

Dissertation Essay

**ORDER IN *DÉSORDRE***

Rhythmic and Melodic Structure in György Ligeti's Piano Etude No. 1

Dissertation Composition

***VELINIKKA***

Concerto for Quarter-Tone Accordion and Chamber Orchestra

Sampo Haapamäki

Submitted in partial fulfillment of the  
requirements for the degree of  
Doctor of Musical Arts  
in the Graduate School of Arts and Sciences

COLUMBIA UNIVERSITY

2012

ORDER IN *DÉSORDRE*

Rhythmic and Melodic Structure in György Ligeti's Piano Etude No. 1

Sampo Haapamäki

Submitted in partial fulfillment of the  
requirements for the degree of  
Doctor of Musical Arts  
in the Graduate School of Arts and Sciences

COLUMBIA UNIVERSITY

2012

© Copyright 2012  
Sampo Haapamäki  
All rights reserved

## ABSTRACT

### ORDER IN *DÉSORDRE*

Rhythmic and Melodic Structure in György Ligeti's Piano Etude No. 1

Sampo Haapamäki

This essay is an analysis of György Ligeti's *Étude 1: Désordre* (Disorder) (1985) for piano. In the first part of the essay, there is a short introduction to Ligeti's Piano Etudes, quotations by him, and basic information about the *Désordre*. In the second part the etude's melodic lines are discussed, with help of figures of the phrases of the melodic lines. The main focus of the composition is in rhythm, which is given consideration in the third and most extensive part. The rhythm is approached from a perspective of different rhythmic levels, also with the help of figures. Finally in the fourth, shifting and form are scrutinized. The last part is followed by Conclusions, Bibliography / Works Cited, and Appendix (Analysis sheets of *Désordre*).

In the analysis sheets of *Désordre* (Appendix) the etude is approached from the points of view of rhythmic levels of two individual lines, phrasings of these melodic lines, shifting of bar lines (between right and left hands) and overall form. Throughout this essay it is recommended that one follows Appendix.

*Désordre* is a refined combination of systematic and non-systematic music. Ligeti bends, changes and breaks the system along the way. The fine balancing between the order and disorder, is a core idea of the composition.

# TABLE OF CONTENTS

## ORDER IN *DÉSORDRE*

### Rhythmic and Melodic Structure in György Ligeti's Piano Etude No. 1

List of Figures	ii
Acknowledgments	iv
1 INTRODUCTION	
1.1 Short Introduction to György Ligeti's Piano Etudes	1
1.2 Quotations by György Ligeti	3
1.3 Summary of Form	5
1.4 Layers: Foreground and Background	6
1.5 Background Eighth-Note Runs	6
1.6 Modes and Pitch Collections as a Substitute for Harmony	6
2 ANALYSIS OF MELODIC LINES	
2.1 Right Hand Phrase I	8
2.2 Left Hand Phrase I	10
2.3 Comparison of Right and Left hands' Phrase Contours	11
2.4 Cycle of Right Hand Phrases	13
2.5 Cycle of Left Hand Phrases	15
3 ANALYSIS OF RHYTHMIC LEVELS	
3.1 Introduction to Rhythms in Appendix (Analysis sheets)	17
3.2 Rhythmic Levels	18
3.3 Right Hand Beat Level	20
3.4 Multiple Ways of Hearing the Right Hand Beat Level	23
3.5 Left Hand Beat Level in comparison to Right Hand Beat Level	25
3.6 Right Hand Meter Level	27
3.7 Left Hand Meter Level in comparison to Right Hand Meter Level	29
3.8 Right and Left Hand Hypermeter Levels	31
3.9 Right and Left Hand Subphrase Levels	33
3.10 Right and Left Hand Phrase Levels	34
4 SHIFTING AND FORM	
4.1 Shifting	36
4.2 Form	40
CONCLUSIONS	43
Bibliography / Works Cited	46
Appendix: Analysis of <i>Désordre</i> (two analysis sheets)	47
<hr/>	
Dissertation Composition (not part of the Dissertation Essay):	
<i>Velinikka</i> , Concerto for Quarter-Tone Accordion and Chamber Orchestra by Sampo Haapamäki	50

## LIST OF FIGURES

- Figure 1: Melodic line of Right Hand Phrase I (without correct rhythms) as shown in Appendix (analysis sheets). The melodic line includes the accented notes in the foreground but not the background eighth-note runs. 8
- Figure 2: Melodic line of Left Hand Phrase I (without correct rhythms) as shown in Appendix (analysis sheets). The melodic line includes the accented notes in the foreground but not the background eighth-note runs. 10
- Figure 3: The melodic lines of Right Hand Phrase I and Left Hand Phrase I (without correct rhythms) as shown in Appendix (analysis sheets). The numbers written between the staves represent steps taken by a line within its mode (right hand white keys, left hand black keys). A positive number represents upward motion and a negative number means downward motion. 11
- Figure 4: The melodic line (without correct rhythms) of the two first right-hand phrases as shown in Appendix. The figure shows that Right Hand Phrase I melodically repeats itself (as Right Hand Phrase II), this time diatonically one step higher. 13
- Figure 5: The melodic line (without correct rhythms) of the two first left-hand phrases as shown in Appendix. The figure shows that Left Hand Phrase I melodically repeats itself (as Left Hand Phrase II), this time pentatonically two steps lower. 15
- Figure 6: The numbers above the staff represent the lengths (in multiples of eighth notes) of each melodic line note of each right-hand phrase throughout the composition. The melodic line (without correct rhythms) of Right Hand Phrase I is notated below only as a reference. 20
- Figure 7: The numbers above the staff represent the lengths (in multiples of eighth notes) of each melodic line note of each right-hand phrase throughout the composition. The melodic line (without correct rhythms) of Right Hand Phrase I is notated below only as a reference. 23
- Figure 8: The numbers below and above the staff represent the lengths (in multiples of eighth notes) of each melodic line note of each right- and left-hand phrase throughout the composition. The melodic lines (without correct rhythms) of Right Hand Phrase I and Left Hand Phrase I are notated only as a reference. 25

Figure 9: The numbers above the staff represent the lengths (in multiples of eighth notes) of each meter-level unit of each right-hand phrase throughout the composition. The melodic line (without correct rhythms) of Right Hand Phrase I is notated below only as a reference. 27

Figure 10: The numbers above and below the staff represent the lengths (in multiples of eighth notes) of each meter-level unit of each right- and left-hand phrase throughout the composition. The melodic lines (without correct rhythms) of Right Hand Phrase I and Left Hand Phrase I are notated only as a reference. 29

Figure 11: The numbers above the staff represent the lengths (in multiples of eighth notes) of each hypermeter-level unit of each right- and left-hand phrase throughout the composition. The melodic lines (without correct rhythms) of Right Hand Phrase I and Left Hand Phrase I are notated below only as a reference. 31

Figure 12: The numbers above the staff represent the lengths (in multiples of eighth notes) of each subphrase-level unit (referred to hereafter as “subphrase”) of each right- and left-hand phrase throughout the composition. The melodic lines (without correct rhythms) of Right Hand Phrase I and Left Hand Phrase I are notated below only as a reference. 33

Figure 13: The numbers above the staff represent the lengths (in multiples of eighth notes) of each right- and left-hand phrase-level unit (referred to hereafter as “phrase”) throughout the composition. The melodic lines (without correct rhythms) of Right Hand Phrase I and Left Hand Phrase I are notated below only as a reference. 34

## ACKNOWLEDGEMENTS

I am extremely grateful to Tristan Murail who taught me composition for academic years 2005-06 and 2007-09 in the Columbia University. I feel enormous gratitude to my advisor, Fred Lerdahl. I am vastly indebted to the Columbia Composition Seminar Instructors who gave me a tremendous amount of ideas: Tristan Murail, Fred Lerdahl, George Lewis and Fabien Lévy. I am hugely grateful to the Columbia University Music Department's staff, namely Anne Gefell and Gabriela Kumar. To Darko Bošnjak, Juliet Forshaw and Tim Page, thank you for taking time out of your busy lives to give me such important feedback in the American English language.

*Velinikka*, Concerto for Quarter-tone Accordion and Chamber Orchestra (2008) is the artistic part of my dissertation. I feel immense gratitude to Veli Kujala, the inventor and instrumentalist of the quarter-tone accordion. He made it possible for me to compose for this marvellous new instrument.

My Columbia University experience and life in the City of New York for five academic years have significantly changed my perspective to this world. It has been important to get teaching experience as an Ear Training instructor for two academic years and as an Undergraduate Composition Assistant of Tristan Murail (Fall 2010) and Joseph Dubiel (Spring 2011). I want to deeply thank fellow music students, it has been great honor to study with you. I am sure that these years will have positive effects on the music I compose also in the future.



# 1 INTRODUCTION

## 1.1 Short Introduction to Ligeti's Piano Etudes

This essay is an analysis of *Étude 1: Désordre* (Disorder) (1985) for piano by György Ligeti (1923-2006). *Désordre* is his first piano etude from the *Études pour piano, premier livre* (Piano Etudes, first book). The duration of the etude is approximately 2 minutes 20 seconds. The composition was dedicated to Pierre Boulez and premiered by Louise Sibourd in Bratislava in April 15, 1986.

Ligeti wrote 3 books of piano etudes: Premier livre, etudes no. 1-6 (1985); Deuxième livre, etudes no. 7-14 (1988-1994) and Troisième livre, etudes no. 15-18 (1995-2001). Etude no. 18 is the last composition he completed. He was 78 years old.

Typically in Ligeti's piano etudes, the main focus is on the rhythm (e.g. irregular beats like 5 + 7). There are often two layers: dynamically accented melodic line(s) in the foreground and soft runs in the background. Melodic line(s) and harmonies are often modal and sometimes simplistic (for example using only white keys). Etudes are often process-oriented. For example there can be a progression in which the register of the etude gradually ascends. The etudes are performed often; they have quickly become part of the piano's canonic repertoire. The etudes are pianistic even they are very difficult to

play. Especially individual rhythmic coordination between the hands creates a challenge for the performer.

As quoted in the next Chapter (1.2 Quotations by György Ligeti), Ligeti himself has written that when he was composing the piano etudes, he was influenced by the Central African Banda-Linda tribe music, Conlon Nancarrow, Thelonious Monk and Bill Evans. He also writes that some influences came from geometricians Benoît Mandelbrot and Heinz-Otto Peitgen. Ligeti might also have been influenced for example by aksak rhythms and modal melodies of Balkan folk music. Amy Bauer writes in *Ligeti's Laments: Nostalgia, Exoticism, and the Absolute* (2011, p. 2), "Although he was a member of the 'official' avant-garde during the 1960s, Ligeti's compositions remained based on traditional techniques and genre models. Renaissance canons and East European folk melodies are submerged in late nineteenth-century orchestration, while a Baroque sensibility informs many of his solo works. The rhythmic and harmonic influence of Bartók is implicit throughout Ligeti's oeuvre from the late 1950s through the 1970s, emerging in a self-conscious yet refined form in the works of the 1980s and 1990s."

Some compositions related to *Désordre* include Ligeti's Concerto for piano and orchestra (1985-88), Continuum (1968) for harpsichord and Steve Reich's Piano phase (1967) for piano. Although Ligeti clearly had multiple influences while composing *Désordre* and his other piano etudes, this essay does not concentrate on them, but preference in this context is to treat the music on its own terms.

## 1.2 Quotations by György Ligeti

### From Foreword by György Ligeti in Simha Arom's

#### *African Polyphony and Polyrhythm (1985)*

“In autumn 1982 a former student of mine, the Puerto Rican composer Roberto Sierra, brought to my attention a collection of instrumental and vocal ensemble music of the Banda-Linda tribe from the Central African Republic, recorded by Simha Arom. The record 'Banda Polyphonies', then several years old, was no longer available so I re-recorded it on to a cassette and made a photocopy of Arom's introductory text. Having never before heard anything quite like it, I listened to it repeatedly and was then, as I still am, deeply impressed by this marvellous polyphonic, polyrhythmic music with its astonishing complexity.

For many years I have been fascinated by the musical epoch from Vitry and Machault to Ciconia, and since my acquaintance with his work in 1980, by the music of Conlon Nancarrow. Undoubtedly my interest in the music Arom has recorded stems also from the proximity I feel exists between it and my own way of thinking with regards to composition: that is, the creation of structures which are both remarkably simple and highly complex. The formal simplicity of sub-Saharan African music with its unchanging repetition of periods of equal length, like the uniform pearls of a necklace, is in sharp contrast to the inner structure of these periods which, because of simultaneous superpositioning of different rhythmic patterns, possesses an extraordinary degree of complexity. Gradually, through repeated listening, I became aware of this music's paradoxical nature: the patterns performed by the individual musicians are quite different from those which result from their combination. In fact, the ensemble's super-pattern is in itself not played and exists only as a illusory outline. I also began to sense a strong inner tension between the relentlessness of the constant, never-changing pulse coupled with the absolute symmetry of the formal architecture on the one hand and the asymmetrical internal divisions of the patterns on the other. What we can witness in this music is a wonderful combination of order and disorder which in turn merges together producing a sense of order on a higher level.

Since my first introduction to the music of the Banda Linda, I have had the opportunity of listening to diverse recordings of sub-Saharan music collected by Simha Arom, Hugo Zemp, Gerhard Kubik, Alfons Dauer and many other ethnomusicologists. During the spring of 1984, while in Jerusalem, I met with Simha Arom, at which time he showed me his transcriptions in full score of this and other Central African music and explained to me their melodic and rhythmic structure.

Needless to say I was greatly impressed by his ingenuity at realising a notation of such complex music. The immense difficulty lies in the fact that the human ear and brain cannot distill the separate rhythmic patterns of the individual players from the intricate rhythmic labyrinth of the ensemble. Arom's method of extracting the individual parts is as efficient as it is simple: by recording separately each player, the score can then be reconstructed part for part. Unfortunately, as the parts function only in terms of the collective structure and have in themselves no autonomous 'meaning', the performers have neither learned nor practised their parts individually and are virtually unable to play them without hearing the complete ensemble. Arom elegantly circumvents this problem by providing each musician in turn with headphones through which he hears a recording of the complete ensemble. This allows the musician to play his part 'alone' and for it to be separately recorded and later transcribed.

I consider Simha Arom's fundamental work to be of equal importance for both the scientific and the musical world. For the ethnological research of African culture, the technique of playback and subsequent recording provides the material essential to fruitful investigation and better understanding of the structure of this highly sophisticated music culture. For composition, it opens the door leading to a new way of thinking about polyphony, one which is completely different from the European metric structures, but equally rich, or maybe considering the possibility of using a quick pulse as a 'common denominator' upon which various patterns can be polyrhythmically superimposed, even richer than the European tradition."

**Quotation from Programs Notes Written by György Ligeti for Recording of  
György Ligeti Edition 3: Works for piano (Études, Musica Ricercata) –  
Pierre-Laurent Aimard (1997)**

"In Africa cycles or periods of constantly equal length are supported by a regular beat (which is usually danced, not played). The individual beats can be divided into two, three, sometimes even four or five 'elementary units' or fast pulses. I employ neither the cyclic form nor the beats, but use rather the elementary pulse as an underlying gridwork. I use the same principle in *Désordre* for accent shifting, which allows illusory pattern deformations to emerge: the pianist plays a steady rhythm, but the irregular distribution of accents leads to seemingly chaotic configurations. Another fundamental characteristic of African music was significant to me: the simultaneity of symmetry and asymmetry. The cycles are always structured asymmetrically (e. g. twelve pulses in 7 + 5), although the beat, as conceived by the musician, proceeds in even pulses.

Further influences that enriched me come from the field of geometry (pattern deformation from topology and self-similar forms from fractal geometry), whereby I am indebted to Benoît Mandelbrot and Heinz-Otto Peitgen for vital stimulus.

And then my admiration for Conlon Nancarrow! From his *Studies for Player Piano* I learned rhythmic and metric complexity. He showed that there were entire worlds of rhythmic-melodic subtleties that lay far beyond the limits that we had recognized in “modern music” until then. Jazz pianism also played a big role for me, above all the poetry of Thelonious Monk and Bill Evans. *Étude Arc-en-ciel* is almost a jazz piece.

Yet my *Études* are neither jazz nor Chopinesque-Debussian music, neither African nor Nancarrow, and certainly not mathematical constructs. I have written of influences and approaches, but what I actually compose is difficult to categorize: it is neither “avant-garde” nor “traditional”, neither tonal nor atonal. And in no way post-modern, as the ironic theatricalizing of the past is quite foreign to me. These are virtuosic piano pieces, *études* in the pianistic and compositional sense. They (he means the piano etudes) proceed from a very simple core idea, and lead from simplicity to great complexity: they behave like growing organisms.”

### 1.3 Summary of Form

As shown in Appendix, there are three sections: Section 1 lays out the basics of the work. Section 2, starting from the end of the third system in the Appendix, is an agitated section, which increases the tension until its end. In the beginning of Section 3 (second page, second system in the Appendix), the tension diminishes suddenly and the composition becomes more lyrical. The form resembles A B A'. In Chapter 4.2, there is more detailed analysis of the form.

#### **1.4 Layers: Foreground and Background**

The basic sound elements in this composition are (1) two individual loud, accented and irregular melodic lines (played in the right and left hands respectively, mostly in octaves) in the *forte* foreground and (2) soft and regular eighth-note runs in the *piano* background. In this analysis, foreground and background do not refer to Schenkerian terminology but simply to the solo and accompaniment.

#### **1.5 Background Eighth-Note Runs**

Background eighth-note runs occur mostly within the span of the accented octave. They almost always go upward. Sometimes they start from the lower note of the current accented octave, and sometimes they start from somewhere between the endpoints of the octave. The runs go more or less towards the next accented octave. Often, not all the notes of the runs are clearly audible because they are covered by the accented melodic lines. Oftentimes the background runs are chosen in order for them to be practical to play. Background eighth-note runs might create the illusion of the music ascending infinitely even though the music is actually staying in the same register.

#### **1.6 Modes and Pitch Collections as a Substitute for Harmony**

The composition is less dependent on harmony than on scales and modes. The right hand plays the diatonic collection of white keys. The left hand plays the pentatonic collection

of black keys (notice the left hand key signature). This emphasizes the right and left hands' independence from each other. The right and left hands' modes together produce a chroma. The result is then not only simultaneous diatonic and pentatonic music, but chromatic music as well. The separation of the two hands into white and black zones means that it is practical for them to occupy the same register and cross over each other if necessary. They never play the same keys, except for the very last note of the composition.

The left hand is generally lower than the right hand. Perhaps the pentatonic scale is chosen to be played by the left hand because it is slightly more consonant than the diatonic scale and therefore more suitable for the purpose of being played in the lower register. Together, low pentatonic and high diatonic scales create a more stable combination than high pentatonic and low diatonic, reflecting the order of intervals in the overtone series, in which smaller intervals are higher than larger.

The right hand always stays within the white keys and the left hand always stays within the black keys, with one exception: the last note of the entire composition is the highest note of the piano, C. Both hands are marked to play the same note. This is the only note that the left hand plays outside of its mode.

## 2 ANALYSIS OF MELODIC LINES

### 2.1 Right Hand Phrase I

# Right Hand Phrase I

subphrases: A A' B

The image shows a musical score for the right hand of a piano. The top staff is in treble clef and contains a melodic line with various note values and rests. The bottom staff is in bass clef and contains a bass line with eighth-note runs. The melodic line is divided into three subphrases: A (4 bars), A' (4 bars), and B (6 bars). The melodic line includes accented notes in the foreground but not the background eighth-note runs.

Figure 1: Melodic line of Right Hand Phrase I (without correct rhythms) as shown in Appendix (analysis sheets). The melodic line includes the accented notes in the foreground but not the background eighth-note runs.

As shown in Figure 1, Right Hand Phrase I consists of three subphrases: A A' B (4 + 4 + 6 bars) (also see Appendix). This phrase, consisting of two closely related shorter subphrases followed by a longer and developing third subphrase, can be called a sentence (without tonal harmonic implications). A similar phrase type occurs in the beginning of Beethoven's Piano Sonata no. 1.

Subphrases A and A' reach their highest points in the middle of their subphrases. The overall contours of the subphrases are A: up, down; A': up, down; B: up, down, up, down.



The right-hand subphrases inside the sentences start with repetition. Subphrases A and A' end with a longer note; the notes last as long as the bar, whereas the other notes last only approximately half of the bar. Also the fourth bar of Subphrase B is approached from above but the subphrase continues with the upward motion. The end notes of Subphrases A and A' are always approached from above.

As presented in Figure 1, there are three different inner lines with stepwise motions (intervals of a second). The first inner line heads upward and extends for 6 steps (marked with a beam above). The second inner line goes downward 2 steps but then turns back upward and does 3 steps heading towards the last note (marked with a beam below). The third inner line with stepwise motions starts from the end of the first inner line but goes downward and heads towards the last note (marked with a beam above at the end of the phrase).

In each right-hand phrase there are a total of 10 stepwise motions (seconds). Also in each right-hand phrase from the strong beat the stepwise motion always goes downward except once. In the fourth last bar a stepwise motion goes upward from the strong beat, perhaps because the lower inner line (marked with beam below) of the phrase heads upward to reach the last note. In the background runs, there are many upward seconds. Perhaps Ligeti wants to have contrasting motion compared to the foreground downward seconds.

Towards the end of the phrase, the intervals other than seconds get larger and larger. However, the many inner lines of stepwise motion add continuity and horizontality to the music.

