BIRMINGHAM CITY University

Synergising music and image – exploring a holistic sonic-visual bond through composition

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Abstract

The aim of this practice-based composition research is to investigate a range of potential connections between music and visual elements. The result is a portfolio of eight works which explore this music-visual synergy through diverse means and on different levels.

These explorations began with the decision to connect two facets of my professional and artistic practice –composition and photography– and from the desire to create works using both elements in a way in which both could be as intimately interconnected to each other as they are in my personal practice as both a composer and a photographer. I aim to integrate visual elements to my compositional process, as well as during the process of communicating and collaborating with performers. The presence of visual elements during the performance of a piece also plays an important role in some of my works. My intention when showing images during a performance is to enhance the perceptual experience (for the audience) and the interpretation of the piece (for the performers), thus creating a deeper visual-aural connection, and adding something that would not exist without the involvement of the visual elements.

Each of the submitted works explore different degrees of a synergetic relationship between visual and aural elements, and focus on how both mediums (aural and visual) can be combined, how they interact and influence each other, and the implications of these combinations within the process of constructing, performing, and eventually presenting a piece.

The pieces that comprise this portfolio include collaborations with performers and visual artists who contributed to the works from different perspectives and different views of the visual-musical connection.

Throughout the accompanying commentary, I examine different means of combining image and sound, and I offer an account of the works and ideas which have influenced my work.
I also consider the basics of visual theory and show how I used these principles to create my image-based pieces, depending on the degree of music-visual connection of each of the composed works.

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List of Portfolio Compositions

Mosaic No.1 (2019)

Open instrumentation

Duration: 12'-20'

8 mosaïques (2019)

Open instrumentation (two performers)

Duration: free

Mosaic No.2 (2019)

Two electric guitars

Duration: 6'21''

Traversing wires (2019)

Open instrumentation

Duration: free

Megi (2020)

Variable ensemble

Duration: 6'

Where there was wood is now water (2020)

Solo viola and fixed media

Duration: 7'30''

One to nine (2021)

String quartet

Duration: 10'30''

Constelaciones (2020)

Flute, clarinet in Bb, violin, vibraphone, piano, cello

Duration: 9'30''

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Preface

Christian von Ehrenfels describes "Gestalt quality" as the extra element which allows two independent elements –mutually separable– to be perceived as a whole. He explains that:

> […] if each of twelve observers listened to one of the twelve tones of a melody, the sum of their experiences would not correspond to the experience of someone listening to the whole melody (Arnheim, 1974: 5).

This statement refers to the Gestalt idea of the importance of the function of any element within a whole. My work as a composer/photographer draws upon the idea of dealing with both musical and visual elements holistically during the entire creative process of a piece.

Instead of regarding images and music as separate entities which can accompany one another (which suggests hierarchy), my research questions lie, through creative practice, in how I can combine music and visual elements in order to create hybrid pieces where the synergy between both elements –musical and visual– shapes the conception, development, and interpretation of the pieces from the very beginning.

My journey with combining images and composition began when, by the end of my Bachelor in Composition, I decided to pursue a photography degree. For a few months, I was doing both degrees simultaneously (Composition and Photography), which led to the idea of using photography as a source of extra musical material to compose music. I started using what I was learning about visual theory to come up with material for composing pieces. This then evolved into my first explorations using my own photographs as scores as a part of my Master's research project at the Royal Conservatoire of The Hague. I composed a number of pieces based on or inspired by images, exploring different ways to notate my ideas and to communicate with players. For two of these pieces, I experimented for the first time with using my own photographs as scores. These works use elements of game pieces, where the performers have some freedom within a fixed set of rules based on the visual elements of the photographs.

Both pieces include an extensive instruction part which accompanies the image-score, explaining the rules for following the score and the rules for performing the pieces. For these works I had the opportunity to collaborate with the ensembles that were to perform them, which

gave me a good lesson in terms of establishing a close collaboration, and dealing with the challenges that can come with the type of notation I was beginning to explore.

Observance of Light (2017), for six players, is based on a series of six photographs I took of the Louis Vuitton Foundation building in Paris, which was at the time intervened with coloured filters by visual artist Daniel Buren. The performers use the photographs as the score, following a designated line on the image to read from left to right. An animated video indicates with a vertical bar the speed for transiting the image. Each movement has specific rules and a particular process based on the colour and composition of each photograph.

