Ob.
Soli
E. Hn.
B♭ Cl. 1
Soli
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
EE
221 ♩= 108 Tenderly, Full of Emotion
Vln. I 1
Unis.
Vln. II 1
Unis.
Vla.
Vc.
D.B.


229 FF
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Soli
Solo
Tam-Tam
Wind Gong
L.V.
229 FF
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
con sord.


237 GG
ritard
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Soli
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Susp. Cymb.
On Harmonic Node
L.V. all notes through rests
237 GG
ritard
Vln. I 1
Vln. II 1
Vla.
Vc.
remove mute
D.B.


HH
243 ♩= 84 Building in Intensity
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Solo
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
L.V.
2. Perc.
Wind Gong
3. Perc.
Tam-Tam
4. Perc.
HH
243 ♩= 84 Building in Intensity
Vln. I 1
Vln. II 1
Vla.
senza sord.
Div.
Vc.
Unis.
D.B.


249
11
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Glsp. B
L.V.
L.V.
Crotales
Bowed
249
11
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.

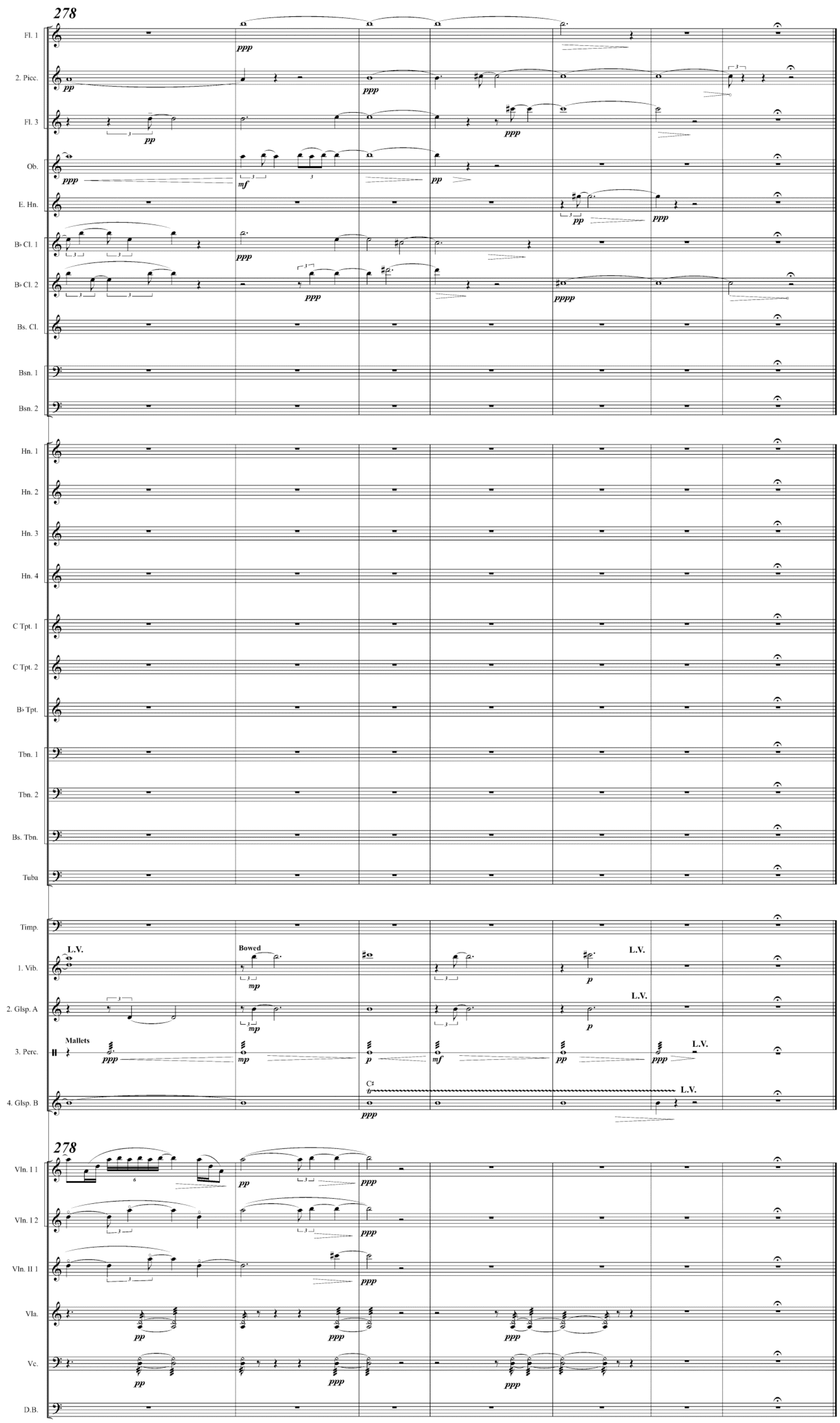

JJ
256
With Greatness
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
Susp. Cymb.
1. Perc.
L.V. all notes through rests
Wind Gong
2. Perc.
L.V. all notes through rests
Tam-Tam
3. Perc.
L.V. all notes through rests
Tam-Tam
4. Perc.
L.V. all notes through rests
JJ
256
With Greatness
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