## 2.2 Left Hand Phrase I

### Left Hand Phrase I

The image shows a musical score for the left hand of a piano. The key signature is three sharps (F#, C#, G#). The melody is written in the bass clef. The score is divided into four subphrases: A (4 bars), A' (4 bars), B (6 bars), and A'' (4 bars). Subphrases A and A' feature repeated eighth-note patterns. Subphrase B has a more complex, developing melodic line. Subphrase A'' returns to a pattern similar to A and A'. The right hand part of the score is shown as a series of rests.

Figure 2: Melodic line of Left Hand Phrase I (without correct rhythms) as shown in Appendix (analysis sheets). The melodic line includes the accented notes in the foreground but not the background eighth-note runs.

As shown in Figure 2, Left Hand Phrase I consists of four subphrases: A A' B A'' (4 + 4 + 6 + 4 bars) (also see Appendix). This phrase type could be called an extended sentence (without tonal harmonic implications). Related to the right-hand phrase type, called a sentence, the left-hand phrase type consists of two closely related shorter subphrases followed by a longer and developing third subphrase, and additionally one shorter subphrase related to the two first ones. The Subphrase A'' is similar to A rhythmically but not melodically, hence it takes its designation as A''.

Subphrases A and A' contain repetition in the beginning and middle. Subphrase B has a double repetition in the beginning. Subphrases A, A' and A'' end with a longer note. In the end of Subphrase B, the whole phrase reaches its highest point. Subphrase A'' then brings the line down towards the last and the lowest note of the phrase.

## 2.3 Comparison of Right and Left hands' Phrase Contours

### Right Hand Phrase I

The image shows the musical notation for the Right Hand Phrase I. It consists of a single staff in treble clef with a key signature of two sharps (F# and C#). The phrase is divided into subphrases A, A', and B. Below the staff, a table of steps taken by the line within its mode is provided. The steps are: 0, 1, -1, 2, -1, -2, 0, 0, 3, -1, 2, -1, -4, 4, 0, 3, -1, 2, -1, -5, 1, 3, -1, 4, -1, -4.

Steps taken by line within its mode	0	1	-1	2	-1	-2	0	0	3	-1	2	-1	-4	4	0	3	-1	2	-1	-5	1	3	-1	4	-1	-4
Steps taken by line within its mode	0	1	-1	2	-1	-2	0	0	3	-1	2	-1	-4	4	0	3	-1	2	-1	-5	1	3	-1	4	-1	-4

### Left Hand Phrase I

Figure 3: The melodic lines of Right Hand Phrase I and Left Hand Phrase I (without correct rhythms) as shown in Appendix (analysis sheets). The numbers written between the staves represent steps taken by a line within its mode (right hand white keys, left hand black keys). A positive number represents upward motion and a negative number means downward motion.

Figure 3 shows the melodic lines of Right Hand Phrase I and Left Hand Phrase I (without correct rhythms) next to each other. In the actual composition, the lines shift apart, but in Figure 3 their beat points coincide for comparison's sake.

The right and left hands' Subphrases A, A' and B (4, 4, 6 bars) have an equal number of notes. In addition, Left Hand Phrase I has one more subphrase, Subphrase A'' (4 bars). All subphrases in both hands start with repetition, apart from the left hand's last subphrase, Subphrase A''. Both hands' Subphrases A, A' and A'' end with a longer note.

The overall contours of right and left hands' Subphrases A, A' and B are similar. To some extent, they have ascending trajectories. Finally, in the end of the Subphrase B,

both hands reach their respective phrases' highest points. After that, the Left Hand Subphrase A'' moves downward until it reaches the last, lowest note of its phrase.

In Figure 3, numbers written between the staves represent steps taken by a line within its mode. In other words, the numbers represent scale steps between consecutive notes within the pitch collection. The right hand takes steps within the diatonic scale (only white keys) and the left hand within the pentatonic scale (only black keys).

Comparison of the right and left hands' Subphrases A shows that they have only one discrepancy in the number of steps between consecutive notes. The discrepancy is in the middle of the phrase when the left hand contains a repetition but the right hand contains a downward step. If Ligeti had composed both hands to correspond identically, there would often have been parallel motion (even though the right and left hands frequently shift apart).

There is more difference between the right- and left-hands' Subphrases A' than between Subphrases A. However, if at the end of the Left Hand Subphrase A' the note A-sharp would have been one octave higher, then the last scale steps of the Left Hand Subphrase A' would have been [2 0 -4] which is almost the same as the last scale steps of the Right Hand Subphrase A', [2 -1 -4].

The overall contours of both hands' Subphrases B are very similar and half of the scale-step numbers are the same. In fact, within their own pitch collections, both lines in their

entirety have many similar step numbers (as written in Figure 3) between consecutive notes.

However, the names of subphrases (A, A', A'', B) are not fixed. They are flexible labels. Even if two different subphrases have the same name, they might not be exactly the same, but they have similar roles within their phrases.

## 2.4 Cycle of Right Hand Phrases

### Right Hand Phrase I

subphrases: A A' B

### Right Hand Phrase II

subphrases: A A' B

R.H.  
bar  
15

Figure 4: The melodic line (without correct rhythms) of the two first right-hand phrases as shown in Appendix. The figure shows that Right Hand Phrase I melodically repeats itself (as Right Hand Phrase II), this time diatonically one step higher.

Presented in Figure 4, Right Hand Phrase I melodically repeats itself as Right Hand Phrase II diatonically one step higher. The phrase keeps recurring melodically, with the next phrase cycle always one scale-step higher than the previous phrase. This gradual process continues until the end of *Désordre*.

The right-hand phrase repeats itself nearly 14 times, with each cycle transposed one step higher. Thus, at the end it reaches a position 13 steps higher within the mode than in the beginning. Within the white keys, 13 steps means nearly two octaves.

The stepwise motion is the crucial factor, not only inside the phrase, but also between the phrases. Also, this similarity inside and between the phrases adds continuity and horizontality which, among other things, ensures that phrases do not individually stick out too much. It is probably not by accident that Ligeti uses many seconds in background runs and foreground melodic lines inside and between the phrases. This is one of the ways Ligeti keeps the music floating.

Also, the beginnings and endings of the right-hand phrases preserve the sense of continuity. The last note of any right-hand phrase and the first note of the next right-hand phrase are actually the same note. The right-hand phrases are linked to each other elliptically so that the music sounds continuous.

## 2.5 Cycle of Left Hand Phrases

### Left Hand Phrase I

subphrases: A A' B A''

### Left Hand Phrase II

subphrases: A A' B A''

Figure 5: The melodic line (without correct rhythms) of the two first left-hand phrases as shown in Appendix. The figure shows that Left Hand Phrase I melodically repeats itself (as Left Hand Phrase II), this time pentatonically two steps lower.

As shown in Figure 5, Left Hand Phrase I melodically repeats itself pentatonically two steps lower, thus becoming Left Hand Phrase II. The phrase keeps repeating itself, and this gradual process continues until the middle of Left Hand Phrase VIII (until the end of Section 2). The next phrase cycle is always transposed pentatonically two steps lower from the previous phrase.

In the middle of Left Hand Phrase VIII (in the beginning of Section 3, the last section) the left hand jumps to a high register. Even from this point the same left-hand phrase still keeps repeating itself, always transposed within the mode two steps lower in each cycle.

The left-hand phrase repeats itself nearly 11 times. The left hand travels through different registers starting from the middle register. From the middle register it travels

progressively to the lowest register of the piano. Then it jumps to the high register and starts another gradual descent, but this time continues to the middle register. At the very end of the composition the left hand suddenly travels to the highest note of the piano.



### **3 ANALYSIS OF RHYTHMIC LEVELS**

#### **3.1 Introduction to Rhythms in Appendix (analysis sheets)**

In this chapter the right and left hands' independent melodic lines are approached from the rhythmic point of view. Both hands have their own individual bar lines and they do not often meet. Neither hand has written time signatures. However, the music seems to suggest time signatures of 8/8, 7/8, 6/8, 5/8 and 4/8. In Appendix (analysis sheets) both hands have individual bar numbers.

In this etude the eighth note is the shortest note value and the unit of time. The continuous eighth-note gridwork creates a rhythmically regular background. The regular eighth-note background creates a steady environment from which irregular rhythms arise.

In Appendix there are numbers written above and below the staves. The numbers show how many eighth notes are equal to a particular length of time. The numbers above show the rhythmic levels of the right hand, and the ones below show the rhythmic levels of the left hand.

In the composition, the actual written lengths of the accented foreground notes are usually shorter than marked in the analysis in Appendix. For practical notational reasons, Ligeti has often written the melodic lines' note lengths shorter than they actually sound.

Ligeti comments in the footnote: “Play the melody legato in both hands.” Thus, the accented melodic lines’ notes should sound until the following ones arrive. This is why, in Appendix, the lengths of the melodic lines’ notes are defined as they sound but not as they are written in the composition.

All the rhythmic levels presented in Appendix can be derived from the eighth note by multiplication. An eighth note multiplied by 2 is equal to a quarter note, an eighth note multiplied by 3 is equal to a dotted quarter note, an eighth note multiplied by 4 is equal to a half note, etc. The rhythms in this composition are built using additive rhythms.

### **3.2 Rhythmic Levels**

The names of the rhythmic levels in Appendix (analysis sheets) are Beat Level, Meter Level, Hypermeter Level, Subphrase Level, and Phrase Level. The names of the rhythmic levels are flexible labels because there are multiple ways to hear rhythmic levels. For example, sometimes what in this analysis is called a beat does not necessarily sound like a beat, or there could be many ways to hear the beat. In this analysis I have chosen one possible way to approach rhythms.

It is appropriate to ask: Do all these rhythmic levels actually exist? For example, if we try to listen to one right hand’s rhythmic level at a time, is it truly possible to perceive the level? Although the rhythmic levels might be more perceptible in some passages than in others, in Appendix, the terms are used consistently throughout the analysis to show how

a certain rhythmic level behaves. One of the purposes of using these concepts is just to be able to label these rhythmic levels.

Here is an example of hearing rhythmic levels in multiple ways. Most of the time, the rhythmic levels presented in Appendix are irregular one way or another. Nevertheless some of the rhythmic levels are relatively regular. Sometimes our ear wants to pick up at least one regular rhythmic level. Or sometimes our ear might want to find regularity in a rhythmic level that is not regular, with the help of another rhythmic level that is regular.

One could hear a rhythmic level as regular even if it is irregular in the analysis. For example Right Hand Beat Level in Right Hand Phrase I is irregular ( $3+5 + 3+5 + 5+3 +7$ ). At the same time Meter Level is relatively symmetrical ( $8 + 8 + 8 + 7$ ). Some people might hear the beats in this passage differently than they are marked in the analysis. Because Meter Level is relatively regular, the beats could also be heard as regular beats (e.g.  $4+4 + 4+4 + 4+4 + 4+3$ ). In this case the accented melody notes would not be on the beats but off the beats. This is part of the game that Ligeti is playing. Though many of these rhythmic levels can be heard in many ways, in Appendix one of them is selected.

The rhythmic levels are connected to each other. If something happens for example in Meter Level, it is reflected in other rhythmic levels. For example, in the right-hand bar 4 meter-level unit is 7 but not 8. This causes the hypermeter-level unit to be 15 ( $8+7=15$ ) but not 16 ( $8+8=16$ ). This also causes one eighth to be taken away from Subphrase and Phrase Levels. What is happening in “surface rhythmic levels” (Beat Level, Meter Level)

typically effect also other rhythmic levels. In this analysis I wanted to show clearly that also the lengths of the phrases and subphrases are constantly changing.

As presented in Appendix a beat lasts as long as the accented note (the melodic line note), a meter-level unit consists of either one or two beats, a hypermeter-level unit consists of two meter-level units, a subphrase consists of either two or three hypermeter-level units. One right-hand phrase consists of three subphrases, and one left-hand phrase consists of four subphrases.

### 3.3 Right Hand Beat Level

Phrase I	3	5	3	5	5	3	7	3	5	3	5	5	3	7	3	5	3	5	5	3	3	4	5	3	3	5
Phrase II	3	5	3	4	5	3	8	3	5	3	4	5	3	8	3	5	3	4	5	3	3	5	5	3	3	4
Phrase III	3	5	3	5	5	3	7	3	5	3	5	5	3	7	3	5	3	5	5	3	3	4	5	3	3	5
Phrase IV	3	5	3	4	5	2	7	2	4	2	4	4	2	5	2	3	2	3	3	1	1	3	3	1	1	3
Phrase V	1	2	1	2	2	1	3	1	2	1	2	2	1	3	1	2	1	2	2	1	1	2	2	1	1	2
Phrase VI	1	2	1	2	2	1	3	1	2	1	2	2	1	3	1	2	1	2	2	1	1	2	2	1	1	2
Phrase VII	1	2	1	2	2	1	3	1	2	1	2	2	1	2	1	2	1	2	2	1	1	2	2	1	1	2
Phrase VIII	1	2	1	2	2	1	2	1	2	1	2	2	1	2	1	2	1	2	2	1	1	2	2	1	1	1
Phrase IX	1	2	1	2	2	1	2	1	2	1	2	1	1	2	1	2	1	2	2	1	1	1	2	1	1	1
Phrase X	1	2	1	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
Phrase XI	3	5	3	5	5	3	8	3	5	3	5	5	3	8	3	5	3	5	5	3	3	5	5	3	3	5
Phrase XII	3	5	3	5	5	3	8	3	5	3	5	5	3	8	3	5	3	5	5	3	3	5	5	3	3	5
Phrase XIII	3	5	3	5	5	3	8	3	5	3	5	5	3	8	3	5	3	5	5	3	3	5	5	3	3	5
Phrase XIV	3	5	3	5	5	3	8	3	5	3	5	5	3	8	3	5	3	5	5							

subphrases: A A' B

Figure 6: The numbers above the staff represent the lengths (in multiples of eighth notes) of each melodic line note of each right-hand phrase throughout the composition. The melodic line (without correct rhythms) of Right Hand Phrase I is notated below only as a reference.

In Figure 6 one can find the lengths of each melodic line note of each right-hand phrase throughout the composition. Equivalent beat lengths of all the right-hand phrases are marked vertically at the same column, so that one can compare them easily. The melodic line of Right Hand Phrase I is notated as a reference.

At first sight it is possible to see that the lengths of the beats tend to be odd numbers. Most beat lengths adjacent to each other are not the same. Thus the Right Hand Beat Level is rather asymmetrical.

Most of the time, a beat group of two beats (e.g. 3+5) comprises one meter-level unit. Two-beat groups, and inversions of them, are often repeated. These two-beat groups create rather symmetrical meter-level units. Also, a single beat can comprise a meter-level unit. For example, the last beats of the Subphrases A and A' alone always create one meter-level unit.

Even though the lengths of the beats do change and vary, throughout the composition all the phrases have a structure with similar *relative* beat lengths. For example, the Subphrases A and A' the relative beat structure is always

“shorter, longer; shorter, longer; longer, shorter; long”.  
 X                    X                    Y                    Z

For Subphrase B the relative beat structure is

“shorter, longer; shorter, longer; longer, shorter; shorter, longer; longer, shorter; shorter, longer”.  
 X                    X                    Y                    X  
 Y                    X

Each of these relative beat structures starts with two “shorter, longer” beat groups and continues with its inversion, a “longer, shorter” beat group. The change from a “shorter, longer” beat group to “longer, shorter” beat group occurs on the subphrases’ highest notes. This rhythmic change may express or be a reaction to the change in melodic direction. After this change, Subphrases A and A’ somewhat relax and end with a “long” and lower note. Subphrase B on the other hand continues the phrase by alternating the “shorter, longer” and the “longer, shorter” beat groups similarly as the melody jumps down and then up. In this way the rhythm and pitches work together, creating balanced subphrases and phrases.

An overall comparison of equivalent beats of all right-hand phrases in Figure 6 emphasizes the form of *Désordre*: Phrases I-IV (Section 1), Phrases V-X (Section 2) and Phrases XI-XIV (Section 3).

As shown in Figure 6 the beat lengths in Right Hand Phrases I-III are typically 3, 5, 7 and 8 (in multiples of eighth notes). The beat lengths of Right Hand Phrase IV gradually become shorter. Thus Right Hand Phrase IV is a transition to Section 2.

Typically, the beat lengths in Right Hand Phrases V-VII are 1, 2 and 3 (in multiples of eighth notes), and in Right Hand Phrases VIII-IX they are only either 1 or 2. Then finally at the end of Right Hand Phrase X all the beat lengths are only 1.

Ligeti cannot continue the shortening process any longer, so at the beginning of Section 3 he suddenly returns to the beat lengths familiar from the beginning. The beat lengths in Right Hand Phrases XI-XIV are either 3, 5, or 8 (in multiples of eighth notes). In Section 3 the beat lengths stay exactly the same the whole time.

### 3.4 Multiple Ways of Hearing the Right Hand Beat Level

Phrase I	3	5	3	5	5	3	7	3	5	3	5	5	3	7	3	5	3	5	5	3	3	4	5	3	3	5
Phrase II	3	5	3	4	5	3	8	3	5	3	4	5	3	8	3	5	3	4	5	3	3	5	5	3	3	4
Phrase III	3	5	3	5	5	3	7	3	5	3	5	5	3	7	3	5	3	5	5	3	3	4	5	3	3	5
Phrase IV	3	5	3	4	5	2	7	2	4	2	4	4	2	5	2	3	2	3	3	1	1	3	3	1	1	3
Phrase V	1	2	1	2	2	1	3	1	2	1	2	2	1	3	1	2	1	2	2	1	1	2	2	1	1	2
Phrase VI	1	2	1	2	2	1	3	1	2	1	2	2	1	3	1	2	1	2	2	1	1	2	2	1	1	2
Phrase VII	1	2	1	2	2	1	3	1	2	1	2	2	1	2	1	2	1	2	2	1	1	2	2	1	1	2
Phrase VIII	1	2	1	2	2	1	2	1	2	1	2	2	1	2	1	2	1	2	2	1	1	2	2	1	1	1
Phrase IX	1	2	1	2	2	1	2	1	2	1	2	1	1	2	1	2	1	2	2	1	1	1	2	1	1	1
Phrase X	1	2	1	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
Phrase XI	3	5	3	5	5	3	8	3	5	3	5	5	3	8	3	5	3	5	5	3	3	5	5	3	3	5
Phrase XII	3	5	3	5	5	3	8	3	5	3	5	5	3	8	3	5	3	5	5	3	3	5	5	3	3	5
Phrase XIII	3	5	3	5	5	3	8	3	5	3	5	5	3	8	3	5	3	5	5	3	3	5	5	3	3	5
Phrase XIV	3	5	3	5	5	3	8	3	5	3	5	5	3	8	3	5	3	5	5							

subphrases: A

A'

B

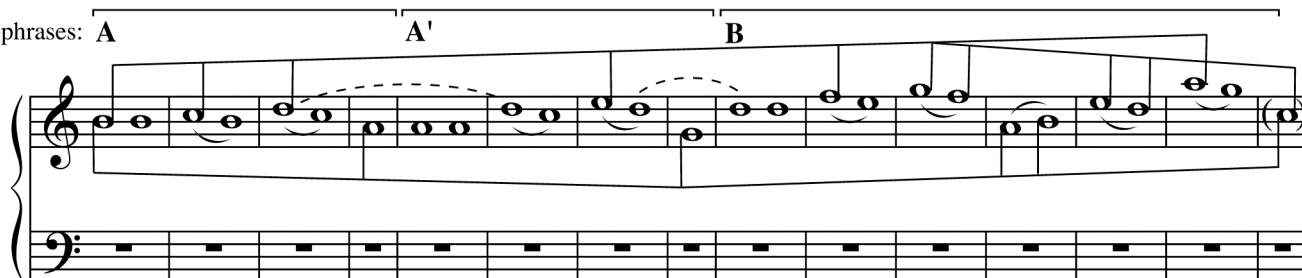


Figure 7: The numbers above the staff represent the lengths (in multiples of eighth notes) of each melodic line note of each right-hand phrase throughout the composition. The melodic line (without correct rhythms) of Right Hand Phrase I is notated below only as a reference.

As mentioned earlier, there are multiple ways to hear beat lengths, not just the way they are presented in Appendix. For example, one may no longer hear the shortest beat length, 1 eighth note, as a beat. Instead one may need at least 2 or 3 multiples of eighth notes for hearing it as an actual beat. This is another game that Ligeti plays. In Right Hand Phrases IV-X he progressively compresses the beats. He lets the listener decide when the

shortening beats stop being actual sounding like beats, and when a beat is short enough that it becomes only a part of a beat.

One of the problems from the analytical point of view in Right Hand Phrases V-X is that one could hear the beat lengths in many different ways. For example in the beginning of Right Hand Phrase V one could hear 1 or 1+2 or even 1+2+1 as only one beat. This may also depend on how it is played. Another example: if the beats of Right Hand Phrase V, presented in Figure 7, were not heard as beats, but instead a two-beat group would be heard as one beat, then the beat lengths would be 3+3+3+3, 3+3+3+3, 3+3+3+3+3+3. If a three-beat group was heard as one beat then the beat lengths would be 4+4+4, 4+4+4, 4+4+4+4+2.

But while “beat” may be a flexible label in matters of perception, for the purposes of this analysis a choice is made to follow the rule: one beat is equal to the length of the note in the melodic line. Even if equivalent beats in two different phrases do not have the same length, they still have a relatively similar role within their phrases.