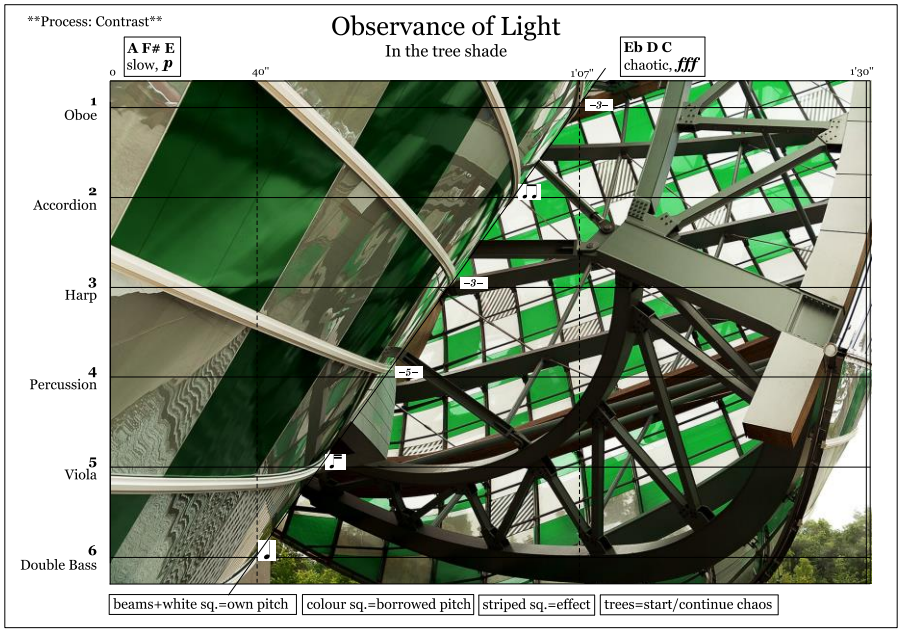


Figure 1: Fourth movement of 'Observance of Light', for ensemble (2017)

	Four have fallen	Above the lamplit house	Waves for the breeze	In the tree shade	How many miles?	Two more drops
Overall process	Long note vs staccato	Legato notes vs staccato + adding pitches	Tempo changes: accellerando-rallentando	Contrasts between 2 parts: 1st: Slow, quiet 2nd: Loud, chaotic	Dynamic waves	Long, legato notes vs staccato + removing pitches
Material	**-Beams+white sq.:** Long, single note **-Color sq.:** Staccato **-Striped sq.:** Effect *Percussion: See extras below	**-Beams+white sq.:** Long, legato note or interval **-Color sq.:** Staccato (with the last added pitch) **-Striped sq.:** Effect	**-Beams+white sq.:** Long, legato note or interval **-Color sq.:** Short notes **-Striped sq.:** Effect Play chosen phrase, making a natural acell. followed by a rall. until the end	Beginning: player chooses a pitch **-White sq.:** Own chosen pitch **-Color sq.:** Pitch/material of another player **-Trees:** Start/continue chaos **-Striped sq.:** Effect **-1st Part:** Slow, long notes, quiet **-2nd Part:** Chaotic, fast, loud	Always long notes, intervals, chords, trills, tremolo. **White sq. and bricks:** *ff* **Color sq.:** *pp* **Striped sq.:** Effect	**Beams+white sq.:** Long note/interval/chord **Color sq.:** Staccato (with the first of remaining pitches) **Striped sq.:** Effect **White bricks:** Pedal note with chosen effect
Pitches	**A B D# E**	**B +G#+F+G+Eb+D**	**D# G B C# F**	1st: **A F# E** 2nd: **Eb D C**	**F B C# D#**	**F# -A -B -D# -E-Bb**
Dynamics	***p*** < ***ff*** long----------stacc.	Increase dynamic with every new pitch, from ***p*** to ***ff***	Beginning ***p*** and gradually increase dynamics to ***ff***, then back towards ***p***	1st: ***p*** 2nd: ***fff***	Move from ***pp*** to ***ff*** (and back) softly, like waves	Decrease dynamic with every removed pitch, from ***fff*** to ***p***
Extras	*Percussion: Free drum rhythmic solo			*Percussion plays 2nd part with drum		*The number of removed pitches varies per instrument

Figure 2: Table of instructions per movement (2017)

Traceurs (2017), for four players, is based on a photograph I took of the roof of the KABK building in The Hague. The score is composed of three parts: the instructions on the photographs, a video-score for each player, and an animated video which is to be projected during the performance of the piece for both the players and the audience to see. This video shows the photograph and the trajectories of the four players. Each player is represented by a circle of a different colour (player one is purple, player two is green, player three is yellow, player four is red). The individual video-scores contain each player's instructions with their own animated circle.

