From Ekphrasis to Apperception:

The Sunlight Topic in Orchestral Music

by

Mohamed (Moe) Touizrar

SCHULICH SCHOOL OF MUSIC

McGILL UNIVERSITY, MONTRÉAL

August, 2019

VOLUME I: Text

A thesis submitted to McGill University
In partial fulfillment of the requirements of the degree of
Doctor of Philosophy

© 2019 by Mohamed Touizrar

This page is intentionally left blank

Abstract

In recent musicology, scholars have identified the sun—and its light—as a topic of musical discourse. Despite these latest albeit brief mentions, no scholar has expounded or populated the topic beyond a few isolated cases, let alone offered speculation as to how the compelling analogy between light and sonorous expression might operate, either in the hands of the composer or in the mind of the listener. Unlike most other musical topoi, light and its modulations exist as conspicuously visual phenomena, and this raises an important question about how depictive topoi are perceived when listening to music: what does it mean to hear a sunrise? And, why might composers develop similar strategies concerning orchestral timbre and form in order to convey an experience devoid of sound?

The dissertation divides into two volumes. Volume I examines orchestral depictions of sunrise and sunset from an interdisciplinary vantage point, by first proposing similarities and continuities between the ancient literary theory (rhetorical device or exercise) of ekphrasis on the one hand, and the evolution of the modern philosophical and psychological term 'apperception' on the other hand. Taken together, I argue that these seemingly unrelated modes of thought suggest the possibility for a theory of enargeia (vivacity) in music. Moreover, by considering recent developments in the perceptual study of timbre and orchestration, I propose several apperceptive features of orchestral sunrises and sunsets that demonstrate the enargic (vivid) capacity of orchestral sonority within such depictive contexts. The final chapter comprises analyses of exemplary orchestral works by Bartók, Ravel, Rimsky-Korsakov, and Schoenberg, as well as an analysis of *Bright, Blue, and Shimmering*—a work composed for large orchestra whose duration is eleven minutes. Volume II contains the full score for *Bright, Blue, and Shimmering*.

Résumé

Dans la musicologie récente, les spécialistes ont identifié le soleil et sa lumière comme un sujet du discours musical. En dépit de ces dernières mentions, bien que brèves, aucun chercheur n'a exposé le sujet ou ne l'a peuplé au-delà de quelques cas isolés, encore moins de spéculations sur la manière dont l'analogie fascinante entre la lumière et l'expression sonore pourrait fonctionner, soit entre les mains du compositeur, soit dans l'esprit de l'auditeur. Contrairement à la plupart des autres sujets musicaux, la lumière et ses modulations existent en tant que phénomènes visuels apparents. Cela soulève une question importante: comment les sujets sont-ils perçus quand on écoute de la musique ? Que signifie entendre un lever de soleil ? Et pourquoi les compositeurs pourraient-ils développer des stratégies similaires concernant le déploiement orchestral du timbre et de la forme afin de transmettre une expérience dénuée de son ?

La thèse se divise en deux volumes. Le volume I examine les représentations orchestrales du lever et du coucher du soleil d'un point de vue interdisciplinaire, en proposant d'abord des similitudes et des continuités entre l'ancienne théorie littéraire (la figure ou l'exercice rhétorique) de l'ekphrasis et l'évolution du terme philosophique et psychologique moderne « aperception ». Pris ensemble, je soutiens que ces modes de pensée apparemment sans rapport suggèrent la possibilité d'une théorie de l'enargie (vivacité) en musique. De plus, en examinant les développements récents dans l'étude perceptuelle du timbre et de l'orchestration, je propose plusieurs caractéristiques « aperceptifs » des levers et des couchers de soleil orchestraux qui démontrent la capacité énargique (vivante) de la sonorité orchestrale dans de tels contextes représentatifs. Le dernier chapitre comprend des analyses d'œuvres orchestrales exemplaires de Bartók, Ravel, Rimski-Korsakov et Schoenberg, ainsi qu'une analyse de *Bright, Blue et Shimmering*, une œuvre composée pour un grand orchestre d'une durée de onze minutes. Le volume II contient la partition complète de *Bright, Blue et Shimmering.*

Acknowledgments

This dissertation would not have been possible without the help and guidance of a number of people. My co-supervisors, composer John Rea and experimental psychologist Stephen McAdams, have been a constant source of thoughtful guidance, intellectual and artistic support, and encouragement over the years. My studies with John and Stephen have been characterized by the freedom to think about art and intellectual history, together with exposure to contemporary scientific research and methodological frameworks for the conceptualization and analysis of orchestral music—all of which come to bear in important ways on this dissertation. Thank you also to John Rea for his translation of the abstract into French.

A very special thank-you to my close friend and former housemate Tyson Gofton for the many philosophical conversations we've had over the years, and in particular for his careful and thoughtful feedback after reading several chapters of this dissertation—*Et monere et moneri proprium est verae amicitiae*. Previous composition studies with Chris Paul Harman and Jean Lesage have played an important role in my development as a composer, especially with regard to the relationship between a composer and their musical materials.

I have benefitted from a great deal of intellectual stimulation in my role as a member of the Music Perception and Cognition Lab (MPCL) at the Schulich School of Music, having spent five years learning from and interacting with an interdisciplinary team of researchers. My lab colleagues have been a constant source of new learning, challenging ideas, and warm, collegial fun. Lab manager Bennett Smith, postdoctoral fellow Jason Noble, fellow students Kit Soden and Tanor Bonin, and former colleagues Kai Siedenburg, David Sears, Ceci Taher, and Meghan Goodchild have all in their unique ways helped to shape my thinking.

I am grateful to the Social Sciences and Humanities Research Council of Canada (SSHRC) the Schulich School of Music, the Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT), Stephen McAdams, the John Rea Summer Travel Award, the SOCAN foundation, and the Canada Council for the Arts for their generous financial support, which over the last few years has allowed me the freedom of unencumbered focus, and the means to travel widely in order to share my work, both artistic and scholarly, and engage with artists and scholars in places and at venues that would have otherwise been out of reach. My composition, *Bright, Blue, and Shimmering* was commissioned as part of the Andrew Svoboda Memorial Prize for Orchestral

Composition, with the generous support of Josef and Lewina Svoboda. My thanks also to the Total Cello Ensemble, the KesäVirratSoi music festival, and the Paulo International Cello Competition for their support and the various artistic opportunities they have provided, including the commission of *Virta (homage à Dutilleux)* for 12 or more cellos, which makes further application of the compositional techniques outlined in this dissertation.

Over the last two years, I have had the opportunity to present preliminary versions of my work to diverse and interdisciplinary audiences. I would like to thank the many scholars who have encouraged me with invitations to present my ideas, and who have provided thoughtful feedback and kind support: Eero Tarasti (University of Helsinki), Patricia Lombardo (Swiss Center for Affective Sciences), Pirjo Lyytikäinen (University of Helsinki), Marc Thompson (University of Jyväskylä), Elżbieta Chrzanowska-Kluczewska, Andrzej Pawelec, and Grzegorz Szpila (Jagiellonian University, Kraków), Nicolas Dufetel (IReMus, Paris), Will Howie (CIRMMT), and David Collins (Department of Philosophy, McGill University). In addition, I would like express my appreciation to Marta Grabocz (Université de Strasbourg), William Dougherty (Drake University), Esti Sheinberg (University of Nebraska at Lincoln), Ewa Schreiber (Adam Mickiewicz University, Poznań, Poland), Wojciech Stępień (The Karol Szymanowski Academy of Music, Katowice, Poland), and Juha Torvinen (University of Helsinki) for taking the time to offer me in-depth critical feedback with regard to my preliminary formulations of the sunlight topic.

I would like to thank my friends Kevin O'Neil, Stephen Spencer, Christopher Goddard, Kit Soden, David Collins, Landon Morrison, Christina Volpini, Brice Gatinet, and Tim Cyr. The impact of our conversations over the years cannot be overstated.

To my family, my eternal gratitude. None of this would be possible without your moral and spiritual support, kind words of encouragement, and faith in positive outcomes.

Finally, my deepest gratitude to my wife Auroora, whose loving patience extends not only across time, but across the northern hemisphere as we negotiate our life together living on and off between Helsinki and Montreal.

Table of Contents

VOLUME I

Abstract ... i

Résumé ... ii

Acknowledgments ... iii

Table of Contents ... v

List of Figures and Illustrations ... ix

List of Tables ... xi

Epigraph ... xii

INTRODUCTION ... 1

CHAPTER 1: SUNLIGHT AS A TOPOS IN MUSIC ... 5

1.1 Music and Light ... 5

1.2 Sunrises in the Orchestral Repertoire ... 7

1.3 Emblematic Features of the Orchestral Sunrise ... 9

1.3.1 The missing *eidos* ... 9

1.3.2 Orchestral sunsets ... 11

1.4 Questions of Perception and Recognition ... 11

1.4.1 A problematic topic? ... 11

1.4.2 Transmediation, cross-modality, and synaesthetic contour ... 14

1.5 At the Border of a Make-believe World ... 15

CHAPTER 2: EKPHRASIS IN THE TRANSMEDIAL WORK OF ART ... 17

2.1 Two Types of Ekphrasis: Ancient and Modern ... 17

2.2 Ekphrasis in Music ... 18

2.2.1 Siglind Bruhn ... 18

2.2.2 Lydia Goehr ... 19

2.3 Enargeia in Literature ... 20

2.4 Three Key Features of Enargeia ... 22

2.4.1 Spatialization (transmediation – from language-time to image-space) ... 22

2.4.2 Familiarity of common experiences ... 23

2.4.3 Simplified contour 23

2.4.4 Enargeia exemplified 24

2.5 Enargeia in Painting 25

2.6 Enargeia in Sculpture 29

2.7 Preliminaries for a Theory of Enargeia in Music 33

2.7.1 Spatialization (transmediation – from sonic-time to tonal-space) 34

2.7.2 Familiarity of common musical experiences 35

2.7.3 Simplified musical contour 35

CHAPTER 3: PHANTASIA IN CROSSMODAL PERCEPTION 37

3.1 The Role of Phantasia in Ekphrasis 37

3.1.1 Etymology 38

3.1.2 Imagination and phantasia 39

3.1.3 Plato’s appearances 39

3.2 Phantasia and Inter-Modality 41

3.2.1 From sensation to perception 42

3.2.2 *Sensus communis*: The perception of perception 44

3.2.3 Phantasia and memory 46

CHAPTER 4: THE APPERCEPTION OF PERCEPTUAL UNITY 48

4.1 Spatialization: The perceptual unity of space prior to objects 48

4.2 Familiarity: The perceptual unity of objects 51

4.3 Contour: The unity of objects and sensation in experience 55

4.4 Apperception of Kinetic Unities in Music 59

4.4.1 The spatiality of music 59

4.4.2 Familiarity 60

4.4.3 Simplified contour 1 61

4.4.4 Simplified contour 2: Sensory intensification 63

4.5 Summary: From ekphrasis to apperception 64

CHAPTER 5: APPERCEPTION OF SUNLIGHT IN ORCHESTRAL MUSIC....66

5.1 Perception of Timbral Unities 66

5.1.1 Auditory scene analysis 66

5.1.2 Orchestration and timbral grouping cues 68
5.1.3 Timbre as a form-bearing element 70
5.2 Apperceptive Features of the Orchestral Sunrise and Sunset 71
5.2.1 Spatialization 71
5.2.2 Spatialization: Registral expansion and contraction 73
5.2.3 Familiarity 73
5.2.4 Specific intensity: Perceived brightness 74
5.2.5 Specific intensity: Sonority and "is-ness" 76
5.2.6 Specific intensity: Sonority and texture 78
5.2.7 Co-variation: Common fate and simplified intensive contour 79
5.3 Orchestration and Enargeia 81
5.3.1 Timbral "width", "thickness", and the horizontal plane 81
5.3.2 Timbral sequences 81
5.3.3 "Three-dimensional" polyphonic textures 82

CHAPTER 6: CASE STUDIES AND ANALYSES 84
6.1 Case 1: Sunrises 84
6.2 Bartók's *The Wooden Prince* ("Curtain") 86
6.2.1 Formal organization of increasing intensity 87
6.3 Ravel's *Daphnis et Chloé* ("Lever du jour") 94
6.3.1 Form and familiarity: Intensive eidetic contour 94
6.3.2 Spatialization and intensification 96
6.3.3 Apperception of increasing luminosity 99
6.3.4 Timbral sequencing, perceived depth, and the *z*-axis 100
6.4 Summary of Case 1 101
6.5 Case 2: Sunsets 102
6.6 Rimsky-Korsakov's *Night on Mount Triglav* ("Apparition des ombres") 104
6.6.1 Form and familiarity: Diminishing return 104
6.6.2 Spatialization and specific intensity: Saturation 106
6.6.3 Spatialization and familiarity: Motivic contraction across iterations ...109
6.6.4 Texture and sonority: From clarity to opacity 110
6.7 Schoenberg's *Gurrelieder* ("Vorspiel" and first song) 113

6.7.1 Formal considerations 113
6.7.2 Spatialization 116
6.7.3 Specific intensity of place, mm. 1-31 119
6.7.4 Familiarity: Apperception of a darkening formal contour 122
6.7.5 Compound ekphrastic expression 125
6.8 Summary of Case 2 127
6.9 Case 3: *Bright, Blue, and Shimmering* 128
6.9.1 Introduction 128
6.9.2 Preliminary considerations 131
6.9.3 Overview of the form and its poetics 134
6.9.4 Growth: mm. 1–38 135
6.9.5 *Static Coalescence*: mm. 31–66 147
6.9.6 *Density*: m. 67-81 149
6.9.7 *Intensification*: mm. 82-113 150
6.10 Conclusion 152
Appendix A 156
Appendix B 159
Bibliography 160

VOLUME II: 1
Bright, Blue, and Shimmering for large orchestra 1

List of Figures and Illustrations

Figure 2.1: William Turner, *The Fighting Temeraire tugged to her last berth to be broken up* (1838). 26

Figure 2.2: Gustave Doré, *Paradiso Canto 31* (year unknown – published 1892). 28

Figure 2.3: Lauren Grey, *In Motion* (2015). 30

Figure 2.4: Gian Lorenzo Bernini, *Apollo and Daphne* (1622-1625), Galleria Borghese, Rome. 32

Figure 5.1: Auditory grouping processes [from Goodchild and McAdams (2018), figure 1] 69

Figure 6.1: Schematic outline of two formal strategies 85

Figure 6.2: Overview of the form, *The Wooden Prince*, mm. 1–136 87

Figure 6.3: Opening texture, *The Wooden Prince*, mm. 1–6. 88

Figure 6.4: Addition of low winds and violin II, *The Wooden Prince*, mm. 7–15. 89

Figure 6.5: Climax, *The Wooden Prince*, mm. 115–119 93

Figure 6.6: Reduction of the low stream, *Daphnis et Chloé*, Act III, mm. 1–7. Reh. 155 97

Figure 6.7: Registral expansion, *Daphnis et Chloé*, Act III, piano reduction, mm. 8–14, Reh. 156 98

Figure 6.8: Undulating upper stream, *Daphnis et Chloé*, Act III, mm. 1–2 100

Figure 6.9: Motive X-a, *Apparition des ombres*. 105

Figure 6.10: Motive Y-a, *Apparition des ombres* 106

Figure 6.11: Motives Y-b and Y-c, *Apparition des ombres* 106

Figure 6.12: Saturation effect, *Apparition des ombres*, mm. 1–12. 108

Figure 6.13: Three contractions of motive X-a, *Apparition des ombres* 110

Figure 6.14: Reduction of Contraction Sequence A, *Gurrelieder*, mm. 32–33. 119

Figure 6.15: Reduction of Contraction Sequence B and its repetition, *Gurrelieder*, mm. 35–39. 119

Figure 6.16: Motivic expansion in Stucky’s Sunrise Theme as quoted in *Bright, Blue, and Shimmering*, mm. 120–133. 132

Figure 6.17: Bird-like figure in the woodwinds as quoted in *Bright, Blue, and Shimmering*, mm. 131–134. 133

Figure 6.18: Descending passage, Cellos and Contrabasses. From Stephen Stucky’s *Radical Light*, as quoted in in *Bright, Blue, and Shimmering*, mm. 116–117. 133

Figure 6.19: Formal Overview of *Bright, Blue, and Shimmering* 134

Figure 6.20: Pitch density, pitch class, and pitch space, *Bright, Blue, and Shimmering*, mm. 1–30. 137

Figure 6.21: Binary *idée fixe*, in *Bright, Blue, and Shimmering*, mm. 1–2. 139

Figure 6.22: Timbral “thickness” in *Bright, Blue, and Shimmering*, mm. 14–17. 142

Figure 6.23: “Up-ness” as a simplified contour in *Bright, Blue, and Shimmering*, mm. 22–27 144

Figure 6.24: Staccatissimo figures, Woodwinds in *Bright, Blue, and Shimmering*, mm. 34–37 145

Figure 6.25: Preliminary changes to specific intensity to pitch A5 in *Bright, Blue, and Shimmering*, mm. 1–8. 146

Figure 6.26: *Staccatissimo* figure, Oboe 1 in *Bright, Blue, and Shimmering*, mm. 51–58. 149

List of Tables

Table 6.1: Formal scheme, *Daphnis et Chloé*, Act III, *Lever du jour* 95

Table 6.2: Progressive orchestration of Theme 1, *Daphnis et Chloé*, Act III. 99

Table 6.3: Orchestration of the undulating stream, *Daphnis et Chloé*, Act III, mm. 1–25 101

Table 6.4: Rondo form, *Apparition des ombres*. 104

Table 6.5: Detailed overview of formal components, *Apparition des ombres*. 112

Table 6.6: Overview of the form, *Gurrelieder*, Prelude and first song 115

Table 6.7: Triadic parsing of measure 3 by instrument, *Gurrelieder*, Prelude. 117

Table 6.8: Form, meter, and character, *Bright, Blue, and Shimmering*, mm. 1–38. 136

Table 6.9: Changes to specific intensity to pitch A5 in *Bright, Blue, and Shimmering*, mm. 1–39. 147

Table 6.10: Pitch-class allocation and compression, *Bright, Blue, and Shimmering*, mm. 82–102. 152

Epigraph

“It is a kind of symbolism for the ear whereby the object, be it in motion or not, is neither imitated nor depicted but rather produced in the imagination in a wholly particular and incomprehensible manner since there seems to be hardly any relation between signified and signifier. It is a matter of course that in music, thunder can roll, and waves roar quite naturally.”

– Goethe, in a letter to Zelter, March 6, 1810

“The sound always leads us towards its content, its significance for us; in visual presentation, on the other hand, we can much more easily ‘disregard’ the content and we are drawn much more definitely towards the part of space where the object is to be found.”

– Merleau-Ponty, *Phenomenology of Perception*

“It follows from [Hume's] definition of a cause, that night is the cause of day, and day the cause of night. For no two things have more constantly followed each other since the beginning of the world.”

– Thomas Reid, *Essays on the Active Powers of Man*

“When the sun sets, who doth not look for night?”

– William Shakespeare, *Richard III*, Act II

INTRODUCTION

I have long been fascinated by the dramatic transitions of the sun and its light. As a boy, I can remember watching the sun set during long summer evenings. At the time, my younger mind was captivated by the chromatic waves that rippled across the sky even as the energy of the day faded. The experience of the sunset seemed akin to a long-held breath, a moment of quiet separation from both the bustling activity of the day and the gloomy shadows of night. The sunrise, too, aroused in my mind a peculiar kind of focus and intensity of experience—a beautiful and shifting expansion that has few other correlates.

I did not at first make the association between luminous phenomena and orchestral music. It was only later and in a very different context that it would first become clear to me. At the time, I was deployed overseas serving as civilian support to the Canadian Armed Forces. I was at a crossroads in my study of music, uncertain of what direction the future might take and I found myself posted for a six-month tour to the Kandahar Airfield in Afghanistan, the main transport hub in a shattered war zone. The noise from military aircraft was constant, as was the intense presence of thousands of people living in cramped, unsafe, and uncomfortable conditions. It was in this unlikely environment that I made the cross-modal connection between luminosity and orchestral sonority. Sunsets at the air field are long and drawn out. Desert dust thrown up by the ceaseless come-and-go of aircraft creates an enveloping dusty haze through which the refracted light of the sunset lingers for impossible intervals. In the beauty and peace of those extended sunsets, I was able to reconnect with something inner and intensely personal: music. In a strange coincidence, without knowing anything about Schoenberg's *Gurrelieder* other than the famous finale, I had a stunning and deeply cross-modal epiphany: the opening prelude painted a sunset.

When I returned to McGill University, my first major composition was a commission to write a work for a large Wind Symphony (45 instruments) as part of a concert commemorating the 70th anniversary of D-Day which I titled *In the Setting Sun (Still Life)*. Music for wind band tends towards the martial and triumphal: marches, fanfares, etc. I had something very different in mind. I aimed to capture some of the strange and otherworldly beauty of the desert sunsets that I had witnessed at Kandahar Air Field, perhaps as a way of reminding myself of the peace and solitude that can be found even in a place of war. I suppose that I underestimated the challenge that I had given myself. After all, what does it even mean to write music that sounds like a sunset? And what was it about Schoenberg's masterful sonic painting that so captured me? What at first seemed like a simple task turned into something much more nuanced than I could ever have expected.

The questions raised by the writing of *In the Setting Sun (Still Life)* led me to reconsider how we might understand the peculiar and intimate feeling of the growth and decline of luminous energy that is so characteristic of the intense experience of sunrise and sunset, and how we might understand this quintessentially visual experience as an experience of and in music. The question of the composition of musical experiences of light encompasses a wide range of subjects. How is it possible, for example, to experience an energetic contour within our own experience merely through the experience of the reception of a work of art? And, how can we understand the transposition of perceived energy contours in one mode of sense experience as analogous or isomorphic to an imagined energy contour in another? Moreover, what are the apperceptive mechanisms through which an energetic contour can even be understood to be a single, continuous contour that persists throughout the many changes in surface detail that are characteristic of compositions for large-scale ensembles? And finally, how do the cognitive and perceptual mechanisms of the timbral individuation of streams and layers of music enable us to hear not just the unity of an identifiable energetic contour, but also its progressive coalescence or dissipation across complex changes over a range of musical parameters? To answer these questions, I have chosen to turn to a range of sources, culminating in an original composition, *Bright, Blue and Shimmering* that exemplifies many (if not all) of the features of orchestral sunrise.

Chapter 1 provides a general introduction to the orchestral sunrise as a topic within the orchestral repertoire. As I learned through my research, I am far from the first composer to grapple with the question of how light is experienced as music. Chapter 1 also introduces the sunset topic, which, as far as I can tell, has yet to be explicitly identified by musicologists even though it is a clear subject in a number of well-known compositions.

Chapter 2 investigates the classical theory of ekphrasis—a theory of rhetoric that demonstrates how vibrant, lifelike experiences are created by aesthetic means. I outline three essential elements of successful ekphrasis: spatialization, small and large-scale contour, and familiarity. The theory of ekphrasis and enargic depiction has gained increasing attention recently as scholars and commentators attempt to understand so-called "peak experience" in a range of aesthetic media.

Chapter 3 investigates cross-modal perception through the Aristotelian theory of sensory reception—a theory that both precedes and underwrites ancient theories of ekphrasis. Of particular importance is Aristotle's theory of common sensibles, which proposes a common framework for the immediate perception of unity and motion across sense modalities. Additionally, Aristotle's theory in turn endowed classical rhetoricians with a notion and theory of phantasia, what today we have come to call the imagination. Aristotle's view is not merely of intellectual interest, but provides a fertile ground for understanding the primary importance of physical metaphors and analogies insofar as they pertain to the phenomenological and hermeneutical description of the experience of listening to music.

Chapter 4 develops a theory of the perception of unity and motion through the modern theory of apperception, which extends Aristotle's theory of the intelligible perception of unity and motion through a more rigorous framework, especially through Kant's theory of *a priori* intuition and the various schools of thought, both philosophical and psychological, that emerged from it in the 19th century. The theory of apperception, together with the organicism and vitalism that it catalyzed, is of interest as a tool for interpreting our own experience of music.

Chapter 5 canvasses and extends the modern psychological theory of Auditory Scene Analysis insofar as it pertains to orchestral music. I argue that Auditory Scene Analysis provides tools and techniques for understanding the experience of musical sunlight through the apperception of spatialization, contour and familiarity in music. Music occurs in a space-like domain where the tensions and large-scale progressions that are necessary for the experience of growth and decline, and coalescence and dissipation, are experienced. Contemporary research in the psychology and cognition of timbre further refines my argument, making it possible to demonstrate how specific orchestrational choices lead to increased or decreased clarity of segregation and blend in the multidimensional space of musical experience.

Chapter 6 exemplifies the theoretical components developed in Chapters 1-5. Works by Bartók, Ravel, Rimsky-Korsakov and Schoenberg are analysed and explicated in two Case Studies to show how energetic contours are developed across a range of parameters and organized ultimately around the inner idea or *eidos* of coalescing or dissipating energy. While the analyses cannot be exhaustive, they aim to support the overall claim this dissertation makes by exemplifying only those features that pertain to the claim. Chapter 6 ends with an analysis of my own composition, *Bright, Blue and Shimmering*. The complete score of this work is reproduced in Volume II of the dissertation. Additionally, it should be noted that the various approaches to score analysis adopted in this chapter stem from my own vantage point as a composer, and are as such idiosyncratic, both to my nature as a listener and to the task at hand.

CHAPTER 1:
SUNLIGHT AS A TOPOS IN MUSIC

1.1 Music and Light

The purpose of this study is to examine the phenomenology, psychology, and compositional strategies associated with the experience, cognition, and evocation of sunlight in music. Moreover, it aims also to exemplify some—but not all—of the elements used by composers to depict sunlight in music through an original composition, *Bright, Blue, and Shimmering*.

On its face, music and light might seem an unlikely pair. After all, music is the exemplary form of acoustic art. Light, on the other hand, exists as electromagnetic energy, given to everyday experience through the visual system. And yet, analogies persist between sound and light. Indeed, we often ascribe to music qualities such as brilliance, colour, luminosity, and even warmth. This is not a recent development, but an association made by composers, musicians, critics and listeners across time. Testimony abounds—for centuries people have written about the experience of sound in a way that strongly implies an overlap between visual and auditory experience (Riley 1995, Tolley 2001, Darrigol 2010, Pesic 2014). But the question remains, why? In the absence of a compelling theory, let alone any clear one-to-one mapping between the senses, we can only speculate about the grounds of an experiential correlation of the senses. Research in empirical psychology has demonstrated that we associate the experience of music with brightness and darkness. Higher pitches played loudly are perceived as brighter than low pitches played softly (Marks 1978, 1997). And clearly, the term "bright" is borrowed from our description of visual experience. Moreover, we often speak of instrumental *qualia*—the difference in sound quality between instruments—as possessing visual characteristics. Instrumental sound production and orchestrational techniques that modulate the distinctive timbral identities of individual instruments in the creation of pairings and large-scale mixtures are frequently called "colours," an obvious analogy to the chroma of visual experience.

Beyond such reports of the visual description of musical experience, however, there are several considerations that may explain the qualitative analogy between light and music. For, we experience music as having space-like characteristics insofar as a listener intuitively constitutes a "scene" of discretized musical events (Bregman 1999). It is in this "space" that the drama of music unfolds. Music thus seems to occupy a place within experience; a virtual space characterized by a variety of dimensions that are not exact parallels or representations of visual space, but that share common characteristics with the visual domain, such as expansiveness (filling space), persistence (occupying a place), motion (moving in space) and presence (object identity).

Moreover, our experience of music may be the experience of music itself, but also the sound of which it is composed, much as we may experience the visual domain as possessing not just colour and form but also luminosity. Luminosity is not a specific colour or form that is directly perceived as an object, but the qualitative apperception of the way in which light itself constitutes a visual experience. It is the peculiar balance of light, shadow and illumination that is characteristic of a scene, not the object or scene itself. Music, too, is not merely colour and form, but a specific deployment of sound that is identifiable and recognizably characteristic of a passage, piece or collection of works. The recognizable character or "sound" of music is not itself the immediate object of perception, but an awareness of sound in the perception of the musical scene. It is the apperception of sound as the constitution of music.

Nevertheless, as a possible sonorous condition of concert music, the concept of light remains elusive as a fully articulated feature of perception. Luminosity, taken as a quality of music, resists the kind of straightforward identification, appraisal, and analysis that is available for other parameters such as pitch, rhythm, harmony, and even timbre. Although qualitatively distinct degrees of auditory brightness may exist as experientially immediate attributes, they remain nonetheless a relative and contextually dependent attribute of musical perception. In a study devoted to the semiosis of light in music, musicologist Eero Tarasti highlights the imprecise, situational, and contextual nature of luminosity in music:

> Light and darkness are not absolutely binary articulations. And in music, a temporal art, the categories of non-light and non-darkness are just as relevant: light that is getting darker = non-light, and darkness that is becoming light = non-darkness … from a phenomenological standpoint, that the same amount of light can mean completely different things—for example, whether we are facing sunrise or sunset—and the same holds true for their musical representations. (Tarasti 2012: 304)

Importantly, Tarasti's problematization underscores the ease with which music transitions from a state of brightness to one of darkness. That music moves between states of brightness and darkness seems uncontroversial. Nevertheless, the ground and function of the analogical perception of light in music remains mysterious.

1.2 Sunrises in the Orchestral Repertoire

Among his many notable innovations, Haydn's transformation of the orchestra, together with his novel and thoroughly modern approach to orchestral sonority, has recently come to light in musicological research (Dolan 2013, Loughridge 2016). Several scholars note Haydn's propensity for evoking light in music, especially in his oratorio *The Creation* where the composer successfully creates sonic analogues for both the inceptive cosmic light (Kramer 1992) and the dynamic, luminous energy of a sunrise (Zbikowski 2015). Haydn's predilection for the curious correspondence between orchestral sonority and luminosity was not limited to light in a strictly religious sense. As is evidenced by an early symphonic trilogy (Symphonies 6, 7, and 8, subtitled *Le matin*, *Le midi*, *Le soir*), his interest in luminosity extended to the observable phenomena of the natural world and specifically to the sun's regular motions and intensities.

Elaine Sisman (2014) first proposed that the orchestral sunrise might in fact constitute a discrete topic (*topos*)—a mode of musical discourse employed by a group of composers whereby a token gesture or musical parameter takes on a referential function. Framing the proto-topic in an earlier article, Sisman argued that "passages ... might be termed 'sunrise music,' whether or not they appear in an explicit solar context, usually featuring rising-and-growing gestures that are easily perceived as 'representing' or 'characterizing' the rising motion of the sun, or the emergence of light more generally" (Sisman 2013: 9). Sisman links the advent of the orchestral sunrise in the mid-18th century with contemporaneous developments in composition and orchestration, such as the invention of the Mannheim crescendo, speculating that the topic developed from earlier Italian opera overtures. For Sisman, the principal feature of the sunrise topic, irrespective of stylistic epoch, is the orchestration of a gradual crescendo. Sisman notes that the sunrise topic extends into the 19th and 20th centuries, pointing to Wagner's Prelude to *Das Rheingold* and to Ravel's *Daphnis et Chloé Suite No. 2* as examples of the topic's longevity. Similarly, Helen Greenwald (2010) notes the connection between sunrises in opera (Verdi, *Attila*; David, *Le Désert*) and those in concert music (Strauss, *Also sprach Zarathustra*). Greenwald also highlights developments in lighting technology for the theatre in the mid-19th century that allowed for the sunrise in music to be transformed into a staged audio-visual spectacle, where sight and sound fuse to create a powerful multimedia experience of the sunrise. Despite these recent (albeit brief) scholarly reviews of sunlight in music, none have explored or populated the topic beyond a few isolated cases. None have offered even a tentative explanation of how the compelling perceptual analogy between light and sound might be possible, either in the hands of the composer or in the mind of the listener.

Depictions of sunlight may occur in many works, symphonic and non-symphonic alike, but the orchestra remains the preferred locus or medium for composers. Familiar examples include Debussy's *La Mer*, where the carefully crafted interplay between musical materials and their formal arrangement and subsequent orchestration work in tandem to produce a stunning and lively depiction of dawn and the interplay of light as it refracts off the dancing waves of the sea. The "fifth door" of Bartók's *Bluebeard's Castle* features a stunning and sudden explosion of light as the duke demonstrates his vast and brilliant territory. The tone poem *Night Ride and Sunrise* by Sibelius tracks the full transition from darkness to brilliant morning light. Less well-known works include Carl Nielsen's *Helios Overture* (1903), Peter Maxwell-Davies' *An Orkney Wedding with Sunrise* (1985), Poul Ruders' stunning *Solar Trilogy* (1993), and Kaija Saariaho's *Notes on Light* (for cello and orchestra, 2006). A list of nearly ninety examples of works in which composers either make explicit reference to sunlight, or in which the characteristic features of sunrise or sunset factor prominently, can be found in **Appendix A**. While the list is far from complete, it serves as a preliminary demonstration of the recurring importance of the light-to-sound analogy for composers across stylistic epochs.

A preliminary distinction must be made between mere instances of sunlight in orchestral music, on the one hand, and whole movements or works (entire forms) devoted to the explicit and emphatic representation of the specific luminosity of a particular time of day. This study is limited in scope to clear cases of orchestral sunrises and sunsets that: (a) occupy entire movements or whole pieces (that is, they are not passing references), and (b) exist in relation to another specific work of art. The first restriction merely spares us the effort and space that would be needed to mark out different topical materials throughout the composition by focusing on works devoted solely to the topics at hand. The relation to a specific, non-musical work of art is by no means a condition of the musical representation of light. For our purposes, however, the avowed reference to a correlated work of art provides clear evidence of the composer's artistic inspiration and compositional intent, sparing us the further task of establishing authorial intent. Furthermore, I give the specific relationship to an external work of art little consideration, focussing instead on the general relationship between works of luminous music that respond to works from the sister arts.

1.3 Emblematic Features of the Orchestral Sunrise

Both Sisman and Greenwald make special note of emblematic features of orchestral sunrises, such as low-to-high pitch progression, minor-to-major key modulation, and soft-to-loud dynamic progressions. Several more basic features should be added. First, orchestral sunrises exist both as temporally evolving forms as well as stylistic conventions. Often, composers write relatively stable harmonic progressions, and make extensive use of prolonged harmonies, perhaps in order to allow other parameters of music to become perceptually heightened. Features that relate directly to an orchestration practice include the proliferation of rising melodic figures according to instrumental brightness, and the general progression from darker to brighter orchestral sonority. Loudness (amplitude) envelopes often evolve linearly from near silence to giant climaxes. This increasing sonic density requires very little indication when, say, writing for the piano, but demands great care when dealing with forty or more instruments. Moreover, the gradual increase in pitch ambitus is often accompanied by an increasing saturation to pitch space, whether by the addition of pitch material, the re-voicing of pitch material according to register, or the addition of instruments to existing voices. Increasing pitch density is a hallmark of orchestral crescendi—in order to create a continuous crescendo, composers observe a general rule that as the music achieves higher and higher pitch plateaus, it requires more and more density. Accordingly, orchestral sunrises generally accumulate pitch density. The sonic realization of brightening also requires the gradual and organized layering of instrumental sonority according to pitch range and specific timbral quality over time. Finally, brass instruments (horns, trumpets, trombones), together with percussion instruments, whose timbre includes audible noisy elements, often “pronounce” the arrival of the cresting solar orb.

1.3.1 The missing *eidos*

Even taken together, the emblematic features of an orchestral sunrise do not in themselves constitute a sunrise. We can easily understand a great number of standard orchestral works to display many, if not all of these features in various combinations over limited spans of time. Yet the temporal nature of the sunrise implies that a contour—some kind of luminous growth—is perceived to extend across both space and time.

To be fully realized, an orchestral sunrise must take place over a notable span of time and must display its constituent "parts" ordered such that an image stems from their interactions. And, since music exists from work to work as an amorphous experience where each composition displays a unique formal organization (even when making use of a so-called standard form), there is no clear prescription for the ordering of parts and their interactions. In fact, in order to qualify first as music, and only second as descriptive entities, most orchestral sunrises grow and recede, rise and fall, get louder and softer, locally to varying degrees according to the whim of the composer, while the general arc of the form rises globally over time. The orchestral sunrise requires nuance and subtle variation to evoke the peculiar, pulsating intensity and dynamic energy of the sunrise. We would no more think that a yellow arrow pointing towards a block of blue colour constitutes a compelling painting of a sunrise than we would experience a simple crescendo as a compelling orchestral sunrise.

The temporal form of the sunrise also displays a specific character or presence, all while still functioning idiomatically as music. While the technical features described above may all contribute in different ways to the experience of increasing light in music, they are not alone sufficient. They lack articulation of the overall eidetic character of a sunrise—how composers structure and imbue music with the explicit intent that it be experienced as something vivid and luminous across a significant span of time. My use of the ancient Greek term *eidos* calls attention not only to the conditions under which a thing undergoes change while retaining its essence or identity, but also to the way in which we experience vivid mental imagery, given the right external prompt. Such vivid imagery easily consumes our attention in the everyday experience of hearing, say, spoken poetry or fiction, even of radio newscasts. To convince listeners of the immediate presence of sunrise, to make listeners both sense and imagine music as sunlight, the composer must deploy and sustain an identifiable and characteristic sonorous form that evolves somehow in relation to, or in tandem with, the unfolding of the musical materials and their formal arrangement. It is only through the combination of growth and the gradual coalescence of a sense of the presence of an identifiable and characteristic sonority that the sunrise as a musical topic comes clearly into focus.

1.3.2 Orchestral sunsets

That the interplay between brightness and darkness forms an important, if ancillary role in the ebb and flow of orchestral music seems largely uncontroversial. From Bach's *Brandenburg Concerti*, to the symphonies of Gustav Mahler, composers have made extensive and deliberate use of music's natural capacity for opposition between the extremes of sonic luminosity. Moreover, works such as Beethoven's *Piano Concerto No. 4*, especially the contrast in luminosity between the first two movements, makes plain the composer's fascination with the intricate and contrasting dialogue between brightness and darkness in the large-scale functional and formal organization of orchestral music.

While the orchestral sunrise has received limited scholarly attention, no one to the best of my knowledge has yet offered more than passing remarks concerning the somewhat occulted subject of the orchestral sunset. Explicit references to sunsets in instrumental music are in fact plentiful. Respighi's *Il Tramonto* (1914), Richard Strauss' *Eine Alpensinfonie* (1915), Tristan Murail's *Treize Couleurs du Soleil Couchant* (1978), Per Nørgard's *Twilight* (1981), Takemitsu's *Signals From Heaven: Night Signals* (1987) and *Twill By Twilight* (1988)—these are just a few of the works that make clear reference to the setting sun and to ambient light at dusk. Others, such as Mahler's *Seventh Symphony*, are thought to contain hidden programs involving depictions of nocturnal light. Moreover, like the orchestral sunrise, the orchestral sunset most likely emerges as a symphonic form linked to staged works, with antecedents reaching back at least as far as Wagner's operas.

1.4 Questions of Perception and Recognition

1.4.1 A problematic topic?

Writing in 1963 about the rapid changes to information technology, Marshall McLuhan coined the now-famous phrase "The medium is the message." As outlined above, an orchestral sunrise or sunset relies on ordered contours whose primary tendency extends across several parameters (spatial, mnemonic, intensive). We might then understand form to be the primary component articulating the changes in a unified pattern. Form "carries" all of the relevant musical information organized across time. Time, in turn, is required to understand the extent of change articulated. Form is thus the medium by which a sunrise or sunset delivers its primary content. The medium of form is the message.

Most other *topoi* in music depend primarily on conventions for their capacity to signify extra-musical meaning. The notion of topic theory, first proposed in 1983 by Leonard Ratner, and subsequently expounded upon by various scholars, including Kofi Agawu, Robert Hatten, and Raymond Monelle, to name but a few, can be characterized as ascendant, if only for the steady expansion of categories subsumed under its umbrella. As a result, disagreement persists among scholars about the criteria with which something may qualify as a bona fide topic. In the introduction to the 2014 *Oxford Handbook of Topic Theory*, Danuta Mirka makes the case for the preeminence of those styles and types firmly rooted in the music-making traditions of the 18th-century (Mirka 2014: 1–43). Mirka reserves particular exclusion for various forms of pictorialism in music, suggested by Monelle, in the form of "iconic" topics, arguing,

> Even if subsuming pictorialism under the concept of topics raises no logical problems, it is historically problematic insofar as musical imitation of other music was unrelated to pictorialism in the eighteenth century. (Mirka 2014: 33)

She later adds:

> From the perspective adopted in this volume, Monelle's "iconic topics" are not topics because they do not form cross-references between musical styles or genres. Instead of dividing musical topics into iconic and indexical, it will be more appropriate to distinguish between two classes of musical signs based on imitation: musical imitation of other music (topics) and imitation of extra-musical sounds. The second class can be further subdivided into two types: imitation of passionate utterances and imitation of natural sounds (pictorialism). (ibid.: 35-36)

While this study does not offer arguments with regard to specific criteria for inclusion as a topic, I will assume that the sunlight topic is a topic in a broad sense. Sunlight is a *topos* of musical rhetoric in so far as composers speak to their audience with music in order to deliver a specific message about the world and about music's capacity to represent that world, and this discourse itself enters into the dialogue of composers across stylistic epochs.

Perhaps the narrow definition of "topic" as restricted to styles and tropes found in 18th-century music is enabled by the easily recognizable tropes that typically derive from simple imitations of natural sounds or popular musical conventions. The dance, the hunt, the birdsong, all are to some degree simple and highly conventional examples of topics with an easily recognizable basis in some other auditory experience. The sunrise (or sunset) does not display a simple and identifiable conventional trope as its basis. There are two distinct but interrelated reasons for this. First, the sunrise is quintessentially a visual phenomenon. Its expression in music is not—cannot—be based on simple imitation. Second, the contour of the orchestral sunrise is, like the sunrise itself, extended and subtle. The sunrise takes time to unfold and unfolds through remarkably fine changes. The sunrise therefore makes special imaginative demands on its musical audience. Its identity as a form is neither obvious nor straightforward in any one instance.

And yet, the orchestral sunrise is clearly related to the notion of topic. Already established in the 18th-century (Haydn), it depends upon a discourse between composer and audience relating to a third (non-musical) experiential source. And, it becomes a discourse between composers, who are able to reference and allude to sunrises found in past works, if only by studying and remaking them. The sunrise differs from conventional topics (*passim* Mirka) precisely in its esoteric *eidos*, as described above. The sunrise-*as*-topic is not created upon a simple, imitative and conventional trope, but rather on an extended contour that varies in subtle ways over time. The subtle presence and variation of the identity of light throughout the form of a composition may not be available to every listener. And so, unlike conventional topics, the sunrise enjoys more commonality with "secret" or "hidden" codes shared among composers than to an artful appropriation of a commonplace experience.

The underlying theoretical mechanisms of signification proposed by topic theorists rely largely on developments made in the last half of the 20th-century within literary and linguistic semiotics. I aim to demonstrate that other theoretical frameworks can be in fact commensurate with topical signification, in addition to, and without excluding or opposing extant conceptions of meaning making. This study therefore proposes a philosophically informed approach to the psychology of music reception, rooted in both ancient and modern theories of the relationship between an auditor and an auditory work of art.

1.4.2 Transmediation, cross-modality, and synaesthetic contour

The possibility of the sunrise as a topic (or something like a topic) does not depend on a simple sign-making of imitation, immediate affect, or plain convention. Instead, the ability of music to point to (or to signify) a phenomenon in another sensory domain must rely on features of our perception and cognition of music. The sunrise can be experienced in music not because it is recognized as familiar or pictorial (there is no sonic referent, after all), but because *music is actually experienced as a something sunrise-like*.

Broadly speaking, the possibility of the sunrise (or sunset) construed as a musical experience relies upon three features of the perception and cognition of music. First, the possibility of aesthetic experience between works of art in different sensory domains has long been recognized and theorized. The classical theory of ekphrasis is just one example of a theoretical approach to the transfer of intelligible form (*eidos*) from one domain of experience to another. We can generally call this process "transmediation," where the creator of a work interprets their own experience in one domain and attempts to recreate key vibrant features of the experience in another sensory domain, evoking a distinctive and vital unity—what the ancient Greeks termed *enargeia*—in the mind of the audience.

Second, the possibility of experiencing an orchestral sunrise as an ekphrastic work of art depends on key features of the reception and interpretation of a unified experience. The modern theory of apperception (Janiak 2016, Kim 2016, Kim 2015, Thompson 2009, Peltz 2007, Arens 1989) shows how unity, motion and identity can be perceived, cognized and recognized across sensory domains through shared mechanisms of discretization, segregation, intensive contour and order. The organization of unities capable of presence, motion and dynamic interaction within an experiential domain (a virtual "space") is a pre-requisite for perceiving the common fate of sunrises and sunsets across the sensory domains. We can call this common perceptual modeling "cross-modality."

Third, the possibility of experiencing the orchestral sunrise as light, in the absence of any immediate or correlated visual stimulus, depends upon the psychoacoustic parameters of timbral identity and quality, its properties and its variation over time. Recent work at the nexus between the psychology of music and music analysis provides the evidence and explanatory framework to understand how specific orchestrational strategies support the transmedial function of composition, and the cross-modal characteristics of perception to evoke specific synaesthetic contours that can be experienced as music, as light, or as both. [See my discussion in Chapter 5]

1.5 At the Border of a Make-believe World

The four works that make up the first two Case Studies of Chapter Six (the former case examines the musical sunrise while the latter examines the musical sunset) were chosen on the basis of their particular strength of representation. In my view, each stands as an exemplary work of musical sunlight. They also share another commonality: each exists as an introductory movement of a staged work. The first case (sunrise) examines the Prelude to Bartók's *The Wooden Prince* (1917) and Ravel's orchestral introduction to Act III of *Daphnis et Chloé* (1912), both written as ballets. The second case investigates Rimsky-Korsakov's (1890) sunset, derived from the Prelude to the third act of the opera *Mlada*, and Schoenberg's (1913) sunset *par excellence*, the Prelude his massive so-called secular cantata, *Gurrelieder*. With the exception of Schoenberg's work, all were arranged by their composer into concert suites for symphony orchestra.

As I hope to demonstrate in the subsequent chapters, orchestral sunrises and orchestral sunsets produce powerful musical experiences that involve not only the senses but also the imagination. The sunrise and the sunset rely on the excitation of affect through intense contrasts and the shimmering colorations that make full use of the timbral effects and gradations available to a composer through the symphony orchestra. But sunlight topics also invite listeners into a powerful inner experience of growth or decline, to experience the majesty and the mystery of the rising or setting sun in vivid and visceral terms. The experience of orchestral sunrises and sunsets relies on an act of the inventiveness on the part of listeners by which a whole world of imagination is invoked. The experience of changing light in music relies on the ingenious construction of a domain of sonic and timbral possibilities where the specific destiny of the setting or rising sun can be apprehended over time as the changing luminosity of sound. To take up the invitation of the orchestral sunrise and the orchestral sunset is to invest oneself in the creation of a whole world of imaginary music and its dynamic possibilities.

It should be no surprise then to find that sunrises and sunsets are frequently found in or used as overtures to dramatic works. They are quite literally openings to another world. The sunrise and the sunset appear in mythology and literature as crucial events in the transition between night and day, between life and death, and between wakefulness and dreaming. They are imbued with a spiritual significance similar to a bridge between this world and the next. As Mirciea Eliade observes in his *Patterns in Comparative Religion* (1958: 136),

> Though immortal, the sun descends nightly to the kingdom of the dead; it can, therefore, take men with it and, by setting, put them to death; but it can also, on the other hand, guide souls through the lower regions and bring them back the next day with its light. That is its twofold function—as psychopomp to "murder" and as hierophant to initiate.

Musically, the sunrise and sunset must cross another kind of threshold, between what is visible and what is merely imagined. As the solar orb passes into or out of existence, a listener's attention is focused upon the uncertain yet vibrant energy of diffuse luminosity just before the sun rises, or fixed upon the lingering luminescence after the sun has set. The orchestral sunrise and the orchestral sunset therefore serve as invitations into aesthetic concentration within a world of mystery and imagination, where illusions are experienced as reality. Within overtures, sunlight topics appear like mercurial psychopomps, if I may say. They are guides that deliver our sensing and meaning-making capacities into another world. Before the curtain rises, the sun also rises (or sets) in the imagination of an audience, inviting spectator-listeners into a world of myth and mystery where the upcoming drama unfolds.

CHAPTER 2:

EKPHRASIS IN THE TRANSMEDIAL WORK OF ART

2.1 Two Types of Ekphrasis: Ancient and Modern

Ekphrasis is an ancient rhetorical strategy, a device whereby a poet conjures the experience of an object or scene—absent or imaginary—by eliciting a vivid picture in the mind of a reader or listener. The visual image forms in the listener's mind through a highly detailed and highly affective description of both the form of the object (or scene), as well as its dynamic essence, often by means of vivid and intense metaphors.

Two divergent conceptions of the term ekphrasis can be found in present-day discussions. In its classical sense, ekphrasis is a literary device—sometimes found together with an epithet—whereby a poet temporarily pauses the action of a speech or a scene in order to describe particular elements within that scene or to offer a more detailed portrayal of a particular character. An ekphrasis operates as a kind of narrative slow-motion, either at a decisive point in the drama or at the moment when a new character, place or thing enters the scene. Time itself seems to dilate as the intensity of the experience amplifies.

By contrast, the modern sense of ekphrasis takes as its object the intertextual or intermedial work of art. A poet-artist portrays a single work of art utilizing the medium and resources of another artistic medium. A prototypical 19th-century example of this second type of ekphrasis is John Keats' *Ode on a Grecian Urn*, where the entire poem serves as a lengthy description of a particular and seemingly real piece of pottery.

2.2 Ekphrasis in Music

Although music has long been understood to enjoy rhetorical and discursive attributes and capacities, it is only recently that refined theories of ekphrasis in music have been proposed.[1]

2.2.1 Siglind Bruhn

The first attempt to furnish a theory of musical ekphrasis comes with the work of Siglind Bruhn, who defines ekphrasis as music about works of art and literature (Bruhn 2000, 2001). Unlike its ancient and storied cousin in the sister arts, Bruhn identifies musical ekphrasis as a relatively recent phenomenon, one whose nexus lies firmly in the music of the late 19th century (Bruhn 2001: 553, 558).

Bruhn suggests a conflation between musical ekphrasis and so-called program music—one that has hitherto gone unarticulated:

> Musical compositions with explicit reference—whether verbal, in titles and accompanying notes, or onomatopoeic—have existed for much of the history of Western music, from the many keyboard works about balmy or inclement weather or battle scenes, collected in Victorian drawing-room anthologies, through Beethoven's *Pastoral Symphony* (1808), to Richard Strauss's *Symphonia Domestica* (1903). Yet, I claim musical ekphrasis is a distinct and much more recent phenomenon. An important task in approaching the subject matter … is that of formulating the criteria by which we can differentiate between musical ekphrasis and what is generally known as "program music." The two genres belong to the same species: both involve purely instrumental music whose *raison d'être* is in its response to a definite literary or pictorial source, and both have been described variously as "illustrative" or "representative" music. (Bruhn 2001: 552-553, author's emphasis)

In Bruhn's view, program music "represents, while musical ekphrasis re-presents" (Bruhn 2001: 554). Program music, Bruhn writes, merely "narrates or paints, suggests or represents scenes or stories … that enter the music from the composer's own mind." (Bruhn 2000: 28). Note that

---

[1] For concise overviews of the history of rhetorical theories in music, see Wilson, Buelow and Hoyt (2001) and McCreless (2002). Mark Evan Bonds (1991) offers a detailed theory of the relationship between rhetoric and musical form.

Bruhn limits her exploration of musical ekphrasis to compositions wherein the referent is a real work of art, created in another medium by another artist. Mussorgsky's *Pictures at an Exhibition*, originally composed for solo piano, epitomizes Bruhn's understanding of musical ekphrasis: a composer responds to a previous work of art by way of re-presentation, a kind of one-to-one copy in a distinct medium. Mussorgsky's aim was to convey something about the individual pictures painted by Viktor Hartmann, but in the medium of music. One might even suppose that two (of more than twenty) subsequent orchestrations of this work, by Ravel and Stokowski, attempt to complete the composer's ekphrastic expression by adding instrumental colours, effectively refining and enlivening the work's sonic texture.

2.2.2 Lydia Goehr

Lydia Goehr (2010), on the other hand, identifies two received views of musical ekphrasis. The first aligns with the ancient rhetorical definition where descriptions of music appear in writing or speech, thus "expand[ing] our concept of music beyond its modern medium restriction to the pure art of tone to accommodate music's principles, practices, persons, and instruments." (Goehr 2010: 389). The second aligns with the modern understanding explored by Bruhn, that is, where a musical work re-presents another form of artwork, such as a painting or a poem (ibid.: 389). This instance privileges music as "works" in the seemingly non-semantic and thus non-referential tonal medium. Goehr proposes a novel synthesis of the two views of musical ekphrasis. Her synthesis grants music an autonomous descriptive capacity. For Goehr, composers—like their literary cousins—can make descriptive utterances but *in* music without any recourse or reference to an external work of art.

Goehr's view thus resonates sympathetically with the sense of ekphrasis found in classical rhetoric, extending the power of description and representation of reality to music. As she puts it, "modern ekphrasis focuses on *works* that bring other works to aesthetic presence; ancient ekphrasis focused on *speech acts* that brought objects, scenes, or events to *imaginative presence* when it extends beyond this domain" (Goehr 2010: 397, author's emphasis). Goehr's synthesis aims to challenge two limiting assumptions: first, that ekphrasis is somehow restricted to the portrayal of works of art in other media, and second, that music is somehow descriptively deficient relative to the other arts. In Goehr's view, ekphrasis manifests a human capacity for expression and interpretation that does not depend on our taxonomy of the arts, and therefore it ought to be considered serviceable in any artistic (read, *expressive*) medium.

Neither Bruhn nor Goehr, however, provide a theory of the unique descriptive or depictive power of music. How can it be the case that music portrays something pictorial or evokes something visual without recourse to language or some other well-defined system of signs? We can begin by asserting with Bruhn and Goehr that visual depiction through music is indeed possible. Our experience alone might suffice to prove the case, yet we must also go further by answering the question of how such a depiction can be made possible at all. How could music give rise to intense, distinctively visual experiences?

2.3 Enargeia in Literature

To answer this question, I propose that we return to a concept central to the classical understanding of ekphrasis: *enargeia*. In the classical handbooks of rhetoric, the *Progymnasmata*, orators describe enargeia as the effect that a narrative or pictorial description creates for listeners—the necessary instrument of a successful ekphrasis (Webb 2016a: 87-90). While it is possible to describe just about any object, person, or event in exhaustive detail, such a description, however accurate, is not sufficient. Ekphrasis produces a qualitatively different type of description that escapes the normal bounds of conceptual representation and seems, paradoxically, to take place within the domain of our own experience. Enargeia imbues a qualitative difference, over and above mere description; difference that results in the distinctive effect of ekphrasis. While many components exist in the theory of classical rhetoric, only enargeia acts as the central characteristic of the direct experience in listeners of a narrative or portrayal perceived to be both real and believable by the audience. The immediacy and authenticity of the enargic description lends it an incontestable persuasive power. It is no surprise then that this power to persuade should prompt great interest among classical rhetoricians (van Eck 2015: 34).

Enargeia can thus be defined as the qualitative (not quantitative) effect of infusing a depiction with luminous living presence. It is enargeia that allows a speech or text (or, as I argue, any form of descriptive media) to open the imagination to the seeming presence of the thing itself, an experience not of the work of art, but of its object (van Eck 2015: 31). Yet, at the same time, enargeia also establishes the mode whereby a description moves from the mind of the speaker or author into that of the audience. Enargeia achieves the intended effect of ekphrasis, that is, to *deliver a picture* (perhaps even a sensory image) formed in the mind of a speaker into the minds of listeners with as much fidelity and vivacity as possible. The fidelity in question here does not concern mere factual correspondence, but rather a realism and an authenticity that arises from experiencing the account immediately as part of our own experience. While fidelity may begin with a description, the presence of metaphor and affect act to differentiate mere description from ekphrasis. Truth, indeed, need not be of the essence (van Eck 2015: 74).

The effectiveness of enargeia is therefore not merely a technical question of how carefully or artfully an author describes the object. Rather, for it to achieve enargeia, a description (of a person, place, or thing) must be especially vivid and immediate. This vivacity becomes possible only because the description draws on experiences shared by the listeners that can be easily recognized and imagined (Webb 2016a: 119). The underlying assumption of enargeia as a rhetorical strategy implies that the author can conjure definite affective responses within the minds of the audience, and that these affective responses, taken together, will confer upon the description the authenticity of lived experience. The rhetorician thus produces enargeia, in part, by combining remembered sensuous experience, carefully selected verbal descriptions, and highly affective language and delivery with the intent of vividly transferring an image from one mind to another. Caroline van Eck provides a succinct definition of enargeia:

> The Greek *enargeia*, derived from *argès*, shining light, meant clearness, distinctness or vividness. In the Iliad and Odyssey the word is used to describe the blinding light in which the gods appear to mortals, and was compared to the almost white quality of Mediterranean lightning. By extension it came to mean putting something before the audience's eyes by highlighting it. In Aristotle's *Poetica* it is defined together with the etymologically unrelated term *energeia* in his discussion of particularly persuasive stylistic strategies: the vivid aspects (*enargeia*) of a description put what is discussed before the eyes of the audience by using words that signify motion or actuality (*energeia*). To achieve this the poet should keep his subject before his eyes (*pro ommatôn*), to see it very clearly (*enargestata*), as if he was present himself. (van Eck 2015: 31)

Thus, enargeia not only engenders the specific character of a successful ekphrasis but also serves as the mechanism within the audible that causes the imagination to simulate a visual experience. The type of seeing evoked by enargeia differs from normal vision in that the enargic image does not stimulate the receptive components of our visual system. Nevertheless, the effectiveness of an especially vivid representation depends on our ability to represent things as moving, dynamic energies within a characteristically visual domain. The space of the mind's eye, even if it is not a real space, borrows many of the features of our receptive visual experience.

My purpose here in making such distinctions is to show how enargeia, as the characteristic feature of a successful ekphrasis, may be possible in music. I will only offer a schematic characterization of a few key elements of enargeia that are especially relevant to musical ekphrasis. Many already excellent historical studies of enargeia exist in classical rhetorical theory. And, while a more comprehensive theory of the mechanisms of enargeia in music is certainly to be desired, space here will not allow a more complete treatment. Nevertheless, in what follows, it should become clear how enargeia becomes not only possible in music, but also how it stands perhaps as the privileged form of musical description.

2.4 Three Key Features of Enargeia

2.4.1 Spatialization (transmediation – from language-time to image-space)

To understand how enargeia works, we must begin with time. Similar to musical performances, the descriptions that employ rhetorical ekphrasis remain time-bound. While a visual representation may encompass an entire vista in the blink of an eye, music and language unfold sequentially. Only one detail at a time (more or less) can be given in order to constitute an image that, piece-by-piece, fills in a virtual space. Therefore, an inevitable tension occurs within a diachronic description (Krieger 1998): the virtual space constituted by an ekphrastic description is not ready-to-hand, which is to say that it is not continuously available, and must be furnished in a continual manner to experience; either externally by the arts, or internally by an act of the imagination.[2] Space must be constituted and reconstituted across time.

To succeed, an ekphrastic description must constitute a virtual space even as that very space comes undone over time, and must deploy qualitative language, metaphor and affect such that a sense of spatialization persists, even as the description moves on. Enargeia operates as a possible rhetorical strategy only because of the ease with which we are immediately able to constitute space as a virtual domain while in the midst of a description. Moreover, the constitution of imaginary space depends upon enargeia for its extension across a given temporal span. Put another way, any weakening of the enargic quality of an utterance risks collapsing the imaginary space within which the mind's eye experiences vivid mental imagery.

---

[2] *c.f.* Heidegger and his notion of 'ready-to-hand' (*griffbereit, zuhanden; Zuhandenheit*). See: Wheeler, Michael, "Martin Heidegger," *The Stanford Encyclopedia of Philosophy* (Winter 2018 Edition), Edward N. Zalta (ed.), https://plato.stanford.edu/archives/win2018/entries/heidegger/.

2.4.2 Familiarity of common experiences

Because of the constraints outlined above, ekphrasis must rely as much upon the imaginative resources of the audience as it does on the wit and creativity of its author. A successful image replete with enargeia is constructed by an appeal to accessible language, common images, and experiences familiar to an audience. In order to produce a highly vivid image of something absent, the author makes use of a simplified vocabulary of recognizable objects, feelings, sense impressions and emotions. Indeed, these descriptors often flow with heavily loaded metaphors that prompt heightened sensory, affective, and emotional resonance. Through these exaggerated metaphorical descriptors, the author imparts a specific energy to a simplified contour, but—and this is perhaps more important—also creates an unfolding of sensory, affective and emotional resonance within the audience. The seemingly magical transfer of an image from one mind into another in fact depends upon the audience reaching into their own experience in order to supply missing elements from the description. While the descriptors appear metaphorical rather than literal, their intimate intensity gives the description a vivacity that far surpasses a merely factual description, however accurate it may be. Through the composition of specific vibrancies, the description transforms "listeners into spectators" (Webb 2016a: 71).

2.4.3 Simplified contour

The effectiveness of enargeia relies on the effortlessness of a spatialized imagining of a person, place or thing. This very effortlessness acts as an important constraint on what can be conveyed in such a description. Additionally, image formation in the mind's eye, when solicited or stimulated externally, depends upon the ease with which the listener can call to mind the various objects of description.

Yet, an imagined experience lacks the clarity and detail of receptive experience. I can fix my gaze upon something in the real world and absorb its details. For example, if I glance at a tree, even as it sways in the breeze, I am able nonetheless to grasp its leaves and branches without losing a sense of the image as a whole. Such does not occur for an author who seeks to convey an image to an audience. Because of the limitations of imagination and attention, too much detail may cause the overall image to be lost or displaced, at least for the common listener. The author must therefore stay alert to the need of reinforcing and reinvigorating the general contour of the described person, place, or event in question. The need to maintain a clear, vibrant contour throughout the description suggests that ekphrastic descriptions must be basic, coarse, or somehow simplified.

However, the basic contour of the thing must also be easily recognizable. This may explain why ekphrasis is associated with familiar objects, events and persons (Webb 2016a: 110-111). At a minimum, the author and the audience must share a mental model of the most fundamental spatial and kinetic features of the thing being described in order for it to be evoked by the author. Crucially, the audience need not have access to the specific shape or qualitative detail intended by the author. Indeed, it seems likely that in many matters of specific detail, the experience of the author and of the audience will diverge substantially. However, a work of art can mediate between these two unknowns by clearly articulating simple contours that reinforce the overall shape of the image. Perhaps paradoxically, it is precisely because an evocative image emerges under-specified that it can take on the required immediacy. Something must be left to the listener.

Furthermore, the contour exhibits an implicitly temporal character. Even as the description unfolds in time, it captures static features as dynamic motions—the fragile matter of our imagination dissipates with ease (Krieger 1998: 5-6). One image dissolves even as a new image comes to be constituted. An ekphrasis must therefore seek to freeze the image in the mind long enough in order to invest it with intensity and vitality (ibid.). We see this at work in the incremental, iterative, and recursive descriptions of images that circle back upon themselves such that they reinforce the image even as it dissolves. Just as a painting may make use of filigreed lines to suggest motion, diachronic representations may turn to motion as a way of stabilizing the flux of images into something persistent.

2.4.4 Enargeia exemplified

Enargic descriptions comprise spatial representations that require the constitution of a virtual or imagined place. At the same time, a specific and visceral intensity saturates this place through the use of metaphor and heightened affect. Such descriptions must make careful use of suggestive contours, often in the form of motions or dynamic intensities, that simultaneously reinforce the intensive and extensive magnitude of the image. In the end, such contours arise clearly in the mind of the audience who draw upon the resources of their own experiences—not through the creation of entirely novel experience. Enargeia is not primarily an intellectual phenomenon, but rather a reflection of experience upon itself.

Saint Augustine provides a compelling account of enargeia at work. He once found himself to be swayed by a vivid description of the city of Alexandria, a city that he had never visited. Surprisingly he was able to build up an evocative image of the city from the fragments of his experience of another city with which he was in fact very familiar: Carthage (O'Daly 1987: 113). Augustine depicts this merging of common images as something essentially effortless. The effectiveness of enargeia does not result from an intense intellectual effort, but from a seemingly spontaneous conjuring up of the imagination. Although Augustine's image of Alexandria cannot be accurate, it is sufficient, even more than sufficient—it has the ring of lived truth to it. He may not produce an accurate imagining of Alexandria, but he does create an imagining that abounds with personal vivacity and veracity. The truth of the image as experienced by Augustine denotes an individual truth because it relies upon his personal and direct experience of Carthage. The truth of the description becomes generalized insofar as it permits, in a personal and immediate way, anyone familiar with any city to "know" one's own Alexandria.

2.5 Enargeia in Painting

Enargeia exists beyond the temporal arts. Just as ekphrasis is not limited to spoken or written language, enargeia as the central effect of ekphrasis occurs in art forms that do not make explicit use of language. Indeed, theorists of rhetoric, both ancient and modern, point to painting and sculpture, as well as music, as models for the practice of rhetoric and of ekphrastic description specifically (Goehr 2010: 390-392, Tsakiridou 2013: 51, van Eck 2015: 36-39, Webb 2016a: 2-11, 61). Painting in particular serves as a privileged medium for representations of the sun and its light as we experience it, filtered by colourful atmospheric alterations. But while the palette of colours and the array of textures available to the painter seem broad, paintings of sunrises or sunsets lack a fundamental feature attained in everyday experience: they do not extend or evolve across time.

And yet, painters can make use of time as well even where none is in fact available. In **Figure 2.1**, J.M.W. Turner employs his canvas to suggest the temporal unfolding of a sunset by modulating colour across space *in lieu of* time. Turner fuses colour and space into a contour that appears to evolve alluringly according to a definite temporal trajectory. Through the visual contraction of space, Turner draws our gaze down the canvas, alluding to the descending motion of the sun, but in a frozen moment. Even a cursory examination of this painting allows us to see how a painter persuasively suggests motion in time through the careful deployment of colour. The fact that no such real motion transpires nor is perceived as such becomes irrelevant. What matters is that the beholder can furnish the missing components of such an experience.

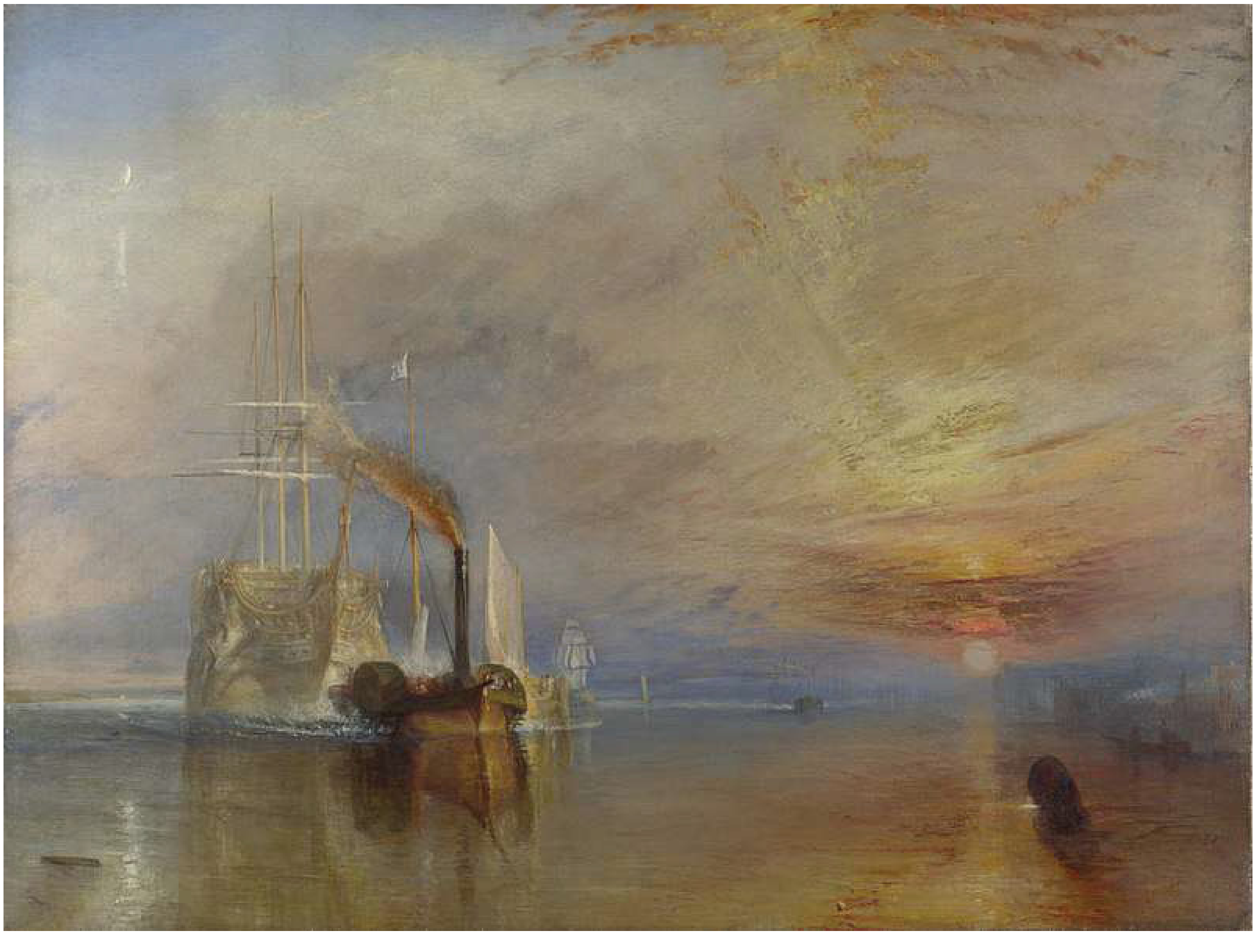


Figure 2.1: William Turner, *The Fighting Temeraire tugged to her last berth to be broken up* (1838). The National Gallery, London. In the public domain.

We might be tempted to conclude that an effective representation of a sunrise or sunset relies on the complex interplay of subtle gradations of colour and luminous intensity, as well as contour—the essential parameters of visual experience. Although it may seem that colour serves as an essential feature of visual depictions of sunlight, engravers have, for centuries, crafted works portraying luminosity by way of black and white. In *Paradiso Canto 31* (**Figure 2.2**), Gustave Doré depicts sunlight to great effect in monochrome, suggesting the progressive change in colour and luminous intensity through structured contrasts between black and white, or darkness and brightness. Variation, fluctuation, and increasing cycles cohere as a progression of change over time. The relationship between figure, degree of brightness, and contour creates a perceived vividness.

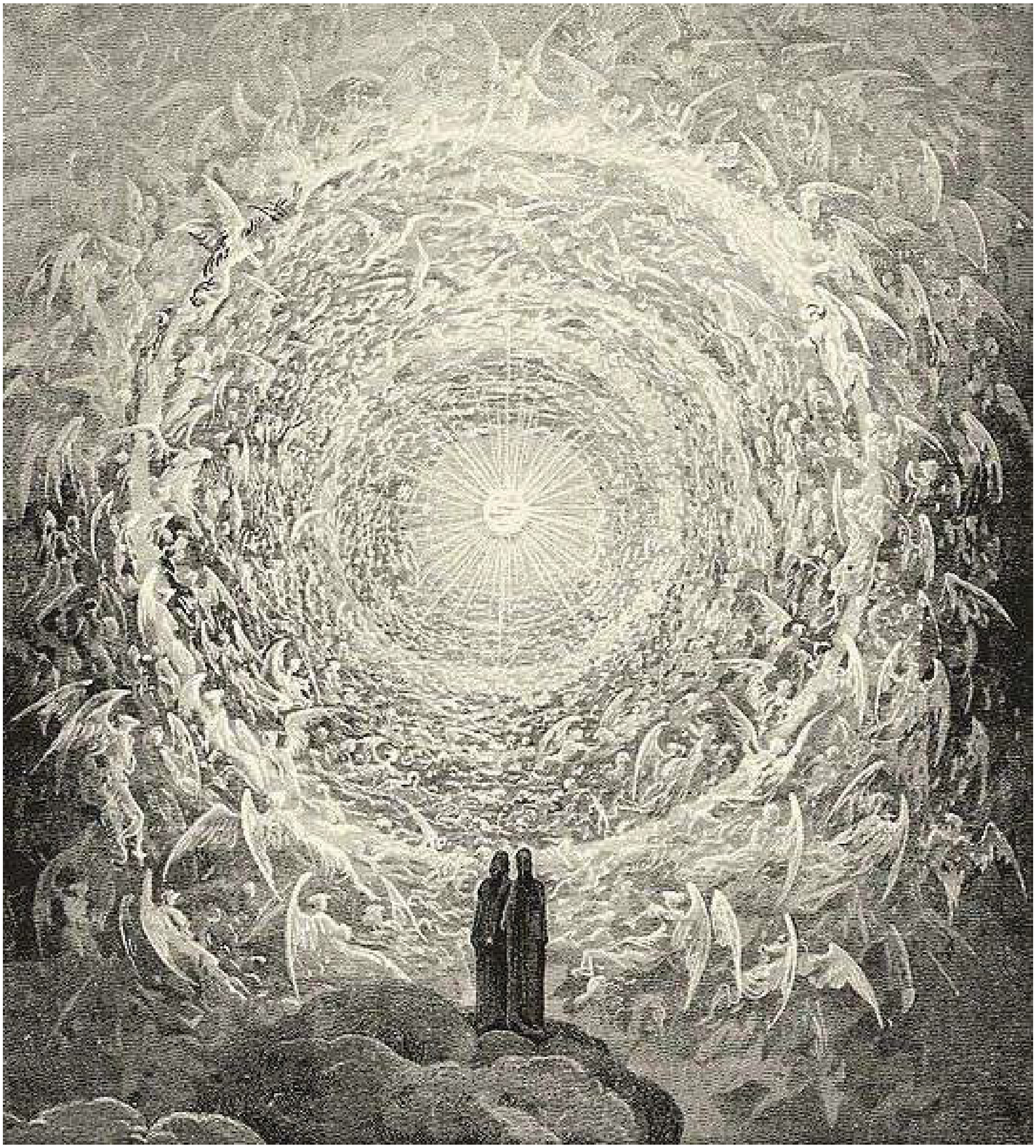


Figure 2.2: Gustave Doré, *Paradiso Canto 31* (year unknown – published 1892). Bibliothèque nationale de France. In the public domain.

2.6 Enargeia in Sculpture

As with painting, a reflexive relationship exists between the general contour of a sculpture and its finer surface details (colour or texture). And both serve to imbue form with veracity and vivacity. Although recent findings suggest that ancient sculptors often painted their works with vivid colours, our modern experience of sculpture—especially of those made of marble—tends to involve works that exist (or have survived) in monochrome or that make use of a limited palette of colours and tints (Brinkmann 2008: 18).

On its own, a sculpture's large-scale contour can effectively suggest motion, again where none is in fact available. In **Figure 2.3**, for example, neither identity nor motion seems to be wholly explicit in the object itself. Yet semblances of both the solar orb and its implied motion pervade our experience, supplied, as it were, by an allusive transaction between the artist, the form of her work, and the beholder.

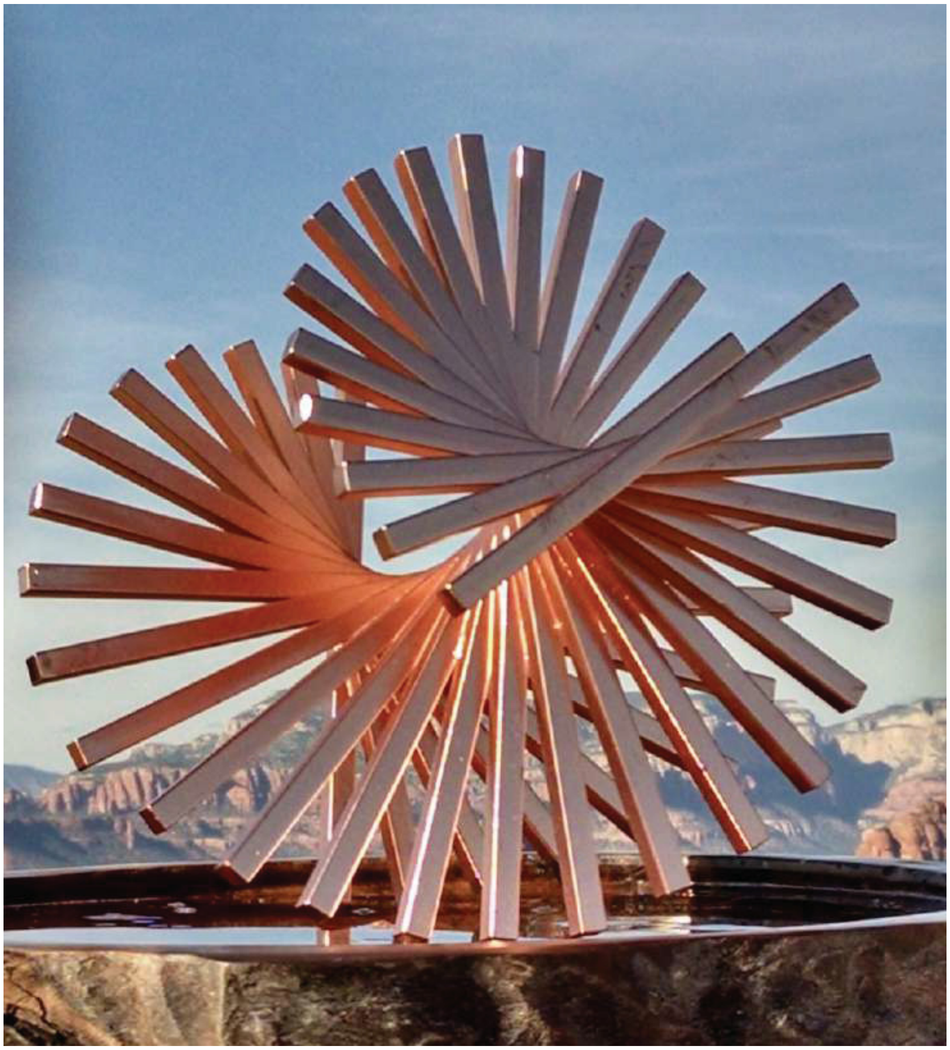


Figure 2.3: Lauren Grey, *In Motion* (2015).[3]

Taken together with its basic contour, the fine details of a sculpture supply the work with vivid lifelike quality. So much so that for many commenters both ancient and modern, contact with an exemplary work of art produces a feeling of the living presence of the work in the experience of the beholder (Tsakiridou 2013). We often feel as though painted portraits gaze back at us, or even as if sculptures come to life, as it were, affecting us as they suggest actual physical movement and the expression of bona fide emotive qualities. Recent studies of ekphrasis and its presence across the arts underscore the role of the perceiver in the midst of such an ekphrastic moment (Goehr 2010, Tsakiridou 2013, van Eck 2015, Webb 2016b). As van Eck puts it,

---

[3] Photograph accessed and downloaded 15 February 2019 from: http://laurengreysculptor.com/fine-art/wp-content/uploads/2015/09/In-Motion1.jpg © 2015 by Lauren Grey. Used by permission.