260
KK
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.

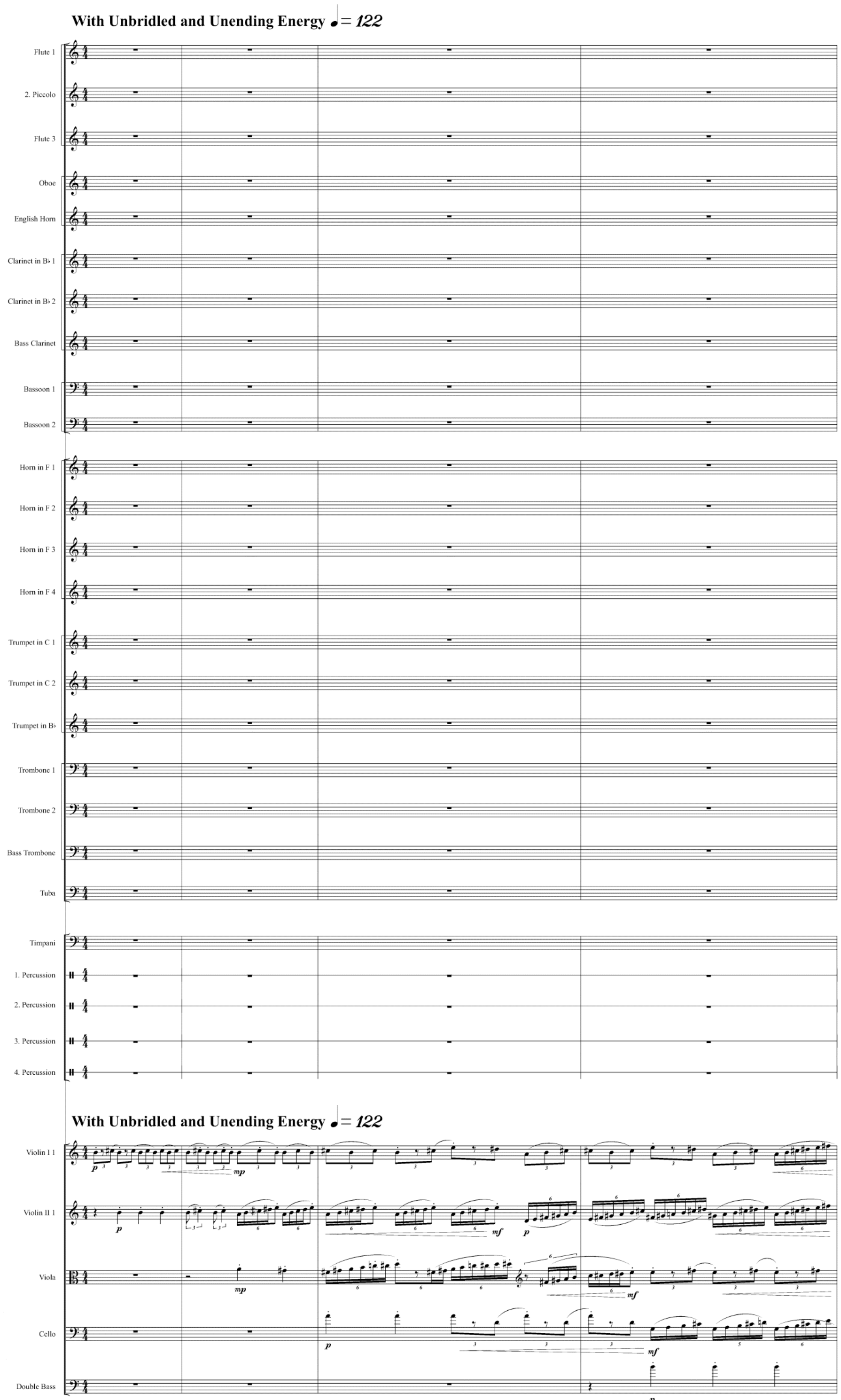

264
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
264
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.