For this piece, I created a path for the players to follow, which can be seen as a semi-transparent white rectangle on the photograph of figure 3.

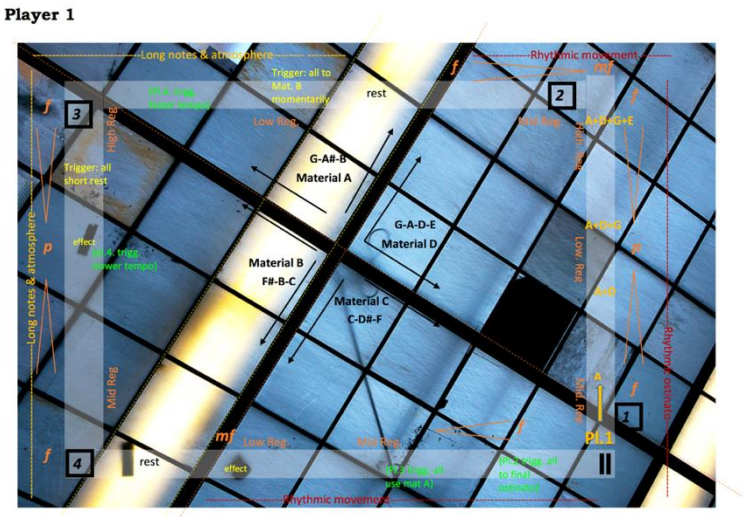


Figure 3: Player 1 part of 'Traceurs' for 4 performers (2017)

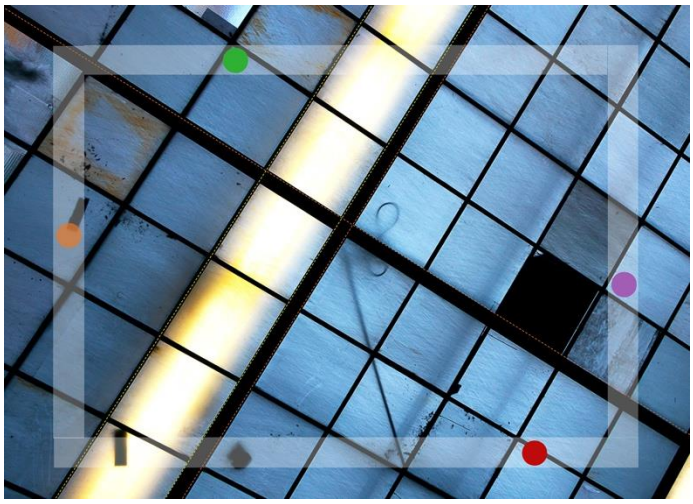


Figure 4: Projected video showing the circles that represent each player (2017)

From these first efforts to combine photography and composition, this practice-based research project was born. The aims of it are to find different ways of using visual stimuli in order to create hybrid pieces where the interconnection between both musical and visual elements shapes the conception and development of the work, as well as, in some cases, the way to score and present each piece. This process of musical-visual interconnection occurs during my compositional process, but it might also impact the performer's interpretation of a score. An example of the former is a photographic series in which a visual process happens, and which helps me determine the structure of a piece. For the latter, there might be a visual element or a colour which triggers a musical idea, thus affecting the way a piece is be performed. Visual stimuli might also have an impact on the listener's experience. For example, the public might discover a correlation between the use of musical elements such as an ascending scale and an ascending line in an image. I will elaborate on these possibilities in chapters two and three of this commentary.

I have explored different ways of achieving this synergic relationship by creating a number of works which are connected to various visual elements such as: paintings, photographs, tangram puzzles, photographic series, and hall layouts. The result is a series of visual-based pieces, each with a different degree of visual-musical interconnection and different approaches in terms of composition, scoring, and interaction with performers and audience.