> Vivid images, like vivid words, trigger memories that feed mental images and thus make us relive the experiences of living beings while looking at their marble representations. In other words, although enargeia is a form of mimesis, like the visual arts or the theater, its effect on the viewer is not based on its lifelike-ness, but on the power of words to activate the experience of seeing in the listener. (van Eck 2016: 3)

What is true with regard to the choice of words in ekphrastic utterances should also be true of finely crafted details in the visual arts. For example, in Bernini's *Apollo and Daphne* (**Figure 2.4**), the balance and perceptual fusion between large-scale contour placed into stark contrast with intricate textures suggests two types of motion. First, the fine detailing of fabric and human hair as they resist the air points to flight and pursuit—the forward motion of the protagonists themselves. A second type of motion evokes mythological metamorphosis where Daphne's hands transform from human flesh into the foliage of a laurel tree. Understood concurrently and globally, these subtly perceived actions propose a protraction of time while magnifying the inherent tension between the static nature of the medium and the enargic vibrancy of visual ekphrasis, all fused together into a powerful experience.

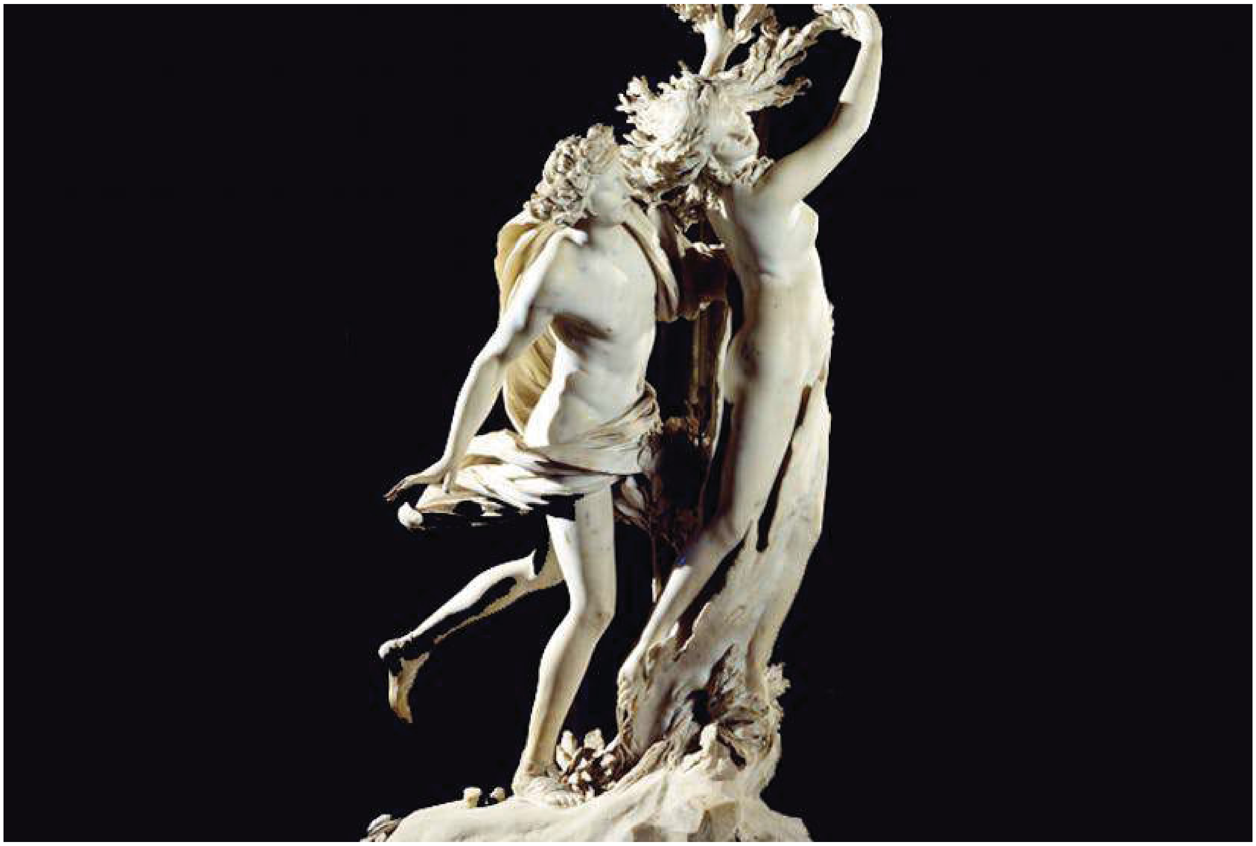


Figure 2.4: Gian Lorenzo Bernini, *Apollo and Daphne* (1622-1625), Galleria Borghese, Rome.[4]

Ancient and modern reports are replete with accounts of people falling in love with statues, and even of statues causing great fear and trepidation in viewers (Stewart 2003: 65; van Eck 2016: 3-9). Thanks to artifice, such responses can sometimes result in shame at having been fooled into very real or otherwise natural affective states (van Eck 2010, 2016). But from where do such experiences arise? Are they to be located solely in the features of an artwork? Caroline van Eck (2010: 643) proposes that reactions to art resulting in a feeling of living presence exist across cultures, and being ubiquitous are as old as art itself. Furthermore viewers themselves supply dynamism as a psychological projection, an ascription informed by prior experience:

---

[4] Photograph accessed and downloaded 2 May 2019 from: https://www.spectator.co.uk/2018/01/turning-marble-into-cushions-and-stone-into-flesh-the-magic-of-gian-lorenzo-bernini/

> … statues or paintings do not by their vivid lifelikeness miraculously dissolve into the living being they represent. Instead, they as well excite images in the mind of the viewers that are animated by their memories of similar situations and living beings, and thus recreate not their presence, but the experience of their presence. The living being is not recreated, but the experience of seeing it, by means of phantasia. (van Eck 2016: 3)

In an earlier article, she elaborated the point this way:

> Viewers react to works of art as if they are living and acting persons not because they have come alive for some miraculous or supernatural reason, or because these spectators suffer from cognitive or semiotic confusion—which is a way of redefining living presence response, but not of explaining it—but because they experience the work of art as living. (van Eck 2010: 646)

Though van Eck offers few details of how it is that spectators themselves come to experience vivacity, her claim that "cognitive or semiotic confusion" cannot suffice as an explanation seems warranted. As I argue later in Chapters 3 and 4, perceptual unity engenders such experiences, and the perceptual system can in fact err, resulting in something akin to perceptual illusion. And although illusions by themselves cannot explain the deep and resonant experience of a particularly effective ekphrasis, they are nevertheless, I argue, essential to ekphrasis in general, and to the apperception of orchestral sunrises and sunsets in particular.

2.7 Preliminaries for a Theory of Enargeia in Music

To what might we point as examples of enargeia in the experience of music? First, we might ask what are the enargic attributes with which music is endowed? And, where do these attributes reside? Enargic attributes are characteristics of the experience of listening to music through which a passage of music may be experienced as imbued with heightened unity, coherence, and vibrancy, that is, as enargic.

2.7.1 Spatialization (transmediation – from sonic-time to tonal-space)

In the same way that advances in the science of perspective made it possible to expand the spatial capacity of painting, Western tonal music has created an expansive set of tonal-harmonic relationships and techniques that further engender the illusion of space.

The organizing principle of Western tonal harmony rests upon the perceptual delineation of recursive pitch classes across a virtual pitch space (Lerdahl 2001). This virtual place engenders a host of spatial experiences for listeners. For example, the piano keyboard contains eight key levers whose names are 'C'. Any 'C' to the right of the middle of the keyboard is experienced as being higher than middle 'C', while those to the left, as being lower. The extensional character of pitch space is also recursive. Any piece composed in the key of C can be replicated, retaining perfect shape and near-perfect fidelity, in any other key.[5]

Moreover, within Western tonal harmony and its scale systems, tones are experienced as tending towards other tones based on their relationship to a given *and* moveable tonal center. Tones not only occupy a place in space but seem to us to be imbued with energies and potentialities that change when the tonal center changes. Within this incredibly real, yet virtual space, pitches seem to rise or fall, to push and pull in different directions, to cause or resolve dissonance. We may sometimes even perceive tones as wanting or desiring to move in a particular direction within tonal space, permeating our experience not only with dynamic energy, but also with appetition (desire) (Huron 2007). Of course, in purely scientific terms pitches can neither rise nor fall.[6] They are merely frequencies that in fact speed up or slow down (as measured in cycles called Hertz). Pitches do project extension only as wavelengths, which, of course, cannot be heard at all; and dissonance and its resolution do not exist in the world. Tension and release, dissonance and resolution appear as products of the way we experience music within a spatialized, dynamical system of organized tonal structures.

---

[5] The only difference would be to experience them somewhat higher or lower, but intact nevertheless.

[6] Marie-Elisabeth Duchez (1989) has proposed an historical-epistemological account of the discretization of pitch from an intuitive binary perceptual phenomenon (high/low) to a form of conceptual knowledge.

2.7.2 Familiarity of common musical experiences

While the materials of Western tonal harmony may not be necessarily founded within biological fact, they do form nonetheless a common heritage shared within a culture. The basic elements of this harmonic system emerge as easily intelligible to most listeners, even if people lack a technical vocabulary to express what they indeed experience. The strongly suggestive power of this shared grammar makes it possible to induce listener expectations with just a few chords or even just a few notes/tones. Indeed, composers in the Western harmonic tradition extensively employ their robust intuitions (and the expectations they engender) in order to build out formal structures that seem intelligible across not only minutes but even hours. Conversely, composers may choose to play against the grain of our shared expectations, to frustrate, excite and ultimately to exhaust audiences. In his lengthy operas for example, Wagner seems to dilate musical time indefinitely by continuously promising harmonic resolution that rarely arrives.

The effectiveness of Western tonal harmony lies not so much in its intelligibility as in its reliable effect on audiences. Even listeners with limited exposure to Western tonal music accumulate affective tension while they anticipate the resolution of a cadence.[7] By manipulating expectations, composers undertake to excite, to disappoint, and to lead listeners to experience a wide range of affective responses (Meyer 1956). A listener's response to harmonic suspense and resolution is not, however, a merely passive response. It requires both a listener's attention and involvement in the anticipation of harmonic tension and release. A listener's excitation in responding to music does not arise as a mere consequence of hearing the sound—it requires an active engagement in the shared model of a spatialized, dynamical harmonic structure.

2.7.3 Simplified musical contour

We experience music not merely as a sequence of physical or tonal events, but rather as perceptual unities with significant internal structure. The unity of musical experience reveals important phenomenological properties. For example, we perceive music as a motion with a distinct contour and even the ability to exert force.[8] Composers, and critics, for example, might speak of the push and pull of thematic elements (or a competition of forces) within a musical work with which a listener must engage.

---

[7] For a comprehensive survey of the literature related to the perception and cognition of the tonal system and implicit learning schemes, see Krumhansl (1990, 1998), Tillmann, Bharucha and Bigand (2000), Bigand and Poulin-Charronnat (2006, 2008), Jackendoff and Lerdahl (2006), Stevens and Byron (2008).

Vocabulary for describing such interactions draws upon our understanding of the world as populated with physical objects, those that take up space, move, and that interact with other objects and forces in the world. These energetic forces also exist within our experience of music and can be understood to retain physical and dynamical properties within that realm. An important feature exhibited by Western tonal music concerns its various prescriptions for the creation and resolution of musical tension. There are of course many kinds of musical tension, but they tend to exist within identifiable groupings that propose some kind of perceptual unity: such as melodies, rhythmic units, harmonic progressions, timbral evolution, phrases, sections, or whole pieces. What binds these formal and structural elements together centers upon the underlying perception of a unifying energetic contour, a motion, force or energy that persists throughout changes within other musical parameters.

As I contend, painting and even sculpture can also make use of enargic, vivid contours to suggest and evoke motion within a static context. Conversely, while music displays time as its essential parameter, it lacks crucial features of the visual perception of physical objects: color, luminosity, and, most importantly, the ability to take up physical space. However, through evoked enargic, vivid contours, the transmedial and crossmodal perception of visual phenomena in auditory experience becomes possible. In other words, it is possible to hear the overall vibrant trajectory of the sunrise through subtle variations in musical parameters of pitch, loudness and timbre, just as it is possible to paint the vibrant contour of the sunset as a static image through subtle changes in color, texture, and shape. In both painting and music, the common element of the representation does not emerge on the surface features, but in the underlying vibrant contour that is characteristic of the experience of the sunrise or sunset.

---

[8] For an overview of the various perceptual accounts of motion in music, see Repp (1993), Gjerdingen (1994), Cox (1999), Todd (1999), Clarke (2001), Addlington (2003), Eitan and Granot (2006), Eitan (2013).

CHAPTER 3:
PHANTASIA IN CROSSMODAL PERCEPTION

3.1 The Role of Phantasia in Ekphrasis

One of the central pedagogical goals of the *Progymnasmata* in training young orators concerns techniques for guiding audience responses by appealing to familiar things (Webb 2016a: 109-110). The first-century orator and lawyer Quintilian proposed that audiences should be able to picture what they hear and can do so with ease if the utterance proves conventional, that is, if the evoked images seem commonplace, such that an average listener would be familiar with the objects described (ibid.). While familiarity on its own cannot guarantee a successful appeal, the ability to call to mind and then hold a mental picture while modifying it across a given temporal sequence are not sufficient conditions for ekphrasis. How then might a sequence of utterances promote the formation of mental images? And how might ekphrasis supervene upon the mechanisms and processes of perception and cognition?

Accounts of ekphrasis in antiquity include commentary, demonstration, and practical advice pertaining to *phantasia*, a Greek word that has been variously interpreted by both ancient and modern thinkers to mean “appearance,” “imagination,” “putting before the eyes,” “mental image,” “perception,” as well as the combination of “sense perception” and “judgment” (Sheppard 2015). The above anecdote (section 2.4.4), where Augustine imagines the details of an unfamiliar city by supplying personal recollections, demonstrates the manner in which enargeia compels listeners to constitute their own unique mental images (*phantasiai*) by fusing a given verbal description together with images known to the recipient, all in “real time”—that is to say, without pause for reflection. A successful ekphrasis depends both on the orator’s ability to infuse description with enargeia, as well as the recipient’s ease in allowing words to draw out familiar images from memory. Among other things, enargeia adjudicates the temporal continuity of a mental image—it supplies the vibrancy required to prevent the image from succumbing to its natural tendency to dissolve. We might, therefore consider a preliminary maxim as follows: the more powerful the enargeia, the more vivid the conjured image; moreover, the more familiar the object of description, the easier the image is to draw from memory.

Yet, the contents of ekphrastic images do not behave as mere recollections. Importantly, while memory supplies phantasia with images from prior experience, these arrive to some degree disassociated from previous and specific context. Under the influence of ekphrasis, phantasia subverts the familiarity of images, retaining only those features seemingly necessary to the present description, and integrates the revised image into a new and wholly "imaginary" mental sequence. Images are pulled from memory, as it were, and propelled by external enticement into imaginary space. In this sense, modern scholars sometimes take phantasia to mean the creative capacity for imagination. However, this imposition seems certainly anachronistic, for although by late antiquity phantasia comes to mean something like imagination, its earliest usage is largely restricted to individual mental images and their sequential arrangement, not the capacity for unbridled fancy. Images formed under the persuasion of an ekphrastic description behave sequentially and derive their particular arrangement from a given external impetus. Thus, only in the context of an ekphrastic experience can ancient phantasia be understood to resemble the free-fantasy of a modern imaginative capacity, in so far as it involves an experiential *space* where mental images come into being, and a *place* where they can be examined, set into motion, and combined—always, however, stimulated by the reception of a verbal sequence.

3.1.1 Etymology

There is disagreement in the literature, both ancient and modern, as to what exactly the term *phantasia* refers. According to the Online Dictionary of Etymology,[9] the Latin noun *phantasia* derives from the Greek meaning "power of imagination, appearance, image, perception," from *phantazesthai* "picture to oneself," from *phantos* "visible," from *phainesthai* "appear," in late Greek "to imagine, have visions," and is related to *phaos*, *phos* "light," *phainein* "to show, to bring to light" (from the Proto Indo-European root *bha* – "to shine"). Similarly, the English word phantasm derives from the Greek *phantasma*, an "image, phantom, apparition; mere image, unreality," from *phantazein* "to make visible, display," from the stem *phainein* "to bring to light, make appear;

---

[9] Accessed 14 March 2019

come to light, be seen, appear; explain, expound, inform against; appear to be so." Although ancient and modern commentators all agree that phantasia involves the recollection of sense experience (*aisthesis*) they differ significantly, and in several key ways.

3.1.2 Imagination and phantasia

Imagination as a cognitive capacity has fascinated both philosophers and literary theorists since antiquity. As noted above, a distinction must be made between the modern sense of imagination as a generative capacity associated with individual creativity, and the term phantasia, whose more passive, ambiguous, and ultimately polysemic nature only begins to resemble our modern usage beginning in the early middle ages under the influence of a Neoplatonic inheritance (Watson 1988). We will set the more familiar notion of imagination aside for the moment in order to better understand the various meanings in antiquity attached to phantasia and will take up the relationship between phantasia and the modern imagination as they relate to apperception in Chapter 4.

3.1.3 Plato's appearances

The first recorded use of the term phantasia occurs in the middle dialogues of Plato (Watson 1988, Scheiter 2012). Perhaps unsurprisingly, Plato's account of phantasia betrays his overarching concern for the ethical in both thought and action, and he warns that since appearances (*phantasiai*) are predicated on the concept of sense percept (*aísthēsai*) they form an illusory deception, one that leads inevitably to false judgement (*doxa*) about the world. In the central discussion about knowledge (*epistḗmē*) found in the *Theaetetus*, Plato's formula for phantasia—the mixing of sensation and judgement—demonstrates that knowledge cannot be based exclusively on sense-perception (Watson 1988: 2; *Theaetus*, 193b, as quoted in Scheiter 2012: 268). For, if knowledge were based solely on perception, then the way things appear to us would form a singular basis for truth. Plato wants to use phantasia as a subtle but important distinction between sensation and perception—that the way things appear to us has already been conditioned by an associated belief or judgement. In the process of becoming aware of a sensation, according to Plato, we cannot help but evaluate what is given. As Gerard Watson puts it:

> Plato, then, is using phantasia to demonstrate how misleading Protagoras' appealing dictum could be [that "Man is the measure of all things"]. Phantasia is the same as aísthēsis, if aísthēsis = perception, but not if it (aísthēsis) = sensation. The awareness of something

> cannot be shared in language until it is judged and fitted into a conceptual context. We might be sure that something is there, but we must be tentative in deciding just what. Plato himself is well aware that with phantasia he has introduced the element of judgement: the emphasis on *phainetai moi*, *soi*, beforehand shows it. But the noun form helps to remove this awareness of cautious subjectivity, and helps Plato to effect, for his own purposes, the transition from "sensation is infallible" to "sense-perception is the only reliable knowledge." Plato wants to show how easy it is to take human sense-perception for granted, and how far astray a mistake even at this apparently primary level can lead us. He wants to make clear that human sense-perception involves judgement, and judgement involves the use of meaningful language and thought. (Watson 1988: 3–4, bracket added for clarity)

For Plato, appearance (*phantasia*) bespeaks an individually conditioned judgement (*doxa*) pertaining to a sensation. We know, for example, that though the sun appears to us to be about a foot wide in our immediate perception, it is undeniably a much larger body (to recall a famous trope by Aristotle[10]). Even without any direct experience of the sun beyond its seemingly small width, we easily understand that the way it appears in our perception does not correspond to its actual size as cognized. Importantly, Plato's formulation of perception follows an ordered progression from sensation to perception to a cognitive assessment mediated by linguistic reasoning and conceptual thinking. Classification and conceptual thought for Plato exist downstream of a sensation and its perception. We might say that by his account, sensory data pass into a cognitive clearinghouse for examination before returning to awareness fully loaded with meaning.

Plato uses the term phantasia to denote appearance in other dialogues, most notably in the *Sophist* and in the *Republic* (Scheiter 2012: 266n28). In all of its instances, what remains in common about his usage of the term points to Plato's suspicion that phantasia endures as an epistemological failure, a perceptual error. And although poets, orators, and philosophers who come after Plato will set into motion a fundamental transition in its meaning, here at its inception the term

---

[10] Aristotle appropriates this example in *De Anima,* III.5 from Plato's *Republic,* VI to demonstrate the productive mind by way of an analogy between thinking and light.

phantasia signifies mere appearance, and is certainly far removed from the modern translation, "imagination."

3.2 Phantasia and Inter-Modality

Aristotle's theory of perception marks a radical departure in the history of psychology, as he offers the first sophisticated account of unified perception—positing, *contra* Plato, that synthesis occurs prior to thought (Suzuki 1952: 21). Perception for Aristotle is a system comprised of structures (faculties and processes) that interpret activity in the world. Processes that act to unify experience extend across the perceptual system, and, in Aristotle's account, coordinate between sensation, perception, phantasia, and memory, all of which belong as faculties to perception writ large (Suzuki 1952: 10, Sorabji 2006: 3, Scheiter 2012: 257–58).

De Anima, or "On the Soul," Aristotle's ground-breaking treatise on the senses, perception and cognition (as they relate to the psyche or soul), functions as his central account of phantasia,[11] though further and important treatments occur in other works, such as the *Rhetoric*, *Poetics*, *On Memory and Recollection*, *On Dreams*, *On the Movement of Animals*, and the *Nichomachean Ethics*. That Aristotle makes use of the term much more frequently than Plato is noteworthy, as he does so with regard to diverse but nevertheless interrelated domains of knowledge. For Aristotle, phantasia acts as a pan-faculty power coincident with the other faculties and processes of the perceptual system. Aristotle's account of phantasia is however obscure, and scholars continue to debate its precise formulation. The confusion lies in the diverse perceptual roles that Aristotle assigns to phantasia—it participates in the interpretation of sensations, the binding of sensations into percepts, the binding of perception into objects of experience, and the codification and classification of sense images for mnemonic storage and recollection. As such, phantasia enjoys variously described functions: as a power, a faculty, or a process (Frede 2001, Kahn 2005, Gregoric 2007, Scheiter 2012).

However, for perception to occur at all, sensations must be registered in experience as fully fused parts of unified wholes, though the parts arrive independently of one another. Aristotle's theory thus requires a secondary and wholly unconscious unifying process to interpret the various affects and sense impressions received by an organism. He calls this faculty the *sensus communis*. Moreover, sensations and simple percepts (*phantasiai*) are not in themselves sufficient for a rich experience of the world, one that includes memory, unity, and the discrimination of objects. Affects (*phantasmata*) arise in the sensory system, and only by binding affects with sense percepts (*phantasiai*) can we begin to become aware of our perceptions as unified wholes. There are thus three components of experience, whether directly linked to the world or merely remembered: 1) a collection of sense images (*phantasiai*), 2) affective unities (*phantasmata*), and 3) the unifying perceptual framework through which the sense impressions of different sense modalities are experienced as being images of a single affective unity (*sensus communis*).

---

[11] The central account of phantasia is located in section III.3 of *De Anima*, hereafter abbreviated as *DA*

Importantly, these various unifications act as pre-conceptual interpretations of sense data that occur prior to language and prior to full-blown conscious awareness. Whereas Plato locates perceptual error in the judgement about a perception, Aristotle identifies error in the very act of perception, not as a judgement downstream of sense experience, but rather, as a result of the intricate nature of the perceptual system (Johnstone 2015; Scheiter 2012). Finally, in order to cohere as a rich experience of the world, the various individual contents of perception must unify into wholes. Perception achieves the unity of wholes by binding various data derived from sensory, perceptive, and mnemonic faculties of the mind. One might conclude then that enargeia, as the act of engendering vivacity and vividness to ekphrasis, depends upon these large-scale perceptual processes in general, and upon phantasia in particular.

Aristotle's account of phantasia differs from Plato's in several important ways—all involved with its multiple roles in the perceptual process. Pavel Gregoric (2007: 5–6) notes that with regard to perceptual theories, Plato "expands thought at the expense of perception," while the numerous and interdependent components of Aristotle's theory "expand the scope of perception at the expense of thought." Surveying Aristotle's theory of perception will help us to better understand phantasia and its role in the ekphrastic process in general, and in particular how phantasia together with enargeia engenders musical ekphrasis.

3.2.1 From sensation to perception

Perception for Aristotle begins with sensation—a motion in the body caused or stimulated by the sensible form of an object (Scheiter 2012: 254). Sensation and perception can be distinguished from one another, where the former requires a sense organ to be affected by an external form (a sense impression), while the latter involves becoming aware of the specific affection (sense experience). According to Aristotle, objects in the world (things that can be pointed to and called a *this*) comprise a substance. As he puts it:

> There are three kinds of substance [*ousia*]: matter [*hyle*], which in itself is not a this; secondly, shape or form [*morphe*], which is that precisely in virtue of which something is called a this; and thirdly that which is compounded of both. (*DA*, 412a6–9, as quoted in Everson 1994: 171)

When we perceive an object, according to Aristotle, the form of the object impresses itself on the sense organ, but the matter does not. Only the form of any perceived object is retained by the perceiving subject, the matter is not important where perception is concerned. Stephen Everson clarifies the process:

> In identifying a particular object, say a plant, one is thereby identifying a collection of matter, but that collection is delimited by its being the matter of a plant, by having that form, and not in virtue of its being the matter it is. The point could be put the other way around. Anything which is identified as a particular must thereby be delimited, and if it is delimited, then it will have form. To do the work required of it in this respect, form need not be a metaphysically rich notion—the form of some objects can simply be a certain shape. (ibid.: 172)

By way of example, Aristotle offers an instructive analogy between perception and the impression that a signet ring leaves on wax:

> Generally, about all perception, we can say that a sense is what has the power of receiving into itself the sensible forms of things without [their] matter, in the way in which an piece of wax takes on the impress (*sēmeion*) of a signet ring without the iron or gold; what produces the impression (*sēmeion*) is a signet of bronze or gold, but not qua bronze or gold: in a similar way the sense is affected by what is coloured or flavoured or sounding not insofar as each is what it is, but insofar as it is of such and such a sort and according to its logos (*DA*, 424a17–24 as quoted in Scheiter 2012: 254)

In this account of perception, a sensible form (*morphe* or *eidos*) causes motion in the sense organ, producing unclassified affectations in the organism, that are then perceived by the organism as a sense image (*phantasia* or *eidolon*) (Frede 1992, 2001; Sorabji 2006; Scheiter 2012). We should note that for Aristotle sense images are not necessarily visual, but are in fact the unified percepts from any sensory modality or combination of modalities that can be recalled to mind (Scheiter 2012: 253; Frede 2001: 157).

3.2.2 *Sensus communis*: The perception of perception

But how might these various levels of unity be conferred within experience? And which perceptual processes precipitate unity? Certainly, our experience of the world can be characterized as one filled with complex wholes. That is to say, even the simplest objects given in everyday experience require the amalgamation of various complex and continuous "streams" of sense data that must be parsed in order to supply the experience of seemingly simple objects.

Sensibility requires the intervention of another faculty for perception to be possible at all. That is to say, perception is obviously sensible, but also it contains already a modicum of intelligibility and unity in order for objects to be understood as individual and separated in some manner from the other data of our senses. Objects (substances) must "pop" out of immediate experience, as it were, as if they were unities having coherent contour and function. Since perception takes in objects comprised of both form and matter, all acts of perception require sensibility, but also already contain intelligibility and unity. That is, objects arrive in perception already infused with some level of organization and categorization, and the perceptual system is already in possession of the essence (*eidos*) of the thing.

Aristotle posits this multifaceted coordination as a unifying sense organ at the heart of phantasia, a faculty whose various processes function in order to bind sense perception itself, and importantly, to unify processes that interact with other faculties in the unification of experience. He calls this faculty the *sensus communis*, or common sense.

The *sensus communis* serves several important perceptual functions. First, as the central locus for the shared perception of shape, magnitude, number, rest, and motion, the *sensus communis* unites the common perceptibles across sense modalities. Aristotle divides sensation into three distinct types. Firstly, he posits those modes of sensation unique to each primary sense organ (i.e. seeing, hearing, smelling, tasting, touching), identifying the objects sensed by these modes as "special sensibles" (*idia aisthēta*). Special sensibles include colours (sight), sounds (audition), odors (olfactory), flavours (taste), and tactile sensations (touch). Secondly, in addition to special sensibles, Aristotle accounts for sensory percepts that are possible across modes, that is, quantities that can be sensed by more than one of the primary sense organs. These he calls common sensibles (*koina aisthēta*). Common sensibles include shape, magnitude, number, rest, and motion, all of which suggest initially that spatio-temporal relations are inherent at the most primitive level of perception (*pace* Plato), and latterly that perception is dependent on some form of joint sensory activity in the construction of unified conscious experience.

We can become aware of the extension of a surface as having shape using both sight and touch. Both modes perceive extension across both space and time—a confluence necessary to the apprehension of shape. Similarly, motion can be detected, and to some degree tracked, by both sight and audition, during the moment a large truck passes a house or an office building, for example. Whether or not we see the truck, we can apprehend basic information concerning its spatial orientation, trajectory, size, and velocity simply and directly via audition. Joint perception of the truck by sight and audition registers in our awareness as a single unified event—one that extends across space and time while retaining unity.

Thirdly, in the process of conjoining sense data, the *sensus communis*, acting in tandem with phantasia, mediates sensation and memory, making possible the perception of "incidental perceptibles" (objects), as a distinct type. The truck remains a truck at all points within the visual field—and remains the same truck, period—not because we evaluate its identity as an object on a continuous basis, but because once identified by phantasia, the *sensus communis* confers stable identity across space and time in the perception of incidental perceptibles. As Scheiter explains:

> We perceive that the horn honked three times because we perceive the lack of continuity in the sound. We perceive that there are two coffee cups on the table because we perceive the lack of continuity in color. But perceiving movement as movement and "lack of continuity" as number is not something we arrive at simply through the perception of special perceptibles [special sensibles]. Like incidental perception, common perception is not reducible to an alteration in the individual sense organ. (Scheiter 2012: 274, brackets added for clarity)

Furthermore, since perception requires awareness, Aristotle posits the se*nsus communis* as the primary sense faculty that affords consciousness a general sense of unity by perceiving perception itself (Suzuki 1952, Gregoric 2007).

To summarize: the process of binding simultaneous sense data according to Aristotle also involves some sort of appeal to the form of an object. This form or contour exists across perceived sensibles (special, common, and incidental), appearing as something general within the specific. In this regard, one can picture how musical melodies serve as a particularly effective example of such reflexive relationships. Under an Aristotelian experience of a melody, we could say that pitch content acts on perception as the *special* sensible, while extension in a "space" registers as a *common* sensible. In tonal music, melody (as a unity) registers as the *incidental* percept, perhaps since we can anticipate its possible and inevitable closure ahead of its actual termination (usually by cadential motion of some sort). But the form or contour of the melody is, on the one hand inherent in each individual sensible—from motion to motion across pitch space while, on the other hand, the overall contour confers unity across the various *incidental* sensibles. Furthermore, the vibrant character of the melody as well as its overall shape at once define, and exist in virtue of, its content.

3.2.3 Phantasia and memory

Phantasia not only participates in perceptual binding—the unity of perception—but is in fact crucial to memory formation and recollection, dreaming, and importantly, to the recognition of objects and their substances (i.e., incidental perception) (Sorabji 2006: 71–73). By way of phantasia and its interactions with memory, we retain the awareness of complex wholes even in their absence. Within a complex experience of the world—one where multiple objects are subject to different rates of change—two types of unity cohere concurrently such that 1) multiple objects retain their individuality across change, while 2) the unity of the perceiver as a self or an "I" remains constant in order to apprehend the individuality of various wholes within multiplicity (Bayne and Chalmers 2003). What might otherwise be perceived as overwhelming bundles of chaotic sense data arrive in our awareness as manageable, unified objects that can be tracked and parsed, and together, they cohere into one single experience across a given space and time.

Together with perception and memory, phantasia serves to associate discrete ideas. Aristotle posits that recollection involves association between ideas and things, and that all association relies on three conditions: similarity, opposition, and contiguity (Sorabji 2006: 42). Through the joint activity of the perceptual system, including both phantasia, and memory, new ideas can be classified and understood in relation to those already held. Moreover, without the joint activity of memory, phantasia, and the perceptual system, we would not be able to associate the past experience of a thing with its presence in a given perception. As Scheiter puts it:

> … the images involved in perceptual appearance are not mere copies of past perceptual experiences, they are accumulations of numerous past experiences that have combined to make a single unified image that cannot be traced back to any one particular perception … when we have a perceptual experience that resembles this unified image, the perception automatically sets our perceptual system in motion, calling up the image and then combining with that image. The combination of phantasia (i.e. [sensory] images) with perception explains how we come to perceive incidental perceptibles [unified objects] and why our perceptual experiences are sometimes in error. (Scheiter 2012: 271–272, brackets added for clarity)

Without phantasia, the contents of our thoughts and dreams would be completely incomprehensible, ideas would float utterly unhinged without any relation to one another.

Thanks to phantasia, an underlying unity is thus already present in the instantaneous perception of an object *as* something. Within the unity of perception, sensation gives rise to sense images, where perception unifies both objects across changes (spatial, temporal, or qualitative) and sense modalities, while the *sensus communis* supplies unity to a static or moving thing, bringing it to awareness as a recognizable object across forms of change. In this sense, the unity bestowed by the perceptual system, working across space and time together with the faculty of phantasia, provides key elements of a theory of enargeia (vividness).

CHAPTER 4:
THE APPERCEPTION OF PERCEPTUAL UNITY

4.1 Spatialization: The perceptual unity of space prior to objects

The term "apperception" first enters into common usage through the work of Wilhelm Gottfried Leibniz towards the end of the 17th century. Leibniz takes up the defense of the Aristotelian theory of perception against the empiricist views of his day, especially that of Locke. Aristotle's theory seemed to rely on the idea that both things and their properties are "out there" in the world. Empiricists simply asked, if so, then where are they? In the same way, we might ask if the "absorbent" property of an object is a natural type, and where might "absorbent" be located? For example, in our rush to find a mop and clean up after spilling a few liters of milk on the floor, we can instantaneously identify a towel as being more absorbent than, say, a shoe.[12] Because substances are not situated in space, empiricists rejected them as objects of perception.

Leibniz argues that we would not be able to have experience of anything at all if we did not have experience of unities. What requires elucidation is not where unities are, but how unities are experienced by way of being in space. The solution was as ingenious as it was counter-intuitive. He proposed that the true object of all of our perception is always the perception of one, simple, unified being: ourselves. Leibniz posits that what we really always perceive are not objects, but the activity of perceiving itself, the various unifying activities that Aristotle described in his theory of "phantasia." Leibniz believed that only God enjoyed an intellectual grasp of the whole of reality, but that as finite minds, we understand the world through a kind of mental "fiction" even though we cannot pinpoint how or even whether these objects possess unity. These fictions he called "apperceptions." As Leibniz puts it in the *Principles of Nature and Grace*, "it is good to distinguish between perception, which is the internal state of the monad representing external things, and apperception, which is consciousness, or the reflective knowledge of this internal state, something not given to all souls, nor at all times to a given soul" (G VI 600/AG 208, as cited in Look 2017: 6.4).

---

[12] *cf.* William James: *The Principles of Psychology*, Chapter 22, "The Intellectual Contrast Between Brute and Man" https://psychclassics.yorku.ca/James/Principles/prin22.htm , Accessed 4 April 2019

As apperceptions, objects are not perceived as pure unities (we still only perceive the activity of the mind, not the "things in themselves") but rather as though they take up space: they retain shape, extension and motion, etc. For Leibniz then apperceptions are not direct perceptions of real form (*eidos*), but a kind of imaginary short-hand vital to interpret our sense of perception. We do not experience objects directly as pure ideas, but instead apperceive them as extended bodies. Leibniz refers to the *sensus communis* in stating how this is supposed to work:

> PHILALETHES: The ideas the perception of which comes to us "by more than one sense, are of space, or extension, figure, motion and rest."
>
> THEOPHILUS: These ideas, which are said to come from more than one sense—like those of space, figure, motion—come rather from the common sense, which is to say, from the mind itself; for they are ideas of the pure understanding, though ones which relate to the external world and which the senses make us perceive, and so they admit of definitions and demonstrations. (New Essays, 128, as quoted in Janiak 2016: 3.3)

Through spatial representations, things are represented as having (finitely) intelligible properties of form, extension and motion that can be grasped by finite minds.

Immanuel Kant takes up Leibniz' view and the term apperception in his *Critique of Pure Reason.* He thinks that Leibniz has made a serious mistake. For Kant, Leibniz did not consider that the same problem of the perception of unity may also apply to *self-perception*. In other words, we can no more directly perceive the activity of the imagination (apperception) than we can the activity of things in themselves (*eidos*). Kant hence follows Leibniz in rejecting the reality of space, but he also denies the reality of time:

> We dispute all claim of time to absolute reality, namely where it would attach to things absolutely as a condition or property even without regard to the form of our sensible intuition. Such properties, which pertain to things in themselves, can also never be given to us through the senses. Therefore herein lies the transcendental ideality of time, according to which, if one abstracts from the subjective condition of our sensible intuition, it is nothing

> at all, and can be considered neither as subsisting nor as inhering in the objects in themselves (without their relation to our intuition). (A36/B52, as quoted in Janiak 2016: 5.1)

For Kant, the perceiving self is nothing more than a duration in time. If apperception is the "fictional" perception of objects as spatial things, then it is also the "fictional" perception of the self as a temporal thing. It is the activity of the imagination that brings these "fictions" forward in the first place. In Kant's theory, apperception both binds sensible unities together in space, and unifies the activity of the imagination (phantasia) that holds them together over time as self-perception.

At first it might seem that Kant has become the most vigorous kind of idealist, one who denies reality to everything at all, including consciousness itself. However, his argument is not that space and time do not exist but that our perception of things as unities in space and in time comes about by the imagination prior to any act of perception (Thompson 2009); we do not *perceive* space and time—we *apperceive* them. As Kant puts it:

> Space is not something objective and real, nor a substance, nor an accident, nor a relation; instead, it is subjective and ideal, and originates from the mind's nature in accord with a stable law as a scheme, as it were, for coordinating everything sensed externally. (Ak 2: 403, as quoted in Janiak 2016: 1)

Space and time are therefore just as real as the objects in space and time. But, they are only real to us because we access them through apperception, which also participates in creating them. In the *Prolegomena to any Future Metaphysics,* Kant writes:

> Space and time, along with what they contain, are not things, or properties of things, in themselves, but belong merely to the appearances of such things; thus far I am in agreement with the previous idealists. But these idealists, and among them especially Berkeley, saw space as a merely empirical representation, a representation which, just like the appearances in space together with all of the determinations of space, would be known to us only by means of experience or perception; I show on the contrary, first, that space (and time too, to which Berkeley gave no attention), along with all its determinations, can be cognized by us, for space, as well as time, inheres in us before all perception or experience as a pure form of our sensibility and makes possible all intuition from sensibility, and therefore all appearances (Ak 4: 374–5, as quoted in Janiak 2016: 6.1)

Kant follows Leibniz in defending the importance of imagination, and therefore accepting Aristotle's *sensus communis* for what it makes possible in perceiving unity in sense data. We see in Kant a return to the arguments Aristotle first made against Plato more than two thousand years earlier, arguments about the sophistication of pre-conscious imperatives. Importantly, Kant's thinking will set the course for the development of modern empirical psychology—a psychology indebted to a new relationship between mind and world. As Katherine Arens puts it:

> Kant's psychology points the way to a new paradigm for psychology, focusing both on the activities of the mind and on the data which is to be processed. This will be a psychology of the interactions between mind and world … Kant's redefinitions provide a taxonomy of the regions in which the mind interacts with the world, thereby establishing a paradigm which defers the question of the world's ontology—a paradigm with mind in the world without the *Ding an sich* [thing-in-itself]. The world is given as data, society is to be built within it to a given end; the development of mind is directed towards the realization of that end through the body. (Arens 1989: 83, bracket added for clarity)

4.2 Familiarity: The perceptual unity of objects

During the first half of the 19th century, Johann Friedrich Herbart initiated what would become a major shift toward an empirically oriented modern psychology. The first phase saw Herbart partially reject the notion of a "faculty" conception of psychology in favour of a process-driven, dynamic conception of the psyche and its relationship to the external world (Arens 1989, Kim 2015). Though he retained a complex metaphysics of the mind, Herbart argues against Kant's dismissal of a scientifically oriented psychology. Kant, in *The Metaphysical Foundations of Natural Science*, famously rejects psychology as a viable object for scientific study. Herbart instead turns toward treating the content of experience as its own wholly physical realm. In Herbart's view, all mental activity consists of competing representations whose energies conflict in the mind, producing competition between representations. As he puts it, "representations must be viewed as forces, whose effective power depends on their strength [or intensity], their oppositions, and their connections, all of which differ in degree" (LPs [1850]: 12, as quoted in Kim 2015: 3.1.5). Psychology, then, must seek to explain the nature of these forces, their competitive interactions in the psyche, and the manner whereby they cohere to one another, resulting in various levels of unity.

Herbart serves as a pivotal figure in the transition from a spatio-temporal metaphysics of apperception defended by Leibniz and Kant to the notion of apperception as a kinetic and dynamic phenomenology of experience. Kant, Leibniz, and Aristotle went to great lengths to point out that our experience of the world does not begin with sensations, but rather with the apperception of unities. Unity seems to be imposed upon perception. And in the early 19th century, during a frenetic era of discovery (mainly of electromagnetism) fuelled in part by the work of Galvani and Volta, and perhaps anticipating the conjectures that would follow as a result of discoveries by Ohm, Faraday and Maxwell, Herbart infused psychology and phenomenology with a descriptive and perhaps metaphoric conception of "forces" and "energies" that inhibit, contest, and merge with one another, and with the "fields" of consciousness where they interact.

In Herbart's account of apperception, representations behave dynamically, never occurring one at a time. Rather they ceaselessly interact, interfere, and fuse with one another in a constant flux (Kim 2015: 3.8.1). Herbart introduces the notion of a temporally ordered process of perception whereby dynamic representations coalesce into sequences that are themselves amalgamated into stable representational masses. Apperception, then, becomes the process whereby sense-representations that are at hand assimilate with recollected sense-representations, drawn from below the liminal line of consciousness (Kim 2015: 3.8.2). Now bound to a temporal view of apperception as a process of negotiation between like and unlike, Herbart cannot yield as yet the notion of mental space—a place where seemingly physical objects and processes interact, propelled by energetic motion. As Alan Kim puts it:

> A new sense perception or perceptual series always appears in an arena of consciousness already occupied by some older representation or representational group. At first, the unarrested intensity [of the series] gives it as it were the drop on the pre-existing representations, initially forcing them down against the threshold [of consciousness]. At the same time, in accordance with the psycho-mechanical laws of reproduction, elements of the new series reawaken the subliminal *similars* amongst the older representations, and fuse with these, while simultaneously inhibiting the *dissimilars*. (Kim 2015: 3.8.2.1, author's emphasis)

Together with Wilhelm Wundt (1832–1920), an early founder of modern psychology, Herbart begins to see consciousness itself as an object of natural physical inquiry. Objects of perception possess kinetic unity. Perception interprets experience as consisting of moving things subject to tension, segregation and fusion through dominance and opposition. While both men propose a physics of the phenomenological domain, they differed on method and theory. For Herbart, consciousness itself becomes a field of mental forces, much like the natural world.

Nevertheless, he remained indebted to an outmoded metaphysics, one that in Wundt's view, hindered the scientific investigation of mental processes. Wundt put it this way: "Herbart attempted to derive the essence of representing itself, as well as the laws of its course from metaphysical presuppositions about the soul and its relation to other simple substances bound to it in the body" (*PP II*: 13, as quoted in Arens 1989: 122). Wundt sounds the death knell of classical metaphysics in so far as they pertain to the "soul," and propels psychology into the modern age with a simple turn towards empirical accountings of the dynamic processes that differentiate between inner and outer worlds. Wundt writes:

> Inner or psychological experience is not one special field of experience next to others, but is immediate experience itself. This immediate experience is not a fixed content, but a constellation of processes; it does not consist of objects, but of processes, namely the generally applicable human experiences and their rule-governed interactions. Each of these processes has on the one hand an objective content, and is on the other a subjective process, and it thus includes in itself the general conditions on all cognition as well as on all practical activity of man. (*PP II*: 17, as quoted in Arens 1989: 122)

Wundt introduces a scalable mechanism consisting of "degrees" of attention that move seamlessly from perception to a state of apperception:

> This feature of consciousness can be clarified by that common image we use in calling consciousness an inner vision. If we say that the representations present at a particular moment are in consciousness's field of vision, then that part of the field upon which our attention is turned may be called the inner focal point. The entry of a representation into the field of inner vision we call "perception," and its entry into the focal point of vision we call "apperception." (*PP* II: 267, as quoted in Kim 2016: 4.2)

Alan Kim continues:

> Apperception, in turn, may either actively select and focus upon a perceived representation, or it may passively find certain representations suddenly thrusting themselves into the center of attention (*PP* II, 267; 562). There is no distinct boundary … perceptive attention becomes apperceptive attention just as it focuses more strenuously, constricting the perceptive field. The more it contracts, the "brighter" the representation appears, now becoming the focal point of apperception as the fringes of the perceptual field retreat into "darkness" (*PP* II, 268, as cited in Kim 2016: 4.2).

In my view, striking parallels exist between Wundt's notion of apperception and the classical theory of enargeia, especially in light of perception as posited by Aristotle with regard to incidental perceptibles, the *sensus communis,* and phantasia. And similarities continue to accrue. For Wundt, the processes by which simple representations cohere, "fused, synthesized, and 'delivered' into the perceptual field", are seen to be associative and independent of apperception (ibid.). Apperception must behave according to laws over and above those of simple association. As Wundt writes:

> Association everywhere gives the first impetus to [apperceptive] combinations. Through association, we combine, e.g., the representations of a tower and of a church. But no matter how familiar the coexistence of these representations may be, mere association does not help us form the representation of a church-tower. For this latter representation does not contain the two constitutive representations in a merely external coexistence; rather, in [the representation of the church-tower], the representation of the church has come to adhere to the representation of the tower, more closely determining the latter. In this way, the agglutination of representations forms the first level of apperceptive combination. (*II*: 476; on "agglutination of representations", as quoted in Kim 2016: 4.2)

Wundt conceives of apperception as a continuous process, where components both fuse together and are separated out from vague totalities. Wundt also emphasizes that objects in our experience are first perceived as indeterminate wholes rather than assembled from their component parts (again, we might recall the distinctions mentioned earlier between Plato and Aristotle, and Leibniz and Kant). Wundt writes: "the original representational totality is present to our consciousness at first as an indistinct complex of individual representations" (*PP* II: 478, as quoted in Kim 2016: 4.2). The whole is perceived prior to its parts, if only indistinctly, and it is through this holistic perception that parts are first understood as belonging to something larger.

The process whereby the parts become distinct as components of a larger system, Wundt calls "apperception": "These individual parts and the manner of their connection become distinct only through the separative activity of apperception" (ibid.). Perception and apperception are therefore recursively related. The whole becomes more articulate as its component members become more distinct. At the same time, the more definite its component parts become, the more clearly and forcefully the original perception occurs to consciousness. This process culminates in judgment: "from the psychological point of view, only in our successively making the obscure outlines of the total picture, so that at the end of the composite thought-act the whole, too, stands more clearly before our consciousness" (ibid.). Apperception, therefore, is not distinct from perception, but is the process of perception becoming more articulate, more definite, and more accessible to consciousness. As Alan Kim puts it, "as the apperceptive activity becomes increasingly intense it seems as it were to rise above the field of perception, above the field of its own constructs, becoming aware of itself as pure activity, as pure self-consciousness" (ibid.).

4.3 Contour: The unity of objects and sensation in experience

Toward the turn of the 20th century, the now firmly established field of psychology came to focus on theories and applications that "build up" from the underlying processes of experience. Apperception took on an increasingly temporal role as philosophers and psychologists began to privilege the unity of objects within and across time, especially in light of the robust interplay between sensation and conceptualization. William James (1842–1910) and Josiah Royce (1855–1916) underscore the continuity of meaning across time (apperception) as an experience with determinate content that is useful or relevant to something. Moreover, beginning with Wundt, the study of apperception will privilege the role of sense data within conscious thought; data are now able to be gathered and measured empirically, thanks in part to advances in experimental design and equipment. The relationship between sense data and conceptual thought will undergo several radical shifts throughout the 20th century, chiefly in the various forms of behaviourism, the subsequent cognitive revolution, and ongoing theorizing with regard to embodied cognition. Unfortunately, by the end of the Second World War, the explicit study of apperception as a mental unity was all but abandoned.[13]

For William James, the association between ideas serves as the fundamental characteristic of apperception. Assimilating a new experience into the totality of past experiences requires that that which is new be conditioned by that which already exists, while what already exists must be altered in the process of acquiring any new experience (James 1916: 157). As James puts it:

> Every impression that comes in from without … is drafted off in some determinate direction or other, making connection with the other materials already there, and finally producing what we call our reaction. The particular connections it strikes into are determined by our past experiences and the "associations" of the present sort of impressions with them. It is the fate of every impression thus to fall into a mind preoccupied with memories, ideas, and interests, and by these it is taken in. (ibid.: 157–158)

Josiah Royce, who studied with Hermann Lotze in Germany before joining James at Harvard, viewed apperception as being bound in time to perception, and tried to follow the perceptual process as it tracks change across a span of time. Benjamin Peltz summarizes rather succinctly Royce's view of apperception and its temporal span:

> That is, when some changing element, some dynamic phenomenon is understood, when it ceases to be mere sense data, when the outward presentation delivered by the senses is distinguished by its constituting parts and the relationships of those parts to one another are held before the mind's eye, one is experiencing a manifestation of one's apperceptive span. (Peltz 2007: 26)

---

[13] Its disappearance as a technical term notwithstanding, several key features of apperception persist in contemporary discourse. The most prominent examples include the enduring principles of gestalt psychology (see Smith 1988), Merleau-Ponty's phenomenology of perception (2012), and the notion of ecological affordances proposed by Gibson (1979). More generally, the questions raised by the theory of apperception are addressed (albeit without explicit reference to the term or its heritage) in the nexus between cognitive science and analytic philosophy—for example, in Cleeremans (2003), Bayne (2010), Siegel (2010, 2017), Bennett and Hill (2014), and Schellenberg (2018).

Reviewing empirical findings collected by Wundt and his students, James suggests that our ability to understand a present moment—what he calls the "specious present," as the span where "the maximum filled duration of which we can be both *distinctly* and *immediately* aware"—lasts less than 1/500 of a second and cannot exceed 12 seconds (James 2007: 611–612, author's italics). Mulling over the question of temporality, Royce defined the "apperceptive present" as "that moment when the comparison of ideas, be they conceptual or perceptual, is mediated by a third idea, an interpreter" (Peltz 2007: 26). As Royce writes,

> Comparison, in the fuller sense of the word, takes place when one asks or answers the question "what constitutes the difference between A and B?," "*Wherein* does A resemble B?," "*Wherein* consists their distinction?" Hence, apperception presents a triadic process, wherein two distinct ideas are reconciled by a third. This third idea, the interpreter, constitutes a dynamic creative act on behalf of the entity apperceiving. ("The Will to Interpret" in *The Problems of Christianity*, page 299, as quoted in Peltz 2007: 26)

Apperception is not simply a static act, one that crudely compares one thing to another. Rather, as Royce sees it, apperceptive ability extends across time, together with perception as an ongoing process. Unities in observed phenomena get apperceived first as sequences "wherein one fact succeeds another" ("The Temporal and Eternal." In: *The World and the Individual*, 205–42. As quoted in Peltz 2007: 27).

Concurring with James, Royce grasps that a single act of apperception takes place across a small window of time, but refrains from defining a precise duration:

> What is meant … by this apperceptive span is the fact that what we call a present moment in our consciousness always has a brief but still by no means infinitesimal length, within which the "pulse" of change, which that moment apperceives, must fall ("Self-Consciousness, Social Consciousness and Nature," in *The Basic Writings of Josiah Royce* [New York: Fordham University Press, 2005] as quoted in Peltz 2007: 26)

While Royce seems hesitant to define a precise time for the "present," he does propose the existence of unities "out there" in the world, modes of communication that do not register within incompatible apperceptive spans. By doing so, Royce suggests (without numerical precision) that there is a somewhat stable time span to human apperception, one that if exceeded simply goes unregistered by the self. As Peltz remarks:

> Hence, apperception is concerned with bringing the constituting parts of a process together such that there is an apperceptive moment wherein the process itself is understood all at once … Thus it would seem that the apperceptive process is the most fundamental unit of such unification. But, what then of processes occurring outside the range of our own unifying or apperceptive limits? Royce asks us to imagine processes, the occurrences of which happen either too swiftly or too slowly for our apperceptive spans to be able to engage interpretation (Peltz 2007: 29).

Seen as the "moment of meaning," Royce's view of apperception opens to unity bestowing a recognizable "whatness" and "thereness" as specific components within experience. As Plato, Aristotle, Leibniz, and Kant all stressed, error lingers along the transductive pathway from sensation to awareness, threatening cognition with deception and illusion. Yet, what we identify in everyday experience as perceptual error, becomes privileged in the creation and experience of art, and this is certainly true of the strategies that composers adopt in the creation of music (Bregman 1999: 457). As Hilary Putnam reports:

> [William] James acknowledges the often obscured line between sensation and perception when he remarks that given a particular "presented and recognized material object … Sensations and apperceptive ideas fuse so intimately that you can no more tell where one begins and the other ends, than you can tell, in those cunning circular panoramas that have lately been exhibited, where the real foreground and the painted canvas join together." (William James, *Essays in Radical Empiricism*, ed. R.B. Perry [Cambridge, MA: Harvard University Press, 1976], page 16, as quoted in Putnam (2016): 147)

Obscurity as the result of perceptual error, illusion, or confusion in the visual domain seems easily understandable, perhaps because in our everyday experience brief visual illusions are rather commonplace. Phantasms lurk at the periphery of the visual field. As we will discuss in Chapters 5 and 6, the sunlight topic in orchestral music depends upon the experience of several *common sensibles* together with their specific qualities as apperceived *across* the senses. When given coherent form across space and time, these cross-modal magnitudes and qualities (which when taken together I term "specific intensities") cohere into large-scale fused and intelligible wholes.[14] What led Plato to proclaim false judgement in regard to the immediate awareness of sensation, becomes here—under an extended apperceptive span—an artistic asset predicated on a perceptual misunderstanding of sense data. With regard to the orchestral sunrise or sunset, apperception is then the process of reconciling a familiar form as it is habitually understood in one modality, *while* the form is presented to another and seemingly incompatible mode—in "real time." That is, an asymmetrical relationship obtains between the visual form as understood synchronically, and the present auditory "copy" of that form across an apperceptive span lasting minutes.

4.4 Apperception of Kinetic Unities in Music

4.4.1 The spatiality of music

For Aristotle, Leibniz and Kant, space confers the possibility of multiple objects existing concurrently within perception. In Aristotle, the *sensus communis* facilitates the discrimination of things that are distinct from each other. With Kant and later psychologists, apperception does the work of creating a mental "stage" upon which multiple things can be represented as if next to each other and moving with respect to each other. A similar phenomenon has been widely remarked upon in music and is sometimes even described with a spatial metaphor: a cognitive fiction of sorts where pitches are said to exist in "space," but perhaps for lack of a better term and concept.[15] As I suggest, the experience of space in music is not any the less real than the way that we perceive a truck moving past us on the street. Because pitches are perceived as occupying different places, they can be conceived as being separate from each other. However, most of us cannot hold before our minds a three-dimensional musical "space," at least not without music to occupy that space. One might say that the space of music does exist in time. We perceive musical space precisely as the ordering of simultaneous and contiguous places, places whose origins and relations are at once sensorial and imagistic. And like ekphrastic images, which appear in the space of the "imagination," the space of music appears to us by virtue of either an incoming signal—the way an ekphrastic utterance instigates the space of phantasia, or the way we supply space and image internally in the absence of a signal.

---

[14] For the definition of "Specific intensity" see section 4.4.4. Further articulation of the concept can be found in sections 5.2.4 through 5.2.6. Examples of the various forms of specific intensity are given in Chapter 6.

[15] For a broad yet admittedly incomplete sampling of the various positions with regard to space as metaphor in music, see Scruton (1999), Lerdahl (2001), Budd (2003), Rocconi (2003), Spitzer (2003), Bayle (2007), Brower (2008), Bonds (2010), Kania (2015), and Park (2015).

Perhaps what matters most for composers (and for listeners) is that the experience of musical space seems to be constituted and sustained by sonorous activity (*energeia*), whether internally or externally supplied, and it effectively disappears in the absence of such signals, only to be reconstituted at the next hearing. Similarly, we might understand the space of our everyday experiences to disappear in the utter absence of sensation. Signal opens space, and in the time-based arts, vivacity and vividness (*enargeia*) compel and sustain our focussed attention within that space. Once constituted, the space of music comprises two dominant dimensions, the vertical and the horizontal, though I argue in Chapter 5 that a subsidiary dimension may in fact be available.

If we take the space of music to be somehow given *a priori* by the imagination, as a supra-perceptual imperative, then at the very least our experience of music occupying space exceeds mere metaphor. The individual discretization of pitch within perception engenders the experience of space, yet we do not question the division. We hear multiple pitches in a given sequence, yet we do not label the multiplicity as metaphoric. We hear two tones simultaneously, and again their identity as separate unities does not arouse suspicion. They are ordered, distinct objects of experience whose distances can be recalled; they must hence be unities available to phantasia. Moreover, we perceive motion across pitch space by virtue of the perceived and remembered distances between unities—distances that can be measured. Put simply, without the affordance of space conferred and unified by perception together with the imagination, music would not be possible at all.

4.4.2 Familiarity

Aristotle's theory of phantasia helps to explain how we perceive unity in sense experience. We perceive unity not only in our experience of everyday objects, but also in listening to the various perceived components that seem to make up music. We understand immediately and without effort the unity of a rhythm through repetition and entrainment. We can recognize basic structures (e.g., motives and melodies) as coherent wholes, and (*pace* Plato) we do not need to make any judgments about these wholes in order to recognize and recall them, however imperfectly. The opening motive of Beethoven's *Symphony No. 5*, for example, demonstrates how quickly and indelibly a small unit of musical material impresses its form on to the mind. Moreover, within a certain threshold, multiple componential features of the motive can be varied without a loss of familial identity.

The Western system of tonality is itself a complex system of perceptual unities, including scalar distances, pitch relations and hierarchies, harmonies, as well as the general contours of progression away from and return towards a tonic centre. The Western tonal key system—grounded by octave equivalence, equal pitch units, and an intricate hierarchy of perceived and remembered pitch relations (Krumhansl 1990)—allows for the transposition of melodic material across pitch *space* and key *place*. Moreover, as with the main motive of Beethoven's fifth symphony, multiple recognizable instances of similarity can exist across a vast pitch space and a limited temporal window, even simultaneously. The saturated and multifarious presentation of the motive plays precisely with our ability to recognize both simultaneous and contiguous unity—and many musical forms, such as Sonata form, subsist on unity across substantial temporal spans. This is the kind of "multiple existence" of the "same" object that led Aristotle to posit the *sensus communis* as a unifying framework of spatial objects and relationships. Just as relationships remain the same across the senses through the *sensus communis*, a musical "*sensus communis*" makes it possible to "hear" the same set of relationships unfolding in both space and time.

The basic materials of Western music are both familiar to us because we have been widely exposed to them and because, at least in simple cases, we perceive and recall perceptual unities within the system without any cognitive effort. A number of perceptual features of the tonal system seem to be stored in memory, as a set of relational, hierarchical, and rule-based forms or schemas whose structures have been encoded through repeated exposure. Still, the perception of musical unity, and so also the perception of the tonal system as a complex system of perceptual and experiential unities, depend on our ability to constitute a musical "space" through which relationships can be recognized, transposed, remembered and then "played out" in the imagination.

4.4.3 Simplified contour 1

Again, as we saw above, our experience consists not just of objects as unities, but of objects as unities that move in relation to each other, and sometimes exert tension upon each other. Herbart's account of apperception, where the forces and tensions of mental representations play out in a constant struggle for unity, resembles or at least seems analogous to how many people experience tonal music. Indeed, composers and theorists of the so-called "energetics" school often speak of the rhetoric of music using various energetic metaphors: the "conflict" between musical "forces."[16] These ways of thinking about large-scale wholes in music are, of course, only metaphorical. However, they are not mere metaphors—mere colourful ways of describing our experience. And they certainly can be challenged in so far as they "stand in" for other types of experience. Harmonic and melodic motions create real tension, for example. Resolution can be delayed, creating a real and heightened sense of anticipation and expectancy. Voices fuse and segregate, enveloping real identities. Orchestral instruments combine for unified power and they segregate for multiplicity. These motions and tensions create higher-order unities perceived as contours that, across space, time, quality, and intensity, engender a dynamic competition for our attention—enargeia in music.

In order for a melody to have an identifiable unity, as noted above, it must consist of individually distinct pitches that can be segregated and assigned various changing functions. The melody itself "rises" and "falls" as a single perceptual whole. That is, we perceive the melody as having a kind of "motion" within musical "space." This requires not just that the pitches in the melody occupy *some space*, but that they occupy the *same space*. This is the space through which the melody "moves."

Further to this, a melody is a kind of motion within the imagined "space" of a particular piece of music. That is, a melody can move past, towards, or against other elements within the music. This motion is perceived as a recognizable contour that can be transposed, inverted, "bent" or otherwise deformed while still retaining its essential nature, or what Aristotle would call its *eidolon*. And, as he also argued, it is this "form" and not the "matter" or specific pitches or timbres that define the whole. It is this idealized or imagined "contour" that we immediately identify and recognize even as it transposes across musical space and as its surface "matter" changes. Melody may be the most obvious example of a moving contour in music, but it is not the only example.

---

[16] For the recent North American revival of 'energetics' and its relation to German thinking and psychology, see: Arnheim (1984), Rothfarb (1991, 2002, 2009, 2011), Maus (1992), Larson (1993, 2012), Goehr (2008), Hatten (2012, 2018), and Tan (2017).

Rhythms, too, may exhibit identifiable contours, and also harmonic progressions, phrases or even larger-scale formal elements.

4.4.4 Simplified contour 2: Sensory intensification

Sensory perception does not merely discard the "matter" of sensation, but encodes it (as it were) in the general mnemonic contour of a musical unity. When we listen to music, we do not retain the whole detailed texture of the sound, but rather a more abstract perception of its various dynamic trajectories. Music moves up or down, waxes or wanes, speeds up or slows down. Built into our perception of the moving contour is also a powerful impression of how it affects us qualitatively, what Aristotle termed *paschein* (affection).

As with William James' earlier remark about the texture of a painting, musical textures appear as wholes in our experience, but wholes whose constituent parts can be more or less perceived. Within an auditory scene (*pace* Bregman), composers operationalize qualities and magnitudes such as timbre and loudness, in addition to pitch, rhythm, etc., toward finely detailed textures that arrive as richly coded unities. Orchestral music in particular requires additional consideration of intensive perceptual qualities. Intensive qualities behave dynamically across time, helping to bind and segregate components in the formation of perceptual unities.

As I discuss below in Chapters 5 and 6, the enargic effect of orchestral music depends on general features of the perception of music: (a) spatialization (pitch space and the various unities within that space), (b) qualitative properties (timbral quality, timbral identity, and loudness), and (c) their combination in the experience of a musical unity as an energetic contour over time, what I term "specific intensity." Spatialization and qualitative intensity exist in a mutually reflexive dialectic in time. To put it simply, there can be no expression or experience of space without an intensive embodiment to open that space. There is no pitch A5 in our experience until that particular location is supplied with some form of intensive articulation—a specific intensity, together with all of its qualitative essence.

Similarly, both local (instrumental timbre) and global (orchestral sonority) qualitative properties depend on the relationship between energy and place within a space—frequency in the former case, and either frequency (as with spectral music) or pitch space (as with tonal music) in the latter. Specific intensity denotes the perception of a qualitative unity that occupies space through an energetic contour. Moreover, I identify several important types of specific intensity that come to bear on the orchestral expression of luminosity: brightness, the various qualitative differences between concurrent unities that occupy an orchestral texture, and sonority in the global sense of a unified overall, if ineffable, sound quality.

In the hands of a skillful composer, a simple, identifiable melodic line can be "overloaded" with both affective as well as other types of semantic meaning that can be suggested often unconsciously to the listener. Composers can also subtly adjust the affective recall of the contour by shading how it is replayed within a new context. Changes in tempo, rhythmic alterations or even transposition from a major to a minor key may have dramatic or subtle consequences for a listener. Moreover, delicate shifts in register, timbre, texture and instrumentation can also be used to heighten the intensity of the recognized contour by creating tensions between the remembered affect and the new presentation of the remembered line. For many listeners, the immediate recognizability of the contour and its ability to "pop out" of the background can be felt as an outcome of intense compression into a simple contour of affective and dynamic recall (memory).

We might say that music provides an ideal arena for a rhetoric of intensities. Changes to intensive parameters succeed one another, and under the right perceptual and intelligible conditions, form a semantic structure across time. These also arrive as unities in experience. The leitmotif used often by composers, for example, may suggest very strong emotions or semantic connections on the basis of a familiar contour. It is not just that the contour itself affects us directly, but that our memory of the contour is both the perception of a simple and easily identifiable "line" as well as a richly shaded impression of its affective content. Other more complex cases—such as the orchestral sunrise or sunset, require the ordered succession of qualities across an entire form to be tracked in order to be apperceived.

4.5 Summary: From ekphrasis to apperception

The psychological and phenomenological framework built up from Aristotle's theory of perception provides the necessary materials to understand how an ekphrasis is possible.

• First, the perceptual unities of experience must be present at the same time, or successively in time, and distinct from each other. The blend and segregation of percepts depends on a "space" (or something like it) where objects or sounds are perceived in relation to each other.

Phantasia provides the common “stage” within which the many complex elements of a musical experience coexist.

- Second, the perceptual unities of experience depend on a framework of familiar experiences and representations, without which it would not be possible to effortlessly perceive more complex wholes. With the help of *sensus communis*, phantasia abstracts from the “matter” of individual representations into a generalized framework of “common musical perceptibles” that populate not just a single work, but a whole range of musical expressions.

- Third, the specific contours and the specific qualitative intensity of a particular contour must be imagined and felt as a unity that possesses energy in space and in time. The motion and energy of the contour must be able to enter into complex relations of tension and release with other elements of the music, and be recognized in its original character, even after undergoing both subtle and drastic changes to its shape and specific character. The work of remembering individual contours and of playing out the drama of their interplay or interaction, requires the active engagement of phantasia. A successful composer understands these elements of the experience of listening to music and comprehending the play of its experiential forces, whether intuitively or through an explicit theory of what it is like to hear music at work. Chapter 5 examines several processes necessary for apperceiving music as if it were sunlight.

CHAPTER 5:
APPERCEPTION OF SUNLIGHT IN ORCHESTRAL MUSIC

5.1 Perception of Timbral Unities

This chapter proposes and exemplifies several apperceptive features of orchestral sunrises and sunsets in light of recent developments in the perceptual study of auditory grouping as they relate to the study and analysis of orchestral music.

5.1.1 Auditory scene analysis

How might we accord significance to the varied and multitudinous sensory data received by the ear when, for example, it is immersed in a complex auditory environment—a busy metropolis or a symphony orchestra concert? Experimental psychologist Albert Bregman (1990/1999) developed the theory of Auditory Scene Analysis (hereafter referred to as ASA) as a way of answering this question. Through the careful integration of gestalt principles, evidence gathered from psychoacoustics, speech perception, and music theory—together with an attentive ear for music—Bregman developed the ASA framework for understanding how auditory "scenes" or "spaces" are constituted through perceptual and cognitive mechanisms. Like the theorists encountered in previous chapters of this dissertation, Bregman's chief concern lies with perceived unity, and more specifically, the relationships between concurrent auditory unities and, especially, perceptual boundaries between concurrent unities. ASA attempts to model the manner in which the auditory system organizes and parses disparate elements of sonic stimulus into meaningful unities of auditory experience. Before elucidating the apperceptive features of orchestral sunrises and sunsets, I will briefly summarize key principles of ASA as it concerns music in general and orchestral music in particular, in order that the various descriptions and their exemplification in the following sections of this chapter might be better understood.

As with the theories proposed by Aristotle, Kant, Wundt, and later gestalt psychologists, ASA claims that auditory grouping processes precede any extraction or recognition of individual attributes of a musical event. We become aware of multiple segregated units of individuated sonic content as already parsed and grouped. The awareness of the unity of an auditory event precedes the individuated awareness of relations between event attributes. The most general unit of an auditory scene, termed an "event," comprises the totality of auditory information available in a given instant—an apperceptive span, to use the language of Josiah Royce (Peltz 2007).

ASA comprises three distinct perceptual grouping processes, each responsible for ever-increasing spans of time: *concurrent* grouping, *sequential* grouping, and *segmental* grouping. Concurrent grouping describes the perceptual organization of instantaneous acoustic surfaces into musical events, which can be understood as coherent elementary unities. For example, three individual pitches played simultaneously and whose fundamental frequencies relate by a harmonic ratio fuse together, registering in our awareness as a unified triad. As with other types of unified simultaneities, the perceptual whole of a triad supersedes the identity of its constituent parts (Bregman 1999: 215). Similarly, when a French horn and a clarinet softly play a simultaneous unison at a medium-low tessitura, the timbre of the individual instruments are likely to fuse together, shedding to some degree the dual identity of "horn" and "clarinet," becoming, in effect, a unified and seemingly singular timbre (Sandell 1995). Auditory cues that contribute to event formation include relative pitch height, harmonicity, onset synchrony, and parallel changes to amplitude and frequency

Sequential grouping describes the formation of larger-scale perceptual unities that persist from one moment to the next. The auditory system connects synchronically what it identifies as related auditory events, forming what Bregman terms "auditory streams." Streams tend to group sounds and their parameters together over time largely in terms of the coherence of their continuous behaviour. Stream formation depends upon spatial, spectral, and intensive continuity. We will see below that timbral cues contribute to stream formation and to segregation (McAdams and Bregman 1979).

Streams represent the most perceptually salient components of an auditory scene. We can think of the various voices that make up a fugal texture as individual streams, where each voice is perceived as an individual entity in relation to the other entities by space (where they exist in pitch space), by contour (how they interact over time), by rhythmic profile, and, in the case of an orchestrated fugue, similarities and differences in timbre. Part of the delight we experience while listening to orchestral music lies in our ability to attend to the various interactions between co-occurring auditory streams over time. Consequently, one of the most important functions of orchestration is to enhance the perceptual demarcation of streams. When applied to Western tonal music, the term auditory stream corresponds generally to the term “voice” described in traditional harmony and orchestration manuals. However, the term “stream” also encompasses the perceived fusion between voices and their corresponding parts (the assignment of individual instrumental sonic roles within an ensemble) into a single perceptual sonorous entity.

Finally, segmental grouping is the process by which we recognize, parse, and segment the temporal markers and boundaries of a piece of music into its constituent formal units. Accordingly, formal elements such as motives, phrases, themes, and sections exist as ever larger perceptual unities, often organized such that the ever-larger grouping of smaller units can be perceived as belonging to and within formal structures (Deliège 1989).

5.1.2 Orchestration and timbral grouping cues

Recent research in the fields of music psychology and music theory demonstrates the various roles timbre plays in structuring the perception of instrumental music (Sandell 1995, Chaisson *et. al* 2017, Goodchild and McAdams 2018, Touizrar and McAdams 2019). Though long neglected as an object of theoretical study, timbre exists first and foremost as a perceptual attribute of music, on par with other attributes of immediate perception such as pitch and loudness (Siedenburg and McAdams 2017). As **Figure 5.1** outlines below, within an orchestral context, timbre helps to structure and articulate each of the three grouping stages proposed by ASA.

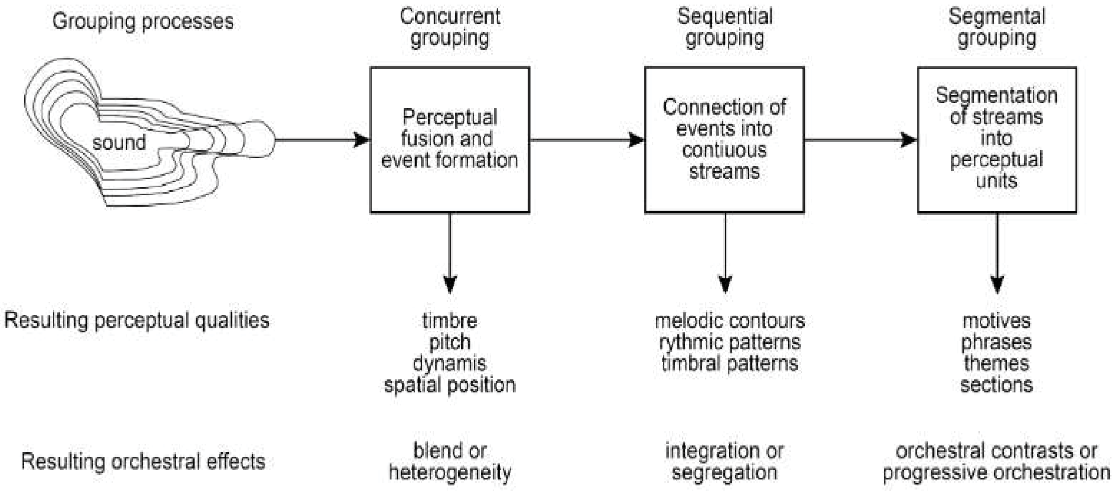

Grouping processes
Concurrent grouping
Sequential grouping
Segmental grouping
sound
Perceptual fusion and event formation
Connection of events into contiuous streams
Segmentation of streams into perceptual units
Resulting perceptual qualities
timbre
pitch
dynamis
spatial position
melodic contours
rythmic patterns
timbral patterns
motives
phrases
themes
sections
Resulting orchestral effects
blend or heterogeneity
integration or segregation
orchestral contrasts or progressive orchestration

Figure 5.1: Auditory grouping processes [from Goodchild and McAdams (2018), figure 1]

Instrumental blend describes the perceptual fusion of two or more instruments into one perceived sonic unity. In addition to those grouping cues outlined above (pitch height, onset synchrony, harmonicity, amplitude and frequency changes), instrumental blend depends to some extent upon relative source location. Instruments that satisfy the other grouping cue criteria may not blend if they are too far from one another along a horizontal plane relative to an auditor. This is especially true for sequential grouping as described below. For example, the sounds of two solitary instruments playing at either end of a large stage are less likely to blend sequentially than those closer to each other. Gregory Sandell (1995) further categorizes all possible instrumental blends as belonging to one of two types. *Timbral augmentation* results when instruments blend such that the identity of one instrument remains perceivable while it subsumes the identity and sonic energy of the others. The dominant timbre will stand out as the perceived source while the subordinate timbre(s) merely colour or shade the resulting sound. *Timbral emergence* describes a blend resulting in the formation of a novel timbre that does not reduce to the identity of any one of its sources. Importantly, both augmentation and emergence can occur progressively over time while instrumental combinations change with regard to a stable auditory stream.