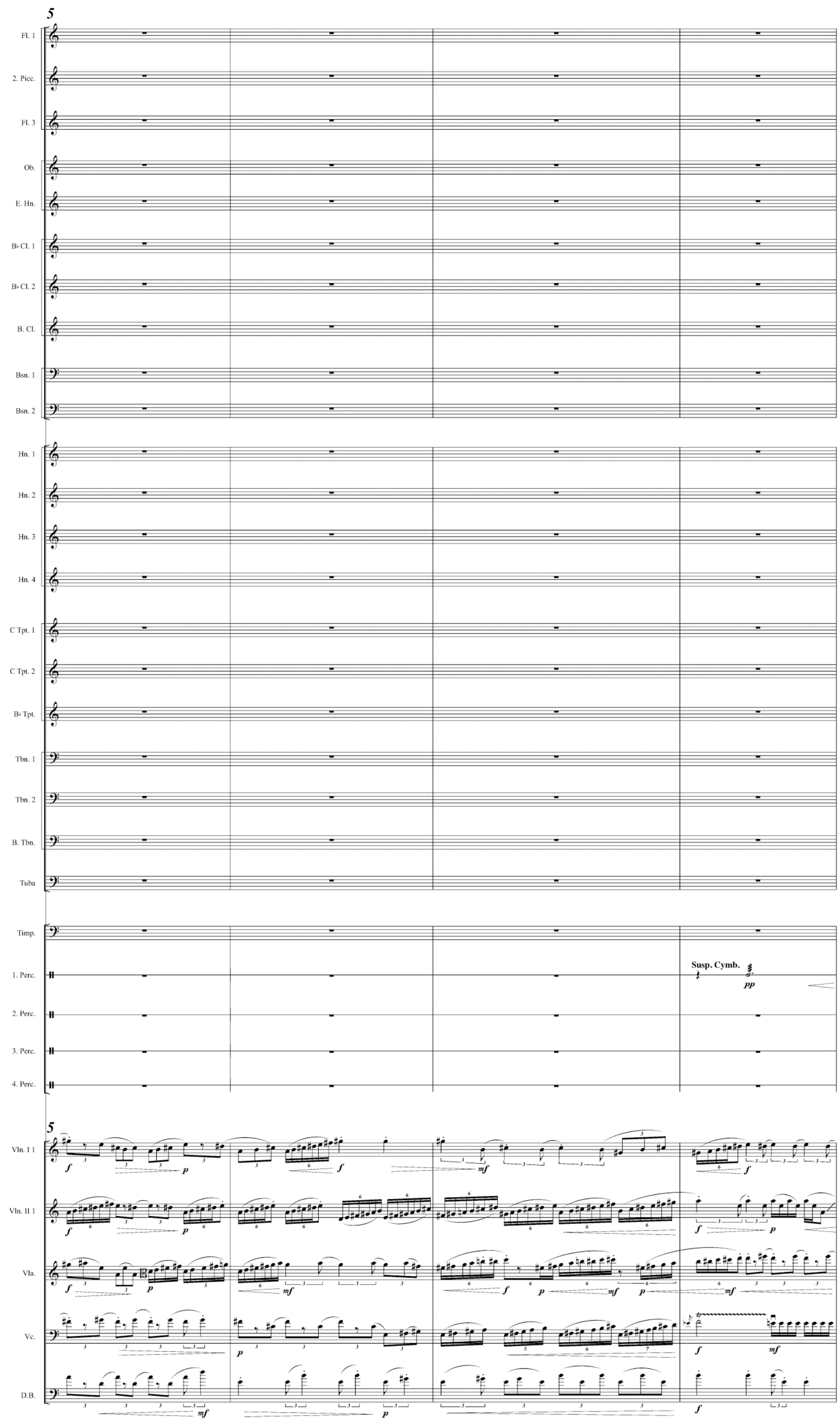

268
accel.
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
L.V.
To Vib.
To Crotales
To Glsp.
268
accel.
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.
take mute