In the subsequent chapters of this commentary I will contextualise my practice and ascertain the relevant theoretical frameworks that this research project draws upon. I will also present my methodology and discuss each of the composed pieces, before presenting conclusions and identifying possible future areas of experimentation. As an appendix, I will briefly discuss the work *Intervened memory* for viola da gamba and electronics, an ongoing collaborative project which is related to this practice-based research.

1. Visually inspired composition

1.1 Painting and music: mapping and translating

The connection between music and image is not new. Throughout history, many composers have used paintings, photographs, or even colours as either a compositional tool or a source of material. The relationship between images and sound fascinated composers such as Modest Mussorgsky, who wrote *Pictures at an Exhibition* as a musical reading of Viktor Hartmann's paintings, and Alexander Scriabin, who developed his idea of a colour organ in *Prometheus*, exploring the relationship between colours, pitch and sensations.

During the 20th Century, various composers had close relationships with painting and with painters: Arnold Schoenberg painted some expressionist works and was in close contact with Der Blaue Reiter group; John Cage made drawings which were often then part of his compositions; Morton Feldman had close relationships with painters such as Philip Guston and Mark Rothko, which influenced his work. He was also inspired by the work of visual artist Francesco Clemente.

Painting continues to conceptually influence composers and has been used as a compositional tool to determine musical structure, as well as to define a series of musical parameters.

In Kaija Saariaho's *Verblendungen*, a brushstroke created by the composer became the base for determining a number of musical parameters. The initial thickness of brushstroke translates into loudness and density, and as the brush is lifted, the texture goes from being homogenous to being a more separated texture. This thinning idea that comes from the brushstroke is then used in internal gestures of the piece.

Visual artist and composer Sedje Hemon developed a method to generate musical material from her paintings. She would use a grid to extract a number of musical parameters (such as duration and pitch) from the lines and curves of her paintings. Hemon asserted that "the painting thus contains the score and this 'is' also the painting" (Hémon, 2021: online).

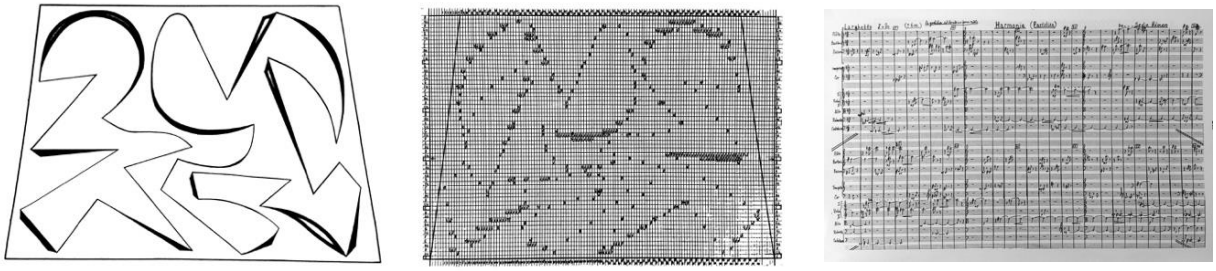


Figure 5: Hemon's Harmonie (1964) transformation process

Chiyoko Szlavnics has also developed a method in which she creates a drawing designed to represent sound. Szlavnics describes this method as follows:

> It begins with the creation of a drawing – a work of two-dimensional art, designed to represent the fullness of sound. A drawing provides an abstract, yet fertile starting point, which can be transformed into sound through an arduous but exciting composition process (Szlavnics, 2006, p. 1).

She uses a four-step process for transforming a drawing into a score, although she is already thinking of the musical possibilities when creating a drawing.

> There are four distinct phases of transforming a drawing into a score, once I am convinced that a drawing is strong enough to serve as the basis for a piece, and after I have scanned it into my computer. 1. I superimpose horizontal and vertical grids on the image (define global scales), 2. I adjust the drawing and grid (set regions), 3. I name all the pitches (specify just-intonation ratios; make local decisions) and orchestrate the work (colour and/or fuse sound), and 4. I produce a score more or less in traditional musical notation (Szlavnics, 2006, p. 5).