### 3.5 Left Hand Beat Level in comparison to Right Hand Beat Level

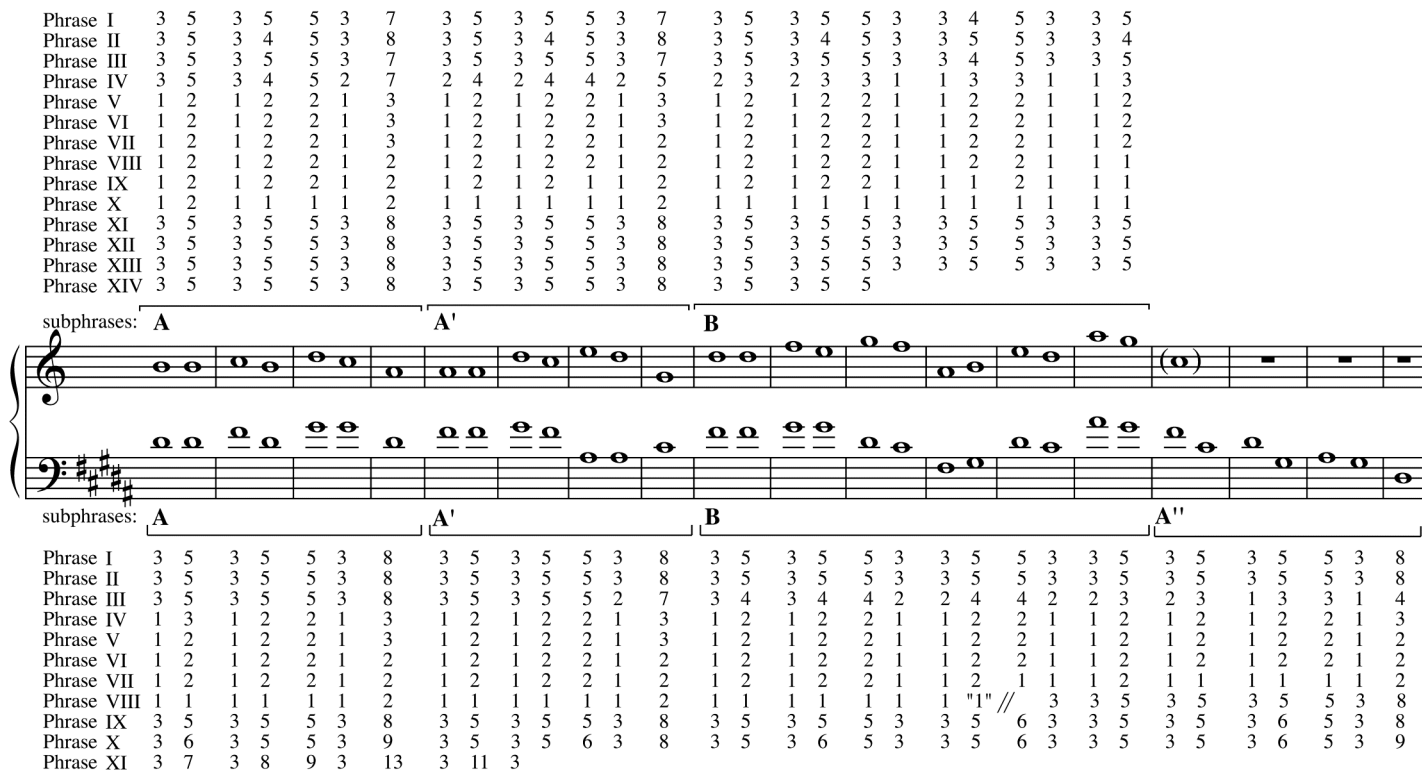


Figure 8: The numbers below and above the staff represent the lengths (in multiples of eighth notes) of each melodic line note of each right- and left-hand phrase throughout the composition. The melodic lines (without correct rhythms) of Right Hand Phrase I and Left Hand Phrase I are notated only as a reference.

Figure 8 shows the lengths of each melodic line note of the right- and left-hands' phrases throughout the composition. Equivalent beat lengths of all the right- and left-hands' phrases are marked vertically at the same column, so that one can compare them easily. The melodic lines of Right Hand Phrase I and Left Hand Phrase I are notated as a reference. In general the right and left hands have a lot of similarities.

Similar to the right hand, the left-hand beat lengths in general tend to be odd numbers. Most of the beat lengths adjacent to each other are not the same. Thus, the Left Hand Beat Level is rather asymmetrical.

Just as in the right hand, throughout the composition all the left-hand phrases have a structure with similar relative beat lengths. For the Subphrases A, A' and A'' the relative beat structure is

“shorter, longer; shorter, longer; longer, shorter; long”.  
 X                      X                      Y                      Z

For Subphrase B a relative beat structure is

“shorter, longer; shorter, longer; longer, shorter; shorter, longer;  
 X                      X                      Y                      X

longer, shorter; shorter, longer”.  
 Y                      X

Moreover, it is important to emphasize that, for a given subphrase in the right hand, this relative beat length structure is *exactly the same* as the relative beat length structure in the corresponding left-hand subphrase.

An overall comparison of equivalent beats of all left-hand phrases in Figure 8 emphasizes the form of *Désordre*: Phrases I-III (Section 1), Phrases IV-until the middle of VIII (Section 2) and Phrases from the middle of VIII-XI (Section 3).

At the end of the composition (Left Hand Phrases X-XI), most of the “longer” and “long” relative beat lengths get even longer while “shorter” relative beat lengths stay the same.

### 3.6 Right Hand Meter Level

Phrase I	8	8	8	7	8	8	8	7	8	8	8	7	8	8
Phrase II	8	7	8	8	8	7	8	8	8	7	8	8	8	7
Phrase III	8	8	8	7	8	8	8	7	8	8	8	7	8	8
Phrase IV	8	7	7	7	6	6	6	5	5	5	4	4	4	4
Phrase V	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Phrase VI	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Phrase VII	3	3	3	3	3	3	3	2	3	3	3	3	3	3
Phrase VIII	3	3	3	2	3	3	3	2	3	3	3	3	3	2
Phrase IX	3	3	3	2	3	3	2	2	3	3	3	2	3	2
Phrase X	3	2	2	2	2	2	2	2	2	2	2	2	2	2
Phrase XI	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Phrase XII	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Phrase XIII	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Phrase XIV	8	8	8	8	8	8	8	8	8	8	8	8	8	8

subphrases: **A** **A'** **B**

Figure 9: The numbers above the staff represent the lengths (in multiples of eighth notes) of each meter-level unit of each right-hand phrase throughout the composition. The melodic line (without correct rhythms) of Right Hand Phrase I is notated below only as a reference.

Figure 9 shows lengths of each meter-level unit of each right-hand phrase throughout the composition. Equivalent meter-level unit lengths of all the right-hand phrases are marked vertically at the same column, so that one can compare them easily. The melodic line of Right Hand Phrase I is notated as a reference.

Most of the meter-level-unit lengths adjacent to each other are the same. Thus Right Hand Meter Level is rather symmetrical. One meter-level unit consists of one or two beats. Most of the time two beats create a meter-level unit together. In Sections 1 and 3, typically two odd number beat lengths added together form an even number meter-level-unit length (e.g.  $3+5=8$ ). Ligeti wrote that he was interested in having both symmetrical

and asymmetrical rhythmic levels at the same time. Symmetry and the contour of the phrase help the meter-level units to stick out, with repetitions and downward seconds from the strong beats, and long notes lasting the whole meter-level unit.

Starting from the beginning, in Right Hand Phrases I-III the meter level has the pattern 8+8+8+7 (in multiples of eighth notes). The pattern is actually broken only in Right Hand Phrase IV. From the beginning of Right Hand Phrase IV to the beginning of Right Hand Phrase V the lengths of the meter-level units are shortened from 8 to 3, so the accelerating transition to Section 2 is very clearly gradual in Meter Level.

In the beginning of Section 2, in Right Hand Phrases V-X, all the meter-level-unit lengths are 3 multiples of the eighth note, but towards the end only 2. During the entire Section 3, Right Hand Phrases XI-XIV all meter-level-unit lengths are 8 multiples of eighth notes. This creates steadiness in Section 3 after the agitated Section 2.

### 3.7 Left Hand Meter Level and Comparison to Right Meter Level

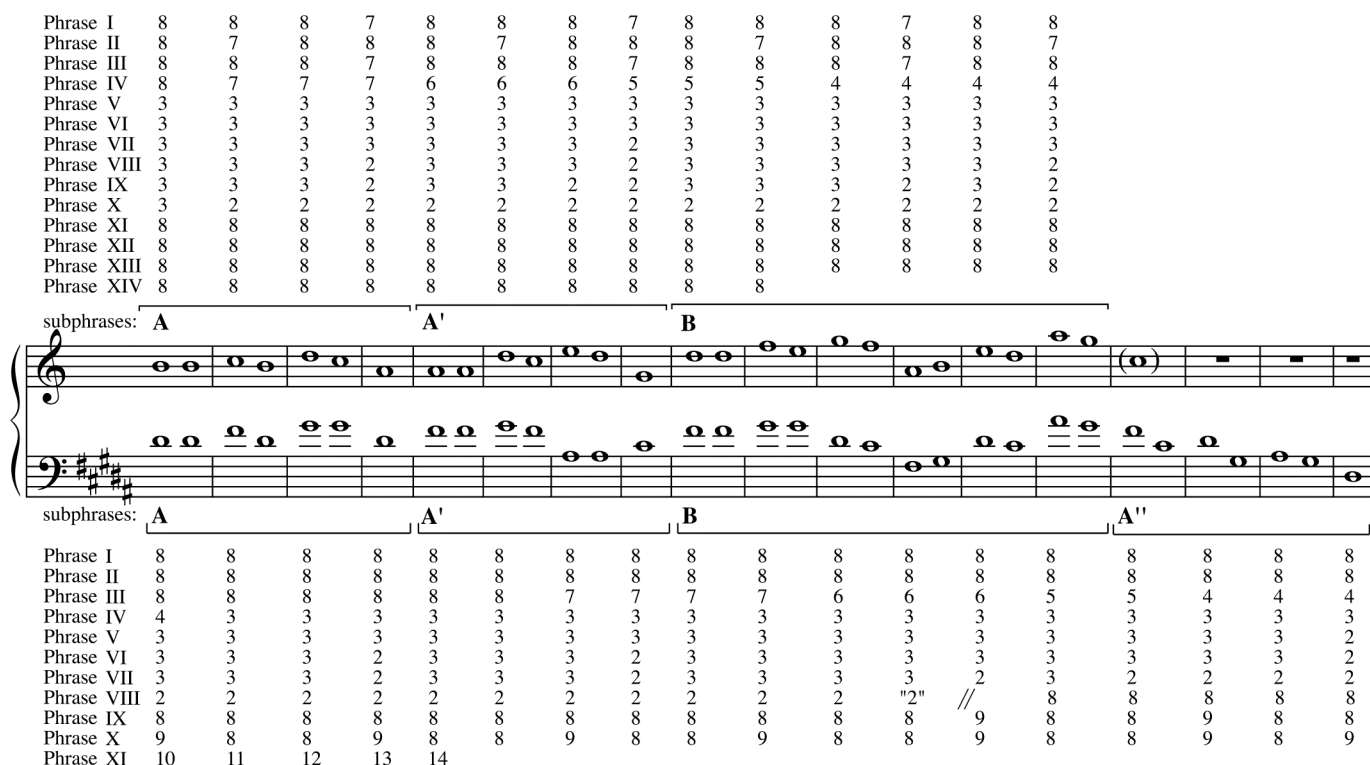


Figure 10: The numbers above and below the staff represent the lengths (in multiples of eighth notes) of each meter-level unit of each right- and left-hand phrase throughout the composition. The melodic lines (without correct rhythms) of Right Hand Phrase I and Left Hand Phrase I are notated only as a reference.

Figure 10 shows the length of each meter-level unit of each right- and left-hand phrase throughout the composition. Equivalent meter-level-unit lengths of all the right- and left-hands' phrases are marked vertically at the same column, so that one can compare them easily. The meter-level units of Right Hand Phrase I and Left Hand Phrase I are notated as a reference. In general, the right and left hands have high degree of similarity.

Similar to the right hand, most of the left hand's adjacent meter-level units are of the same length. Thus, the Left Hand Meter Level is also rather symmetrical.

Starting from the beginning, Meter Level in Right Hand Phrases I-III has the pattern 8+8+8+7. At the same time the left hand's meter level repeats the length of 8. This causes shifting, which will be addressed in Chapter 4.1.

Like the right hand, the left hand also has an accelerating transition in Left Hand Phrase III, and the meter-level-unit lengths are shortened from 8 to 4. However, in Section 2, the rhythmic lengths are compressed so much that, instead of only two accented notes fitting in one bar, a total of four accented notes fit in one bar. Section 2 starts with meter-level-unit length 4 (in the left hand), continues with 3, and finally shortens to 2. In the beginning of Section 3 the meter-level-unit length is the same in both hands; it is returned to 8. This is the longest passage where the bar lines of both hands meet (for a total of 25 bars).

Unlike in the right hand, in Left Hand Phrases IX-XI some meter-level units are elongated from the length 8 to 14. At the end of the composition the difference between the meter-level units of the right and the left hand is the biggest. This creates increasing divergence, expressing the idea of disorder, and also creates a sense that the music is moving farther away -- with the time between "echoes" also increasing.

### 3.8 Right and Left Hand Hypermeter Levels

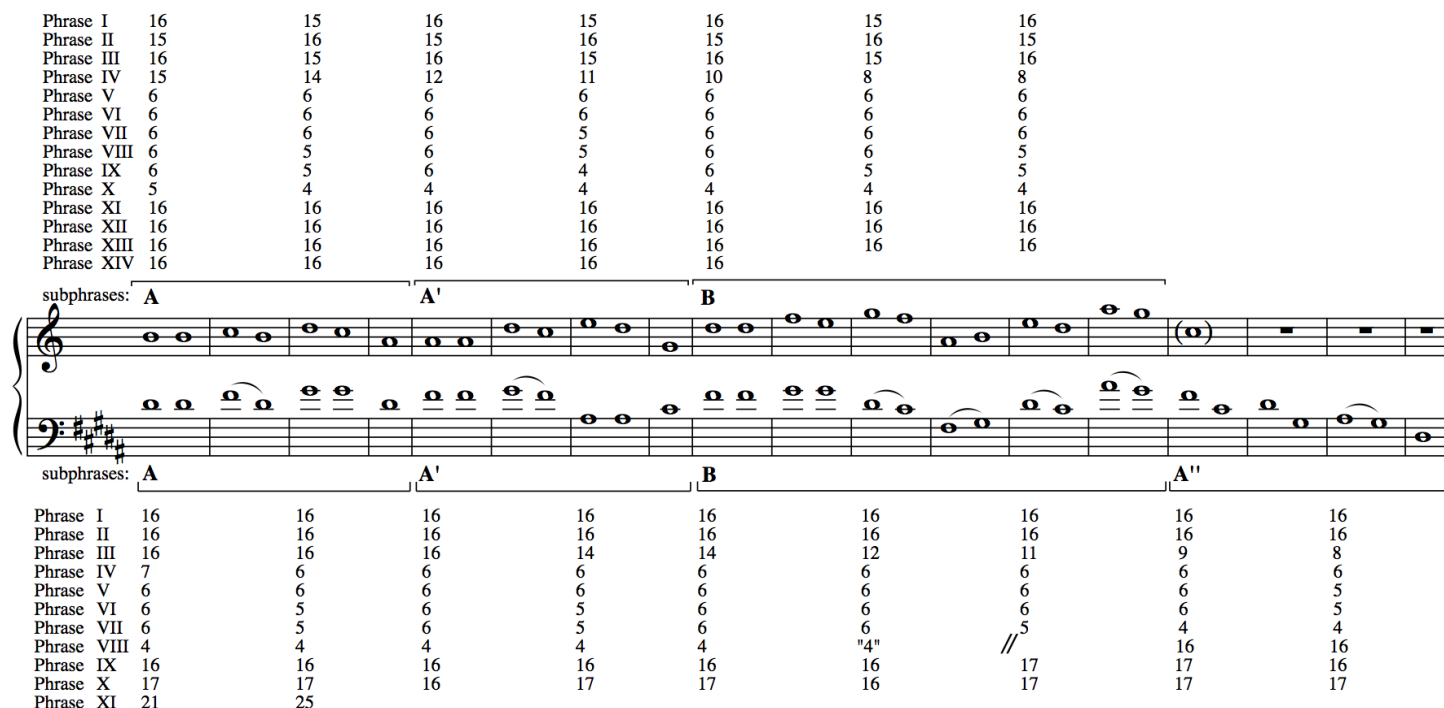


Figure 11: The numbers above the staff represent the lengths (in multiples of eighth notes) of each hypermeter-level unit of each right- and left-hand phrase throughout the composition. The melodic lines (without correct rhythms) of Right Hand Phrase I and Left Hand Phrase I are notated below only as a reference.

Figure 11 shows the length of each hypermeter-level unit of each right- and left-hand phrase throughout the composition. Equivalent hypermeter-level-unit lengths of all the right- and left-hands' phrases are marked vertically at the same column, so that one can compare them easily. The melodic lines of Right Hand Phrase I and Left Hand Phrase I are notated as a reference.

Most of the hypermeter-level-unit lengths adjacent to each other are the same. Thus in both hands, Hypermeter Level is rather symmetrical. One hypermeter-level unit consists of two meter-level units.

Two hypermeter-level units divide subphrases into two parts. Changes in Meter Level (e.g. 3+5, 3+5, 5+3, 7), in the middle of the subphrases, help the Hypermeter Level to stick out. The first hypermeter-level unit consists of two meter-level units, both of them consisting of the beat group 3+5, which inverts to the beat group 5+3, marking the beginning of the new hypermeter.

Starting from the beginning, Right Hand Hypermeter Level has the pattern 16+15. At the same time Left Hand Hypermeter Level keeps repeating the length 16. This causes shifting. The right-hand pattern (16+15) is broken only in Right Hand Phrase IV where a gradually accelerating transition happens towards Right Hand Phrase V. In the left hand the transition happens between Left Hand Phrase III and Left Hand Phrase IV.

From the beginning of Right Hand Phrase V the hypermeter-unit length stays at 6 and accelerates, reaching a length of 4 during Right Hand Phrases VIII-IX. Similarly, although Left Hand Phrase IV starts with the hypermeter-level unit length of 7, it shortens to 6, and finally to 4 in the middle of Left Hand Phrase VIII.

In the beginning of Section 3 (Right Hand Phrase XI / Left Hand Phrase IX) the hypermeter-level-unit length is the same in both hands; it is returned to 16 as in the beginning of the composition. Unlike in the right hand, in Left Hand Phrases IX-XI some hypermeter-level units are elongated from 16 to 25.



### 3.9 Right and Left Hand Subphrase Levels

Phrase I	31	31	47	
Phrase II	31	31	46	
Phrase III	31	31	47	
Phrase IV	29	23	26	
Phrase V	12	12	18	
Phrase VI	12	12	18	
Phrase VII	12	11	18	
Phrase VIII	11	11	17	
Phrase IX	11	10	16	
Phrase X	9	8	12	
Phrase XI	32	32	48	
Phrase XII	32	32	48	
Phrase XIII	32	32	48	
Phrase XIV	32	32	48	

Phrase I	32	32	48	32
Phrase II	32	32	48	32
Phrase III	32	30	37	17
Phrase IV	13	12	18	12
Phrase V	12	12	18	11
Phrase VI	11	11	18	11
Phrase VII	11	11	17	8
Phrase VIII	8	8	"8"	32
Phrase IX	32	32	49	33
Phrase X	34	33	50	34
Phrase XI	46			

Figure 12: The numbers above the staff represent the lengths (in multiples of eighth notes) of each subphrase-level unit (referred to hereafter as “subphrase”) of each right- and left-hand phrase throughout the composition. The melodic lines (without correct rhythms) of Right Hand Phrase I and Left Hand Phrase I are notated below only as a reference.

Figure 12 shows the lengths of each subphrase of each right- and left-hand phrase throughout the composition. Equivalent subphrase lengths of all the right- and left-hands’ phrases are marked vertically at the same column, so that one can compare them easily. The melodic lines of Right Hand Phrase I and Left Hand Phrase I are notated as a reference.

Most of the subphrase lengths adjacent to each other are not the same. The subphrase structures are asymmetrical. The Right Hand Subphrase Level has a “shorter, shorter, longer” (i.e. Subphrases A, A’ and B) structure. The Left Hand Subphrase Level has

“shorter, shorter, longer, shorter” (i.e. Subphrases A, A', B and A'') structure. The Subphrase B lengths are always longer than the corresponding Subphrases A, A' and A'' in a given phrase.

### 3.10 Right and Left Hand Phrase Levels

Phrase I	109
Phrase II	108
Phrase III	109
Phrase IV	78
Phrase V	42
Phrase VI	42
Phrase VII	41
Phrase VIII	39
Phrase IX	37
Phrase X	29
Phrase XI	112
Phrase XII	112
Phrase XIII	112
Phrase XIV	

Phrase I	144
Phrase II	144
Phrase III	116
Phrase IV	55
Phrase V	53
Phrase VI	51
Phrase VII	47
Phrase VIII	//
Phrase IX	146
Phrase X	151
Phrase XI	

Figure 13: The numbers above the staff represent the lengths (in multiples of eighth notes) of each right- and left-hand phrase-level unit (referred to hereafter as “phrase”) throughout the composition. The melodic lines (without correct rhythms) of Right Hand Phrase I and Left Hand Phrase I are notated below only as a reference.

Figure 13 shows the lengths of each right- and left-hand phrase throughout the composition. Equivalent phrase lengths of all the right- and left-hands’ phrases are marked vertically at the same column, so that one can compare them easily. The melodic lines of Right Hand Phrase I and Left Hand Phrase I are notated as a reference.