Sequential cues include timbral segregation and integration signifying the sonorous realization of orchestrated streams. Together, concurrent and sequential grouping give rise to a spatial feature of orchestration termed “stratification” (McAdams and Goodchild 2018). Stratification occurs when composers “layer” musical streams, textures or loose groupings of streams such that individual streams or groups of streams are perceived as occupying relative places “in front” of or “behind” others. More attentionally salient groupings are more likely to be experienced as more prominent, and thus apperceived as being in a place in “front of” other strata. Composers, orchestrators and analysts call this segregation of streams and groupings foreground and background “timbral layering.” Additionally, a third middleground layer may also be available to scene analysis (McAdams, Goodchild and Soden, submitted). Importantly, there are degrees of clarity in the segregation and stratification of events within streams, such that changes in instrumental forces (and thus the timbral components of a grouping) can take place while nevertheless being heard as a continuous unity. Variation in timbre over time gives rise to diachronic orchestrational progressions, the most familiar of which is Schoenberg’s notion of *Klangfarbenmelodie*. Put simply, in such cases, stream integrity persists over a span of time while continuous changes in instrumental configuration occur.

5.1.3 Timbre as a form-bearing element

Segmental grouping cues also contribute to contrastive timbral articulations, such as the delineation of formal boundaries. Such segmental grouping cues raise an important point about the large-scale perception of timbre over time. Timbre exists as a form-bearing element, helping to articulate various levels of formal organization in multi-instrumental music (McAdams 1989). These larger-scale articulations include clarifying and segregating polyphonic textures over time, and heightening formal contrasts at various levels (motive, theme, phrase, section). (As I will argue below, in its realization by composers within orchestration, timbre also helps to articulate a third spatial dimension of the experience of music.) Timbre, too, plays an important form-bearing role in the articulation of contours across varying temporal spans by increasing or decreasing the clarity of the articulation of contrasting streams (even to the point of eliminating the distinction between streams altogether). As Stephen McAdams (1989) remarks: “a dimension can bear form if configurations of values along it can be encoded, organized, recognized and compared with other such configurations” (p. 181). In general, brighter and louder timbres tend to segregate, while darker and softer timbres contribute to perceived fusion. Composers strategize the careful interplay between blended and segregated sonorities such that textures characterized by the simultaneity of multiple individuated components can evolve over time into highly fused textures, where the clear demarcation of components becomes increasingly difficult to distinguish. That a listener can indeed trace these interconnected changes to timbre, texture, and sonority over time is one of the more compelling facets of orchestral music as a listening experience.

5.2 Apperceptive Features of the Orchestral Sunrise and Sunset

5.2.1 Spatialization

The spatial progression of light across the atmosphere characterizes the everyday visual experience of twilight—what we understand binarily as dawn and dusk. During the former, the increasing presence of ambient light extends steadily across the domed sky, gradually enveloping latitudes previously occupied by darkness. During the latter, luminous intensity recedes toward a singular point on the horizon, giving way and width to increasingly sombre shades. The solar orb itself embodies spatiality. Its bated yet sudden appearance along the horizontal plane seems to defy gravity, sundering morning from dawn with an intense and immediate brilliance, while its decent toward the horizon heralds evening's repose—trailed by the darkening recession of dusk. Composers harness the spatial capacity of music in order to suggest the various motions and intensities of ambient light, and of the sun itself. It is no coincidence that the orchestral sunrise and the orchestral sunset emerge as topics for musical ekphrasis as the variety of orchestral sonorities rapidly diversifies throughout the 19th century. The resulting expansion in register, loudness, and variety of sonic textures and sonorities allows composers to fully articulate the range of spatial characteristics intrinsic to Western music.

As discussed above (especially in section 4.1), if we understand the perception of a manifold of auditory stimuli (e.g., the audition of concurrent or sequential tones) as an implicitly spatializing experience, then the integration of musical parameters and events into auditory streams serves to further articulate the experiential verisimilitude of music as seemingly unfolding in something like visual space. We can therefore consider Auditory Scene Analysis to be an analytical tool that defines and describes the conditions under which large-scale musical unities are experienced as simultaneous and successive. As such, Auditory Scene Analysis provides a contemporary, empirically validated framework within which the classical and modern hypotheses of enargeia, ekphrasis and apperception can be understood. This framework begins with the implicit spatiality of the segregation of simultaneous musical events in a space-like domain. Indeed, The term “scene” already implies a place or space where things happen. Within orchestral auditory scenes, multiple individuated streams (unities) co-exist, underwritten, for example, by an already discretized (and in effect spatialized) pitch-space. Moreover, streams segregate from one another, “coalesce” into one another, and change in relation to one another. And we can easily experience and understand individual streams within an orchestral passage to be unities capable of modification along several parameters, including changes to orchestral colour and loudness. These variations take place within a virtual domain of relations of scalarity and contrast.

Within an auditory scene, streams may also seem to move closer or further away from one another, or to become more or less prominent relative to each other. Contrasting motion and relative salience are experienced as dynamic and relational, within a domain of actual and potential relations. We can even perceive an orchestral stream to “thicken” or “thin” in subtle ways. Moreover, even the notion of stratification—that streams can segregate not only along a perceived vertical dimension, but also in terms of perceived depth—is already characterized by an implicit appeal to the spatializing nature of the perceived musical stream: foreground, middleground, and background. Although the instruments of a symphony orchestra are themselves physically arranged in space, notably in terms of depth (woodwinds behind the strings, brass behind the woodwinds), the perception of foreground and background does not necessarily depend on the real distance of a sound source from an auditor, but on the relative “places” occupied by the various streams in question within our experience of a musical scene. More prominent and attentionally salient groupings are experienced as “closer” to the listener, and as occupying a place “in front of” less salient strata. The experience of this quasi-spatial domain gives depth and realism to the experience of space, motion and energy within a stream or stream grouping and in their interplay as stratified textures.

Auditory depth is, at least in part, a perceptual illusion, but one that enhances the cross-modal apperception of attentionally salient streams and textures as moving in a virtual domain. One blended sound can exist in our experience as though it were “in front” of another. Streams can even emerge from or disappear toward an imagined auditory vanishing point “behind” another texture. These places are not physical, but perceptual and experiential, existing only in relation to other streams, textures and groupings as strata with varying attentional salience. Orchestration helps to imbue music with increased spatial delineation: first, in terms of the timbral articulation and intensification of tonal pitch-space; second, by enabling and delineating a wide variety of stream formation and segregation—an increased demarcation of unities (streams and strata) in relation to one another; and, third, by engendering an increased and seemingly vivid manifestation of perceptual depth between auditory streams and strata. Though the imaginary distances between streams cannot be measured as such, they are still experienced as if they were real and determinate (if somewhat ineffable) locations.

5.2.2 Spatialization: Registral expansion and contraction

It should come then as no surprise that composers rely on pitch space to articulate "up-ness" or "down-ness." The most immediate feature in the construction of a orchestral sunrise or sunset is the local directionality of pitch over a relatively short span. Similarly, articulating higher and higher pitch ranges across various lengths of contour seems obvious with regard to a formal pitch plan in a composition intended to depict a sunrise. The inverse is true of compositions aiming to depict sunset—pitch must somehow descend over time.

5.2.3 Familiarity

That an orchestral sunrise or sunset depends first and foremost on the unfolding formal arrangement of musical materials and structures cannot be overstated. As I have argued, spatialization to a large degree underwrites the perceptual salience of both unity and change over time. Yet, the vivid effect of sunrise or sunset in orchestral music requires that a listener apperceive commonly perceptible magnitudes across perceptual modalities and over time. That is, listeners must hear something about the behaviour of a particular piece of music—both sensuously and temporally—in a manner akin to the experience of sunsets or sunrises. Moreover, I argue that the act of suggesting a sunrise or sunset in music exceeds mere depiction or description, being itself an ekphrastic utterance that implies a common experiential ground. Thus, the individual details of the musical work serve to prompt the listener, via enargeia and phantasia, into supplying at least some of the sensuous crossmodal details, ultimately unifying (or apperceiving) present sense data with an abstraction of previous experience. To enable this synthesis, composers imbue their musical forms with specific and vivid mnemonic function. The progressive timbral modulation of recognizable formal units is one of the most potent ways in which composers suggest various types of luminous contour over the course of an extended passage or a whole musical work.

While sunlight topics often rely on familiar techniques and tropes, the recognition of a luminous phenomenon within music also relies on the familiarity of materials within a single work or passage. To fully appreciate the sunlight topic as a transmodal experience, the listener must experience a progressive accumulation or dissipation of energy along an apperceived contour. The possibility of this contour depends on the recurrence of a particular and recognizable musical pattern that undergoes variation, complexification, or a change in trajectory within a single work of music. With regard to sunrises or sunsets in music, familiarity involves the recognition and apperception of a span of music as related to another previous instance of the same span of music, with variation across one or more parameters. These variations, in turn, are apperceived as increasing or decreasing in energy through the spatializing parameters of music: group coherence ("unity"), attentional salience ("foreground/background"), increasing register ("extent"), increasing brightness and pitch density ("presence"), etc. Composers strategize formal units and their mnemonic and sonorous interrelationships in order to maximize a listener's recognition of the identity of a span of music as well as its modulation across one or more parameters from instance to instance. The recognition of a familiar span of music each time varying across some parameter allows the composer to suggest a progressively higher apex or lower nadir, brightness or darkness, growth or decay, across the recurring instances of the recognized span. The listener is thereby able to apperceive a large-scale energetic contour of a particular span of music, experiencing a span of music as gaining or losing distinctness, prominence ("foreground"), and other forms of interpreted energy. Ultimately, familiarity serves the crossmodal apperceptive mechanism that permits a present auditory experience and previous sense memory to unite into an ekphrastic experience of sunlight.

5.2.4 Specific intensity: Perceived brightness

The ease with which we can experience brightness as a prominent feature of both visual and auditory experience stands as perhaps the most immediate perceptual link between light and sound. Everyday experiences of sunrise and sunset register as unified luminous contours, characterized primarily by increasing or decreasing intensity across space and time. Similarly, we perceive auditory brightness as one of the most salient dimensions of instrumental timbre (McAdams and Cunible 1992, Cousineau *et. al* 2014, Goodchild 2016). That the synergy of visual and auditory experience as luminous phenomena is also experienced by composers and orchestrators is demonstrated in a recent corpus study conducted by Zachary Wallmark (2018). Wallmark's examination of semantic terms derived from orchestration treatises—written by composers as manuals for composers and orchestrators—establishes that adjectives related to the term "bright" (brightness, luminance, etc.) form one of the more robust categories of descriptive terms employed by composers in their conception and descriptions of orchestral sonority.

Furthermore, by analyzing frequency and energy patterns over time, psychophysicists and experimental psychologists demonstrate how the distribution of sonic energy helps to define the unified perception of the timbral quality of a single instrument (McAdams 1993). Emery Schubert and Joe Wolfe (2006) confirm that perceptual brightness correlates strongly with the measurement of spectral centroid, and that changes to the centroid predict changes in the perceived brightness of timbre. Almeida *et al*. (2017: 1893) define spectral centroid this way: "the distribution of power at different frequencies in a way that is analogous to the definition of the centre of mass, a point around which the mass of an object is distributed." Moreover, McDermott *et al*. (2008) demonstrate that, in addition to the pitches themselves, mental representations of contour can track brightness over time, and perhaps more importantly, and that contours presented in one dimension (pitch) can be apprehended in another (loudness and brightness). While the majority of perceptual studies examining perceived auditory brightness derive their results using simple stimuli—often constructed to simulate the sound of a single instrument—our experience of brightness in music designed to depict light involves vastly more complex timbral configurations whose morphology spans entire works of art.[17]

To simulate sunrises and sunsets sonically, composers operationalize complex perceptions of brightness within sonorous structures, strategizing their deployment across various apperceptive spans. Yet, the experience of brightness within complex, timbrally stratified instances of orchestral music also involves something more than the concentration of frequency energy at the centroid of a spectrum. Relations between streams, their degrees of perceptual prominence, and their varying orchestrations make it difficult to point to and measure their differences, let alone exhaustively define nuanced changes to brightness as a result of changes to their configuration however small. Put another way, the computer-aided measurement of energy spread across frequency, while clearly an important tool for describing the perceived brightness of a single instrument, or the overall energy of a group of instruments, cannot on its own account for the entirety of the experience of luminosity found in auditory scenes involving complex orchestral textures. The computer cannot (yet) model human perception of stratified and segregated streams.

---

[17] One noteworthy exception, a novel analysis conducted by my former colleague Meghan Goodchild, involves the re-orchestration of standard works from the orchestral repertoire with the desired effect of brightening or darkening the music. Goodchild's findings demonstrate a correlation between centroid and brightness across complex orchestral textures. See pages 138-164 of Goodchild (2016).

5.2.5 Specific intensity: Sonority and "is-ness"

Although the idea of sonority may seem like a theoretically contentious term, since it enjoys no agreed-upon definition, it nevertheless plays an important role in the unfolding of a orchestral sunrise or sunset.[18] While any attempt to fully define and articulate a concept of sonority seems doomed to flounder in vagueness and imprecision, it is nevertheless important to recognize its role in the experience of music, most especially in the experience of luminous sound.

When we listen to music, we can easily identify clear parameters that, when taken together, make up the music. Timbre, rhythm and melody seem to pop out immediately as highly salient features whose identities are easily recognizable, and whose elements can be pointed to and discussed at further levels of scrutiny. To greater or lesser degrees, we may even reproduce these features after the music has ended—we can sing the melody or clap a fragment or sequence of the rhythm. For example, we can even cup our hand in front of our mouths and imitate the wah-wah sound of a trumpet or trombone. However, especially with multi-layered orchestral music, we often also hear something that is best described as a kind of sonic presence, an intensity, or an "is-ness"—a qualitative sense of sonic identity. Though this sonic identity is difficult to point to or describe, let alone define, "sonority" seems the most appropriate term to refer to the qualitative character of a unified musical event. Generally speaking, sonority is thought to encompass a non-reducible tension present in any attempt to discern between harmony and timbre.[19] However, if it is understood within the spatial framework of ASA, sonority as "is-ness" takes on additional complexity and nuance.

---

[18] The lack of definition for sonority in the theoretical literature is perhaps due to the difficulty inherent in attempting to articulate its constituent parts and their functions such that they could easily be enumerated and discussed.

For tonal music, especially that of the 19th and early 20th centuries, harmony in its most general sense as the qualitative "sound" of any simultaneity, be it harmonic, timbral, or both, becomes the personalized insignia (or a "sound print," perhaps) of a particular moment within a work, of an entire work, of a group of works by a particular composer, or perhaps even of a group of works by a group of composers. For example, the opening few seconds of any Beethoven symphony exude a unique and personal sonorous identity—a conflation of chordal spacing, the instruments selected to produce each pitch of the chord, and their relative articulation in terms of loudness. The voicing, instrumentation and energy distribution of the chord does not reduce to the timbre of a blended group (or groups), or to an analysis of tonal harmony. Instead, the characteristic "sound" of a span of music invokes a determinate structuring of sound that is stable or unstable, light or dark, sparse or dense, resonant or muted, etc. Composers speak of sound worlds—consistent, identifiable, and qualitative sonic unities that persist over time and that can often exist at any given instant, across and even throughout harmonic variations. When young composers strive to emulate their favourite composer, they often do so by attempting to "capture the sound" of a particular work. Even lacking an awareness of its materials or construction, a young composer nevertheless hears a sonic identity, one that can at the very least be approximated intuitively. The same is true of any iconic music within any tradition—exceptional music exudes a certain resonant "sound."

What we hear when we hear the "is-ness" (or specific intensity) of a sonority is twofold. First we hear a specific distribution of frequencies and energies as a single, qualitative identity. The distribution of energy across frequencies at the microscopic scale defines in part the timbre of an instrumental blend. Second, the distribution of energy across pitch space can be apprehended as a discrete articulation of pitch space in any particular texture of musical streams, whether fused or segregated. Even though the sound may be heard as a blended whole, it retains its identity as an articulation of pitch space. In some cases, attack time, spectral energy and content, and microcosmic spectral changes fuse into the timbral quality of a particular instrument, instrumental combination or choir, limiting the perceived articulation of pitch space within a particular sonority. In other and no less intricate case, pitches, streams, and their spatial relations combine with timbre and loudness to create experientially resonant sonorities that retain their characteristic, identifiable quality as articulated wholes. Changes to the "spatial" configuration of pitches that preserve pitch-class content (e.g., alternate voicings of the same chord) alter to some degree the "is-ness" or specific identity of a sonority by changing the articulation and resonance of the span of music. For example, a simple sonority may be described as dark and dense because it consists primarily of low pitches clustered close together. We might also describe the sonority of identical pitch-class content as open and resonant. In this latter case, the pitches and their energies are likely to be widely spaced across the frequency spectrum, and mainly fall on or close to the harmonic series.

---

[19] As Theodor Adorno remarked with regard to Wagner's orchestral sound world: "This element, with its two dimensions of harmony and colour, is sonority. Through sonority, time seems transfixed in space, and while as harmony it 'fills' space, the notion of colour, for which musical theory has no better name, is directly borrowed from the realm of visual space." (Adorno 2009: 52)

5.2.6 Specific intensity: Sonority and texture

Sonority is not just a question of what notes appear on the page of the score. Rather, it is the spacing of energy that is characteristic and recognizable not just as sound, but as a specific coloring of *that particular* sound. As noted above, sonority does not reduce solely to either pitch or timbre. Instead, it is suspended somewhere between sound and harmony as a peculiar and irreducible tension between what is intelligible and what is merely felt. It is the unified and specific qualitative intensity of a whole, as well as its parts. Likewise, a sonority can be heard as a musical unity, even if it fails in important ways to fuse as a musical event or stream, as a grouping or strata. A sonority, for example, may be realized by individual timbral makeup of multiple streams that do not fuse together. The sonority may also be retained even as streams begin and end.

The increased size and timbral nuance of the early 20th-century symphony orchestra makes it possible to create ever larger and more expansive sonorities that do not fuse into identifiable streams, but that nonetheless create the impression of a recognizable and identifiable presence, or sonority through changes in harmony, register, range, and instrumentation. Moreover, sonority, like other parameters, can undergo progressive variations. For example, the sonority of a orchestral sunrise may evolve from densely clustered voicings toward open, resonant voicings, while retaining the same pitch class materials and harmonic progressions. In the extreme case, sonority may lack a minimum set of features to resolve into a definite stream, grouping or strata with an identifiable contour. Yet a sonority without a definite contour can still be heard and experienced as articulating a virtual space for the music, within which and against which identifiable streams can emerge and move in dynamic tension. In this sense, orchestral sonority might also be said to occupy the boundary between harmony, colour, and texture. And for composers, the harmonic-colouristic-textural relationship of orchestral sonority plays an important role in what McAdams, Goodchild and Soden (submitted) term textural integration. They define textural integration as occurring "when two or more instruments have different material—contrasting rhythmic figure and/or pitch material—but integrated to create a single surface texture … It is perceived as being more than a single instrument, but the instruments do not separate into distinguishable streams."

A peculiar and poignant example occurs near the midpoint of the Prelude to the *Gurrelieder* (see **Appendix B**, page 10, measure 44, at 3'06"). In what may be one of the brighter moments in this work, Schoenberg introduces a descending passage in the upper register, played by four piccolos. The surrounding orchestral texture is both thick and busy. Multiple layers co-exist, performing several independent motivic functions. In order to call attention to the upper line, Schoenberg makes a seemingly simple orchestrational decision: He has the triangle sound the downbeat, blending with the onset of the piccolos. In what to my ear is the brightest moment of the entire work, the resulting sonority stands out of the global sonority without overshadowing or diminishing any other component of the texture.

5.2.7 Co-variation: Common fate and simplified intensive contour

An effective painting of a sunrise would not simply articulate a yellow arrow pointing up towards a blue sky. While such an image might capture the schematic trajectory of sunrise, it would not capture the characteristic temporal and evolving perception of changing luminosity, motion and energy of the phenomenon. That is, such a bare contour could not readily suggest the complex, nuanced, qualitative unfolding of the experience—and it certainly seems unlikely to prompt a viewer into supplying one's own remembered schemas or vivid experiences. Although it may seem an obvious point to make, irrespective of medium, depictions of sunrise express "up-ness" and increasing energy within their basic schematic framework. Like the astonishing painting by Turner (section 2.5), the inverse is true of depictions of sunset.

Our perception of orchestral music allows for the intricate interplay of many individuated streams and groups (together with their intensive contours) to be experienced as simplified contours whose general schematic directionality and intensification can be apperceived, even while various components within an auditory scene defy this general tendency. Effective sunrise music does not simply rise in pitch and intensity, and continue to do so until the end of the piece or movement. Like the case of the yellow arrow pointing to the sky, simple depiction fails to convince. It is the experience that counts. What we do apperceive in listening to music is a general trajectory and destiny of musical materials as an accumulation or dissipation of complex energies, even as we attend to the complex and intricate details that seem to exist at the periphery of the general contour. Boundary features (spatialization as streams), grouping, implied and explicit repetition (familiarity), and the persistence of specific sonorous intensity can be combined to create musical structures that lead the listener to experience an apperceived energetic contour that unfolds over long time spans. Though a construction of such structures might involve the complex textural interplay of multiple instruments and multiple layers of activity, the perceptual system generalizes basic contour, resolving complexity into simple directionality that is experienced as a unified trajectory or *eidos* underlying a richly detailed musical experience.

Because they are spatialized unities, auditory streams make it possible to hear the contours of individual streams and their groupings as having energy and direction. Increasing or decreasing loudness, including the addition of instruments to a single stream, makes it possible to hear music as being stronger or weaker. Together with intensive contour, the registral expansion or contraction of both individual streams and the overall sonority make it possible to hear music becoming “bigger” or “smaller,” occupying more space and being more or less present within an auditory stream. The dynamic interplay we experience while various streams move against and in tension with each other increases the perceptual effect of rising and falling energy through any particular stream.

In summary, space, familiarity, intensity, contour and sonority engender sonic depictions of light with increased vivacity (*enargeia*). Taken together, these varying dimensions give the composer a varied palette with which to create complex and evolving sonic energies.

5.3 Orchestration and Enargeia

As I argue in Chapter 2, enargic descriptions comprise spatial representations that require the constitution of a virtual or imagined place. I argue further that a successful image replete with enargeia is constructed by an appeal to accessible language, common images, and experiences familiar to any audience. Exemplary orchestral sunrises and sunsets achieve enargeia in part via the increased spatialization of auditory streams within sonorous textures, and by increased capacity for intensity of contour made possible by the art of orchestration. I will now exemplify several orchestral features composers harness in order to engender vivid and lively experiences of luminosity in sound.

5.3.1 Timbral “width”, “thickness”, and the horizontal plane

I use the term “timbral thickness” to describe a unified and well-blended sonority, whether instrumentally homogeneous or heterogeneous, that undergoes modification resulting in the perception of a horizontal thickening of the sonority. Similar categories have been proposed, such as Koechlin’s notion of “volume,” which has recently been reinterpreted by Frédéric Chiasson as “extensity” (Chiasson *et al.* 2017). To be clear, this perceptual effect of orchestration registers in my own experience as exclusively “horizontal” in terms of perceived spatiality. Not all changes to perceptual dimensions register as spatialized in perception, and certainly those that do for some listeners might not do so for others. Nevertheless, intensification serves as the principal component of timbral thickening as I experience it and as I organize it compositionally. Other factors, such as the “offset” of a gesture—the final moments of its sounding—or the saturation of a stream in physical space by the addition of instruments along the horizontal (time) axis of the orchestra, also play a role in creating the illusion of timbral width. It is perhaps not coincidental that the layout of the symphony orchestra on a stage embodies this effect, especially the layout of the string section. Indeed, perceived width often involves admixtures of strings and woodwinds augmenting one another’s timbral quality.

5.3.2 Timbral sequences

Sequences formed by measured changes to timbre take on smaller-scale function in much orchestral music of the late 19th-century, and beyond. Here streams persist through progressive changes to orchestration, retaining their coherence and directionality. The persistence of a stream against occasionally kaleidoscopic timbral modulations serves to highlight the strength and coherence of the stream. The remarkable persistence of auditory streams through such changes also highlights the clear difference between the perception of unity (contour) and the specific, colouristic identity of that stream or grouping in any given span of music. To be clear: timbral sequencing in the sense of a specific sonority embodying the stream differs from the notion of *Klangfarbenmelodie*; this other notion that I point to resembles much more the broader category of "Progressive Orchestration" proposed by Goodchild and McAdams (2018). As discussed below in section 6.9, I make special use of timbral sequences in the opening few minutes of *Bright, Blue, and Shimmering*, calling particular attention to the isolation of a solitary pitch.

5.3.3 "Three-dimensional" polyphonic textures

As noted above in section 5.2.1, stratification points to a third dimension of perceived spatialization between auditory streams themselves. If we conceptualize pitch as a vertical *y*-axis, and time as a horizontal *x*-axis, then the art of orchestration, I contend, serves in large part to articulate a *z*-axis of depth, allowing for multiple streams to co-exist concurrently at various perceived distances relative to one another along a third dimension.[20] Furthermore, this articulation of perceptual depth exists as a poignant form of enargeia, imbuing music with an immediate and intricate vibrancy and vivacity, of "popping out" into the foreground of our experience. I wish to reiterate: there is a distinction between physical space (the musicians on stage) and the experiential domain where music, by virtue of the coexistence of multiple unities, musical objects are apperceived as spatialized relative to each other, not with respect to an absolute or physical space. Articulation of the *z*-axis is built in to the physical layout of instrument families as organized in the traditional symphony orchestra. Yet, the illusion of depth relies primarily on differences in loudness and varying degrees of timbral dissimilarity between stratified streams and groupings, not on the localization of instruments in physical space. Chapter 6 exemplifies many of the theoretical concepts presented in Chapter 5, with particular attention given to their role in creating the vibrant contours displayed by orchestral sunrises and sunsets.

---

[20] I credit the notion of a *z*-axis to the composer John Rea, whose demonstrations of orchestrational "depth" in a class titled "Advanced Orchestration" and in private conversations have had a lasting impression on my own thinking.

CHAPTER 6:
CASE STUDIES AND ANALYSES

6.1 Case 1: Sunrises

In the first chapter, we discussed the relationship between features displayed by an orchestral sunrise and the *eidos* or formal shape and contour through which an orchestral sunrise is organized. Elaine Sisman (2013, 2014) points to a gradual crescendo as the basic defining feature of the sunrise. But how are orchestral crescendi created? What strategies and procedures are available to organize musical structures across time in order that they describe the transition from one state of luminosity to another?

Apperceptive features are both beholden to and responsible for the formal strategies adopted by a composer. Each determines the other. Apperceptive features invigorate and enliven the luminous contour (*eidos*) into which they are ordered, while the formal plan that realizes the contour constrains and focuses the pace, rate, and directionality of the local features. Even if the large-scale contour supervenes on the detailed surface of the music, the success of the sunrise as an *eidos* depends on the pacing and structuring of local materials such that the contour may indeed be apperceived.

Composers adopt one of two basic strategies for the gradual build-up of specific intensity (schematized in **Figure 6.1**). The first and most common formal design is a simple, gradual, and unabating contour that features an almost seamless intensive growth lasting several minutes in duration before climaxing and then dissipating. We can call this formal design unidirectional or direct brightening (TYPE-1 sunrise). TYPE-1 sunrises build up steadily toward their ultimate goal without retreating. The unrelenting and unidirectional shape of their growth contour serves as their defining feature.

The second strategy deviates from the direct route, favouring instead a recursive structure with progressive expansions. Here, form folds back upon itself—again and again, building-up and dissipating intensity in several clearly demarcated stages, serving to suggest both delay and the ultimate climax. Several subsequent waves of intensity, combined with familiarity, produce a more complex and compositionally nuanced form. And each iteration grows in relation to the previous instance. This form is perhaps more difficult to apperceive due to its more subtle unfolding. We can call this form discoid, indirect, or elliptical brightening. (TYPE-2 sunrise). TYPE-2 sunrises depend primarily on familiarity, as music heard earlier returns having undergone perceived growth in luminous quality. TYPE-2 sunrises intensify, climax and dissipate intensive energy in successive formal blocks, each time growing further when compared to the last.

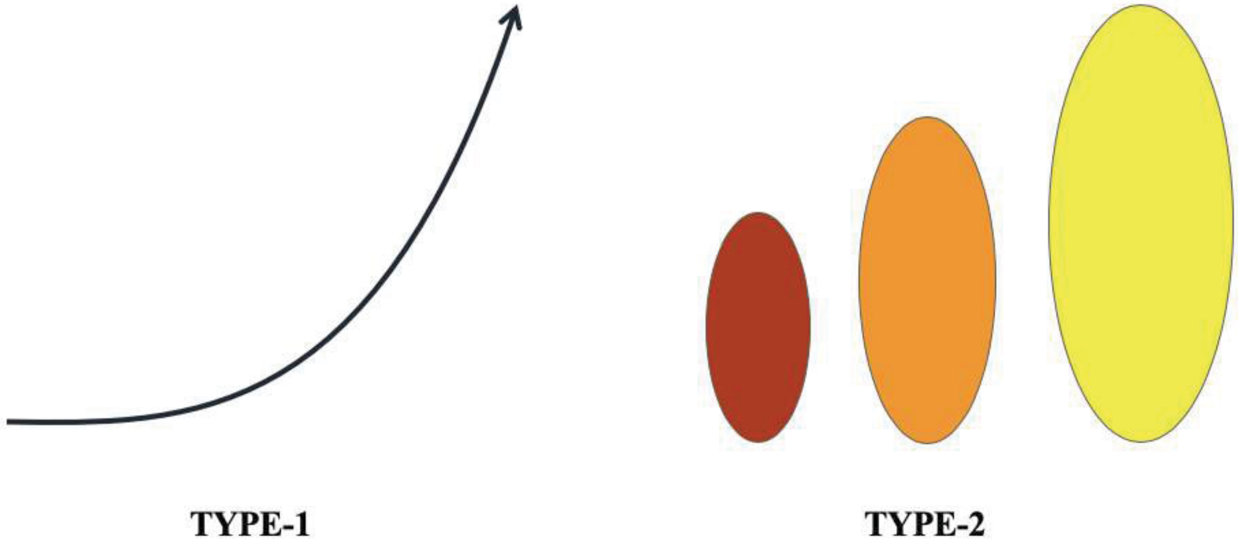


Figure 6.1: Schematic outline of two formal strategies

Because of its continuous intensification, the former strategy (TYPE-1) is more immediately apperceived. Parameters such as pitch height, saturation, loudness, and instrumental brightness tend to co-evolve across time in a continuous (if gradual) crescendo. Formal strategies tend to highlight textural continuity and seamless changes to parameters. Conversely, the latter strategy (TYPE-2) is characterized by sequential climaxes, often three or more, where each grows by degrees toward a final luminous zenith. Memory and familiarity are strategized such that formal discontinuity separates successive sections, but familiar elements and structures reoccur periodically across the formal unfolding of the music. Composers establish clear formal boundaries to delineate the grouping structure of contrasting sections.

To first compose an orchestral sunrise, one must be able to apperceive the form either *a priori* (as a merely possible work of art) or *a posteriori* (in hearing an orchestral sunrise). Consequently, we find that composers have recognized and referenced sunrises occurring in earlier works. While the earliest examples of sunrises appear sometimes obvious and plain to the ear, over time composers have made more nuanced and extended sunrises. Orchestral sunrises thus serve as technical models for other composers, but also as intertextual sources of reference and recognition. Composers have not only referred to previous works in which sunrises are presented, but have done so in works that are themselves orchestral sunrises. For example, the Prelude from Bartók's *The Wooden Prince* (1917) relates in several obvious ways to the Prelude of *Das Rheingold*. A further example includes the Introduction to the third act of the ballet *Daphnis et Chloé* (1909-12) by Ravel, where he employs a formal design that is similar to the Prelude from Wagner's *Parsifal*. Moreover, Bartók's sunrise is also clearly related to the opening gesture of Ravel's ballet (Act I), *Daphnis et Chloé*. Noël De Surmont (2007) notes the many similarities that exist between both works. He offers compelling evidence that Bartók borrowed several key elements of Ravel's ballet, altering them in only very basic ways. Importantly, De Surmont highlights the opening of the two ballets, characterizing each as an example of the "nature awakes" trope and demonstrating various correspondences. However, De Surmont misses their textural and gestural relationship to Wagner's *Rheingold* prelude. Indeed, because there is no obvious extra-musical sound that composers of sunrises could plausibly be said to be imitating, it is perhaps no surprise that sunrise compositions can be highly intertextual. After all, the closest sonic analogue to an orchestral sunrise is another orchestral sunrise.

6.2 Bartók's *The Wooden Prince* ("Curtain")

Among the assorted recordings of Bartók's ballet *The Wooden Prince*, the opening movement (or dance, Bartók's designation) is variously subtitled "Introduction," "Prelude," "Opening," or even "Vorspiel." In conductor András Kórodi's recording with the Budapest Philharmonic Orchestra (1972) for the label Hungaroton (SLPX 11403), the opening movement is given the label, "Curtain." Each of these subtitles points to the introductory nature of the dance, and the title "Curtain" in particular, points to an interpretation of the work as an explicit boundary between the real world and the imaginary world of the staged fairy tale. One might even suppose that a staged performance would see the slow raising curtain coincide with the performance of the dance, perhaps with appropriate lighting effects. The combination of music and theatrical action reinforces both the dramatic function of the music as transposition into an imagined world and the *eidos* of the sunrise. We are quite literally transported from the darkened world of the theatre's seats into the brightly lit world of the stage as it is slowly revealed behind the rising curtain. That this may in fact have been Bartók's intention is supported in the official score published by Universal Edition (UE 6638), where above measures 32 through 34 lies the boldface and boxed instruction in French: "VIDE." Presumably, the indication serves as a stage direction and reminder to the conductor that the curtain is indeed to begin its slow ascent just after the first entry of the harp at measure 30 and just prior to the first entry of the French horn on the last beat of measure 35.[21]

6.2.1 Formal organization of increasing intensity

My interpretation and analysis of the movement holds that a TYPE-1 intensive orchestral contour underlies the form and organizes its constituent components, which can be divided into several seamless functional sections. **Figure 6.2** displays an overview of the constituent formal components. In general, large-scale changes to the overall intensive contour are achieved by smaller scale changes to pitch height, texture, and specific intensity.

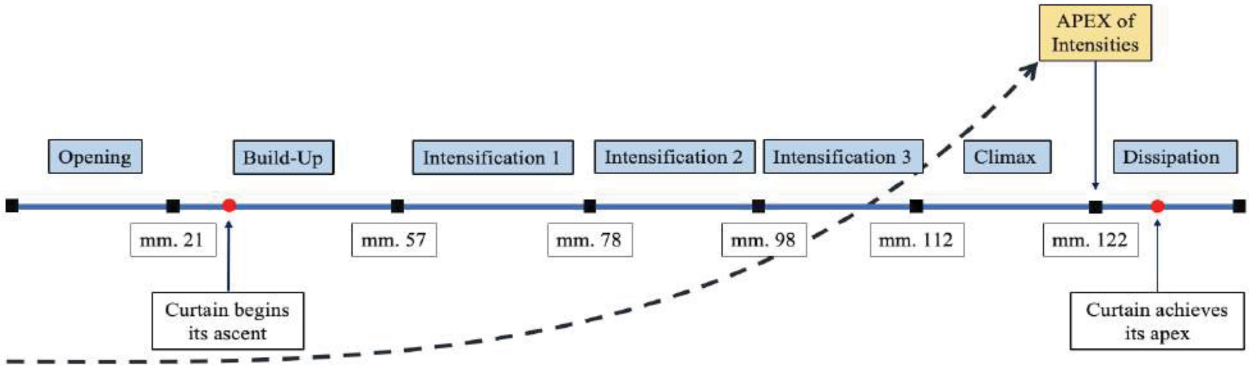

APEX of Intensities
Opening
Build-Up
Intensification 1
Intensification 2
Intensification 3
Climax
Dissipation
mm. 21
mm. 57
mm. 78
mm. 98
mm. 112
mm. 122
Curtain begins its ascent
Curtain achieves its apex

Figure 6.2: Overview of the form, *The Wooden Prince*, mm. 1–136

Opening: mm. 1–20

The effectiveness of a TYPE-1 form requires that the overall sonority at the beginning of the work be dark and distant in order to grow brighter and seemingly closer in small incremental steps over time. By starting low and dark, the composer has the widest range available to develop the luminous contour. Bartók opens his ballet with a restricted timbral palette consisting of layered low stings (the last two desks each: contrabass, cello, and viola) and the distant rumbling of a softly trilled timpani (**Figure 6.3**). By introducing only the last few desks of the string section, Bartók establishes a very real sense of physical distance, as well as the background condition for the apperception of sonorous depth.

---

[21] The score can be accessed online and downloaded in Canada and Europe using the IMSLP database, but remains under copyright in the USA: https://imslp.org/wiki/The_Wooden_Prince,_Sz.60_(Bart%C3%B3k,_B%C3%A9la)

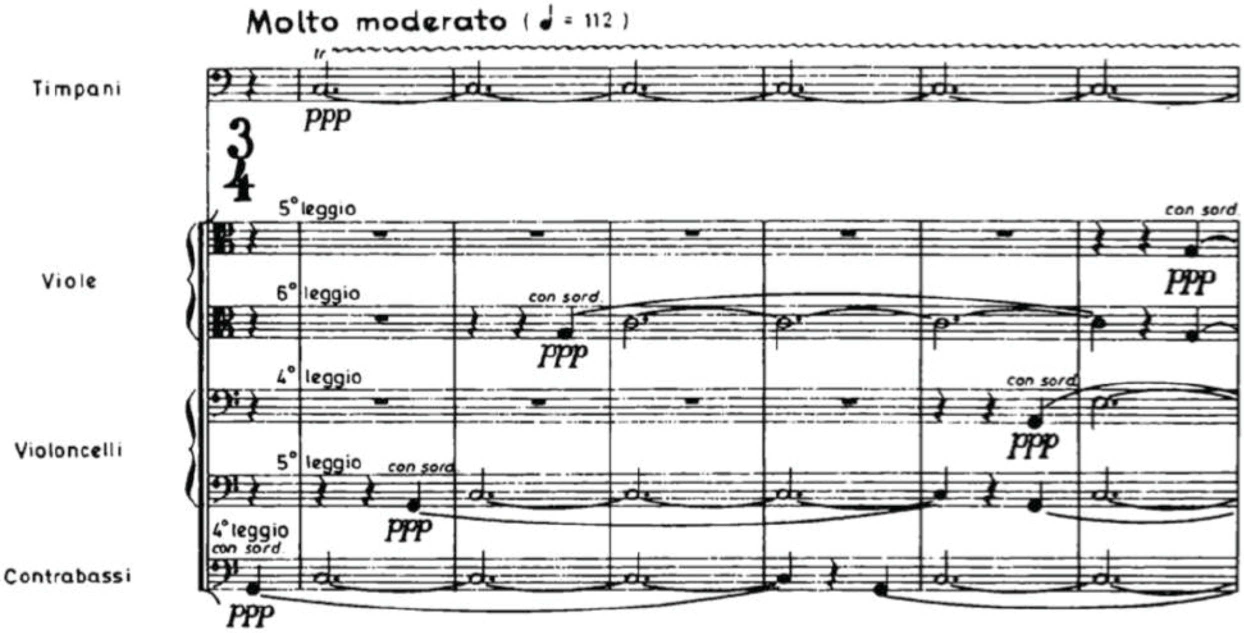

Molto moderato (♩ = 112)
tr
Timpani
ppp
3
4
5° leggio
Viole
6° leggio
con sord.
ppp
con sord.
ppp
4° leggio
Violoncelli
con sord.
ppp
5° leggio
con sord.
ppp
4° leggio
con sord.
Contrabassi
ppp

Figure 6.3: Opening texture, *The Wooden Prince*, mm. 1–6.
Béla Bartók "Der holzgeschnitzte Prinz, Tanzspiel in 1 Akt, op. 13" © Copyright 1924, 1951 by Universal Edition A.G., Wien / UE6639. Used by permission

The gradual intensification of sonority begins with the staggered introduction of bassoons 2 and 3 and clarinet 3 (mm. 10–11) and violin II (last desk) on the upbeat to measure 14. Each entry of a subsequent instrument (to this point unheard) serves to either intensify an already sounding place in pitch space, or to introduce an expansion of overall space. The stability of the C major triadic harmony expanding by the sequential introduction of constituent pitch classes is interrupted by the introduction of pitch class F# (m. 14, Violin II back desk), implying the Lydian mode (**Figure 6.4**).

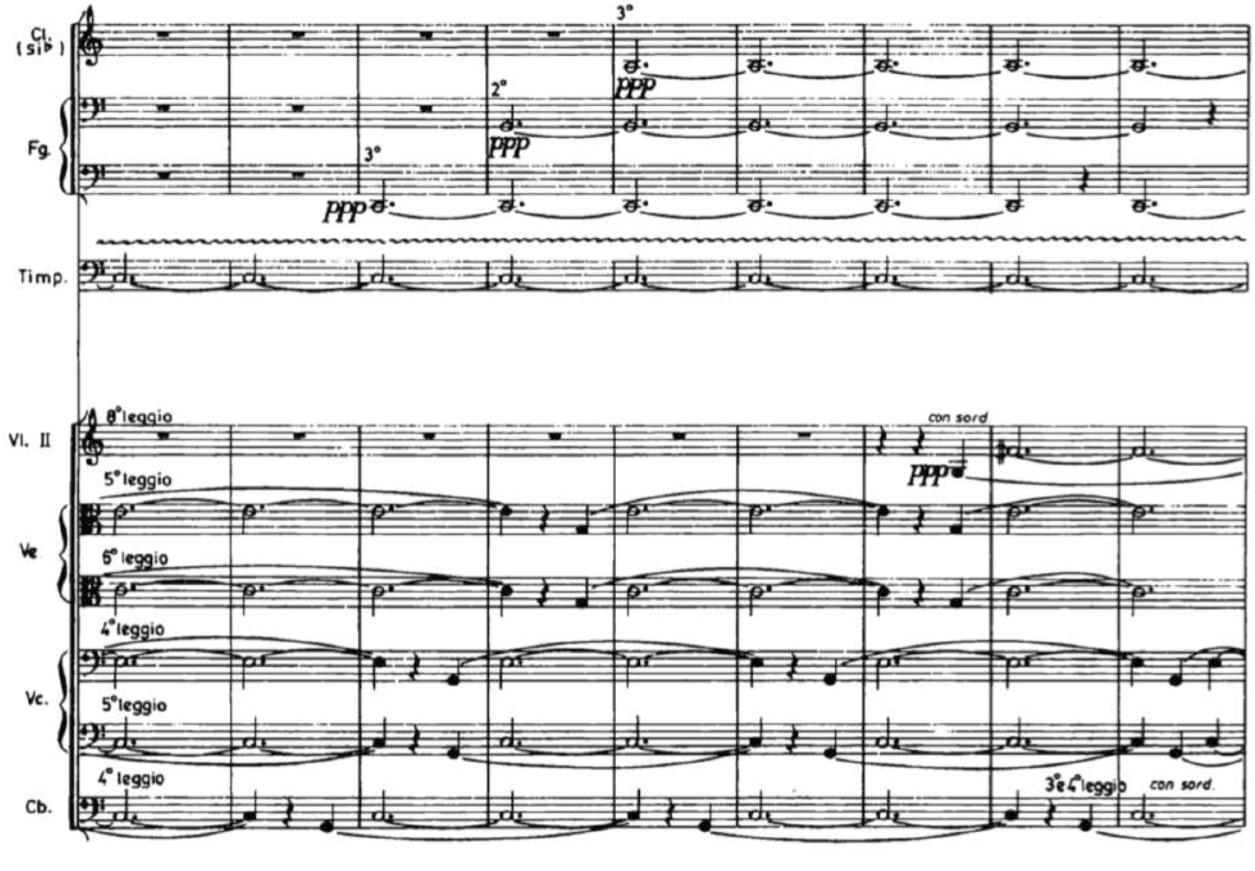

Cl. (Si♭)
Fg.
Timp.
Vl. II
Va
Vc.
Cb.
3°
2°
3°
ppp
ppp
ppp
8° leggio
con sord
ppp
5° leggio
6° leggio
4° leggio
5° leggio
4° leggio
3° e 4° leggio
con sord.

Figure 6.4: Addition of low winds and violin II, *The Wooden Prince*, mm. 7–15.
Béla Bartók "Der holzgeschnitzte Prinz, Tanzspiel in 1 Akt, op. 13" © Copyright 1924, 1951 by Universal Edition A.G., Wien / UE6639. Used by permission

The recurring pickup figure played by the strings helps to establish metric regularity, while rhythmic phasing of the pickup figure, beginning with the cellos at measure 15 and continuing in the violas (m. 16), serves to slightly obfuscate the downbeat, resulting in a gently oscillating texture—one whose rhythmic stresses will undergo intensification as the work progresses. In fact, various stages and types of textural patterning will persist throughout the movement, creating a tension of sorts between the steady, goal-oriented and linear progression toward climax and the static nature of shimmering textures, which require regularity over at least a short span of time in order to be perceived as unified "same-nesses." Thus the static being or "is-ness" of a unified texture pulls against the stable trajectory of the overall contour.

Build-up: mm. 21–56

The second section is characterized in large part by the increased rhythmic phasing of the upbeat figure that disturbs any sense of metric regularity. Additionally, the introduction and partial saturation of the upper register, together with increased rhythmic oscillation, leads to a gentle shimmer in the overall texture. This shimmering results from the periodic emphasis placed upon each of the three beats. Beginning at measure 29, the strongest emphasis is placed on the last beat of each bar by the high strings (violins I [last four desks] and violins II [desks 5 and 6]), while violins II (last two desks) and contrabasses (last two desks) articulate beat one. Beat two receives emphasis from the cello section (last two desks). Here pitch height, spatial placement of instrumental timbre (both horizontally and in terms of sonorous depth), and register co-vary, without clear stream formation.

The entry of harp 1 at measure 30 serves to reinforce the triple meter, as does the entry and melodic proliferation of the solo French horn at measure 35. The recurring three-measure ascending arpeggio played by the harp articulates the lower and upper extremities of pitch space sounded thus far by the orchestra. The entire back half of the string section is active by measure 29. Pitch space and *z*-axis (orchestrational depth) co-variation continues, expanding pitch space upward while seeming to become simultaneously more dense. The crescendo across measures 31–34 coincides with the inscribed instruction to begin the curtain's ascent and is followed by a decrease in overall volume as the horn presents the main thematic material (mm. 35–55). The hemiola figure played by two horns (mm. 57–58) bisects, and thus rhythmically blurs the formal dividing line between the sections "Build-up" and "Intensification 1" as seen in **Figure 6.2**. Over the course of the "Build-up" section, only the following instruments make their initial appearance within the auditory scene: clarinet 1, French horns 2 and 4, harp 1, violin I (desks 5, 6, and 7), violin II (5 and 6).

Intensification 1: mm. 57–77

The hemiola in the horns mentioned above (mm. 56–57) also creates a displaced downbeat at measure 59, thus further obscuring the demarcation of formal boundary lines. Similarly, a hemiola pattern in the high strings further blurs the meter by placing alternating emphasis on beats 1, 3, and 2, respectively. This section achieves a maximum dynamic of *piano* and ends with a six-measure-long *poco crescendo* in the strings (mm. 72–78), the first of several extended parallel increases in loudness. Over the course of the section, the following instruments make their initial appearance: flutes 1, 2, and 3, oboes 2 and 3, English horn, French horn 1, harp 2, viola (desk 4), and cello (desk 3).

Intensification 2: mm. 78–97

Segregation as a result of changes in both rhythm and timbral width occur with the introduction of a melody at measure 78 played *senza sordina* by the front four desks of violin I and violin II. Beginning at measure 78, the low end of pitch space changes from stasis to motion, and becomes further intensified: first, by desks 1 and 2 of the contrabasses playing in unison followed by octaves (mm. 78–88), and second, by the addition of desks one and two to the articulation of octaves at measure 89. Violins I (desks 1-4), violas (desks 1-3) and flutes intensify the upper register (mm. 89–97) in parallel octaves. Flutes further intensify the texture at measure 96 when they switch from playing in octaves to playing in unison. This section achieves a maximum dynamic of *mezzo-forte* and ends with a three-measure-long *crescendo* (mm. 95–97). Additionally, the tempo increases (m. 86) for the first time in the work. Beginning at measure 86, an increasing articulation of space by individual inner voices within the string section occurs. Rhythmic intensification progresses from quarter notes at the beginning of the section to triplet eights (harp 1, violin 1, desks 5-8) and steady sixteenths (harp 2) by its end. The section concludes with crescendo beginning in measure 95 and continuing into the following section. Over the course of the section, the following instruments make their initial appearance: oboe 1, violin I (desks 1-4), violin II (desks 1-4), viola (desks 1-3), cello (desks 1 and 2), contrabasses (desks 1 and 2).

Intensification 3: mm. 98–111

Rhythmic intensity continues to accrue with the introduction of trill figures in violin I (four last desks). The crescendo begun in the previous section (m. 95) continues to accumulate intensity, reaching a level of *forte* in measures 105 and 106. The tempo increases at measure 103. Increased parallel motion (in octaves) in the lowest register (contrabass, cello, contrabassoon, bassoon), together with the changing intensity in the uppermost voice, combine to highlight the total span of articulated pitch space. Oboes “a2” double the first violins (front four desks) and second violins (first four desks) an octave below. The celesta enters shading the upper register with a rapid tremolo figure (mm. 105). Three trumpets add to the background texture, sounding a diminished triad at measure 103, and followed by the entry of the tuba at measure 110. Violins I and II unify (all desks) into a unison melody on beat two of measure 109, but a subtle shading effect is obtained due to the last four desks in each section continuing to play *con sordina*, while the front desks play without a mute.

Climax: **mm. 112–121**

Measure 114 (**Figure 6.5**) sees the full complement of brass instruments sounding, first with the entry of three trombones, and second with the French horns playing a unison ("a4") countermelody played *marcato*. Rhythmic intensification continues with the introduction of eighth-note triplets in the high register of the four flutes. Perhaps the most striking feature of the climax lies in the global sense of intensification Bartók achieves, all while the direction of most voices is firmly downward. Despite the descending nature of individual lines, one certainly continues to feel in a general sense that the texture thickens and intensifies, creating a perceptual illusion, a tension between a feeling of growth and even "upward-ness." Importantly, at measure 118, just prior to the apex, Bartók adds non-pitched noise in the form of two pairs of crash cymbals trilling while performing a crescendo.

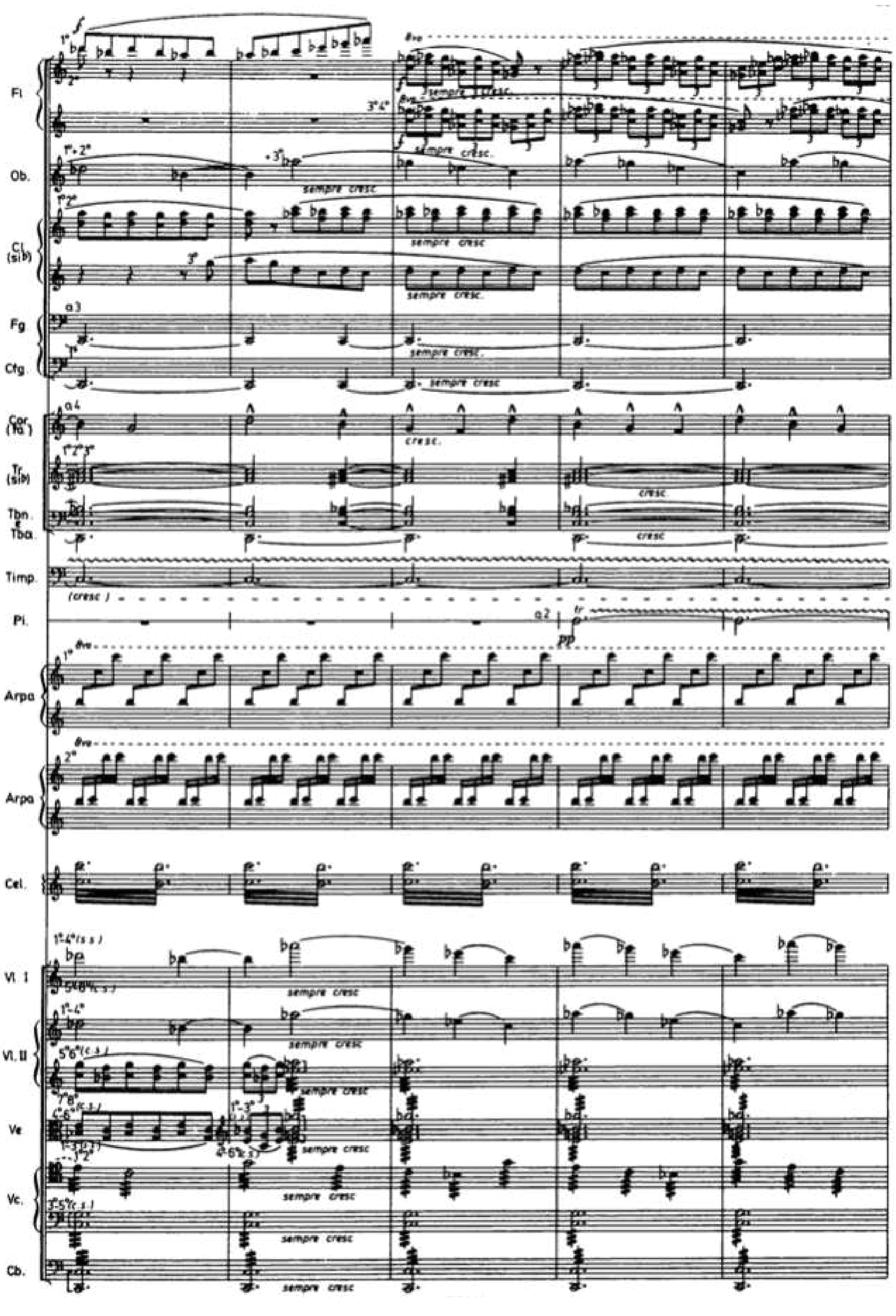

Fl.
Ob.
Cl. (si♭)
Fg
Cfg.
Cor. (fa)
Tr. (si♭)
Tbn. e Tba.
Timp.
Pi.
Arpa
Arpa
Cel.
Vl. I
Vl. II
Va
Vc.
Cb.
sempre cresc.
cresc.
a 3
a 4
a 2
8va
pp

Figure 6.5: Climax, *The Wooden Prince*, mm. 115–119.
Béla Bartók “Der holzgeschnitzte Prinz, Tanzspiel in 1 Akt, op. 13” © Copyright 1924, 1951 by Universal Edition A.G., Wien / UE6639. Used by permission.

***Apex and Dissipation:* mm. 122–136**

Rhythmic intensification reaches the final stage. Within the chaotic texture, every instrument except for the brass section plays trills or quasi trills, tremolo, thirty-second notes, or sextuplets. The texture is at its most busy and most saturated. French horns, trombones, and tuba sustain an extended dominant chord, while unison trumpets sound a descending triad. The overall dynamic level reaches *fortissimo* (m. 122) and begins to recede almost immediately beginning at measure 123, reaching *mezzo-forte* by measure 128, and continues to diminish until measure 131, where it levels off at *piano*.

At measure 128 (rehearsal number 8) the score is inscribed with the following instruction: "*Vorhang. Die Fee steht links am Fuße des Hügels, die Prinzessin sitzt im Walde*."[22] Initiation into both the dramatic and musical worlds being achieved, Bartók indicates that the curtain is to achieve its apex as the music completes its recession from climax. Here the so-called real world of the theatre seats, darkened and muted, ceases to exist. The curtain has risen, illuminating the make-believe world in which the story will unfold.

6.3 Ravel's *Daphnis et Chloé* ("Lever du jour")

6.3.1 Form and familiarity: Intensive eidetic contour

Unlike my analysis of Bartók's "Curtain" above, the formal functions assigned to Ravel's score follow precisely the composer's own instructions as indicated by rehearsal number markings.[23] **Table 6.1** outlines my interpretation of Ravel's formal scheme as a TYPE-2 sunrise . An average performance of the piece lasts no more than seven minutes, but curiously it contains no less than fifteen formal sections. With regard to formal organization, several features stand out. First, the formal sections can be divided into four contrasting functions: introduction, themes, climaxes, and interludes. Dissipation of built-up intensity, while no doubt formally functional, is only given separate function in Section 15 due to its extended length relative to previous instances. Given the small number of functions relative to sections, together with the four interspersed climaxes, the overall form displays rondo-like characteristics.

---

[22] "Curtain. The fairy is on the left at the foot of the hill, the princess is sitting in the woods."

[23] The full score of the ballet can be downloaded or viewed using the following link: http://ks.imslp.info/files/imglnks/usimg/5/58/IMSLP13069-Ravel_-_Daphnis_et_Chloe_(complete_score).pdf . *Lever du jour* begins on page 184 of the PDF.

Section	Function	Measures	Rehearsal number	Length (bars)
1	Introduction	1–7	155	7
2	Theme 1a	8–14	156	7
3	Climax 1 & Dissipation	15–19	157	5
4	Theme 2a	20–25	158	6
5	Theme 3a	26–30	159	5
6	Theme 3b (varied/extended)	31–37	160	7
7	Theme 2b	38–43	161	6
8	Theme 3c	44–48	162	5
9	Climax 2 & Dissipation	49–51	163	3
10	Interlude 1	52–54	164	3
11	Climax 3 & Dissipation	55–59	165	5
12	Interlude 2	60–61	166	2
13	Theme 1b	62–69	167	8
14	Climax 4	70–72	168	3
15	Dissipation	73–78	169	5

Table 6.1: Formal scheme, *Daphnis et Chloé*, Act III, *Lever du jour*

The three themes and their variations share many characteristic features—especially simple upward motion through pitch space combined with orchestral intensification that together create a lack of strong functional contrast. Moreover, together with their shared features, the relative simplicity of each allows the listener to deemphasize (or at least pay less attention to) melodic developments, such that listeners are better able to attend to changes in intensity and form. The simplicity of the melodic materials suggests an intention on the part of Ravel to draw attention specifically to changes along other parameters. This kind of simplified familiarity is reminiscent of ancient oratorical practice, where the constitution of vivid ekphrastic images depends on a simplified vocabulary and narrative strategies that allow the listener to be drawn more powerfully into the experience.

The irregularity of section length may serve to prevent easy parsing of the form, in essence thwarting the anticipation of local formal closure, and propelling the music forward by means of disrupted anticipation. The overall upward motion of the themes, together with their sonorous intensification, make up the majority of the work. However, it is the climaxes and their subsequent dissipations that reinforce the apperceptive image of overall brightening. Like the wave pattern created by dropping a pebble into still water, and like the Gustave Doré etching reproduced in section 2.5, the ordering, pacing and relative strength of the four climaxes across time form an apperceptive pattern—a sensory image of an intensifying emanation.

6.3.2 Spatialization and intensification

Whereas Bartók begins his sunrise in a dark and distant manner, Ravel begins his "Lever du jour" with an orchestral sonority that exudes an air of mystery, even murkiness, yet it also exhibits a veiled presence. As discussed above, even clearly segregated streams or strata can express a characteristic "sound," which becomes all the more elusive for failing to fuse into a coherent unity. The introductory theme comprises three distinct streams (reh. 155, mm. 1–7). The streams divide according to pitch space, segregating such that each occupies a specific tessitura, forming upper, middle, and lower voices. Each displays its own specific intensity, and together they form a coherent sonority. Perhaps unsurprisingly, the outer streams (bass and treble voices) emerge as more perceptually prominent than does the inner stream. All three can nonetheless be characterized as somewhat nebulous. These streams clearly exemplify the notion that streams may be perceived as segregated, even in the absence of clear timbral markers of boundary. The nebulous quality of the streams, like the overall uncertainty of the sonority, depends on our tendency to perceive sounds as bounded places within a musical space and on the capacity of the skilled orchestrator to frustrate that perceptual expectation.

Ravel orchestrates the upper stream, a rapidly undulating figure, in various combinations using two harps, a clarinet, a flute, and a celesta. The lower stream, shown in reduction below in **Figure 6.6**, encompasses a blended sonority composed of parallel octaves. The upper octave is sounded by the contrabasses (*divisi*, front desks) and the cellos (*divisi*, back desks), blending at the unison, and shadowed one octave lower by the contrabasses (*divisi*, back desks). By doubling the upper octave (and not the lower one), Ravel gives increased prominence and slight qualitative tension to the clearer, more perceptually salient location in pitch space, achieving both a sense of clarity as well as a shadowy underscoring—a faint but perceptually important thickening an octave lower.

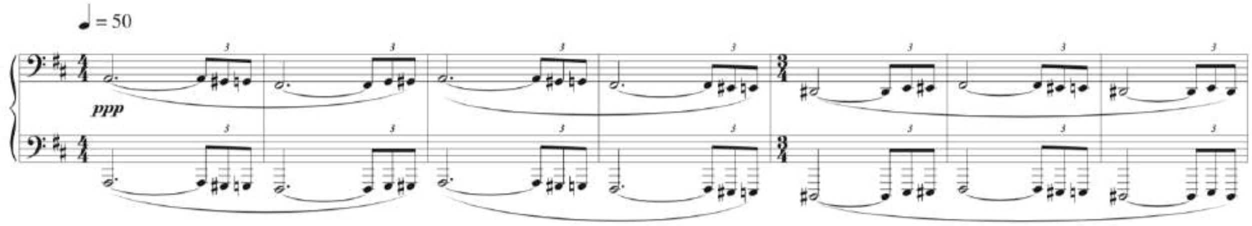


Figure 6.6: Reduction of the low stream, *Daphnis et Chloé*, Act III, mm. 1–7. Reh. 155

The middle stream is orchestrated such that it alternates between two instrumental groupings, creating an oscillating two-measure pattern that first melts into relative perceptual obscurity as a background sonority (violins I and II, violas (*divisi*) measures 1, 3, 5, 7) before "surfacing" as a fully perceived stream (muted French horns, unmuted and *divisi* violas and cellos playing harmonics, measures 2, 4, 6). With each iteration, the pattern thickens either by the subtle addition of timbre (violins I in measure 5), increasing spatial density (added pitches), or by expanding the register. At measure 5, the meter contracts by one beat adding a very slight intensification to the overall passage. Orchestration of the introduction's upper stream is discussed below in section 6.4.3.

The main theme (Theme 1a) of "Lever du jour" makes use of a short three-beat figure that undergoes six upward transpositions in rapid succession covering a total span of four octaves (mm. 8–14, see **Figure 6.7**). Relative to the two-measure grouping of the opening theme, the compression of Theme 1 into one measure units serves to rhythmically intensify the music's flow even as the music spans more and more pitch space. Beginning at measure 10, the addition of upper octaves further expands the already growing register, helping to reinforce the overall sense of expansion.

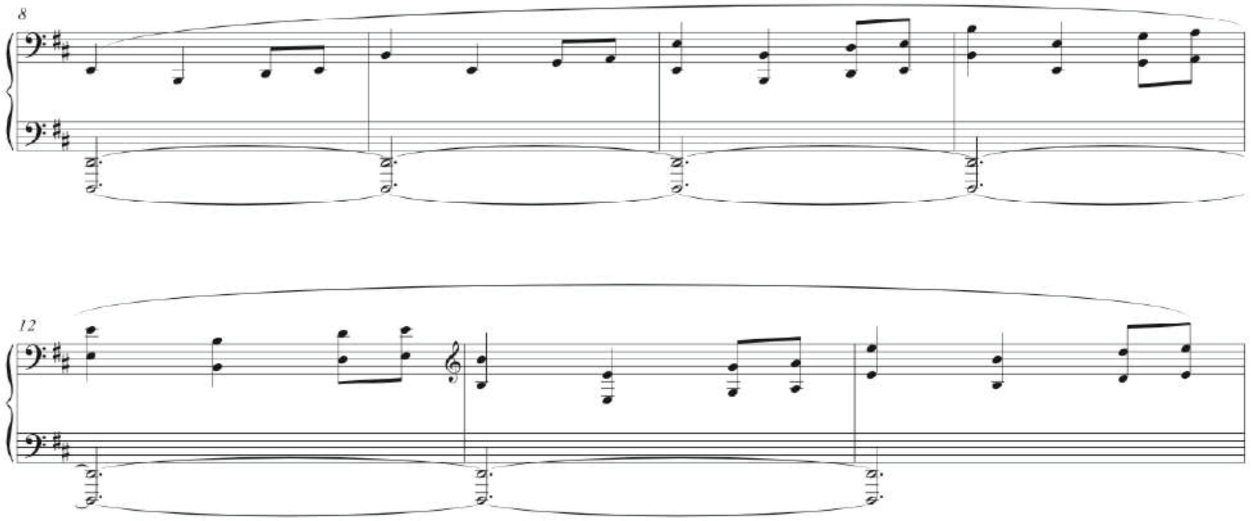


Figure 6.7: Registral expansion, *Daphnis et Chloé*, Act III, piano reduction, mm. 8–14, Reh. 156

Curiously, Ravel’s orchestration of the ascending theme serves to subtly distinguish the simultaneous octaves, creating a slight tension between full fusion and partial segregation that is ultimately perceived as slight colouration and shimmer. **Table 6.2** details the intertwined and escalating timbral blends that colour the theme and separates the instruments assigned to the lower and upper octaves. Instruments highlighted with the colour green represent changes in orchestration relative to the previous measure for each voice. Lack of highlighting indicates those instruments that remain sounding in a particular voice relative to the previous measure. The staggered brightening of each voice, together with the alternation of several instrumental identities between octaves creates a very weak sense of timbral sequencing. Ravel’s escalation of blended timbre, while not quite a timbral sequence, serves as an intricate if subtle example of what Goodchild and McAdams (2018) term *progressive orchestration*.

Measure	**Specific Intensity in Pitch Space**	
	LOWER OCTAVE	**UPPER OCTAVE**
8	Contrabasses (*divisi*, front desks), Bassoon 1	(no upper octave)
9	Contrabasses (*divisi*, front desks), Bass clarinet	(no upper octave)
10	Contrabasses (*divisi*, front desks) Bassoon 2	Cellos (*divisi*, front desks), Bassoon 1
11	Contrabasses (*divisi*, front desks), Bassoon 2	Cellos (*divisi*, front desks), Bassoon 1, Bass clarinet
12	Cellos (*divisi*, front desks), Bassoon 2, Bass clarinet	Violas (in unison), Bassoon 1
13	Cellos (*divisi*, front desks), Violas (divisi, back desks), Bassoon 2, Bass clarinet	Violas (*divisi*, front desks), Bassoon 1, English horn, Alto flute
14	Cellos (*divisi*, front desks), Violas (in unison—all desks),Bassoon 1, Bassoon 2, Clarinet 2	Violin II (all desks), Clarinet 1, Clarinet in E♭,

Table 6.2: Progressive orchestration of Theme 1, *Daphnis et Chloé*, Act III.

As if the recursively brightening nature of the music, together with the work's first subtitle, were not enough to convince us that Ravel indeed intends to create a sunrise, the appearance of descriptive indications and depictive sonic pictorialisms serve to solidify the music's purpose. As the first theme begins, Ravel indicates in the score that "Peu à peu le jour se lève" (m. 8).[24] One measure later he writes "On perçoit des chants d'oiseaux" (m. 9).[25] The first indication coincides with the initial upward striving of the first theme, while the second calls attention to three solo violins and a solo piccolo as they articulate mimetic representations of bird song.

6.3.3 Apperception of increasing luminosity

Taken together across time, the progressive intensification of the four climax sections create an apperceptive contour of increasing luminosity. Pitch height, total pitch span, loudness and specific intensity combine with build-up, sustain, and subsequent dissipation to imbue each climax with relative brilliance. Importantly, the defining kinetic character of each, except for the penultimate third climax, is the downward transposition of a descending one-measure figure.

---

[24] "Little by little day awakens."

[25] "We hear birds singing."

6.3.4 Timbral sequencing, perceived depth, and the *z*-axis

Ravel makes striking use of depth by manipulating orchestral timbre along the *z*-axis. Throughout “Lever du jour,” a rapid and blurred stream rises to and recedes from perceptual prominence according to its careful orchestration along the *z*-axis. **Figure 6.8** shows the opening instance of the stream, played first by two flutes, followed by two clarinets.

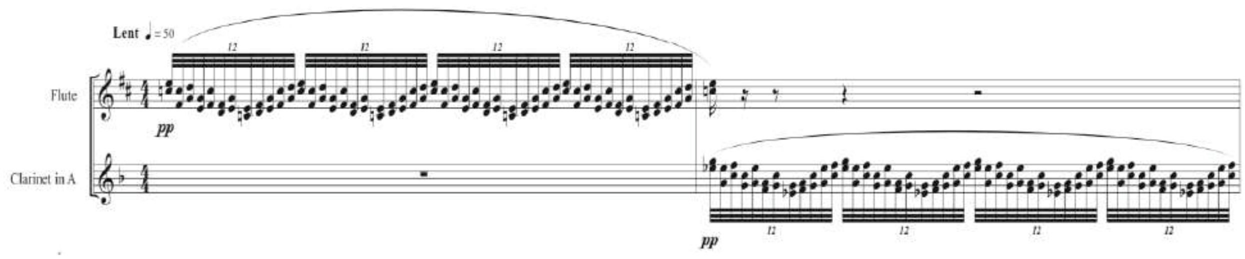


Figure 6.8: Undulating upper stream, *Daphnis et Chloé*, Act III, mm. 1–2

The sequencing of timbral changes employed by Ravel (up to measure 25) is demonstrated in **Table 6.3.** Though the timbral sequence extends continuously across the entire movement, perhaps its most noteworthy instance occurs in measure 15, where Ravel passes the stream to the violins. Although in physical space, the violins exist downstage (foreground) in the orchestra—the most proximate sound to listeners—their articulation of this blurred stream exists in the background of the auditory scene. Green highlighting indicates the first instance of a timbral identity within the sequence.

Measure	**Orchestration**	**Measure**	**Orchestration**
1	Harp 1, Flutes 1&2	10	Harp, English Horn, Oboe, Alto Flute, Flute 1
2	Harp 2, Clarinets 1&2	11	Harp, English Horn, Oboe, Alto Flute, Flute 1
3	Harp 1, Flutes 1&2	12	Harp, Clarinets 1&2, Oboe, Flute 2
4	Harp 2, Clarinets 1&2	13	Harp, Clarinets 1&2, Oboe, Flute 2
5	Celesta, Flutes 1&2	14	Harp, Bass Clarinet, English Horn, Oboes 1&2, Alto Flute, Flute 2
6	Harp 2, Clarinets 1&2	15-16	Violins I (*div*. in 4), Harp 1, Bass Clarinet, Clarinets 1&2, E-flat Clarinet
7	Celesta, Flutes 1&2	17-18	Violins I (*div*. in 4), Harp 1, Alto Flute, Flutes 1&2
8	Harp 2, Clarinets 1&2	19	Violins I (*div*. in 4), Harp 1, Alto Flute, Flutes 1&2
9	Harp 2, Clarinets 1&2	20-25	Violins II (*div*. in 4)

Table 6.3: Orchestration of the undulating stream, *Daphnis et Chloé*, Act III, mm. 1–25

6.4 Summary of Case 1

Type-1 Strategies

TYPE-1 forms display a broadening and brightening orchestral contour where intensification occurs across several parameters and whose changes co-vary in a general sense. Changes to parameters often happen in staggered succession and in close temporal proximity. This is especially evident in the measures immediately preceding and following formal boundaries. Noise elements and brass sonorities become more prominent in the moments just before the apex of the climax. In retrospect, we can speculate that the six-beat window given by Bartók to initiate the curtain's rise (mm. 32–34) indicates that he had at some point timed and coordinated the curtain's speed, ensuring the parallel pacing and unfolding of both the music and the overall visual luminosity in the hall. Compositions such as Bartók's "Curtain" that are structured to display the seamless articulation of a single unified contour must necessarily also display formal ambiguity between sections. TYPE-1 formal strategies cannot articulate easily apprehended contrast from section to section and so do not stress familiarity in the same way that TYPE-2 strategies must.

Type-2 Strategies

Bartók is clearly focused on the stage curtain as a liminal object whose world-mediating capacity bisects dark from light. Ravel, on the other hand, aims to evoke the mysterious and reflective mood of the morning, which opens into a world populated by ethereal, supernatural beings. To achieve this end, he employs a number of strategies that enhance uncertainty, instability, and variability in the segregation and stratification of streams and groupings. These techniques enhanced the effect of a recursive form, which cycles through the accumulation and dissipation of energy. For the listener, the combined effect of these techniques is to create both the anticipation of an energetic contour and the erratic frustration of climax—all without sacrificing the overall experience of accumulation over the course of repeated cycles. The cycles of accumulation and dissipation characteristic of the TYPE-2 sunrises make possible a longer elaboration of the sunrise that balances (a) the overall energetic contour of growing energy with (b) the local directionality of growth. However to achieve both ends, the TYPE-2 sunrise makes additional demands on the listener's memory, attention, and concentration. The recurrence of familiar melodic and thematic material allows one to attend not only to the development and variation of simplified melodic and harmonic content, but also to the changing energy supplied by the composer's orchestrational strategies.

6.5 Case 2: Sunsets

Given the binary opposition between sunrises and sunsets as complementary markers between night and day, we might expect that orchestral sunsets would display a steady decrescendo as their primary formal feature, reversing as it were the energetic contour of the rising sun. This is not, however, the approach taken by composers of orchestral sunsets. Indeed, steady and even linear decrease in energy does not appear to work either as a successful strategy for creating the apperception of the contour of dissipating energy, or as a structure for creating a pleasing musical form. Linear increase is more easily apperceived both for its luminosity as well as for its musicality, for the simple reason that it increases attentional salience and somatic excitation. The sunrise demands attention as it develops. If a sunset begins with maximum attentional salience and declines progressively and without variation, the risk of listener disinterest and disengagement is high. If orchestral sunsets are not merely inverted sunrises, then what are they and what strategies are employed?

As with the TYPE-2 sunrise, familiarity takes on a structural formal role as a support for apperceptive processes. The recurrence of familiar musical materials provides a mnemonic and attentional reference against which the dissipation of energy can be experienced as a clear trajectory. Because familiar materials are attentionally salient, they reengage listener attention even as the music itself becomes less arousing. Accordingly, formal structure in orchestral sunsets is defined by the recursion of familiar materials that vary along several parameters, delivering a temporally formed contour of progressive dissipation of energy. The dissipating energy of the sunset may be realized through progressive lowering of pitch height, contracting pitch range, relaxation of sonorous tension, increasing duration, and darkening timbre. Moreover, as is the case for objects in the fading light of the sunset, the boundaries between simultaneous and successive streams, groupings and strata become blurred. Musical objects begin to lose their definition as energy dissipates from the scene. One might say that the identity of individual streams and groupings melts or bleeds together as segregational boundaries fail and while stratified groupings begin to blend. Moreover, the recursive form of the sunset, like the TYPE-2 sunrise, has characteristically rondo-like features, where the recurrence of familiar material becomes a vehicle for the apperception of differences in luminous content.

However, despite the similarities between TYPE-2 sunrises and the sunset, there are also important differences in the overall energy contour. Orchestral sunrises often begin from near silence, and may build tension and anticipation for extended time-spans. Because the performance begins from silence (under optimal performance conditions), the composer may probe in the first moments of intense concentration the boundaries between the audible and the inaudible, between the musical and what is merely noise. However, in descending from a peak of musical cohesion, the sunset cannot merely fade out, but instead must communicate dissipative energy across several parameters while retaining listener interest in more rarified musical materials. Thus, even as overall energy declines, listener attention becomes focused on a single stream, grouping or sonority that may be identified as the material essence of the *eidos*. Whereas the sunrise comes from nothing to express maximum intensity across all parameters, the sunset dissipates to reveal a singular, almost spiritual identity of the music itself.

6.6 Rimsky-Korsakov's *Night on Mount Triglav* ("Apparition des ombres")

6.6.1 Form and familiarity: Diminishing return

General Form (Rondo-like)

Rimsky-Korsakov's Prelude to the third act of the opera *Mlada*, titled "Apparition des ombres," paints the rapidly setting sun and subsequent dusk as an introduction to the nocturnal setting of Act III.[26] The movement displays rondo-like formal characteristics, consisting of six clear sections with three formal functions: A, B & C (**Table 6.4**). Section A suggests the descending motion of the sun through a repeated four motive phrase, B introduces thematic elements, and C presents a theme followed by a large climax.

Section	**Measures**	**Length** (bars)
A	1–45	46
B	46–53	8
A'	54–63	10
A"	64–103	34
B'	104–115	12
C	116–127	11

Table 6.4: Rondo form, *Apparition des ombres*.

Presentation of an "eidetic image"

Section A presents what I will call an *eidetic image*. The basic phrase structure (mm. 1–17) contains easily recognizable features that are strongly defined, especially in comparison to other contrasting materials within the work. The "image" consists of four motives that are presented sequentially (labelled below as: X-a, Y-a, Y-b, and Y-c). I call this image an *eidetic image* because it is the familiar and recognizable bearer of the progressive changes that together trace the energetic contour of the overall *eidos*. Each of the four component motives presented in the eidetic image will undergo transformations throughout the work and can appear individually in different contexts. Nevertheless, the overall eidetic image retains its identity even as its components change across various parameters. The result of this transformation of relations internal to the image creates a sense of holistic change within the eidetic image itself. It is through this ingenious and easily apperceivable mnemonic technique that Rimsky-Korsakov is able to convey the overall energetic contour of the work, even as it contrasts with an intensification in surface detail across a range of parameters.