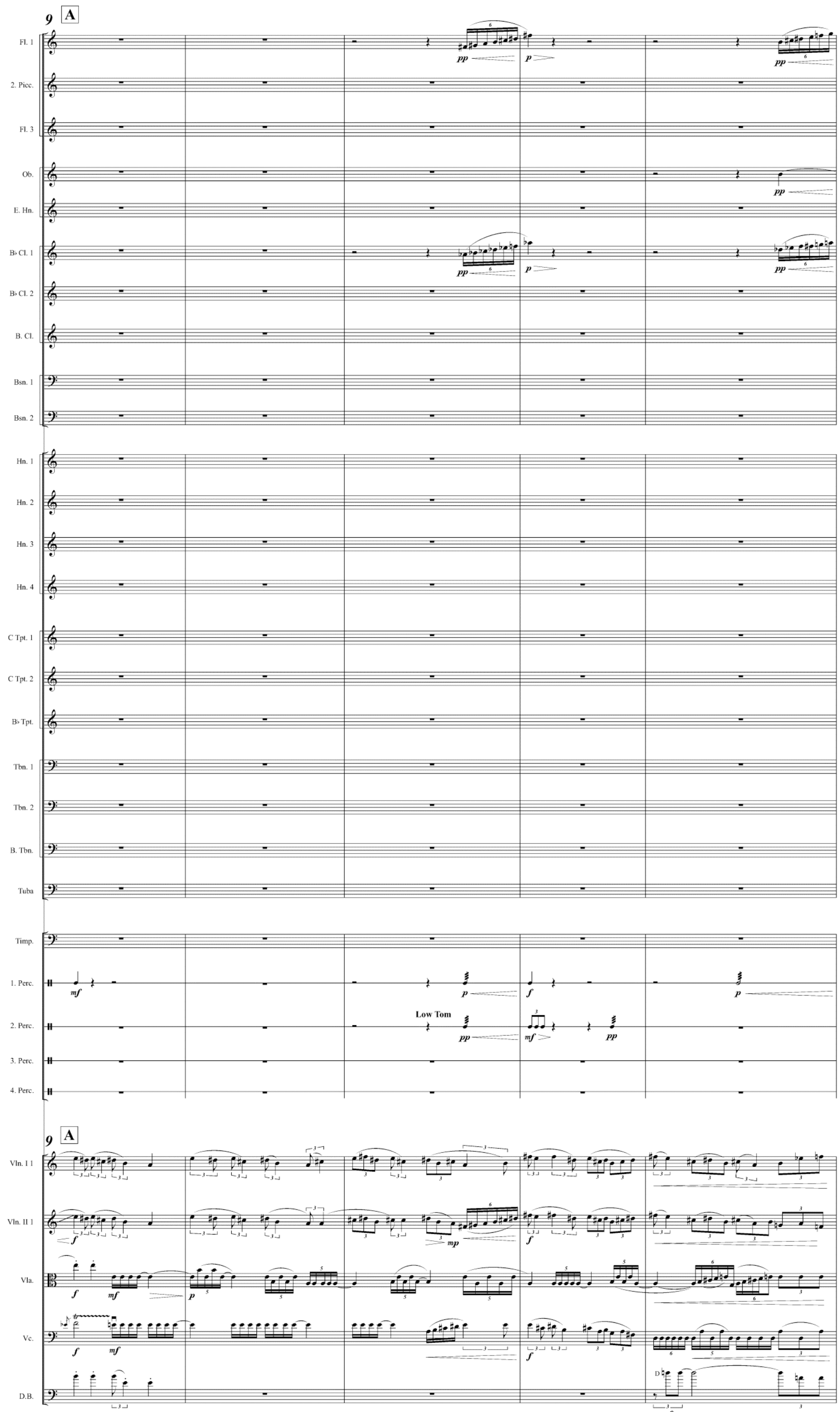

LL
274
♩= 108 Playful, Transparent
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
Vib.
1. Vib.
Crotales Bowed
2. Glsp. A
Wind Gong Bowed
3. Perc.
Glsp.
4. Glsp. B
LL
274
♩= 108 Playful, Transparent
con sord.
Vln. I 1
con sord.
Vln. I 2
con sord.
Vln. II 1
con sord.
sul pont.
Vla.
con sord.
sul pont.
Vc.
D.B.


278
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
Bs. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
Bs. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Perc.
4. Glsp. B
L.V.
Bowed
Mallets
278
Vln. I 1
Vln. I 2
Vln. II 1
Vla.
Vc.
D.B.

III. First Experiences: From Day 2 to Month 23




5
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Susp. Cymb.
5
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


9
A
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
Low Tom
3. Perc.
4. Perc.
9
A
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


B
14
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
Wind Gong
L.V.
4. Perc.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


18
C
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
L.V.
To Glsp.
Wind Gong
Tam-Tam
18
C
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


23
D
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Glsp. A
Gspl.
3. Perc.
L.V.
4. Glsp. B
L.V. To Glsp.
Gspl.
23
D
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


28
Fl. 1
2. Picc.
Solo
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Glsp. A
L.V.
3. Perc.
4. Glsp. B
L.V.
28
Vln. I 1
Behind the bridge
Vln. II 1
Vla.
Vc.
sul pont.
D.B.


E
32
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Vln. I 1
Behind the bridge
Vln. II 1
Behind the bridge
Vla.
Vc.
D.B.


36
F
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
sul pont.


40
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Flutter tongue
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
L.V.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
40
Vln. I 1
Ord.
Vln. II 1
Ord.
Vla.
Ord.
Vc.
Ord.
D.B.
sul D


45
G
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Perc.
3. Perc.
4. Perc.
Vib.
Ch. Cymb.
45
G
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


49
H
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
L.V.
2. Perc.
3. Perc.
L.V.
4. Perc.
49
H
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


53
I
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


J
57
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
with 2 sticks, 1 stick dead stroke
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
J
57
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


61
K
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
L.V.
1. Vib.
Bowed
L.V. all notes through rests
2. Glsp. A
Crotales
3. Perc.
4. Perc.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
sul pont.


68
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
Tam-Tam Bowed
L.V. all notes through rests
3. Perc.
Crotales Bowed
L.V. all notes through rests
4. Glsp. B
68
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


72
ritard
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Perc.
4. Glsp. B
L.V.
L.V. To Glsp.
L.V. To Chimes
L.V. To Glsp.
72
ritard
Vln. I 1
Vln. I 2
Vln. II 1
Vla.
Vc.
D.B.