One right-hand phrase consists of three subphrases, and one left-hand phrase consists of four subphrases. Because the left-hand phrase is one subphrase longer than the right-hand phrase, the left hand clearly keeps getting ahead after each phrase cycle. After Right Hand Phrases I-IV (lengths of the phrases are  $109 + 108 + 109 + 78 = 404$  in multiples of eighth notes) and Left Hand Phrases I-III (lengths of the phrases are  $144 + 144 + 116 = 404$  in multiples of eighth notes), the beginnings of both hands' phrases meet again in the beginning of Section 2. After this, the beginnings of both hands' phrases never meet again. In the next Chapter (4.1 Shifting), *Désordre* is approached from the shiftings' point of view.

In Section 2, there are six right-hand phrases (Right Hand Phrases V-X) and four and a half left-hand phrases (Left Hand Phrases IV-“VII”). Since Section 2 is an agitated and compressed section, its phrase lengths are shorter than the phrase lengths of the two other sections.

In the beginning of Section 3 the Left Hand Phrase VIII is suspended for a short moment and continued again. For this reason, there is not only one method to determine the length of the Left Hand Phrase VIII. In Section 3, there are three and a half right-hand phrases (Right Hand Phrases XI-“XIV”) and approximately three left-hand phrases (Left Hand Phrases “VII”-“XI”). The very last phrases of both hands are not complete. There are a total of 13 and a half right-hand phrases but only 10 and a half left-hand phrases.

## 4 SHIFTING AND FORM

### 4.1 Shifting

Between the beginning and the right-hand bar 44, the Right Hand Meter Level has the pattern 8+8+8+7. In other words, every right hand's fourth bar is only 7 eighth notes long. This is 1 eighth note less than the left hand's fourth bars, because Left Hand's Meter Level constantly repeats the length 8. Thus in the beginning every fourth right-hand bar is 1 eighth note longer than the corresponding left-hand bar. This causes shifting of bar lines. The shifting process continues in the right-hand bars from 1 to 44 and in the left-hand bars from 1 to 42.

As presented in Appendix, the right-hand bar 5 and the left-hand bar 5 are off by 1 eighth note. After four bars (right-hand bar 9 / left-hand bar 9) the right and left hands' bar lines are off by 2 eighth notes. The beginnings of the left-hand bars fall behind those of the right-hand bars step-by-step. At first this creates the effect of an echo or desynchronization. But as the shifting develops, it leads to seemingly chaotic configurations.

When bar lines or beats meet again after rotating through an entire bar length, it creates a feeling of reunification. In the right-hand bar 14 / left-hand bars 13-14, the right and left hand's beats meet again, two times, in the highest notes of Right Hand Phrase I. This is

probably not by accident, because it feels as if the end of Right Hand Phrase I is somewhat emphasized before Right Hand Phrase II starts.

During the shifting process, the bar lines actually meet again four times in the right-hand bars 33-36 / left-hand bars 32-35. At this point the right hand is 1 bar ahead of the left hand. Also at this point both hands' beats meet five times.

As stated earlier, from the beginning of *Désordre*, the shifting continues until right-hand bar 44 / left-hand bar 42. In the right-hand bar 45, the meter-level-unit length is expected to be 8 due to the preceding pattern, but it is actually 7 eighth notes. From here the transition starts to Section 2, and the shifting still continues, but not periodically (no longer in every right-hand fourth bar). During the transition (right-hand bars 44-57 / left-hand bars 43-55), the rhythmic levels are compressed. The relative rhythmic lengths remain, but the actual rhythmic lengths get compressed. This is the point where for the first time Ligeti changes the rhythmic rules from the rhythmic setup of the beginning.

In the right-hand bar 54 / left-hand bar 52, the bar lines meet again four times. Shifting has now caused the right hand to be 2 bars ahead of the left hand. In the right-hand bar 58 / left-hand bar 56, the left hand has 1 extra eighth note compared to the right hand, which causes the bar lines to shift by 1 eighth note. Until the right-hand bar 76 / left-hand bar 74 shifting does not increase or decrease (shifting is always by 1 eighth note). After that, in the right-hand bars 77-93 / left-hand bars 75-91, one can find unstable shifting back and forth. Maybe in this section Ligeti wants to express instability and agitation before the

cut, the sudden change, in the right-hand bar 99 / left-hand bar 97 (in the end of Section 2). Finally in the right-hand bar 93 / left-hand bar 91 the bar lines meet again and stay together for 25 bars.

In the beginning of Section 3 (right-hand bars 93-117 / left-hand bars 97-115) the bar lines stay nicely together. This expresses stability and resolution after the agitated section. During the entire Section 3 the right-hand meter-level-unit lengths stay at 8 eighth notes. After a while, once the situation has sufficiently calmed down, the shifting resumes again, with the left hand's bar lengths occasionally increasing.

During the right-hand bars 118-140 / left-hand bars 116-137, Ligeti shifts the bar lines by 1 eighth note, every third bar. Unlike in the beginning of the composition, where the shifting was caused by compression of the right-hand bars, in this section the shifting is caused by the expansion of the left-hand bars. In the right-hand bars 140-141 / left-hand bars 137-138, the bar lines meet again. This time the right hand is 3 bars ahead of the left hand.

In the end of the composition the left hand's bars are expanded by even more than 1 eighth note. In the right-hand bar 142 / left-hand bar 139, the bar lines are shifted by 1 eighth note. Both hands' subsequent bar lines are shifted by 3 eighth notes. The next bar lines are shifted by 6 eighth notes, etc. Finally in the right-hand bar 155 / left-hand bar 145, the bar lines meet again. At this point the right hand is 10 bars ahead of the left hand.

Shifting also occurs on levels other than the Meter Level. From the beginning, because the left-hand phrase is one subphrase longer than the right-hand phrase, the left hand clearly keeps getting ahead after each phrase cycle. After four right-hand phrases (Right Hand Phrases I-IV) and three left-hand phrases (Left Hand Phrases I-III), the beginnings of both hands' phrases meet again (right-hand bar 57 / left-hand bar 55, in the beginning of Section 2). The beginnings of both hands' phrases never meet again.

In Section 2, there are six right-hand phrases (Right Hand Phrases V-X) and four and a half left-hand phrases (Left Hand Phrases IV-"VII"). In Section 3, there are three and a half right-hand phrases (Right Hand Phrases XI-"XIV") and approximately three left-hand phrases (Left Hand Phrases "VII"- "XI").

In *Désordre*, there are multiple rhythmic levels connected to each other. The rhythmical levels have hierarchical relationships. When one rhythmic level is shifted, it makes other rhythmic levels shift, too. Thus there are multiple shifting speeds at the same time. It can be described metaphorically as a set of different-sized cogwheels that are connected to each other and rotate in different speeds.

## 4.2 Form

The total length of *Désordre* is 1063 eighth notes. As shown in Appendix, there are three sections. The etude is in A B A' form, where Sections 1 and 3 have many things in common and Section 2 is developed from Section 1.

The length of Section 1 (right-hand bars 1-56 / left-hand bars 1-54) is 404 eighth notes. Section 1 presents the basic musical material and ideas. In the foreground, two independent lines, that are nonetheless closely related melodically and rhythmically, start shifting apart from each other. In the background, eighth note repetition creates an underlying additive-rhythm environment from which other rhythmic lengths, symmetrical and asymmetrical, arise.

In Section 1, both the right- and left-hands' phrases keep recurring melodically. In each cycle they are transposed within their modes, right hand one scale-step upward and left hand two scale steps downward.

Regardless of the irregularity in many rhythmic levels, all the rhythms arise from the eighth note environment by multiplication. The beginning's rhythmic setup remains more or less stable until the right-hand bar 44. From the right-hand bar 44 and left-hand bar 43 both hands's rhythms start to speed up, in other words, the rhythmic levels starts to compress. The transition lasts until the right-hand bar 57 and left-hand bar 55.



The length of Section 2 (right-hand bars 57-98 / left-hand bars 55-96) is 230 eighth notes. Section 2 is developed from the previous Section 1. Section 2 is an agitated section; the tension increases. Its rhythmic structures are compressed. This is the reason why it is the shortest section. There is a transition approximately in right-hand bars 78-98 / left-hand bars 76-96 from slightly longer melodic note values towards the shortest note value of the composition, the eighth note. In the end of Section 2, Ligeti writes *crescendo molto* until *sfff*.

In Section 2 the melodic lines' phrases keep recurring and transposing just as in Section 1, with the right hand upward and the left hand downward. As mentioned earlier, the right-hand phrase keeps recurring melodically, with the next phrase cycle always one scale-step above the previous phrase. This gradual process continues until the end of the *Désordre*.

The length of Section 3 (right-hand bars 99-155 / left-hand bars 97-145) is 429 eighth notes. In the beginning of Section 3, a sudden but somewhat anticipated cut occurs. The left hand jumps to the high register close to the right hand. In Section 3 the dynamic level of the music returns suddenly to the one at the beginning of the composition, with the foreground played in *forte* and background in *piano*. Also, the rhythms from the very beginning of the composition return to both melodic lines. These sudden changes create an effect of relaxation, especially because the rhythm changes from the accented eighth note repetition back to the accented longer beats from the beginning. Accented melodic

line notes are no longer doubled in octaves, but create more lyrical music by using other intervals and three or four note chords within the pitch collections.

Rhythmically Section 3 remains stable until the middle of the section. In the left-hand bar 115, the left hand melodic line starts slowing down. This left hand's expansion of the note durations in the melody causes shifting to start again. These actions create a feeling of the approaching end. The right hand is steadily transposed upward and the left hand downward. Finally, at the end of the composition both hands' background eighth-note runs climb to the highest register and play the same key as a very last note, the highest key of the piano.

## CONCLUSIONS

György Ligeti's *Étude 1, Désordre* for piano, has multiple rhythmic ideas connected to each other: rhythmic hierarchy (rhythmic levels), two individual rhythmic structures (the right and the left hands), shifting of rhythmic structures, and multiple simultaneously shifting speeds. Multiple rhythmic levels are connected to each other and have hierarchical relationships to each other, remaining that way throughout the composition.

*Désordre* is polymetric music, which means that it has more than one meter at the same time. The right and left hands have individual meters. In the same sense, one could call this composition polyhypermetric, polysubphrase and polyphrase music.

It would be very interesting to hear only either hand's rhythmical structure alone but Ligeti wants to have two individual rhythmic structures played at the same time. Even this is not enough for Ligeti, so he adds the idea of two individual rhythmic structures shifting apart from each other. The rhythmic structures have their own trajectories. Sometimes they meet and sometimes they morph away from each other.

But when the two individual rhythmic structures keep recurring as cycles, there is yet one more rhythmic idea added. That is, after shifting has occurred long enough, the beginnings of the cycles actually cease diverging from each other and begin getting closer to each other.

What is truly remarkable is that when the two individual rhythmic structures -- both consisting of multiple rhythmic levels -- are shifting, all the rhythmic levels are actually shifting at different speeds. For example, while the beats are rotating through cycles relatively quickly, first diverging from and then re-approaching each other, the meter-level-units are rotating through cycles a little more slowly. The hypermeter-level units take even more time to rotate back together, and so on. But even this is not enough for Ligeti. With unequal phrase lengths between the hands, rhythmic rotation of phrases also occurs, constituting the largest-scale rotation in the composition.

As stated earlier, the composition is characterized by a rhythmic hierarchy. Not only are the beat lengths modified, but also multiple additional rhythmic layers are modified at the same time. These different rhythmic levels are present throughout the whole composition in one form or another, which can metaphorically thought of as various-sized cogwheels that start rotating at different speeds. They also speed up, and upon reaching their highest speed, they suddenly return to their original speed, and some of them start slowing down. Ligeti creates almost magical rhythmic spirals, individually for each hand. In the midst of all the rhythmic complexity, Ligeti keeps repeating the same two melodic phrases (right and left hand), varying them only slightly each time. This also helps make the composition very unified.

Ligeti compresses and expands the individual rhythmic structures, but still manages to maintain all the rhythmic levels almost the whole time. In my opinion, from the

rhythmical point of view this composition is truly a masterpiece because this is executed with great musicality.

From the point of view of harmony, the etude is quite straightforward. For the length of the composition, the right hand plays white keys and the left hand plays black keys. The way the pitch collections are used constitutes less of the “activity” in the composition than does the rhythmic structure. At the formal level there is no real tension-relaxation (dissonant-consonant) principles that operate in the harmony. A direction in which the ideas on display in *Désordre* might be further developed could include changes in the pitch collection(s). For example, one could imagine some kind of transformation from the diatonic pitch collection to the chromatic one in the right hand. Or maybe in the left hand Ligeti could have proceeded from the pentatonic collection to, for example, a column chord of only perfect fourths. But as stated earlier, the main focus in Ligeti’s piano etudes is on the rhythm. Ligeti defined very clear tasks for himself and carries those out logically and imaginatively.

*Désordre* is very systematic music, but Ligeti does not want to stick to only one way of looking at the system. Instead he bends, changes, and breaks the system along the way. He starts from an algorithm, but keeps changing or disrupting it. There is order, but also disorder. He gives the listener predictions, but also summons unpredictable elements. Ligeti uses machine-like patterns and algorithms as a starting point, but with *Désordre* he creates something deeply human.

**Bibliography / Works Cited**

Ligeti, György (1985). *Études pour piano: premier livre*. Mainz: B Schott's Söhne.

Sallis, Friedemann (2002). *György Ligeti (1923-), Music of the twentieth-century avant-garde: A biocritical sourcebook*. Larry Sitsky ed. Westport: Greenwood Publishing Group Inc., 254-263.

Bauer, Amy (2011). *Ligeti's Laments: Nostalgia, Exoticism, and the Absolute*. Ashgate publishing Limited.

Arom, Simha (1985). *Polyphony and polymetric in African rhythm*. Cambridge: Cambridge University Press.

Kinzler, Hartmuth (1991). *György Ligeti, Decision and Automatism in 'Désordre', 1<sup>re</sup> Étude, Premier Livre*. Interface, 20.2, 89-124.

Kunze, Tobias (1999). *An Algorithmic Model of György Ligeti's Étude No. 1, Désordre*.

Retrieved on January 5, 2009 from

[http://ccrma.stanford.edu/~tkunze/pbl/1999\\_desordre/ligeti.html](http://ccrma.stanford.edu/~tkunze/pbl/1999_desordre/ligeti.html)









*VELINIKKA*

Concerto for Quarter-tone Accordion and Chamber Orchestra

Sampo Haapamäki

Submitted in partial fulfillment of the  
requirements for the degree of  
Doctor of Musical Arts  
in the Graduate School of Arts and Sciences

COLUMBIA UNIVERSITY

2012

© Copyright 2008  
Sampo Haapamäki  
All rights reserved

3. versio

Sampo HAAPAMÄKI

# VELINIKKA

NELJÄSOSASÄVELASKELHARMONIKKAKONSERTTO  
soolonejäsosäsävelaskelharmonikalle ja kamariorkesterille (18 muusikkoa)  
(2008)

kesto n. 25 min  
tilannut *Gaudeamus-musiikkiviikko*  
omistettu *Veli Kujalalle*

## Instrumentaatio

Soolonejäsosäsävelaskelharmonikka

1 Huilu  
1 Oboe  
1 Klarinetti (in Bb)  
1 Alttosaksofoni (in Eb)  
1 Fagotti

1 Käyrätorvi (in F)  
1 Trumpetti (in C)  
1 Pasuuna

Lyömäsoittimet (1 soittaja):  
*Finger Cymbals, Glockenspiel, Splash Cymbal,  
Chinese Cymbal, Suspended Cymbal,  
Tam-Tam (large), Wind Chimes,  
Gran Cassa, Whip*

1 Harppu

3 Viulua  
2 Alttoviulua  
2 Selloa  
1 Kontrabasso (5. kieli H)

TRANSPONOIMATON  
PARTITUURI

3<sup>rd</sup> version

Sampo HAAPAMÄKI

# VELINIKKA

QUARTER-TONE ACCORDION CONCERTO  
for quarter-tone accordion solo and chamber orchestra of 18 musicians  
(2008)

duration ca. 25 min  
*commissioned by Gaudeamus Music Week*  
*dedicated to Veli Kujala*

## Instrumentation

Solo Quarter-tone Accordion

1 Flute  
1 Oboe  
1 Clarinet in Bb  
1 Alto Saxophone in Eb  
1 Bassoon

1 Horn in F  
1 Trumpet in C  
1 Trombone

Percussion (1 player):  
*Finger Cymbals, Glockenspiel, Splash Cymbal,  
Chinese Cymbal, Suspended Cymbal,  
Tam-Tam (large), Wind Chimes,  
Gran Cassa, Whip*

1 Harp

3 Violins  
2 Violas  
2 Cellos  
1 Double Bass (5th string B natural)

SCORE IN C

**VELINIKKA (2008)**

NELJÄSOSASÄVELASKELHARMONIKKAKONSERTTO  
neljäsosäsävelaskelharmonikalle ja kamariorkesterille (18 muusikkoa)  
kesto n. 25 min  
tilannut Gaudeamus-musiikkiviikko  
omistettu Veli Kujalalle

## kantaesitys:

Veli Kujala, neljäsosäsävelaskelharmonikka  
Insomnio kapellimestarinaan Ulrich Pöhl  
Gaudeamus Music Week  
Muziekgebouw aan 't IJ  
Amsterdam  
1. syyskuuta, 2008

**VELINIKKA (2008)**

QUARTER-TONE ACCORDION CONCERTO  
for quarter-tone accordion and chamber orchestra of 18 musicians  
duration ca. 25 min  
commissioned by Gaudeamus Music Week  
dedicated to Veli Kujala

## premiere:

Veli Kujala, quarter-tone accordion  
Insomnio conducted by Ulrich Pöhl  
Gaudeamus Music Week  
Muziekgebouw aan 't IJ  
Amsterdam  
1<sup>st</sup> of September, 2008

## Ohjelmateksti

*Velinikka* on neljäsosäsävelaskelharmonikkakonsertto neljäsosäsävelaskelharmonikalle ja kamariorkesterille. Sävellyksen on tilannut Gaudeamus-musiikkiviikko ja se on omistettu Veli Kujalalle. Oli erittäin inspiroivaa säveltää konsertto Veli Kujalalle ja Insomniolle kapellimestarinaan Ulrich Pöhl. Konserton kadenssi on solistin improvisaatio, säveltämä tai näiden yhdistelmä.

Veli Kujalan ja allekirjoittaneen yhteistyö on johtanut uuden instrumentin, neljäsosäsävelaskelharmonikan kehittämiseen. Neljäsosäsävelaskelharmonikan merkittävin ero standardiin konserttiharmonikkaan verrattuna on, että sen kielipenkit on vaihdettu neljäsosäsävelaskelkielipenkeihin. Neljäsosäsävelaskelkielipenkeillä voi tuottaa miltei viisioktaavisen täysneljäsosäsävelaskelasteikon.

Neljäsosäsävelaskelharmonikan on keksinyt Veli Kujala vuonna 2004. Neljäsosäsävelaskelkielipenkit on suunnitellut Veli Kujala ja rakentanut Pigini ([www.pigini.com](http://www.pigini.com)), harmonikkatehdas Italiassa, vuonna 2006. Instrumentissa käytetään tasavireistä neljäsosäsävelaskel-viritysjärjestelmää, jossa oktaavi on jaettu 24 yhtä suureen osaan. Instrumentin on viritännyt tuhannesosahertsin tarkkuudella ( $A = 442$  Hz) Tapio Peltola.

Nykyään monet säveltäjät ovat kiinnostuneita käyttämään mikrointervalleja. Tämä on synnyttänyt tarpeen kehittää lisää instrumentteja, joilla niitä voidaan tuottaa. Neljäsosäsävelaskelharmonikka on yksi vastaus tähän tarpeeseen.

Sampo Haapamäki

## Program notes

*Velinikka* is a quarter-tone accordion concerto for quarter-tone accordion and chamber orchestra. The composition was commissioned by Gaudeamus Music Week and is dedicated to Veli Kujala. It was very inspiring to compose the concerto for Veli Kujala and Insomnio conducted by Ulrich Pöhl. The cadenza of the concerto is improvised or/and composed by the soloist.

Cooperation between Veli Kujala and the undersigned has led to an elaboration of a new instrument, the quarter-tone accordion. The most significant difference between the quarter-tone accordion and a standard chromatic button accordion with free-bass system is that the reed blocks inside the accordion are replaced with quarter-tone reed blocks. The quarter-tone reed blocks are able to produce a complete quarter-tone scale of range of nearly five octaves.

The quarter-tone accordion was invented by Veli Kujala in 2004. The quarter-tone reed blocks were designed by Veli Kujala and built by Pigini ([www.pigini.com](http://www.pigini.com)), an accordion factory in Italy, in 2006. The tuning system used is quarter-tone equal temperament, in which the scale divides an octave into 24 equal-ratio steps. The quarter-tone accordion is tuned with an accuracy of one thousandth of a hertz ( $A = 442$  Hz) by Tapio Peltola.

Today many composers are interested in using micro-intervals. This increases demand for instruments able to produce them. The quarter-tone accordion is one of the answers for this demand.

Sampo Haapamäki

**Nuotinnus:****Notation:**

Tilapäiset etumerkit  
voimassa koko tahdin  
siinä oktaavialassa,  
johon ne on kirjoitettu.

Accidentals are valid  
for the whole measure  
in the octave in which  
they are written.

Heleet soitetaan ennen iskua.