---

[26] The score of the ballet's third act can be downloaded or viewed using the following link http://ks.imslp.net/files/imglnks/usimg/0/09/IMSLP23411-PMLP46699-Rimsky_Mlada_Act3_OrchAlone_Harvard.pdf

Four constituent motives

Motive *X-a* comprises a B major triad presented as steady dotted half-notes in a descending arpeggio that spans four octaves from F#5 to F#3 for a total duration of 9 measures (mm. 1–9) (**Figure 6.9**).

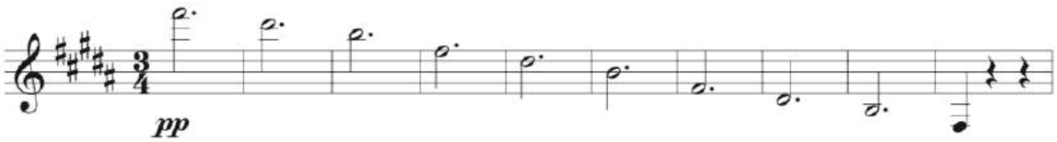


Figure 6.9: Motive X-a, *Apparition des ombres*.

Motive *Y-a* functions as a consequent to *X-a*, and features two overlapping ascending-descending contours (**Figure 6.10**). The lower contour spans six beats, or two measures, and comprises a B major triad arpeggiation. The upper contour replicates the lower one in rhythmic diminution at the eighth-note triplet, where three sequential iterations, for a total of six beats, superimpose concurrently over the lower contour to create a rhythmic hemiola. It may appear at first that motive Y-a behaves less like a motive and more like a mere accompaniment to the subsequent motives Y-b and Y-c, into which it elides. However, as the movement progresses and the phrase repeats, the sequential position occupied by the first few measures of Y-a take on increased delineation and articulation.

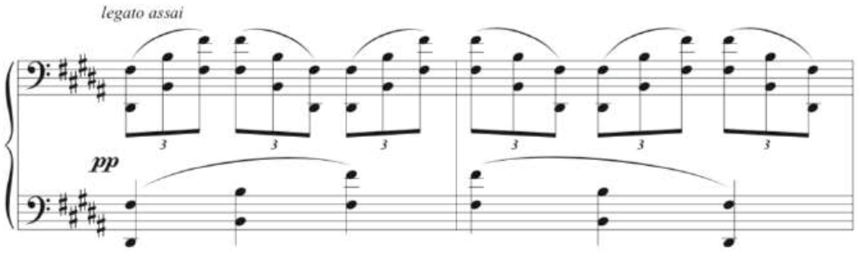


Figure 6.10: Motive Y-a, *Apparition des ombres*

Motives Y-b and Y-c both overlap motive Y-a and form a second antecedent-consequent pairing (**Figure 6.11**). The three-note ascending figure labeled Y-b comprises a major second followed by a minor third, spanning a perfect fourth in total. Y-c can be understood as a harmonized rhythmic diminution of Y-a, where the upper voice traces the aforementioned contour (ascending major second followed by an ascending minor third).

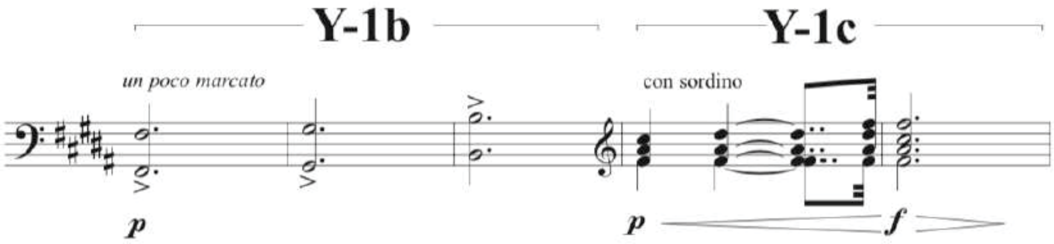


Figure 6.11: Motives Y-b and Y-c, *Apparition des ombres*

The combination of X-a and the three Y motives as presented sequentially form an antecedent-consequent phrase that will be repeated nine times throughout the work.

6.6.2 Spatialization and specific intensity: Saturation

As exemplified below in **Figure 6.12**, Rimsky-Korsakov saturates pitch space by sustaining the individual tones of motive X-a in a timbrally expanding downward gesture. The measured sustain of each entry creates the impression of increasing saturation and luminous presence, even as the arpeggio descends into lower registers, suggesting both the descending arc of the sun and subsequent recession of luminosity, not only in pitch and sustain, but in the specific intensity of timbral progression in conjunction with spatial changes. The steady descent of the resonant sonority produces the impression of both expansion and darkening through changes in register and instrumentation. High, bright woodwinds blended with muted strings elide smoothly, giving way to horns, bassoons, and low strings.

At the onset of Y-a, the descending arc comes to an end and the gesture settles into a sustained chord in the low brass. Low woodwinds sustain a static chord (with one contrabass as reinforcement). At the same time, the lower register becomes rhythmically activated through two overlapping cyclical patterns with contrasting rhythms.

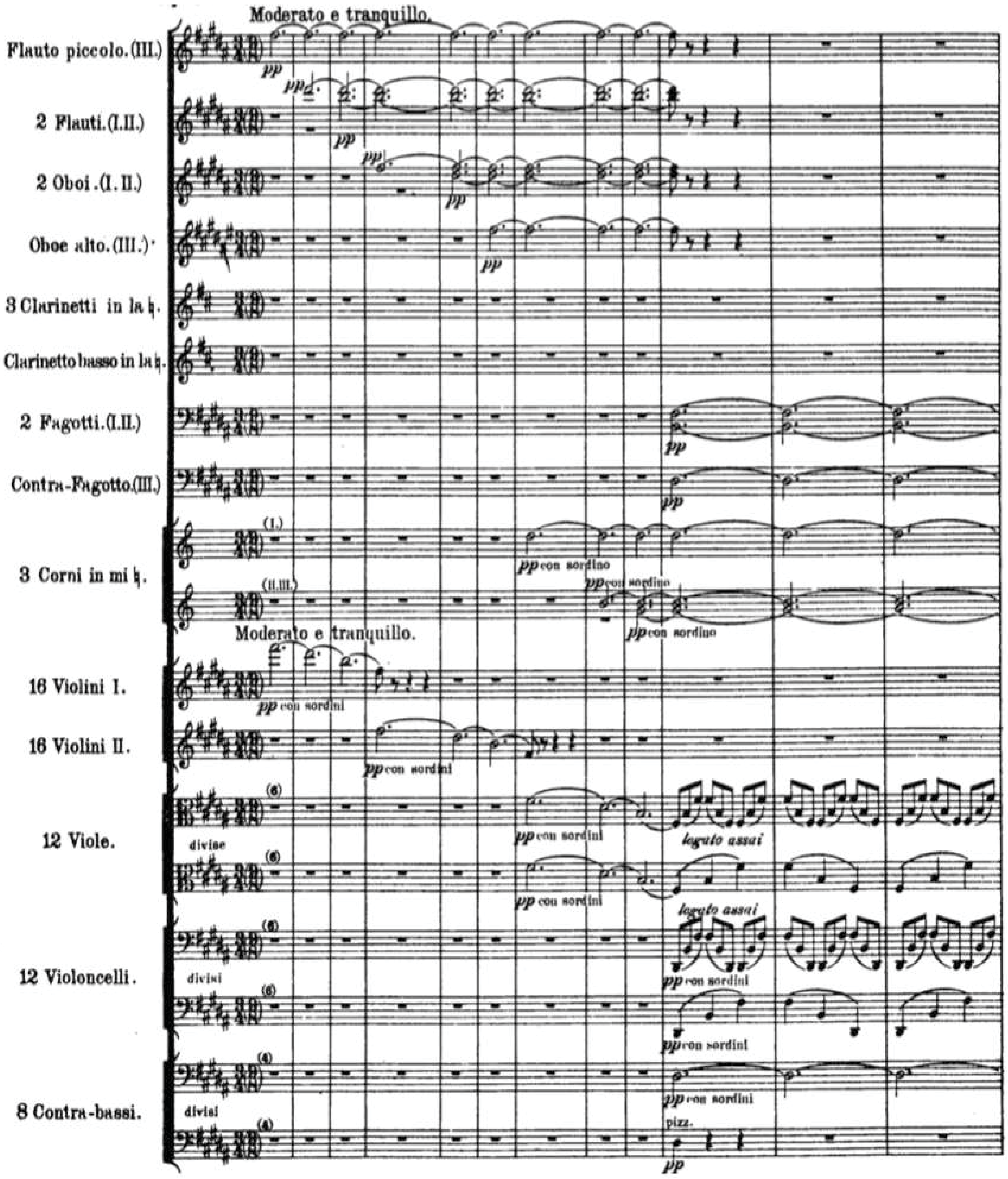

Moderato e tranquillo.
Flauto piccolo. (III.)
2 Flauti. (I.II.)
2 Oboi. (I. II.)
Oboe alto. (III.)
3 Clarinetti in la ♮.
Clarinetto basso in la ♮.
2 Fagotti. (I.II.)
Contra-Fagotto. (III.)
3 Corni in mi ♮.
16 Violini I.
16 Violini II.
12 Viole.
12 Violoncelli.
8 Contra-bassi.
pp
pp con sordino
pp con sordini
legato assai
divise
divisi
pizz.

Figure 6.12: Saturation effect, *Apparition des ombres*, mm. 1–12.

As noted above, Y-b and Y-c together form a second antecedent-consequent pairing. In its first iteration at measure 13, motive Y-b can be characterized as a weak and diminutive ascent—a contrasting reply to X-a that lacks the power to re-ascend the entire gamut of previously presented pitch space. Two clarinets play the upper octave in unison, doubled one octave lower by the bass clarinet (mm. 13–15). Rimsky-Korsakov indicates additional articulation (accented notes and the performance direction *un poco marcato*) to ensure that the motive fully segregates from the related low tessitura of Y-b. Motive Y-c, played by four French horns, answers the clarinets. Importantly, the muted horns sound somewhat more distant along the *z*-axis. In fact, taken together, the four motives display a contour that descends, darkens, and diminishes in sonic presence in a sequentially progressive manner, producing a single unified image. In my opinion, this unified image serves as a musical ekphrasis describing the progression of the setting sun (X-a), its disappearance below the horizon (Y-a), followed by two further stages of decreasing luminosity (Y-b, Y-c). Moreover, as described below, the various transformations of the eidetic image over the course of the work further support my claim.

6.6.3 Spatialization and familiarity: Motivic contraction across iterations

Rimsky-Korsakov structures Section A as four iterations of the eidetic image: an initial presentation, followed by three repetitions. With each repetition, motive X-a undergoes rhythmic contraction. As demonstrated in **Figure 6.13**, Rimsky-Korsakov's method of contraction is rather simple. As noted above, iteration one (marked from now on as X-1a) is structured rhythmically in dotted half-notes. Motive X-2a, the second iteration, reduces the governing rhythmic value to half-notes, while retaining the descending pitch content. X3-a further diminishes note values to quarter notes, contracting the pitch sequence from ten pitches to seven, while retaining the total pitch span. X-4a retains the contracted pitch material of X-3a and syncopates the quarter-note rhythm.

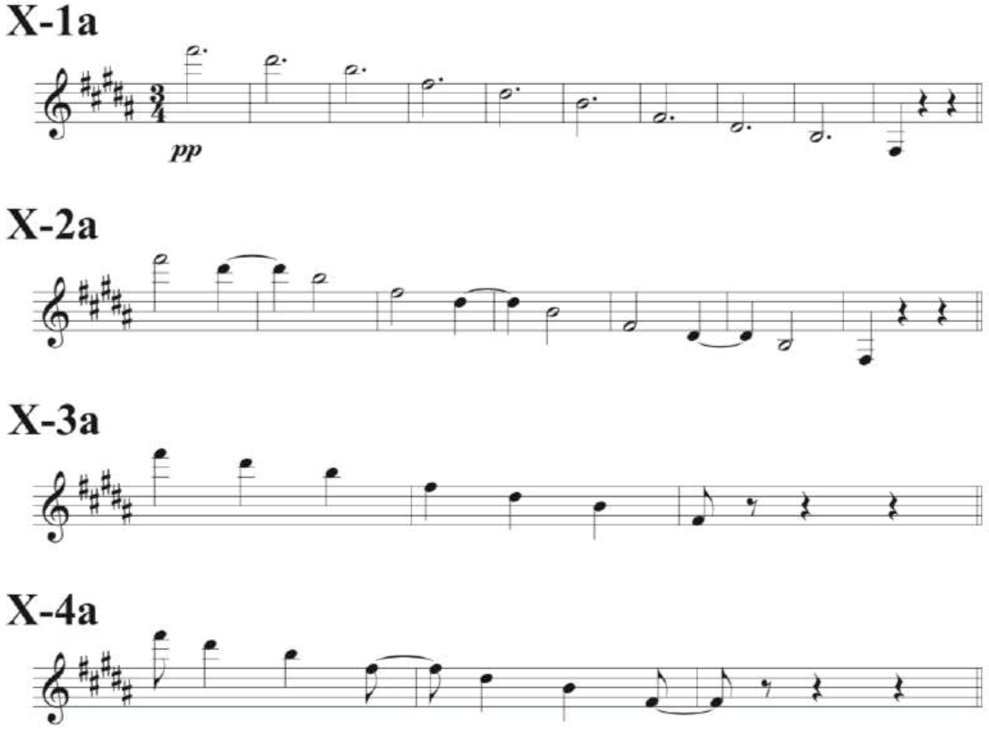


Figure 6.13: Three contractions of motive X-a, *Apparition des ombres*.

6.6.4 Texture and sonority: From clarity to opacity

The ingenuity of Rimsky-Korsakov's construction of a luminous contour is not easily reduced to any one exemplary component, but arises instead from a combination of techniques and variations across many different musical parameters over the course of the prelude. However, it is in the formal design of the work that his strategy is most clearly observable (**Table 6.5**, below—yellow highlights indicate noteworthy changes to regularities, blue highlights indicate progressive changes to orchestration to motive Yb, green highlight indicates a particularly complex variation of X-5).

The well-ordered structure of the eidetic image, the combination of X-1 and Y-1 (Y-1 refers to the collection of the three Y motives) is first presented in an extended passage of ten and eight measures (18 in total). The image is repeated another three times, with X undergoing a rapid contraction through reduced note duration. The Y component however is only modestly compressed, reducing in length from 8 measures to 6 for the three repetitions of Section A. The repetition of the eidetic image serves as a familiar and identifiable carrier of the suggested contraction. At the same time, however, the whole of the eidetic image undergoes a distortion as the relation between its component parts shifts. When X is presented a third time (X-3, m. 30), a significant change is signalled through the indication to raise the curtain. The stage direction also signals an upcoming formal change: as the B section begins (m. 46), we are now fully immersed in the dramatic world of the stage after the sunset, and the relative clarity of the opening section becomes increasingly opaque as luminosity diminishes. The thematic material of B, however, is an elaboration of the Y-b and Y-c motives into a thematic component. As noted above, the four component parts of the eidetic image can appear individually and undergo independent transformations, as is the case for the Y motives in B.

Further figural additions include an ascending arpeggio played first by a solo cello and continued in the upper register by a solo violin (X-2, mm. 18–22). This upward arpeggiated pattern takes on an increasingly important role, especially beginning with the B section at measure 47 (violins I and II). Moreover, the ascending arpeggio figure undergoes textural multiplication and variation (mm. 51-63), helping to blur the boundaries between sections A and B, as well as blurring the previously clear divisions between motives within sections. At measure 70, the ascending arpeggio figure first introduced at measure 18, returns played by three harps and stabilizes, occupying the three-measure span that I identify as motive Y-a.

A final and conspicuous transformation merits attention because of its progressive change to the apperception of luminosity. Over the course of sections A' and A", motive Y-b undergoes significant changes to both rhythm and orchestration that together, help the listener to track luminosity over time. First presented by two clarinets doubled at the octave by the bass clarinet (m. 13), subsequent iterations contract rhythmically (mm. 26, 34, 42), expand spatially (mm. 34, 42, 60, 73), and articulate rapidly repeated notes (mm. 73, 84, 92, 100). Moreover, progressive changes to the orchestration of Y-b (highlighted in blue in **Table 6.5**) produce increasingly brighter, but perhaps paradoxically, weaker iterations. This temporally extended orchestral contour may serve as a depiction of the final changes in luminosity after sunset, as beautiful arrays of colour seem to dance brightly in the darkening sky—especially with the presence of clouds that, given their relative height, are able to refract the last rays of the already sunken sun.

Section	**Iteration**	**Measures**	**Length** (bars)	**Remarks**	**Orchestration**
A	X-1	1–9	**10**	Dotted half notes	Violins 1-2-violas, flutes-oboes-horns
	Y-1	10–17	8		3 clarinets, bass clarinet, low strings, bassoons, horns
	X-2	18–23	**6**	Half notes, Ascending arpeggio (solo cello and solo violin)	Violins 1-2-violas, flutes-oboes-horns, solo cello-solo violin, (bass clarinet drone)
	Y-2	24–29	6		3 clarinets, bass clarinet, low strings, bassoons, horns
	X-3	30–31	**2**	Quarter notes	Violin 1-2, flutes-oboes-horns solo cello, (bass clarinet drone)
	Y-3	32–37	6	Curtain rises slowly	3 clarinets, bass clarinet, low strings, bassoons, horns
	X-4	38–39	**2**	Syncopated quarter notes	Violin 1-2, flutes-oboes, solo cello, (bass clarinet drone)
	Y-4	40–45	6		3 clarinets, bass clarinet, low strings, bassoons, horns
B		46–53	8	Thematic with textural arpeggios	Alto Oboe, 3 horns, violins (*divisi*), low strings
A’	X-5	54–57	**4**	Complex variation, Textural elision	Flutes-oboes, 3 clarinets-bass clarinet-horns & low strings
	Y-5	58–63	6	Elided (no Yc)	Yb: 2 oboes-2 flutes (low strings pizz.)
A”	X-6	64–69	**6**	Clear arpeggios, String trills	Flutes-clarinets-horns, solo cello and solo bass clarinet-solo violin
	Y-6	70–77	8	Added “B” element	Yb: Harp-glock.-2 oboes-2 flutes
	X-7	78–81	**4**		
	Y-7	82–87	6	Added “B” element	Yb: Harp-glock.-2 oboes-2 flutes-piccolo
	X-8	88–89	**2**		
	Y-8	90–95	6	Added “B” element	Yb: Harp-glock.-2 oboes-2 flutes, violins 1,2
	X-9	96–97	**2**	Syncopated quarter notes	
	Y-9	98–103	6	Added “B” element Extended Ya	
B’		104–115	12	Sequenced Theme	
C		116-127	11	Climax and dissipation	

Table 6.5: Detailed overview of formal components, *Apparition des ombres*.

6.7 Schoenberg's *Gurrelieder* ("Vorspiel" and first song)

6.7.1 Formal considerations

In his thematic guide to the *Gurrelieder* prepared for the general concert goer, Schoenberg's acolyte and former composition student Alban Berg makes a revealing observation concerning the prelude to the work:

> Also the Prelude to Part I [mm. 1–92] (which amounts to a completely new symphonic form) is both an introduction to the whole work with regard to thematic material and a form in itself, considered alone or together with the first song of Waldemar. For not only does this introduction have almost all of its themes, harmonic progressions, and the key in common with the first song, it also appears to me to be like a giant cadence reaching into the distance. (Berg and Simms 2014: 13–14)

Berg links the materials of the Prelude to the subsequent song, which was written some years prior to the completion of the *Gurrelieder*. Perhaps more strikingly, his remarks also point to an overriding formal contour that to his mind suggests motion along the *z*-axis. That an entire movement could be apperceived as "reaching into the distance" suggests that the large-scale formal arrangement of musical materials, together with their sonorous embodiment as timbral structures over time, can in fact convey depth or a receding over an extended apperceptive span. As I hope to demonstrate, the retreat of materials into an apperceptive dimension is what conveys the dwindling luminosity of a sunset in the Prelude of the *Gurrelieder*. Indeed, Berg characterizes the form of the Prelude as a novel invention. This novelty, I claim, results from Schoenberg's rich sense of music's potential as an ekphrastic medium. As I also hope to demonstrate below, Schoenberg achieves the vibrant and vivid description of a sunset, inspired by both a pre-existing text and a pre-existing musical work, by fusing form and material into a stunning orchestral achievement.

In my opinion, the Prelude's formal innovation stems from Schoenberg's desire to demonstrate the full potential of the orchestral medium capable of describing the decreasing luminosity of a sunset, not only as an ekphrastic expression of a text, but also as a fully formed, stand-alone unified sensory image—one that subsumes and integrates his own earlier attempt to paint dusk in music. In order for the cross-modal image to be apperceived, Schoenberg devises a series of intricate motivic relationships whose interactions and variations can be easily apprehended—a necessary condition for the apperception of changes in luminosity across time. Form, articulating familiar motives, becomes the vehicle for the delivery of a vivid sonic picture.

Lawrence Zbikowski notes that for Schoenberg, "comprehension starts with recognition, and recognition starts with basic musical figures, which he came to call motives" (Zbikowski 1999: 2). Zbikowski continues:

> According to Schoenberg, then, the process of comprehension starts with recognizable bits (motives) that are easily remembered. Motives hang together not only because their constituent parts are connected to one another, but because these connections emphasize similarities to other motives. Coherence thus reflects properties shared by collections of motives; it is not, properly speaking, a property of any one individual motive. Motive forms are of necessity variable, for differences between forms reveal most clearly what is typical of the collection of motives as a whole. And, although attention to coherence is important to the composer who wishes to craft a convincing work, the apprehension of coherence is essential to the listener who would make sense of that work. (Zbikowski 1999: 7)

Zbikowski's insight concerning the relation between motivic arrangement and apprehension comes to bear on the apperception of luminosity in the Prelude to the *Gurrelieder*. However, motives alone cannot suffice for an enargic description of sunset in music. They require a temporal container, a formal arrangement that best conveys their capacity for transition from bright to dark. Schoenberg achieves a large-scale darkening first by beginning the work in a state of relative sonic brightness. The spatial and temporal arrangements of motivic components in the opening section of the Prelude, together with their timbral realization, form a bright and well-ordered point of departure. Over time, orderliness loosens, giving way to relative irregularity. Similarly, luminosity recedes, fading into a timbral haze. Throughout this transition, Schoenberg masterfully guides our attention, enhancing our apperception of the changes to sonorous luminosity by re-articulating familiar motives and gestures as they descend and darken across a significant apperceptive span.

My analysis focuses upon the organization and orchestral vivacity of the constituent motivic and gestural materials that make up the Prelude (mm. 1–92), demonstrating also their continuation and conclusion in the first song of the cantata (mm. 93–188). In the accompanying score (located in **Appendix B**), motivic function is identified using coloured solid outlines to denote shared function across instrumentation. Formal sections are indicated in blue boxes and when required outlined by coloured dotted lines.[27] **Table 6.6** diagrams Schoenberg's organization of formal components into three overarching formal functions: what I term an A section with its related sub-components, Contraction Sequences, and a relatively short but increasingly important Pickup. The Prelude elides into the first song titled "Nun Dampft die Damm'rung."

Section	**Measure**
Introduction	1-2
A	3-22
Parametric Drift	23-31
Contraction Sequence 1	32-38
Pickup 1	39
A'	40-53
Climax	54-59
Contraction Sequence 2	60-65
Pickup 2	66-67
A"	68-84
Contraction Sequence 3	85-87
Pickup 3	88-92
Song 1: "Nun Dampft die Damm'rung"	93-188

Table 6.6: Overview of the form, *Gurrelieder*, Prelude and first song

---

[27] Time stamps in the analysis located in Appendix B correspond to Simon Rattle's impeccably clear 2002 recording with the Berlin Philharmonic, released by EMI Classics (EMI 5 5730302). For subscribers, the recording is available on the Naxos database (search term: "Rattle Gurre-lieder").

6.7.2 Spatialization

Articulation of specific place

The opening section of the Prelude serves to familiarize the listener with the basic motivic material of the movement (and subsequent song) and their unification into a bright orchestral sonority. Schoenberg organizes the basic phrasing into binary 2-bar units where the first bar acts as a call, followed in the second bar by a response (mm. 3–4). Several motivic components, parsed by spatial alignment and timbre, cohere to form each half of the binary phrase. A two-measure introduction (mm. 1–2) articulates the least conspicuous elements of the overall texture—what will become the least audible layers of an intricately segregated and stratified sonority. Oboes 3 and 4 sound a droning perfect fifth in the middle register. Flutes 3 and 4 play a rapidly oscillating figure above the drone. Lastly, the back four desks of the violin II section play a shimmering v-shaped figure (marked in green). All of these components fade into the background at the beginning of section A (m. 3).

Brief pointillisms that appear and later fade out of textural prominence characterize section A (mm. 1–22). First, a series of v-shaped motives overlap, interlocking to form a syncopated and general descent and rise (measure 3, piccolos 1 and 2, flutes 1 and 2, violins I and II [desks 5 and 6], all marked in dark blue). An arpeggiated chord played initially by the first harp punctuates the onset of the two-bar antecedent (measure 3, marked in purple). The consequent function proliferates the v-shape primarily as triplets (measure 4, piccolo 4 and harp 2, marked in green). Rhythmic and timbral shimmer colours the second half of the consequent (measure 4, violins I and II [back four desks], also marked in green). Harp 1 and French horn 3 merge the two binary elements by continuing the syncopation of the antecedent "behind" the consequent (measure 4, marked in blue). Two trills from E*b* to F further activate the background layer, the first (piccolo 3, measure 3, circled in red) sounding an octave higher than the second (flute 1, measure 4, circled in red).

In the few analyses of the Prelude that do exist, several commentators point to the opening section as being organized around a static harmony comprised of pitch classes E*b*-G-B*b*-C (Bruhn 2015, Berg and Simms 2014, Cherlin 2007). Depending upon the inversion and context of the set, it can also be interpreted as a C-minor seventh chord, and Schoenberg exploits this tonal ambiguity to create the illusion of harmonic motion without any change to overall pitch class content. However, the addition of a prominent A*b* in the second half of each measure (mm. 1-22), coupled with

Schoenberg's careful spatial parsing of the triadic content of the individual motivic components, further entrenches harmonic vagueness by means of melodic ambiguity. **Table 6.7** demonstrates the changing harmonic function of each beat in measure 3 only, grouped by instrument. Harmonic ambiguity characterizes the first half of the measure, while the second half clearly coalesces as an A*b* major chord, despite the droning oboes. Given the overall melodic motion of the measure (and subsequent iterations), we might characterize the v-shaped motive as descending into obscurity (E*b* / c minor) for three beats and ascending clearly as A*b* major for three beats.

Beat	**E*b* major**	**c minor**	**E*b* added 6**	**A*b* major**
1	Oboes 3-4 Violins I - II	Piccolo 1-2, Flutes 1-4	Harp 1	
2	Piccolo 1-2 Flutes 1-2 Violins I - II	Flutes 3, 4		
3	Piccolo 1-2	Flutes 1-4	Violins I & II	
4	Oboes 3-4			Piccolos 1-2 Flutes 1-4 Violins I - II
5	Oboes 3-4			Piccolos 1-2 Flutes 1-4, Violins I - II
6	Oboes 3-4			Piccolos 1-2 Flutes 1-4, Violins I - II

Table 6.7: Triadic parsing of measure 3 by instrument, *Gurrelieder*, Prelude.

The second half of the second measure of the binary phrase contains additional ambiguity in the form of a barely audible descending arpeggiation of an F minor seventh chord in the violins (marked in green).

Together, the various individual motivic components of the opening few measures cohere to form a well-ordered, spatially and timbrally segregated and stratified sonority. Beginning at measure 7, Schoenberg introduces what I term the *sunset motive* (played by the first trumpet, marked in orange). The two-bar descending motive spans a major seventh and repeats at measure 9, and is answered subsequently by an extended three-bar consequent, played by the first French horn beginning in measure 11 (marked as a blue box surrounded by an orange box). The extended response by the French horn deserves additional attention. First, it rhythmically augments the v-shaped motive presented two-octaves higher in measure 3 by the first piccolo. Second, the function of the v-shaped motive changes to become the consequent melodic response to the sunset motive. Lastly, as we will see below in section 6.8.5, the six-note sequence (C-E*b*-G-C-E*b*-A*b*) forms the motivic genesis of the whole movement, which Schoenberg has derived from the first song of the cantata.

Conflation of the various motivic components into a unified texture, together with the binary nature of phrasing and its division in each bar into two groups of three, results in a gentle, peaceful, well-ordered, rocking motion. Over the course of the Prelude, each of the individual components, together with their well-formed interactions, undergo various spatial and timbral alterations that serve to gradually reduce the overall sense of luminosity. Schoenberg uses the opening section to fix each component in space such that any change to spatial location would result in the apperception of changes to brightness. For example, if the flute and piccolo motive first presented in measure 3 were to occupy a different place in space relative to its initial presentation, the change would necessarily produce a different degree of luminosity, as is the case at measures 23, 24, and 40.

Harmonic contraction

Over the course of the Prelude and subsequent first song of the *Gurrelieder*, Schoenberg makes striking use of registral contraction to suggest both the descent of the sun, as well as the retreating luminosity of dusk. At measure 32, Schoenberg introduces an important and recurring formal element that I call the *contraction sequence*, and which contains two binary phrases, each repeated once (Sequence A and its consequent Sequence B). Sequence A (**Figure 6.14**) comprises seven voices. The outer voices move mostly in contrary motion: the upper voice outlines a descending diminished fourth (D*b*-A) and the lower voice outlines an ascending perfect fourth (G-C). The sequence repeats at measure 34, transposed down a semitone.

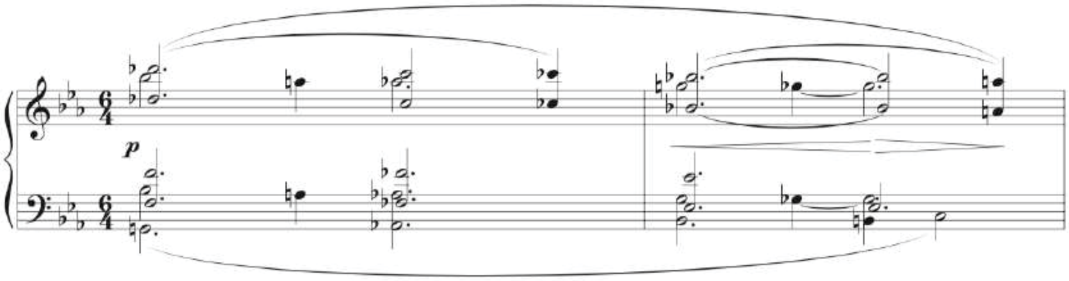


Figure 6.14: Reduction of Contraction Sequence A, *Gurrelieder*, mm. 32–33.
Reproduced by permission of Belmont Music Publishers.

Paradoxically, although Sequence B (F**igure 6.15**) sounds and feels darker than its antecedent counterpart, it in fact begins a perfect fifth higher in the bass voice relative to the end of the repeated Sequence A. Moreover, the second sequence contracts to a total length of nine quarter notes, relative to the twelve quarter-note length of Sequence A. These two alterations allow Schoenberg to utilize Sequence B and its subsequent repetition an octave lower to exaggerate downward motion towards the lowest register. Moreover, Schoenberg begins Sequence B on the upbeat, a shift that serves to further enhance the sense of descent.

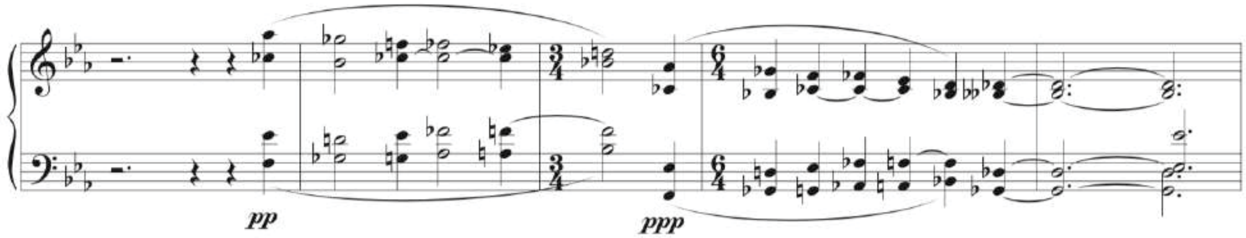


Figure 6.15: Reduction of Contraction Sequence B and its repetition, *Gurrelieder*, mm. 35–39.
Reproduced by permission of Belmont Music Publishers.

6.7.3 Specific intensity of place, mm. 1-31

Schoenberg's approach to orchestration can be divided into two basic concerns: local and global. Given the spatialized and cohesive nature of the motivic content, Schoenberg's local deployment of timbre acts to enliven texture, intensifying the already segregated and stratified configuration of pitch through the careful placement and modulation of instrumental colour. Moreover, in order to paint a convincing rendering of a sunset in music, intensive articulation of local space requires a diachronic treatment of timbral organization, one that follows a basic darkening of the contour. This discussion examines local applications of specific intensity. The large-scale organization of specific intensity receives consideration below in section 6.7.4.

Returning again to the first page of the score (**Appendix B**), we can observe several poignant examples of timbral configuration that, together with Schoenberg's finely chiselled articulation of pitch space, lend an enhanced sense of interlocking motion along both the *x*- and *z*-axes. We can begin by noting that the place in space where a sonic event occurs can be made more or less manifest by the differences in sound quality that place exhibits relative to other local happenings. Distinct sound colour, relative textural prominence, and spatial configuration combine, creating a unified specific intensity.[28] Moreover, brief modulations of timbre help to articulate space and directionality across the recurring two-bar phrase.

First, at measure 3, two piccolos and two flutes play the antecedent syncopated figure (marked in blue) and are answered in the following measure by one flute followed by harp (marked in green), forming a unified contour that seems to fade slightly into the background. In the last half of measure 4, violins I (back 4 desks) add a blurred but descending legato figure (marked in green). Second, violins I and II (desks 5 and 6) further syncopate the flutes and piccolos with the addition of pairs of sixteenth-notes sounding every other eighth-note beat (also marked in blue). Here the upward lunge of every pair nevertheless traces the v-shaped contour, creating a soft shimmer. Blurring the binary division, the violin figures extend into the first half of measure 4, before changing function (marked in green) with a rapidly descending flourish that complements the second harp. Schoenberg reinforces the change in function with the addition of pitch-class 'F' in both the upper and lower octaves of the violin figure (marked as red ovals).

Given the brevity, rapid pointillism, and kaleidoscopic nature of the repeating binary phrase, this music dances at the threshold of stream formation. We sense pattern and individuated entities, and the various disparate elements certainly fit together. However, their coherence stems from a general and simplified contour—one that seems to descend and fade, only to be restarted and reinvigorated again by the harp's arpeggio. And yet, despite all of the sparkling activity, the texture is revealed over the first twenty-two measures to be generally static, if nonetheless compelling.

---

[28] I define "specific intensity" in section 4.4.4 and its various formulations in sections 5.2.4, 5.2.5, and 5.2.6.

As section A progresses, Schoenberg slowly introduces variations to the by now regularly occurring elements, allowing the listener to apperceive a gradual change that is salient relative to an otherwise static and highly ordered texture. Beginning at measure 14, the punctuated arpeggio, played thus far by the harp to mark the onset of each binary phrase, undergoes orchestrated growth in intensity (and consequently growth along the z-axis), perhaps depicting luminous swells in the sky. Harp sonority begins to articulate beats one and four with the addition of lower and compacted arpeggios. The addition of harp 2, together with pizzicato strings on each downbeat reinforces an E*b* major harmony in an otherwise swirling pattern of tonal obscurity (marked in purple). Trumpets and French horns articulate an open sonority, swelling to and receding from the middle of each bar. The blended brass sonority receives gestural and timbral extension from the low strings with a delayed swell (marked in purple), together with the rapid beating of the triangle (marked with a red circle). This breath-like gesture, characterized by progressive changes in orchestration, culminates at measure 19 with the addition of the front four desks of violins I and II, reinforced by clarinets and oboes.

At measure 23 the concatenation of the motivic materials that form the opening well-ordered and pointillistic texture begins to transition from a state of relative stability that registers as unified at the forefront of our experience, toward a state of relative opacity. Harmonic sequencing, the introduction of new material and new sonority, and the dispersal of previously ordered motivic material combine to begin a process of textural undoing and, ultimately, of timbral darkening. The previously unified, swelling component breaks up into timbrally distinct and rhythmically offset repetitions, perhaps cross-modally akin to the fractured and multi-coloured luminescence of the evening sky (mm.23–30, marked in purple). Additional articulation of sonorous depth occurs at measure 23 with the introduction of the *cuivré* timbre of stopped French horns, which further enliven the sense of depth in the overall orchestral texture (marked with a red circle, mm. 23–30).

Beginning at measure 27, a second theme begins to pervade and saturate the texture (marked in light blue). First introduced by two French horns, violins answer in measure 28, augmented in the second half of the measure by oboes 1 and 3. Violas then take up the motive at measure 29, augmented by the first four desks of the cello section, together with three bassoons, answered in measure 30 by an emergent blend formed by three oboes, two English horns, two clarinets, a bass clarinet, and a muted trumpet. Somewhat behind the prominent and timbrally shifting theme, remnants of the v-shaped motive (dark blue), its upward return (green), and the swell figure continue to sound.

Section A and the related Parametric Drift of measures 23–31 (see **Table 6.6**), infuse our experience first with stability and second with an apprehendable yet measured sense of change. Each new element has been introduced in a gradual manner, and yet by measure 31 we are indeed quite far removed from the opening binary texture. Schoenberg slowly and masterfully guides the music, together with our attention, away from a clear and bright unified and well-ordered orchestral texture into relative flux.

6.7.4 Familiarity: Apperception of a darkening formal contour

As with Rimsky-Korsakov's earlier sunset, rondo-like organization becomes the formal vehicle through which Schoenberg delivers his sonic rendering, structuring the ideal conditions under which the merging of luminous and sonorous darkening are apperceived. And, also like Rimsky-Korsakov, the apperceptive model adopted by Schoenberg is one of diminishing returns. From measure 32 until the end of the first song some 156 measures later, a slow but nonetheless kaleidoscopic churning of repeated and poignantly eidetic formal sections serve to impress upon the listener a descending and darkening contour across a large apperceptive span.

Contraction Sequences

With the "set-up" complete and the salient image of a bright ordering that is slowly unravelling firmly entrenched, Schoenberg begins his descent at measure 32. Contraction Sequence-1 comprises two independent perceptual streams—Contraction Sequences A and B, and Dissipation. First, the descending trajectory of Sequences A and B suggest darkening, which is enhanced by their orchestration. Sequence A (mm. 32–33) and its immediate repetition (mm. 34–35) share a common orchestration consisting of the full string section, together with the second bass clarinet, three bassoons, and contrabassoon. Above this stream, four piccolos and four flutes play a repeating figure that seems to slowly lose both energy and perceptual prominence along the *z*-axis—a fading away of sorts. The relation of these sequences to the A section cannot go unnoticed. Though timbrally distinct and experienced as "higher" and "lower," the two streams share spatial overlap (flutes 3 & 4 and violins II, flutes 1 &2 and violins I), bridging the two streams in terms of space, while segregating the streams by both timbre and rhythmic profile. Sequence B and its repetition (mm. 35–38) further darken the overall texture, first as a well-blended string sonority (mm. 35–36), followed by an emergent blend whose orchestration mirrors that of Sequence A, minus the bass clarinet, second contrabassoon, first violins, and contrabass.

Taken as a unified gesture, the contraction sequence appears as the first predominantly downward gesture of the Prelude, serving to signal both descent and timbral darkening. Repetitions of the sequence at measures 60 and 85 play an important role in the formation of a darkening contour. Orchestrational modifications to each recurrence serve to reinforce the apparent contour. First, at measure 60, the initial presentation of Sequence A omits the violins, and initially, the low woodwinds, displaying a relative weakening compared to the first iteration at measure 32. The second presentation, beginning on the pick-up to measure 62, re-voices the sequence, omitting the violas and cellos, while emphasizing a somewhat nasal, emergent woodwind blend. The orchestration of Sequence B (mm. 63–64) omits the violins, and contrabasses, divides the violas and cellos, and adds a muted French horn to the top voice. Its repetition (mm. 64–65) further divides the strings, with only one half of the violas, doubled by bassoon 1, articulating the upper voice, while divided contrabasses doubled by two contrabassoons sound the lower voice. Contraction Sequence 3 (mm. 85–87) registers as even weaker than its predecessor, especially Sequence B, whose dominant, blended wind sonority, supported only by the contrabasses, firmly establishes the distance travelled throughout the prelude from bright to dark. The third sequence arrives truncated, missing Sequence A altogether.

Pickup Gesture

A third and no less important formal structure, which I have labelled the *Pickup*, serves to bridge or link the three contraction sequences and the various formal functions that follow. In its first iteration (upbeat to measure 39 through the end of the bar), the Pickup reintroduces unified ascending motion, terminating the descent of the contraction sequence. The seven-beat figure begins with an emphatic *sforzando-piano* punctuation of a G*b* diminished triad (a tritone away from the opening harmony), followed by an ascending arpeggiation of the triad. The gradual addition of piccolos and flutes, together with tremolo strings recalls the orchestration of the now-faded Dissipation gesture, as well as the triplet figure that characterizes the second bar of the binary phrase in Section A (marked in green).

As if pulling on a piece of toffee, Schoenberg both stretches and weakens the second iteration of the Pickup gesture such that it is immediately apperceived as weaker—losing energy even as it extends (upbeat to measure 66). Two bassoons replace the four piccolos and four flutes of the earlier instance, while *divisi* violas and the full cello section reproduce the tremolo shimmer—greatly diminished. Further articulation of the *z*-axis arrives in the last half of measure 67 with the addition of three arpeggios by harps one and two, together with the *cuivré* timbre of two French horns. The harmony articulated in this section is noteworthy for its resemblance to both the first Pickup, as well as the opening chord of section A. As notated, the e-minor triad with an added C# can be interpreted either as a triad with an added sixth (reminiscent of the opening E*b*- G-B*b*-C) or as a C# half-diminished seventh chord, a slight addition to the G*b* diminished triad found in Pick-up 1. The final iteration of the Pickup gesture (mm. 87–92) ends the Prelude and transports the listener from sunset to dusk, eliding seamlessly into the first song. A gently rocking and slowly climbing figure characterizes this transitory formal section and perhaps depicts the first moments of dusk.

The diminishing return of A

The two recurrences of Section A (mm. 40–53, 68–84) serve as perhaps the strongest carriers of apperceived changes to luminosity. Schoenberg organizes the extensive preparation in the initial A section, where harmonic stasis and repetition together with well-ordered spatial and timbral contours, in order to imprint the specific spatial location and the specific intensity of motivic content, fixing their interlocking relations in the mind of the listener. The two repetitions of section A darken progressively. First, section A' arrives in the distantly related key of D*b* major, transposed down a major second relative to the home key. Schoenberg places additional emphasis on the second half of the binary figure, adding clarinets and additional violins to the consequent response (marked in green). The "sunset theme" returns almost immediately, metrically displaced to begin on the fourth beat of measure 40. A somewhat progressive blend of three oboes, two English horns, and the first trumpet first play the timbrally darkened theme. An immediate repetition (m. 42) by the contrabasses and cellos establishes the lower register as a carrier of important mnemonic information. Subsequent repetitions of the theme in the low register grow in both loudness and darkness (mm. 46-53) as the bass trumpet, contrabassoons, and trombones add further timbral articulation. Compression of the highest register occurs beginning at measure 44, where the timbral fusion of a triangle and four piccolos calls perceptual attention to the upper reaches of the auditory scene in order to highlight its descent. Violins I (desks 5-10) further articulate registral compression with a repeating descending figure. Beginning at measure 47, the second theme (marked in light blue) begins to saturate the upper register in contrapuntal dialogue with the sunset motive. With the arrival of the climax at measure 54, Schoenberg reintroduces the punctuation-swell figure, thickening the texture with full and rich simultaneities.

With the final return of section A at measure 68, Schoenberg begins the last stage of luminous retreat. Relative absence, weakness, and distance characterize this music. First, the most immediate change transpires in the selection of instruments. The total instrumental forces comprise the lowest and darkest potential of the available orchestral forces: two English horns, three clarinets (playing in the middle and lower registers), two bass clarinets, three bassoon, two contrabassoons, four horns, two harps, timpani, muted violas, muted cellos, and muted contrabasses. Pointillism returns, uncharacteristically low and somewhat weakened, with the articulation of the v-shaped motivic material played by the first harp and three bassoons (mm. 68-76, marked in blue). The drone layer, originally played by the oboes in the treble register, now sounds several octaves lower, played by the contrabassoons and contrabasses.

In contrast to the opening section of the Prelude, the consequent half of the binary phrase, marked in green, now receives initial timbral articulation from a solitary harp (harp 2, measures 68 and 70) before becoming slightly more complex with the added pizzicato figure in the violas beginning at measure 71. Beginning at measure 77, the consequent phrase disappears altogether, as the pizzicato violas, together with English horn, and the second bass clarinet replace the bassoon and first harp in the articulation of the v-shaped motive (marked in blue). Increasing saturation of the sunset motive (mm. 77-84) in the lowest register, the gradual disappearance of the v-shaped motivic material and the rhythmic *rallentando* of the bassoons (mm. 83-84), together with the reduced Contraction Sequence 3 and elongated Pickup 3, signal the final moments of direct light as the sun sinks below the horizon. The sun has set, dusk has begun, the final lingering luminosity of dusk is upon us—the stage has been set, so to speak, for the drama of the cantata to unfold.

6.7.5 Compound ekphrastic expression

The entire form of the Prelude, as noted by Berg, seems to be oriented toward disappearance—not just in the gradual reduction of forces, but as a complex, multifaceted contour that depends on the listener's ability to apperceive a host of intricate changes to varied articulations across a significant span of time. It is the combination of repetition, contraction of space, and diminishing specific intensity that together allow a global, wholesale movement along the *z*-axis to seem real—the ultimate luminous illusion. Yet the Prelude serves a still larger poetic purpose.

As musicologists have noted, the first nine songs that comprise the opening section of the *Gurrelieder* were written as a stand-alone song cycle for piano and two singers some ten years before the expanded orchestral work was first performed. The Prelude was composed as a later addition (Cherlin 2007, Haimo 2006). That Schoenberg returned to the first song years later, judging that it required a prelude—a "set-up"—points to the existence of a compound form of musical ekphrasis. The text of the first song (originally the beginning of the work) begins at dusk with a description of a sun that has already set. Lines nine through twelve of the poem, composed by the Danish poet and novelist Jens Peter Jacobsen (1847-1885), read as follows,[29]

9. In the west the sun has shed (mm.110-112)

10. Her flowing scarlet gown (mm. 112-115)

11. And drawn the waves above her (mm. 115-118)

12. To dream the glory of the morn. (mm. 119-122)

To the best of my knowledge, no one has yet remarked on the relationship, beyond simple harmonic correspondences, between the original song's ekphrastic musical expression of the text on the one hand, and the later construction of the Prelude on the other. Yet important resonant motivic and ekphrastic congruities exist. The v-shaped motive of the Prelude derives from the accompaniment of the ninth line of the text, played by the cellos and bassoons in measures 110 and 111 (marked in blue). This motivic kernel permeates the Prelude, in what can be understood as a second, compound ekphrasis. Further motivic congruities can be found in measures 96-100, where the horn sounds what I identify as the second theme of the Prelude, here elided with a modified presentation of the Contraction Sequence (mm. 97-108), which, as it turns out, formed the accompaniment to the first verse structure in the original song. We might even hear the antecedent-consequent phrase structure of the opening as an ekphrastic representation of the waves into which the sun sets at line eleven of the poem. Finally, elided with the resolution of the first clear perfect cadence (a 4-3-2-1 descent in the upper voice, mm. 168-169, marked with a red oval), Schoenberg re-articulates the sunset theme four times, as if to join the meaning of text with the principal thematic material of the Prelude (marked in orange beginning at measure 169). Compound ekphrasis arises from Schoenberg's revisiting of the song, extracting key motivic elements, and re-casting them in a complex new composition (the Prelude), creating an additional ekphrasis of an already ekphrastic work.

---

[29] "Im Westen wirft die Sonne von sich die Purpurtracht und träumt im Flutenbette des nächsten Tages Pracht." Translated from the German and original Danish sources by Tyson Gofton.

6.8 Summary of Case 2

While many points of congruence exist in the approaches taken by Rimsky-Korsakov and Schoenberg, the most important for our purposes lie in formal considerations. As we saw above, the orchestral sunrise promotes and privileges increasing intensity across a number of musical parameters: rhythm, meter, register, pitch range and timbral brightness, among others. The impression of increasing energy can be easily communicated through motivic materials that accumulate energy across time, even as they grow in attentional salience. Thus, the orchestral sunrise may proceed rapidly from obscurity and darkness towards clarity and brightness. The form itself reinforces motivic material through the increasing energy that it bears. For the orchestral sunset, on the other hand, the declining energetic contour means that listeners may struggle to identify and retain motivic material that is losing clarity and distinctness as the contour progresses. The composer cannot simply state motivic materials then proceed to decrease the energy across parameters since the resulting effect would be most likely an erasure of motivic content, not the declining energy of a familiar and recognizable idea; the simple orchestration of a decrescendo would fail as a strategy.

As we saw in Chapters 3 and 4, the perception of energetic unity depends on a range of identifiable features, but especially on the capacity of a unity to occupy a determinate place in a perceived space. The identifiable relaxation of energy in primary motivic elements in the orchestral sunset is primarily communicated through a loss of this determinate boundary between identifiable motivic units. The eidetic and identifiable image that bears the energetic contour loses determinacy not because it cannot be perceived, but because its capacity to occupy a determinate place across several dimensions diminishes. Motivic elements begin to overlap in time, losing their determinate formal segregation, even as the orchestrational strategy of the composer frays the determinate timbral boundaries of the unity. Unlike the orchestral sunrise where the listener's attention can always be refocused through an increase in excitation, the orchestral sunset requires careful balance between the relaxation of energy and the retention of attentional salience.

Accordingly, as in the two examples presented here, the orchestral sunset privileges a transformation of energy through formal techniques. The composer's trick in the creation of an effective orchestral sunset is to imbue the motivic elements with enough energy and dynamism in order to remain salient, while at the same time loosening the boundaries between elements to suggest a loss of intensity that does not interfere with recognition. Both examples considered here begin with a prolonged introduction to primary motivic materials that serves to establish familiarity and a determinate apprehension of the specific energy of the contour at its outset. As the form progresses, the clarity and determinacy of these motivic elements will progressively be lost as the energetic contour dissipates. Orchestral sunsets therefore privilege short, easily identified motivic units that can be recognized despite their decreasing markers of distinctness as the form progresses. In both examples, the formal approach is based upon a binary phrase structure of related motivic units. As the form progresses, these related motivic units are allowed to overlap in different ways, signaling to the listener the progressive loss of clarity and energy.

6.9 Case 3: *Bright, Blue, and Shimmering*

6.9.1 Introduction

My composition *Bright, Blue, and Shimmering* (Volume II of this dissertation) exemplifies and further develops many of the theoretical concepts elucidated above. The work is scored for large orchestra consisting of triple woodwinds and brass, timpani, three percussion players, harp, piano, and a large complement of strings (14/12/10/8/6). The remainder of this chapter consists of an analysis of the work with specific emphasis placed on the formal arrangement of apperceptive features of the orchestral sunrise.

My role as composer is threefold. First, like both an architect and an engineer, a composer designs musical structures as abstract musical entities, and then builds these structures to conform to a basic plan. Second, a composer acts as a first listener of the work, ensuring that what first originates as an abstract musical idea is heard as it was conceived in the mind. Third, a composer intent on delivering a so-called extra-musical idea engages in a rhetorical act. As such, a composer anticipates that the listener is able to understand or decode a rhetorical message encoded in music. A composer predicts that the sonic formulation of an idea can be understood not just as sound or as music, but as music about something. Like the orators of antiquity (and beyond), a composer wagers on the apperceptive capacity of the audience, on their capacity to participate actively in the imaginative constitution of apperceptive content. This wager rests on the efficacy of the interface between sonic articulation and the ability of listeners to mediate experience as meaning across modalities. A composer as (self)analyst demonstrates the sonic mechanics of the work in terms of sonic goals and intended meaning.

Genesis of the work

As the finale of a trilogy of works for large ensemble, *Bright, Blue, and Shimmering* (2018) aims to portray the transition from a state of relative darkness to relative brightness—the whole of the experience of dawn, from the darkness of night to the rising of the sun. Earlier works in the cycle explored brightening and darkening as compositional processes using different instrumental configurations. *In the Setting Sun (Still Life)* (2014) scored for Wind Symphony, depicts sunset, while *Au Bord du Léthé* (2016), scored for 15 instruments, depicts the final few minutes of dusk. Each work adopts a different compositional approach to the depiction of light, both in terms of musical materials, and orchestration. It is important to note that *Bright, Blue, and Shimmering* was conceived and written before the theoretical and analytical portions of this dissertation were undertaken, making the work a *prima facie* case study.

Ekphrasis as re-contextualization

Inspired by the compound ekphrasis of Schoenberg's Prelude to the *Gurrelieder*, my composition *Bright, Blue, and Shimmering* proposes a novel type of musical ekphrasis. Given the important differences between the two models of musical ekphrasis proposed above by Bruhn and Goehr (section 2.2), I attempt a unique formulation. Bruhn takes ekphrasis to be the musical expression or description of a non-musical work of art, while Goehr holds that ekphrasis serves as an oratorical mode of description that need not make reference to a work of art. My approach aims to query both definitions by asking: Can musical ekphrasis re-cast existing music in a novel rhetorical act? In other words, can an instance of music be appropriated for a different and ekphrastic purpose? If so, what would distinguish this novel act of ekphrasis from related forms of appropriation, such as variation (as in "Variation on a theme by *x*"), quotation, or iconic allusion (as with the numerous allusions to the Tristan chord by composers of the late 19th and early 20th centuries)? Acts of musical appropriation are not at all uncommon in the world of composition. The Japanese composer Toru Takemitsu (1930-1996) provides a striking example. His work, *Quotation of Dream: Say sea, Take Me!* (1991), for two pianos and large orchestra serves as an exemplary model for the intermixing between quotation of, allusion to, and variation upon an existing work of music by another composer—Debussy's *La Mer*. Mark Hutchison notes the extent to which Takemitsu interweaves Debussy's music into his own, heeding as well the ekphrastic title of the work,

> Around one-fifth of the duration of the piece is given over to these quotations; taken together, these amount to a kind of whistle-stop tour of Debussy's score, covering most of the primary thematic material from across the three movements of the original. They are joined together by passages of Takemitsu's own falteringly melodic language, with its own reservoir of interacting motifs and recurrent material; the boundaries between the two composers are sometimes very clear and sometimes almost inaudible. The title is taken from the work of the American poet Emily Dickinson (1830–1866) … the full poem evokes a longing by the poet to be absorbed into her surroundings, to find unity in a wider sea—a longing which resonates with Takemitsu's own handling of his influences and his conception of the "sea of tonality" into which his music was flowing. (Hutchison 2014: 429)

This type of re-creative tribute, I hold, serves as a special case of musical ekphrasis, one where the blurring of identity between the two composers is built into each musical utterance. Equally extreme examples abound, such as Alfred Schnittke's *String Quartet No. 3*, Luciano Berio's *Sinfonia*, to name but two. My own re-formulation of ekphrasis is related, yet somewhat different. With *Bright, Blue, and Shimmering*, I seek to re-cast a musical quotation as the apex of an orchestral sunrise. To do so, I quote the last twenty measures of Steven Stucky's 2007 orchestral work *Radical Light* (measures 114-134 of my accompanying score). As with Takemitsu, Schnittke, and Berio, my use of quotation is an act of musical homage. Stucky had just passed away shortly before I began to work on the piece. I devised a way to both pay homage to a great composer and musical thinker, and to develop an orchestral sunrise as a novel re-formulation of musical ekphrasis. Importantly, Stucky claimed that the title *Radical Light* was given to the work after it was completed, and that the work itself has little to do with the title.[30]

But how does a quotation become a novel form of musical ekphrasis? According to Stucky himself, the work was never intended to express or depict light, let alone a sunrise. However, the final few measures of the work display many of the characteristics associated with the rapid increase in musical luminosity—one of the key features of an orchestral sunrise. Nothing about the remainder of the work, however, suggests the sunrise form. In fact, Stucky acknowledged taking Sibelius' Seventh Symphony as his own compositional model (see footnote 30). As a demonstration of a novel approach to musical ekphrasis, I set myself the goal of building a musical form and infusing it with appropriate musical materials such that the form itself, as the product of a devised reciprocation, would re-cast Stucky's ending as a sunrise. Like a well-crafted joke or a short story, the sunrise form depends upon, even privileges, the set-up. That is to say, that punch lines and plotline revelations are themselves beholden to the effectiveness of their formal context. The punch line cannot be effective if the set-up is ineffective. The same is true of the orchestral sunrise—it is the efficacy of a generalizable contour over time that allows the image to form in the mind of a listener as a process of apperception.

6.9.2 Preliminary considerations

Three key features of the Stucky quotation

The most remarkable feature of the passage quoted from Stucky's *Radical Light* lies in the progressive goal-oriented nature of the thematic material. I label this material *Sunrise Theme* (**Figure 6.16**). The initial cell labelled *x* (mm. 120–121) ascends a minor third followed by a whole tone. The following iteration adds an ascending step (*x*-2, m. 122). The motive is then metrically displaced and transposed up a whole tone (*x*-3, mm. 123–124) and repeated with an additional two whole-tone steps. The process continues until, by the sixth iteration (*x*-6, m. 130), the complete extension of the motive spans a minor tenth and is structured as an E Lydian scale with a flattened seventh degree. Stucky engineers a sense of growth, first by extending the sequence with the gradual addition of pitch material (*x*-2, *x*-3, *x*-4, *x*-5, *x*-6), thus expanding the total span of each iteration (P4, P5, P5, M7, P8, m10, respectively). Second, Stucky transposes three of the iterations upward consecutively by whole step (*x*-3, *x*-5, *x*-6). And third, he alters the intervallic sequence to create hybrid scalar configurations (*x*-4: Lydian with a raised fifth scale degree; *x*-6: Lydian with a flattened seventh scale degree—what is often referred to as the "acoustic scale").

---

[30] https://www.youtube.com/watch?v=SvYLeFtUpGQ, accessed March 2017, and 23 May 2019.

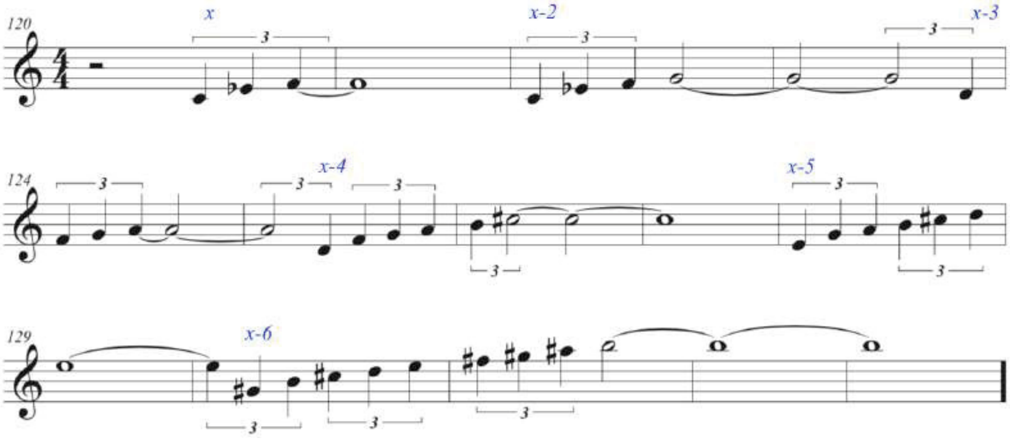


Figure 6.16: Motivic expansion in Stucky's Sunrise Theme as quoted in *Bright, Blue, and Shimmering*, mm. 120–133. © 2007 Carl Fischer LLC. Reproduced by permission.

As the Sunrise Theme reaches its apex on the pitch class 'B' (*x*-6), Stucky introduces a texture consisting of woodwinds articulating the Lydian flat-seven scale in rapid figurations (**Figure 6.17**). This additional stream helps to reinforce the climactic intensification of both the brass and string choirs. Perhaps incidentally, the passage sounds rather like a flock of birds—an iconic feature Ravel's sunrise in *Daphnis et Chloé*.

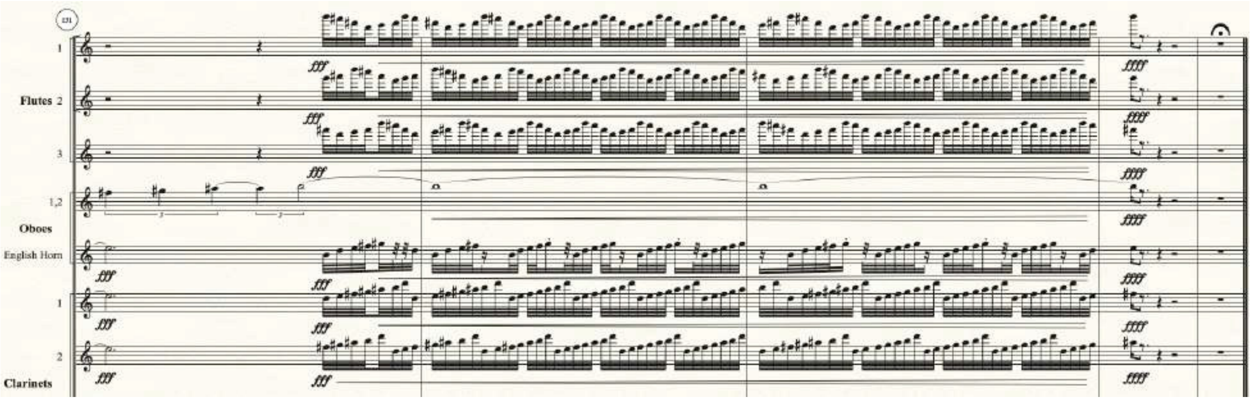


Figure 6.17: Bird-like figure in the woodwinds as quoted in *Bright, Blue, and Shimmering*, mm. 131–134. © 2007 Carl Fischer LLC. Reproduced by permission.

Lastly, just prior to the Sunrise Theme, Stucky writes a transitional passage featuring woodwinds, harp, and low strings (mm. 114–117 in Volume II). **Figure 6.18** demonstrates the low string portion of the passage. Stucky creates a cascade of overlapping descending scales as the final link in a general contour first initiated in the woodwinds (m. 114). In addition to the staggered entries, displaced by a half, a quarter, and an eighth of one beat, alternate bowings further articulate the cascade effect. In addition to greater articulation, alternate bowing here also prevents fusion between lines, resulting in a rough sonority in the lower register that is both timbrally homogeneous and somewhat segregated. Key features of Stucky's finale, most notably growth, intensification, and metric displacement and overlap are developed and integrated into *Bright, Blue, and Shimmering* at various levels of structure.

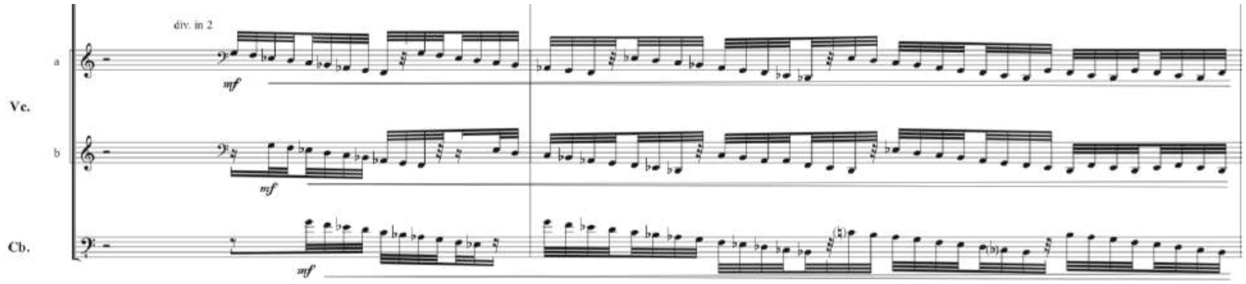


Figure 6.18: Descending passage, Cellos and Contrabasses. From Stephen Stucky's *Radical Light*, as quoted in in *Bright, Blue, and Shimmering*, mm. 116–117. © 2007 Carl Fischer LLC. Reproduced by permission.

6.9.3 Overview of the form and its poetics

Bright Blue and Shimmering divides into two movements, to be played without a pause. The first movement (mm. 1–81), subtitled *Clair-obscur (Nocturne)*, explores subtle gradations of musical luminosity and growth in the portrayal of nocturnal light and the rising of the moon. The second movement (mm. 82–135), subtitled *Sol Invictus (Matutinae)*, renders the dawn through parametric intensification. Overall, the piece comprises five sections, each characterized by a particular state—the generalizable affective and energetic character of the music. Each specific state, ordered as such, contributes to the rendering of light and its modulations over the course of the form.

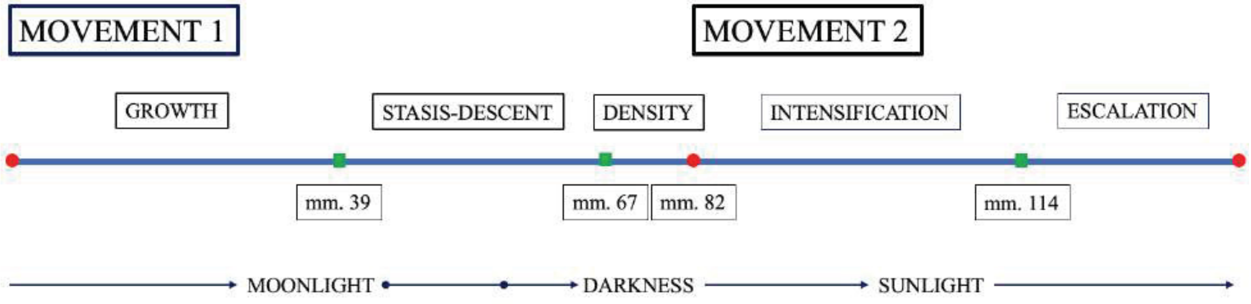


Figure 6.19: Formal Overview of *Bright, Blue, and Shimmering*

Figure 6.19 outlines parallels between the depictive aims of the work (thin bottom line) and the principal characteristics of the five sections (top line). Along the lower line, arrows represent music undergoing change, a forward motion that is easily apprehended. Conversely, the line bookended by black circles, between MOONLIGHT and DARKNESS, represents a general lack of forward drive. Red circles indicate the division of the work into movements and green squares indicate the boundaries between sections.

While the lower line describes the progress of intended luminosity, both in terms of brightness and motion, the upper line makes use of conceptual metaphors with regard to the behaviour of the musical surface. Metaphors such as *growth* or *density* not only describe how the listener apprehends the music, but in this case also serve as a pre-compositional plan to organize goals during the writing phase. Of course, music does not actually grow, stay still, get heavier, intensify, or escalate. (However, intensification may be an exception here since both loudness and onset density can in fact be intensive). Nevertheless, composers and audiences alike easily and routinely ascribe such physical, kinetic and mechanical properties to music. As I have argued above, such ascriptions arise from the way in which music is apperceived as an energetic contour. I use the effortless recognition of and familiarity with these energetic contours as underlying formal units of apperception. That is to say, taken together and in order these states and their readily apprehendable character help to produce an intensive apperceptive contour that conforms to my descriptive goals. As with the goal-oriented forms analyzed above, especially in the analysis of Schoenberg's Prelude, increased emphasis is placed on the analysis of the opening section of my work—the set-up necessarily takes priority so that the goal-driven contour can be properly accounted for.

6.9.4 Growth: mm. 1–38

As stated above, the overall goal of the work lies in the integration of a non-sunrise music (in this case, the quotation of Stucky's *Radical Light*) into a pre-ordered formal plan. And, as demonstrated above, the sunrise *eidos* or form is itself responsible over time for the apperception of changes in sonic luminosity. If an endpoint is fixed, the point of departure is of crucial importance, since the remainder of the form must be conditioned by its point of origin, especially with respect to initial intensity.

Taking inspiration from earlier orchestral works by Sibelius (*Night Ride and Sunrise*, 1908) and Schoenberg (*Gurrelieder*), my planned sunrise begins at night. Perhaps the overriding visual experience of night lies in our inability to make out the full contours and details of the things we may come across. Objects and their defining features appear indistinctly in environments that are minimally lit. Like their painterly counterparts, composers since at least Mozart (*Notturno in D*, K.286) have sought to render the luminous quality of night-time in music. Mozart's nocturne serves as a particularly insightful example, if only for his intuition that darkness in the visual domain enhances auditory sensitivity to spatial location: Mozart scores his nocturne for four spatially distinct ensembles.

Formal organization

In the opening section of *Bright, Blue, and Shimmering*, I pay particular attention to the parameters of pitch, local formal structure, directionality, and the progressive accumulation of orchestral luminosity. First, growth is operationalized across these parameters, beginning with the overall form of the section, which divides into three phrases of varying length, followed by a transition phrase. Taken together the structure of the four phrases forms a loose *mise-en-abîme*, where four of the five overriding metaphors of growth, stasis, intensification, and escalation are miniaturized across thirty-nine measures (darkness is omitted). Of course, the expression of these characteristic metaphors at the local level remains much more subtle and nuanced than their expression and immediacy at the larger level. Yet, together they contribute to an overall sense of growth. **Table 6.8** demonstrates the formal, metric, and analogical organization of the four phrases that comprise the opening section of the work. Coloured boxes in the table serve to capture the progression of growth and intensity across the four phrases, with blue indicating the admixture between sections one and two.

Measures	1-2	3-4	5-6	7-8	9-10	11-13
Meter	3+4	3+4	3+4	3+4	3+3	3+3+4
Beats	7	7	7	7	6	10
Phrase	1	1	1	1	1	1-Extension (codetta-like)
1–GROWTH						

Measures	14-15	16-17	18-19	20-21
Meter	3+4	3+3	3+4	3+4
Beats	7	6	7	7
Phrase	2	2	2	2
2–COALESCENCE (relative stasis)				

Measures	22-23	24-25	26-27	28-30	31-38
Meter	5+5	4+5	4+5	4+4+4	4+4+4+4+4+4+4+4
Beats	10	9	9	12	32
Phrase	3	3	3	3	4
3–INTENSIFICATION (& preview)					**4**–TRANSITION (escalation)

Table 6.8: Form, meter, and character, *Bright, Blue, and Shimmering*, mm. 1–38.

Pitch density, pitch class, and pitch space: mm. 1–30

The organization of pitch across the first three phrases, measures 1–30, mirrors their formal and characteristic grouping (see **Figure 6.20**, below). Importantly, the transition phrase derives its pitch material from the subsequent section (Stasis, beginning at measure 39) and will not be subject to analysis here.

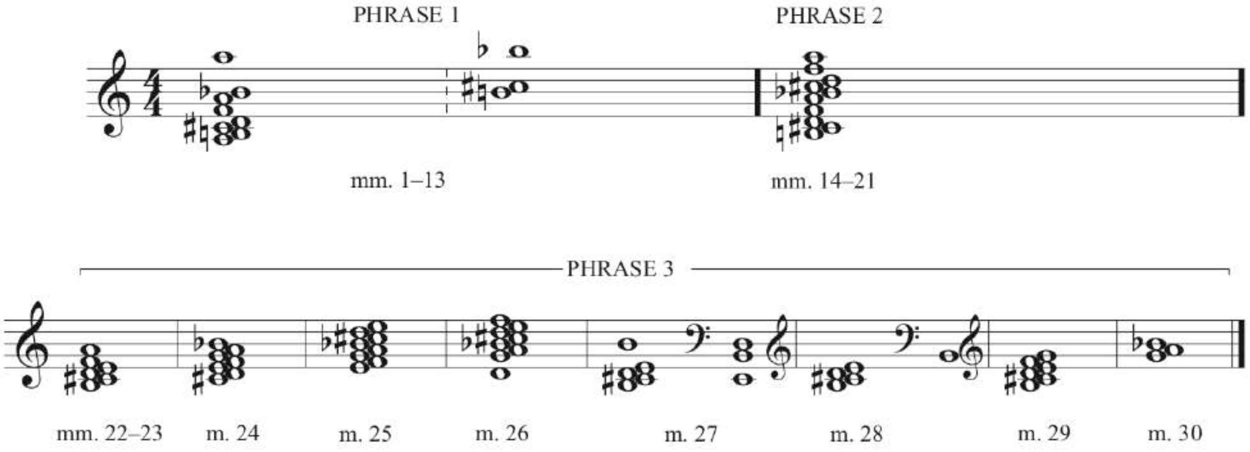


Figure 6.20: Pitch density, pitch class, and pitch space, *Bright, Blue, and Shimmering*, mm. 1–30.

Beginning with Phrase 1, we can observe that the general tessitura of the pitch collection at the opening of the work lies in the middle register (neither high nor low in audition), with the exception of the pitch A5, which by virtue of its disconnection and distance from the other pitches, sticks out as somewhat conspicuous. To the left of the dotted line (**Figure 6.20**, first measure) lies the more perceptually prominent pitch collection heard in the phrase (pitch classes A, B*b*, B, C#, D, F). To the right of the dotted line lies a trichord that I relegate to the background layer of the texture—cellos (*divisi*) with heavy mutes, together with the contrabasses (*divisi*, harmonics), articulate pitches B and C#, and the high B*b* is played four times by the celesta (once at measure 8 as part of a colouristic cluster). Pitch materials and their allocation in space remain relatively static for the duration of the first phrase.

Phrase 2 repeats the initial pitch collection, omitting the low A and high B*b*, and adding C#5 and D5 and F5. Phrase 3 differs from the earlier two phrases. First, increased harmonic rhythm and motion introduce elements of change relative to the prior harmonic stasis (mm. 22–25). In terms of pitch class, Phrase 3 largely mirrors the previous harmonies except for the addition of pitch classes E (mm. 22) and G (mm. 23). However, the fixed location of pitch changes rapidly across the phrase relative to the static locations of the earlier phrases. Measures 22–26 rise steadily before a descent and textural reduction at measure 27, together with the introduction of the low register (mm. 27–28). Measures 29 and 30 see a return to the middle register of the opening with the omission of A5 in the upper voice. Importantly, the trichord at measure 30 serves as a preview and variation of a structurally important chord heard later in the Intensification portion of the second movement where a different but related pitch process occurs, further entrenching the occulted *mise-en-abîme* that structures the entire opening section.

***Sonority and spatialization:* mm. 1–13**

Bright, Blue, and Shimmering begins with the repetition of a binary, two-bar *idée fixe* (**Figure 6.21**, below), presenting an eidetic structure whose oscillatory nature persists across several variations, some more perceptually salient than others, for the entire first movement and much of the second. In its initial repetitions (mm. 1–8 and later in mm. 14–17), the 2-measure phrase consists largely of an unequal metric division (3 beats followed by 4 beats) and features an often recurring *ritardando* to its second half that further elongates the phrase, eroding the sense of metric regularity. The opening sonority of the phrase can be characterized as languid, and is marked in the score as *languido e molto sostenuto, ma poco luminoso*.

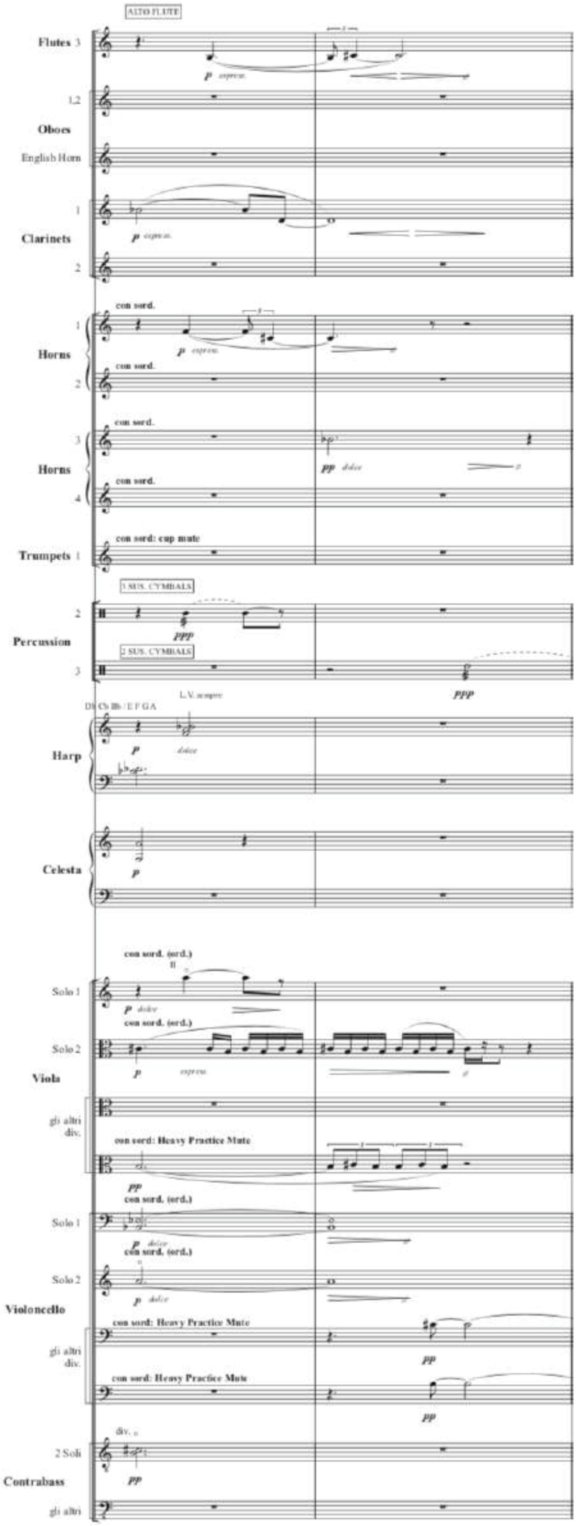

ALTO FLUTE
Flutes 3
p espress.
1,2
Oboes
English Horn
1
Clarinets
2
p espress.
con sord.
Horns
p espress.
con sord.
con sord.
Horns
pp dolce
con sord.
con sord: cup mute
Trumpets 1
3 SUS. CYMBALS
Percussion
ppp
2 SUS. CYMBALS
L.V. sempre
ppp
Harp
p
dolce
Celesta
p
con sord. (ord.)
Solo 1
p dolce
con sord. (ord.)
Solo 2
Viola
p
espress.
gli altri div.
con sord: Heavy Practice Mute
pp
con sord. (ord.)
Solo 1
p dolce
con sord. (ord.)
Solo 2
p dolce
Violoncello
con sord: Heavy Practice Mute
gli altri div.
pp
con sord: Heavy Practice Mute
pp
div.
2 Soli
Contrabass
pp
gli altri

Figure 6.21: Binary *idée fixe*, in *Bright, Blue, and Shimmering*, mm. 1–2.