L
77
= 92 With Intensity
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
(non cresc.)
Chimes
L.V.
Gspl. Mallets
sul pont.
Ord.
pizz.
arco
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


81
M
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Straight mute
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Glsp. A
(non cresc.)
3. Chimes / Gong
L.V.
4. Glsp. B
(non cresc.)
Vln. I 1
Ord.
sul pont.
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
gliss.
D.B.
pizz.
arco


85
poco accel.
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
con sord.
Hn. 3
Hn. 4
con sord.
C Tpt. 1
C Tpt. 2
Straight mute
B♭ Tpt.
Tbn. 1
Straight mute
Tbn. 2
Straight mute
B. Tbn.
Straight mute
Tuba
Timp.
1. Vib.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
85
poco accel.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


88
N
♩= 100
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
stopped
Hn. 1
Hn. 2
stopped
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
L.V.
dampen
1. Vib.
2. Glsp. A
3. Chimes / Gong
4. Glsp. B
88
N
♩= 100
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


92
O
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Perc.
3. Chimes / Gong
4. Perc.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
open
senza sord.
Straight mute
blend with Strings


96
P
accel.
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
senza sord.
senza sord.
senza sord.
senza sord.
senza sord.
96
P
accel.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


Q
103
♩= 112 Triumphantly
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Susp. Cymb.
Low Tom
Ch. Cymb.
Tam-Tam
L.V.
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


108
R
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
108
R
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.
take mute


112
S
poco ritard
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
take Plunger
Plunger
C Tpt. 2
take mute
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
L.V.
2. Perc.
L.V. To Glsp.
3. Perc.
L.V.
4. Perc.
Maracas
L.V.
112
S
poco ritard
Vln. I 1
con sord.
Vln. I 2
take mute
con sord.
Vln. II 1
take mute
con sord.
Vln. II 2
take mute
con sord.
Vla.
take mute
con sord.
Vc.
pizz.
arco
pizz.
D.B.
sul D


T
118
♩ = 92 Slightly Relaxed
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
Straight mute
remove mute
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2 Wd. Bl.
2. Glsp. A
Gspl.
3. Perc.
4. Perc.
118
T Slightly Relaxed
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
arco
pizz.
D.B.