Graces notes before the beat.



neljäsosasävelaskelylennys

quarter-tone sharp



neljäsosasävelaskelalennus

quarter-tone flat



viivaston samanaikaisten sävelten  
etumerkit on kirjoitettu samaan  
järjestykseen kuin nuotinpäätkin

the accidentals of the  
simultaneous notes on a stave  
appear in the same order  
as the noteheads

0.5-*gliss*  
1-*gliss.*  
1.5-*gliss*

0.5-*gliss* tarkoittaa glissandoa  
neljäsosa-, 1-*gliss.* puoli- ja  
1.5-*gliss* kolmeneljäsosa-  
sävelaskelittain

0.5-*gliss.* means a glissando by  
quarter-tone steps, 1-*gliss.* by  
half steps and 1.5-*gliss.* by  
 $\frac{3}{4}$  of whole steps

## NELJÄSOSASÄVELASKELTEN NIMITYS

neljäsosasävelaskelylennetyn päätte -US

neljäsosasävelaskelalennetun päätte -OS

C CUS CIS DOS D DUS DIS EOS E EUS FOS F FUS

FIS GOS G GUS GIS AOS A AUS AIS HOS H HUS COS

---

## NAMES OF THE QUARTER TONES

C C quarter-tone sharp C-sharp D D quarter-tone flat D D quarter-tone sharp D-sharp E E quarter-tone flat E E quarter-tone sharp F F quarter-tone flat F F quarter-tone sharp

F-sharp G G quarter-tone flat G G quarter-tone sharp G-sharp A A quarter-tone flat A A quarter-tone sharp A-sharp B B quarter-tone flat B B quarter-tone sharp C C quarter-tone flat

## QUARTER-TONE ACCORDION REGISTERS

### RIGHT HAND

COMPLETE QUARTER-TONE SCALE (QUARTER TONES)

COMPLETE QUARTER-TONE SCALE

COMPLETE QUARTER-TONE SCALE

8<sup>va-</sup>

### LEFT HAND

CHROMATIC SCALE (SEMITONES)

COMPLETE QUARTER-TONE SCALE

CHROMATIC SCALE (SEMITONES)

COMPLETE QUARTER-TONE SCALE

CHROMATIC SCALE (SEMITONES)

8<sup>bb-</sup>

15<sup>ma-</sup>

Registration symbol indicates the lowest current register in use.  
If wanted and possible, soloist can freely add upper registers to the indicated one.



## HARP TUNING $A_4 = 442 \text{ Hz}$

strings:  $C_4$   $D_4$   $E_4$   $F_4$   $G_4$   $A_4$   $B_4$

sounding result:

Tune harp as shown in staff above to  $A=442$  (cycles per second) in following register:

Strings  $C_4$ ,  $E_4$ ,  $G_4$  and  $A_4$  are meant to be tuned as C,  $E_b$ ,  $G_b$  and A. Thus strings  $C_4$  and  $A_4$  are tuned normally but strings  $E_4$  and  $G_4$  are meant to be lowered a half step from their normal pitches.

String  $D_4$  is meant to be tuned as quarter tone lowered D, string  $F_4$  as quarter tone lowered F and string  $B_4$  as quarter tone lowered B. To tune quarter lowered strings ( $D_4$ ,  $F_4$  and  $B_4$ ), set electronic chromatic tuner to  $A=455$ . Frequency 455 (or to be more exact 454,95) is the frequency of quarter tone raised A. Tune the string  $D_4$  so that the electronic chromatic tuner shows  $C\#/D_b$ , then tune the string  $F_4$  so that the tuner shows  $E\#/F_b$  and finally string  $B_4$  so that it shows  $A\#/B_b$ .

### Harp tuning with pedaling possibilities (within the register used in the composition)

strings/  
pedalings:

sounding result:

Notes on the staff in the harp part are written in C. The pedalings above the staff indicate the strings played and the pedalings used but not the sounding result. In the composition all harp pedal changes are written in the harp part.

omistettu Veli Kajalalle

# VELINIKKA

SCORE IN C

SAMPO HAAPAMÄKI

**4/4** ♩ = 36

Flute

Oboe

Clarinet in B♭

Alto Saxophone in E♭

Bassoon

Horn in F

Trumpet in C

Trombone

**4/4** ♩ = 36

Percussion

Finger Cymbals  
let vibrate  
*mf*

Harp

D: C> B♭ / E: F> G: A>

*mp*

*mf*

Quarter-tone accordion solo

*pp* *ff*

**4/4** ♩ = 36

Violin I

*p > ppp* *mp > pp* *mf > pp* *mf > pp* *f > pp* *ff > pp*

Violin II

*p > ppp* *mp > pp* *mf > pp*

Violin III

*mp > pp* *mf > pp*

Viola I

Viola II

Violoncello

Violoncello II

Double Bass (5 strings, lowest string B natural)

*ff* niente  
(diminuendo as gradual as possible)

9

Perc. *mp*

Hp. *mp*

Q-tone acc. solo *p* *f* *mp*

Vln. I *ppp* *p* *mp* *mf* *f*

Vln. II *ppp* *p* *mp* *mf* *f*

Vln. III *p* *mp* *mf* *f*



13

Q-tone acc. solo *mp* *f* *ff*

Vln. I *ppp* *p* *mp* *mf* *f*

Vln. II *ppp* *p* *mp* *mf* *f*

Vln. III *p* *mp* *mf* *f*



15

Perc. *p*

Hp. *pp*

Q-tone acc. solo *mp* *p*

Vln. I *ppp* *p*

Vln. II *ppp* *p*

Vln. III *ppp* *p*

Vc. II *pizz.* *mp* *p*

Db. *mf* (simile)

non arpeggio

C<sub>2</sub>-C<sub>2</sub> C<sub>2</sub>-C<sub>2</sub> C<sub>2</sub>-C<sub>2</sub>

19

Fl. *mp* *mf* *pp*

Perc. Glockenspiel *mp*

Hp. *mf* *mp* non arpeggio (simile)

Quarter-tone acc. solo *f* *ff* *mp* *ff* *f*

Vln. I *mf* *p*

Vln. II *mf* *p*

Vln. III *mf* *p*

Vla. I *mp* *mf* *p*

Db. *mp* *mf* *p*

*niente*

22

Fl. *p* *mp*

Perc. *mp*

Hp. *mp* C<sub>2</sub>-C<sub>2</sub> A<sub>2</sub>-A<sub>2</sub>

Quarter-tone acc. solo *mf*

Vln. I *mp*

Vln. II *mp*

Vln. III *mp*

Vla. I *mp*

Vc. II pizz. *mf*

Db. *f*

26

Perc. *mf*

Hp. *D2-D2 C2-C2* *mf*

Quarter-tone acc. solo *ff* *mf* *mp*

Vin. I *mf* *p*

Vin. II *mf* *p*

Db. *niente*



31 **(♩ = 36) accelerando . . . . . 3/4**

Perc. *mf*

Hp. *E2-E2* *G2-G2* *mp* *mf*

Quarter-tone acc. solo *f* *ff*

Vin. I *mf* *p*

Vin. II *mf* *p*

Vc. II *pizz.* *mf*

Db. *mf* *niente*

35  $\frac{3}{4}$  .....  $\frac{2}{4}$  ♩ = 54

Fl. *p* ..... *mf*

Ob. *mf* ..... *p*

Cl. *p* ..... *mf* ..... *p*

A. Sax.

Bsn.

Hr. *p* ..... *mf* (mute)

Tpt.

Tbn. *p* (cup mute)

Perc.

Hp. *mp* ..... *mf* (D>D# E>E# F#>F#)

Quarter-tone acc. solo

Vln. I *p* ..... *mf* ..... *p*

Vln. II *p* ..... *mf* ..... *p* ..... *mf*

Vln. III *p* ..... *mf* ..... *p*

Vla. I *mp* ..... *p* ..... *mf* ..... *p*

Vla. II *mp* ..... *p* ..... *mf* ..... *p*

Vc. I *p* ..... *mf*

Vc. II *mp* ..... *p* ..... *mp* (pizz.)

Db. *niente* ..... *mf* ..... *pp*

39  **$\frac{3}{4}$  accelerando**

Fl.

Ob. *mf* *pp* *p*

Cl. *mf* *pp* *p*

A. Sax. *mf* *p*

Bsn.

Hr.

Tpt.

Tbn. *mf*

Perc.  **$\frac{3}{4}$  accelerando**

Hp. *mp* C♯-C♯ F♯-F♯

Quarter-tone acc. solo *ff* *mp* *p*

**$\frac{3}{4}$  accelerando**

Vln. I

Vln. II

Vln. III *f* *pp*

Vla. I *f* *pp*

Vla. II *f* *p*

Vc. I

Vc. II

Db.

43  $\text{♩} = 81$  **rallentando**

Fl. *pp*

Ob. *pp*

Quarter-tone acc. solo *mf* *p*

$\text{♩} = 81$  **rallentando**

Vln. I *mp* *pp* *mf*

Vln. II *mp* *pp* *mf*

Vln. III

Vla. I



46  $\frac{4}{4}$   $\text{♩} = 54$   **$\frac{3}{4}$**

Fl. *mp*

Perc. *mp*

Hp. *mf*

Quarter-tone acc. solo *f* *mp*

$\frac{4}{4}$   $\text{♩} = 54$   **$\frac{3}{4}$**

Vln. III *mf* *pp*

Vla. I *mf* *pp*



51

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Suspended Cymbal

HP.

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

3/8

6/16

4/4

mf

ppp

D: C: B: / E: F: G: A: let vibrate glissando

mp

glissando

ff

mf

ff

mp

mp

mp

mf

f

f

pizz.

f

f

mf

mf

f

← ♩ = ♩ →  
4/4 ♩ = 72

Fl.  
Ob.  
Cl.  
A. Sax.  
Bsn.  
Hn.  
Tpt.  
Tbn.

Flute: *f sfz sfz sfz sfz sfz sfz sfz*  
Oboe: *f sfz sfz sfz sfz sfz sfz sfz*  
Clarinet: *f sfz sfz*  
Trumpet: *straight mute p PPP*

← ♩ = ♩ →  
4/4 ♩ = 72

Perc.  
Hp.  
Quarter-tone acc. solo

Percussion: *mp ppp*  
Harp: *mf*  
Quarter-tone acc. solo: *mp*  
Notes: *F3-F#3 G3-G#3*

← ♩ = ♩ →  
4/4 ♩ = 72

Vln. I  
Vln. II  
Vln. III  
Vla. I  
Vla. II  
Vc. I  
Vc. II  
Db.

Violin I: *ff*  
Violin II: *ff*  
Violin III: *ff*  
Viola I: *ff*  
Viola II: *ff*  
Violoncello I: *f pp*  
Violoncello II: *f*  
Double Bass: *f pp*

60

Fl. *ff*

Ob. *ff*

Cl. *ff*

Hp. *f*

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. II *pizz.* *f*

Db. *f*

A>A# B>B# C>C#

63

Fl. *ff*

Ob.

Cl.

Hp.

Quarter-tone acc. solo *mp*

Vln. I

Vln. II

Vln. III

Vla. II

Vc. II *mp*

Db. *mf*

*ppp*

66

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

3/4  $\text{♩} = 108$

4/4

3/4

3/4  $\text{♩} = 108$

4/4

3/4

3/4  $\text{♩} = 108$

4/4

3/4

*pp*

*ff*

*f*

*f*

*mp*

*mf*

*mf*

*mf*

*mf*

*mf*

*pizz.*

*niente*

*niente*

72  $\frac{3}{4}$   $\frac{2}{4}$

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.  $\frac{3}{4}$  Chinese Cymbal  $\frac{2}{4}$

Hp.

Quartet  
tone  
acc.  
solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

without mute  
*ppp*

without mute  
*ppp*

without mute  
*f*

*ppp*

*p*

A2-A3

*mf*

*ppp*

*mf*

*ff*

*ff*

*ff*

*ff*

*mf*

*f*

*f*



80

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Harp.

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vcl. I

Vcl. II

Db.

*ppp*

*mf*

*mp*

Suspended Cymbal

*ppp*

acc.

E<sub>3</sub>-E<sub>2</sub>

83

Fl. *ff* *ff*

Ob. *p* *ff* *ff*

Cl. *ff* *ff* *ff*

A. Sax. *ff* *ff* *ff*

Bsn.

Hn.

Tpt.

Tbn.

Perc. *mf*

Hp. *ff*

Quarter-tone acc. solo

Vln. I *ff*

Vln. II *ff*

Vln. III *ff*

Vla. I *ff*

Vla. II *ff*

Vc. I *ff*

Vc. II *ff*

Db.

B♭-B♯ D♯-D♯ D♯-D♭ C♯-C B♯-B♭ B♭-B♭ A♯-A♭

*p*



86 3/4

Fl. *mf* *sfz*

Ob. *mf* *sfz* *sfz*

Cl. *mf* *sfz* *sfz* *sfz*

A. Sax. *ff* *sfz* *mp*

Bsn.

Hn.

Tpt.

Tbn.

Perc. *ppp*

Harp. *B♭-B♭* *B♭-B♭* *G♯-G♯* *G♯-G♯* *F♯-F♯* *G♯-G♯* *D♯-D♯*

Quarter-tone acc. solo *mp* *f*

Vln. I *mf* *p* *p*

Vln. II *mf* *f*

Vln. III *mf* *f*

Vla. I *mf* *f*

Vla. II

Vc. I *mf* *f*

Vc. II *mf* *f*

Db.

3/4

89 **3/4** **rallentando**

Fl. *f*

Ob. *f*

Cl. *f* *ff* *mf*

A. Sax. *f* *ff* *mf*

Bsn. *ff* *f*

Hr. *mf* *f* *mf*

Tbn. *mf* *f* *mp*

**3/4** **rallentando**

Hp. *f* *mp*

Quarter-tone acc. solo *mp* *f*

**3/4** **rallentando**

Vln. I *ff* *f* *p*

Vln. II *ff*

Vln. III *ff*

Vla. I *ff* *fff* *f*

Vla. II *ff* *fff*

Vcl. I *ff* *fff* *ff* *mp*

Vcl. II *ff* *fff* *ff*

93 **2/4** **Suspended Cymbal** **♩ = 36** **4/4**

Perc. *ppp*

Hp. *p*

Quarter-tone acc. solo *ff* *mf*

Vcl. I *gliss.* **♩ = 36** **4/4**

← ♩ = ♩ →

96  $\frac{4}{4}$  ♩ = 72

Fl. *f* *sfz* *sfz* *sfz* *sfz* *sfz* *sfz* *sfz* *sfz* *fff*

Ob. *f* *sfz* *sfz* *sfz* *sfz* *sfz* *sfz* *sfz* *sfz* *fff*

Cl. *f* *sfz* *sfz* *sfz* *sfz* *sfz* *sfz* *sfz* *fff*

A. Sax. *f* *sfz* *sfz* *sfz* *sfz* *sfz* *sfz* *sfz* *fff*

Bsn.

Hr.

Tpt. straight mute *pp* *f* *fff*

Tbn.

← ♩ = ♩ →

96  $\frac{4}{4}$  ♩ = 72

Perc. *mp* *ppp*

Hp. *mf* *p* Eb-Ez Bb-Bz F-Fz C-Cz G-Gz D-Dz Ab-Az

Quarter-tone acc. solo *f* *pp*

← ♩ = ♩ →

96  $\frac{4}{4}$  ♩ = 72

Vln. I *ff*

Vln. II *ff* *fff*

Vln. III *ff* *fff*

Vla. I *ff* *fff*

Vla. II

Vc. I *giss.* *pp*

Vc. II

Db.

5  
← ♩ = ♩ →

101 ♩ = 90

rallentando

Fl. *ff* *fff* *f* *mp*

Ob. *ff* *fff*

Cl. *ff* *fff* *f* *mp*

A. Sax. *ff* *fff* *f* *mp*

Bsn. *fff* *f* *mp*

Hr. *f* *mf* *mp*

Tpt. *mp* straight mute

Tbn. *f* *mf* *p*

5  
← ♩ = ♩ →

♩ = 90

rallentando

Perc. Suspended Cymbal *ppp*

Hp. *mp* Db Cb Bb / Eb Fb Gb Ab

Quarter-tone acc. solo *ff* *fff* *f* *mp*

(0.5-gliiss.) (0.5-gliiss.) (0.5-gliiss.) (1-gliiss.) (1-gliiss.) (0.5-gliiss.) (0.5-gliiss.) (1-gliiss.) (0.5-gliiss.) 1.5-gliiss.

5  
← ♩ = ♩ →

♩ = 90

rallentando

Vln. I *ff* *fff* *mf*

Vln. II *ff* *fff* *ff* *pizz.*

Vln. III *ff* *fff* *ff* *pizz.*

Vla. I *ff* *fff* *f* *mf*

Vla. II *ff* *fff* *f* *ff* *pizz.*

Vc. I *fff* *f* *mf* *f* *ff*

Vc. II *fff* *f* *mf*

Db.

106  $\text{♩} = 72$   $\frac{3}{4}$

Fl. *f* *mp* *ppp*

Ob. *p* *pp*

Cl. *f* *mp* *ppp* *ppp*

A. Sax. *mf*

Bsn.

Hr. *mf*

Tpt. *mf* *ppp*

Tbn.

Perc. *mp* *ppp*  $\frac{3}{4}$

Hp. *mf* *mp* *pp*

Quarter-tone acc. solo *ff* *f*

$\text{♩} = 72$   $\frac{3}{4}$

Vln. I *f* *mf* *pizz.*

Vln. II *f* *mf* *arco* *pizz.*

Vln. III *f* *mf* *arco* *pizz.*

Vla. I *f* *mf* *pizz.*

Vla. II

Vc. I

Vc. II

Db.

110

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

$\leftarrow \overset{5}{\text{♩}} = \text{♩} \rightarrow$

$\frac{2}{4}$  ♩ = 90

*mp*

*p*

without mute

*pp*

Chinese Cymbal

*ppp*

$\leftarrow \overset{5}{\text{♩}} = \text{♩} \rightarrow$

$\frac{2}{4}$  ♩ = 90

$\leftarrow \overset{5}{\text{♩}} = \text{♩} \rightarrow$

$\frac{2}{4}$  ♩ = 90

*ppp*

*ppp*

115

Fl. *mp* *mf*

Ob. *mf*

Cl. *mf*

A. Sax. *p* *mf*

Bsn. *f*

Hn. *mf*

Tpt. *mf*

Tbn. *mf* *mp*

Perc. *mp*

Hp.

Quarter-tone acc. solo *fff*

Vln. I *ff* *fff*

Vln. II *ff* *fff*

Vln. III *ff* *fff*

Vla. I *ff* *fff*

Vla. II *pizz.* *ff* *fff*

Vc. I *ff*

Vc. II *pizz.* *f* *ff*

Db. *ff*





122

Fl. *pp*

Hr. *mp*

Quarter-tone acc. solo *f* *pp*

Vln. I *ff*

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II *arco* *ff*

Db. *mp*

124

Fl. *ppp* *fff*

Hr. *f* *pp* *ff*

Vln. I *p* *fff*

Vln. II *p* *ff*

Vln. III *p* *mf*

Vla. I *p*

Vla. II *p*

Vc. I *mp*

Vc. II *p*

**3/4**

126 **3/4** **rallentando**

Fl. *f* *pp* *mp*

Ob. *f* *pp* *f*

Cl. *ff* *pp* *f*

A. Sax. *ff* *p* *p < f* *mp*

Bsn. *ff* *pp* *mf* *p*

Hr.

Tpt.

Tbn. *mp* *ppp*

**3/4** **rallentando**  
Gran Cassa

Perc. *mf* *mp*

Hp.

Quarter-tone acc. solo *ff* *ppp*

**3/4** **rallentando**

Vln. I *ff* *pp* *f*

Vln. II *ff* *pp* *f*

Vln. III *f* *pp* *f*

Vla. I *ff* *pp*

Vla. II *ff* *pp < mp*

Vc. I *ff* *p*

Vc. II *ff* *pp*

Db. *ff* *ppp* *gliss.* *pp*

131 **♩ = 54** **rallentando** **♩ = 36** (fermata on the bar line, only shared notes are meant to be sustained)

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hrn.

Tpt.

Tbn.

Perc.

Gran Cassa

Wind Chimes

Hp.

D<sub>2</sub>-D<sub>4</sub> C<sub>2</sub>-C<sub>4</sub> B<sub>2</sub>-B<sub>4</sub> A<sub>2</sub>-A<sub>4</sub>

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vcl. I

Vcl. II

Db.

**♩ = 54** **rallentando** **♩ = 36** (fermata on the bar line, only shared notes are meant to be sustained)

← 3 = ♩ →

♩ = 108

134

Fl. *solo*

Ob. *mp* *mf* *mp*

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

4/4 3/4

*p* *mp*

← 3 = ♩ →

♩ = 108

Perc. *mp* *Glöckenspiel*

Hp. *mp*

Quarter-tone acc. solo

D2-D2 C2-C2 B2-B2 A2-A2 C3-C3 F3-F3 G3-G3 F3-F3

4/4 3/4

← 3 = ♩ →

♩ = 108

Vln. I *pp* *poco a poco cresc.* *last* *slow the trill down* *slow*

Vln. II *pp* *poco a poco cresc.*

Vln. III *pp* *poco a poco cresc.*

Vla. I *p* *poco a poco cresc.*

Vla. II *p* *poco a poco cresc.*

Vc. I *mp*

Vc. II

Db.

4/4 3/4

*p* *poco a poco cresc. (simile)*

*p* *poco a poco cresc. (simile)*

*p* *poco a poco cresc. (simile)*

*p* *poco a poco cresc.*

141

Fl.

Ob.

Cl.