The introductory phrase (mm. 1–13) can be characterized as somewhat blurred, and consists of several orchestral layers that, due to brief iterations, do not always form clearly demarcated strata but that nevertheless, taken together, convey a sense of depth. In the first measure of the *idée fixe*, several rhythmically offset two-note melodic profiles convey an overall sense of descending motion. These are followed in the second measure by an oscillation between pitches B4 and C#4. First, clarinet 1 performs a descending minor sixth (B*b*-D). Nestled within the duration of the clarinet's melodic line, a muted French horn performs a descending major third (notated as an augmented fourth, F-C#) as a rhythmically diminished reply, and is followed by an ascending major second (B-C#) in the alto flute.

The texture is sparse. Strings either play as solo instruments or in *divisi* groupings where their sound is diminished by the application of a heavy practice mute, minimizing their textural prominence, maximizing their textural relief, and obscuring their full timbral potential. Soft punctuations by the celesta and the harp, together with resonance presented by sustained solo strings provide a further sense of relief. A soft noise element produced by two suspended cymbals colours the background of the texture. Like in the earlier example of Schoenberg's Prelude, the general tendency across the two bars is some sort of onset followed by a diminuendo. The phrase repeats four times, with minor variations to timbre and metric placement. The final iteration (beginning at measure 9) can be seen as serving a codetta-like function, both in its rhythmic extension and in its immediate repetition of the descending figure, first by the clarinet, and followed by the English horn.

Increasing onset synchrony, timbral width and metric variation: **mm. 15-21**

The most immediate difference between the first and second phrases resides in a combination of increased onset synchrony and increasing addition to sonority post-onset. Both serve to increase timbral width. The second phrase of *Bright, Blue, and Shimmering* begins with a case of timbral thickening (**Figure 6.22**) inspired in part by my observation that, in the first song of the *Gurrelieder*, Schoenberg paints dusk in his orchestration by thickening textures. Up to this point in my work, two of the three percussionists make use of variously sized suspended cymbals, adding resonance and noise to the texture. In measures 14–15, I thicken the onset of the sonority first by use of the sizzle cymbal, whose initial attack is noisy, followed by a shimmering sustain. Second, I orchestrate the offset of the initial impulse (m.15) by staggering three groupings: violins Ia, and alto flute on the downbeat, followed one sixteenth note later by violins IIb and French horn, and finally, after another sixteenth duration, the solo violin. The overall effect of this passage is to thicken the texture, both at its onset and at its decay. While onset synchrony increases in phrase two, the melodic component of the *idée fixe* diverges across instrumental groupings in different ways, enhancing the perception of change and growth. For example, at measure 16, instruments that contribute to onset include flutes 1 and 2, alto flute, clarinet 1, bassoon 1, French horn 2, sizzle cymbal (percussion 2), violin I solo, violin I *divisi* (back desks), and violin II divisi (front desks).

Furthermore, the onset sonority changes at measure 18 (two clarinets, bassoon, solo violin and violin I (back desks), and the subsequent offset (m. 18–19) receives increased emphasis from the alto flute, clarinet three, two solo violas, the viola section (*divisi*) and the front half of the cello section. Additionally, the introduction of violin I and II *divisi* played with ordinary mutes (rather than practice mutes) serves to intensify and thicken the previously muted string timbre. Privileging the low register of the violins also contributes to an overall increase in timbral width.

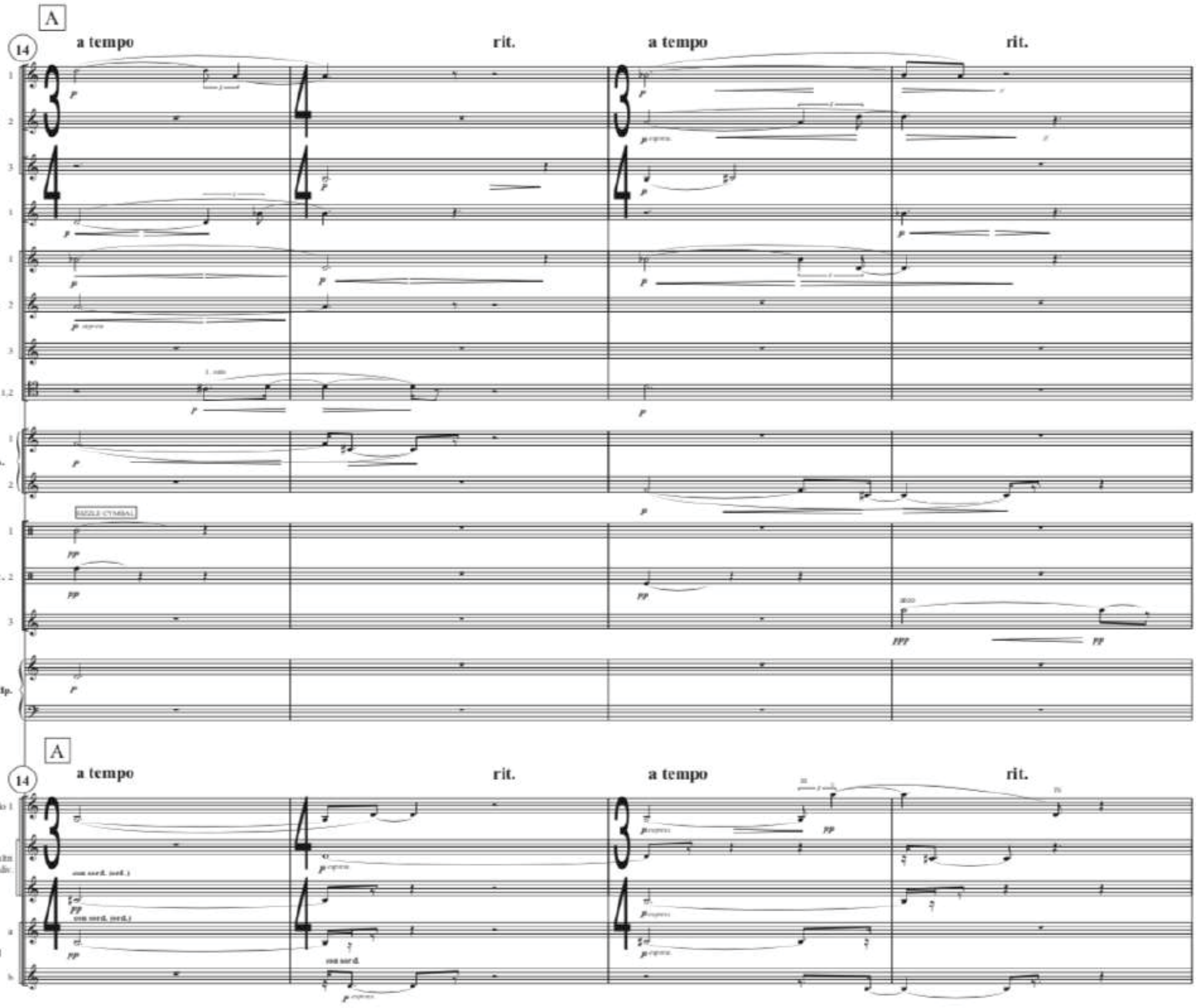

A
14
a tempo
rit.
a tempo
rit.
Fl.
Ob.
Cl.
Bsn. 1.2
Hns.
SIZZLE CYMBAL
Perc.
Hp.
A
14
a tempo
rit.
a tempo
rit.
Solo 1
Vln. I
Vln. II
con sord.

Figure 6.22: Timbral “thickness” in *Bright, Blue, and Shimmering*, mm. 14–17.

Simplified contour and seeding motivic familiarity: mm. 22–38

The third phrase of section one (mm. 22–30) deserves special attention, especially insofar as it displays a relative sense of growth, simplifies contour, and previews several important features of later sections. Of course, the reverse engineering of variations within a sunrise form—that is, variations designed and aligned backwards across time—requires several forms of material reduction rather than expansion. Measures 22–38 anticipate several gestures that will gain perceptual salience in later sections of the work. First, the ascending motion from B to C# that featured prominently in the alto flute and strings in the opening two sections now expands, forming overlapping rising figures across the string and woodwind choirs. The resulting scalar extension alludes to the scale extension scheme employed by Stucky (see above **Figure 6.16**). In a reversal of the process observed in the *Gurrelieder*, where clear and well-ordered motivic integration and orchestration give way to blurred lines, here the orchestration of the rising scale steps is both blurred and thickened so that any other occurrences are perceived to have increased in orderliness and magnitude, culminating in the emphasis given to the succession B-C#-E in measure 27 (punctuated by the timpani, together with four French horns, muted trumpet, and blended winds). This upward motion will come to its completion in the Stucky quotation, but is anticipated here in an obscured form. The orchestration of Stucky's motive (mm. 120–131) is dominated perceptually by a brass sonority. Here at measure 27, in what is perhaps the most perceptually salient and direct reference to the Stucky motive, there exists a conspicuous absence of a dominating brass timbre as multiple fragments of ascending scales allude to the coming sunrise.

Second, a sense of growth permeates the third phrase. Metric expansion to the binary structure of the *idée fixe* (now 4 or 5 beats per measure) extends the duration of each iteration. The saturation of texture by the addition and overlap of individuated voices coheres, forming a general rising motion. Taken together, the textural saturation of individual two- and three-note ascending fragments along with the timbral distribution of blended woodwind and string sonorities coheres to form a simplified contour that displays "up-ness" as its general characteristic (see **Figure 6.23** below). Moreover, in measures 25 and 26 the doubling of the various fragmented and overlapping woodwind voices by the vibraphone serves to focus the fragments into a clear and well-blended stream, leading to increased perceived brightness and resonance relative to earlier music. And yet, the overall texture remains relatively dark, soft, and dim compared to the upcoming Stucky material.

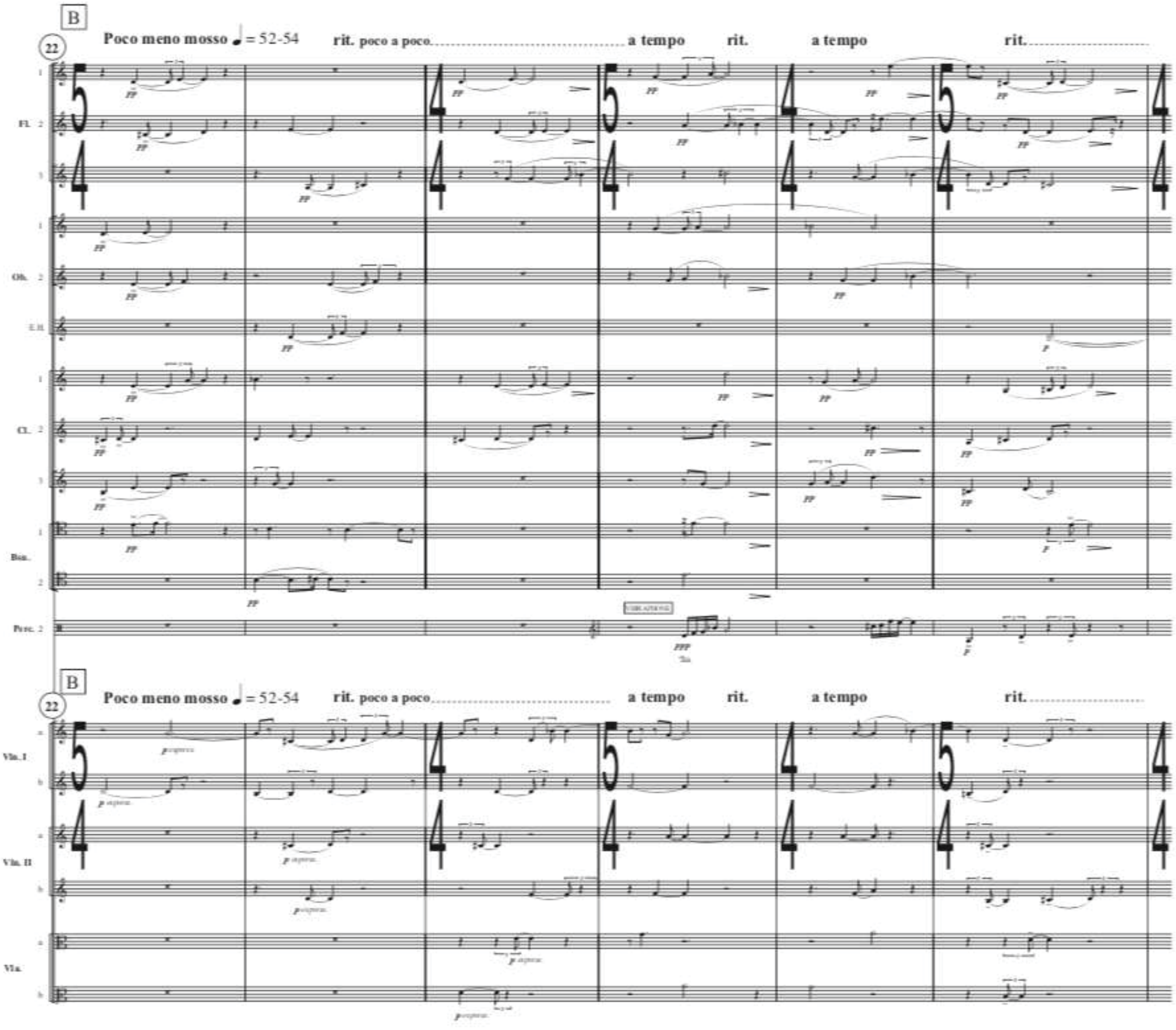

B
22
Poco meno mosso ♩ = 52-54
rit. poco a poco
a tempo
rit.
a tempo
rit.
Fl.
Ob.
E.H.
Cl.
Bsn.
Perc. 2
VIBRAPHONE
pp
p
Vln. I
Vln. II
Vla.
p espress.

Figure 6.23: "Up-ness" as a simplified contour in *Bright, Blue, and Shimmering*, mm. 22–27

Finally, the last section of the opening formal unit functions to merge the sonorous quality and motivic content of the opening GROWTH section together with the fixed-pitch array and binary oscillation of subsequent STASIS section. **Figure 6.24** demonstrates its general tendency to be upward and growing in luminosity through the addition of instruments, as well as through an increasingly active rhythmic texture. Importantly, several iterations of the figure do outline a wedge-shaped melodic unfolding that exhausts all twelve pitch classes. This increased rhythmic and melodic activity alludes to the bird theme that appears at the end of the Stucky quotation (woodwinds mm. 132–133), a texture that returns toward the end of the STASIS section. While the combined *staccatissimo* figures can perhaps be heard as birds, the pointillistic and relatively luminous texture can perhaps also stand as a sonic portrayal of the night sky.

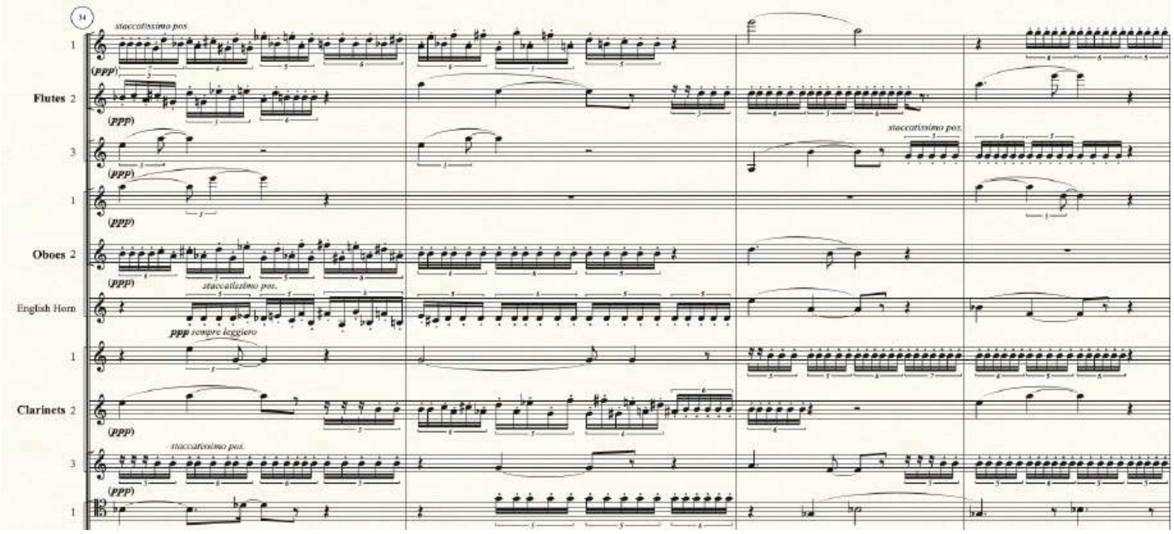


Figure 6.24: Staccatissimo figures, Woodwinds in *Bright, Blue, and Shimmering*, mm. 34–37

Growth, specific intensity, and timbral sequence: **mm. 1-39**

Spanning the first three phrases of the work lies a somewhat hidden continuity whose diachronic function serves to both bind the GROWTH and STASIS sections using a common trajectory, as well as to preview a specific and salient feature of the coming STASIS section. This large-scale continuity highlights the pitch A5 and grows in perceived intensity from measure 1 to measure 38 by gradual timbral sequencing before becoming a key perceptual feature of the STASIS section beginning at measures 38 and 39. **Figure 6.25** demonstrates the opening five iterations of the sequence in the solo viola and celesta. Subtle timbral shifting obtains in the solo viola pattern as the steady harmonic vacillates between strings. Importantly, the timbral oscillation displayed by these two instruments overlaps in a slightly phased manner with the back-and-forth of the *idée fixe* in the opening measures, creating an additional larger-scale rocking pattern.

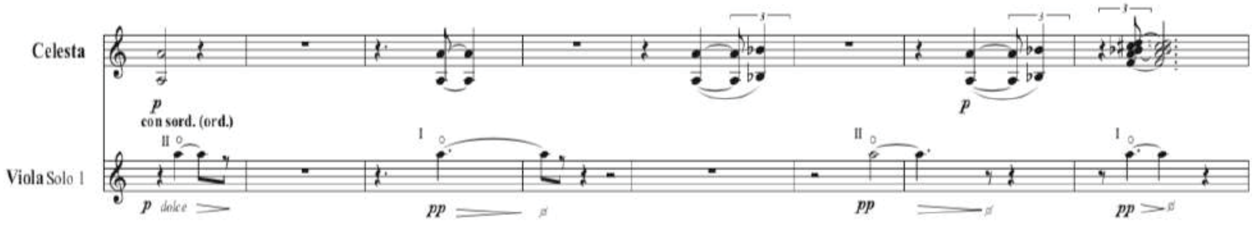


Figure 6.25: Preliminary changes to specific intensity to pitch A5 in *Bright, Blue, and Shimmering*, mm. 1–8.

Table 6.9 traces the growth of the timbral sequence from measures 1 through 39, accounting for the subtle changes to the specific intensity to A5. Blue highlights indicate the first appearance of an instrumental timbre to the sequence. With the conclusion of the opening GROWTH section, and the basic materials of the work revealed, the remainder of the work serves to re-articulate the various components and their compositional possibilities across depictive variations, always oriented toward a final luminous climax. As such, the remainder of my analysis serves to briefly exemplify each of the stages along this given contour.

Measure	Orchestration
1	Viola (solo), Celesta
3	Viola (solo), Celesta
5	Celesta
6	Viola (solo)
7-8	Viola (solo),Celesta, Vibraphone (arco)
9-10	Viola (solo),Celesta, Harp (harmonic)
16-17	Violin (solo), Vibraphone (arco)
20	Violin (solo)
31	Violin Ia (harmonic)
32	Violin Ib (harmonic)
33	Violin Ia, Ib (harmonic), Flutes 1 & 3
34	Cello a, b (harm.), Viola a (harm.), Violin Ia, Ib (harm.), Clarinet 2, Oboe 1, Flute 3
35	Cello a, b (harm.), Viola a (harm.), Violin Ia, Ib (harm.), Flutes 2 & 3
36	Viola a (harm.), Violin Ia, Ib (harm.), Piccolo Trumpet (mute), Flute 1
37	Viola a (harm.), Violin Ia, Ib (harm.), Clarinet 2, Oboe 1, Flute 2
38	Cello a (harm.), Viola a (harm.), Violin Ia, Ib (harm.), Piccolo Trumpet (mute), Clarinet 1
39	Cello a (harm.), Viola a (harm.), Violin I (harm.), Violin II (harm.), Glockenspiel, Piccolo Trumpet (mute), Clarinet 1, Flute 1 & 2

Table 6.9: Changes to specific intensity to pitch A5 in *Bright, Blue, and Shimmering*, mm. 1–39.

6.9.5 *Static Coalescence*: mm. 31–66

Shimmering stasis characterizes the second formal section, where harmony and orchestration coalesce in the formation of a subtly shifting texture. First, a tension obtains between the static nature of a fixed pitch array and the generally binary oscillation of each instrumental component within the texture. Deployment of pitch materials accords to a register-specific construction, such that several clear harmonic components segregate both in terms of density in pitch space and timbral grouping. Perhaps the most perceptually salient feature of the basic register-colour complex can be found in the upper voice. Picking up at measure 39 (Reh. D) where the timbre sequence featured above in **Figure 6.34** leaves off, the upper voices of the static texture vacillate between A5 and E6 a perfect fifth higher. Flutes 1 and 2, clarinet 1, piccolo trumpet, together with violins I and II, and the front desks of the viola and cello section, all sound the binary back-and-forth between the two upper pitches, and continue to do so until they taper off individually between measures 55 and 62. A similar binary oscillation occurs at different fixed-pitch locations across the orchestra with several timbrally and texturally important exceptions. Taken together, the rhythmically offset individuation of each instrument combines to form a unified and largely static texture whose varying motions become perceptually generalized. Importantly, however, the upper register persists with the binary pitch oscillation (E6-A5), continuing both the general sense of back-and-forth that has characterized various parameters of the work thus far and arresting the timbral sequencing of the pitch A5, all the while continuing to promote its textural prominence.

A second two-part layer of sonority occupies something like a middleground ground stratum, though given the complexity of the texture and its shimmering intent, we are apt to hear interactions within and between layers as moving back and forth along the perceptual *z* axis. First, the percussion instruments (harp, two vibraphones, and glockenspiel) form a churning pattern of harmonic simultaneities. Second, the four horns articulate a repeated four-note chord. Together these two timbrally distinct layers occupy similar strata within the global texture.

Lastly, *divisi* contrabasses, at first barely audible, occupy the background layer of the texture contributing to the middle register of the sonority with slightly shimmering and harmonically complex microtonal harmonics. Beginning at measure 51 (Reh. E), the initial six-voice harmony reduces to four voices. Concurrently, and together with a relatively thinned orchestral texture, two solo basses emerge from textural obscurity and begin a slow downward glissando, spanning only a perfect fourth across twelve measures. At the same time, the bird theme returns and transforms, now phased, staggered, and variously transposed by oboe 1, piccolo trumpet, four solo violins, two solo violas, and two solo cellos (exemplified in **Figure 6.26**, below). Together, the glissando and *staccatissimo* theme combine to create a downward contour.

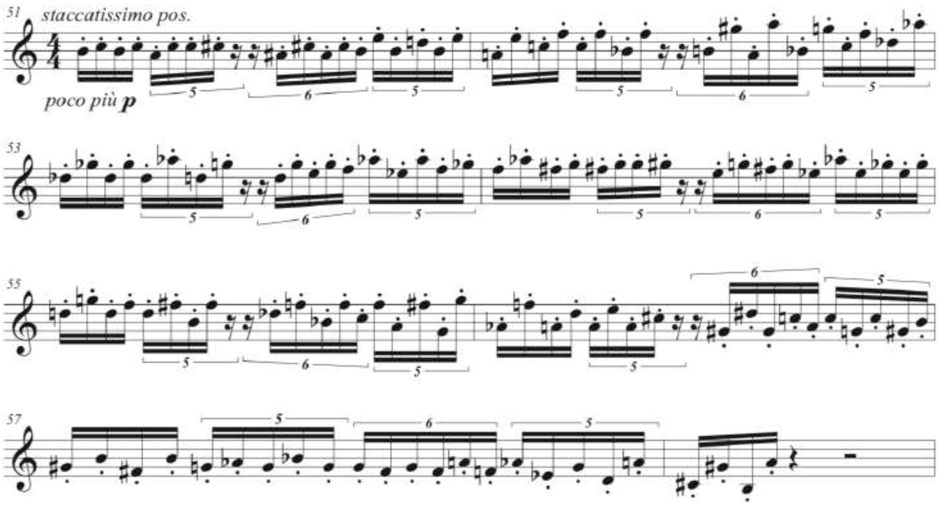


Figure 6.26: *Staccatissimo* figure, Oboe 1 in *Bright, Blue, and Shimmering*, mm. 51–58.

6.9.6 *Density*: m. 67-81

Section three stands as the darkest moment of the work. As the old saying goes, it is always darkest before dawn. Overall, orchestral energy focused in the low tessitura, serves to articulate the conceptual metaphor that "heavier" in music is "darker." While, of course, heavy is not a physical property of music, it is easily apprehended as an energetic feature of the experience of orchestral music.

Several important and salient elements articulated in earlier sections receive special consideration. First, and perhaps most importantly, the perception of binary oscillation continues to pervade the music. However, where earlier examples fluctuated in the middle or high registers and often across several measures, here the predominantly rhythmic fluctuation sways back and forth, lurching through a constricted one-measure pattern, effectively compressing binary polarity towards its ultimate goal. Each measure articulates a slow short-short-long rhythm (two quarter-notes followed by a half-note) that serves as a further and in some ways more proximate preview of the first few notes of the Stucky Sunrise Theme, as articulated by the brass in measures 121–122 later in the score.

Further orchestrational decisions serve to darken and thicken the texture, first the prominence of the low strings playing for the first time without mutes, the bassoons and contrabassoon, and the bass clarinet, together with the sustained notes of the tuba and the bass trombone. Next, pitch density and the concentration of intensive energy in the low register of the harp punctuates the texture and adds a modicum of resonance. Short and rapid oscillations related to those articulated by the violas in the opening few measures of the work re-appear, first in the bass marimba and then together with the bass clarinet (mm. 67–79). Additional microtonal trills articulated by the violins and violas in their lowest registers (and without mutes for the first time) serve to compound the flickering figuration (mm. 70–75). Noise elements take on increasing prominence first with the timpani *glissandi*, thunder sheet rolls, and gong and bass drum strikes (mm. 69–78), and second with the aeolian articulation of the flutes near the bottom of their range (mm. 71–80). Finally, increasing rhythmic activity in bassoons 1 and 2 (mm. 71–74), transforms at measure 75 into a compound melody whose upward and perhaps striving nature receives additional articulation from the bass clarinet (mm.75–79).

6.9.7 ***Intensification*: mm. 82-113**

Finally, the last stage in my extended set-up to rearticulate Stucky's Sunrise Theme culminates in the second movement with a process of intensification. Beginning near the golden section of the work's total duration (the work lasts roughly eleven minutes and the second movement begins six minutes and forty seconds after the celesta sounds the opening), the second movement bisects both the work's formal organization and its descriptive polarity. With the onset of a blurred rustling in the strings, the transition from night to day begins. Intensification, a feature of music that is at the same time both metaphoric and easily apperceived across sensory modalities, is here organized both at the visceral surface of the music as well as at its structural underpinning.

The first and most salient intensification takes place in the transition from softly murmuring oscillations spread across the string choir to a powerful *tutti* climax at measure 110 by way of a gradually brightening crescendo. Several features of this section relate to those highlighted in the preceding sections. First, the overlapping upward and downward scale passages that together comprise the string texture contain a simplified oscillating contour, now unfurling across a pitch span of a tritone plus an octave (B-F, mm. 82–100). Two additional streams, discussed in further detail below, superimpose over the string texture beginning at measures 84 and 85—pitched percussion, and noisy cymbal/timpani glissandi, the latter co-evolving in intensity with the strings. Scale-like passages begin to grow at measure 103 with a series of lengthening ascending figures played by the bass clarinet, two bassoons, and contrabassoons. Finally, at measure 108 the brass and string sections intensify the texture toward the penultimate climax at measure 110 in what can be understood as a preview of Stucky's climax.

Additional details serve to preview features of the coming Sunrise Theme. First, the vibraphone, harp, and celesta outline a few of the defining elements of Stucky's ultimate pitch collection: the E Lydian scale. Scale degrees degrees $\hat{1}$, $\hat{4}$, and $\hat{2}$ (pitch classes E, B*b*—the enharmonic equivalent of A#—,and F#) receive prominent and resonant articulation at measures 84, 87, and 88 followed in measure 89 by the pitch C, which corresponds to the raised fifth scale degree of Stucky's *x*-4 iteration in the Sunrise Theme. Though somewhat occulted, it is nevertheless possible to hear a variation on the binary oscillation of sections 1, 2, and 3 in the overlapping and sonorous glissandi articulated by three timpani with repeatedly struck cymbals laid over the membrane. Lastly, the dissipating and downward gesture immediately following the climax (mm. 110–113) both previews the descending woodwind and contrabass figure of the beginning of the Stucky quotation, and in a seamless transition, elide with the quote, which begins at measure 114 (Reh. H).

The second and underlying form of intensification rests in the pitch plan that governs the shimmering string texture from measures 82 through 102: pitch class compression. It might seem counter-intuitive that the compression of pitch would be associated with rising intensity. Nevertheless, the combination of reduced pitch class content together with the increased loudness of the crescendo forms a highly poignant joint intensification: the gesture becomes clearer as it gets louder. The increased presence of noise elements compared to other sections adds additional shimmer to the intensification in the upper bandwidth. **Table 6.9** demonstrates the process with orange highlight signalling content change in a given voice relative to the previous measure.

Group	Instruments	mm. 82–96	m. 97	m. 98	m. 99	m. 100
1	Vln. I: 1-8, 13, 14	C# D E♭ F	B C# D E♭	A B C# D	G# A B C#	G G# A B
2	Vln. I: 9-12; Vln. II: 1-4	G# A B C#	G# A B C#	G# A B C#	G# A B C#	G G# A B
3	Vln. II: 5-12	E♭ F G A♭	E♭ F G A♭	E♭ F G A♭	E♭ F G A♭	F G G# A
4	Vla. 1-8 + (9-10)	B C# D E♭	C# D E♭ F	D E♭ F G	E♭ F G A	F G G# A
5	Vla. 9-10			C# D E♭ F	D E♭ F G	E♭ F G A♭
# of Pitch Classes		8	8	8	8	6

Group	Instruments	m. 101	m. 102
1	Vln. I: 1-8, 13, 14	G G# A	G# A
2	Vln. I: 9-12; Vln. II: 1-4	G G# A	G G#
3	Vln. II: 5-12	G G# A	G# A
4	Vla. 1-10	G G# A	G G#
# of Pitch Classes		3	2

Table 6.10: Pitch-class allocation and compression, *Bright, Blue, and Shimmering*, mm. 82–102.

6.10 Conclusion

It is perhaps not surprising that the *eidos* of the sunrise is missing from earlier considerations of the sunrise topic. After all, realizing a sunrise as music requires the composer to organize complex interactions between instrumentation, texture, register, timbre, and time. Orchestral sunrises are complex and highly detailed works of music—the success of the effect depends upon it. Orchestral sunsets, paradoxically, rely on similar strategies.

Taken together, my analyses of the five works in Chapter 6 aim to demonstrate that the essence of the sunrise and sunset topics lies not solely with their emblematic features; the surface details of a composition do not themselves suffice for the apperception of a sunrise or sunset as a powerful and enargic expression of musical ekphrasis. Moreover, composers adopt different and sometimes seemingly contradictory approaches in realizing the phenomenon of luminosity within music. Neither pitch height, nor pitch class content, nor rhythmic variation, nor timbral variation stand as individually necessary or collectively sufficient to constitute an effective experience of sunlight in music.

Instead, the success of the musical representation of sunlight depends upon the ability of the composer to entice a listener into hearing an evolving energetic contour that displays a discernible identity and destiny, regardless of the underlying changes in other parameters. The techniques for creating the experience of gathering and dissipating energy have been examined in some detail above. What is common to all, however, is the importance of formal strategies that magnify or diminish sonorous intensity while reinforcing the familiarity of the principal motivic and textural bearers of the *eidos*. It is our ability to identify and re-identify these unities as the bearers of change that makes possible the apprehension of a transformational energy—one that underlies the intelligibility of the music as luminous. Moreover, the relationship between materials and form is made more evident and more easily recognizable when composers privilege eidetic imprinting early in a work, so that the changes unfolding along contours that span minutes in duration can be more readily apperceived.

Perhaps the questions raised at the beginning of this dissertation prompt a more immediate answer. I am not the first composer or theorist who struggles to understand how such accumulations of discernible energy can be conveyed in the first place. Many of the same issues arise in Schoenberg's manuscript, *The Musical Idea and the Logic, Technique and Art of its Presentation* (which was left unpublished upon his death in 1951), and show a remarkably similar understanding of the importance of the *eidos* in the act of composition.

"I myself," Schoenberg wrote, "consider the totality of a piece as the idea: the idea which its creator wanted to present" (as quoted in Schoenberg, Carpenter and Neff 2004: 1). However, the idea in question is nothing abstract, but a very immediate and intimate perception of a specific and complex motion. Perhaps in echoing ancient orators and their ekphrastic expressions, the art of the composer for Schoenberg consists of "the presentation of an object to a spectator in such a way that he perceives its composite parts as if in functional motion" (ibid.: 2). The listener must perceive not only the idea of the motion (analogous in painting to the yellow arrow pointing towards the blue sky) but also dynamic energy as formal and underlying contours unfold, together with all of the necessary complexity at the surface level. The work of art comprises neither its surface realization nor the idea underlying it, but the manner with which both working together create in the listener the unmistakable impression of the music's gathering or dissipating energy. As Schoenberg writes,

> I see the work as a whole first. Then I compose the details. In working them out, I always lose something. This cannot be avoided. There is always some loss when we materialize. But there is a compensating gain in vitality. We all have technical difficulties, which arise not from inability to handle the material, but from some inherent quality in the idea. And it is this idea, this first thought, that must dictate the structure and the texture of the work. (ibid.)

But even Schoenberg's ideological commitment to the originality of the idea is not entirely adequate with regard to his own youthful compositional technique. The Prelude and first song of the *Gurrelieder* show why this is the case. The source material for the expanded work, as I noted above, is a youthful song that sets a poem about the setting sun. Schoenberg might have us believe that his overall work is fully self-contained. And yet, it was Schoenberg himself who later returned to this composition in order to recontextualize it within a much larger work that deploys much greater and more developed forces than were present in its source. The original song is retained but now only appears as the next portion of a newly constructed musical whole—and at its most poignant moment—as the culminating statement of the new and more mature Prelude. It is a declamation and articulation of the idea of the work. And yet, for the original youthful work to take on the promise that it might have offered in its germinal state, Schoenberg undertook to create an entire new work of art around it, a work that would give to this relative fragment a meaning and a significance, an enargic expression, that it could not support on its own. As Schoenberg wrote,

> Art does not depend on the single component part alone; therefore, music does not depend upon the theme. For the work of art, like every living thing, is conceived as a whole—just

> like a child, whose arm or leg is not conceived separately. The inspiration is not the theme, but the whole of the work. (ibid.: 2)

If the work of art is the idea, then a fragment of another work of art or even another whole work of art can become something entirely new with the breath blown into it through the idea. The fragment itself may suggest a whole work of art, as yet unrealized, of which it is only a part.

Sunrise and sunset topics perhaps provide a privileged context in which fragments can become entirely new works of art. For their power lies precisely in the fact that the contour is occulted as an *eidos* that can only be experienced over an extended time span. Because of this, the surface itself does not bear the conventional code of the topic. Rather, the surface is always a consequence of the energetic contour, the *eidos*, that it at most realizes. It is of course possible to write a short and obvious orchestral sunrise. But an effective sunrise takes time to accumulate, to heighten and to gather energy. The experience demands attention from the listener not merely to perceive the idea but to understand in the surface details the realization of that idea from moment to moment and over the course of the whole work. Luminous phenomena, because of their very peculiar and intimate energies, cannot be represented on the surface of the work, as is the case for more conventional topics, but rely on a commitment on the part of the listener to enter into an intimate and personal form of listening. It is therefore no surprise that sunrise and sunset topics are gateways to other worlds that represent a connection between a world of materiality and a world of the spirit. It is the idea that carries us from one domain and to another, an idea that is only fully intelligible to us in the immediacy of an apperceived contour of accumulating or dissipating energy.

Appendix A

Composer	Work
Adams, John Luther	*The Light that fills the world*
Bartók, Béla	*Bluebeard's Castle*
Bartók, Béla	*The Wooden Prince*
Bax, Arnold	*Spring Fire*
Bax, Arnold	*November Woods*
Bax, Arnold	*From Dusk Till Dawn*
Bax, Arnold	*Morning Song, "Maytime in Sussex"*
Benjamin, George	*At First Light*
Bergman, Erik	*Aubade*
Bridge, Frank	*Summer*
Bridge, Frank	*Enter Spring*
Bridge, Frank	*Hourglass*
Cendo, Raphaël	*Registre des lumières*
Cherney, Brian	*Illuminations*
D'Indy, Vincent	*Jour d'été à la montagne*
David, Félicien	*Le Desert*
Debussy, Claude	*La Mer*
Debussy, Claude	*Prelude a l'apres-midi d'un faune*
Debussy, Claude	*Iberia*
Debussy, Claude	*Danses Sacrée et Profane*
Delius, Frederick	*A Song Before Sunrise*
Delius, Frederick	*On Hearing the First Cuckoo in Spring*
Delius, Frederick	*Florida Suite*
Di Castri, Zosha	*Alba*
Fagerlund, Sebastian	*Violin Concerto "Darkness in Light"*
Feldman, Morton	*Coptic Light*
Franck, César	*Psyché, M. 47 (version for orchestra)*
Gilbert, Nicolas	*Up*
Grieg, Edvard	*Peer Gynt, Op. 23*
Haas, George Friedrich	*Hyperion*
Haydn, Joseph	*Symphony No. 1, No. 6 "Le matin"*
Haydn, Joseph	*String Quartet in B flat major Op.76 No.4 "Sunrise," Q 36*

Composer	***Work***
Haydn, Joseph	*The Creation*
Hillborg, Anders	*King Tide*
Holst, Gustav	*The Planets*
Jalbert, Pierre	*From Dusk To Starry Night*
Klami, Uuno	*Aurora borealis, op. 38*
Kraggerud, Henning	*Concerto in A, "Morning"*
Kraggerud, Henning	*Overture in C Major*
Langgaard, Rued	*Symphony No. 14, "Morgenen" (The Morning)*
Liszt, Franz	*Dante Symphony*
Maxwell-Davies, Peter	*An Orkney Wedding with Sunrise*
Mozart, Wolfgang Amadeus	*The Magic Flute*
Murail, Tristan	*Treize Couleurs du Soleil Couchant*
Nielsen, Carl	*Helios, Op. 17*
Nordgren, Pehr Henrik	*Taivaanvalot (The Lights of Heaven)*
Nørgard, Per	*Twilight*
Pickard, John	*Sixteen Sunrises*
Prokofiev, Sergey	*Scythian Suite*
Ravel, Maurice	*Daphnis and Chloé*
Respighi, Ottorino	*The Fountains of Rome*
Respighi, Ottorino	*Pines of Rome (Pini di Roma)*
Respighi, Ottorino	*Il Tramonto*
Rimsky-Korsakov, Nikolay	*Night on Mount Triglav*
Rimsky-Korsakov, Nikolay	*Scheherazade (Op. 35)*
Rossini, Gioacchino	*Barber of Seville*
Rudders, Paol	*Solar Trilogy*
Saariaho, Kaija	*Laterna Magica*
Saariaho, Kaija	*Lichtbogen*
Saariaho, Kaija	*Notes on Light*
Sallinen, Aulis	*Sunrise Serenade, Op. 63*
Salonen, Esa-Pekka	*Nyx*
Schoenberg, Arnold	*Gurrelieder*
Schoenberg, Arnold	*Five Pieces for Orchestra*
Schwantner, Joseph	*New Morning for the World, "Daybreak of Freedom"*
Sibelius, Jean	*Pohjola's Daughter*
Sibelius, Jean	*Night Ride and Sunrise*

Composer	***Work***
Stolz, Robert	*Fruhjahrsparade*
Stolz, Robert	*Im Prater bluh'n wieder die Baume, Op. 247 (arr. for orchestra)*
Strauss II, Johann	*The Blue Danube*
Strauss II, Johann	*Frühlingsstimmen (Voices of Spring), Op. 410*
Strauss, Richard	*Eine Alpensinfonie*
Strauss, Richard	*Also sprach Zarathustra*
Stravinsky, Igor	*Rite of Spring*
Suppé, Franz von	*Morning, Noon and Night in Vienna*
Takemitsu, Toru	*Signals From Heaven: Day Signal*
Takemitsu, Toru	*Signals From Heaven: Night Signal*
Tchaikovsky, Pyotr	*Serenade for Strings in C Major Op. 48*
Vasks, Pēteris	*Concerto for Violin and Orchestra: Distant Light*
Wagner, Richard	*Götterdämmerung*
Wagner, Richard	*Siegfried*
Wagner, Richard	*Parsifal*
Wagner, Richard	*Lohengrin*
Wagner, Richard	*Das Rheingold*
Waxman, Franz	*Dusk*
Wiklund, Adolf	*Summer Night and Sunrise*
Zimmermann, Bernd Alois	*Photoptosis*

Appendix B

The analysis of Schoenberg's *Gurrelieder* (Prelude and first song) can be found in the following pages. The score is reproduced with the kind permission of Belmont Music Publishers.

GURRE-LIEDER

VON

JENS PETER JACOBSEN

DEUTSCH VON ROBERT FRANZ ARNOLD

FÜR

SOLI, CHOR UND ORCHESTER

VON

ARNOLD SCHÖNBERG

UNIVERSAL-EDITION A.G.
WIEN LEIPZIG

COPYRIGHT 1920 BY UNIVERSAL-EDITION

U. E. Nr. 6300.

© Copyright Renewed 1948 by Arnold Schoenberg

BELMONT MUSIC PUBLISHERS
P.O. Box 49961 • Los Angeles, California 90049

BESETZUNG

SOLI:

Waldemar (Tenor)
Tove (Sopran)
Waldtaube (Mezzosopran oder Alt)

Bauer (Baß)
Klaus-Narr (Tenor)
Sprecher

CHØRE:

Waldemars Mannen (3 vierstimmige Männerchöre)
Achtstimmiger gemischter Chor

HOLZBLÄSER:

4 kleine Flöten
4 große Flöten
} 8 große Flöten
3 Oboen
2 Englisch-Hörner
} 5 Oboen

3 Klarinetten in A oder B
2 Es-Klarinetten
2 Baß-Klarinetten in B
} 7 Klarinetten in A
3 Fagotte
2 Kontra-Fagotte

BLECHBLÄSER:

10 Hörner in F (4 Wagner-Tuben)
6 Trompeten in F, B, C
1 Baß-Trompete in Es
1 Alt-Posaune

4 Tenor-Baß-Posaunen
1 Baß-Posaune in Es
1 Kontrabaß-Posaune
1 Kontrabaß-Tuba

SCHLAGINSTRUMENTE:

6 Pauken
Große Rührtrommel
Becken
Triangel
Glockenspiel
Kleine Trommel

Große Trommel
Holzharmonika (Xylophon)
Ratschen
Einige große eiserne Ketten
Tamtam

4 HARFEN, CELESTA.

STREICHER:

Violine I 10fach geteilt
II 10
Bratsche 8
Violoncell 8
Kontrabaß
} in mehrfacher Besetzung

AUFFÜHRUNGSRECHT VORBEHALTEN · DROITS D'EXÉCUTION RÉSERVÉS

UNIVERSAL-EDITION A.-G.
WIEN LEIPZIG

COPYRIGHT 1920 BY UNIVERSAL-EDITION

© Copyright Renewed 1948 by Arnold Schoenberg

GURRE-LIEDER

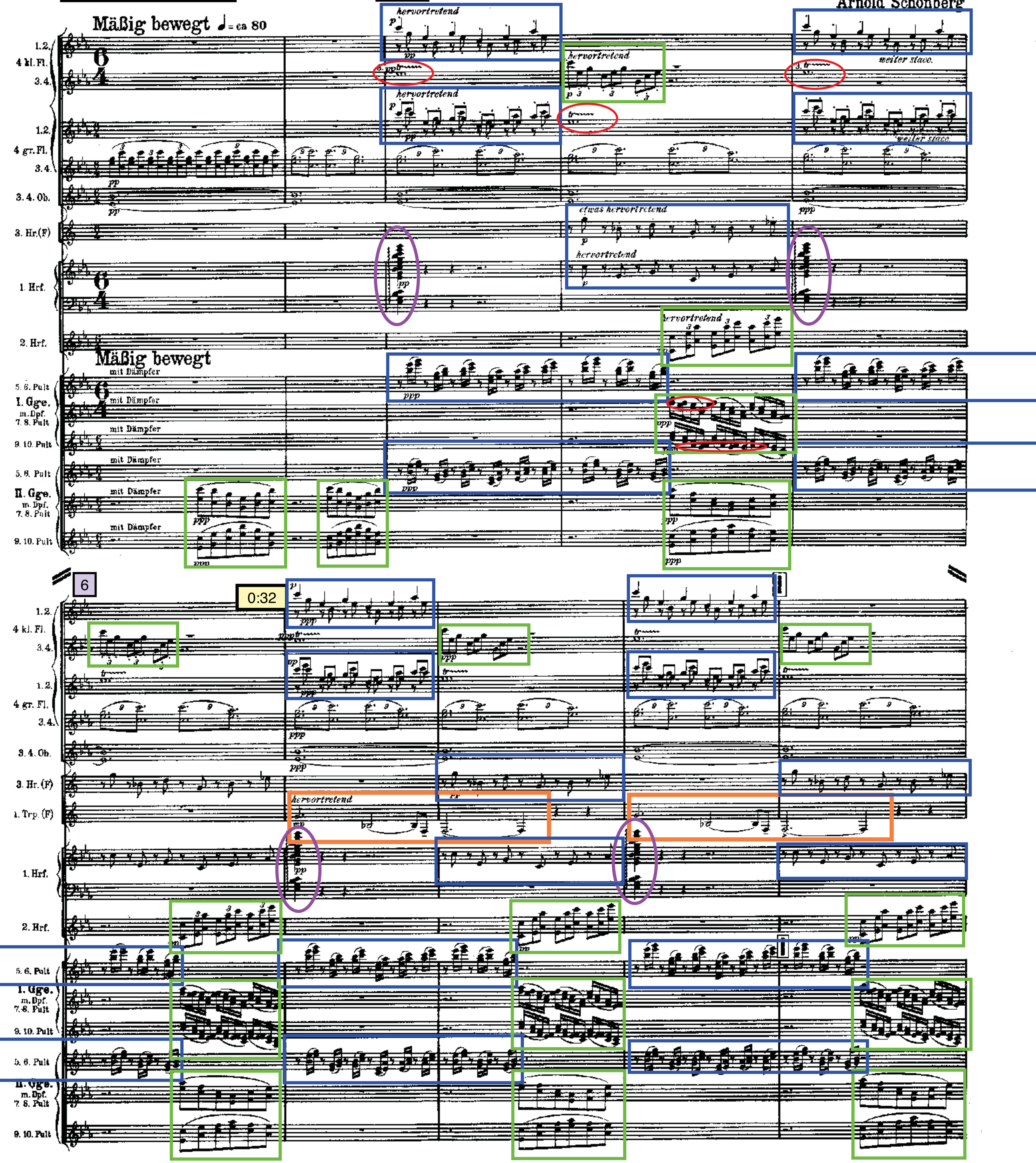
von Jens Peter Jacobsen
(deutsch von Robert Franz Arnold)
für Soli, Chor und Orchester

Introduction

A

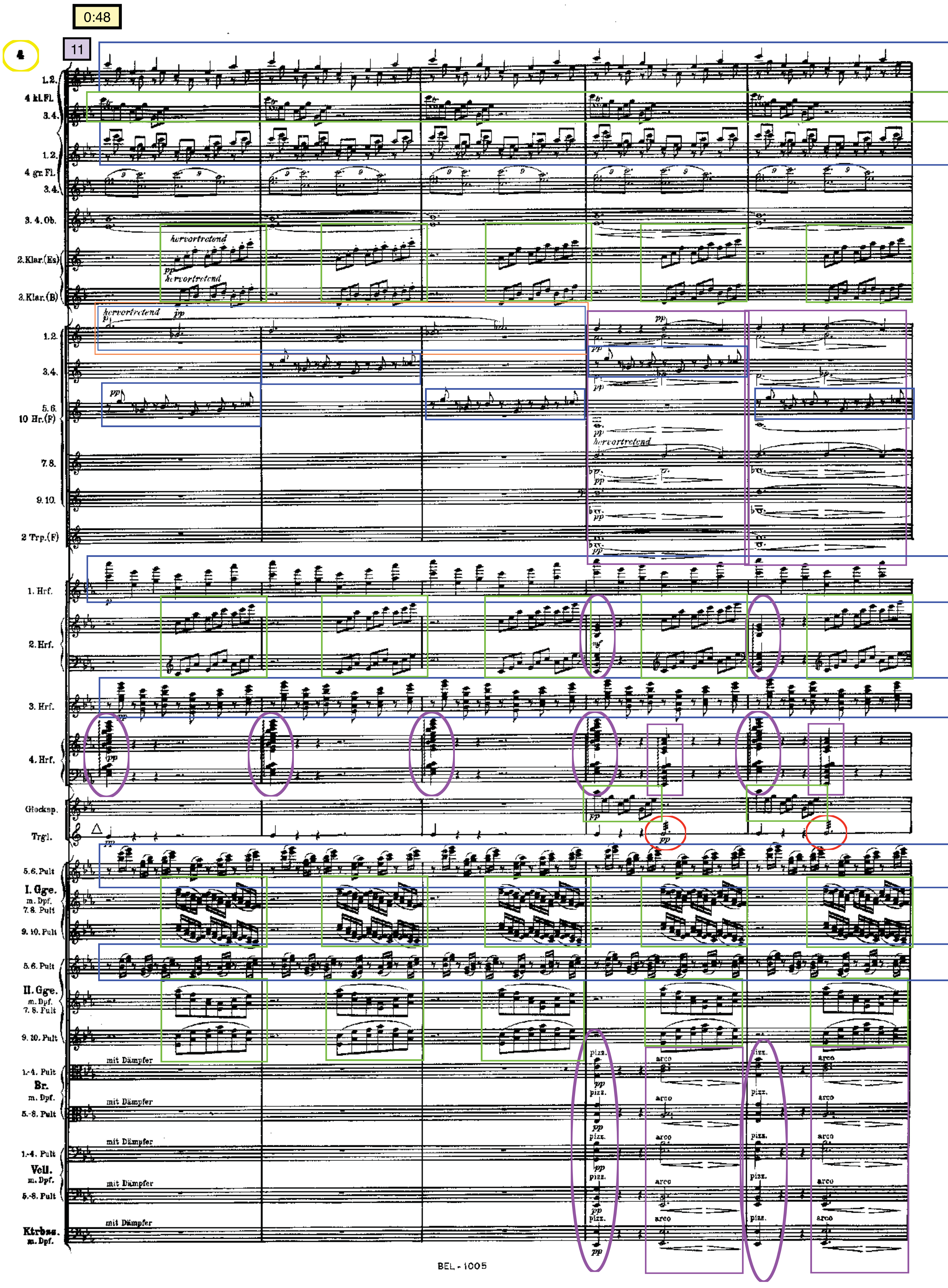
I. TEIL

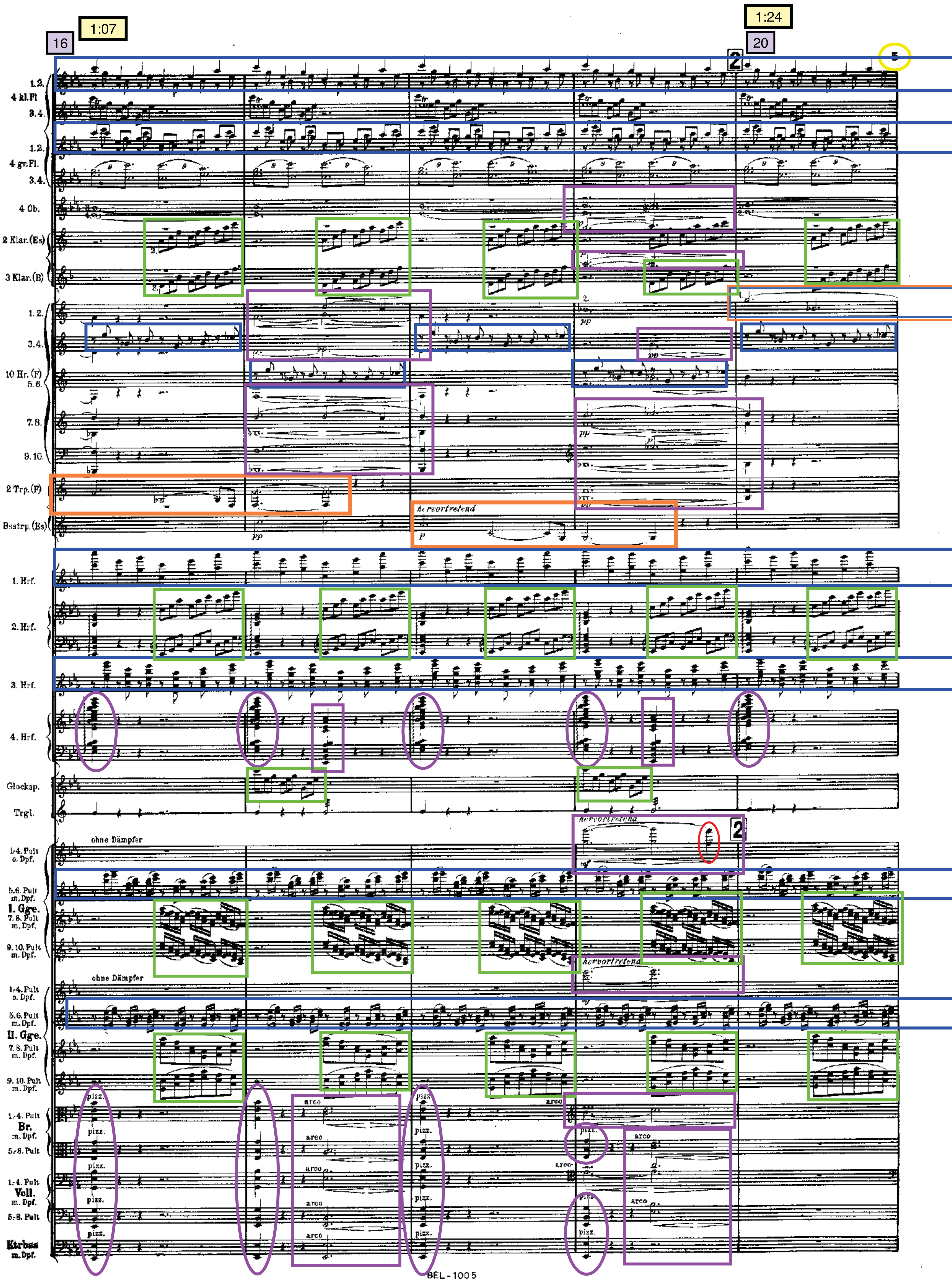
Arnold Schönberg


Mäßig bewegt ♩= ca 80
1.2.
4 kl. Fl.
3.4.
1.2.
4 gr. Fl.
3.4.
3. 4. Ob.
3. Hr. (F)
1. Hrf.
2. Hrf.
Mäßig bewegt
mit Dämpfer
5. 6. Pult
I. Gge.
m. Dpf.
7. 8. Pult
9. 10. Pult
5. 6. Pult
II. Gge.
m. Dpf.
7. 8. Pult
9. 10. Pult
hervortretend
weiter stacc.
etwas hervortretend
pp
ppp
6
0:32
1. Trp. (F)

Copyright 1920 by Universal-Edition © Copyright Renewed 1948 by Arnold Schoenberg

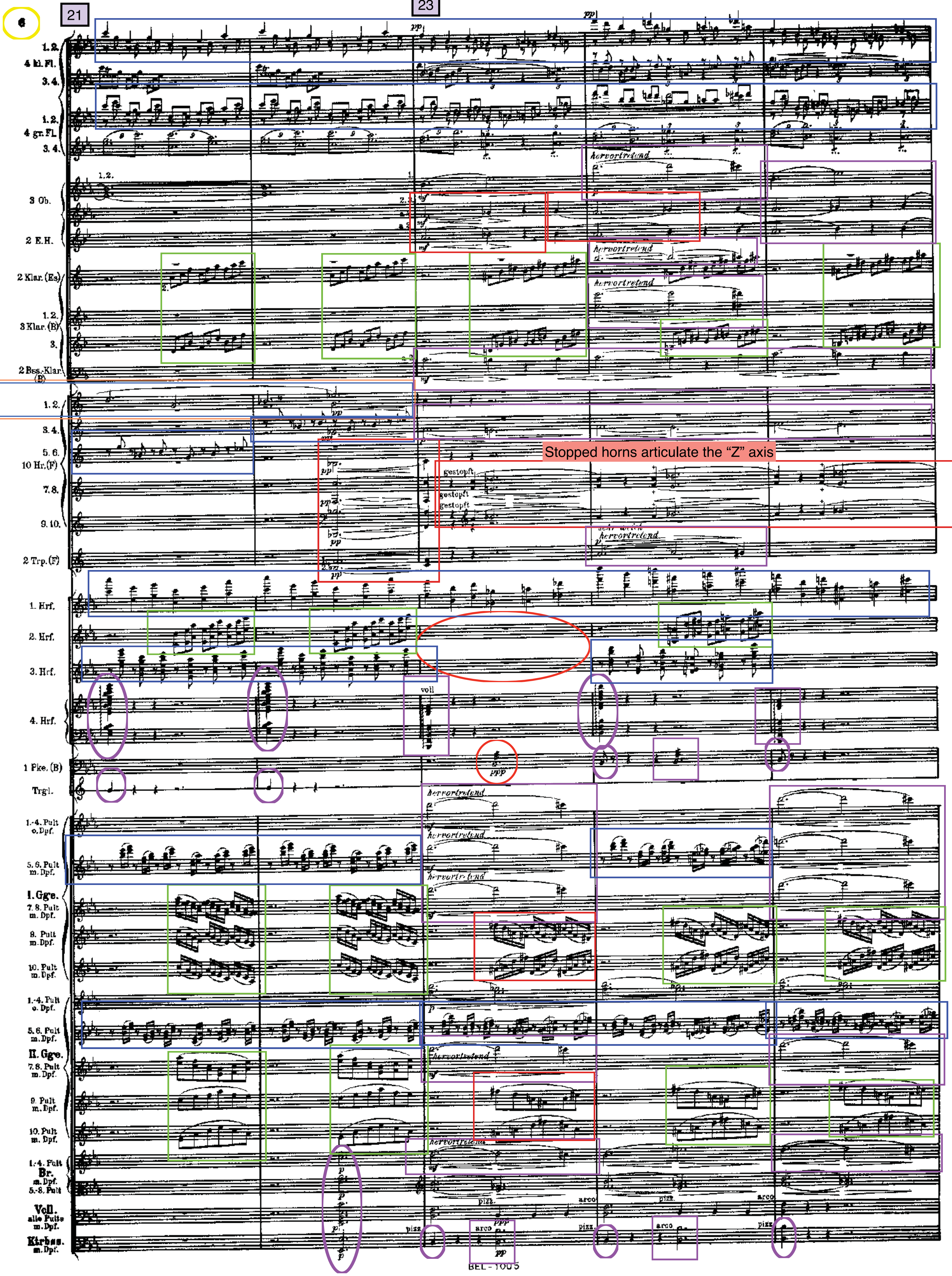
Belmont Music Publishers


0:48
11
4
1.2.
4 kl. Fl.
3.4.
1.2.
4 gr. Fl.
3.4.
3. 4. Ob.
2. Klar. (Es)
3. Klar. (B)
hervortretend
1.2.
3.4.
5.6.
10 Hr. (F)
7.8.
9.10.
2 Trp. (F)
1. Hrf.
2. Hrf.
3. Hrf.
4. Hrf.
Glocksp.
Trgl.
5.6. Pult
I. Gge.
m. Dpf.
7.8. Pult
9.10. Pult
5.6. Pult
II. Gge.
m. Dpf.
7.8. Pult
9.10. Pult
1.-4. Pult
Br.
m. Dpf.
5.-8. Pult
1.-4. Pult
Vcll.
m. Dpf.
5.-8. Pult
Ktrbss.
m. Dpf.
mit Dämpfer
pizz.
arco
pp
p
mf


16
1:07
1:24
20
2
5
1.2.
4 kl.Fl
3.4.
1.2.
4 gr.Fl.
3.4.
4 Ob.
2 Klar.(Es)
3 Klar.(B)
1.2.
3.4.
10 Hr. (F)
5.6.
7.8.
9.10.
2 Trp.(F)
Bsstrp.(Es)
hervortretend
pp
p
1. Hrf.
2. Hrf.
3. Hrf.
4. Hrf.
Glocksp.
Trgl.
ohne Dämpfer
1.-4. Pult o. Dpf.
5.6. Pult m. Dpf.
I. Gge.
7.8. Pult m. Dpf.
9.10. Pult m. Dpf.
hervortretend
2
ohne Dämpfer
1.-4. Pult o. Dpf.
5.6. Pult m. Dpf.
II. Gge.
7.8. Pult m. Dpf.
9.10. Pult m. Dpf.
1.-4. Pult
Br.
m. Dpf.
5.-8. Pult
1.-4. Pult
Vcll.
m. Dpf.
5.-8. Pult
Ktrbss
m. Dpf.
pizz.
arco

Parametric Drift

1:28 21 1:36 23


6
1.2. 4 kl. Fl. 3.4.
1.2. 4 gr. Fl. 3.4.
3 Ob.
2 E.H.
2 Klar. (Es)
1.2. 3 Klar. (B) 3.
2 Bss. Klar. (B)
1.2. 3.4. 5.6. 10 Hr. (F) 7.8. 9.10.
2 Trp. (F)
1. Hrf.
2. Hrf.
3. Hrf.
4. Hrf.
1 Pke. (B)
Trgl.
1.-4. Pult o. Dpf.
5.6. Pult m. Dpf.
I. Gge.
7.8. Pult m. Dpf.
9. Pult m. Dpf.
10. Pult m. Dpf.
1.-4. Pult o. Dpf.
5.6. Pult m. Dpf.
II. Gge.
7.8. Pult m. Dpf.
9. Pult m. Dpf.
10. Pult m. Dpf.
1.-4. Pult Br. m. Dpf. 5.-8. Pult
Vcll. alle Pulte m. Dpf.
Kbass. m. Dpf.
pp
mf
hervortretend
gestopft
sehr weich
voll
ppp
pizz.
arco
p

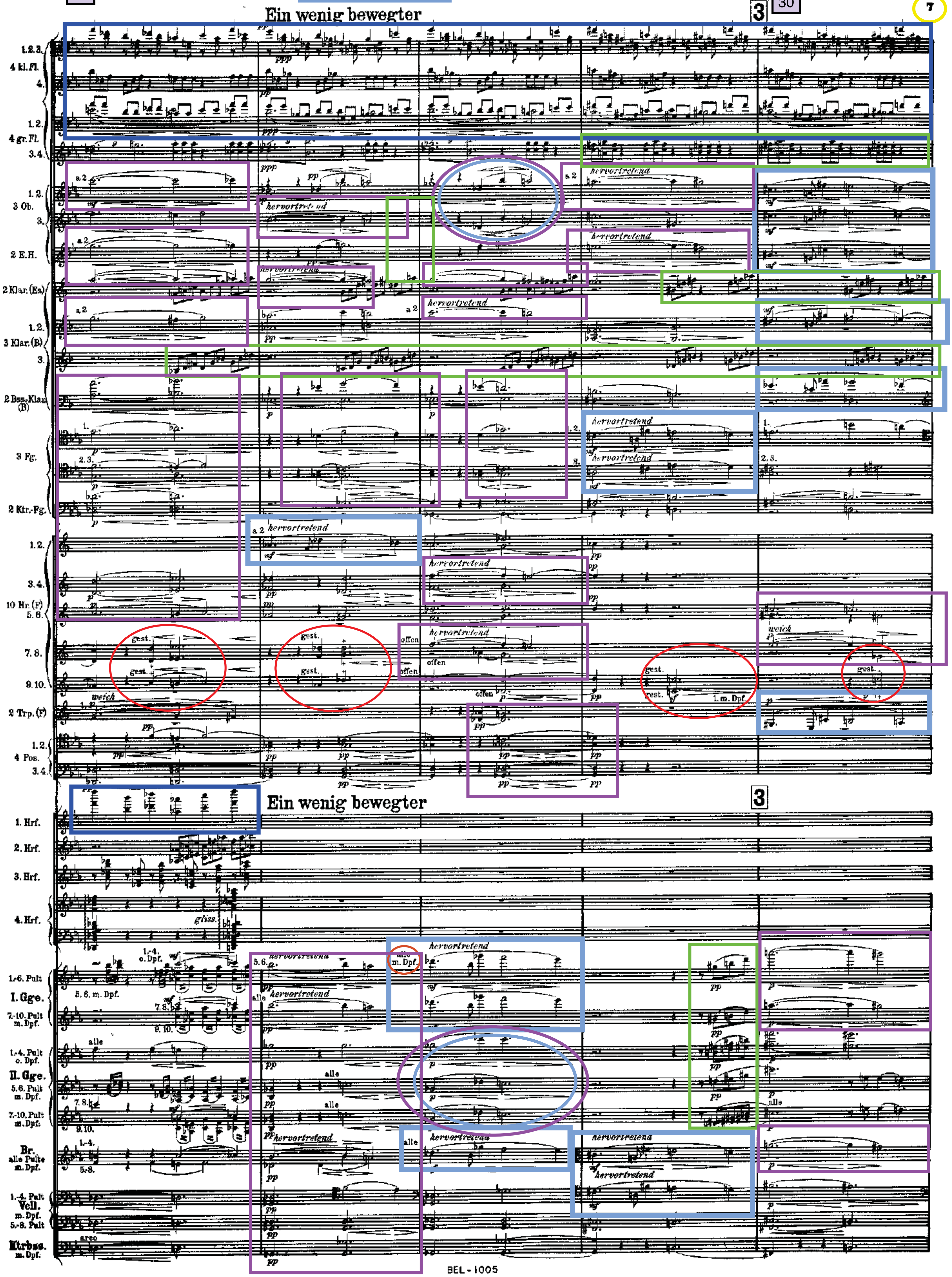
Stopped horns articulate the “Z” axis

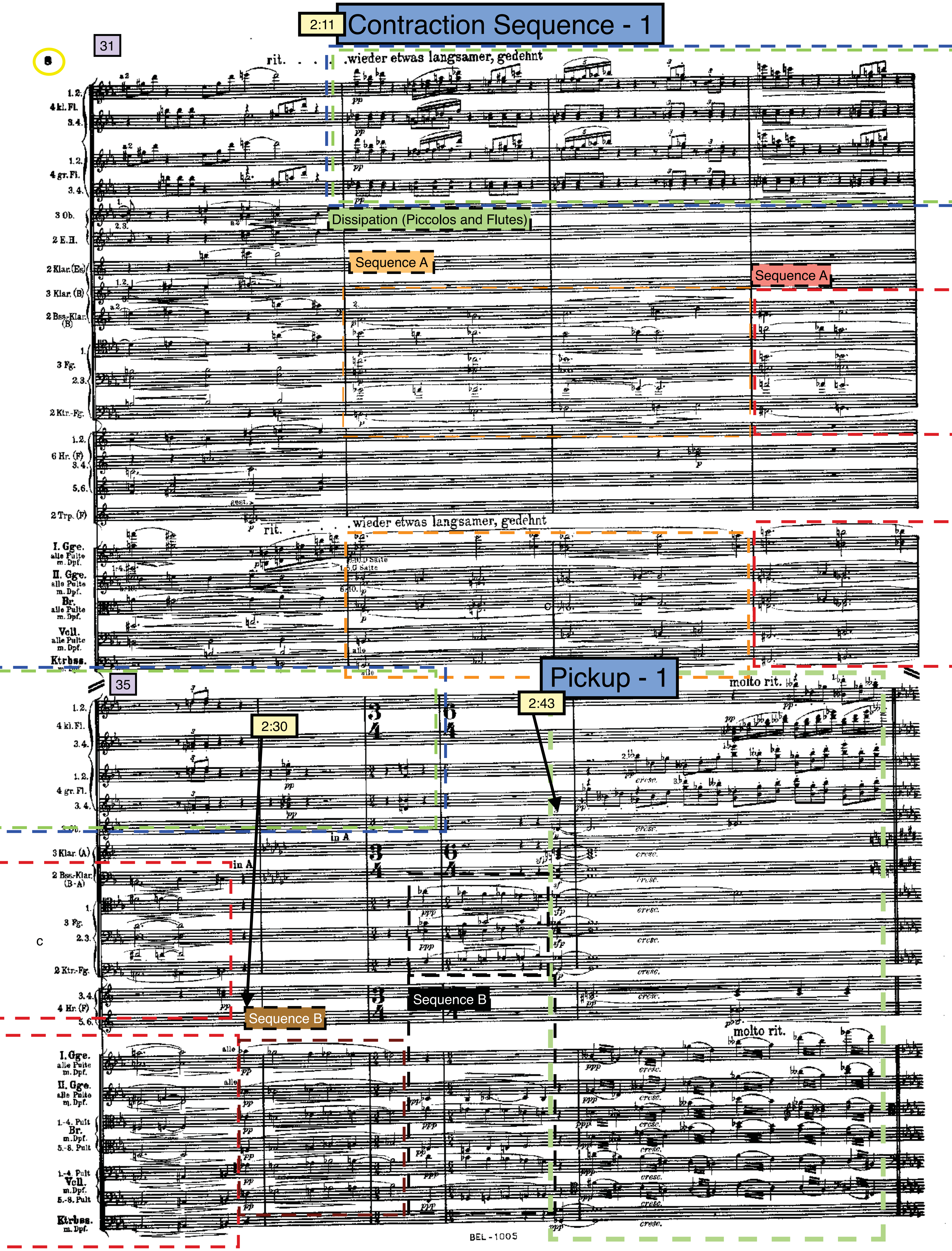
26

1:51

Saturation of THEME B

30

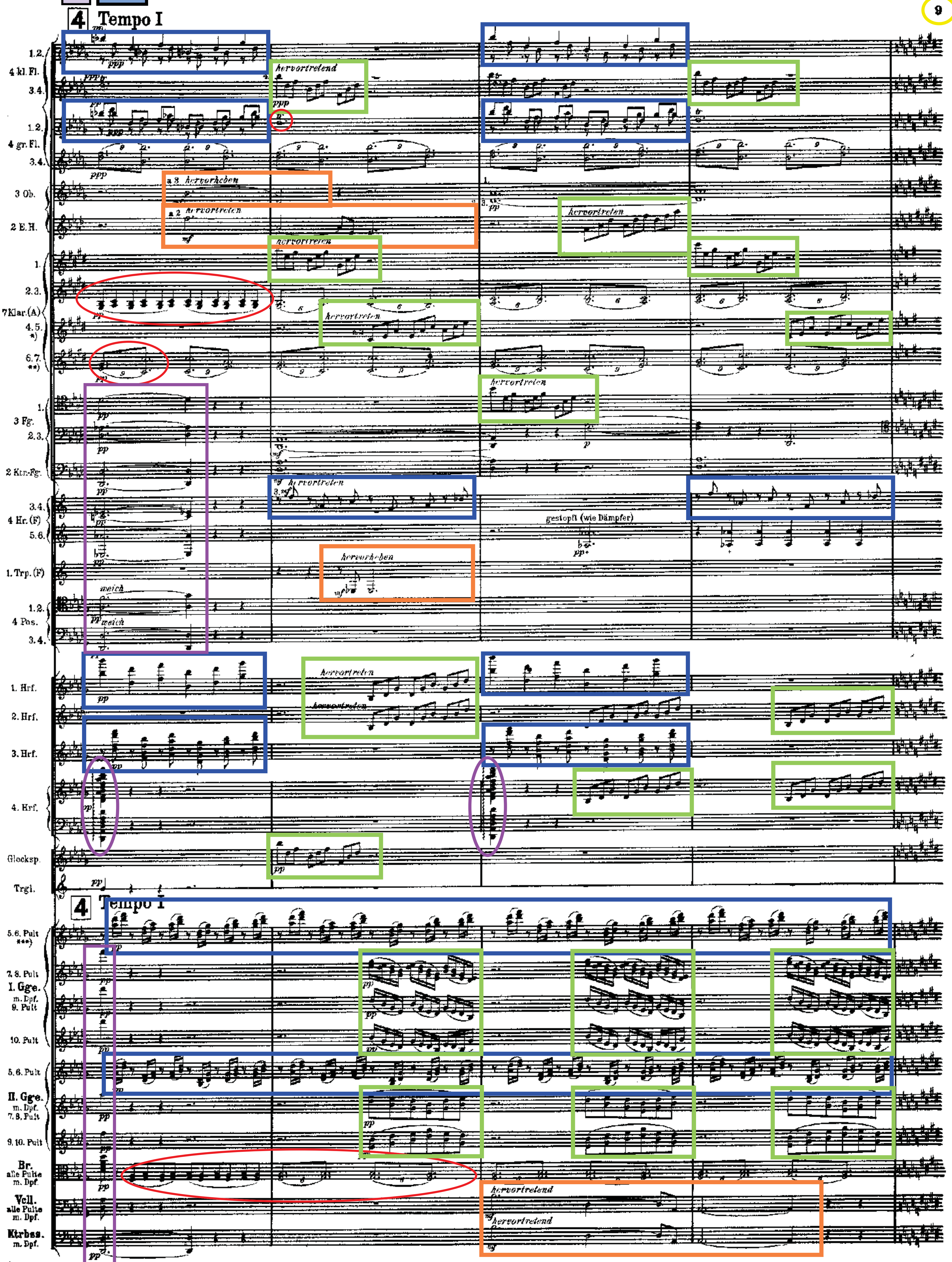

Ein wenig bewegter
3
1. 2. 3. 4 kl. Fl. 4.
1. 2. 4 gr. Fl. 3. 4.
1. 2. 3 Ob. 3.
2 E.H.
2 Klar. (Es)
1. 2. 3 Klar. (B) 3.
2 Bss.-Klar. (B)
3 Fg.
2 Ktr.-Fg.
1. 2. 3. 4. 10 Hr. (F) 5. 6. 7. 8. 9. 10.
2 Trp. (F)
1. 2. 4 Pos. 3. 4.
1. Hrf.
2. Hrf.
3. Hrf.
4. Hrf.
1.-6. Pult I. Gge. 7.-10. Pult m. Dpf.
1.-4. Pult o. Dpf. II. Gge. 5. 6. Pult m. Dpf. 7.-10. Pult m. Dpf.
Br. alle Pulte m. Dpf.
1.-4. Pult Vcll. m. Dpf. 5.-8. Pult
Ktrbss. m. Dpf.
a 2
hervortretend
gest.
offen
weich
1. m. Dpf.
gliss.
o. Dpf.
m. Dpf.
alle
arco
mf
p
pp
ppp


8
2:11
Contraction Sequence - 1
31
rit.
wieder etwas langsamer, gedehnt
1.2. 4 kl. Fl. 3.4.
1.2. 4 gr. Fl. 3.4.
3 Ob.
2 E.H.
2 Klar.(Es)
3 Klar. (B)
2 Bss-Klar. (B)
1. 3 Fg. 2.3.
2 Ktr.-Fg.
1.2. 6 Hr. (F) 3.4. 5.6.
2 Trp. (F)
I. Gge. alle Pulte m. Dpf.
II. Gge. alle Pulte m. Dpf.
Br. alle Pulte m. Dpf.
Vcll. alle Pulte m. Dpf.
Ktrbss.
Dissipation (Piccolos and Flutes)
Sequence A
Sequence A
pp
gest.
35
2:30
Pickup - 1
2:43
molto rit.
in A
3 Klar. (A)
2 Bss-Klar. (B-A)
1. 3 Fg. 2.3.
2 Ktr.-Fg.
3.4. 4 Hr. (F) 5.6.
Sequence B
Sequence B
cresc.
ppp
I. Gge. alle Pulte m. Dpf.
II. Gge. alle Pulte m. Dpf.
1.-4. Pult Br. m. Dpf. 5.-8. Pult
1.-4. Pult Vcll. m. Dpf. 5.-8. Pult
Ktrbss. m. Dpf.
alle