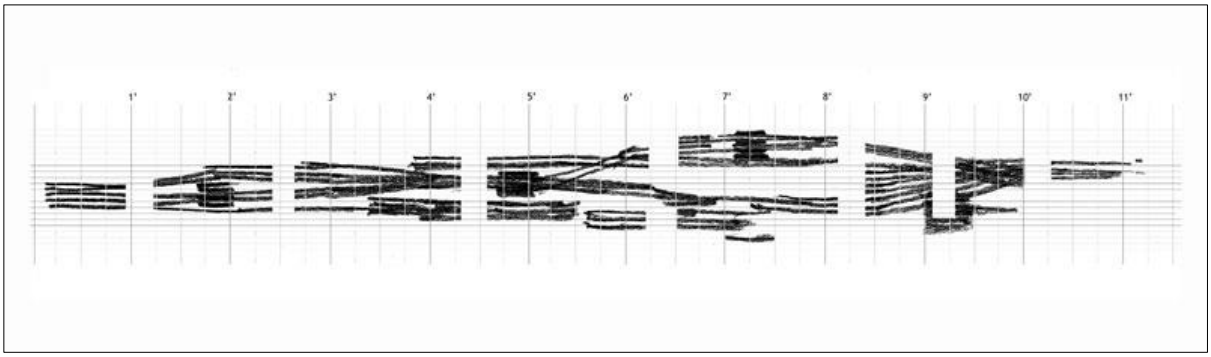


Figure 6: Sketch for Szlavnics' 'LightFalls' (2007)

A number of Bryn Harrison's pieces were inspired by the work of visual artists, in particular those that engage the viewer in some type of moving stasis. His method of scoring some of his pieces, such as *Six symmetries* and *Rise* has a direct relationship with a visual process. He represents curves by using musical elements such as rhythmic canons and pitch cycles. In *Rise*, curves are represented by musical elements such as strings playing ascending glissandi, with the idea of having a continuously rising movement.

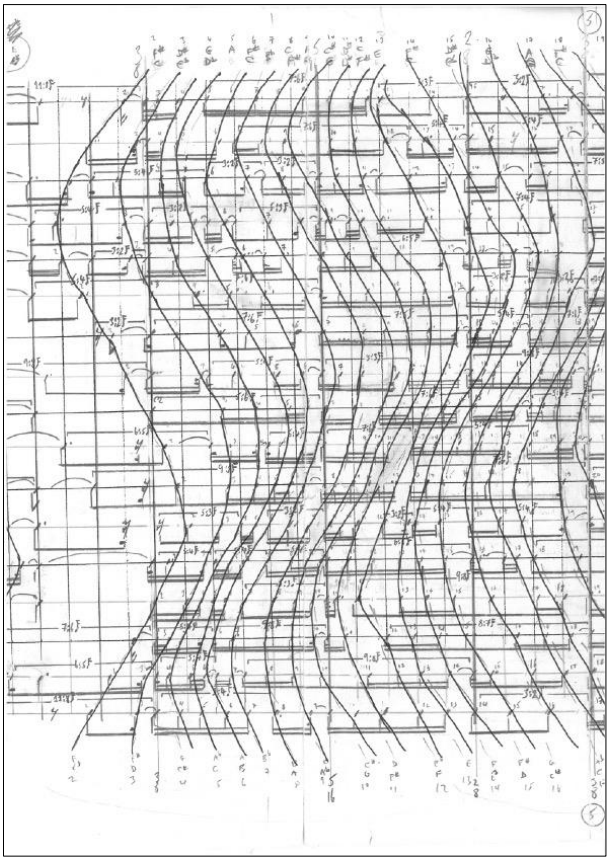


Figure 7: Sketch for 'Six symmetries'. Courtesy of Bryn Harrison

In an article on the CeReNeM journal, he states: "One might even say that the conception of my compositions is visual even though, paradoxically, they require time as a premise for the work" (Harrison, 2012: 59).

Six symmetries was written from analysing the way that artist Bridget Riley uses the curve in her curve paintings of the mid-1970's and by conveying a certain sense of oscillation, present in kinetic visual art, into music.

> The piece considers the ways in which certain processes adopted by Riley might be applied musically. The rhythmic contours of the piece are derived directly from a series of geometric curves based on these paintings by tracing the constellation of points from specific paintings into curvilinear grids, resulting in a series of quietly oscillating musical canons. The research considered the ways in which adopting the constructs of a visual medium can have a direct bearing upon the approach to musical notation and how, in turn,

this can effect the consequent interpretation of the piece (Harrison, 2021: online).