A. Sax. *solo* *f*

Bon.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo

Vln. I *mp*

Vln. II *mp*

Vln. III *mp*

Vla. I *mp poco a poco cresc. (simile)*

Vla. II *mp poco a poco cresc. (simile)*

Vc. I *poco a poco cresc.*

Vc. II

Db.

6/8

2/4 *♩ = 72*

4/4

3/4

6/8

2/4 *♩ = 72*

4/4

3/4

6/8

2/4 *♩ = 72*

4/4

3/4

147  $\frac{3}{4}$   $\frac{4}{4}$  ♩ = 120

Fl. *mf* *ff*

Ob. *mf* *ff*

Cl. *ff* *fff*

A. Sax. *mf* *fff*

Ban. *mf* *fff*

Hr. *mf* *fff*

Tpt. *mf* *fff*

Tbn. *f* *fff*

Perc. *ppp* *p* *mf* *ppp*  
Gran Cassa

Hp.

Quar-  
-tone  
-acc.  
-solo

*ff* *fff* *ppp*

Vln. I *mp*

Vln. II *f* *mp*

Vln. III *f* *mp*

Vla. I *f* *mp*

Vla. II *f* *mp*

Vc. I *f* *fff* *ppp*

Vc. II *fff* *ppp*

Db. *ff* *ppp*  
♯ (Bartok-pizz.)

152

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

3/4

3/4

3/4

fff

f

mf

ppp

Gran Cassa

Tam-Tam

C2-C2

3

arco

155  $\frac{3}{4}$

Fl. *ppp*

Cl. *ppp*

Perc.  $\frac{3}{4}$  Splash Cymbal *mp*

Hp. *f*

Quarter-tone acc. solo

Vc. I *p*

Vc. II *p*

Db. *p*

160

Cl. *ppp*

Perc. Gran Cassa *mp*

Quarter-tone acc. solo

Vin. I *fff* *pp*

Vin. II *fff* *pp*

Vin. III *fff* *pp*

Vla. I *fff* *pp*

Vla. II *fff* *pp*

Vc. I

Vc. II

Db.



165

Perc. *mf*

Quarter-tone acc. solo *fff* *1.5-gloss.* *ppp* *fff* *ff* *ppp* *ff* *f* *ppp* *ff* *ppp*

Vln. I *fff* *pp* *fff* *pp* *fff* *pp* *fff* *pp*

Vln. II *fff* *pp* *fff* *pp* *fff* *pp* *fff* *pp*

Vln. III *fff* *pp* *fff* *pp* *fff* *pp* *fff* *pp*

Vla. I *fff* *pp* *fff* *pp* *fff* *pp* *fff* *pp*

Vla. II *fff* *pp* *fff* *pp* *fff* *pp* *fff* *pp*

Vc. I *mf* *f* *fff* *pp*

Vc. II *mf*

Db. *mf*

169

Perc. *p* *pp*

Quarter-tone acc. solo *fff* *ppp* *ff* *ppp* *f* *ff* *ppp* *f* *ppp* *ff* *ppp* *f* *ppp* *mf* *ppp* *f* *ppp* *mf* *ppp* *mp* *ppp*

Vln. I *fff* *fff* *pp* *fff* *pp* *fff* *fff* *pp* *fff* *f*

Vln. II *fff* *fff* *pp* *fff* *pp* *fff* *fff* *pp* *fff* *f*

Vln. III *fff* *fff* *pp* *fff* *pp* *fff* *fff* *pp* *fff* *f*

Vla. I *fff* *fff* *pp* *fff* *pp* *fff* *fff* *pp* *fff* *f*

Vla. II *fff* *fff* *pp* *fff* *pp* *fff* *fff* *pp* *fff* *f*

Vc. I *fff* *fff* *pp* *fff* *pp* *fff* *fff* *pp* *fff* *f*

Vc. II *f* *fff* *pp* *fff* *fff* *fff* *pp* *fff* *f*

Db. *f*

173

$\frac{6}{8}$   $\frac{3}{4}$  ♩ = 80 *rallentando* ..... *accelerando*

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hr.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo

*fff > ppp ff > ppp mf > ppp mp p ppp fff*

$\frac{6}{8}$   $\frac{3}{4}$  ♩ = 80 *rallentando* ..... *accelerando*

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vcl. I

Vcl. II

Db.

*mf mp p pp pp fff pp*

178 **rallentando** . . . . .  $\frac{2}{4}$   $\text{♩} = 54$  **rallentando** . . . . .  $\text{♩} = 36$   $\text{♩} = 72$

FL. *mp* *fff* *pp*

Ob. *f* *fff* *f*

Cl. *pp* *fff* *p*

A. Sax. *p* *fff* *p*

Bsn. *pppp* *fff* *f*

Hrn.

Tpt. *mf* *f* *mf*

Tbn.

**rallentando** . . . . .  $\frac{2}{4}$   $\text{♩} = 54$  **rallentando** . . . . .  $\text{♩} = 36$   $\text{♩} = 72$

Perc. Gran Cassa *mf*

Hp. G3-G4 *ff* D3 C3 B2 / E3 F3 G3 A3

Quarter-tone acc. solo *pppp* *mf* *p*

**rallentando** . . . . .  $\frac{2}{4}$   $\text{♩} = 54$  **rallentando** . . . . .  $\text{♩} = 36$   $\text{♩} = 72$

Vln. I *pp* *fff* *pp*

Vln. II *p* *fff* *mf* *p*

Vln. III *mp* *fff* *ff*

Vla. I *mf* *fff* *mf*

Vla. II *f* *fff* *f*

Vc. I *ff* *fff* *mf*

Vc. II *fff* *f*

Db. *fff* *f*

183

Perc. **3/4**  
 Suspended Cymbal (wire brushes) *pp*  
 Chinese Cymbal (wire brushes) *mp*  
 Splash Cymbal (wire brushes) *pp*  
 Chinese Cymbal (wire brushes)

Hp. *ppp* *niente*

Quarter-tone acc. solo

Vln. I *pizz.* *mp* *ff* *ff* *mf*

Vln. II *pizz.* *mp* *ff* *ff* *f*

Vln. III *pizz.* *mp* *ff* *ff* *f*

Vla. I *pizz.* *mf* *ff* *ff* *f*

Vla. II *pizz.* *mf* *ff* *ff* *f*

Vc. I *pizz.* *f* *ff* *ff* *f*

Vc. II *pizz.* *ff* *ff* *ff* *ff*

Db. (Bartok-pizz.) *f*

**3/4**

190 **3/4** **2/4**

Perc. *mf* *pp*  
 Suspended Cymbal (wire brushes)  
 Chinese Cymbal (wire brushes)  
 Splash Cymbal (wire brushes)

Quarter-tone acc. solo

192 **2/4** **2/4**

Quarter-tone acc. solo

Vln. I *arco* *mf*

Vln. II *arco* *mf*

Vln. III

Vla. I

194 solo

**6**  
**16**

Fl. *ff*

Ob.

Cl. *f*

A. Sax. *f*

Bsn.

Hr.

Tpt.

Tbn.

Perc. Suspended Cymbal (wire brushes) *mf* Chinese Cymbal (wire brushes) **6** **16** Splash Cymbal (wire brushes) *pp*

Hp. *D♭ C♭ B♭ / E♭ F♭ G♭ A♭* *mf* *f*

Quarter-tone acc. solo *mp* *f* *fff*

**6**  
**16**

Vln. I *pizz.* *arco*

Vln. II *pizz.* *arco*

Vln. III *arco* *mf* *pizz.* *arco* *f*

Vla. I *arco* *mf*

Vla. II

Vc. I

Vc. II

Db.

198 3/4

Fl. *mf*

Ob. *p*

Cl. *ff* *p*

A. Sax. *p*

Bsn.

Hn.

Tpt. without mute *ppp* *p*

Tbn.

Perc.

Hp. *glissando* *ff*

Quarter-tone acc. solo *f* Bellows Shakes

Vln. I *f* *ff* *fff*

Vln. II *f* *ff* *fff*

Vln. III *ff* *fff*

Vla. I *ff* *fff*

Vla. II arco *mf* *ff*

Vc. I arco *f* *ff*

Vc. II

Db.

3/4

201  $\frac{3}{4}$  ♩ = 96

Fl. *ff* *fff* *p*

Ob. *ff* 3 5

Cl. *ff* 3 5

A. Sax. *ff* 3 5

Bon. *f* 3 *mf*

Hn. *mp* *ppp*

Tpt. *mf* 3 5 *f*

Tbn. *f* *pp*

Perc.  $\frac{3}{4}$  ♩ = 96  
tam-tam *ppp* *mp*

Hp. *p* *mf* niente

Quarter-tone acc. solo *ff* *Normal*

Vln. I  $\frac{3}{4}$  ♩ = 96 *mp* *ppp*

Vln. II *mp* *ppp*

Vln. III *mf* *pp*

Vla. I *f*

Vla. II *f*

Vc. I *ff*

Vc. II *arco* *ff*

Db. *arco* *bas* *fff*

204

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

*pp* *ppp* *mp* *mf* *f* *fff*

solo

"overtone gliss."

I → II → III → IV → V → VI → VII

Bellows Shakes



206 **rallentando**  $\text{♩} = 72$

Fl. *fff* *f* **2/4** **3/4**

Ob. *fff* *mf*

Cl. *fff* *f*

A. Sax. *fff* *mp*

Bsn. *f* *mp* *fff*

Hrn. *f* *mf* *mf* *mp*

Tpt. *f* *mp* *p*

Tbn. *f* *mf* *mp* *ppp* *mp*

Perc. **rallentando**  $\text{♩} = 72$  **2/4** **3/4** Gran Cassa *mp*

Hp. C<sub>2</sub>-C<sub>2</sub> A<sub>2</sub>-A<sub>2</sub> C<sub>2</sub>-C<sub>2</sub> *ff*

Quarter-tone acc. solo *fff* *ppp* *ff* Normal

Vln. I **rallentando**  $\text{♩} = 72$  *fff* *f* **2/4** **3/4** *mf* *f*

Vln. II *fff* *mf* *f*

Vln. III *fff* *f* *mf* *f*

Vla. I *fff* *f* *mf* *ff*

Vla. II *fff* *f* *mp* *ff*

Vc. I *fff* *mf* *pp* *mp* *ff*

Vc. II *fff* *f* *mp* *pp* *ff*

Db. *fff* *mp* *pp* *f*

211  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$  ♩ = 108

Fl. *mf* *pp*

Ob.

Cl. *mf* *pp*

A. Sax. *f* *p*

Bsn. *fff*

Hn.

Tpt.

Tbn. *f* *p*

Perc.  $\frac{3}{4}$   $\frac{2}{4}$   $\frac{3}{4}$  ♩ = 108

Hp. C<sub>2</sub>-C<sub>3</sub> C<sub>3</sub>-C<sub>4</sub> C<sub>4</sub>-C<sub>5</sub> *fff* *mf*

Quarter-tone acc. solo *fff*

Vln. I *f* *ff*  $\frac{3}{4}$  ♩ = 108

Vln. II *ff*

Vln. III *ff*

Vla. I *fff*

Vla. II *fff*

Vcl. I *fff*

Vcl. II *fff*

Db. *fff*

215 **2/4**

Fl.

Ob.

Cl. *sol*  
*ff*

A. Sax. *sol*  
*ff*

Bsn. *sol*  
*ff*  
*gliss.*

Hr.

Tpt.

Tbn.

Perc. **2/4**

Hp.

Quarter-tone acc. solo  
*ppp*  
Bellows Shakes

Vln. I **2/4**

Vln. II *pp*

Vln. III *pp*

Vla. I *p*  
*ff*

Vla. II *p*  
*ff*

Vc. I *p*  
*ff*

Vc. II *p*  
*ff*

Db. *pizz.*  
*mp*

218

Fl. *fff* *ppp*

Ob. *fff* *ppp*

Cl. *ppp*

A. Sax. *ppp* *ppp*

Bsn. *f* *mp*

Hn. *f* *ppp*

Tpt. *f* *pp*

Tbn.

Perc.

Harp. *pp* *p* *mp*

Quarter-tone acc. solo *fff* *pp* *Normal*

Vln. I *ff* *pp* *ppp*

Vln. II *fff* *pp*

Vln. III *fff* *pp*

Vla. I *pp* *ppp*

Vla. II *pp*

Vcl. I *pp* *ppp*

Vcl. II *pp* *ppp*

Db. *fff* *pp*

3/4 4/4 2/4

3/4 4/4 2/4

3/4 4/4 2/4

D $\flat$ -D $\natural$  B $\flat$ -B $\natural$  E $\flat$ -E $\natural$  F $\flat$ -F $\natural$  G $\flat$ -G $\natural$  non arpeggio (simile) C $\flat$ -C $\natural$

223  $\frac{2}{4}$  ♩ = 90  $\frac{3}{4}$   $\frac{4}{4}$   $\frac{5}{4}$   $\frac{2}{4}$  ♩ = 72  $\frac{3}{4}$

Fl. *ppp*

Ob. *ppp*

Cl. *ppp*

A. Sax. *f* *secco*

Bsn. *f*

Hn. *ppp* without mute

Tpt.

Tbn.

Perc.  $\frac{2}{4}$  ♩ = 90  $\frac{3}{4}$   $\frac{4}{4}$   $\frac{5}{4}$   $\frac{2}{4}$  ♩ = 72  $\frac{3}{4}$

Harp. *mf* *p* *mf* *p* *pp* *mf* *p* *pp* *ppp* *mf*

Quarter-tone acc. solo *fff* *pp* *fff* *pp* *fff* *pp* *fff* *pp* *fff* *pp*

Vln. I *pp* *arco*

Vln. II *ppp* *pizz.* *pp*

Vln. III *ppp* *pizz.* *p*

Vla. I *ppp* *secco* *f*

Vla. II *ppp* *secco* *f*

Vcl. I *pp* *secco* *f*

Vcl. II *p* *secco* *f*

Db.

228  $\frac{3}{4}$   $\frac{4}{4}$   $\frac{5}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\text{♩} = 54$

Fl. *ppp*

Ob.

Cl.

A. Sax. *ppp*

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp. *G#-G#* *D#-D# C#-C# E#-E# F#-F#* *f*

Quarter-tone acc. solo *fff* *pp* *fff* *pp* *fff* *pp* *fff*

Vln. I  $\frac{3}{4}$   $\frac{4}{4}$   $\frac{5}{4}$   $\frac{2}{4}$   $\frac{3}{4}$   $\text{♩} = 54$

Vln. II

Vln. III

Vla. I *ppp* *ff* *secco*

Vla. II *ppp* *mp*

Vc. I *ppp* *mp* *pizz.*

Vc. II *ppp* *p*

Db.

232

3/4 2/4 5/4

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

*ppp*

*pppp*

*ppp*

*pp*

*p*

*mf*

*mp*

*pp*

*f*

*fp*

*f*

*fff*

*pp*

*mf*

Suspended Cymbal

G<sup>+</sup>-G<sub>2</sub>

B<sub>2</sub>-B<sub>2</sub>: A<sub>2</sub>-A<sub>2</sub>

*glissando*

3/4 2/4 5/4

← ♩ = 108 →

236  $\frac{5}{4}$  ♩ = 108  $\frac{4}{4}$

Fl. *mf* *pp* *mf* *ppp* *mf*

Ob. *mf* *mp* *p*

Cl. *mf* *pp* *mf* *ppp* *mf* *ppp*

A. Sax. *f* *ppp*

Bsn. *mf* *pp* *mf* *ppp*

Hr. *mf* *mp* *ppp*

Tpt. *mp* *ppp*

Tbn. without mute *mf* *ppp* *f* *pp*

Perc. *mp* *ppp* Gran Cassa *mp*

Hp. *D: C2 B2 / E2 F2 G2 A2* *mf* niente

Quarter tone acc. solo *f* *mf* *fff* *pp*

← ♩ = 108 →

$\frac{5}{4}$  ♩ = 108  $\frac{4}{4}$

Vln. I *mf* *pp* *mp* *ppp*

Vln. II *ff* *mf* *mp* *ppp*

Vln. III *ff* *mf* *mf* *pp*

Vla. I *f* *p* *f* *ppp*

Vla. II *f* *p* *f* *ppp*

Vcl. I *f* *p* *ff* *ppp*

Vcl. II *f* *mp* *ff* *ppp*

Db. *ff* *mp* *fff* *ppp*



239

Fl. *ppp* *p* *ppp*

Ob.

Cl. *ppp* *p* *ppp*

A. Sax. *ppp* *p* *ppp*

Bn. *ppp* *p* *ppp*

Hn.

Tpt.

Tbn.

Perc. Gran Cassa *p*

Hp.

Quarter-tone acc. solo

Bellows Shakes

Vln. I *solli* *ff* *p*

Vln. II *solli* *ff* *p*

Vln. III *solli* *ff* *mp*

Vla. I *solli* *ff* *f* *mf*

Vla. II *solli* *ff* *f*

Vc. I *solli* *ff* *mp* *ff*

Vc. II *solli* *ff* *mp* *fff*

Db. *fff*

241

3/4

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hr.

Tpt.

Tbn.

3/4

Perc.

Hp.

F2-F3 G2-G3

Quarter-tone acc. solo

Normal

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vcl. I

Vcl. II

Db.

3/4

244

3/4      2/4 ♩ = 72      3/4      2/4

Fl.

Ob.

Cl.

A. Sax.

Bon.

Hn.

Tpt.

Tbn.

Perc.

Hrp.

Quarter  
stone  
acc.  
solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

251 **2/4** **6/16**

Fl. *mp*

Ob.

Cl. *p* *ff*

A. Sax. *mp* *mf* *ff*

Bsn. *f* *ff*

Hn.

Tpt. *f* without mute

Tbn. *f*

Perc. **2/4** **6/16**  
Gran Cassa *pp*

Hp. *ff* D: C3 Bb / Eb F# G# Ab

Quarter-tone acc. solo

Vln. I *p* *mp* *mf* *f* *fff*

Vln. II *p* *mp* *fff*

Vln. III *ff* *fff*

Vla. I *mp* *fff* *fff* *fff* *fff*

Vla. II *fff* *mf* *fff* *fff*

Vc. I *mf* *fff* *fff* *fff*

Vc. II *mf* *fff* *fff* *fff*

Db. *mf* *f* *ff*

256

FL. *mp* *mf*

Ob. *mp*

Cl. *mp*

A. Sax. *mp*

Ban. *mf*

Hn. *mf*

Tpt. straight mute *mf*

Tbn. straight mute *mf*

Perc. *mp* Tam-Tam *ppp* Gran Cassa *ppp*

Hp. *fff* *glissando* *mp*

Quarter-tone acc. solo

Vln. I *mf* *sfz* *sfz* *sfz*

Vln. II *mf* *sfz* *sfz* *sfz*

Vln. III *mf* *sfz* *sfz* *sfz*

Vla. I *sfz* *sfz* *sfz*

Vla. II *mp*

Vc. I *mp*

Vc. II *mp*

Db.

260

Fl. *ff*

Ob. *ff*

Cl. *ff*

A. Sax. *ff*

Bn. *ff*

Hn. *f* *mp* *pp*

Tpt. *pp*

Tbn. straight mute *p* *pp*

Perc. *p* Suspended Cymbal (medium mallet)  
*p* Gran Cassa

Hp. *ff*

Quarter-tone acc. solo

Vln. I *sfz* *ff*

Vln. II *sfz* *ff*

Vln. III *sfz* *ff*

Vla. I *sfz* *ff*

Vla. II *ff*

Vc. I *ff*

Vc. II *pp*

Db. *pp*

264

FL. *mp* *ff*

Ob. *p* *ff*

Cl. *mp* *ff*

A. Sax. *mp* *ff*

Bsn. *mp* *ff*

Hn. *ff*

Tpt. *ff*

Tbn. *ff*

Perc. Chinese Cymbal *mp* *mf* Splash Cymbal *mf*  
Gran Cassa *mp* *mf* Gran Cassa *mf*

Hp. *ff*

Quarter-tone acc. solo *fff* 1.5-glass. 1.5-glass. simile

Vln. I *fff*

Vln. II *fff*

Vln. III *fff*

Vla. I *fff*

Vla. II *fff* soli

Vc. I *fff* soli

Vc. II *fff* soli

Db. *fff* soli

33

33

33

268

secco

$\leftarrow \text{♪} = \text{♪} \rightarrow$

$\frac{3}{4}$  ♩ = 144

Fl.

ff

f

Ob.

secco

ff

f

Cl.

secco

ff

f

A. Sax.

secco

ff

f

Bsn.

secco

ff

f

Hr.

secco

ff

mf

Tpt.

secco

ff

mp

Tbn.

secco

ff

mf

ppp

Perc.

$\leftarrow \text{♪} = \text{♪} \rightarrow$

$\frac{3}{4}$  ♩ = 144

f

f

Hp.

Quarter-tone acc. solo

ff

$\leftarrow \text{♪} = \text{♪} \rightarrow$

$\frac{3}{4}$  ♩ = 144

strong accents

Vln. I

mf

fff

Vln. II

f

p

Vln. III

f

Vla. I

f

Vla. II

f

Vc. I

f

Vc. II

f

Db.

f



273

FL. *p* *pp* *ppp*

Ob. *p* *pp* *ppp*

Cl. *p* *pp* *ppp*

A. Sax. *p* *pp* *ppp* *f*

Bsn. *p* *ppp*

Hr. *ppp*

Tpt. *pppp* *f* without mute *sol* without mute

Tbn. *f*

Perc.

Hp.

Quarter-tone acc. solo

Vln. I *sol*

Vln. II *strong accents* *fff*

Vln. III *p* *pp* *fff* *strong accents*

Vla. I *p* *ppp* *fff* *strong accents*

Vla. II *p* *ppp*

Vc. I *p* *ppp*

Vc. II *p* *ppp*

Db. *p* *ppp*

279

rallentando . . . . .