2:49

40

A'

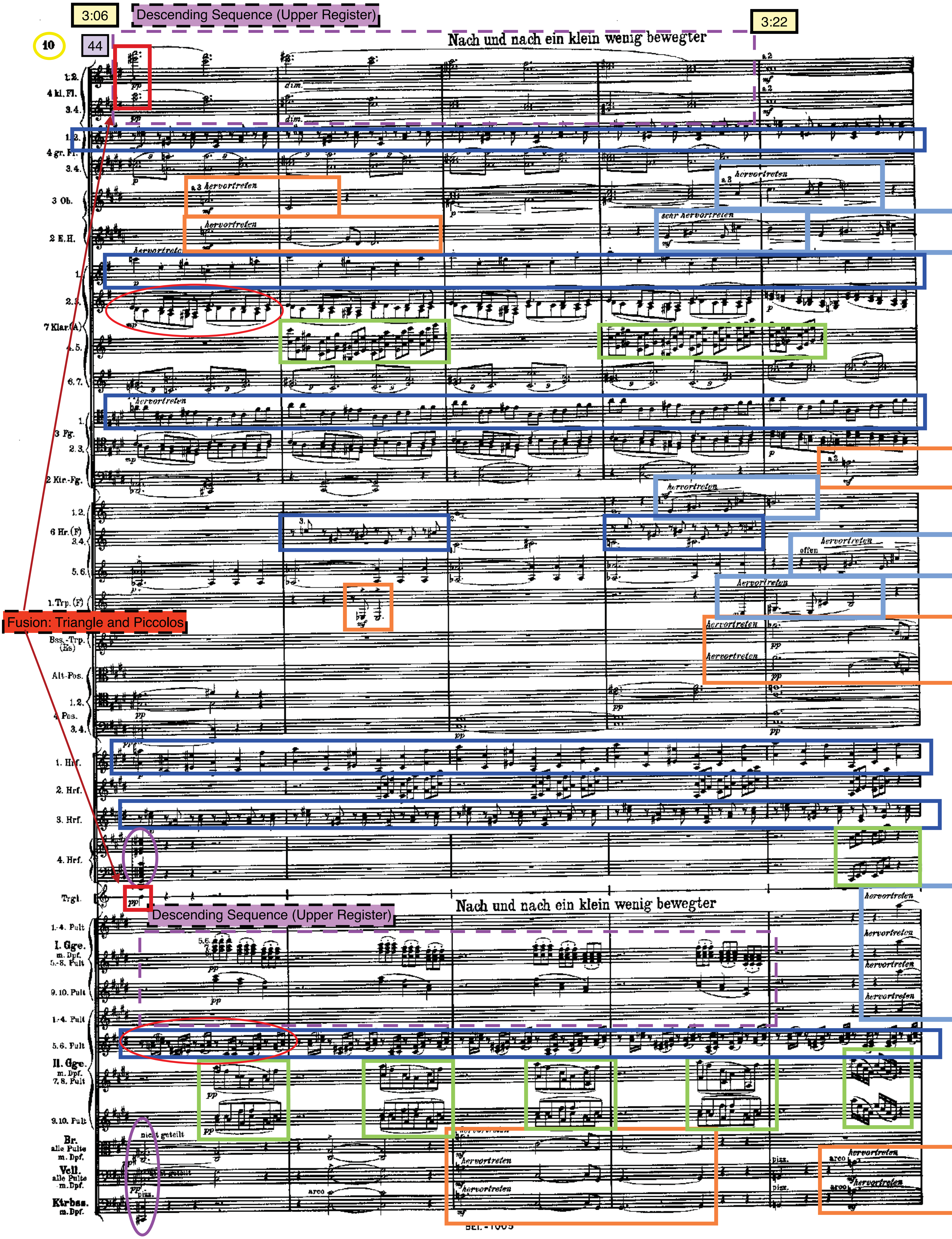

4 Tempo I
1.2.
4 kl. Fl.
3.4.
1.2.
4 gr. Fl.
3.4.
3 Ob.
2 E.H.
1.
2.3.
7 Klar. (A)
4.5. *)
6.7. **)
1.
3 Fg.
2.3.
2 Ktr.-Fg.
3.4.
4 Hr. (F)
5.6.
1. Trp. (F)
1.2.
4 Pos.
3.4.
1. Hrf.
2. Hrf.
3. Hrf.
4. Hrf.
Glocksp.
Trgl.
5.6. Pult ***)
7.8. Pult
I. Gge.
m. Dpf.
9. Pult
10. Pult
5.6. Pult
II. Gge.
m. Dpf.
7.8. Pult
9.10. Pult
Br.
alle Pulte
m. Dpf.
Vcll.
alle Pulte
m. Dpf.
Ktrbss.
m. Dpf.
ppp
pp
mf
hervortretend
a 2
hervorheben
hervortreten
weich
gestopft (wie Dämpfer)
pp+

---

*) Die 4. und 5. Klarinette in A wird von den Bläsern der Baß-Klarinetten gespielt

**) Die 6. und 7. Klarinette in A wird von den Bläsern der Es-Klarinetten gespielt

***) Die sämtlichen Streichinstrumente verbleiben, bis eine andere Bezeichnung diese Bestimmung aufhebt, mit Dämpfern



10
44
Nach und nach ein klein wenig bewegter
1.2.
4 kl. Fl.
3.4.
1.2.
4 gr. Fl.
3.4.
3 Ob.
2 E.H.
1.
2.3.
7 Klar.(A)
4.5.
6.7.
1.
3 Fg.
2.3.
2 Kfr.-Fg.
1.2.
6 Hr. (F)
3.4.
5.6.
1. Trp. (F)
Bss.-Trp. (Es)
Alt-Pos.
1.2.
4 Pos.
3.4.
1. Hrf.
2. Hrf.
3. Hrf.
4. Hrf.
Trgl.
Nach und nach ein klein wenig bewegter
1.-4. Pult
I. Gge. m. Dpf.
5.-8. Pult
9.10. Pult
1.-4. Pult
5.6. Pult
II. Gge. m. Dpf.
7.8. Pult
9.10. Pult
Br. alle Pulte m. Dpf.
Vcll. alle Pulte m. Dpf.
Kfrbss. m. Dpf.
hervortreten
a 3 hervortreten
sehr hervortreten
offen
nicht geteilt
pizz.
arco
dim.
a 2
pp
p
mp
mf

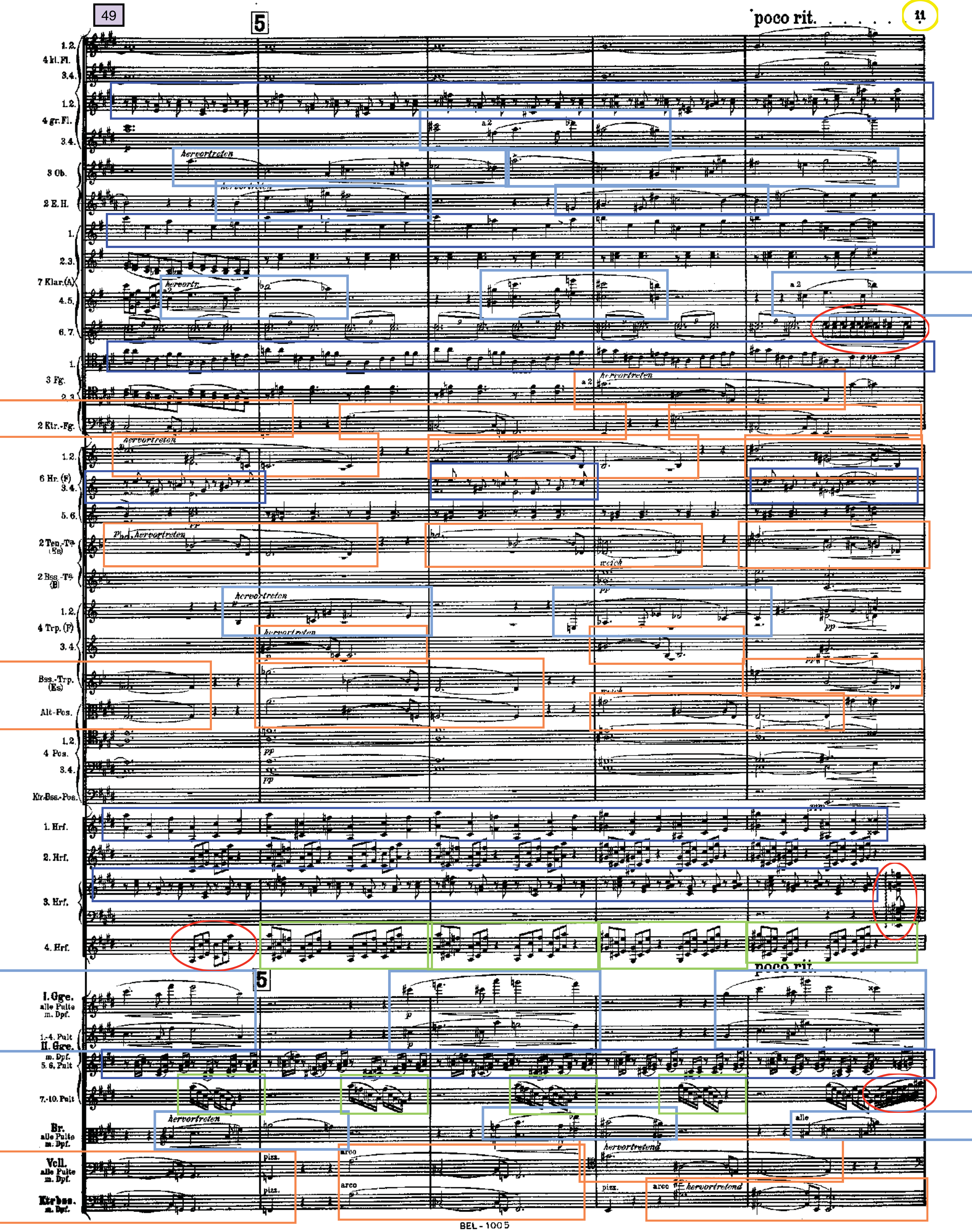
3:06

Descending Sequence (Upper Register)

3:22

Fusion: Triangle and Piccolos

Descending Sequence (Upper Register)

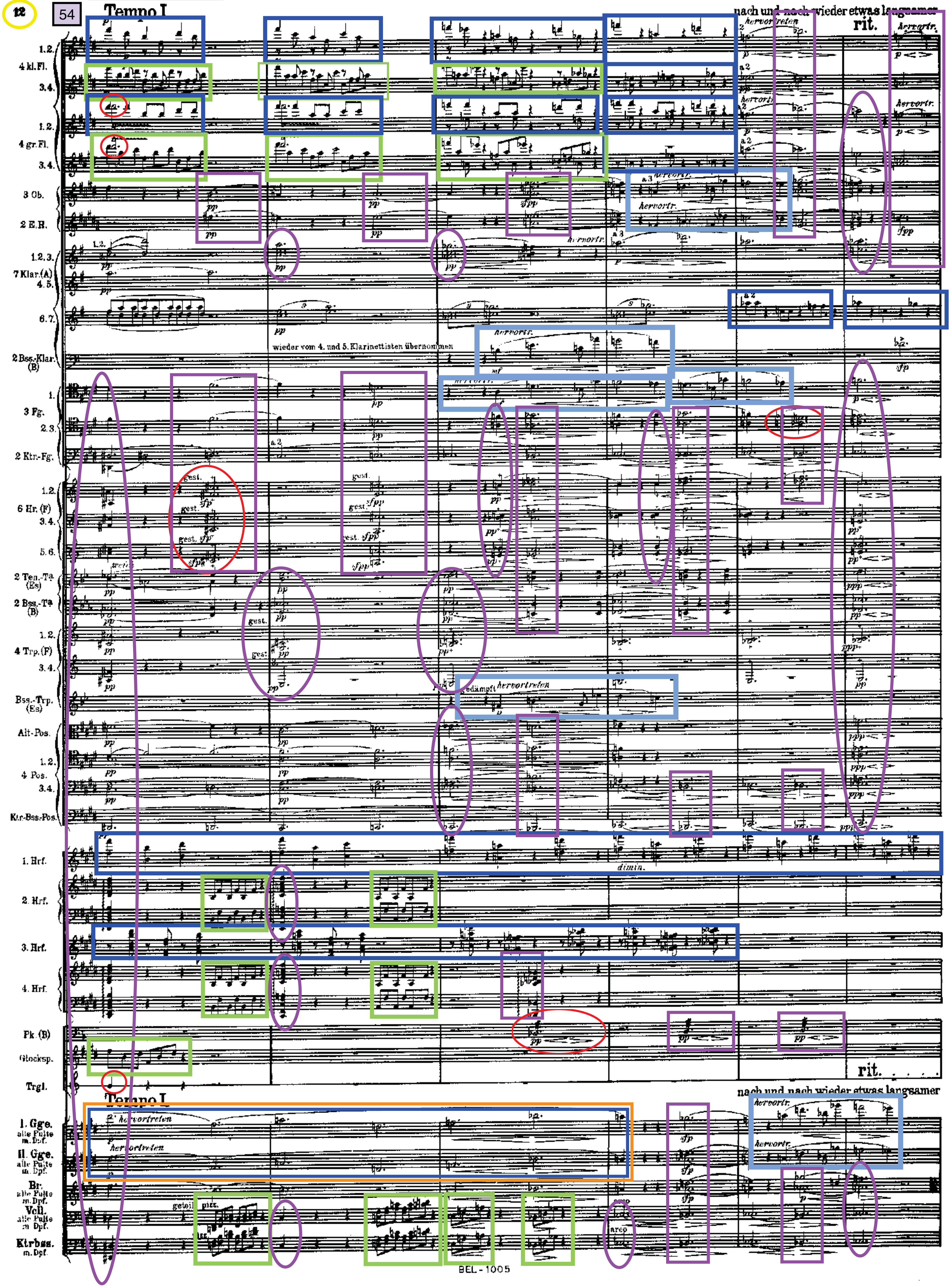

5
poco rit. . . . . . .
1. 2.
4 kl. Fl.
3. 4.
1. 2.
4 gr. Fl.
3. 4.
a 2
3 Ob.
hervortreten
2 E. H.
hervortreten
1.
2. 3.
7 Klar. (A)
4. 5.
hervortr.
a 2
6. 7.
1.
3 Fg.
2. 3.
a 2
hervortreten
2 Ktr.-Fg.
1. 2.
hervortreten
6 Hr. (F)
3. 4.
5. 6.
pp
2 Ten.-Tb. (Es)
Pp
hervortreten
weich
2 Bss.-Tb. (B)
pp
1. 2.
hervortreten
4 Trp. (F)
3. 4.
hervortreten
p
pp
Bss.-Trp. (Es)
Alt-Pos.
1. 2.
4 Pos.
3. 4.
pp
pp
Ktr.-Bss.-Pos.
1. Hrf.
2. Hrf.
3. Hrf.
4. Hrf.
poco rit.
I. Gge. alle Pulte m. Dpf.
1.-4. Pult
II. Gge. m. Dpf. 5. 6. Pult
7.-10. Pult
p
p
Br. alle Pulte m. Dpf.
hervortreten
alle
Vcll. alle Pulte m. Dpf.
pizz.
arco
hervortretend
Ktrbss. m. Dpf.
pizz.
arco
pizz.
arco
hervortretend

3:45

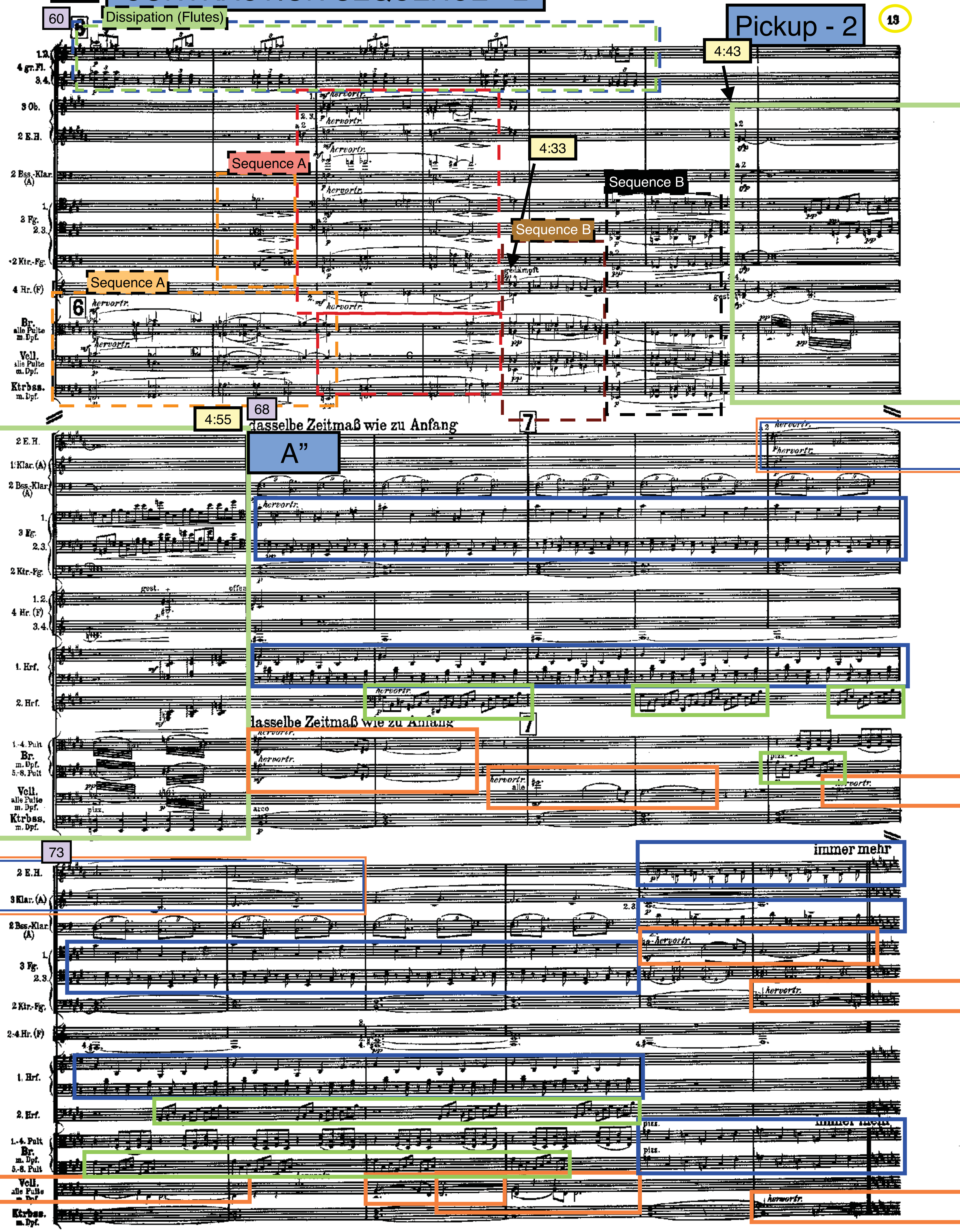
CLIMAX

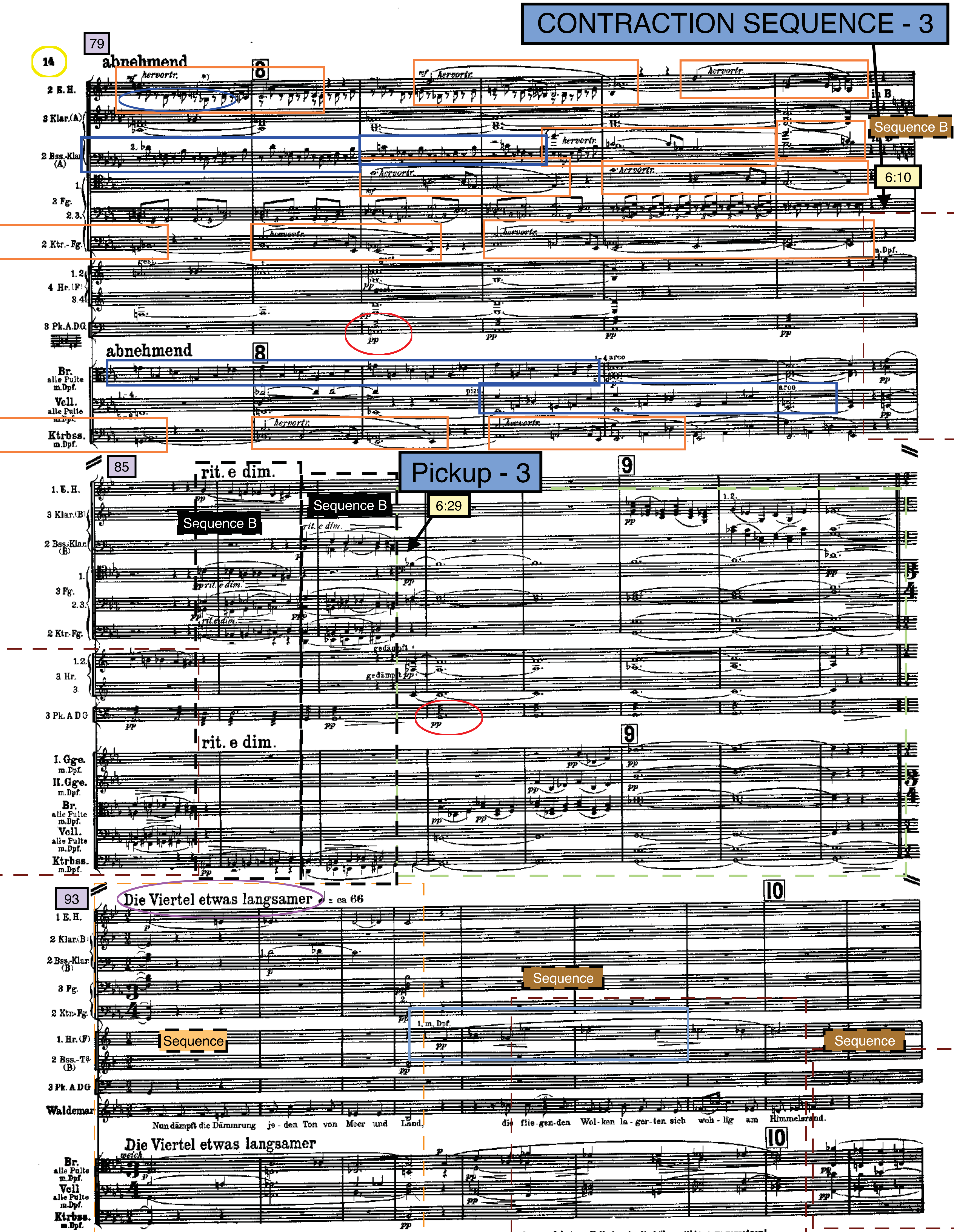
12

54


Tempo I
nach und nach wieder etwas langsamer
rit.
hervortreten
hervortr.
a 2
a 3
1. 2. 4 kl. Fl. 3. 4.
1. 2. 4 gr. Fl. 3. 4.
3 Ob.
2 E. H.
1. 2. 3. 7 Klar. (A) 4. 5. 6. 7.
wieder vom 4. und 5. Klarinettisten übernommen
2 Bss.-Klar. (B)
1. 3 Fg. 2. 3.
2 Ktr.-Fg.
1. 2. 6 Hr. (F) 3. 4. 5. 6.
gest.
2 Ten.-Tb. (Es)
2 Bss.-Tb. (B)
1. 2. 4 Trp. (F) 3. 4.
gedämpft hervortreten
Bss.-Trp. (Es)
Alt-Pos.
1. 2. 4 Pos. 3. 4.
Ktr.-Bss.-Pos.
1. Hrf.
dimin.
2. Hrf.
3. Hrf.
4. Hrf.
Pk. (B)
Glocksp.
Trgl.
Tempo I
rit.
nach und nach wieder etwas langsamer
I. Gge. alle Pulte m. Dpf.
II. Gge. alle Pulte m. Dpf.
Br. alle Pulte m. Dpf.
Vcll. alle Pulte m. Dpf.
Ktrbss. m. Dpf.
geteilt
pizz.
arco

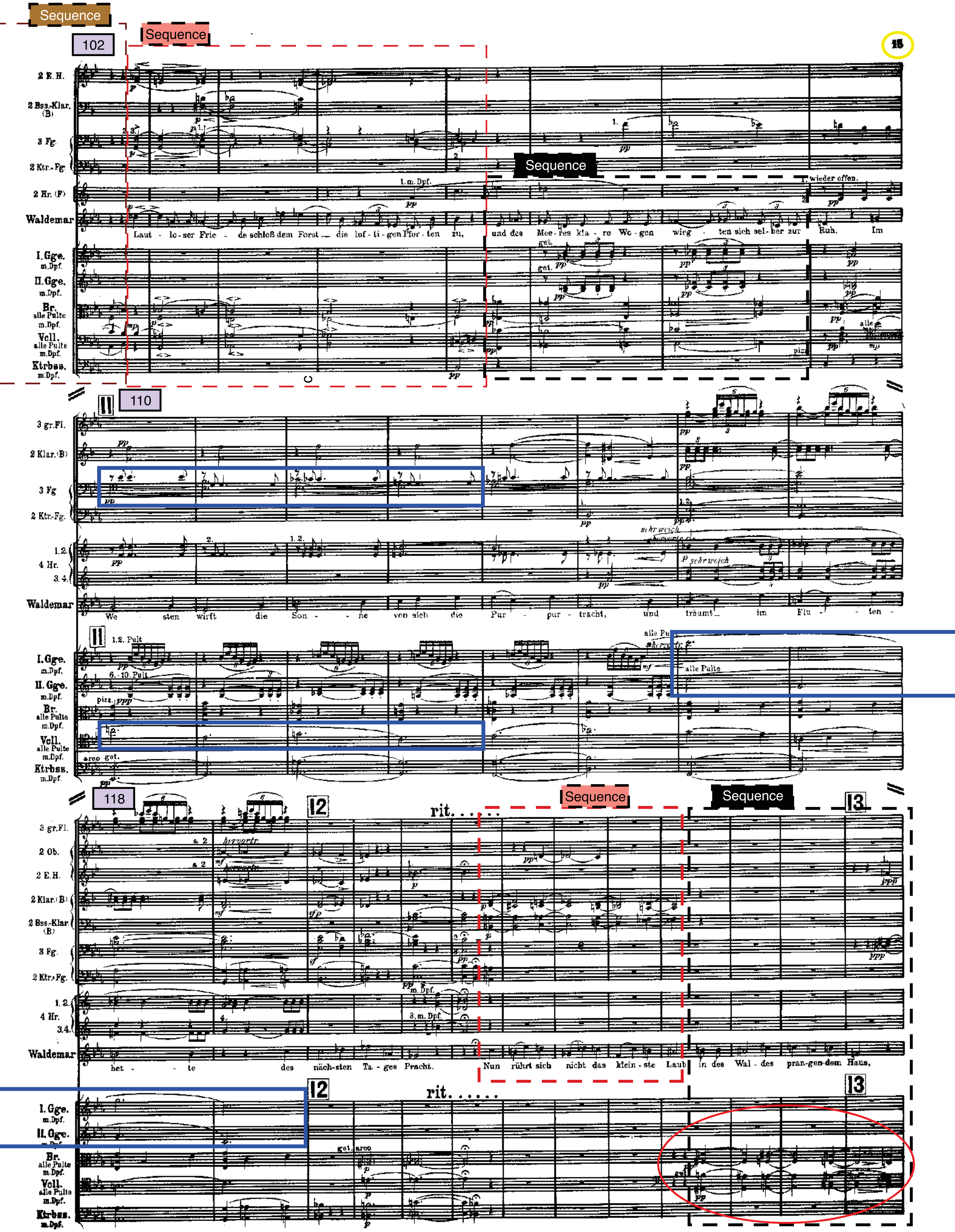
CONTRACTION SEQUENCE - 2


4:13
60
Dissipation (Flutes)
Pickup - 2
4:43
5
1.2.
4 gr. Fl.
3.4.
3 Ob.
2 E.H.
2 Bss.-Klar. (A)
1.
3 Fg.
2.3.
2 Ktr.-Fg.
4 Hr. (F)
hervortr.
a 2
Sequence A
4:33
Sequence B
Sequence B
gedämpft
gest.
Sequence A
6
Br. alle Pulte m.Dpf.
Vcll. alle Pulte m.Dpf.
Ktrbss. m.Dpf.
4:55
68
dasselbe Zeitmaß wie zu Anfang
A”
7
1 Klar. (A)
1.2.
4 Hr. (F)
3.4.
offen
1. Hrf.
2. Hrf.
1.-4. Pult
Br. m. Dpf.
5.-8. Pult
Vcll. alle Pulte m. Dpf.
Ktrbss. m. Dpf.
pizz.
arco
alle
73
3 Klar. (A)
2-4 Hr. (F)
immer mehr
pizz.

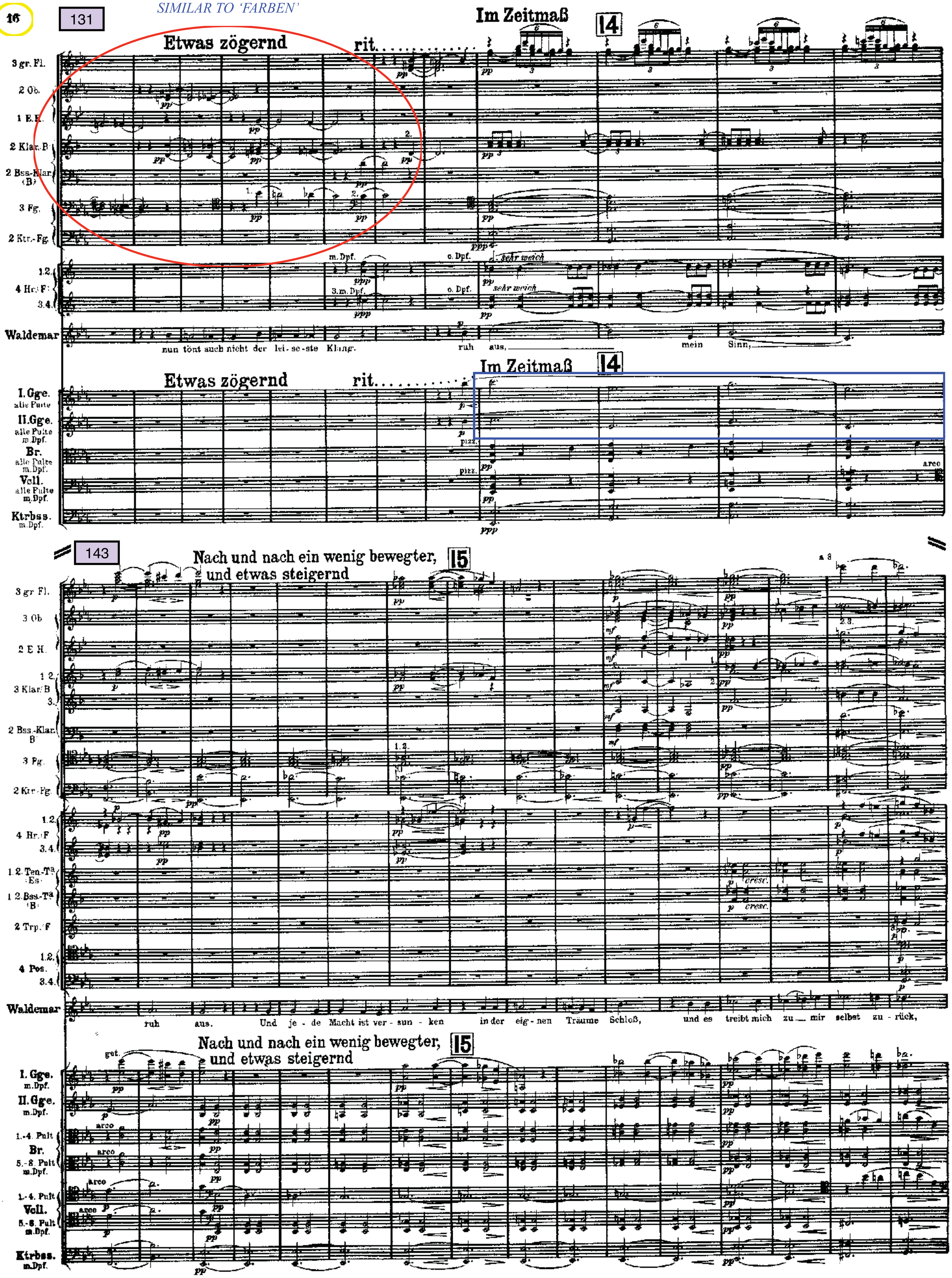

CONTRACTION SEQUENCE - 3
79
abnehmend
8
hervortr.
Sequence B
6:10
2 E. H.
3 Klar.(A)
2 Bss.-Klar. (A)
3 Fg.
2 Ktr.-Fg.
4 Hr. (F)
3 Pk. A.D.G
Br. alle Pulte m.Dpf.
Vcll. alle Pulte m.Dpf.
Ktrbss. m.Dpf.
gest.
arco
pizz.
85
rit. e dim.
Pickup - 3
6:29
9
1. E. H.
3 Klar.(B)
2 Bss.-Klar. (B)
3 Hr.
gedämpft
I. Gge. m.Dpf.
II. Gge. m.Dpf.
93
Die Viertel etwas langsamer ♩ = ca 66
10
Sequence
1. Hr. (F)
2 Bss.-Tb. (B)
Waldemar
1. m. Dpf.
Nun dämpft die Dämmrung je - den Ton von Meer und Land, die flie - gen - den Wol - ken la - ger - ten sich woh - lig am Himmelsrand.
weich
pp

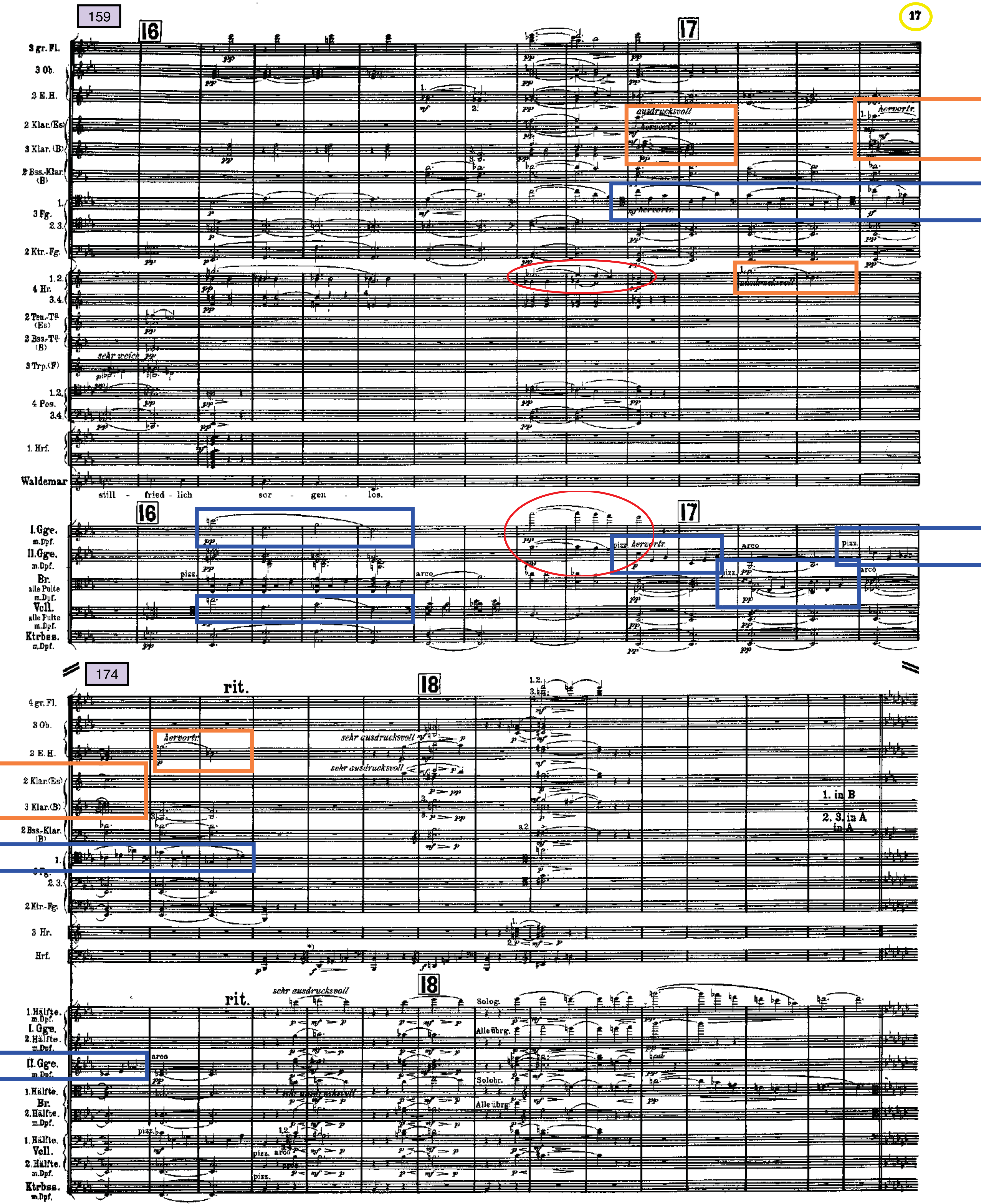
---

*) Sollte das Englisch-Horn den Ton Es noch nicht haben, so ist er auszulassen oder in ein anderes Instrument einzuziehen; auf keinen Fall aber in die höhere Oktave zu versetzen!


Sequence
102
Sequence
2 E. H.
2 Bss.-Klar. (B)
3 Fg.
2 Ktr.-Fg.
2 Hr. (F)
Waldemar
I. Gge. m. Dpf.
II. Gge. m. Dpf.
Br. alle Pulte m. Dpf.
Vcll. alle Pulte m. Dpf.
Ktrbss. m. Dpf.
1. m. Dpf.
Sequence
1. wieder offen.
get.
pizz.
alle
Laut - lo - ser Frie - de schloß dem Forst — die luf - ti - gen Pfor - ten zu,
und des Mee - res kla - re Wo - gen wieg - ten sich sel - ber zur Ruh.
Im
110
11
3 gr. Fl.
2 Klar. (B)
3 Fg.
2 Ktr.-Fg.
1. 2. 4 Hr. 3. 4.
Waldemar
sehr weich
hervortr.
We - sten wirft die Son - ne von sich die Pur - pur - tracht,
und träumt im Flu - ten -
11
1. 2. Pult
6.-10. Pult
pizz.
arco
get.
alle Pulte
I. Gge. m. Dpf.
II. Gge. m. Dpf.
Br. alle Pulte m. Dpf.
Vcll. alle Pulte m. Dpf.
Ktrbss. m. Dpf.
118
12
rit.
Sequence
Sequence
13
3 gr. Fl.
2 Ob.
2 E. H.
2 Klar. (B)
2 Bss.-Klar. (B)
3 Fg.
2 Ktr.-Fg.
1. 2. 4 Hr. 3. 4.
Waldemar
a 2
hervortr.
m. Dpf.
3. m. Dpf.
het - te des näch-sten Ta - ges Pracht.
Nun rührt sich nicht das klein - ste Laub
in des Wal - des pran-gen-dem Haus.
12
rit.
13
I. Gge. m. Dpf.
II. Gge. m. Dpf.
Br. alle Pulte m. Dpf.
Vcll. alle Pulte m. Dpf.
Ktrbss. m. Dpf.
get. arco

SIMILAR TO 'FARBEN'


131
Etwas zögernd
rit.
Im Zeitmaß
14
3 gr. Fl.
2 Ob.
1 E.H.
2 Klar. B
2 Bss.-Klar. (B)
3 Fg.
2 Ktr.-Fg.
1.2.
4 Hr. F
3.4.
m. Dpf.
3. m. Dpf.
o. Dpf.
sehr weich
Waldemar
nun tönt auch nicht der lei-se-ste Klang.
ruh aus,
mein Sinn,
I. Gge. alle Pulte
II. Gge. alle Pulte m. Dpf.
Br. alle Pulte m. Dpf.
Vcll. alle Pulte m. Dpf.
Ktrbss. m. Dpf.
pizz.
arco
143
Nach und nach ein wenig bewegter, und etwas steigernd
15
3 gr. Fl.
3 Ob.
2 E.H.
1.2.
3 Klar. B
3.
2 Bss.-Klar. B
3 Fg.
2 Ktr.-Fg.
1.2.
4 Hr. F
3.4.
1.2. Ten.-Tᵃ (Es)
1.2. Bss.-Tᵃ (B)
2 Trp. F
1.2.
4 Pos.
3.4.
a 3
cresc.
Waldemar
ruh aus. Und je-de Macht ist ver-sun-ken in der eig-nen Träume Schloß, und es treibt mich zu mir selbst zu-rück,
get.
I. Gge. m. Dpf.
II. Gge. m. Dpf.
1.-4. Pult Br. 5.-8. Pult m. Dpf.
1.-4. Pult Vcll. 5.-8. Pult m. Dpf.
Ktrbss. m. Dpf.


159
16
17
3 gr. Fl.
3 Ob.
2 E. H.
2 Klar. (Es)
3 Klar. (B)
2 Bss.-Klar. (B)
1. 3 Fg. 2. 3.
2 Ktr.-Fg.
1. 2. 4 Hr. 3. 4.
2 Ten.-Tb. (Es)
2 Bss.-Tb. (B)
3 Trp. (F)
1. 2. 4 Pos. 3. 4.
1. Hrf.
Waldemar
still - fried - lich sor - gen - los.
I. Gge. m. Dpf.
II. Gge. m. Dpf.
Br. alle Pulte m. Dpf.
Vcll. alle Pulte m. Dpf.
Ktrbss. m. Dpf.
sehr weich
ausdrucksvoll
hervortr.
pizz.
arco
174
rit.
18
4 gr. Fl.
3 Ob.
2 E. H.
2 Klar. (Es)
3 Klar. (B)
2 Bss.-Klar. (B)
3 Fg.
2 Ktr.-Fg.
3 Hr.
Hrf.
sehr ausdrucksvoll
1. in B
2. 3. in A
a 2
1. Hälfte. I. Gge. 2. Hälfte. m. Dpf.
II. Gge. m. Dpf.
1. Hälfte. Br. 2. Hälfte. m. Dpf.
1. Hälfte. Vcll. 2. Hälfte. m. Dpf.
Ktrbss. m. Dpf.
Solog.
Alle übrg.
Solobr.

*) Diese Stelle sowie die analogen sind in der Weise zu spielen, daß das I. Instrument die beiden Töne doppelt aus den Saiten B und As resp. Ces und Fes erhält, das zweite Instrument den Ton aus As natürlich und As Flageolette erhält.

Bibliography

Adlington, Robert. (2009). “Moving Beyond Motion: Metaphors for Changing Sound.” *Journal of the Royal Musical Association*. 128/2: 297–318.

Almeida, Andre, Emery Schubert, John Smith and Joe Wolfe. (2017). “Brightness Scaling of Periodic Tones.” *Attention, Perception & Psychophysics*. 79/7: 1892-1896.

Adorno, Theodor. (1952/2009). *In Search of Wagner*. New York: Verso

Arens, Katherine. (1989). *Structures of Knowing: Psychologies of the Nineteenth Century*. Boston: Kluwer Academic Publishers.

Aristotle. (1984). “De Anima.” In: Jonathan Barnes (ed.), *The Complete Works of Aristotle: The Revised Oxford Translation*. Princeton, NJ: Princeton University Press.

Arnheim, Rudolph. (1984). “Perceptual Dynamics in Musical Expression.” *The Musical Quarterly*. 70/3: 295–309.

Bailey, Walter B. (1998). “Schoenberg’s Tonal Beginnings.” In: Walter B. Bailey (ed.), *The Arnold Schoenberg Companion*. Westport, CT: Greenwood Press.

Bayle, François. (2007). “Space and More.” *Organized Sound*. 12/3: 241–249.

Bayne, Tim. (2010). *The Unity of Consciousness*. New York: Oxford University Press.

Bayne, Tim and David J. Chalmers (2003). “What is the Unity of Consciousness?” In: Alex Cleeremans (ed.), *The Unity of Consciousness: Binding, Integration, and Dissociation*. New York: Oxford.

Bennett, David J., and Christopher S. Hill. (2014). *Sensory Integration and the Unity of Consciousness*. Cambridge, MA: MIT Press.

Berg, Alban, and Bryan R. Simms. (2014). *Pro Mundo-Pro Domo: The Writings of Alban Berg*. New York: Oxford University Press.

Bigand, Emmanuel and Bénédicte Poulin-Charronnat. (2008). “Tonal Cognition.” In: Susan Hallam, Ian Cross, and Michael Thaut (eds.), *Oxford Handbook of Music Psychology*. New York: Oxford University Press.

_________. (2006). “Are We ‘Experienced Listeners’? A Review of the Musical Capacities That

Do Not Depend on Formal Musical Training." *Cognition*. 100/1: 100–130.

Bonds, Mark Evan. (2010). "The Spatial Representation of Musical Form." *Journal of Musicology*. 27/3: 265–303.

_________. (1991). *Wordless Rhetoric: Musical Form and the Metaphor of Oration*. Cambridge, MA: Harvard University Press.

Bregman, Albert S. (1990/1999). *Auditory Scene Analysis: The Perceptual Organization of Sound*. Cambridge, MA: MIT Press.

Brinkmann, Vinzenz. (2008). "The Polychromy of Ancient Greek Sculpture." In: Roberta Panzanelli (ed.), *The Color of Life: Polychromy in Sculpture from Antiquity to the Present*. Los Angeles: The J. Paul Getty Museum and the Getty Research Institute.

Brower, Candace. (2008). "Paradoxes of Pitch Space." *Music Analysis*. 27/1: 51–106.

Bruhn, Siglind. (2015). *Arnold Schoenberg's Journey from Tone Poems to Kaleidoscopic Sound Colors*. Hillsdale, NY: Pendragon Press.

_________. (2000). *Musical Ekphrasis: Composers Responding to Poetry and Painting.* Hillsdale, NY: Pendragon Press.

_________. (2001). "A Concert of Paintings: 'Musical Ekphrasis' in the Twentieth Century." *Poetics Today*. 22/3 (Fall 2001): 551–605.

Budd, Malcolm. (2003). "Musical Movement and Aesthetic Metaphors." *British Journal of Aesthetics*. 43/3: 209–223.

Cherlin, Michael. (2007). *Schoenberg's Musical Imagination*. New York: Cambridge University Press.

Chiasson, Frédéric, Caroline Traube, Clément Lagarrigue and Stephen McAdams. (2017). "Koechlin's volume: Perception of sound extensity among instrument timbres from different families." *Musicae Scientiae*. 21/1: 113–131.

Clarke, Eric. (2001). "Meaning and the Specification of Motion in Music." *Musicae Scientiae* 5/1: 213–34.

Cleeremans, Axel (ed.). (2003) *The Unity of Consciousness: Binding, Integration, and Dissociation*. New York: Oxford University Press.

Collins, Christopher. (1991). *The Poetics of the Mind's Eye: Literature and the Psychology of Imagination*. Philadelphia: University of Pennsylvania Press.

Cousineau, Marion, Samuele Carcagno, Laurent Demany and Daniel Pressnitzer. (2014). "What is a Melody? On the Relationship Between Pitch and Brightness of Timbre." *Frontiers in Systems Neuroscience*. DOI: https://doi.org/10.3389/fnsys.2013.00127

Cox, Arnie. (2016). *Music and Embodied Cognition: Listening, Moving, Feeling, and Thinking*. Bloomington: Indiana University Press.

_________. (1999). *The Metaphoric Logic of Musical Motion and Space*. Ph.D. dissertation, University of Oregon. Retrieved May 20, 2019 from: https://proxy.library.mcgill.ca/login?url=https://search.proquest.com/docview/304517410?accountid=12339

Darrigol, Olivier. (2010). "The Analogy between Light and Sound in the History of Optics from the Ancient Greeks to Isaac Newton. Part 1." *Centaurus*. 52/2: 117–155.

Deliège, Irène. (1989). "A Perceptual Approach to Contemporary Musical Forms." *Contemporary Music Review*. 4/1: 213–230.

De Surmont, Noël. (2007). "Béla Bartók et Maurice Ravel: Question d'une Influence Bartók a-t-il Été Inspiré Par Daphnis et Chloé de Ravel Dans Son Ballet le Prince de Bois?" *Studia Musicologica*. 48/2: 133–145.

Dolan, Emily I. (2013). *The Orchestral Revolution: Haydn and the Technologies of Timbre*. New York: Cambridge University Press.

Doležel, Lubomír. (1998). *Heterocosmica: Fiction and Possible Worlds*. Baltimore: The Johns Hopkins University Press.

Duchez, Marie-Elisabeth. (1989). "An Historical and Epistemological Approach to the Musical Notion of 'Form-bearing' Element." *Contemporary Music Review*. 4/1: 199–212.

Eliade, Mircea. (1958). *Patterns in Comparative Religion*. New York: World

Eitan, Zohar. (2013). "How Pitch and Loudness Shape Musical Space and Motion." In: Siu-Lan Tan, Annabel J. Cohen, Scott D. Lipscomb, and Roger A. Kendall (eds.), *The Psychology of Music in Multimedia*. New York: Oxford University Press.

Eitan, Zohar and Roni Granot (2006). "How Music Moves: Musical Parameters and Listeners' Images of Motion." *Music Perception*. 23/3: 221–247.

Everson, Stephen. (1999). *Aristotle on Perception*. New York: Oxford University Press.

_________. (1994). "Psychology." In Jonathan Barnes (ed.). *The Cambridge Companion to Aristotle*. New York: Cambridge University Press.

Frede, Dorothea. (2001). "Aquinas on *Phantasia*." In: Dominik Perler (ed.), *Ancient and Medieval Theories of Intentionality*. Boston: Brill.

_________. (1992). "The Cognitive Role of *Phantasia* in Aristotle." In: Martha Nussbaum and Amélie Rorty (eds.), *Essays on Aristotle's De Anima*. New York: Oxford University Press.

Frisch, Walter. (1993). *The Early Works of Arnold Schoenberg, 1893–1908*. Berkeley, CA: University of California Press.

Gibson, James J. (1979). *The ecological approach to visual perception*. Boston: Houghton Mifflin.

Gjerdingen, Robert O. (1994). "Apparent Motion in Music?" *Music Perception*. 11/4: 335–370.

Goehr, Lydia. (2010). "How to Do More with Words. Two Views of (Musical) Ekphrasis." *The British Journal of Aesthetics*. 50/4: 389–410.

_________. (2008). *Elective Affinities: Musical Essays on the History of Aesthetic Theory*. New York: Columbia University Press.

Goodchild, Meghan. (2016). *Orchestral Gestures: Music-Theoretical Perspectives and Emotional Responses.* Ph.D. dissertation, McGill University, Montreal, Canada. http://www.music.mcgill.ca/~smc/Goodchild_2016_PhDThesis.pdf

Goodchild, Meghan and Stephen McAdams. (2018). "Perceptual Processes in Orchestration." In: Emily Dolan and Alexander Rehding (eds.), *The Oxford Handbook of Timbre*. New York: Oxford University Press.

Greenwald, Helen M. (2009) "Son Et Lumière: Verdi, 'Attila' and the Sunrise Over the Lagoon." *Cambridge Opera Journal*. 21/3: 267–277.

Gregoric, Pavel. (2007). *Aristotle on the Common Sense*. New York: Oxford University Press.

Haimo, Ethan. (2006). *Schoenberg's Transformation of Musical Language*. New York: Cambridge University Press.

Hatten, Robert S. (2018). *A Theory of Virtual Agency for Western Art Music*. Bloomington: Indiana University Press.

_________. (2012). "Musical Forces and Agential Energies: An Expansion of Steve Larson's Model." *Music Theory Online*. 18/3. DOI: http://www.mtosmt.org/issues/mto.12.18.3/mto.12.18.3.hatten.php

Herbart, Johann Friedrich. (1850). "Lehrbuch zur Psychologie" (2nd ed.). Reprinted in: Gustav Hartenstein (ed.) *Herbarts Schriften zur Psychologie*. Leipzig: Voss.

Huron, David. (2007). *Sweet Anticipation: Music and the Psychology of Expectation*. Cambridge, MA: MIT Press.

Hutchinson, Mark. (2014). "Dreams, Gardens, Mirrors: Layers of Narrative in Takemitsu's *Quotation of Dream*." *Contemporary Music Review*. 33/4: 428–446.

Jackendoff, Ray, and Fred Lerdahl. (2006). "The Capacity for Music: What Is It and What's Special About It?" *Cognition*. 100/1: 33–72.

James, William. (2007). *The Principles of Psychology Vol. I*. New York: Cosimo. First published in 1890.

_________. (1916). Talks to Teachers on Psychology. Accessed April 21, 2019 at: https://archive.org/details/talkstoteachers11jamegoog

Janiak, Andrew. (2016). "Kant's View of Space and Time." In: Edward N. Zalta (ed.) *Stanford Encyclopedia of Philosophy*. DOI: https://plato.stanford.edu/archives/win2016/entries/kant-spacetime/

Johnstone, Mark A. (2015). "Aristotle and Alexander on Perceptual Error." *Phronesis* 60/3: 301–338.

Kahn, Charles H. (2005). "Aristotle Versus Descartes on the Concept of the Mental." In: Ricardo Salles (ed.), *Metaphysics, Soul, and Ethics in Ancient Thought : Themes from the*

Work of Richard Sorabji. New York: Oxford University Press.

Kania, Andrew. (2015). "An Imaginative Theory of Musical Space and Movement." *British Journal of Aesthetics*. 55/2. DOI: 10.1093/aesthi/ayu100.

Kant, Immanuel (1998). *Critique of Pure Reason*, translated by Paul Guyer and Allen Wood. New York: Cambridge University Press.

_________. (1902). *Kants gesammelte Schriften*, edited by Königlich Preussischen Akademie der Wissenschaften. Berlin: G. Reimer.

Kim, Alan. (2016). "Wilhelm Maximillian Wundt." In: Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*. URL: https://plato.stanford.edu/archives/fall2016/entries/wilhelm-wundt/

_________. (2015). "Johann Friedrich Herbart." In: Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy*. URL: https://plato.stanford.edu/archives/win2015/entries/johann-herbart/

Kramer, Lawrence. (1995). *Classical Music and Postmodern Knowledge*. Berkeley: University of California Press.

_________. (1992). "Music and Representation: The Instance of Haydn's Creation." In: Steven Scher (ed.), *Music and Text: Critical Inquiries*. New York: Cambridge University Press.

Krieger, Murray. (1998). "The Problem of Ekphrasis: Image and Words, Space and Time – and the Literary Work." In: Valerie Robillard and Els Jongeneel (eds.), *Pictures into Words: Theoretical and Descriptive Approaches to Ekphrasis*. Amsterdam: VU University Press.

Krumhansl, Carol. (1998). "Perceived Triad Distance: Evidence Supporting the Psychological Reality of Neo-Riemannian Transformations." *Journal of Music Theory*. 42/2: 265–281.

_________. (1990). *Cognitive Foundations of Musical Pitch*. New York: Oxford University Press.

Larson, Steve. (2012). *Musical Forces: Motion, Metaphor, and Meaning in Music*. Bloomington: Indiana University Press.

_________. (1993). "On Rudolph Arnheim's Contribution to Music Theory." *The Journal of Aesthetic Education*. 27/4: 97–104.

Leibniz, G. W. (1965). *Die philosophischen Schriften*. 7 vols. Edited by C. I. Gerhardt. Berlin, 1875–90. Reprint, Hildesheim: Georg Olms

Lerdahl, Fred. (200l). *Tonal Pitch Space*. New York: Oxford University Press.

Look, Brandon C. (2017) "Leibniz, Wilhelm Gottfried." In Edward N. Zalta (ed.) the *Stanford Encyclopedia of Philosophy*. URL: https://plato.stanford.edu/archives/sum2017/entries/leibniz/

Loughridge, Deirdre. (2016). *Haydn's Sunrise, Beethoven's Shadow: Audiovisual Culture and the Emergence of Musical Romanticism*. Chicago: The University of Chicago Press.

Marks, Lawrence E. (2000). "Synesthesia." In: Etzel Cardeña, Steven Jay Lynn and Stanley Krippner (eds.), *Varieties of Anomalous Experience: Examining the Scientific Evidence*. Washington, DC: American Psychological Association.

_________. (1997). "On Colored-hearing Synesthesia: Cross-modal Translations of Sensory Dimensions." In: Simon Baron-Cohen and John E. Harrison (eds.), *Synaesthesia: Classic and Contemporary Readings*. Cambridge, MA: Blackwell.

_________. (1978). *The Unity of the Senses: Interrelations among the Modalities*. New York: Academic Press.

Marmodoro, Anna. (2014). *Aristotle on Perceiving Objects*. New York: Oxford University Press.

Maus, Fred Everett. (1992). "Hanslick's Animism." *The Journal of Musicol*ogy. 10/3: 273–292.

Mawer, Deborah. (2006). *The Ballets of Maurice Ravel*. Burlington, VT: Ashgate.

McAdams, Stephen (2013). "Musical Timbre Perception." In: Diana Deutsch (ed.), *The Psychology of Music*. New York: Oxford University Press.

_________. (1993). "Recognition of Sound Sources and Events." In: Stephen McAdams and Emanuel Bigand (eds.), *Thinking in Sound: The Cognitive Psychology of Human Audition*. New York: Oxford University Press.

_________. (1989). "Psychological Constraints on Form-bearing Dimensions in Music." *Contemporary Music Review*. 4/1: 181–198.

McAdams, Stephen and Albert S. Bregman. (1979). "Hearing Musical Streams." *Computer Music Journal*. 3/4: 26–43

McAdams, Stephen and Jean-Christophe Cunible. (1992). “Perception of Timbral Analogies.” *Philosophical Transactions: Biological Sciences*. 336/1278: 383–389.

McAdams, Stephen, Suzanne Winsberg, Sophie Donnadieu, Geert De Soete and Jochen Krim phoff (1995). “Perceptual Scaling of Synthesized Musical Timbres: Common Dimensions, Specificities, and Latent Subject Classes.” *Psychological Research*. 58/3:177–192.

McAdams, Stephen, Meghan Goodchild and Christopher Soden (submitted). “A Taxonomy of Perceptual Effects of Orchestration Related to Auditory Grouping Principles.” Under Review.

McCreless, Patrick. (2002). “Music and Rhetoric.” In: Thomas Christensen (ed.), *The Cambridge History of Western Music Theory*. New York: Cambridge University Press.

McDermott, Josh H., Andriana J. Lehr and Andrew J. Oxenham. (2008). “Is Relative Pitch Specific to Pitch?” *Psychological Scienc*e. 19/12: 1263–1271.

Merleau-Ponty, Maurice. (2012). *Phenomenology of Perception*. Translated by Donald A. Landes. New York: Routledge.

Mirka, Danuta (ed.). (2014). *The Oxford Handbook of Topic Theory*. New York: Oxford University Press.

O’Daly, Gerard. (1987). *Augustine’s Philosophy of Mind*. Berkeley: University of California Press.

Park, Joon. (2015). *Music, Motion, and Space: A Genealogy*. Ph.D. dissertation, University of Oregon. Retrieved March 15, 2019 from: https://scholarsbank.uoregon.edu/xmlui/handle/1794/19354

Pavel, Thomas G. (1986). *Fictional Worlds*. Cambridge, MA: Harvard University Press.

Peltz, Benjamin. (2007). “The Moment of Meaning: Apperception in the Philosophy of Josiah Royce.” *Cognitio-Estudos: Revista Electronica de Filosofia*. 4/1: 25–36.

Pesic, Peter. (2017). *Polyphonic Minds: Music of the Hemispheres*. Cambridge, MA: MIT Press.

_________. (2014). *Music and the Making of Science*. Cambridge, MA: MIT Press.

Putnam, Hilary and Mario De Caro. (2016). *Naturalism, Realism, and Normativity*. Retrieved April 19, 2019 from: http://www.degruyter.com/view/product/473053

Repp, Bruno H. (1993). "Music as Motion: A Synopsis of Alexander Truslit's (1938) Gestaltung und Bewegung in der Musik." *Psychology of Music*. 21/1: 48–72.

Riley, Charles A. (1995). *Color Codes: Modern Theories of Color in Philosophy, Painting and Architecture, Literature, Music, and Psychology*. Hanover: University Press of New England.

Rocconi, Eleonora. (2003). "The Development of Vertical Direction in the Spatial Representation of Sounds." In: E. Hickmann, A. Kilmer and R. Eichmann (eds.), *The Archeology of Early Sound: Origin and Organization*. Serie Studien zur Musikarchäologie, Orient-Archäolo gie (Deutsches Archäologisches Institut Berlin, Orient-Abteilung), Leidorf : Rahden/Westf. Retrieved April 29, 2019 from: https://www.academia.edu/3364120/The_Development_of_Vertical_Direction_in_the_Spatial_Representation_of_Sounds

Rothfarb, Lee. (2011). "Nineteenth-Century Fortunes of Musical Formalism." *Journal of Music Theory*. 55/2. DOI: 10.1215/00222909-1540347.

_________. (2009). *August Halm: A Critical and Creative Life in Music*. Rochester: University of Rochester Press.

_________. (2002). "Energetics." In: Thomas S. Christensen (ed.), *The Cambridge History of Western Music Theory*. New York: Cambridge University Press.

_________. (1991). *Ernst Kurth: Selected Writings*. New York: Cambridge University Press.

Sandell, Gregory. (1995). "Roles for Spectral Centroid and Other Factors in Determining 'Blended' Instrument Pairings in Orchestration." *Music Perception*. 13/2: 209–246.

Scheiter, Kristina M. (2012). "Images, Appearances, and 'Phantasia' in Aristotle." *Phronesis*. 57/3: 251–278.

Schellenberg, Susanna. (2018). *The Unity of Perception: Content, Consciousness, Evidence*. New York: Oxford University Press.

Schoenberg, Arnold, Patricia Carpenter, and Severine Neff. (2006). *The Musical Idea and the Logic, Technique and Art of Its Presentation*. Bloomington: Indiana University Press.

Schofield, Malcolm. (1992). "Aristotle on the Imagination." In: Martha Nussbaum and Amélie Rorty (eds.), *Essays on Aristotle's De Anima*. New York: Oxford University Press.

Schubert, Emery and Joe Wolfe. (2006). "Does Timbral Brightness Scale with Frequency and Spectral Centroid?" *Acta Acustica united with Acustica*. 92: 820-825.

Scruton, Roger. (1999). *The Aesthetics of Music*. New York: Oxford University Press.

Sheppard, Anne. (2015). *The Poetics of Phantasia: Imagination in Ancient Aesthetics*. New York: Bloomsbury Academic.

_________. (1991). "Phantasia and Mental Images: Neoplatonist Interpretations of *De anima*, 3.3." In: Henry Blumenthal and Howard Robinson (eds.), *Aristotle and the Later Tradition*. New York: Clarendon Press.

Siedenburg, Kai and Stephen McAdams. (2017). "Four Distinctions for the Auditory 'Wastebasket' of Timbre." *Frontiers in Psychology*. 8/1747. DOI: 10.3389/fpsyg.2017.01747

Siegel, Susanna. (2017). *The Rationality of Perception*. New York: Oxford University Press.

_________. (2010). *The Contents of Visual Experience*. New York: Oxford University Press.

Silverman, Allan. (1991). "Plato on 'Phantasia'." *Classical Antiquity*. 10/1: 123–147.

Simner, Julia and Hubbard Edward (eds.). (2013). *Oxford Handbook of Synesthesia*. New York: Oxford University Press.

Sisman, Elaine. (2014). "Symphonies and the Public Display of Topics." In: Danuta Mirka (ed.), *The Oxford Handbook of Topic Theory*. New York: Oxford University Press.

______. (2013). "Haydn's Solar Poetics: The *Tageszeiten* Symphonies and Enlightenment Knowledge." *Journal of the American Musicological Society*. 66/1: 5–102.

Smith, Barry (ed.). (1988). *Foundations of Gestalt Theory*. Munich: Philosophia Verlag.

Sorabji, Richard. (2006). *Aristotle on Memory*. Chicago: University of Chicago Press.

Spence, Charles. (2011). "Crossmodal Correspondences: A Tutorial Review." *Attention, Perception & Psychophysics*. 73/4: 971–995.

Spitzer, Michael. (2003). "The Metaphor of Musical Space." *Musicae Scientiae*. 7/1: 101–120.

Stevens, Catherine and Tim Byrons. (2008). "Universals in Music Processing." In: Susan Hallam, Ian Cross, and Michael Thaut (eds.), *Oxford Handbook of Music Psychology*. New York: Oxford University Press.

Stewart, Peter. (2003). *Statues in Roman Society: Representation and Response*. New York: Oxford University Press.

Suzuki, Albert Ichiro. (1952). *The Role of Sensus Communis in Aristotle, Thomas Aquinas, Locke and Kant*. Ph.D. dissertation, Boston University. Retrieved April 12, 2019 from: https://hdl.handle.net/2144/6318

Tan, Daphne. (2017). " 'As Forming Becomes Form': Listening, Analogizing, and Analysis in Kurth's Bruckner and Musikpsychologie." *Journal of Music Theory*. 61:1. DOI: 10.1215/00222909-3855702.

Tarasti, Eero. (2012). *Semiotics of Classical Music: How Mozart, Brahms and Wagner Talk to Us*. Boston: Mouton De Gruyter.

Temperley, David. (1999). "The Question of Purpose in Music Theory: Description, Suggestion, and Explanation." *Current Musicology*. 66/1: 66–85.

Thompson, Michael. (2009). *Roots and Role of the Imagination in Kant: Imagination at the Core*. Ph.D. dissertation, Retrieved April 22, 2019 from: scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1049&context=etd

Tillmann, Barbara, Jamshed J. Bharucha and Emmanuel Bigand. (2000). "Implicit Learning of Tonality: A Self-Organizing Approach." *Psychological Review*. 107/4: 885–913.

Todd, Neil P. (1999). "Music in Motion: A Neurobiological Perspective." *Music Perception*. 17/1: 115–126.

Tolley, Thomas. (2001). *Painting the Cannon's Roar: Music, the Visual Arts, and the Rise of an Attentive Public in the Age of Haydn, C.1750 to C1810*. Aldershot: Ashgate.

Touizrar, Moe and Stephen McAdams. (2019). "Perceptual Facets of Orchestration in *The Angel of Death* by Roger Reynolds: Timbre and Auditory Grouping." In Philippe Lalitte (ed.), *Analyse Musicale et Perception: Actes des Journées d'Analyse Musicale 2016*. Dijon: Editions Universitaires de Dijon. https://www.mcgill.ca/mpcl/files/mpcl/touizrar_mcadams_actes_jam_2016_en.pdf

Tsakiridou, Cornelia A. (2013). *Icons in Time, Persons in Eternity: Orthodox Theology and the Aesthetics of the Christian Image*. Burlington, VT: Ashgate.

van Eck, Caroline. (2016). "The Petrifying Gaze of Medusa: Ambivalence, Explexis, and the Sublime." *Journal of Historians of Netherlandish Art*. 8/2. DOI: 10.5092/jhna.2016.8.2.3

______. (2015). *Art, Agency and Living Presence: From the Animated Image to the Excessive Object*. Boston: De Gruyter.

______. (2010). "Living Statues: Alfred Gell's Art and Agency, Living Presence Response and the Sublime." *Art History*. 33/4: 642–659.

Vande Moortele, Steven. (2017). *The Romantic Overture and Musical Form from Rossini to Wagner*. New York: Cambridge University Press.

Wallmark, Zachary. (2018). "A Corpus Analysis of Timbre Semantics in Orchestration Treatises." *Psychology of Music*. DOI: https://doi.org/10.1177/0305735618768102

Watson, Gerrard. (1988). *Phantasia in Classical Thought*. Galway: Galway University Press.

Webb, Ruth. (2016a). *Ekphrasis, Imagination and Persuasion in Ancient Rhetorical Theory and Practice*. New York: Routledge.

_________. (2016b). "Sight and Insight: Theorizing Vision, Emotion and Imagination in Ancient Rhetoric." In: Michael Squire (ed.), *Sight and the Ancient Senses*. New York: Routledge.

Wilson, Blake., Buelow, George J. and Hoyt, Peter A. (2001). "Rhetoric and Music." *Grove Music Online*. DOI: https://doi.org/10.1093/gmo/9781561592630.article.43166

Wundt, Wilhelm. (1874). *Grundzüge der physiologischen Psychologie*, 2 volumes. 4th edition, 1893, 5th edition, 1903 (vol. 3); 6th edition, 1908 (vol. 1), 1910 (vol. 2), 1911 (vol. 3). Leipzig: Engelmann.

Zbikowski, Lawrence. (2017). *Foundations of Musical Grammar*. New York : Oxford University Press.

_________. (2015). "Musical Semiotics and Analogical Reference." In: Constantino Maeder and Mark Reybrouck (eds.), *Music, Analysis, Experience*. Leuven: Leuven University Press.

_________. (1999). "Musical Coherence, Motive, and Categorization." *Music Perception*. 17/1: 5–42.

VOLUME II:

Bright, Blue, and Shimmering for large orchestra

Moe Touizrar

Bright, Blue, and Shimmering

for Orchestra
(2017)

Commissioned by the Schulich School of Music, McGill University as part of the inaugural Andrew Svoboda Memorial Prize in Orchestral Composition.

Dedicated to Josef and Lewina Svoboda

Strumenti dell'orchestra

3 Flauti (1° & 2° anche Flauto piccolo, 3° anche Flauto contralto in Sol)
2 Oboi
1 Corno inglese in Fa
3 Clarinetti in Si ♭ (3° anche Clarinetto basso in Si ♭)
2 Fagotti
1 Contrafagotto

4 Corni in Fa
3 Trombe in Do (1° anche Trombe piccolo in Si ♭)
2 Tromboni
1 Trombone basso
1 Tuba

5 Timpani: 32", 29", 26", 23", e 20" [anche 2 piatti (per i timpani 32" e 26")]

Percussione (3 esecutori)

Percussione I
Glockenspiel, Marimba (5 octaves), Timpano (29") con piatto, Sizzle cymbal (medium), Flexatone.

Percussione II
Vibrafono (no motor), Timpano (29") con piatto (can be shared with timpanist), Gong (E2), 3 Piatti sospesi (small, medium, large), Tam tam (large), Thunder sheet, Gran cassa (shared with Perc. 3).

Percussione III
Vibrafono (with motor), Campane, Crotales (c3-e4), 2 Piattio sospesi (medium), Gong (Ab2), Small Chinese Opera gong (ascending glissando), Tam tam (large), Gran cassa (shared with Perc. 2).

Pianoforte (anche Celesta)
Arpa

Archi (minimo)

14 Violini I	
12 Violini II	
10 Viole	(8 with heavy practice mutes)
8 Violoncelli	(6 with heavy practice mutes)
6 Contrabassi	

In the score, all instruments are written as they sound except the Contrabassoon and Contrabasses, which are written in *8vb*, the Piccolo and Celesta, which sound one octave higher than written, and the Crotales and Glockenspiel, which sound 2 octaves higher than notated.

I – Clairobscur (Nocturno), page 1
II – Sol Invictus (Matutinae), page 16

Duration: 10 minutes

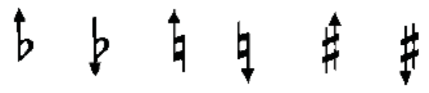
Seating

This piece is written to accommodate two possible seating arrangements; each concerning the placement of the Violin II section. The first possibility is the more traditional placement of the Violin II section next to the Violin I section (just slightly to the right from the conductor's vantage point). The second, and less frequent placement of the Violin II section – at the extreme right of the conductor, symmetrical in relation to the Violin I section – is also possible.

Performance Notes

All instruments

Quarter-tones are indicated by arrows extending upward or downward from the 3 normative accidentals:



Arrows (⟶) indicate a gradual change between states of playing (e.g. from senza vibrato to molto vibrato, or from sul ponticello to sul tasto).

Glissandi should begin at the onset of the note and should last the entire duration indicated.

The symbol "ø" indicates *al niente*, a dynamic beginning or ending in near silence.

Accidentals apply to the specified octave for the entire measure.

Winds

◇ Diamond-shaped note heads indicate blown air while fingering the indicated pitch.

Brass

◇ Diamond-shaped note heads indicate blown air while fingering or positioning the indicated pitch.

Strings

ord. = ordinario
T = sul tasto, as flautando as possible when applicable
P = sul ponticello estremamente, almost on the bridge

ric. = ricochet bowing with the approximate number of articulations in one bow indicated by the number of dots after the ric (for example, *ric* . . . indicates three articulations, while *ric* . . . . . indicates five)

S.R. = *suono reale*, a marking for the Contrabasses indicating an actual sounding pitch (cancels any *8vb*)

Percussion

Choice of mallets is left up to the performer, but should always be made to maximize resonance. Never dampen notes – leave all instruments vibrating – unless otherwise indicated.

Percussion players 1 and 2 play the timpani (29" and 29") with cymbals in conjunction with the timpanist from measures 117 thru 138. If extra timpani are available, the percussionists should use two dedicated instruments (29", 29"), with appropriate sized cymbals (large), leaving 5 timpani dedicated to the timpanist (32", 29", 26", 23", and 20") [7 timpani in total (3 x 29")], with two large cymbals for the 32" and the 26" timpani assigned to the timpanist. Otherwise player 2 will have to share one of the 29" timpani with the timpanist (6 timpani in total). At the end of the conjunct section (mm. 117-138), player 2 has enough time to tune the drum for the timpanist's subsequent solo entry, as marked in the individual parts.

Dawn with her rose-red fingers might have shone
upon their tears, if, with her glinting eyes,
Athena had not thought of one more thing.
She held back the night, and night lingered long
at the western edge of the earth, while in the east
she reined in Dawn of the golden throne at Ocean's banks,
commanding her not to yoke the windswift team that brings men light,
Blaze and Aurora, the young colts that race the Morning on.