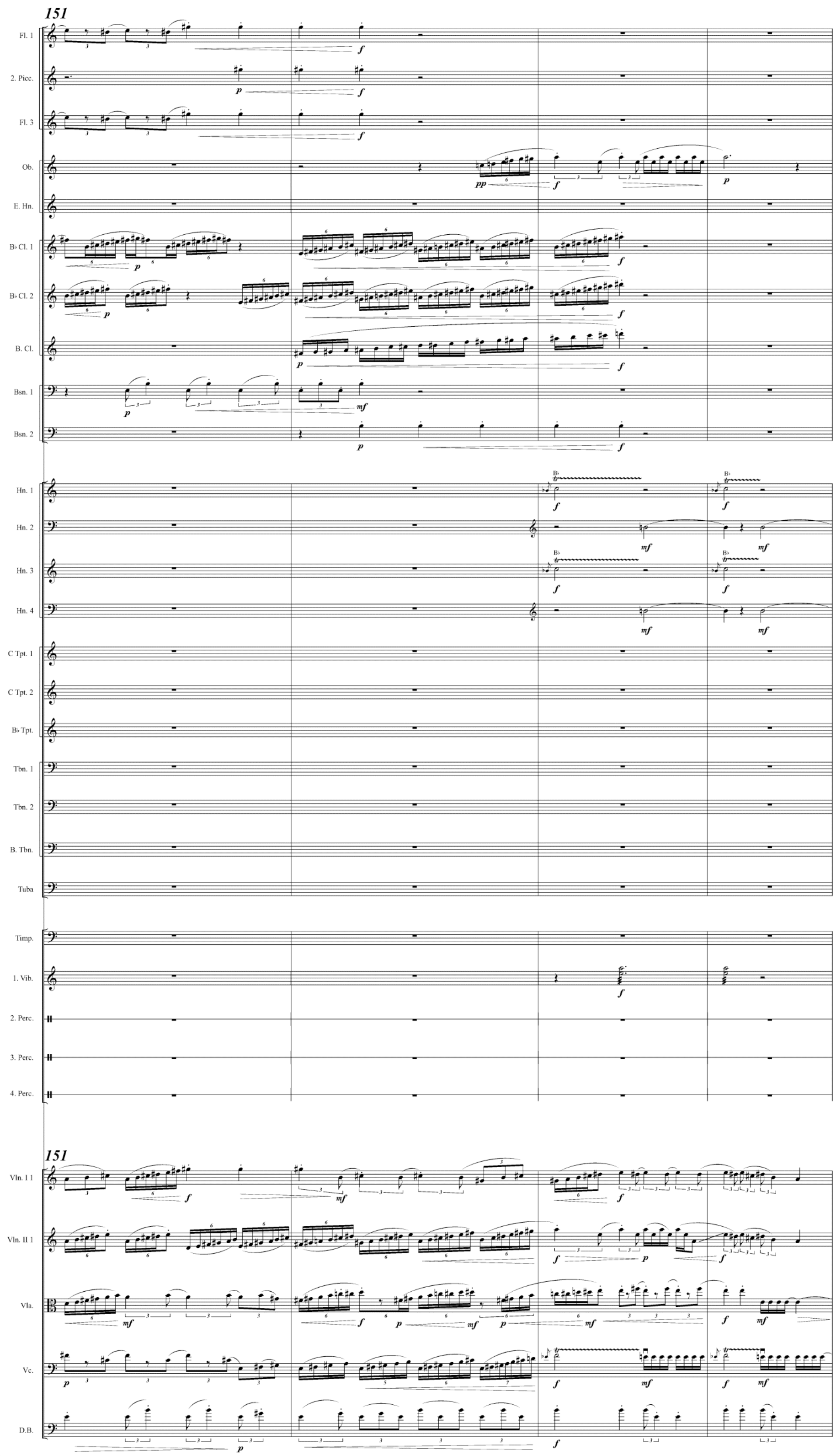

U
ritard
accel.
♩= 134 Triumphant and Wild
125
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Glsp. A
3. Perc.
4. Perc.
remove mute
U
ritard
accel.
♩= 134 Triumphant and Wild
125
senza sord.
Vln. I 1
Vln. I 2
Vln. II 1
Vln. II 2
Vla.
Vc.
D.B.


132
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
132
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.
extreme sul pont.
distort tone - extreme pressure


V
137 poco ritard
♩= 122 With Incredible Energy
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Behind the bridge
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


142
W
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Flutter tongue
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
senza sord.
C Tpt. 2
senza sord.
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
gliss.
pp subito
1. Perc.
2. Perc.
3. Perc.
4. Perc.
142
W
Vln. I 1
Ord.
Vln. II 1
Ord.
Vla.
Vc.
Ord.
D.B.
Ord.


147
X
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
147
X
Vln. I 1
Vln. II 1
Vla.
Ord.
Vc.
D.B.
sul D


151
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Vib.
2. Perc.
3. Perc.
4. Perc.
151
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


Y
155
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Y
155
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


159
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
with 2 sticks, 1 stick dead stroke
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
159
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


163
Z
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
Trgl.
2. Glsp. A
Gspl.
3. Perc.
Ch. Cymb.
4. Glsp. B
L.V.
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


AA
Massive, Overwhelming
168
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
Tam-Tam
Low Tom
Tam-Tam
Tam-Tam
AA
Massive, Overwhelming
168
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


173
BB
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
173
BB
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


179
CC
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
179
CC
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.


186
DD
Let all sound dissipate completely
Fl. 1
2. Picc.
Fl. 3
Ob.
E. Hn.
B♭ Cl. 1
B♭ Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Hn. 4
C Tpt. 1
C Tpt. 2
B♭ Tpt.
Tbn. 1
Tbn. 2
B. Tbn.
Tuba
Timp.
1. Perc.
2. Perc.
3. Perc.
4. Perc.
L.V.
To Chimes
Chimes
Vln. I 1
Vln. II 1
Vla.
Vc.
D.B.