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hr.

Tpt.

Tbn.

mf

mp

p

pp

mp

p

mf

pp

f

mp

p

rallentando . . . . .

Perc.

Hp.

Quarter-tone acc. solo

mf

rallentando . . . . .

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vcl. I

Vcl. II

Db.

mf

mp

mf

mf

p

mp

mp

mp

mp

285  $\text{♩} = 108$  **rallentando** . . . . .

Fl. *ff* *ppp* *mf*

Ob. *mf* *mf* *p*

Cl. *f* *ppp* *f* *p*

A. Sax. *mp* *mf* *f* *mp* *p* *pp*

Bsn. *f* *fff* *f* *mp* *p*

Hr. *pp* *mf* *pp* *ff* *mf*

Tpt. *ppp* *f* *mf* *p*

Tbn. *ppp* *f* *mf* *mp*

Perc.  $\text{♩} = 108$  **rallentando** . . . . .  
Gran Cassa *mf*

Hp.

Quarter-tone acc. solo

Vln. I *fff* *ppp* *ff*

Vln. II *fff* *ppp* *f*

Vln. III *fff* *mp* *f*

Vla. I *fff* *fff*

Vla. II *fff* *f* *ff*

Vcl. I *fff* *fff* *p*

Vcl. II *fff* *fff* *p*

Db.

290

Fl. *ppp* *mf* *secco*

Ob. *mf* *secco*

Cl. *ppp* *mf* *secco*

A. Sax. *mf* *secco*

Bsn. *mf* *secco*

Hn. *mp* *secco*

Tpt. *mp* *secco*

Tbn. *mp* *secco*

Perc. Wind Chimes *ppp* Chinese Cymbal *ppp* *p* *ppp*

Hp.

Quarter-tone acc. solo *pp* *mf* *f* *1.5-gliss.*

Vln. I *pp* *mf*

Vln. II *pp* *mf*

Vln. III *pp* *mf*

Vla. I *p* *pp* *mf*

Vla. II *pp* *mf*

Vc. I *pp* *mf*

Vc. II *mf*

Db. *mf*

Tempo markings:  $\text{♩} = 72$  (2/4),  $\text{♩} = 144$  (3/4)

296

FL. *mp* *p* *pp*

Ob. *p* *pp* *ppp* *pppp*

Cl. *mp* *p* *pp*

A. Sax. *mp* *p* *pp*

Bsn. *mp* *p* *ppp*

Hr. *p* *ppp*

Tpt. *pp* *pppp*

Tbn. *p* *ppp*

Perc.

Hp.

Quartet  
-one  
acc.  
solo

Vln. I *mp* *p* *ff* *strong accents*

Vln. II *mp* *p* *ff* *strong accents*

Vln. III *mp* *p* *ff* *strong accents*

Vla. I *mp* *p*

Vla. II *mp* *p*

Vc. I *mp* *p*

Vc. II *mp* *p*

Db. *mp* *p* *ppp*

302

Fl. *ppp*

Ob. *mp*

Cl. *ppp* *ppp* *mf*

A. Sax. *ppp* *piu mp* *espressivo* *mp*

Bsn. *p*

Hn. *p*

Tpt. *straight mute* *p*

Tbn.

Perc.

Hp.

Quarter-tone acc. solo *pp*

Vln. I *mp* *ppp*

Vln. II *mp*

Vln. III *mp*

Vla. I *ppp*

Vla. II *ppp* *p*

Vc. I *ppp*

Vc. II *ppp*

Db.



312

Fl. *f* *ff*

Ob. *f* *ff*

Cl. *f* *ff*

A. Sax. *f* *ff*

Bsn. *fff*

Hn.

Tpt. *f* *ppp*

Tbn. *p*

Perc. *pp* Tam-Tam

Hp. *mp*

Quarter-tone acc. solo

Vln. I *ff* *ppp*

Vln. II *ff* *ppp*

Vln. III *ff* *ppp*

Vla. I *fff*

Vla. II *fff*

Vc. I *fff*

Vc. II *fff*

Db. *fff*

Tempo:  $\text{♩} = 96$

Time signature:  $\frac{3}{4}$  and  $\frac{4}{4}$

Chords: D<sub>2</sub> C<sub>3</sub> B<sub>2</sub> / E<sub>3</sub> F<sub>3</sub> G<sub>3</sub> A<sub>3</sub>

Detailed description: This page of a musical score, numbered 120, contains measures 312 through 314. It features a large ensemble of instruments. The woodwind section (Flute, Oboe, Clarinet, Alto Saxophone, Bassoon, Horn, Trumpet, Trombone) and brass section (Tuba) are active in the first system. The string section (Violins I, II, III, Violas, Cellos, Double Bass) and percussion (Percussion, Harp) are active in the second system. The harp part includes a chord progression: D<sub>2</sub> C<sub>3</sub> B<sub>2</sub> / E<sub>3</sub> F<sub>3</sub> G<sub>3</sub> A<sub>3</sub>. A quarter-tone accented solo is marked for the strings. The score includes dynamic markings such as *f*, *ff*, *fff*, *p*, *pp*, and *ppp*. A tempo marking of  $\text{♩} = 96$  is present. The time signature changes from  $\frac{3}{4}$  to  $\frac{4}{4}$  at the end of the page. A rehearsal mark with a double bar line and a right-pointing arrow is located above the first system.



315

Fl. *pp* *mp* *mf*

Ob. *p*

Cl. *pp* *mp* *mp*

A. Sax. *pp*

Bsn. *ff* *ff*

Hn. *mf* *mp*

Tpt. *mf* without mute

Tbn. *mf*

Perc. *mf* *pp* *ppp*

Harp. *f* *mp*

Quarter-tone acc. solo

Bellows Shakes

Vln. I *mp* *ff*

Vln. II *mp* *ff*

Vln. III *mf* *ff*

Vla. I *f* *ff*

Vla. II *f* *mf* *ff*

Vc. I *ff* *mp* *ff*

Vc. II *ff* *p* *ff*

Db. *ff* *pp*

318 3/4

Fl. *mp*

Ob. *p*

Cl. *p*

A. Sax. *pp*

Bsn. *pp*

Hn. *mf*

Tpt.

Tbn.

Perc. 3/4

Hp.

Quarter-tone solo *mp*

Vln. I *pp*

Vln. II *pp*

Vln. III *p*

Vla. I *p*

Vla. II *mp*

Vc. I *mf*

Vc. II *mf*

Db.

321 **3/4** **4/4** *rallentando* **3/4**

Fl. *ff* *fff*

Ob. *f* *fff*

Cl. *ff* *fff*

A. Sax. *f* *fff*

Bsn. *mf*

Hr. *f*

Tpt. *f*

Tbn. *mf* *ff* *mf*

Perc. **3/4** *pp* *mf* *p* **3/4**

Wind Chimes

Hp.

Quarter-tone acc. solo *fff*

Vln. I *mp* *fff*

Vln. II *mf* *fff*

Vln. III *mf* *fff*

Vla. I *ff*

Vla. II *ff*

Vc. I *fff*

Vc. II *fff*

Db.

324  $\frac{3}{4}$   $\text{♩} = 72$   $\text{♩} = 144$  *rallentando*

Fl. *f*

Ob. *mf*

Cl. *f*

A. Sax. *mp*

Bsn. *f* *mp* *fff* *pp*

Hr. *mf* *mf* *mp*

Tpt. *mp* *p*

Tbn. *mf* *mp* *f* *pp*

Per.  $\frac{3}{4}$   $\text{♩} = 72$   $\text{♩} = 144$  *rallentando*  
Gran Cassa *mf* *ppp*

Hp.

Normal

Quarter tone acc. solo *ppp*

Vln. I  $\frac{3}{4}$   $\text{♩} = 72$   $\text{♩} = 144$  *rallentando* *f* *ppp*

Vln. II *mf*

Vln. III *f*

Vla. I *fff* *f*

Vla. II *fff* *f*

Vcl. I *fff* *mf* *ff*

Vcl. II *fff* *f* *mf* *ff*

Db. *ff* *mf* *fff*

330  $\text{♩} = 90$  *rallentando* . . . . .  $\text{♩} = 72$   $\frac{4}{4}$   $\text{♩} = 108$

FL. *mp* *fff* *pp*

Ob. *f* *fff* *f*

Cl. *pp* *fff* *p*

A. Sax. *p* *fff* *p*

Bsn. *ppp* *fff* *f* *p* *ff*

Hr. *straight mute* *mf* *f* *mf*

Tpt. *mf* *f* *mf*

Tbn. *ppp* *mf*

Perc. *Gran Cassa* *mf*  $\text{♩} = 90$  *rallentando* . . . . .  $\text{♩} = 72$   $\frac{4}{4}$   $\text{♩} = 108$

Hp. *ff*

Quarter-tone acc. solo *pp* *fff* *ppp* *mp*

Vln. I  $\text{♩} = 90$  *rallentando* . . . . .  $\text{♩} = 72$   $\frac{4}{4}$   $\text{♩} = 108$  *pp* *fff* *pp*

Vln. II *p* *fff* *mf* *p*

Vln. III *mp* *fff* *f*

Vla. I *mf* *fff* *mf* *mf*

Vla. II *f* *fff* *f* *mf*

Vc. I *p* *ppp* *ff* *fff* *mf* *pp* *fff*

Vc. II *p* *ppp* *fff* *f* *ppp* *fff*

Db. *p* *ppp* *fff* *f* *ppp* *ff*



340

Fl. *mf* *ff* sub. *mf*

Ob. *mp* *f* sub. *mp*

Cl. *mf* *f* sub. *mp*

A. Sax. *mf* *f* sub. *p*

Bsn. *ff*

Hn. *f*

Tpt. without mute *mp* *mf*

Tbn. *mp* *mp* *mf*

Perc. *mp*

Harp. *mf* glissando *ff*

Quarter-tone acc. solo *fff*

Vln. I *mf* gliss.

Vln. II *mf* gliss.

Vln. III *mf* gliss.

Vla. I *f*

Vla. II *f*

Vc. I *f*

Vc. II *f*

Db. *mf* *ff*

3/4

3/4

3/4

344

Fl. *p*

Ob. *p*

Cl. *pp* *p*

A. Sax. *pp* *p*

Bsn. *p*

Hn.

Tpt. *ppp*

Tbn. *ppp*

Perc.

Hp.

Quarter-tone acc. solo *pp*

Vln. I *ppp*

Vln. II *p*

Vln. III *p*

Vla. I *p*

Vla. II *p*

Vc. I *gliss.*

Vc. II *gliss.*

Db. *p*

Detailed description: This page of a musical score covers measures 344, 345, and 346. The instrumentation includes Flute, Oboe, Clarinet, Alto Saxophone, Bassoon, Horn, Trumpet, Trombone, Percussion, Harp, Quarter-tone solo, Violin I, Violin II, Violin III, Viola I, Viola II, Violoncello I, Violoncello II, and Double Bass. The score features complex woodwind and string passages with various dynamics such as *pp*, *p*, and *ppp*. The Quarter-tone solo part includes glissando markings and a 4:3 ratio. The Violoncello parts feature glissando markings. The page number 71 is centered at the bottom.



348

Fl. *ppp*

Ob. *ppp*

Cl. *ppp* *mf*

A. Sax. *ppp* *p* *mp*

Bsn. *ppp*

Hn. *pp*

Tpt.

Tbn. *p*

Perc. Wind Chimes *ppp*

Hp. *pp*

Quarter-tone acc. solo *pp* 1-gliss. 1-gliss. 1-gliss. 1-gliss. simile

Vln. I *mf*

Vln. II *ppp*

Vln. III *ppp*

Vla. I *ppp*

Vla. II *ppp*

Vcl. I *ppp*

Vcl. II *ppp*

Db. *ppp* *f*

351

Fl. *ff*

Ob. *ff*

Cl. *f* *ff*

A. Sax. *ff*

Bsn. *fff*

Hn. *ff*

Tpt. *pp* *ff*

Tbn. *ff*

Perc. *mf*

Hp. *fff* *glissando*

Quarter-tone acc. solo *fff* *Bellows Shake (3-ricochét)*

Vln. I *fff*

Vln. II *fff*

Vln. III *fff*

Vla. I *fff* *mp*

Vla. II *fff* *mf*

Vc. I *ff*

Vc. II *ff*

Db. *p* *ff*

354

FL. *mp* *ppp* *pppp*

Ob. *ppp*

Cl. *ppp*

A. Sax. *ppp*

Bsn. *ppp*

Hr. *ppp*

Tpt. *ppp*

Tbn. *ppp*

Perc. *ppp*

Hp. *ppp*

Quarter-tone acc. solo *pp* *ppp* *pp*

Bellows Shake

Vln. I *ppp* *mp* *pp*

Vln. II *pp* *mp* *pp*

Vln. III *p* *mp* *pp*

Vla. I *mp* *pp*

Vla. II *mp* *pp*

Vc. I *p*

Vc. II *p*

Db. *p* *gliss.* *ff*

359

Perc. *pppp*

Quarter-tone acc. solo

Db.

365

Hp. *ppp* E<sub>2</sub>-E<sub>2</sub> F<sub>2</sub>-F<sub>2</sub>

Quarter-tone acc. solo *ppp*

Db. *niente*

$\frac{4}{4}$  ♩ = 144

370 Glockenspiel

Perc. *ppp*

Hp. *ppp* G<sub>2</sub>-G<sub>2</sub> F<sub>2</sub>-F<sub>2</sub> F<sub>2</sub>-F<sub>2</sub> E<sub>2</sub>-E<sub>2</sub>

Quarter-tone acc. solo *pp*

Vln. I *ppp*

Vln. II *ppp* *p*

Vln. III *ppp* *pp*

Vla. I *pp*

Vla. II *pp*

$\frac{3}{4}$

374

Fl. *p* *f* *ff* *fff*

Ob. *pp* *f* *ff* *fff* *ppp*

Cl. *p* *f* *ff* *fff* *ppp*

A. Sax. *mf* *f* *ff* *fff* *ppp*

Bsn. *f* *ff* *fff* *ppp*

Hn. *ff* *overtones glissando* *ppp*

Tpt. *ff*

Tbn. *pp* *overtones glissando* *ff* *fff* *pp*

Perc. *pp* *mp* *ff*

Hp. *p* *glissando* *f*

Quarter-tone acc. solo *p* *mp* *f* *fff*

Vln. I *p* *mp* *f* *ff* *fff*

Vln. II *mp* *f* *ff* *fff* *Sul D gliss.*

Vln. III *p* *mp* *f* *ff* *fff* *Sul G gliss.*

Vla. I *p* *mp* *f* *ff* *fff*

Vla. II *p* *mp* *f* *ff* *fff* *pp*

Vc. I *f* *ff* *fff* *p*

Vc. II *f* *ff* *fff* *mp*

Db. *ff* *fff* *mf*

2/4 4/4

2/4 4/4

Gran Cassa (hard mallet) *pp* *mp* *ff*

D<sup>9</sup> C<sup>9</sup> B<sup>9</sup> / E<sup>9</sup> F<sup>9</sup> G<sup>9</sup> A<sup>9</sup>

Normal

Sul D gliss.

Sul G gliss.

378

Hp. *ppp*

Quarter-tone acc. solo *pp* *ff* *Normal*

Vln. I *ppp*

Vln. II *ppp*

Vln. III *ppp*

Vla. I *ppp*

382

Quarter-tone acc. solo *niente* *pppp* *ffff* *niente*

Vln. I *pppp*

Vln. II *pppp*

Vln. III *pppp*

Vla. I *pppp*

389

Fl. *G.P.* *p* *mf* *p*

Quarter-tone acc. solo *G.P.* *pp* *ff*

Vln. I *G.P.* *f* *fff* *mf*

Vln. II *G.P.* *fff* *f*

Vln. III *G.P.* *fff* *f*

Vla. I *G.P.* *fff* *ff*

Vla. II *G.P.* *fff* *ff*

394

Fl. G.P.

Cl. G.P.

Quarter-tone acc. solo

Vln. I G.P.

Vln. II G.P.

Vln. III G.P.

Vla. I G.P.

Vla. II G.P.

*mf*

*mf*

*ppp*

*niente*

*f*

*ff*

*f*

*f*

400

Fl. G.P.

Cl. G.P.

Quarter-tone acc. solo

Vln. I G.P.

Vln. II G.P.

Vln. III G.P.

Vla. I G.P.

Vla. II G.P.

*p*

*mp*

*mp*

*mp*

*mf*

*mf*

406

Fl.

Ob. *fff sffz ppp*

Cl. *fff sffz ppp*

A. Sax. *fff sffz ppp*

Bsn. *fff sffz ppp*

Hn. *overtone glissando ff ppp*

Tpt. *ff*

Tbn. *ff sffz pp*  
*Gran Cassa (hard mallet)*  
*f*

Perc.

Hp. *glissando f ppp*

Quarter-tone acc. solo *fff pp ff*  
*Bellows Shakes*

Vln. I *fff sffz ppp*

Vln. II *fff sffz ppp*

Vln. III *fff sffz ppp*

Vla. I *fff sffz ppp*

Vla. II *fff sffz pp*

Vcl. I *fff sffz p*

Vcl. II *fff sffz mp*

Db. *fff sffz mf*



409  $\frac{3}{4}$  Normal

Quarter-tone acc. solo

*ppp*



414

Quarter-tone acc. solo

*poco a poco cresc.*

*ppp*

Vln. I

Vln. II

Vln. III

Vla. I

*ppp*

*ppp*

*ppp*

*pp*



420

Quarter-tone acc. solo

*pp poco a poco cresc. (simile)*

*p*

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

*poco a poco cresc.*

*poco a poco cresc.*

*poco a poco cresc.*

*poco a poco cresc.*

*pp poco a poco cresc. (simile)*

*pp poco a poco cresc. (simile)*

*p poco a poco cresc. (simile)*

*p poco a poco cresc. (simile)*

*p poco a poco cresc.*

*p poco a poco cresc.*

426

Fl. *pp* poco a poco cresc. *p* poco a poco cresc. (simile)

Ob. *ppp* poco a poco cresc. *pp* poco a poco cresc. (simile)

Cl. *pp* poco a poco cresc.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone solo *mp* *mf*

Vln. I *pp* poco a poco cresc. (simile) *p*

Vln. II *p*

Vln. III *p*

Vla. I *mp*

Vla. II *mf*

Vc. I *mp* poco a poco cresc. (simile) *mf*

Vc. II *mp* poco a poco cresc. (simile)

Db.

432

FL. *mp* *mf* *f*

Ob. *p* *mp* *mf*

Cl. *p poco a poco cresc. (simile)* *mp* *mf*

A. Sax. *pp* *mp*

Bsn. *p* *mp*

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo *f* *ff* *fff poco a poco dim.*

Vln. I *p* *mp* *mf* *f* *mp poco a poco dim.*

Vln. II *mp* *mf* *f* *mp poco a poco dim.*

Vln. III *mp* *mf* *f* *f poco a poco dim.*

Vla. I *mf* *f* *ff poco a poco dim.*

Vla. II *f* *ff* *fff poco a poco dim.*

Vc. I *f* *ff* *fff poco a poco dim.*

Vc. II *mf* *f* *ff poco a poco dim.*

Db.

438

Fl. *pp*

Ob. *pp*

Cl. *pp*

A. Sax. *pp*

Bsn. *pp*

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo

*ff poco a poco dim. (simile)* *f* *mf* *mp* *p*

Vln. I *p poco a poco dim. (simile)* *pp*

Vln. II *mp poco a poco dim. (simile)* *p* *pp* *ppp*

Vln. III *mf poco a poco dim. (simile)* *mp* *p* *pp* *ppp*

Vla. I *f poco a poco dim. (simile)* *mf* *mp* *p* *pp niente*

Vla. II *ff poco a poco dim. (simile)* *f* *mf* *p* *ppp*

Vc. I *ff poco a poco dim. (simile)* *f* *mf* *mp* *pp*

Vc. II *f poco a poco dim. (simile)* *mf* *mp* *pp*

Db.



450

Fl. *ff* *mp*

Ob. *fff* *mp*

Cl. *fff* *mf*

A. Sax. *fff* *f*

Bsn. *fff* *mf* *fff*

Hn. *mf* *ff*

Tpt. *f* *ff*

Tbn. solo "overtone gliss." *fff* *mp* *ff*

Perc. Gran Cassa *f*

Harp. G<sub>5</sub>-G<sub>5</sub>

Quarter-tone acc. solo *fff* *p*

Vln. I

Vln. II

Vln. III *ff* *mp* *f*

Vla. I *ff* *mp* *f*

Vla. II *ff* *mp* *f*

Vc. I *ff* *mf* *ff*

Vc. II *fff* *mf* *ff*

Db. *fff* *mf* *fff*

Belows Shakes

452  $\text{♩} = 144$  **rallentando** . . . . .

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo

*Normal*

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

$\text{♩} = 144$  **rallentando** . . . . .

$\text{♩} = 144$  **rallentando** . . . . .

457

Fl. *fff* *mp*

Ob. *fff* *mp*

Cl. *fff* *mp*

A. Sax. *fff* *f* *mp*

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp. *ppp*

Quarter-tone acc. solo *fff* *pp* *mf* *pp* *pp* *fff* *p*

Vln. I *fff* *p*

Vln. II *fff* *p*

Vln. III *fff* *ff* *p*

Vla. I *fff* *f* *p*

Vla. II *fff* *f* *mp*

Vc. I *ppp* *ff* *ppp* *p*

Vc. II *ppp* *mf* *ppp*

Db.