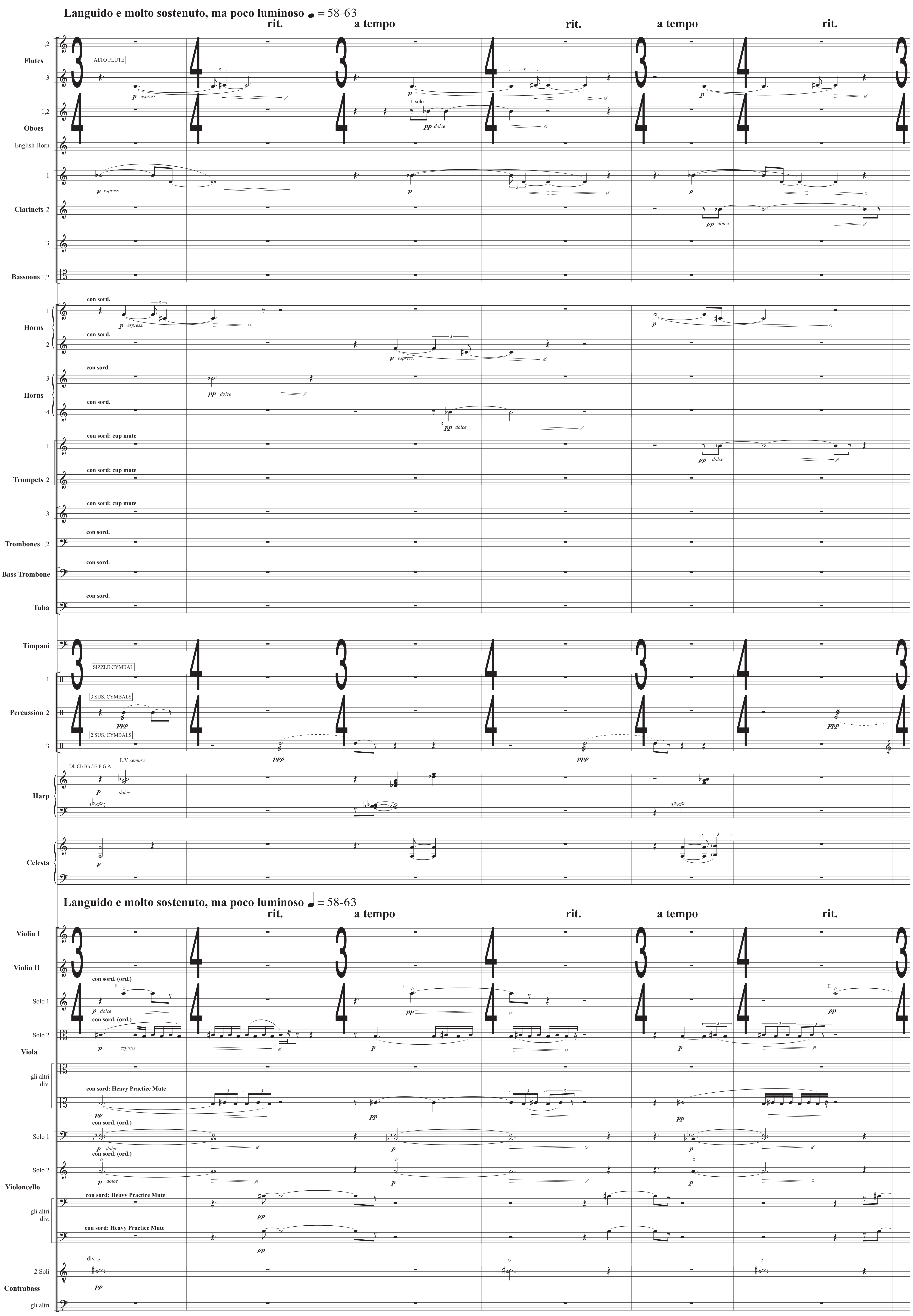
-The Odyssey, Book XXIII (trans. Robert Fagles)

Score in concert pitch

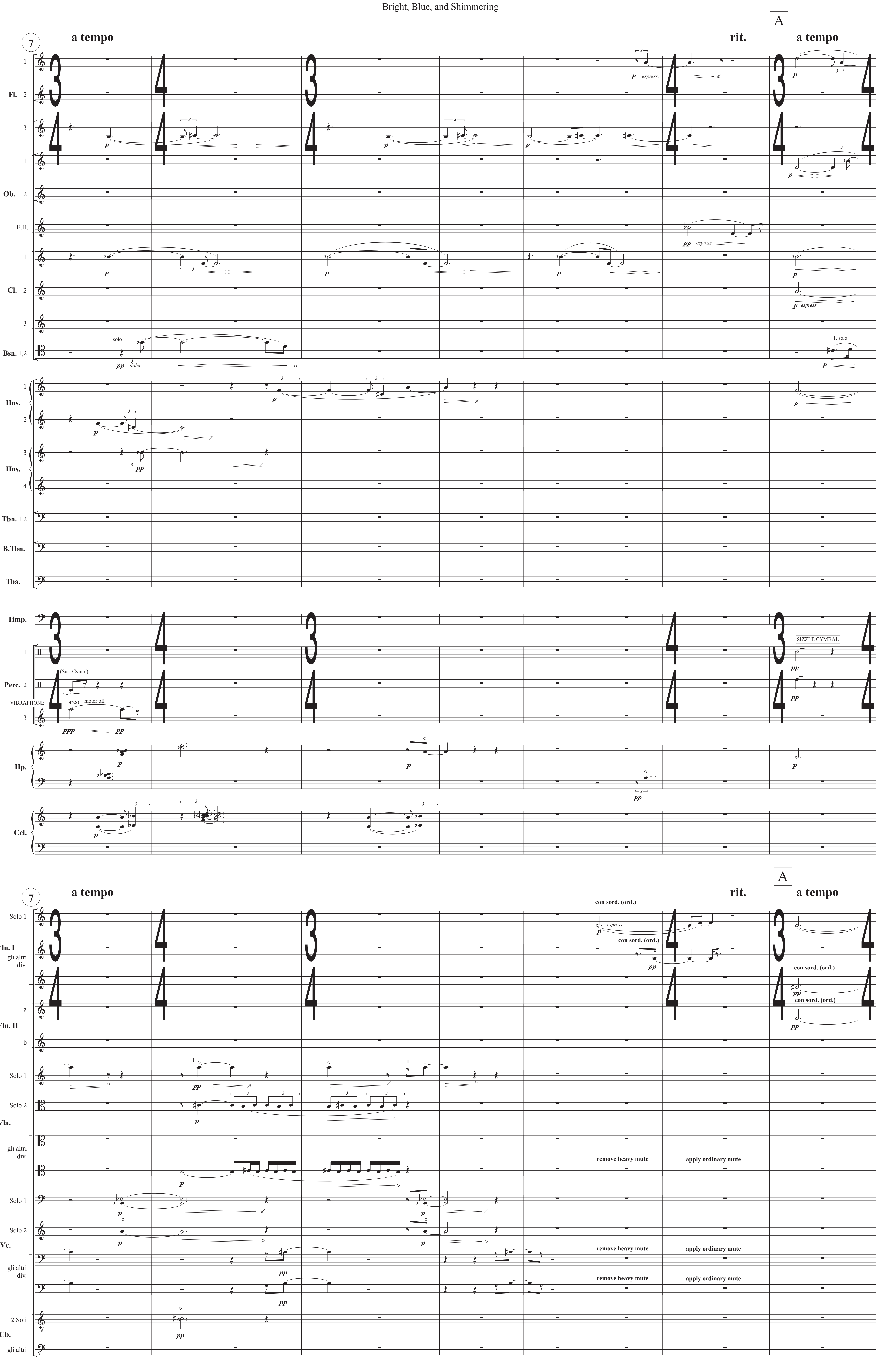
Bright, Blue, and Shimmering

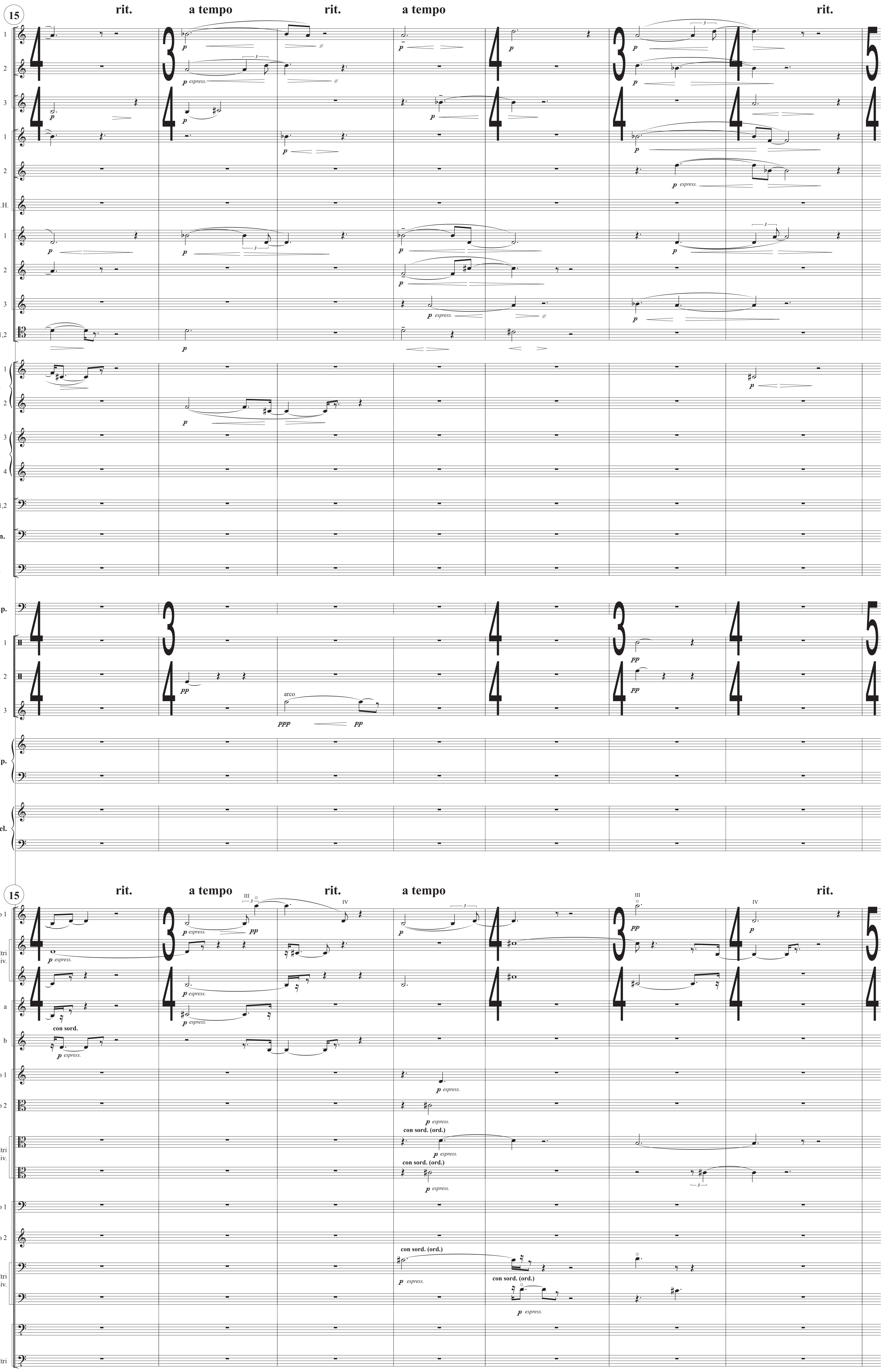
I: Clair-obscur (Nocturne)

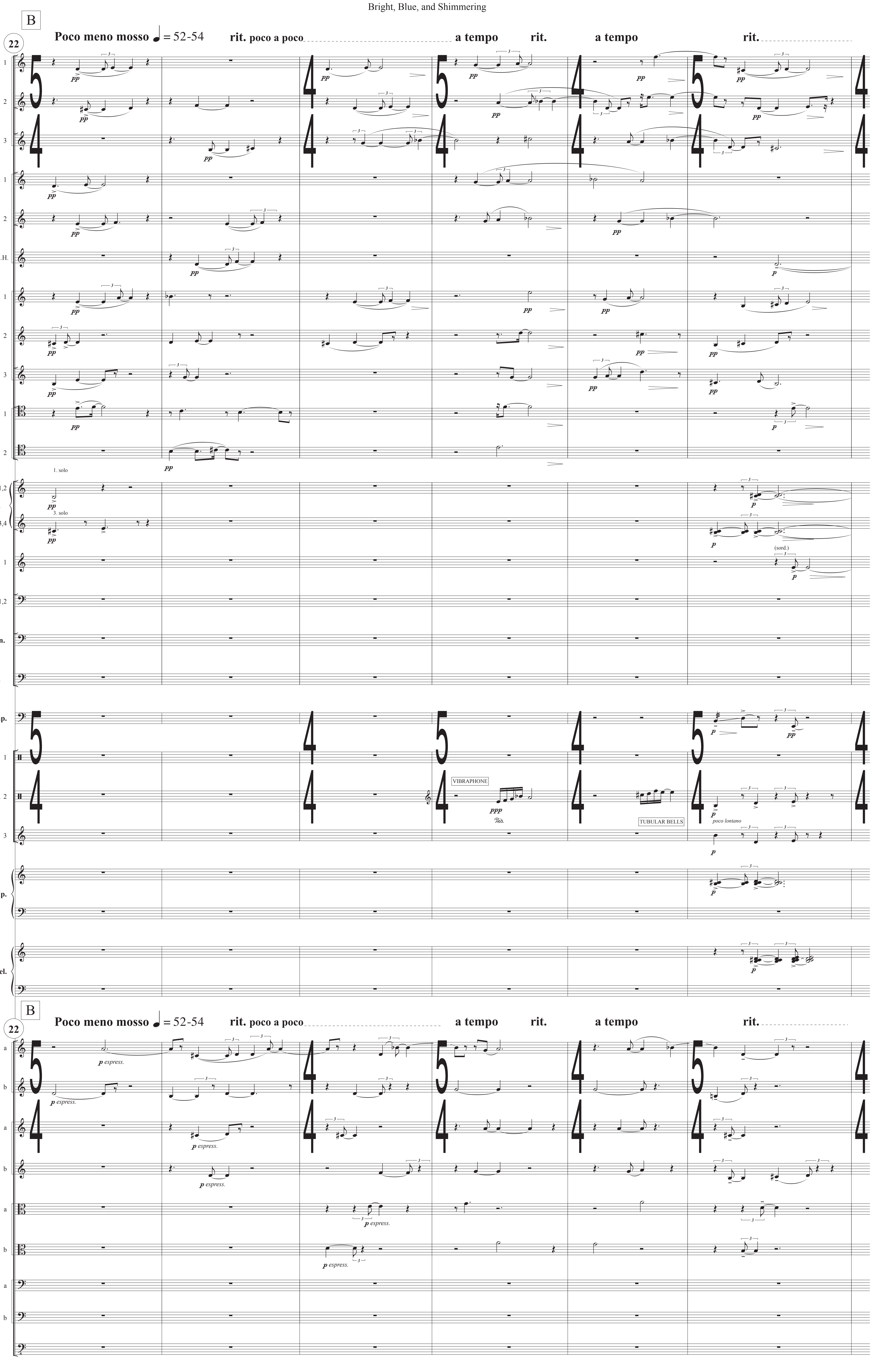
Moe Touizrar

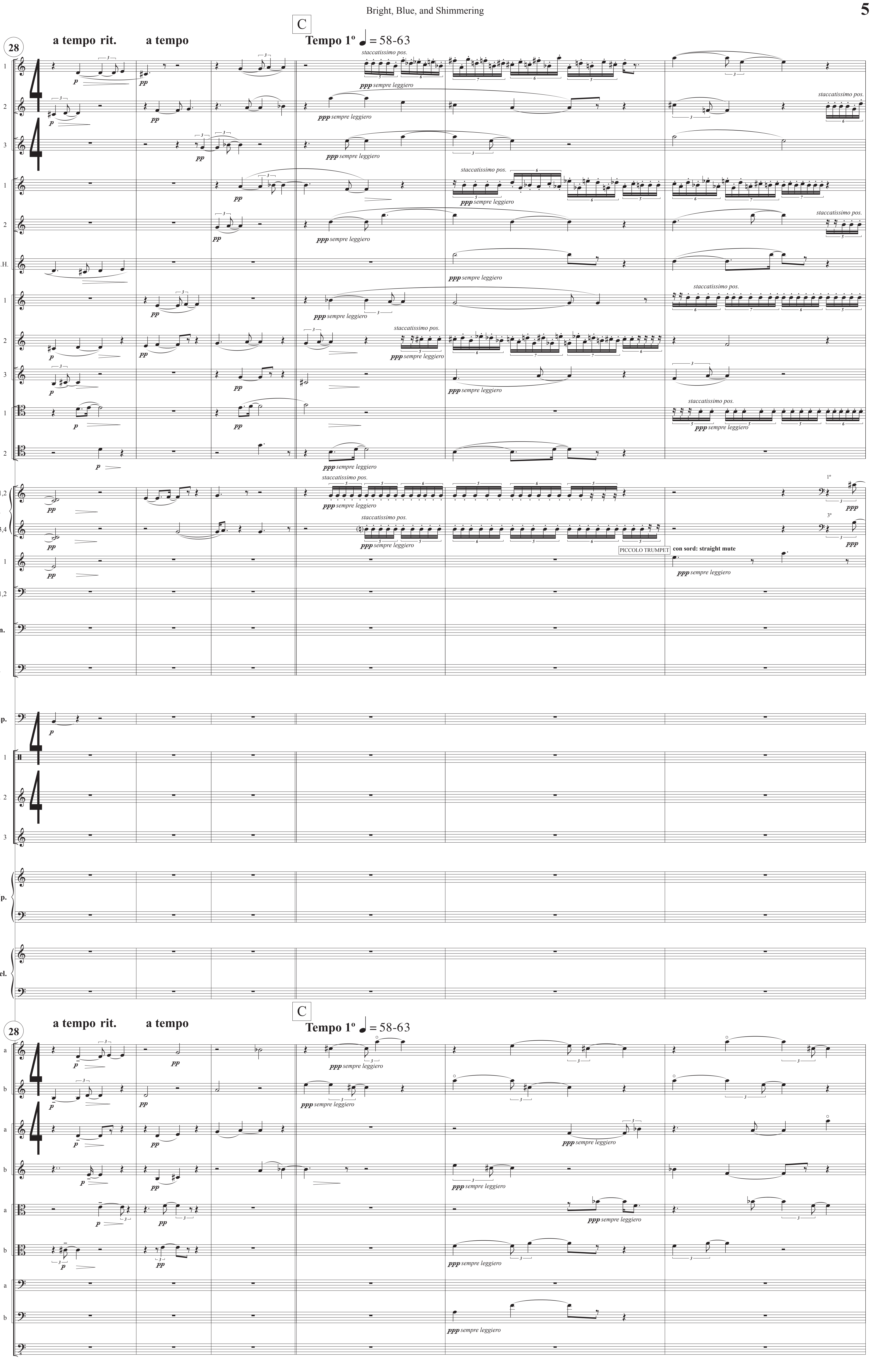

Languido e molto sostenuto, ma poco luminoso ♩ = 58-63
rit.
a tempo
rit.
a tempo
rit.
Flutes 1,2
3
ALTO FLUTE
p espress.
Oboes 1,2
1. solo
pp dolce
English Horn
Clarinets 1
2
3
p espress.
p
pp dolce
Bassoons 1,2
Horns 1
2
3
4
con sord.
p espress.
pp dolce
p
Trumpets 1
2
3
con sord.: cup mute
pp dolce
Trombones 1,2
Bass Trombone
Tuba
con sord.
Timpani
Percussion 1
2
3
SIZZLE CYMBAL
3 SUS. CYMBALS
2 SUS. CYMBALS
ppp
L.V. sempre
Db Cb Bb / E F G A
Harp
p dolce
Celesta
p
Violin I
Violin II
Viola
Solo 1
Solo 2
gli altri div.
con sord. (ord.)
II
I
p dolce
pp
p espress.
con sord: Heavy Practice Mute
Violoncello
Solo 1
Solo 2
gli altri div.
p dolce
Contrabass
2 Soli
gli altri
div.
pp

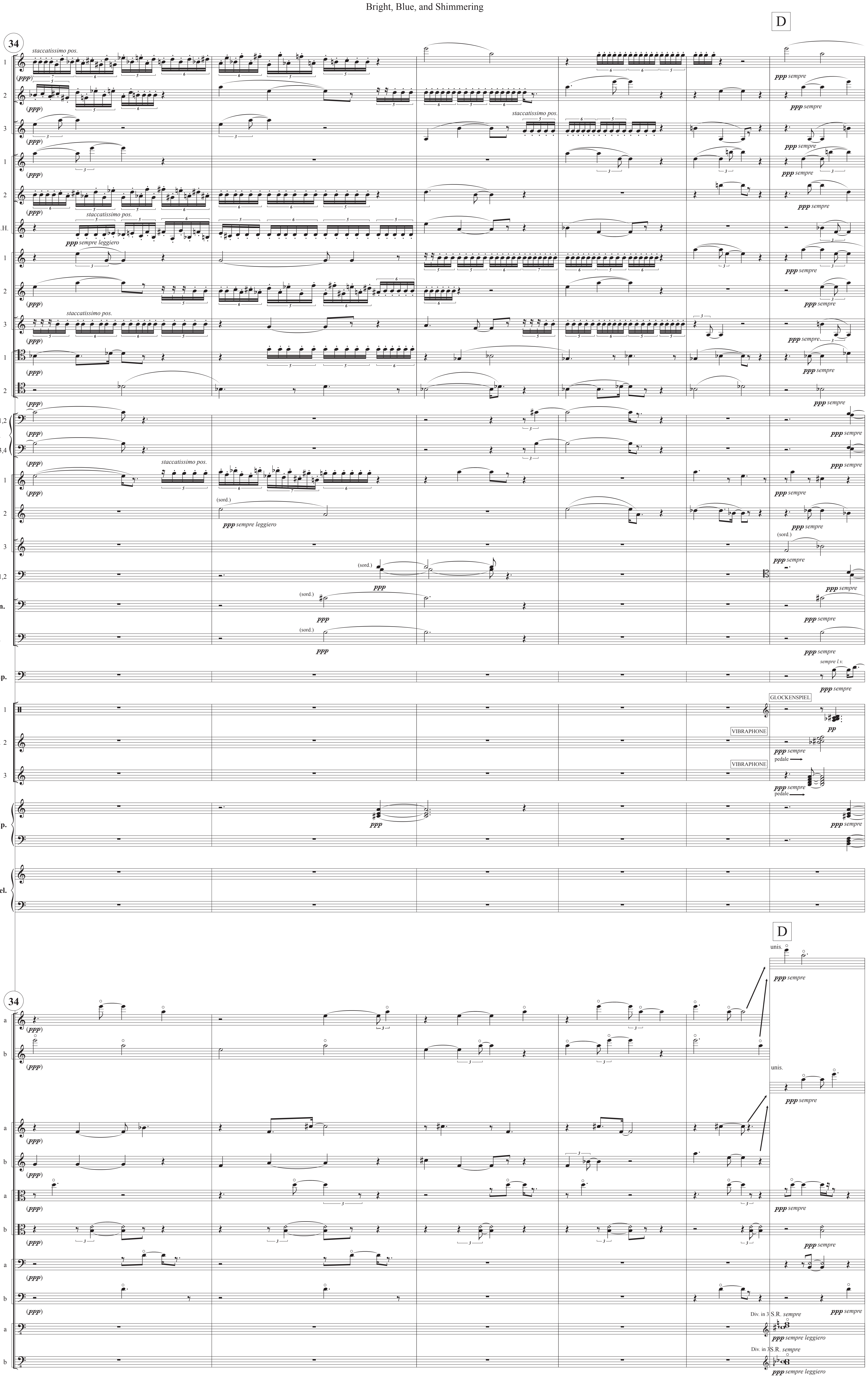
Measures 1-113 © copyright 2017 by Moe Touizrar
Measures 114-134 © copyright 2007 Carl Fischer LLC. Reproduced by permission.

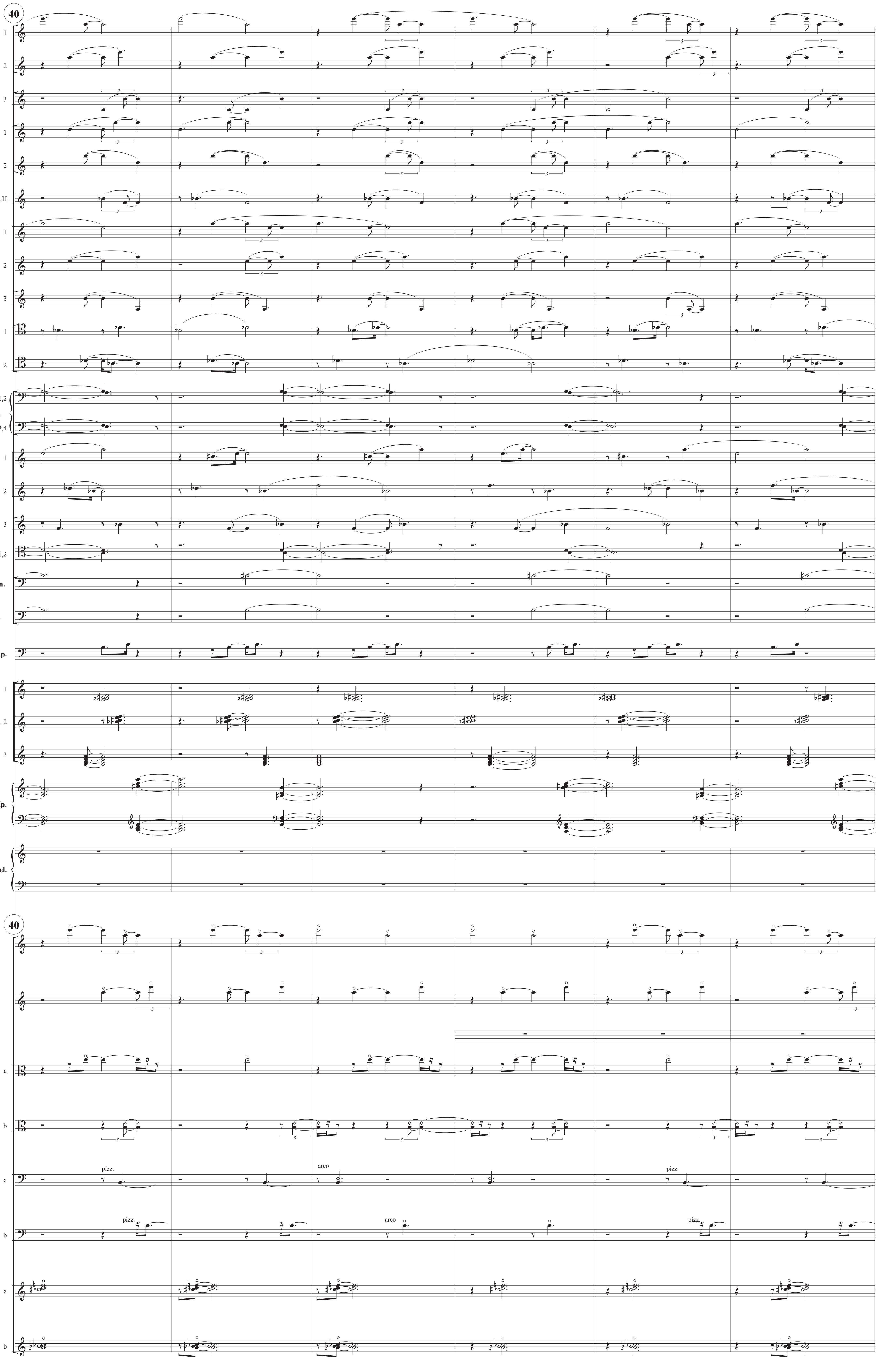

7
a tempo
rit.
A
a tempo
Fl.
Ob.
E.H.
Cl.
Bsn. 1,2
Hns.
Tbn. 1,2
B.Tbn.
Tba.
Timp.
Perc.
VIBRAPHONE
(Sus. Cymb.)
arco
motor off
SIZZLE CYMBAL
Hp.
Cel.
1. solo
dolce
espress.
p
pp
ppp
Vln. I
gli altri div.
Vln. II
Vla.
Solo 1
Solo 2
Vc.
Cb.
2 Soli
gli altri
con sord. (ord.)
remove heavy mute
apply ordinary mute

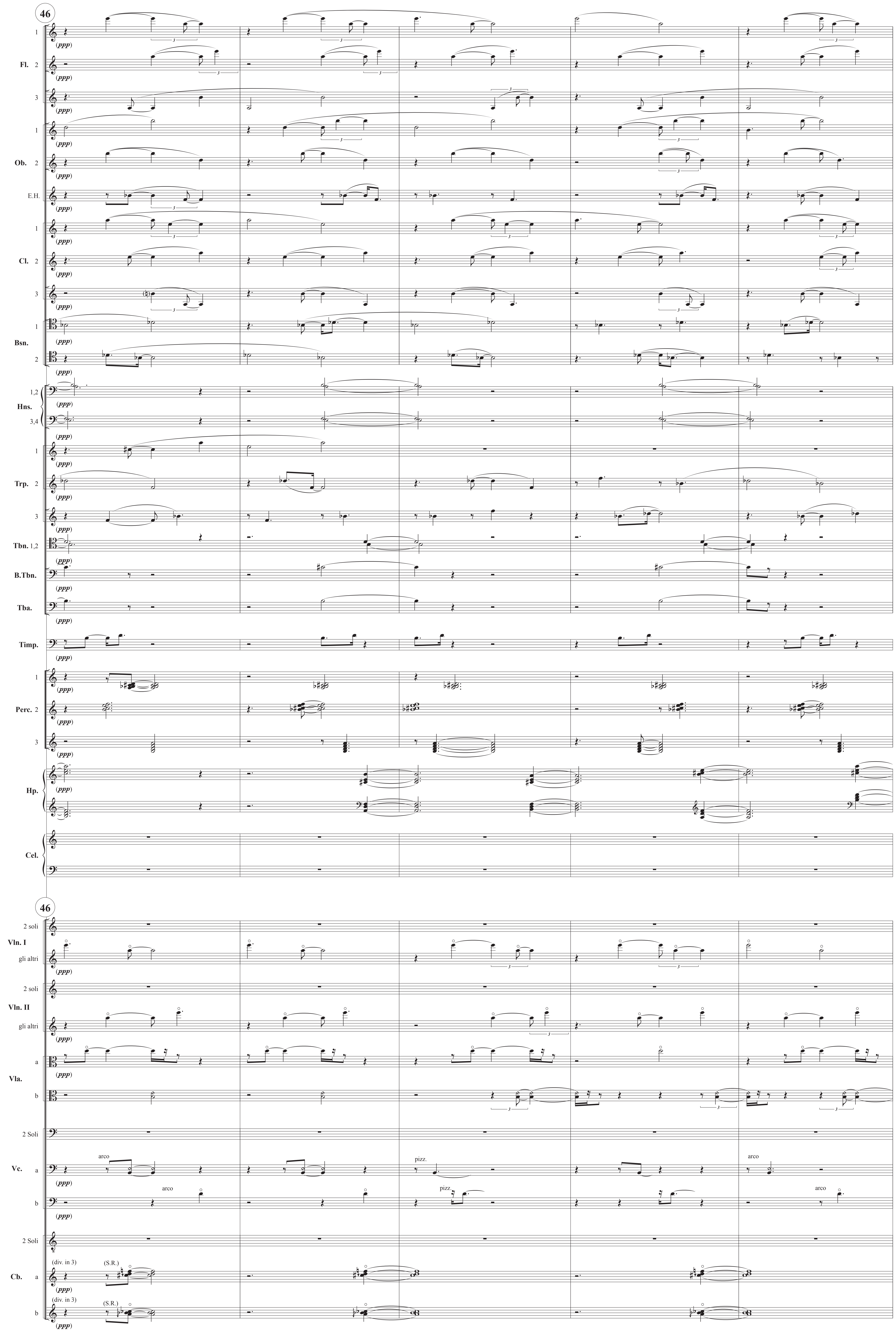

15
rit.
a tempo
rit.
a tempo
rit.
Fl. 1 2 3
Ob. 1 2
E.H.
Cl. 1 2 3
Bsn. 1,2
Hns. 1 2
Hns. 3 4
Tbn. 1,2
B.Tbn.
Tba.
Timp.
Perc. 1 2 3
Hp.
Cel.
Solo 1
Vln. I
gli altri div.
Vln. II a b
Vla. Solo 1 Solo 2
gli altri div.
Vc. Solo 1 Solo 2
gli altri div.
Cb.
gli altri
p
p espress.
pp
ppp
arco
con sord.
con sord. (ord.)
III
IV
3

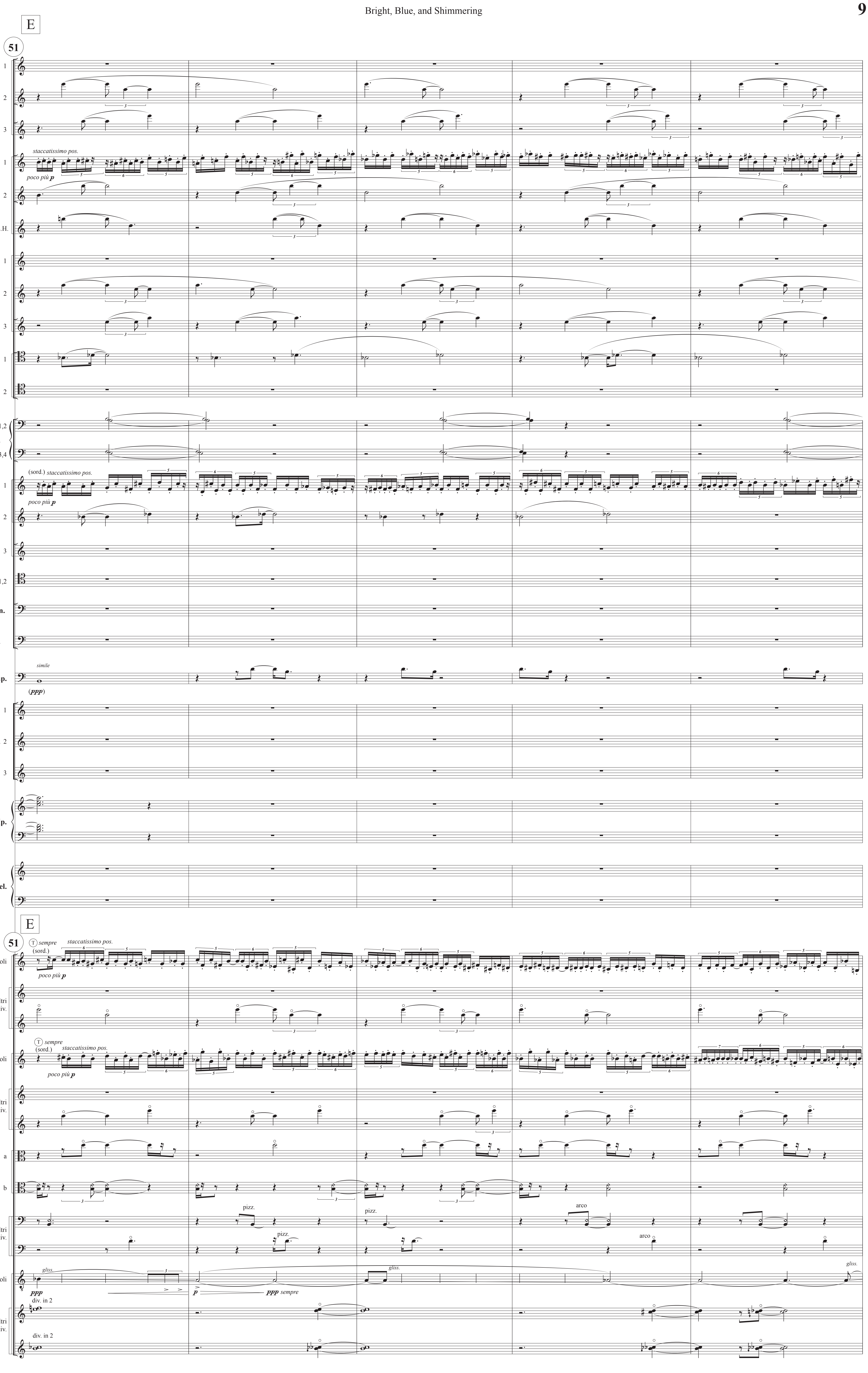

B
22
Poco meno mosso ♩ = 52-54
rit. poco a poco
a tempo
rit.
a tempo
rit.
Fl. 1 2 3
Ob. 1 2
E.H.
Cl. 1 2 3
Bsn. 1 2
1. solo
3. solo
Hns. 1,2 3,4
(sord.)
Trp. 1
Tbn. 1,2
B.Tbn.
Tba.
Timp.
Perc. 1 2 3
VIBRAPHONE
TUBULAR BELLS
poco lontano
Hp.
Cel.
pp
ppp
p
p espress.
Vln. I a b
Vln. II a b
Vla. a b
Vc. a b
Cb.
5
4
3

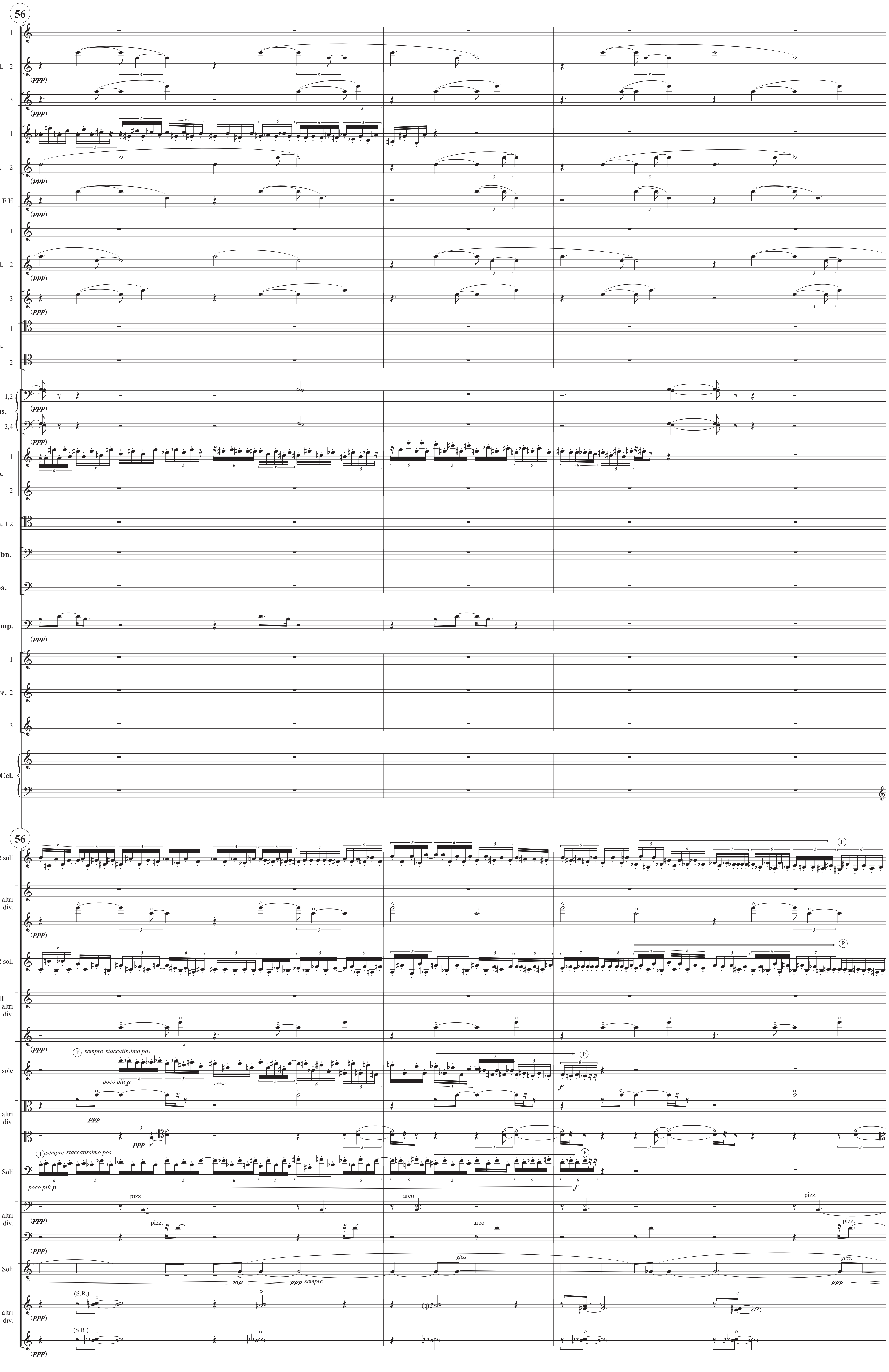

28
a tempo rit.
a tempo
C
Tempo 1º ♩ = 58-63
Fl. 1 2 3
Ob. 1 2
E.H.
Cl. 1 2 3
Bsn. 1 2
Hns. 1,2 3,4
Trp. 1
Tbn. 1,2
B.Tbn.
Tba.
Timp.
Perc. 1 2 3
Hp.
Cel.
Vln. I a b
Vln. II a b
Vla. a b
Vc. a b
Cb.
staccatissimo pos.
ppp sempre leggiero
p
pp
1º
3º
PICCOLO TRUMPET
con sord: straight mute

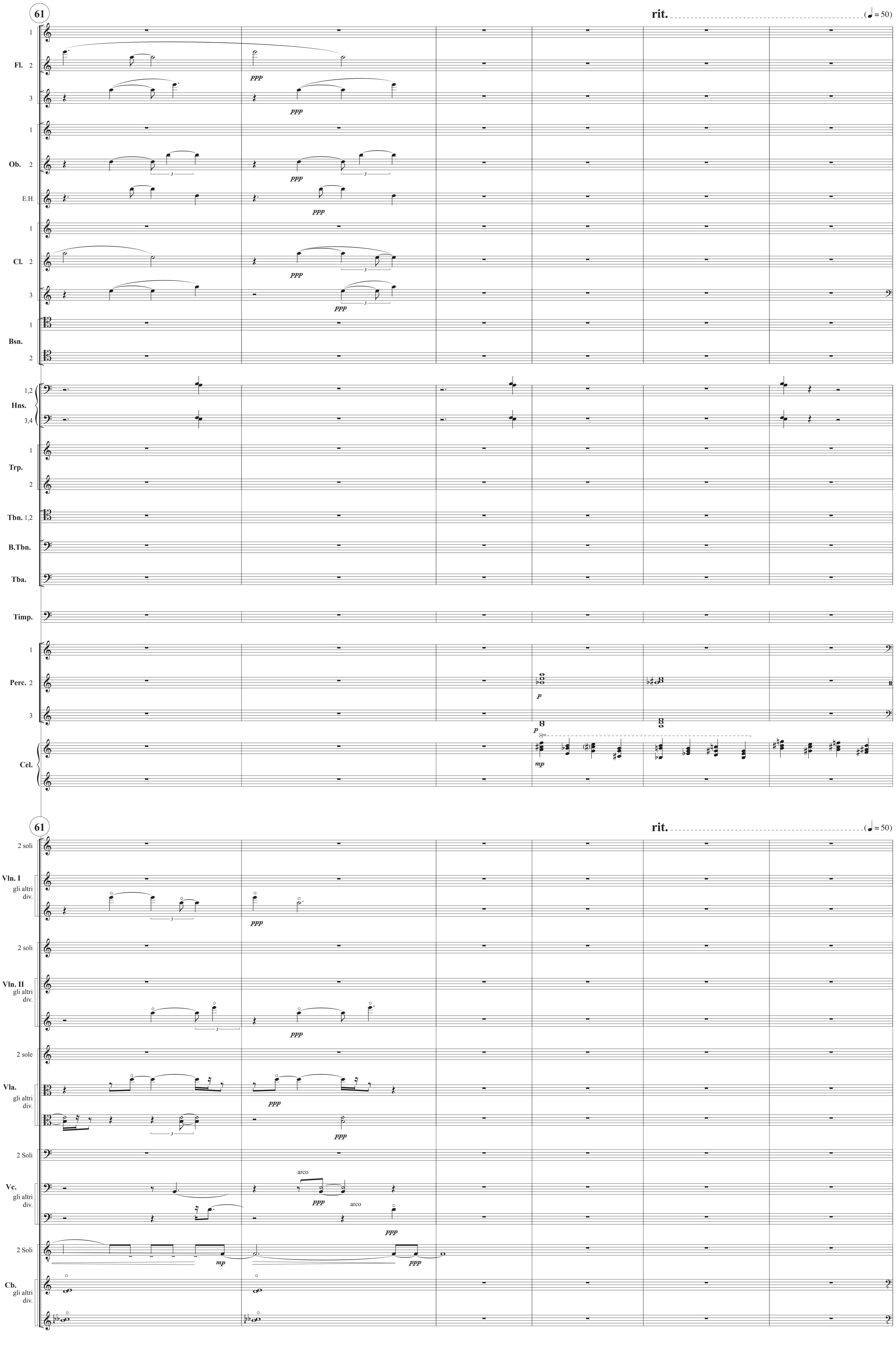

D
34
staccatissimo pos.
Fl.
(ppp)
ppp sempre
Ob.
E.H.
ppp sempre leggiero
Cl.
Bsn.
Hns.
1,2
3,4
Trp.
(sord.)
ppp sempre leggiero
Tbn. 1,2
B.Tbn.
Tba.
ppp
Timp.
sempre l.v.
Perc.
GLOCKENSPIEL
pp
VIBRAPHONE
pedale
Hp.
Cel.
unis.
Vln. I
Vln. II
Vla.
Vc.
Cb.
Div. in 3 S.R. sempre
ppp sempre leggiero
a
b

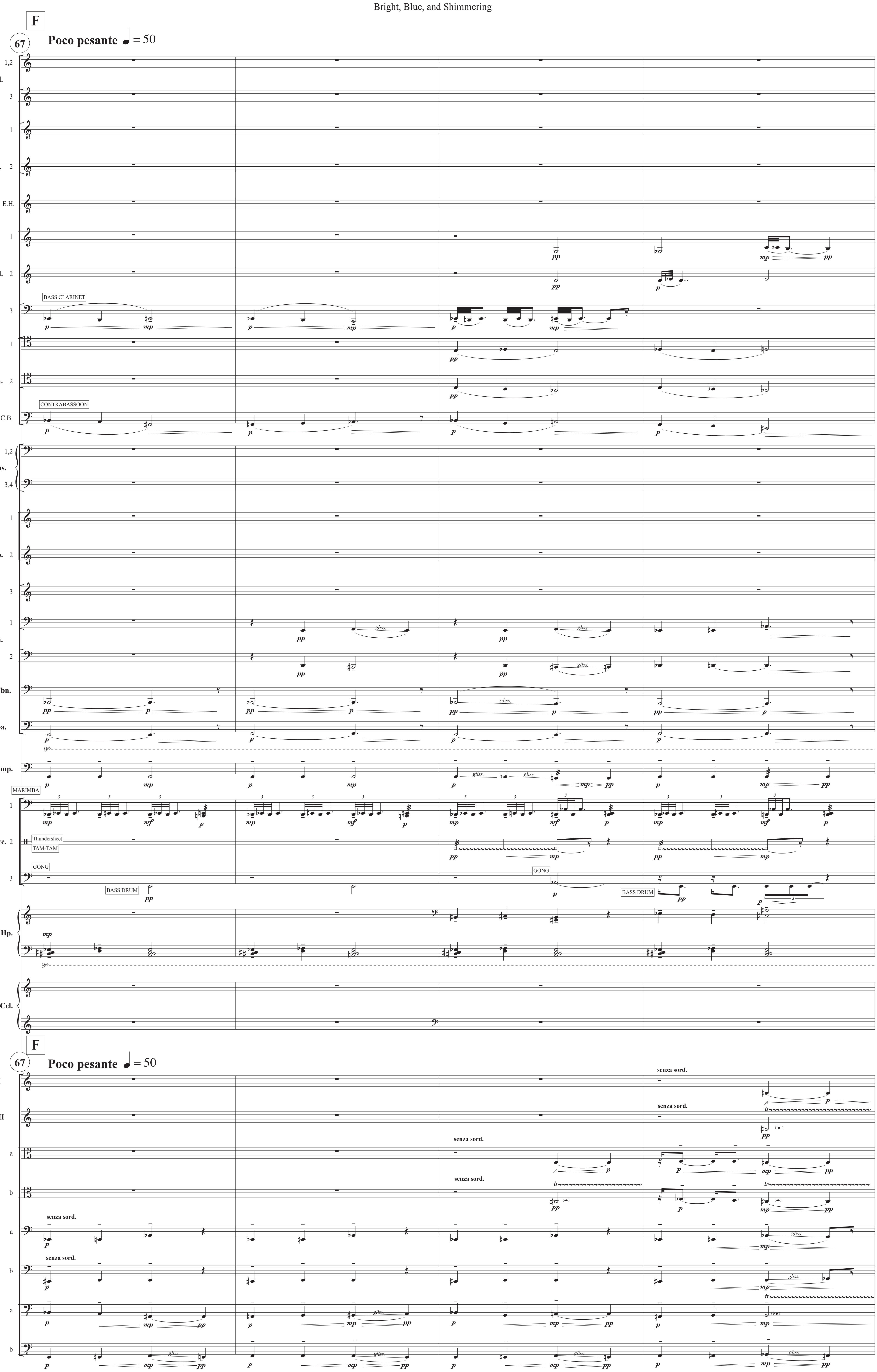

40
Fl. 1 2 3
Ob. 1 2
E.H.
Cl. 1 2 3
Bsn. 1 2
Hns. 1,2 3,4
Trp. 1 2 3
Tbn. 1,2
B.Tbn.
Tba.
Timp.
Perc. 1 2 3
Hp.
Cel.
40
Vln. I
Vln. II
Vla. a b
Vc. a b
pizz.
arco
pizz.
pizz.
arco
pizz.
Cb. a b

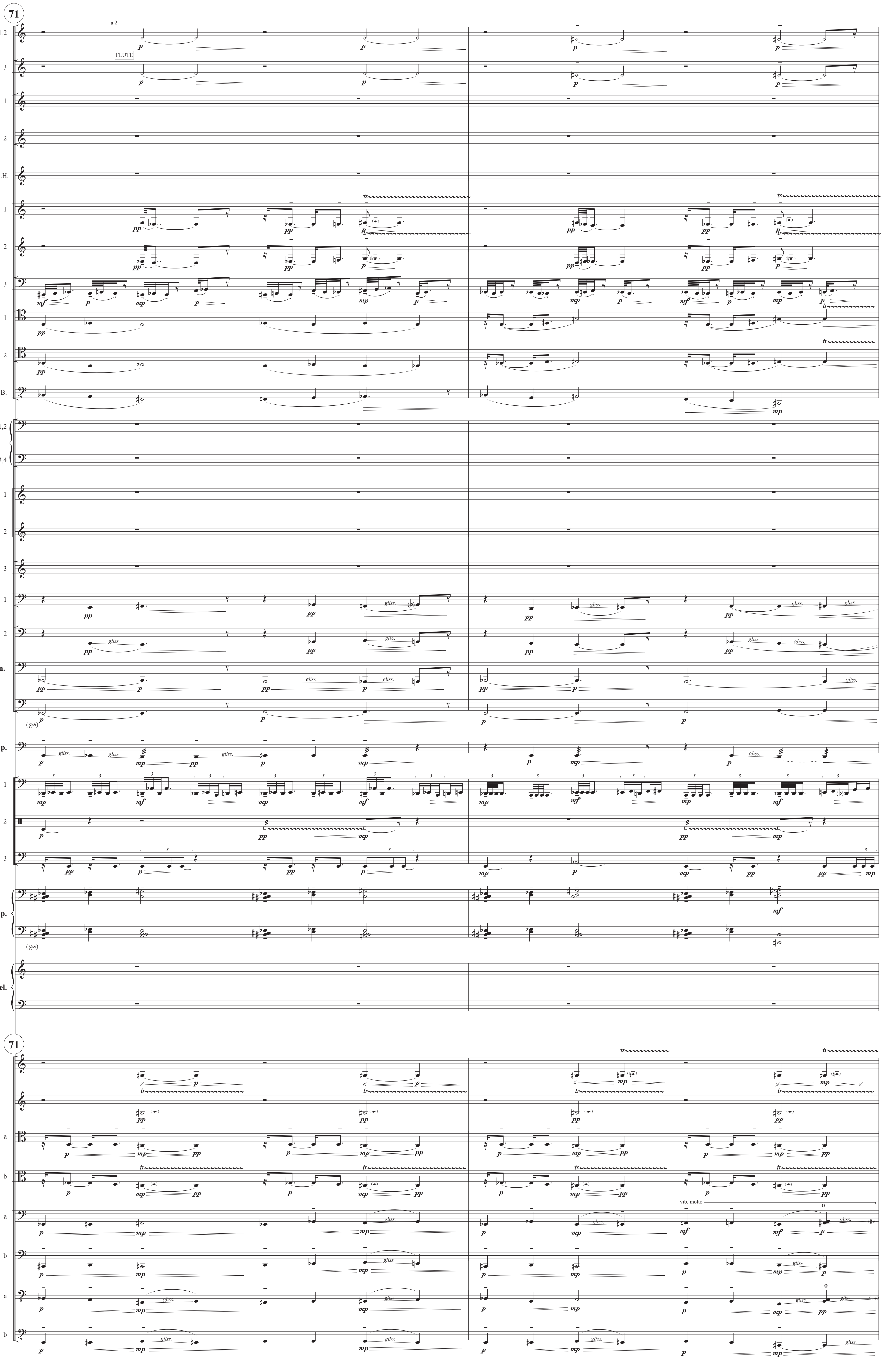

46
Fl. 1 2 3
Ob. 1 2
E.H.
Cl. 1 2 3
Bsn. 1 2
Hns. 1,2 3,4
Trp. 1 2 3
Tbn. 1,2
B.Tbn.
Tba.
Timp.
Perc. 1 2 3
Hp.
Cel.
46
Vln. I 2 soli gli altri
Vln. II 2 soli gli altri
Vla. a b
Vc. 2 Soli a b
Cb. 2 Soli a b
(ppp)
arco
pizz.
(div. in 3)
(S.R.)
3

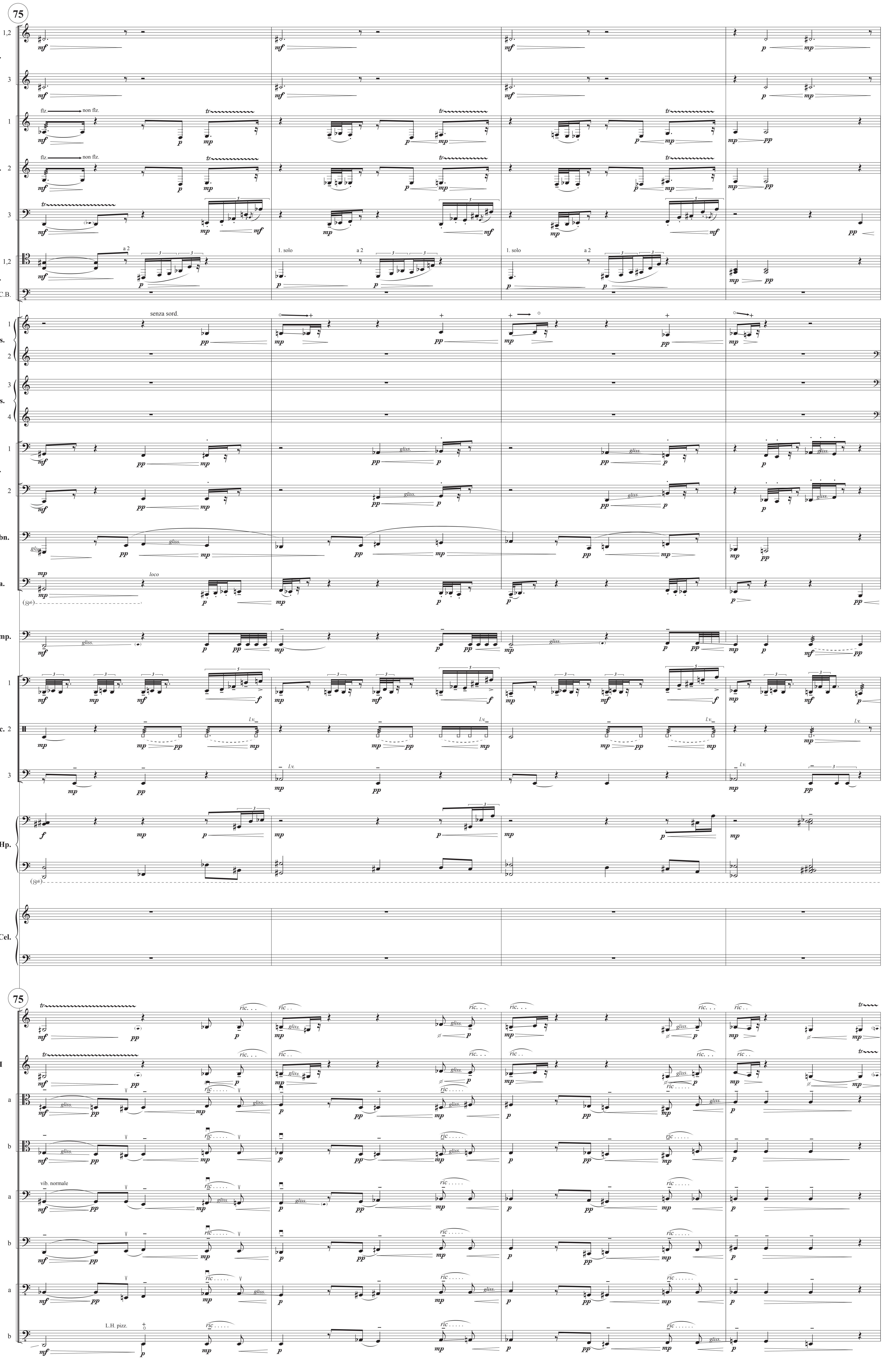

E
51
Fl. 1 2 3
staccatissimo pos.
poco più p
Ob. 1 2
E.H.
Cl. 1 2 3
Bsn. 1 2
Hns. 1,2 3,4
(sord.) staccatissimo pos.
poco più p
Trp. 1 2 3
Tbn. 1,2
B.Tbn.
Tba.
simile
Timp.
(ppp)
Perc. 1 2 3
Hp.
Cel.
E
51
T sempre
(sord.)
staccatissimo pos.
poco più p
2 soli
Vln. I
gli altri div.
T sempre
(sord.)
staccatissimo pos.
poco più p
2 soli
Vln. II
gli altri div.
Vla. a b
pizz.
arco
gli altri div.
Vc.
2 Soli
gliss.
ppp
p
ppp sempre
Cb.
gli altri div.
div. in 2

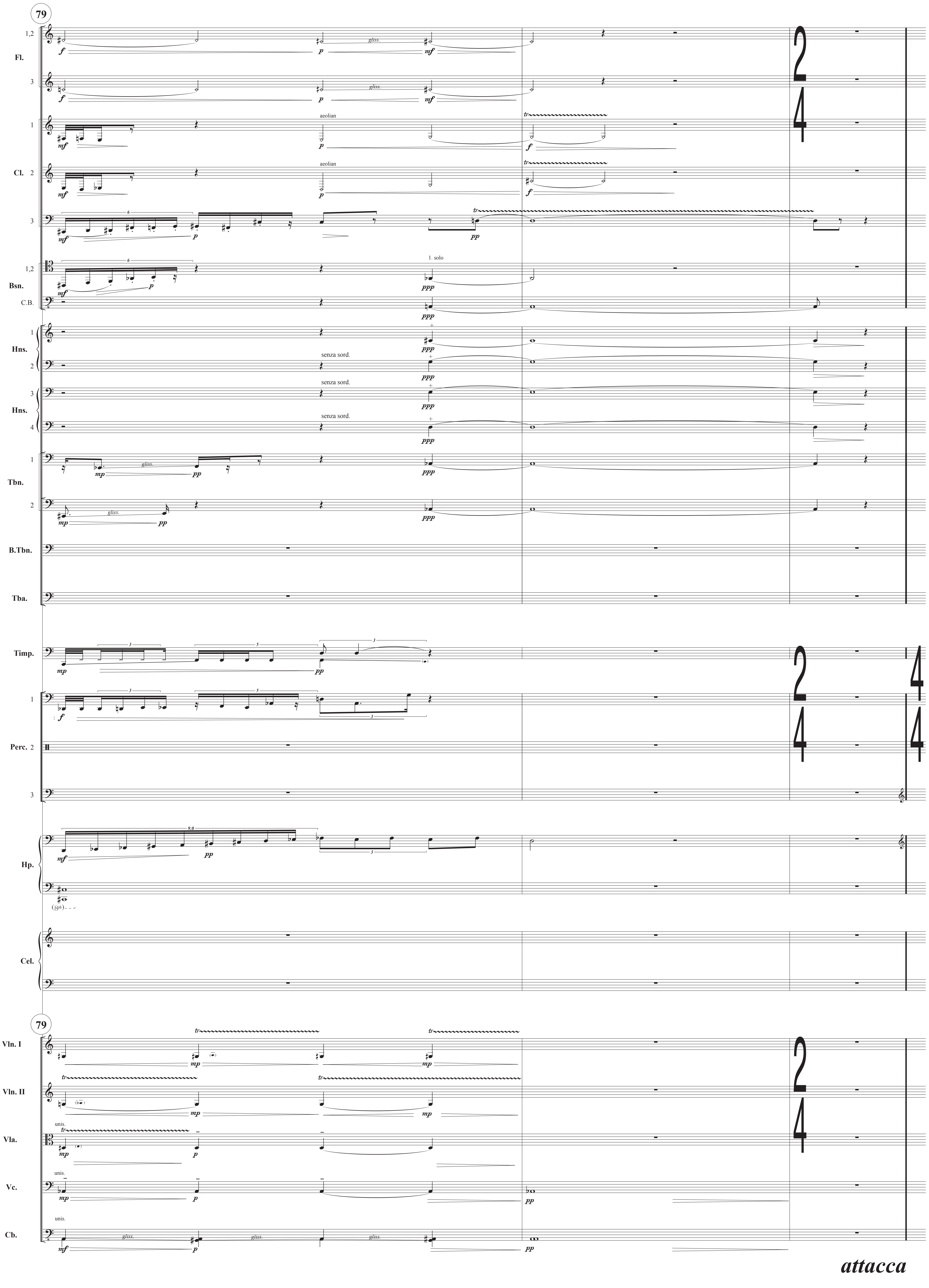

56
Fl. 1 2 3
(ppp)
Ob. 1 2
E.H.
Cl. 1 2 3
Bsn. 1 2
Hns. 1,2 3,4
Trp. 1 2
Tbn. 1,2
B.Tbn.
Tba.
Timp.
Perc. 1 2 3
Cel.
56
Vln. I 2 soli gli altri div.
Vln. II 2 soli gli altri div.
Vla. 2 sole gli altri div.
Vc. 2 Soli gli altri div.
Cb. 2 Soli gli altri div.
P
T sempre staccatissimo pos.
poco più p
cresc.
f
ppp
pizz.
arco
gliss.
mp
ppp sempre
(S.R.)


61
rit.
(♩ = 50)
Fl. 1 2 3
Ob. 1 2
E.H.
Cl. 1 2 3
Bsn. 1 2
Hns. 1,2 3,4
Trp. 1 2
Tbn. 1,2
B.Tbn.
Tba.
Timp.
Perc. 1 2 3
Cel.
8va
ppp
p
mp
3
Vln. I 2 soli gli altri div.
Vln. II 2 soli gli altri div.
Vla. 2 sole gli altri div.
Vc. 2 Soli gli altri div.
arco
Cb. 2 Soli gli altri div.

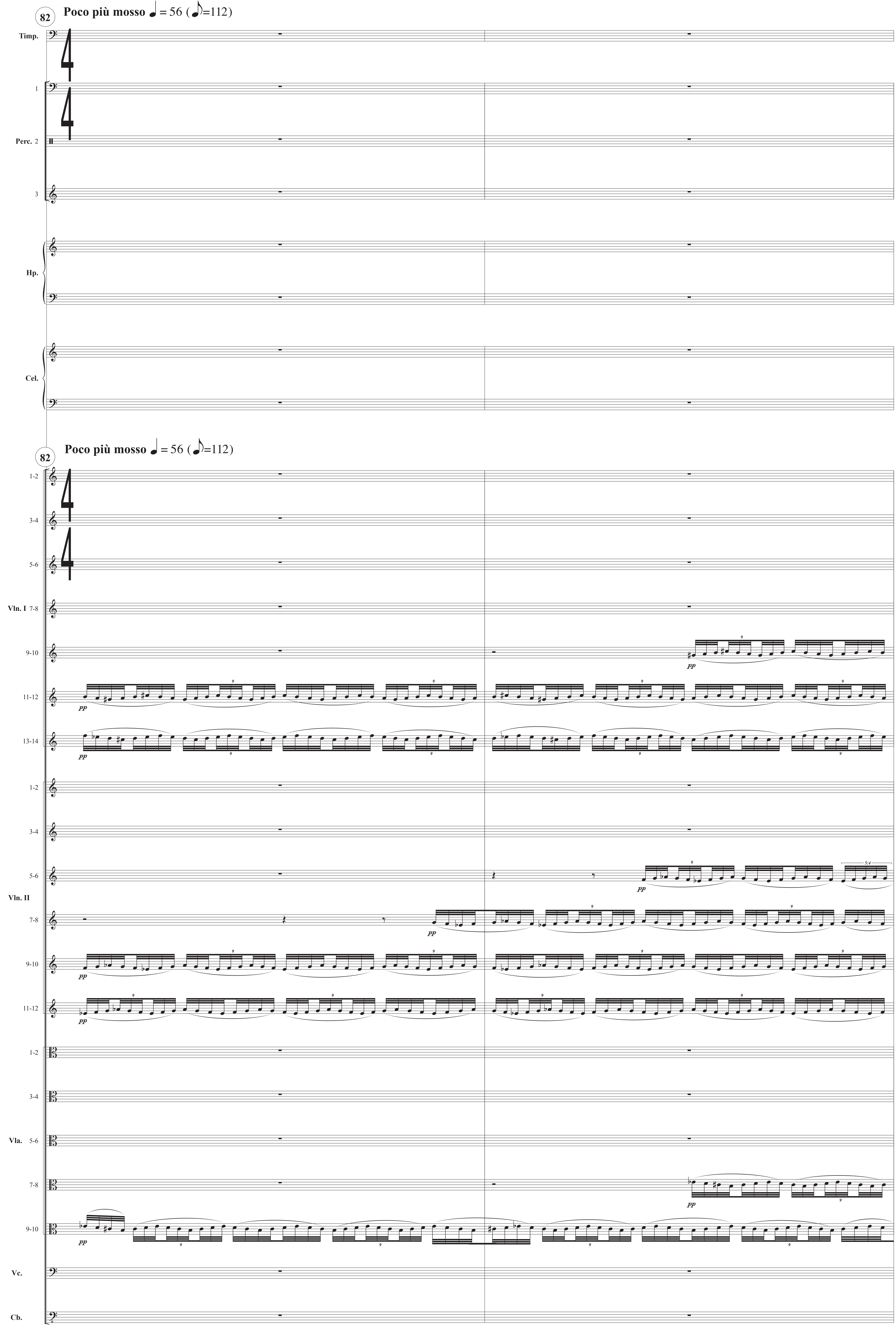

F
67
Poco pesante ♩ = 50
Fl. 1,2
3
Ob. 1
2
E.H.
Cl. 1
2
3
BASS CLARINET
Bsn. 1
2
C.B.
CONTRABASSOON
Hns. 1,2
3,4
Trp. 1
2
3
Tbn. 1
2
B.Tbn.
Tba.
Timp.
MARIMBA
Perc. 1
2
3
Thundersheet
TAM-TAM
GONG
BASS DRUM
Hp.
Cel.
F
67
Poco pesante ♩ = 50
Vln. I
Vln. II
Vla. a
b
Vc. a
b
Cb. a
b
senza sord.
gliss.
tr
p
pp
mp
mf
8vb

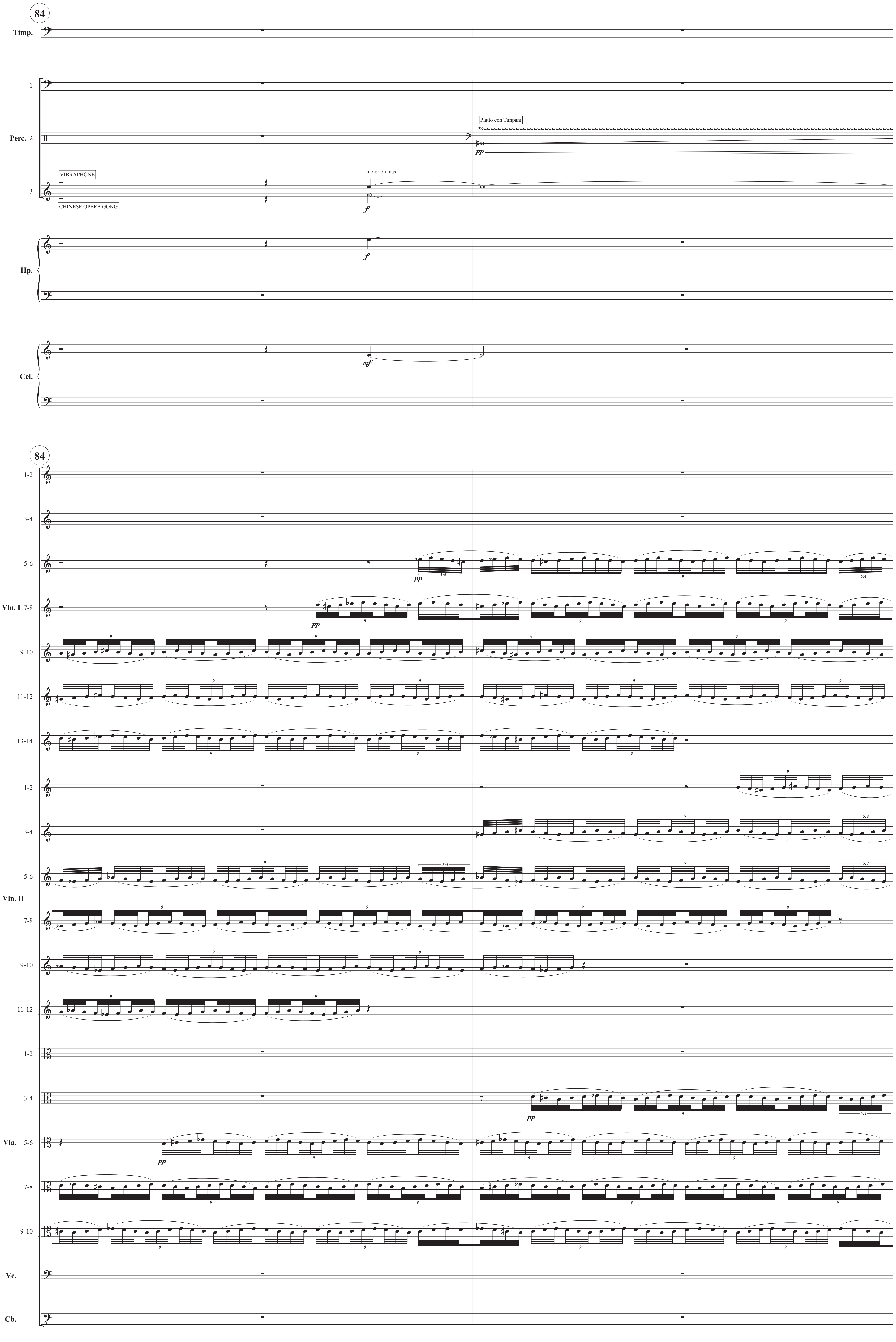

71
Fl. 1,2 3
a 2
FLUTE
Ob. 1 2
E.H.
Cl. 1 2 3
Bsn. 1 2
C.B.
Hns. 1,2 3,4
Trp. 1 2 3
Tbn. 1 2
B.Tbn.
Tba.
Timp.
Perc. 1 2 3
Hp.
Cel.
Vln. I
Vln. II
Vla. a b
Vc. a b
Cb. a b
p
pp
mf
mp
tr
gliss.
(8vb)
vib. molto
o

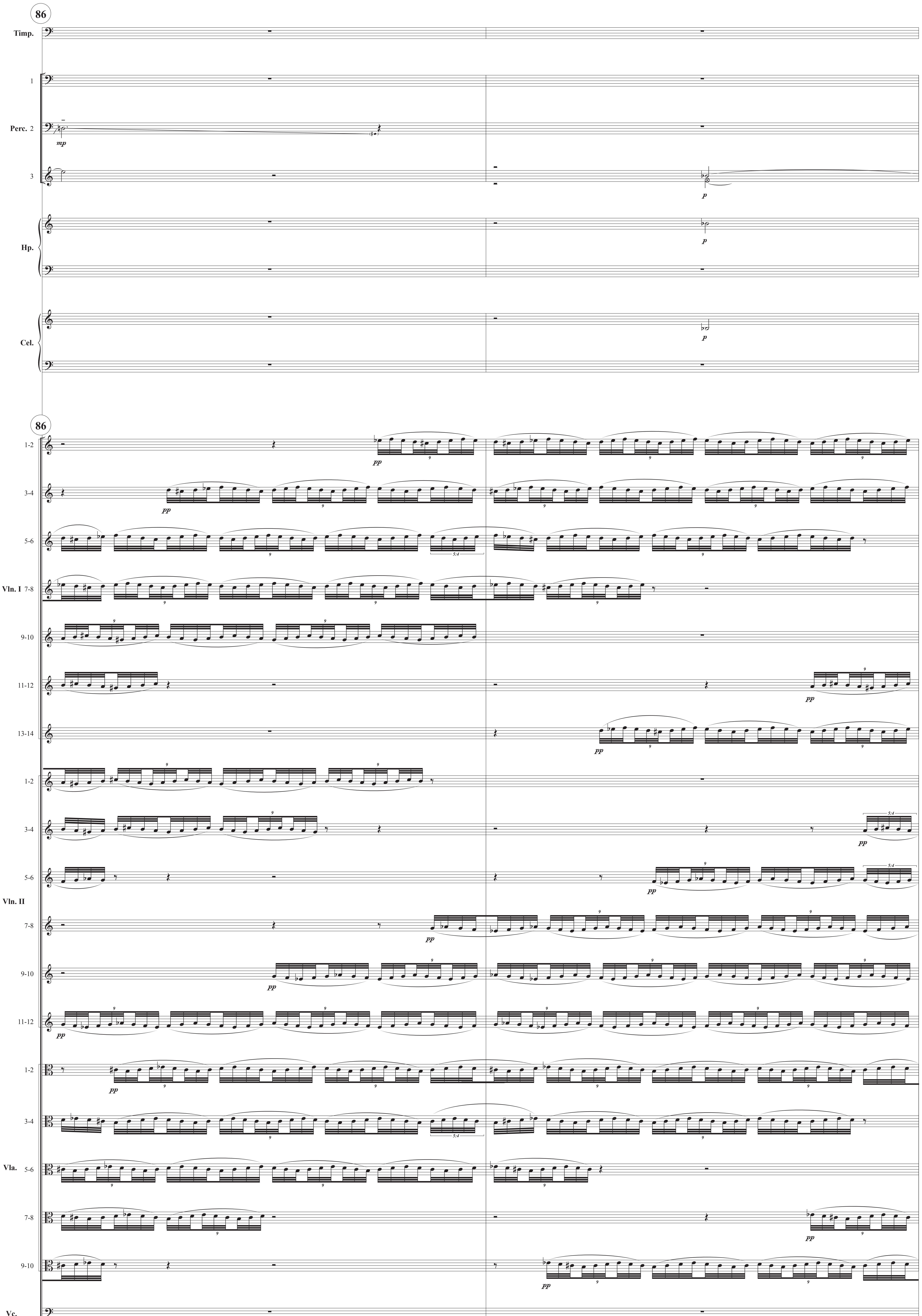

75
Fl.
1,2
3
Cl.
1
2
3
flz.
non flz.
tr
Bsn.
1,2
C.B.
a 2
1. solo
Hns.
1
2
3
4
senza sord.
Tbn.
1
2
gliss.
B.Tbn.
Tba.
loco
Timp.
Perc.
1
2
3
l.v.
Hp.
Cel.
75
Vln. I
Vln. II
ric. . .
Vla.
a
b
Vc.
vib. normale
Cb.
L.H. pizz.
mf
mp
p
pp

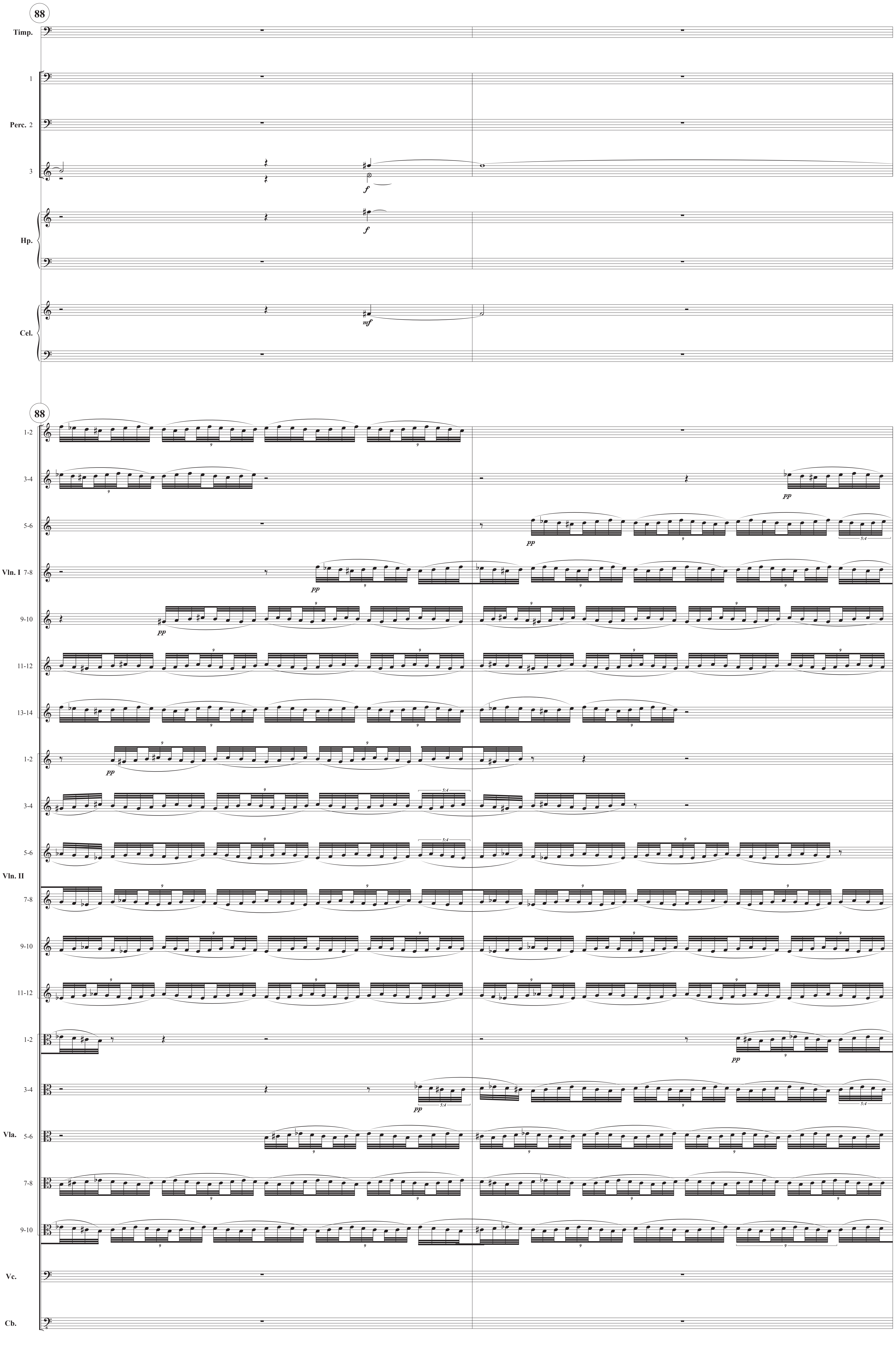

79
Fl.
1,2
3
gliss.
Cl.
1
2
3
aeolian
tr
6
Bsn.
1,2
C.B.
1. solo
Hns.
1
2
3
4
senza sord.
Tbn.
1
2
B.Tbn.
Tba.
Timp.
Perc.
Hp.
9:8
(8vb)
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.
unis.
f
p
mf
mp
pp
ppp
2
4
4
4
attacca