46 f

$\frac{3}{4}$  ♩ = 81 *rallentando* . . . . .  $\frac{2}{4}$  ♩ = 54 *rallentando* . . . . . ♩ = 36

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

straight mute

Gran Cassa

G♯-G♯

*mp* *fff* *pp*

*f* *fff* *f*

*pp* *fff* *f* *p*

*p* *fff* *p*

*ppp* *fff* *f*

*mf* *f* *mf*

*mf*

*G♯-G♯* *ff*

*fff* *pp* *mp*

$\frac{3}{4}$  ♩ = 81 *rallentando* . . . . .  $\frac{2}{4}$  ♩ = 54 *rallentando* . . . . . ♩ = 36

*pp* *fff* *pp*

*p* *fff* *mf* *p* *pp*

*mp* *fff* *ff* *pp*

*mf* *fff* *mf* *pp*

*f* *fff* *f*

*ff* *fff* *mf*

*fff* *f*

*fff* *f*

466 ♩ = 72 **4/4** poco a poco accelerando

Fl. *p* *mf* *pp* solo

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Wind Chimes **4/4** poco a poco accelerando *ppp*

Hp. D<sup>b</sup> C<sup>b</sup> B<sup>b</sup> / E<sup>b</sup> F<sup>b</sup> G<sup>b</sup> A<sup>b</sup>

Quarter-tone acc. solo *ppp* *mp* 1.5-gliss.

**4/4** poco a poco accelerando

Vln. I *ppp* *mp*

Vln. II *ppp* *mp*

Vln. III *ppp* *mp*

Vla. I *ppp* *mp*

Vla. II *pp* *ppp* *mp*

Vc. I *pp* *ppp* *mp*

Vc. II *ppp* *mp*

Db.

471

Fl. *mf* *f* *sol*

Ob. *mp* *mf* *sol*

Cl. *mf* *p* *f*

A. Sax. *ppp* niente

Bsn. *pp* niente

Harp. *p* niente

Quarter-tone acc. solo *mp* *pp* *mf* *1.5-glass.*

Vln. I *ppp* *mp*

Vln. II *ppp* *mp*

Vln. III *ppp* *ppp* *mp*

Vla. I *ppp* *ppp* *mp*

Vla. II *pp* *ppp* *mp*

Vc. I *pp* *ppp* *mp*

Vc. II *pp* *ppp* *mp*

Db. *mp* *ppp*

Bellows Shakes Normal

474

Fl. *p* *pp* *mf*

Ob.

Cl. *p* *pp* *mf*

A. Sax. *mp* *pp*

Bsn. *mp* *p* *pp* *mf*

Hn. *p* *pp* *mp*

Tpt.

Tbn. *mp* *p* *pp* *mf*

Perc.

Hp. *mp* *ppp*

Quarter-tone acc. solo *f* *mf* *p* *f*

Bellows Shakes Normal

Vln. I *pp* *pp* *ppp* *p* *solis* *ff* *fff*

Vln. II *pp* *pp* *ppp* *p* *solis* *mf* *ff*

Vln. III *pp* *solis* *mp* *ff* *mf* *gliss.*

Vla. I *pp* *solis* *f* *solis* *ff* *gliss.*

Vla. II *pp* *solis* *f* *solis* *mf* *gliss.*

Vc. I *pp* *solis* *f* *mp* *mf* *gliss.*

Vc. II *pp* *solis* *f* *mp* *f* *gliss.*

Db. *mp* *pp* *f* *gliss.*

477

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Gran Cassa

Perc.

Hp.

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

without mute

solo

"overtone gliss."

Bellows Shakes

Normal

1.5-gliss.

I → II → III → IV → V → VI → VII

*mf* *pp* *ppp* *ff*

*mp* *ppp* *mp* *ff*

*f* *pp* *f* *p* *ff*

*mf* *p*

*mf* *ppp*

*ff* *p*

*mp* *ppp*

*mf* *pp* *pp* *ppp* *f*

*f* *p* *ppp* *f*

*f* *p* *ppp* *f*

*ff* *mp* *ppp* *ff*

*ff* *mp* *ppp* *ff*

*fff* *mf* *ppp* *fff*

480  $\text{♩} = 108$  *rallentando* . . . . .  $\text{♩} = 54$   $\frac{3}{4}$   $\text{♩} = 108$  *rall.* . . . . .  $\text{♩} = 36$   $\frac{4}{4}$   $\text{♩} = 108$

Fl. *ff* *ppp* *fpp* *ff*

Ob. *ff* *pppp* *fpp* *ff*

Cl. *ff* *ppp* *fpp* *ff*

A. Sax. *ff* *ppp* *fpp* *ff*

Bsn. *fff* *ppp* *ffp* *ff*

Hrn. *ff* *pppp* *fppp* *f*

Tpt. *f* *pppp* *fppp* *f*

Tbn. *f* *pppp* *ffp* *f*

Perc.  $\text{♩} = 108$  *rallentando* . . . . .  $\text{♩} = 54$   $\frac{3}{4}$   $\text{♩} = 108$  *rall.* . . . . .  $\text{♩} = 36$   $\frac{4}{4}$   $\text{♩} = 108$  *Gran Cassa*

Hp. D $\sharp$  C $\sharp$  B $\sharp$  / E $\sharp$  F $\sharp$  G $\sharp$  A $\sharp$

Quarter-tone solo *fff* *pp* *ffp*

Vln. I *fff* *pp* *ffp* *fff*

Vln. II *fff* *pp* *ffp* *fff*

Vln. III *fff* *pp* *ffp* *fff*

Vla. I *fff* *pp* *ffp* *fff*

Vla. II *fff* *pp* *ffp* *fff*

Vcl. I *fff* *pp* *ffp* *fff*

Vcl. II *fff* *pp* *ffp* *fff*

Db. *fff* *pp* *ffp*



487

Fl.  $\frac{5}{4}$   $\frac{4}{4}$   $\frac{5}{4}$   $\frac{4}{4}$   
*mp* *pp* *f* *ppp* *p* *ff*

Ob. *mf* *mp* *p* *mf*

Cl. *mp* *pp* *mf* *ppp* *mp* *f*

A. Sax.

Bsn. *mf* *pp* *mf*

Hn. *mf*

Tpt. straight mute *mp*

Tbn. *mf* *ppp* *mf* *ppp*

Perc.  $\frac{5}{4}$   $\frac{4}{4}$   $\frac{5}{4}$   $\frac{4}{4}$   
*ppp* *ppp* *ppp*

Harp.  $\frac{5}{4}$   $\frac{4}{4}$   $\frac{5}{4}$   $\frac{4}{4}$   
D $\flat$  C $\flat$  B $\flat$  / E $\flat$  F $\flat$  G $\flat$  A $\flat$  let vibrate *mf* poco a poco cresc.

Quarter-tone acc. solo  
Normal 1.5 gliss. *fff* *ff* *fff* *fff*

Vln. I  $\frac{5}{4}$   $\frac{4}{4}$   $\frac{5}{4}$   $\frac{4}{4}$   
*mf* *pp* *p* *p*

Vln. II *pizz.* *ff* *mf* *f*

Vln. III *p*

Vla. I *f* *p* *mp*

Vla. II *f* *p* *mp*

Vcl. I *f* *p* *mf*

Vcl. II *f* *mp* *mf*

Db. *ff* *mp* *f*



490

Fl.  $\frac{4}{4}$   $\frac{5}{4}$   $\frac{4}{4}$   $\frac{3}{4}$   
*p* *ppp* *ff* *pp*

Ob. *pp*

Cl. *mp* *pp* *f* *p*

A. Sax. *mp* *p*

Bsn. *p* *mp*

Hn. *f*

Tpt. *mf* *pp* *mp* *p*

Tbn. *mf* *pp* *mp* *p*

Perc.  $\frac{4}{4}$   $\frac{5}{4}$   $\frac{4}{4}$   $\frac{3}{4}$

Harp. *f* poco a poco cresc.

Quarter-tone acc. solo

Vln. I  $\frac{4}{4}$   $\frac{5}{4}$   $\frac{4}{4}$   $\frac{3}{4}$

Vln. II *arco* *p*

Vln. III

Vla. I

Vla. II

Vcl. I

Vcl. II

Db. *piu f*

494

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc. Suspended Cymbal

Harp

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vc. I

Vc. II

Db.

9

9

ppp

mp

mf

f

497 **6**

Fl. *p*

Ob. *p*

Cl. *mp*

A. Sax. *mp*

Bsn. *mf*

Hr. *mp*

Tpt. *mp*

Tbn. *mp*

Perc. *mp* *ppp*

Hp. *ff* *poco a poco cresc.*

Quartet  
-tone  
acc.  
solo *poco a poco cresc.*

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vcl. I

Vcl. II

Db.

Detailed description: This page of a musical score covers measures 497 to 500. It features a variety of instruments including woodwinds (Flute, Oboe, Clarinet, Alto Saxophone, Bassoon, Horn, Trumpet, Trombone), percussion (Percussion, Harp), a string quartet (Violin I, Violin II, Violin III, Viola I, Viola II, Violoncello I, Violoncello II, Double Bass), and a string quartet. The score is marked with a '6' and a '6/8' time signature. Dynamics range from *p* (piano) to *ppp* (pianissimo) and *ff* (fortissimo). Performance instructions include *poco a poco cresc.* and *ppp*. The woodwinds and strings play sustained notes with some melodic movement, while the harp and quartet play rhythmic patterns.

500

Fl. *gliss.* *mp*

Ob. *gliss.* *mp*

Cl. *gliss.* *mf*

A. Sax. *gliss.* *mf*

Bsn. *gliss.* *f*

Hn.

Tpt.

Tbn. *gliss.* *mf*

Perc.

Hp. *fff*

Quarter-tone acc. solo *fff*

Vln. I *mf*

Vln. II *gliss.* *mf*

Vln. III *gliss.* *mf*

Vla. I *f*

Vla. II *f*

Vc. I *ff*

Vc. II *gliss.* *ff*

Db. *gliss.* *fff*

503

Fl. *pp*

Ob. *p*

Cl. *p*

A. Sax. *p*

Bsn. *mp*

Hn.

Tpt.

Tbn. *mp*

Perc.

Hp.

Quarter-tone acc. solo

Vln. I *p*

Vln. II *p*

Vln. III *p*

Vla. I *mp*

Vla. II *mp*

Vc. I *mf*

Vc. II *mf*

Db. *f*

506

Fl. *fff* *ppp*

Ob. *fff* *mf*

Cl. *fff* *f*

A. Sax. *mf* *ff*

Bsn. *fff*

Hn.

Tpt.

Tbn. *mf*

Perc. *ppp* Wind Chimes

Harp. *ppp* *pp*

Quarter-tone acc. solo *p* *f*

Vln. I *fff* *pp* *mf* *fff*

Vln. II *fff* *pp* *mf* *fff*

Vln. III *fff* *pp*

Vla. I *fff* *pp*

Vla. II *fff* *pp*

Vcl. I *fff* *mf* *flageolet gliss. approximate pitches* *simile*

Vcl. II *fff* *mf* *flageolet gliss. approximate pitches* *simile*

Db. *fff* *ppp*

509

FL.  $\frac{4}{4}$   $\frac{5}{4}$   $\frac{4}{4}$   $\frac{3}{4}$   
*ff*  $\frac{3}{}$  *mf* *ff*  $\frac{3}{}$  *mf*

Ob.

Cl. *ff*  $\frac{3}{}$  *mf* *ff*  $\frac{3}{}$  *mf*

A. Sax. *PPPP*  $\frac{3}{}$  *PPP*  $\frac{3}{}$  *PPPP*

Bsn.

Hr.

Tpt.

Tbn.

Perc.  $\frac{4}{4}$   $\frac{5}{4}$   $\frac{4}{4}$   $\frac{3}{4}$   
*p* *PPP* *mp*

Hp. *mf* *pp* *mf*

Quarter-tone acc. solo *f* *p* *mp* *fff* *fff*

Vln. I  $\frac{4}{4}$   $\frac{5}{4}$   $\frac{4}{4}$   $\frac{3}{4}$   
*f* *pp* *mf* *fff* *f*

Vln. II *f* *pp* *mf* *fff* *f*

Vln. III *f* *pp* *f*

Vla. I *f* *p* *mf* *ff* *fff*  
*flageolet gliss. approximate pitches* *simile*

Vla. II *f* *p* *mf* *ff* *fff*  
*flageolet gliss. approximate pitches* *simile*

Vc. I *fff* *mf* *ff*

Vc. II *fff* *mf* *ff*

Db. *f* *PPP* *f*

512  $\frac{3}{4}$   $\frac{6}{8}$

Fl. *mf* *pp* *mp*

Ob. *ppp*

Cl. *mf* *pp* *mp*

A. Sax. *p* *ppp* *ppp*

Bsn. *ppp*

Hn. *ppp* *pp*

Tpt. *ppp* without mute

Tbn. *ppp*

Perc. *ppp*

Hp. *pp*

Quarter-tone acc. solo *mf*

Vln. I *pp*

Vln. II *pp*

Vln. III *pp*

Vla. I *mp* *pp*

Vla. II *mp* *pp*

Vc. I *mp* *mp*

Vc. II *mp* *mp*

Db. *ppp*



516

Fl. *f* *ff*

Ob. *mf*

Cl. *f* *ff*

A. Sax. *f*

Bsn. *ff*

Hn. *mf*

Tpt. *mp*

Tbn. *mf* *ff*

Perc. Gran Cassa *ppp* *mf*

Hp. *ff*

Quarter-tone acc. solo *fff*

Vln. I *f*

Vln. II *ff*

Vln. III *fff*

Vla. I *fff* *f*

Vla. II *fff* *f*

Vc. I *fff*

Vc. II *fff*

Db. *fff*

522

**3/4**

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vcl. I

Vcl. II

Db.

*ppp*

*ff*

*fff*

*fff*

*fff*

*fff*

*fff*

**3/4**

**3/4**

530 4/4

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone acc. solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vcl. I

Vcl. II

Db.

*ppp* *pppp*

*ppp*

*p*

*mf*

*p* *pp*

4/4

4/4



541

Fl.

Ob.

Cl. *ppp poco a poco cresc. (simile)* *pp*

A. Sax. *ppp poco a poco cresc.*

Bsn. *ppp poco a poco cresc. (simile)* *pp*

Hn. *ppp poco a poco cresc. (simile)*

Tpt.

Tbn. *ppp poco a poco cresc. (simile)*

Perc. Tam-Tam (soft mallets) *pppp*

Hp. *ppp poco a poco cresc. (simile)*

Quarter-tone acc. solo *p* *mp*

Vln. I *mp poco a poco cresc. (simile)* *mf*

Vln. II *strong accents* *mp poco a poco cresc. (simile)* *mf*

Vln. III *mp poco a poco cresc. (simile)* *strong accents* *mf*

Vla. I *mp poco a poco cresc. (simile)* *mf*

Vla. II *mp poco a poco cresc. (simile)* *mf*

Vc. I *p poco a poco cresc. (simile)* *mp*

Vc. II *p poco a poco cresc. (simile)* *mp*

Db. *p poco a poco cresc. (simile)* *mp*

545

Fl. *pp* poco a poco cresc. *p* poco a poco cresc. (simile)

Ob.

Cl. *p*

A. Sax. *pp* poco a poco cresc. (simile) *p*

Bsn. *p*

Hn. *pp* *p*

Tpt.

Tbn. *pp* *p*

Perc. *ppp* poco a poco cresc. *pp* poco a poco cresc. (simile)

Hp. *pp* *p*

Quarter-tone acc. solo *mf* *f*

Vln. I strong accents *f*

Vln. II *f*

Vln. III *f*

Vla. I *f*

Vla. II *f*

Vcl. I *mf*

Vcl. II *mf*

Db. *mf*

549 **rallentando** . . . . .

FL. *mp*

Ob.

Cl. *mp*

A. Sax. *mp*

Bsn. *mp*

Hn. *mp*

Tpt. *secco* *ppp* *pp*

Tbn. *mp*

Perc. Tam-Tam *p* Gran Cassa

Hp. *mp*

Quarter-tone acc. solo *ff*

1.5-glis. 1.5-glisimile

**rallentando** . . . . .

Vln. I *ff* *ff non cresc.*

Vln. II *ff* *ff non cresc.*

Vln. III *ff* *ff non cresc.*

Vla. I *ff*

Vla. II *ff*

Vc. I *f* *ff*

Vc. II *f* *ff*

Db. *f* *ff*

552

Fl. *mf*

Ob. *mp* *ff*

Cl. *mf*

A. Sax. *mf*

Bsn. *mf* *f*

Hr. *mf*

Tpt. *p* *mp*

Tbn. *mf* *f*

Perc. *mp*

Hp.

Quarter-tone acc. solo *fff* *non gliss.*

Vln. I *fff*

Vln. II *fff*

Vln. III *fff*

Vla. I *fff*

Vla. II *fff*

Vc. I *fff*

Vc. II *fff*

Db. *fff*









564 2/4

Fl.

Ob.

Cl.

A. Sax.

Bsn.

Hn.

Tpt.

Tbn.

Perc.

Hp.

Quarter-tone solo

Vln. I

Vln. II

Vln. III

Vla. I

Vla. II

Vcl. I

Vcl. II

Db.

*ff*

*rubato*  
*(bend, simile)*

*rubato*  
*1-5-glass*  
*simile*

2/4

2/4

566  $\frac{2}{4}$

Fl. *ff* *fff*

Ob. *ff* *fff*

Cl. *ff* *fff*

A. Sax. *mp*

Bn. *pp*

Hn. *p* *f*

Tpt. *p* *f*

Tbn. *p* *f*

Perc.  $\frac{2}{4}$  Gran Cassa *p*

Hp. *ff*

Quarter-tone acc. solo *poco a poco cresc.*

$\frac{2}{4}$

Vln. I (5) *fff*

Vln. II (5) *fff*

Vln. III (5) *fff*

Vla. I (5)

Vla. II (5)

Vc. I

Vc. II

Db.



572

Fl. *ppp*

Ob. *ppp*

Cl. *ppp*

A. Sax.

Bsn. *fff*

Hn.

Tpt.

Tbn. *fff*

Perc. *f* Tam-Tam (let vibrate) *f* Gran Cassa

Hp. *p*

Quarter-tone acc. solo

Vln. I *p*

Vln. II *p*

Vln. III *p*

Vla. I

Vla. II

Vc. I *fff*

Vc. II *fff*

Db. *fff*

576

Fl. Cadenza

Ob. Cadenza

Cl. Cadenza

A. Sax. Cadenza

Bsn. Cadenza

Hn. Cadenza

Tpt. Cadenza

Tbn. Cadenza

Perc. Cadenza

Hp. Cadenza

Quarter-tone acc. solo Cadenza

Vln. I Cadenza

Vln. II Cadenza

Vln. III Cadenza

Vla. I Cadenza

Vla. II Cadenza

Vc. I Cadenza

Vc. II Cadenza

Db. Cadenza

*p*

*ppp*

*p*

*p*

*p*

**4/4**

**4/4**

**4/4**



581  $\frac{4}{4}$  ♩ = 108

Fl. *pp* *fff*

Ob. *fff*

Cl. *pp* *fff*

A. Sax. *pp* *fff*

Bsn. *fff* *mf* *fff* *mf*

Hrn. *p* *pp* *ff* *mf*

Tpt. *pp* *ff* *f* *mf* *mp*

Tbn. *fff* *p* *pp* *ff*

Perc. *fff* Whip *mf*

Hp. *fff* *f* *mp*

Quarter-tone acc. solo *pppp* *ffff*

$\frac{4}{4}$  ♩ = 108

Vln. I *mp* *p* *fff* *pizz.*

Vln. II *mp* *pp* *p* *fff* *pizz.*

Vln. III *mf* *p* *fff* *pizz.*

Vla. I *f* *p* *fff* *ff* *f*

Vla. II *f* *p* *fff* *ff* *f*

Vc. I *ff* *p* *fff* *f*

Vc. II *ff* *p* *fff*

Db. *fff* *p* *fff*

585

$\frac{2}{4}$  ritardando  $\frac{4}{8}$   $\text{♩} = 120$

Fl. *p* *p* *mf* *f* *ff* *ff*

Ob. *p* *mf* *f* *ff* *fff*

Cl. *p* *p* *mp* *mf* *f* *ff* *ff* *mp*

A. Sax. *p* *p* *mf* *f* *f* *ff* *fff* *p*

Ban. *p* *mp* *mf* *f* *fff* *p*

Hr. *pp* *p* *mf* *f* *ff*

Tpt. *mf* *f* *mf* *ff*

Tbn. *mp* *f* *mf* *ff*

Perc.  $\frac{2}{4}$  ritardando  $\frac{4}{8}$   $\text{♩} = 120$   
secco Gran Cassa (damp) *f*

Quarter-tone acc. solo *sf* *fff* *pp*

$\frac{2}{4}$  ritardando  $\frac{4}{8}$   $\text{♩} = 120$

Vln. I *mp* *mp* *mf* *ff* *fff* *sf*

Vln. II *mp* *mp* *mf* *ff* *fff* *ff*

Vln. III *mp* *mp* *f* *ff* *fff* *f*

Vla. I *mp* *pizz.* *mp* *mf* *f* *ff* *fff*

Vla. II *mp* *pizz.* *mp* *f* *ff* *fff* *mp*

Vc. I *mp* *pizz.* *mp* *f* *ff* *fff* *p*

Vc. II *mp* *pizz.* *mp* *f* *ff* *fff* *mp*

Db. *mp* *pizz.* *mp* *f* *ff* *fff* *mp*