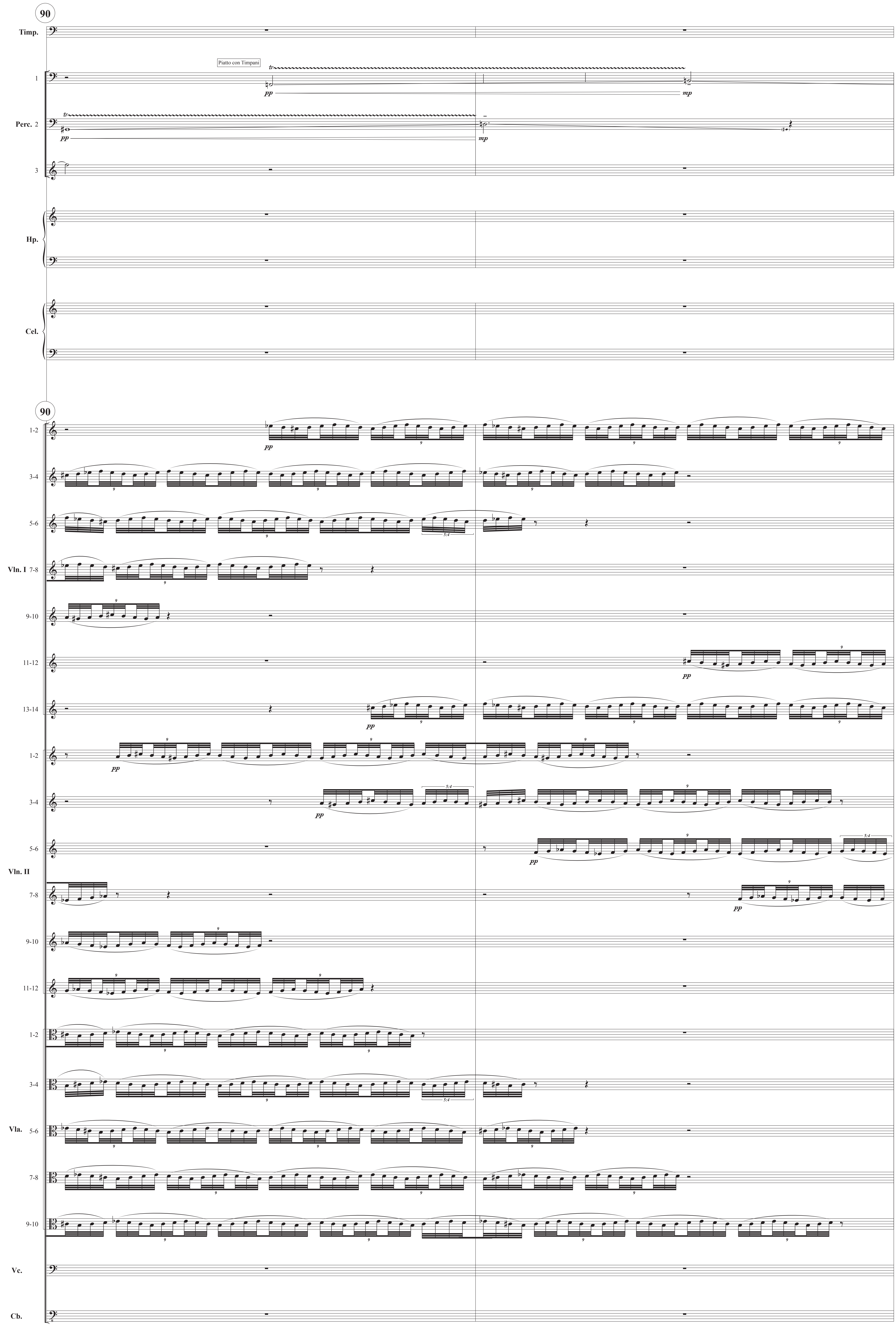
II: Sol invictus (Matutinae)

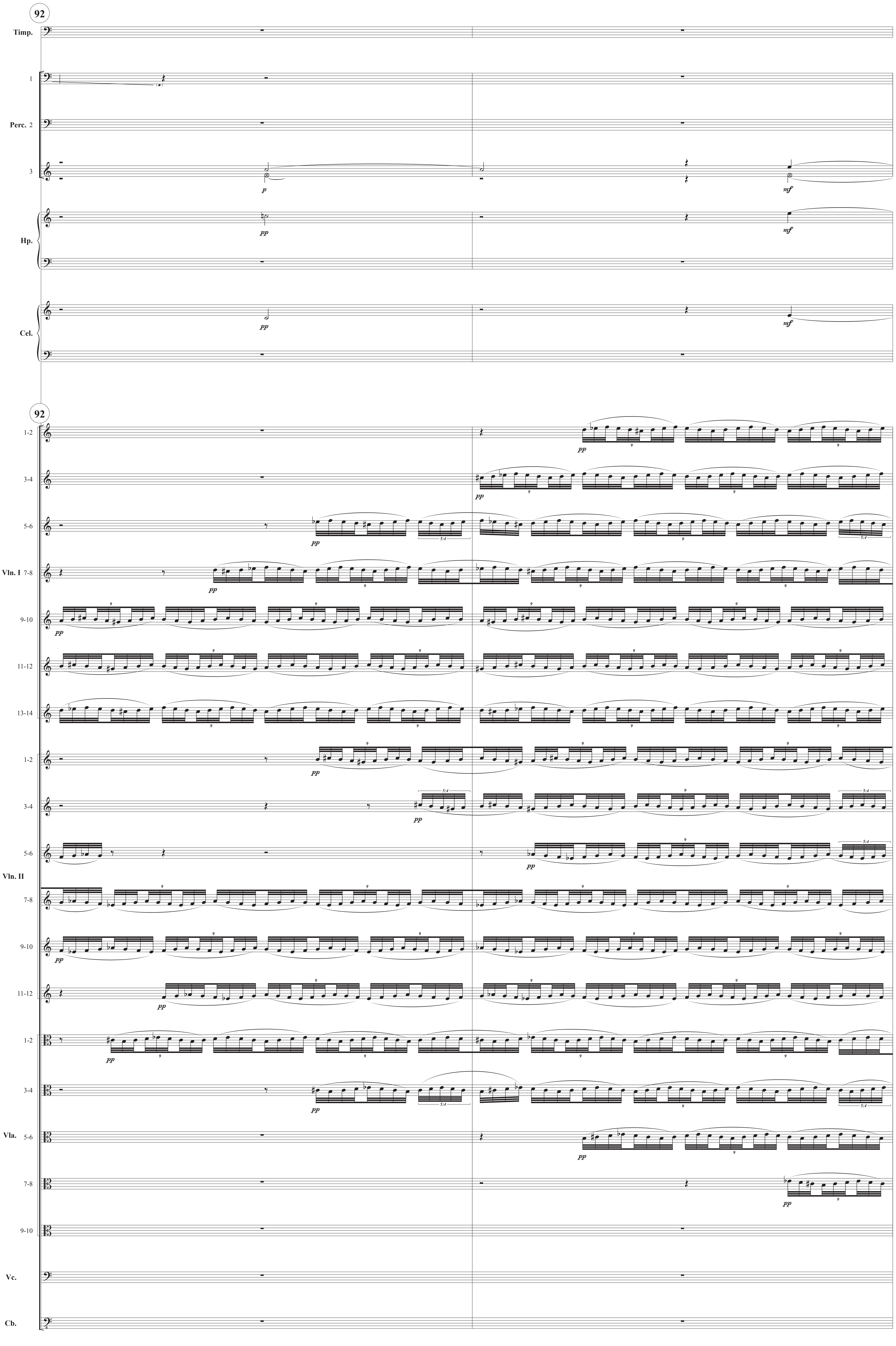

82
Poco più mosso ♩ = 56 (♪=112)
Timp.
1
Perc. 2
3
Hp.
Cel.
82
Poco più mosso ♩ = 56 (♪=112)
1-2
3-4
5-6
Vln. I 7-8
9-10
11-12
13-14
1-2
3-4
5-6
Vln. II
7-8
9-10
11-12
1-2
3-4
Vla. 5-6
7-8
9-10
Vc.
Cb.
pp
9
5:4

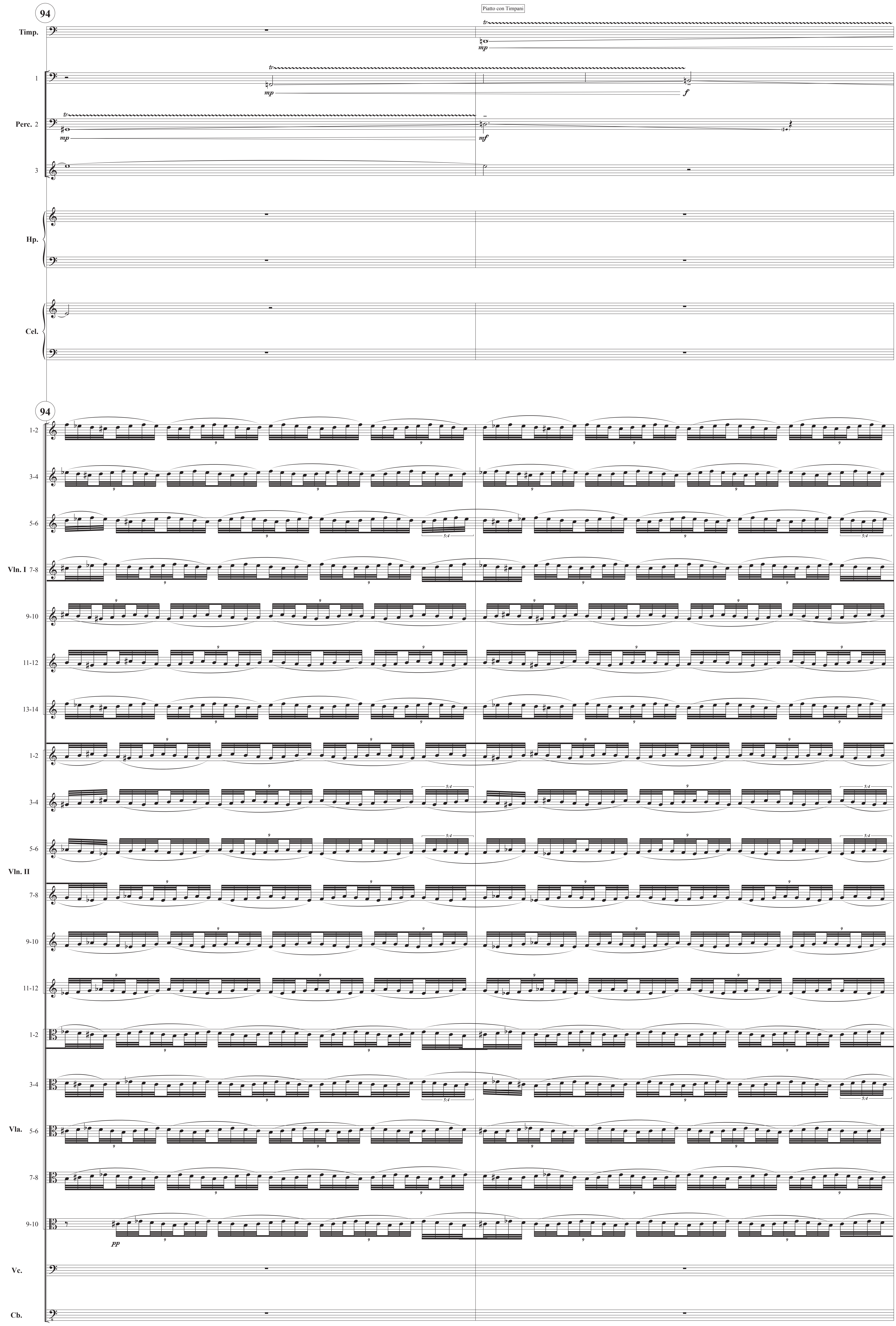

84
Timp.
1
Perc. 2
3
Piatto con Timpani
tr
pp
VIBRAPHONE
CHINESE OPERA GONG
motor on max
f
Hp.
f
Cel.
mf
84
1-2
3-4
5-6
pp
5:4
Vln. I 7-8
pp
9
9-10
11-12
13-14
1-2
3-4
5-6
Vln. II
7-8
9-10
11-12
1-2
3-4
pp
Vla. 5-6
pp
7-8
9-10
Vc.
Cb.

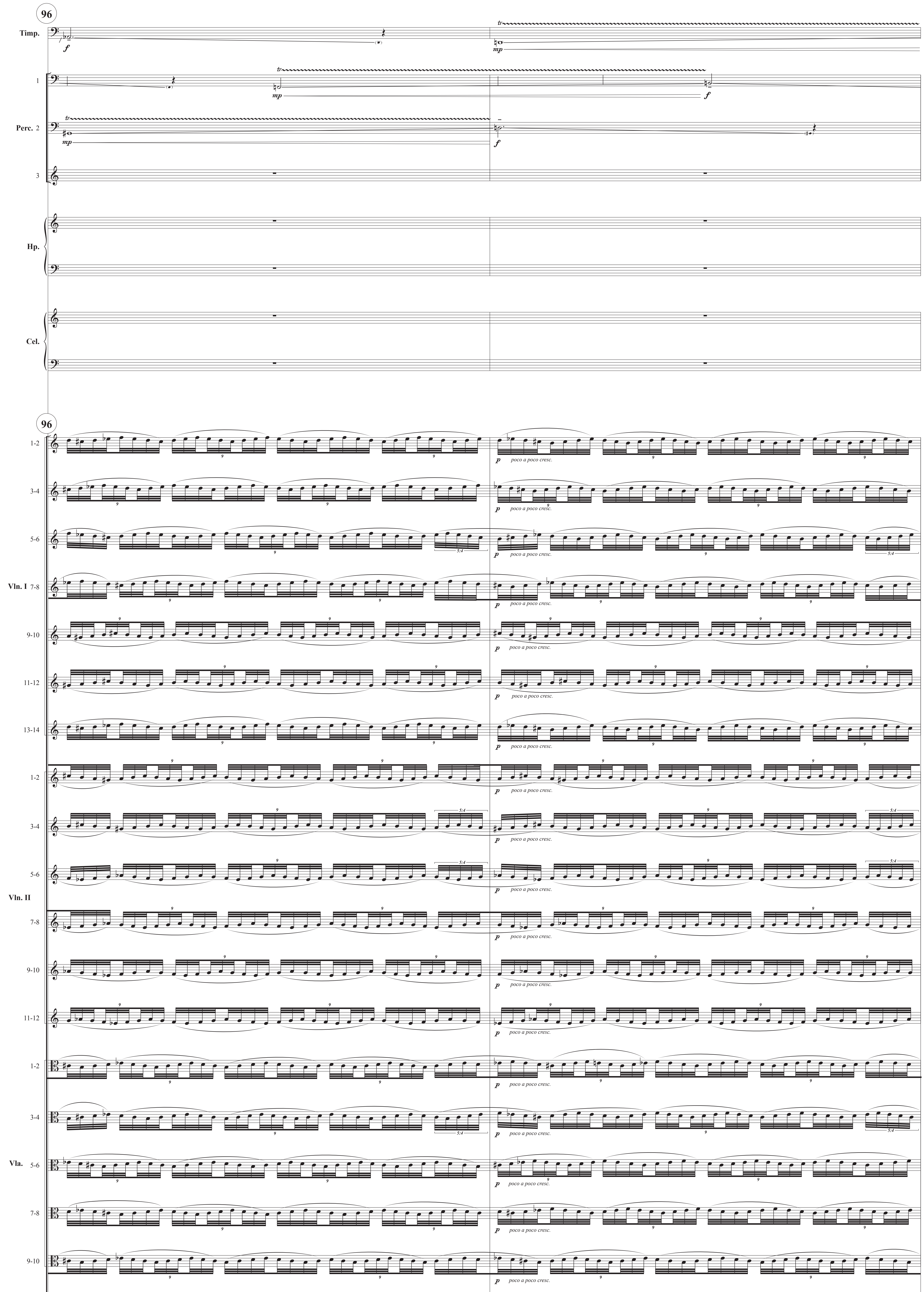

86
Timp.
1
Perc. 2
3
mp
p
Hp.
p
Cel.
p
86
1-2
3-4
5-6
Vln. I 7-8
9-10
11-12
13-14
1-2
3-4
5-6
Vln. II
7-8
9-10
11-12
1-2
3-4
Vla. 5-6
7-8
9-10
Vc.
Cb.
pp
9
5:4

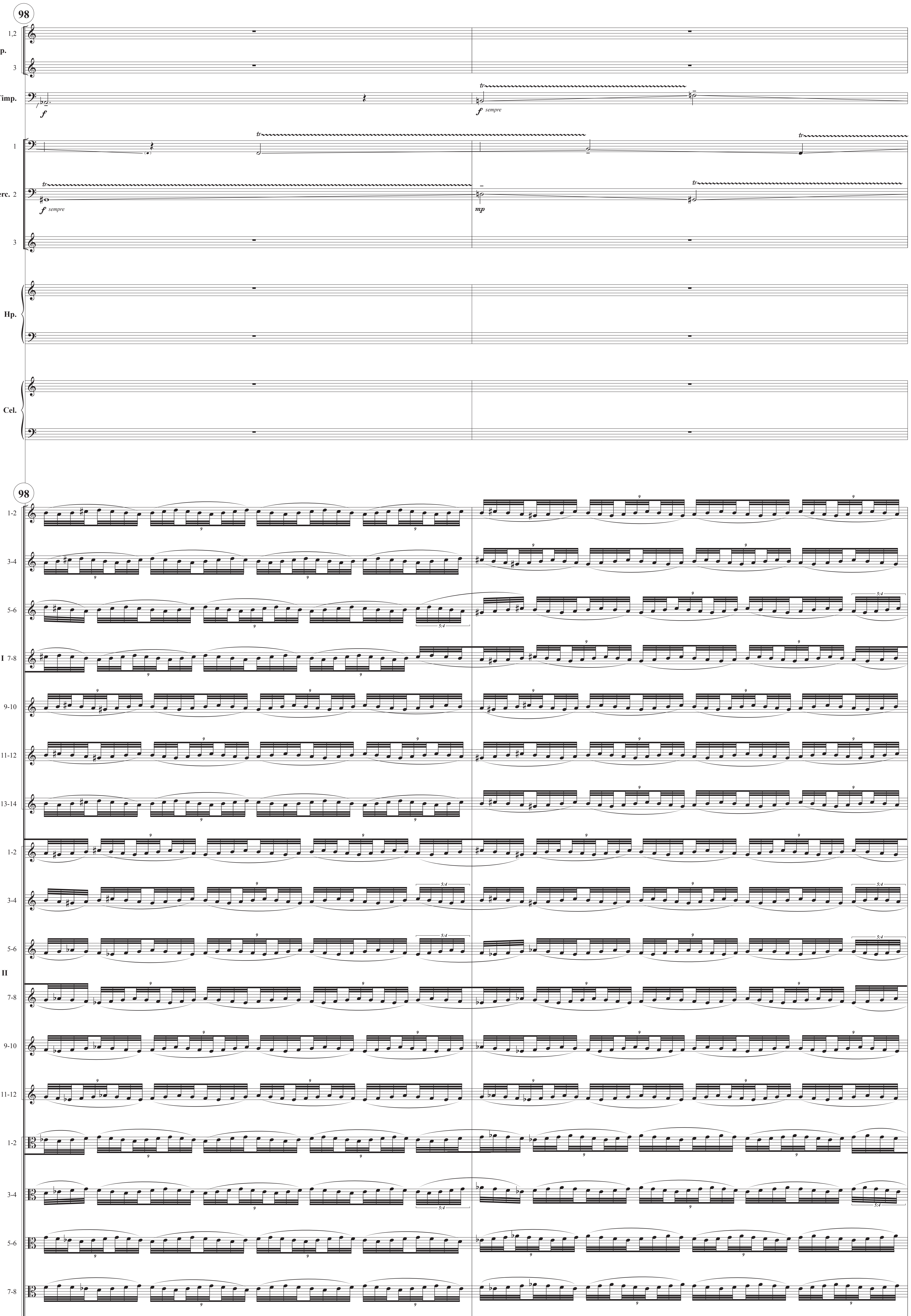

88
Timp.
1
Perc. 2
3
f
Hp.
f
Cel.
mf
88
1-2
3-4
5-6
Vln. I 7-8
9-10
11-12
13-14
1-2
3-4
5-6
Vln. II
7-8
9-10
11-12
1-2
3-4
Vla. 5-6
7-8
9-10
Vc.
Cb.
pp
9
5:4

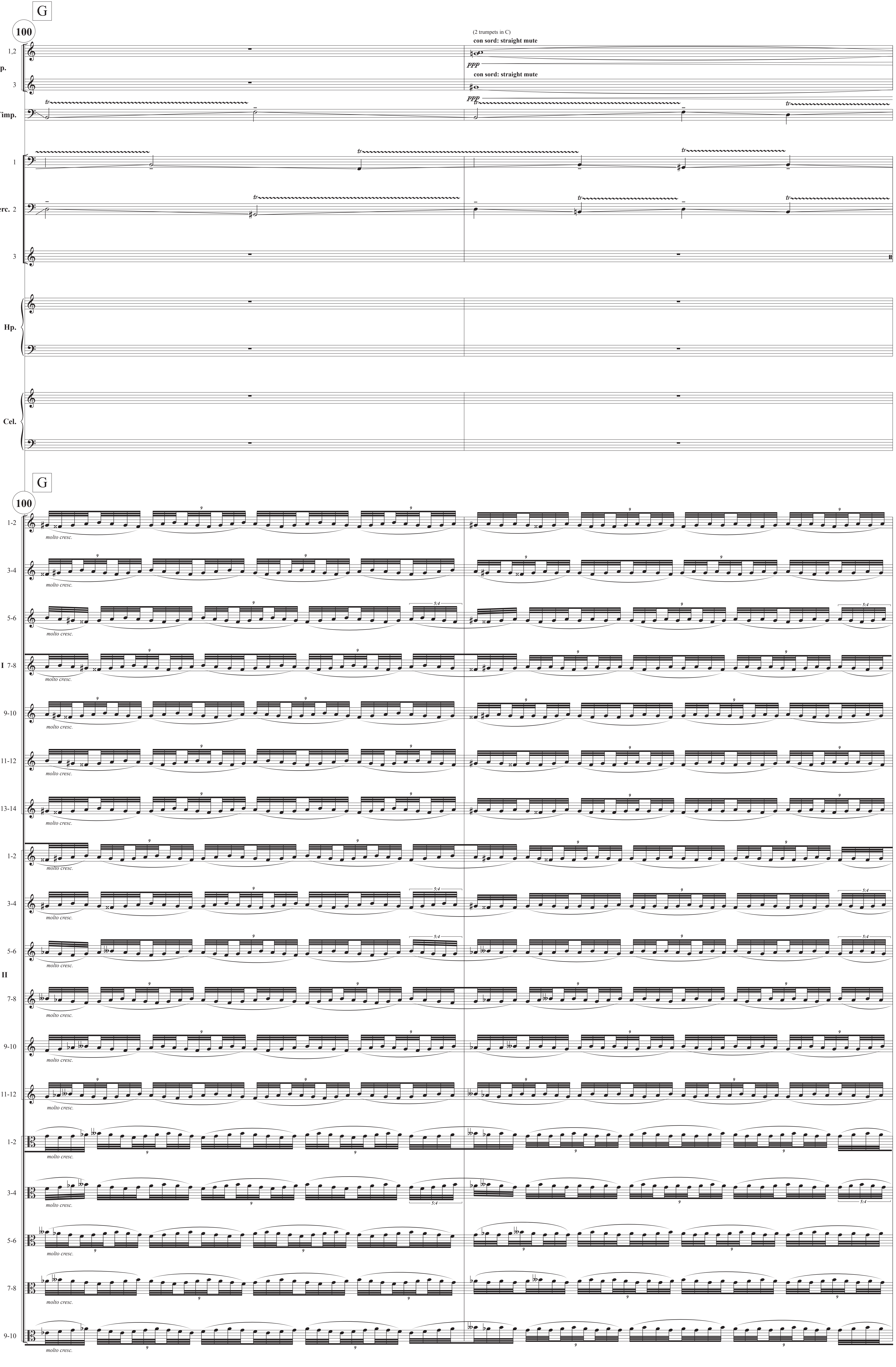

90
Timp.
Piatto con Timpani
tr
1
Perc. 2
3
pp
mp
Hp.
Cel.
90
1-2
3-4
5-6
Vln. I 7-8
9-10
11-12
13-14
Vln. II
1-2
3-4
5-6
7-8
9-10
11-12
Vla.
1-2
3-4
5-6
7-8
9-10
Vc.
Cb.
9
5:4

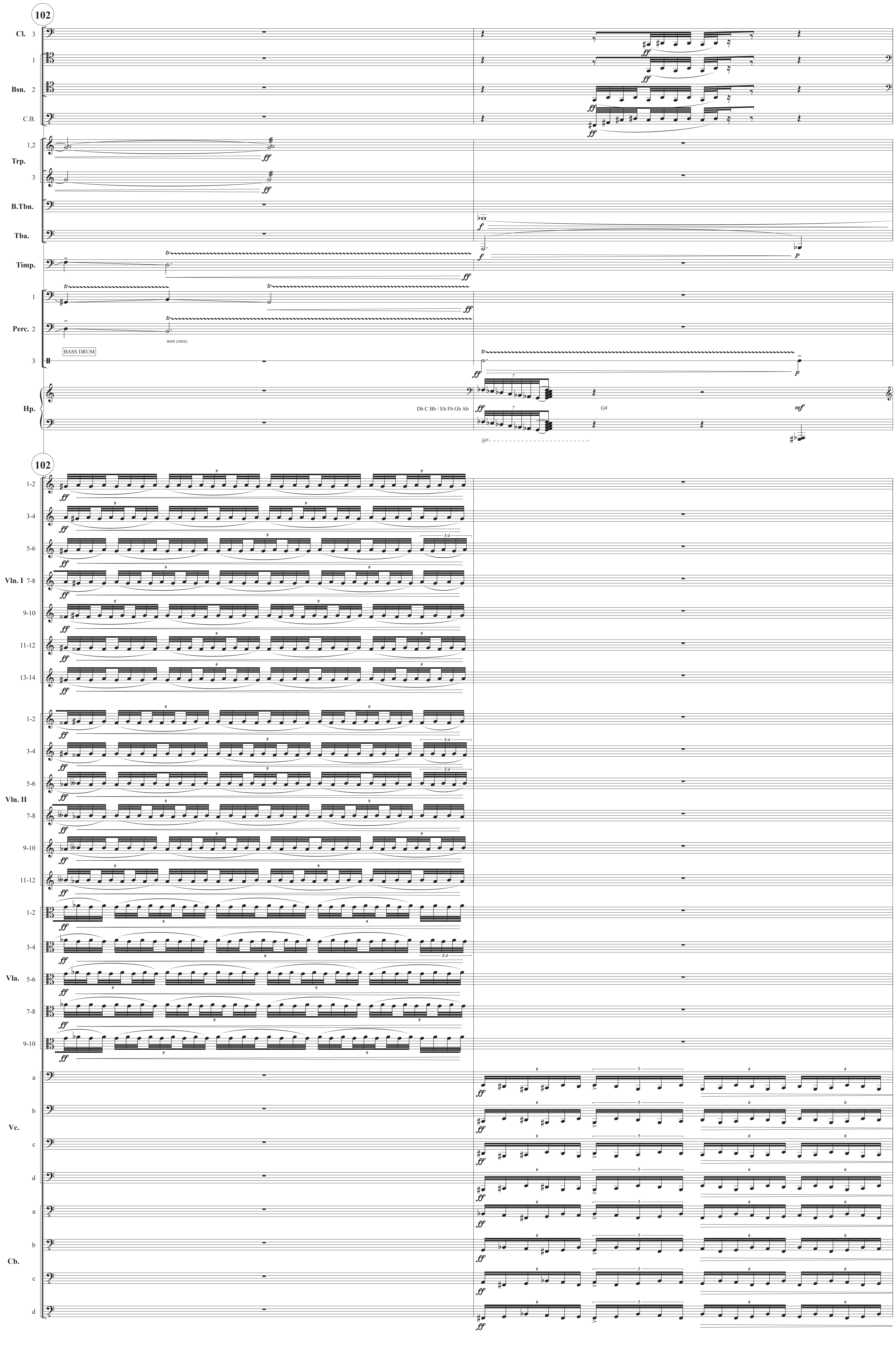

92
Timp.
1
Perc. 2
3
p
mf
Hp.
pp
mf
Cel.
pp
mf
92
1-2
3-4
5-6
Vln. I 7-8
9-10
11-12
13-14
1-2
3-4
5-6
Vln. II
7-8
9-10
11-12
1-2
3-4
Vla. 5-6
7-8
9-10
Vc.
Cb.
pp
9
5:4

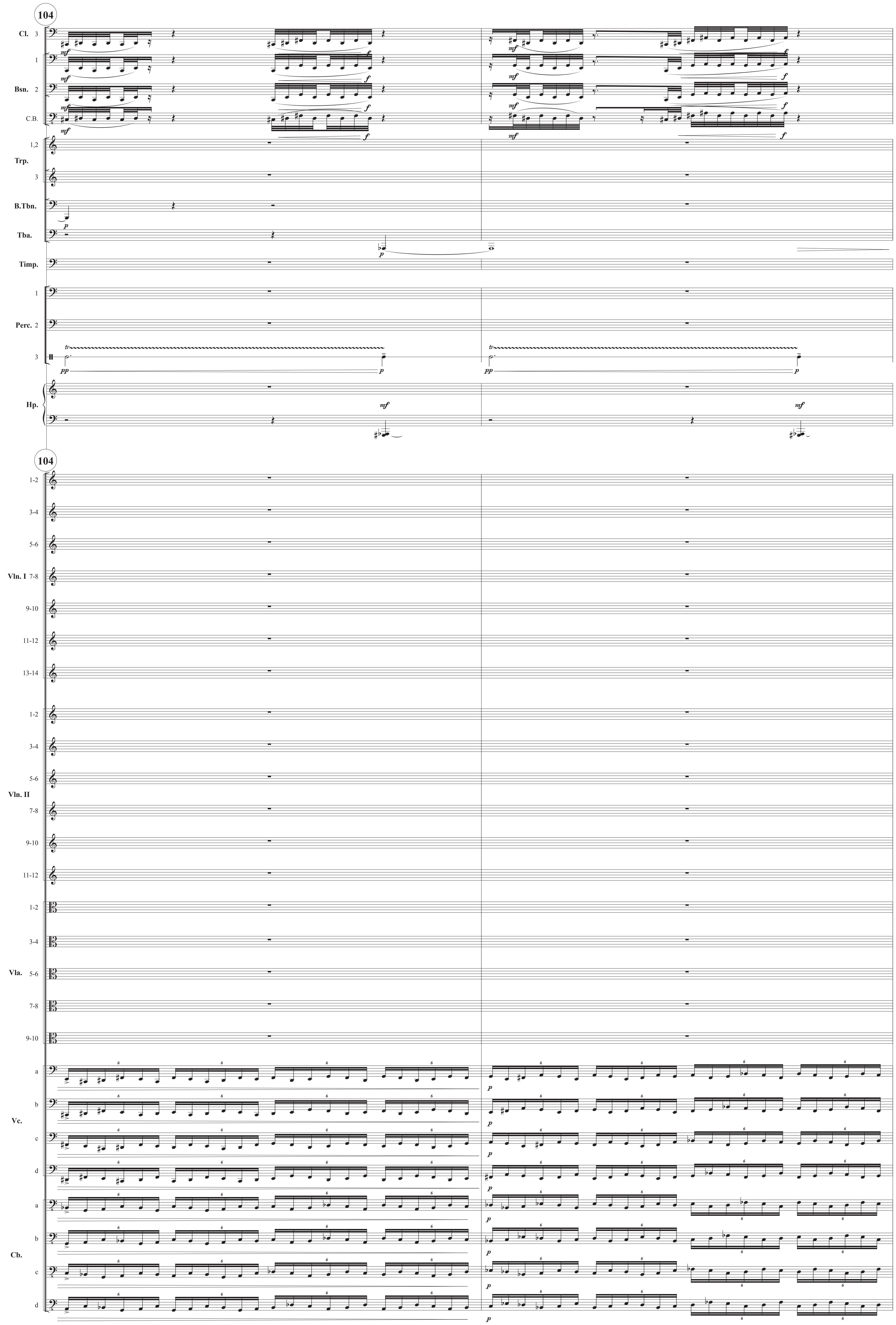

94
Piatto con Timpani
Timp.
tr
mp
1
tr
mp
f
Perc. 2
tr
mp
mf
3
Hp.
Cel.
94
1-2
3-4
5-6
Vln. I 7-8
9-10
11-12
13-14
1-2
3-4
5-6
Vln. II
7-8
9-10
11-12
1-2
3-4
Vla. 5-6
7-8
9-10
pp
Vc.
Cb.
9
5:4

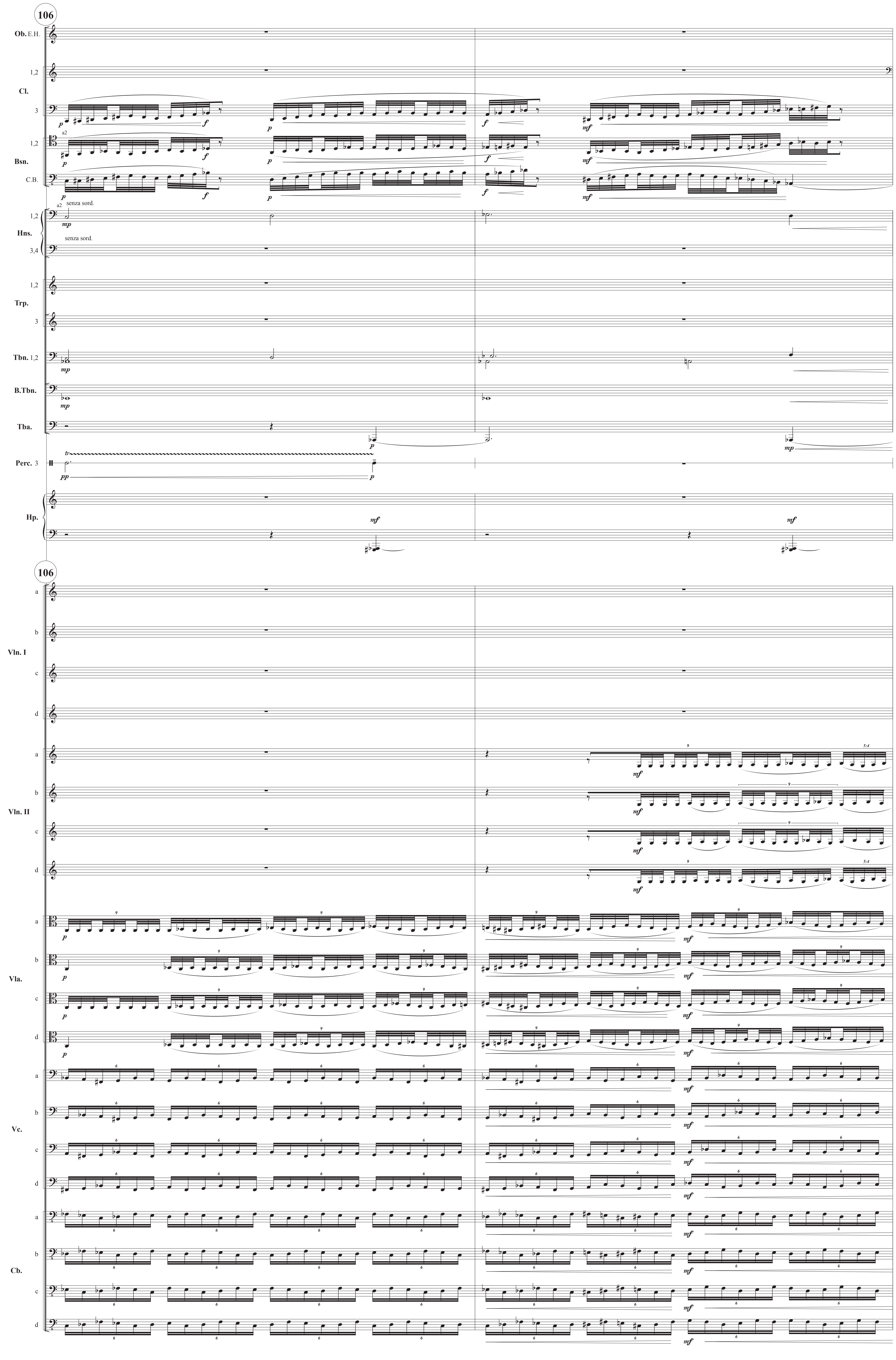

96
Timp.
f
tr
mp
Perc.
1
2
3
tr
mp
f
Hp.
Cel.
96
Vln. I
1-2
3-4
5-6
7-8
9-10
11-12
13-14
Vln. II
1-2
3-4
5-6
7-8
9-10
11-12
Vla.
1-2
3-4
5-6
7-8
9-10
Vc.
Cb.
9
5:4
p
poco a poco cresc.

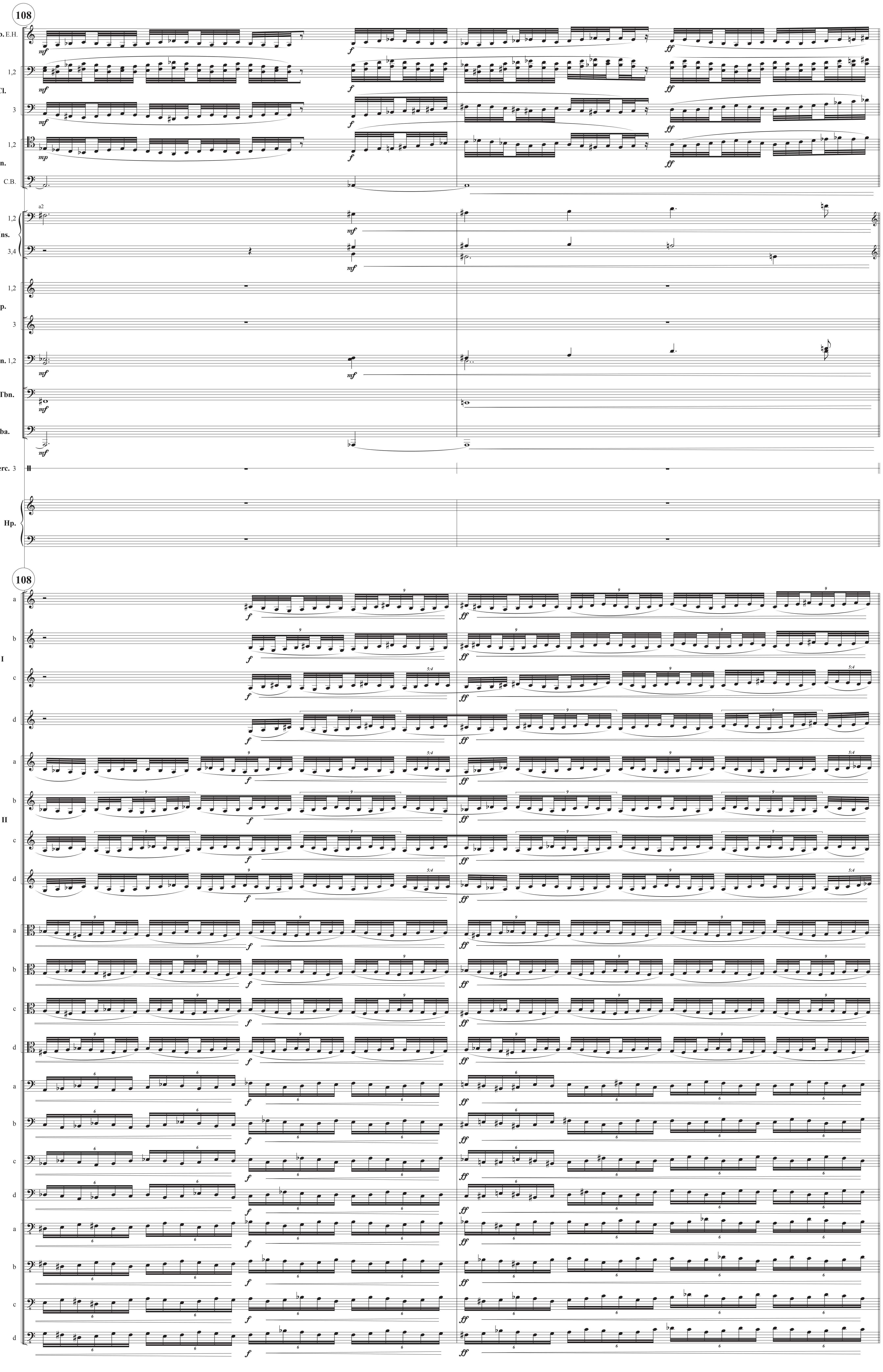

98
Trp. 1,2
3
Timp.
tr
f
f sempre
Perc. 1
2
3
mp
Hp.
Cel.
98
Vln. I 1-2
3-4
5-6
7-8
9-10
11-12
13-14
Vln. II 1-2
3-4
5-6
7-8
9-10
11-12
Vla. 1-2
3-4
5-6
7-8
9-10
9
5:4

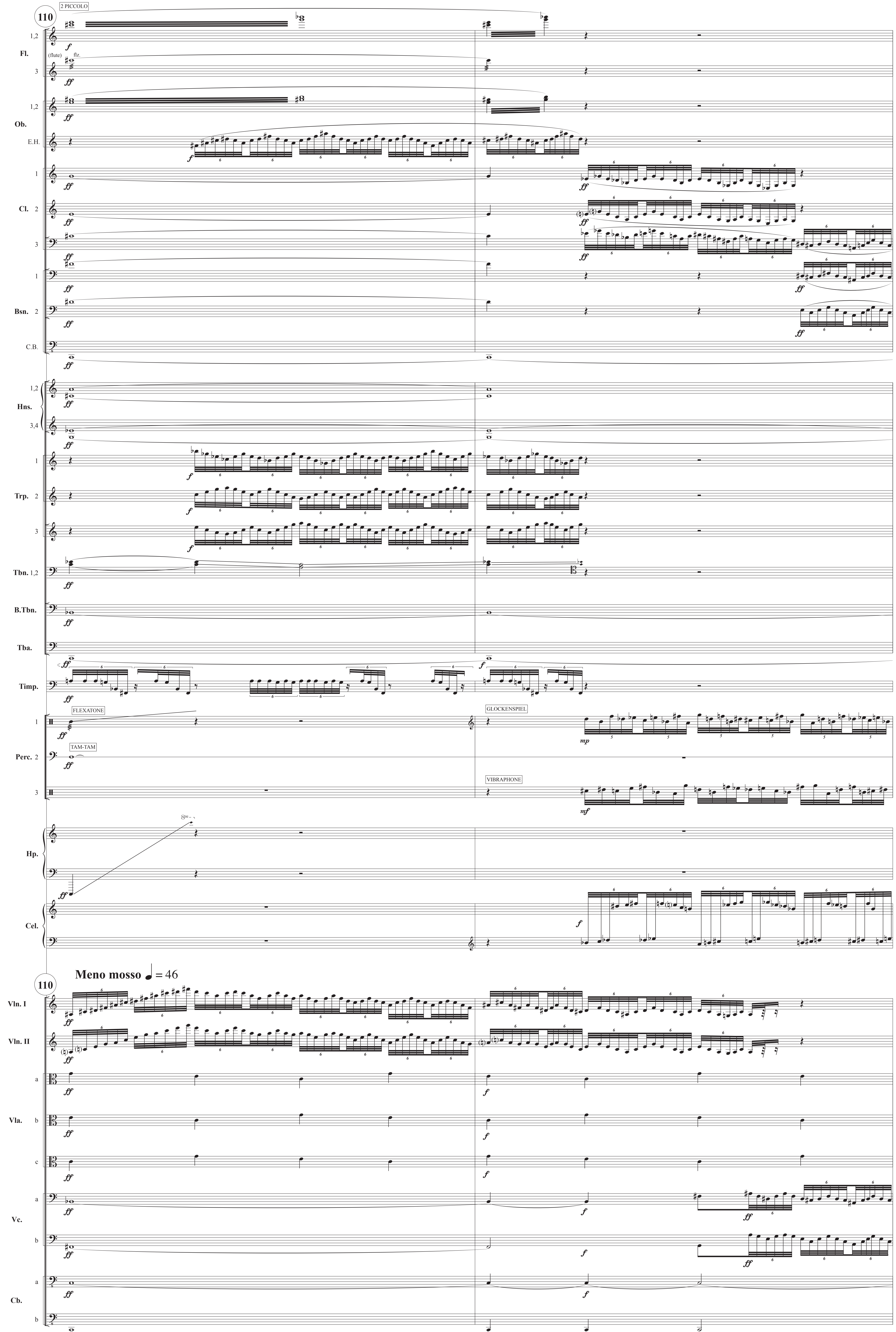

G
100
(2 trumpets in C)
con sord: straight mute
ppp
con sord: straight mute
ppp
Trp.
1,2
3
Timp.
tr
Perc.
1
2
3
Hp.
Cel.
G
100
Vln. I
1-2
3-4
5-6
7-8
9-10
11-12
13-14
Vln. II
1-2
3-4
5-6
7-8
9-10
11-12
Vla.
1-2
3-4
5-6
7-8
9-10
molto cresc.
9
5:4

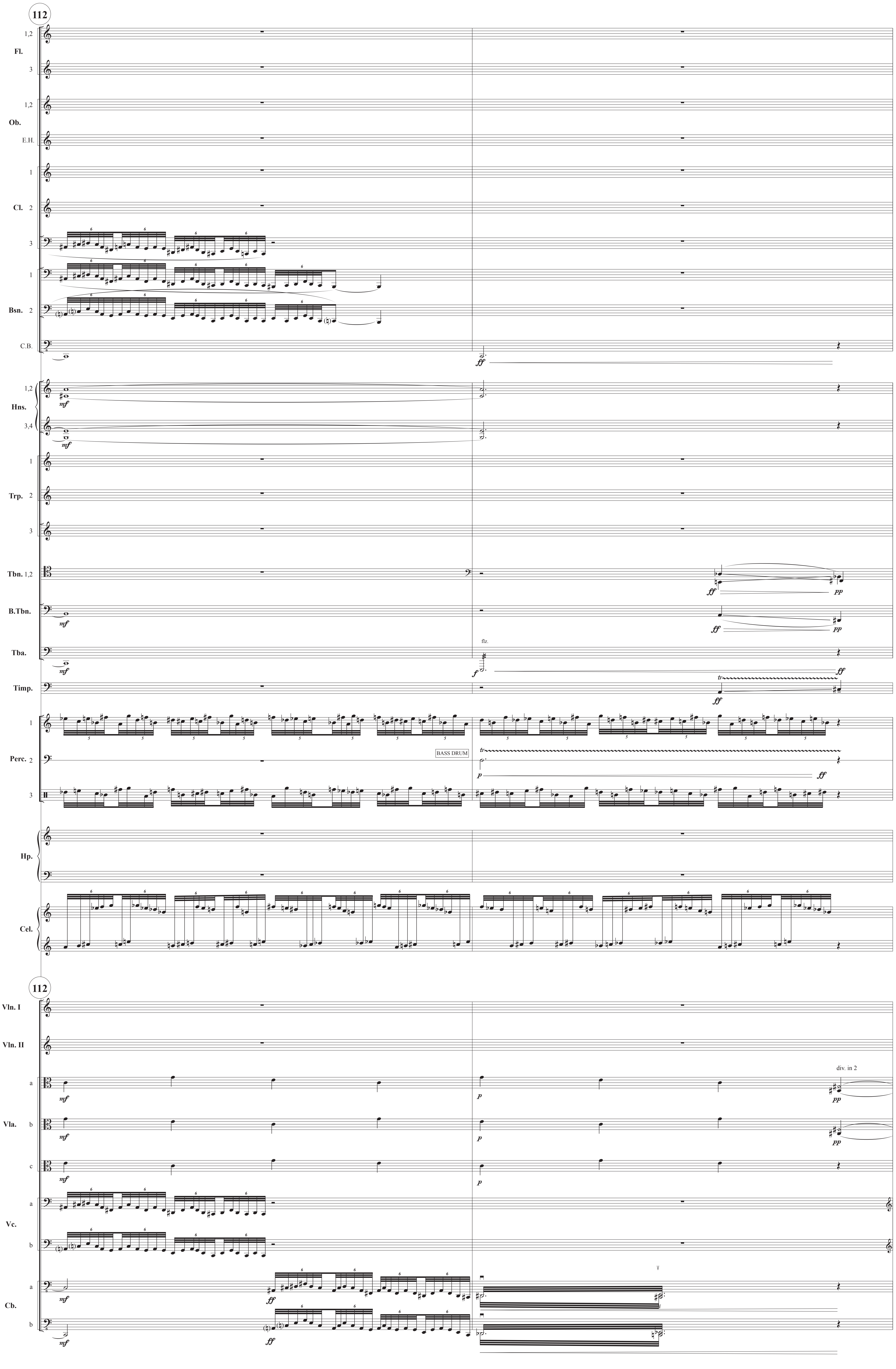

102
Cl. 3
Bsn. 1
2
C.B.
Trp. 1,2
3
B.Tbn.
Tba.
Timp.
Perc. 1
2
3
BASS DRUM
non cresc.
Hp.
Db C Bb / Eb Fb Gb Ab
G#
8vb
102
Vln. I 1-2
3-4
5-6
7-8
9-10
11-12
13-14
Vln. II 1-2
3-4
5-6
7-8
9-10
11-12
Vla. 1-2
3-4
5-6
7-8
9-10
Vc. a
b
c
d
Cb. a
b
c
d
ff
f
p
mf
tr
9
5:4
7
6
5

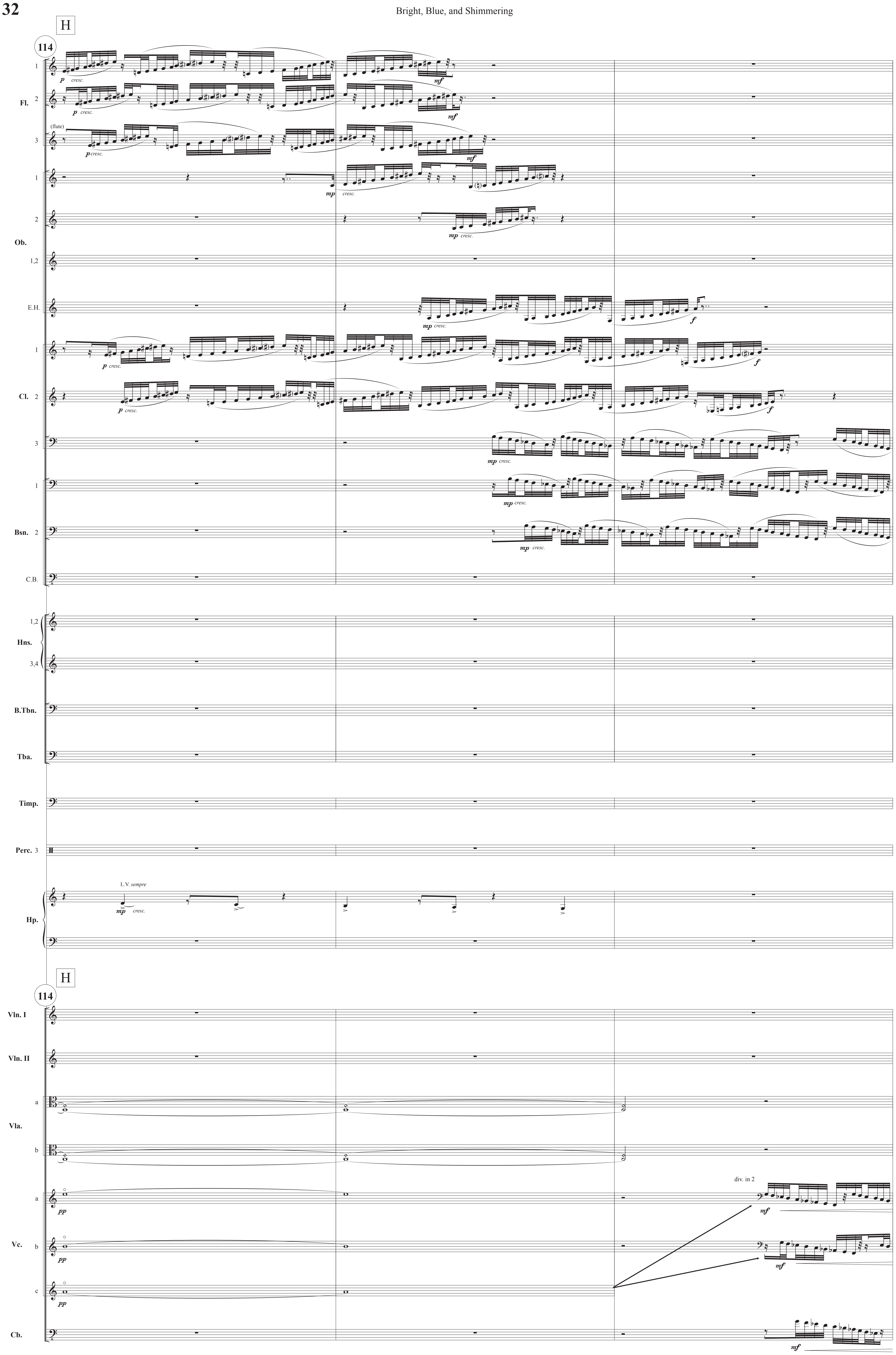

104
Cl. 3
Bsn. 1
2
C.B.
Trp. 1,2
3
B.Tbn.
Tba.
Timp.
Perc. 1
2
3
Hp.
mf
f
p
pp
tr
104
Vln. I 1-2
3-4
5-6
7-8
9-10
11-12
13-14
Vln. II 1-2
3-4
5-6
7-8
9-10
11-12
Vla. 1-2
3-4
5-6
7-8
9-10
Vc. a
b
c
d
Cb. a
b
c
d
6

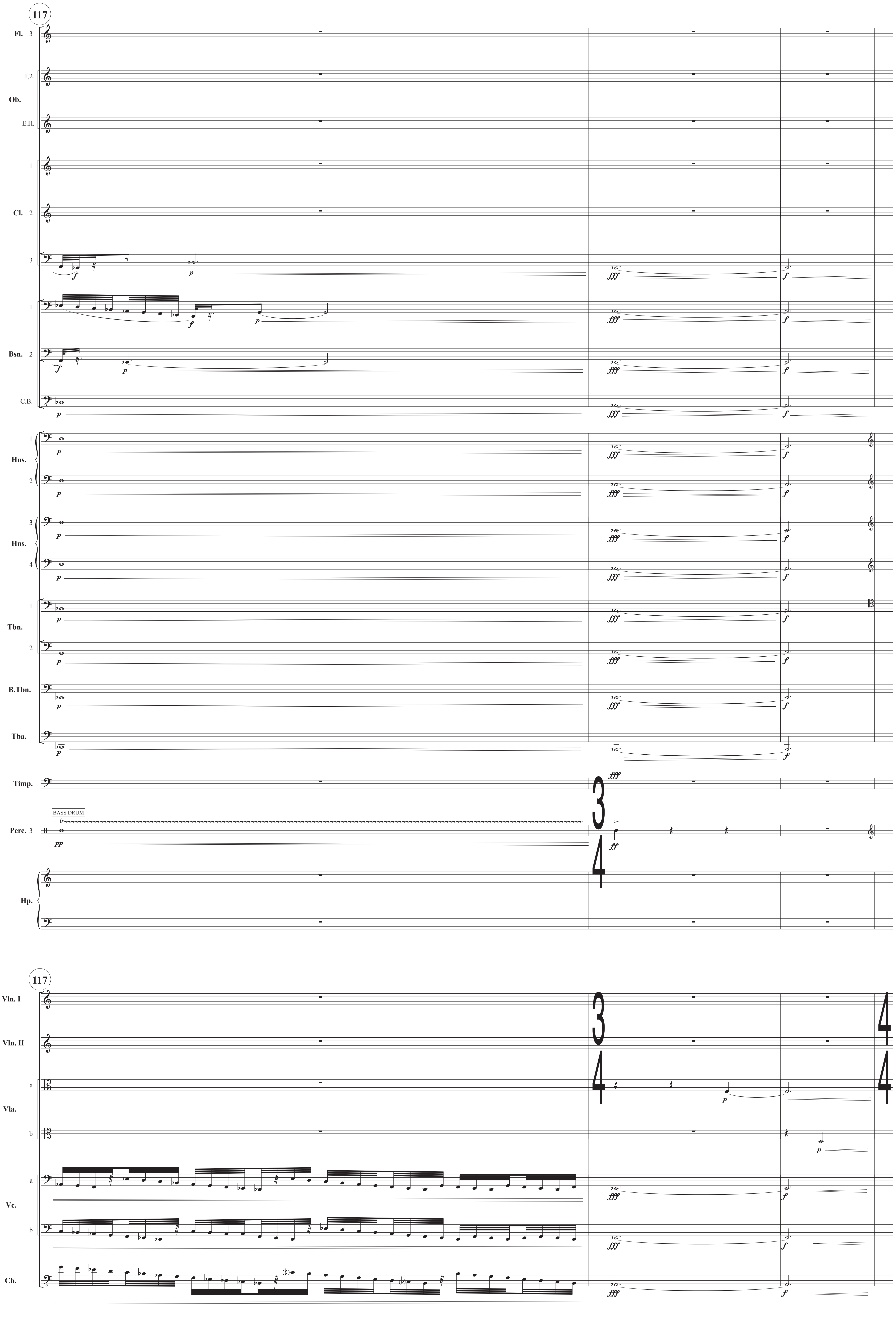

106
Ob. E.H.
1,2
Cl.
3
1,2
Bsn.
C.B.
1,2
Hns.
3,4
1,2
Trp.
3
Tbn. 1,2
B.Tbn.
Tba.
Perc. 3
Hp.
a2
senza sord.
senza sord.
tr
p
f
mf
mp
pp
Vln. I
Vln. II
Vla.
Vc.
Cb.
a
b
c
d
9
6
5:4

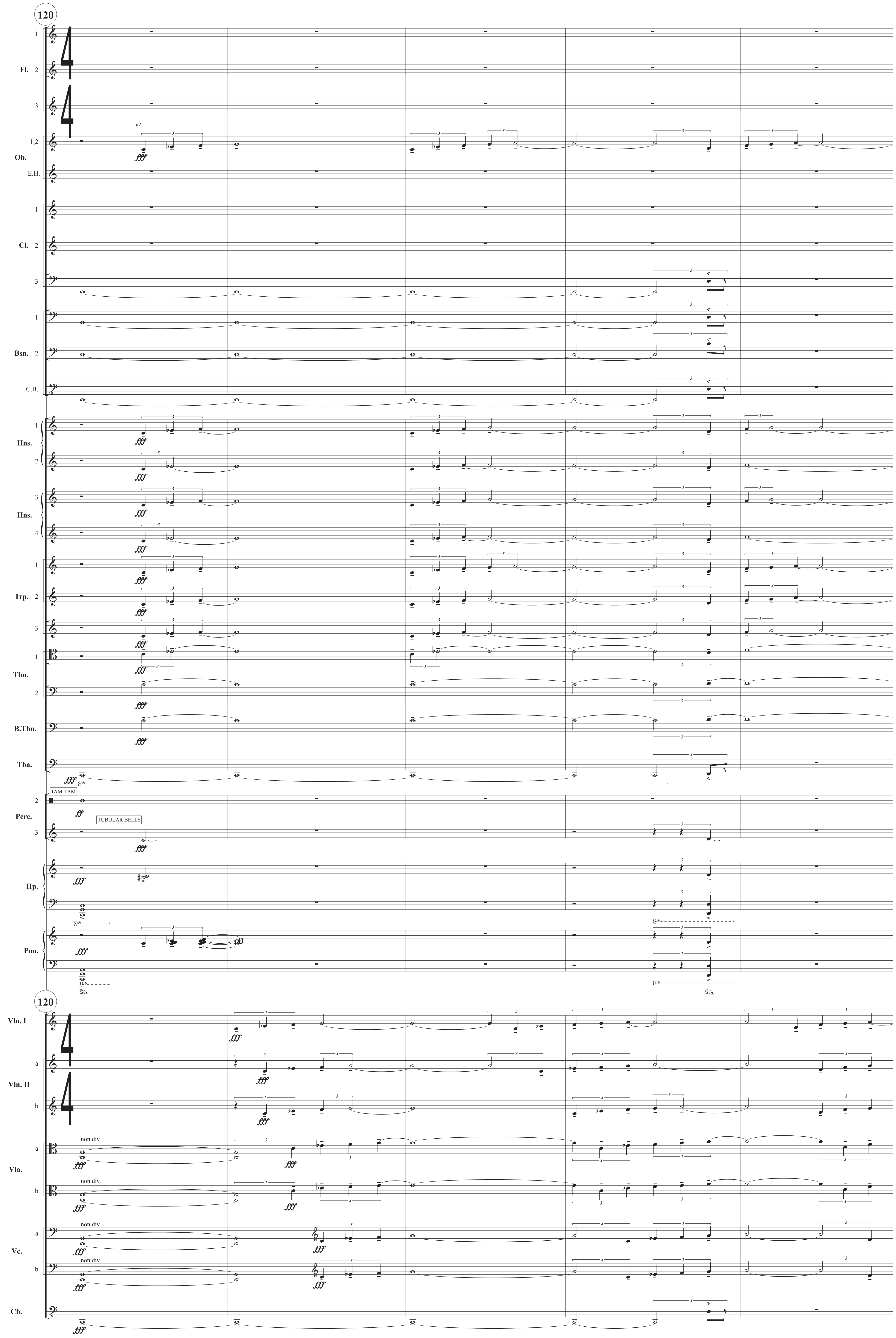

108
Ob. E.H.
1,2
Cl.
3
1,2
Bsn.
C.B.
a2
1,2
Hns.
3,4
1,2
Trp.
3
Tbn. 1,2
B.Tbn.
Tba.
Perc. 3
Hp.
108
Vln. I
Vln. II
Vla.
Vc.
Cb.
a
b
c
d
mf
mp
f
ff
9
6
5:4

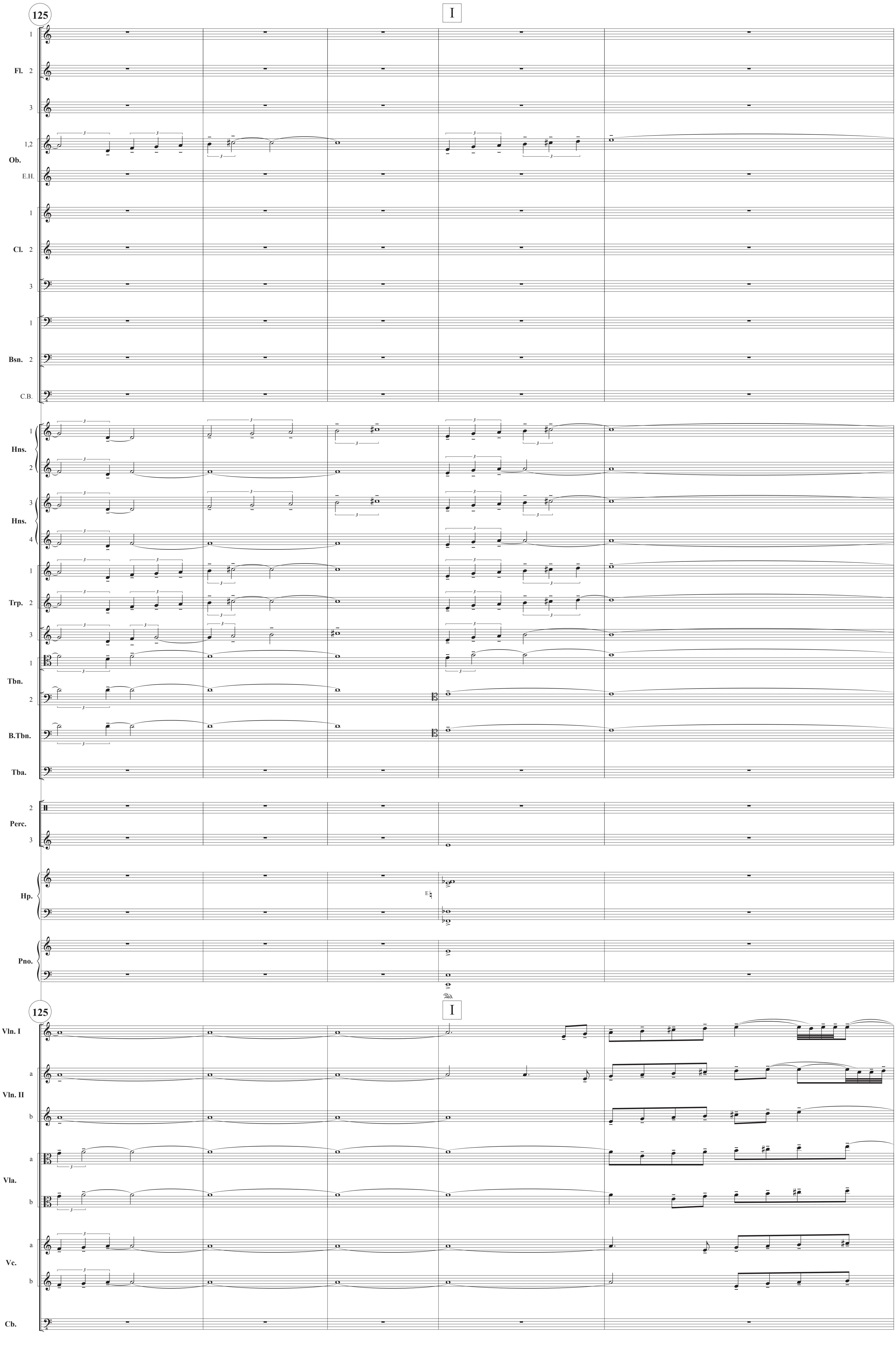

Meno mosso ♩ = 46
110
2 PICCOLO
Fl.
1,2
3
(flute)
flz.
Ob.
E.H.
Cl.
Bsn.
C.B.
Hns.
1,2
3,4
Trp.
Tbn. 1,2
B.Tbn.
Tba.
Timp.
FLEXATONE
GLOCKENSPIEL
TAM-TAM
VIBRAPHONE
Perc.
Hp.
8va
Cel.
Meno mosso ♩ = 46
110
Vln. I
Vln. II
Vla.
Vc.
Cb.
a
b
c
f
ff
mp
mf

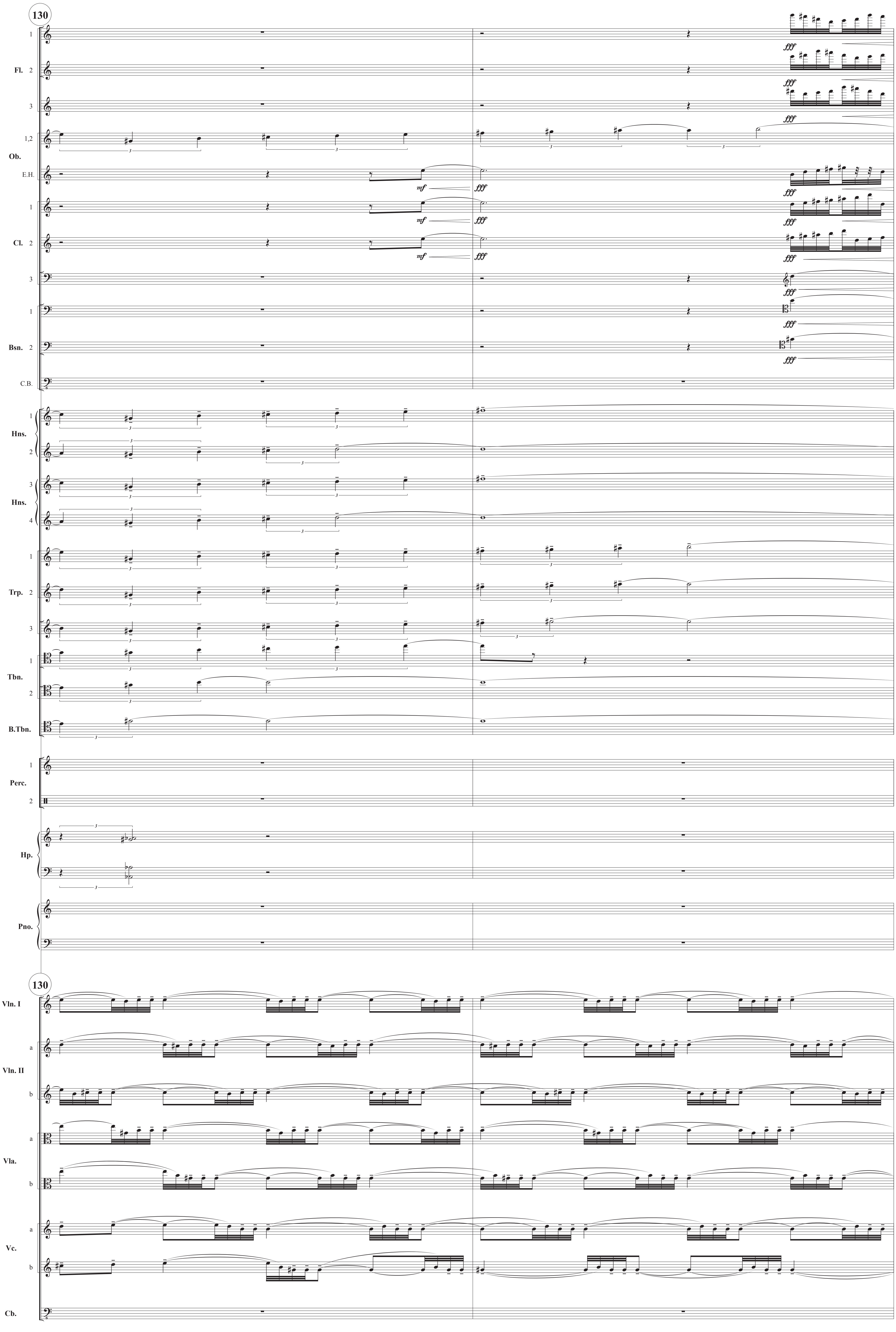

112
1,2
Fl.
3
1,2
Ob.
E.H.
1
Cl. 2
3
1
Bsn. 2
C.B.
ff
1,2
Hns.
3,4
mf
mf
1
Trp. 2
3
Tbn. 1,2
ff
pp
B.Tbn.
mf
ff
pp
Tba.
flz.
mf
f
ff
Timp.
tr
ff
1
Perc. 2
3
BASS DRUM
tr
p
ff
Hp.
Cel.
112
Vln. I
Vln. II
a
Vla. b
c
mf
p
div. in 2
pp
a
Vc.
b
a
Cb.
b
mf
ff

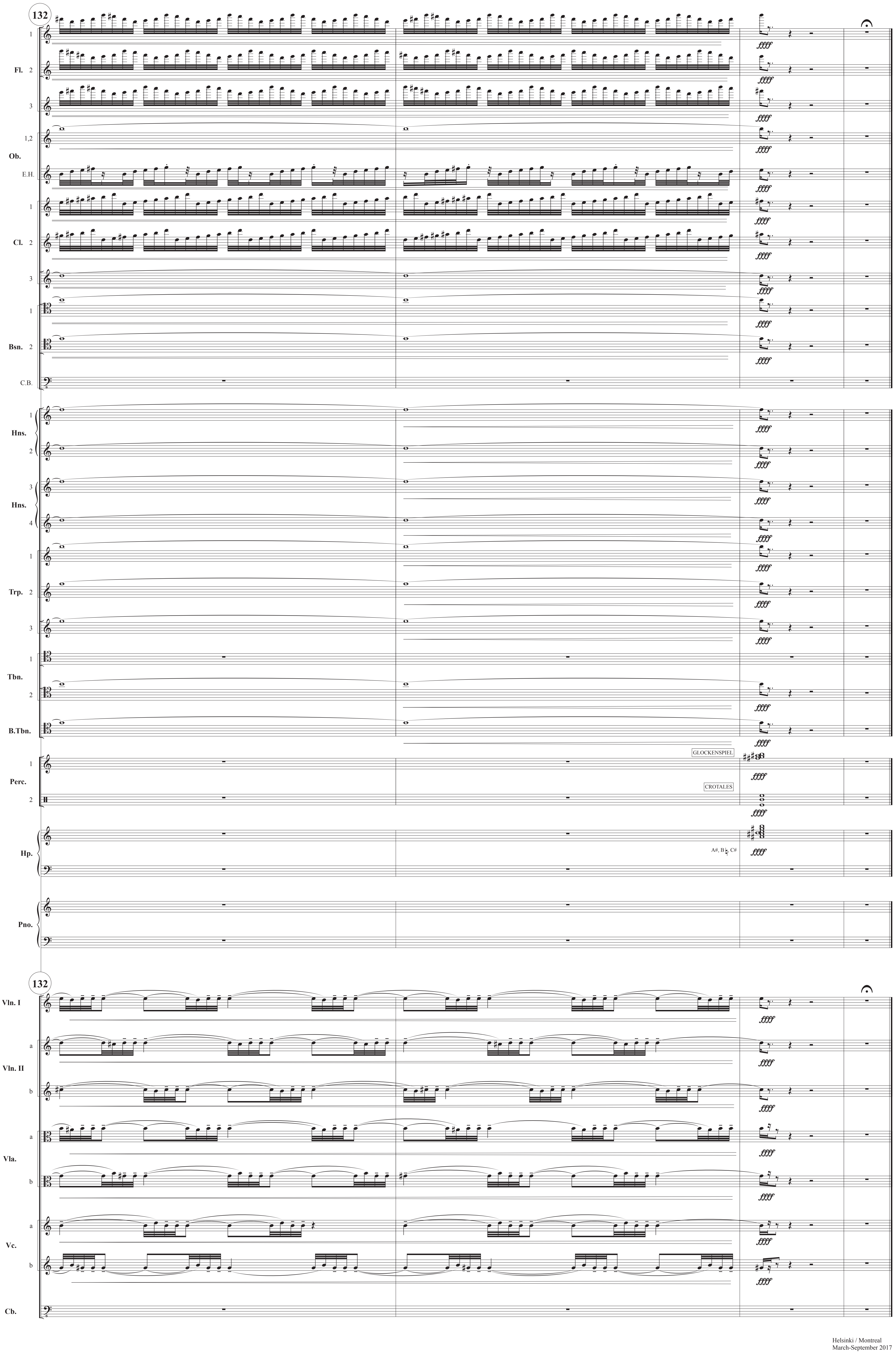

H
114
Fl.
1
2
3
(flute)
p cresc.
mf
Ob.
1,2
E.H.
mp cresc.
f
Cl.
Bsn.
C.B.
Hns.
3,4
B.Tbn.
Tba.
Timp.
Perc. 3
Hp.
L.V. sempre
mp cresc.
Vln. I
Vln. II
Vla.
a
b
Vc.
c
pp
div. in 2
mf
Cb.


117
Fl. 3
1,2
Ob.
E.H.
1
Cl. 2
3
1
Bsn. 2
C.B.
1
Hns.
2
3
Hns.
4
1
Tbn.
2
B.Tbn.
Tba.
Timp.
BASS DRUM
tr
Perc. 3
Hp.
117
Vln. I
Vln. II
a
Vla.
b
a
Vc.
b
Cb.
f
p
fff
ff
pp
3
4
4
4


120
Fl.
1
2
3
Ob.
1,2
a2
E.H.
Cl.
Bsn.
C.B.
Hns.
4
Trp.
Tbn.
B.Tbn.
Tba.
Perc.
TAM-TAM
TUBULAR BELLS
Hp.
Pno.
Vln. I
Vln. II
a
b
Vla.
Vc.
Cb.
non div.
fff
ff
8vb
3


125
I
Fl. 1 2 3
Ob. 1,2
E.H.
Cl. 1 2 3
Bsn. 1 2
C.B.
Hns. 1 2
Hns. 3 4
Trp. 1 2 3
Tbn. 1 2
B.Tbn.
Tba.
Perc. 2 3
Hp.
E♮
Pno.
Ped.
125
I
Vln. I
Vln. II a b
Vla. a b
Vc. a b
Cb.


130
Fl. 1 2 3
Ob. 1,2
E.H.
Cl. 1 2 3
Bsn. 1 2
C.B.
Hns. 1 2
Hns. 3 4
Trp. 1 2 3
Tbn. 1 2
B.Tbn.
Perc. 1 2
Hp.
Pno.
130
Vln. I
Vln. II a b
Vla. a b
Vc. a b
Cb.
mf
fff


132
Fl. 1 2 3
Ob. 1,2
E.H.
Cl. 1 2 3
Bsn. 1 2
C.B.
Hns. 1 2
Hns. 3 4
Trp. 1 2 3
Tbn. 1 2
B.Tbn.
Perc. 1 2
GLOCKENSPIEL
CROTALES
Hp.
A#, B♮, C#
Pno.
132
Vln. I
Vln. II a b
Vla. a b
Vc. a b
Cb.
ffff

Helsinki / Montreal
March-September 2017