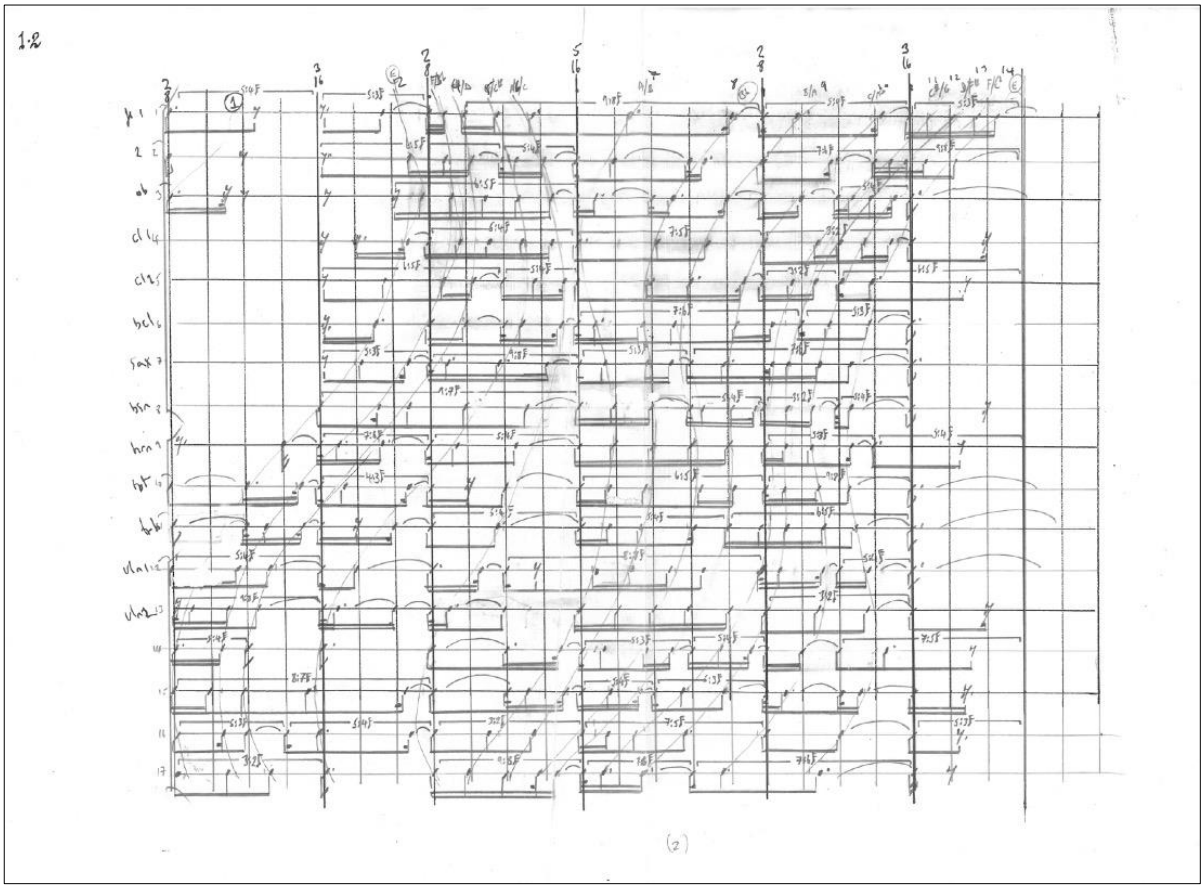


Figure 8: Sketch 2 for 'Six symmetries'. Courtesy of Bryn Harrison

Luiz Henrique Yudo, an auto-didactic Brazilian-Dutch composer with a background in architecture, design, illustration and painting, sees any visual element as a source of sonic potential. He translates visual patterns into musical parameters such as structure, melody and repetition. When discussing his transformation of visual objects into scores, he attributes his "satisfying results" to an awareness that comes from his visual training. (Reynell, 2021: online).

In the programme notes of his piece *Chinese wall paper,* Yudo describes the design of a decorative pattern he saw in Taiwan, and which he used to compose the piece:

> The complexity and symmetry of that design appealed to me firstly as a visual and then as a musical structure. I mapped this pattern's structure from four different corners, creating a set of four melodic lines of two sounds. This

> composition is therefore a musical translation of that structure (Yudo, 2021: online).

These previously mentioned works all use paintings, patterns, designs and lines as a source of material or inspiration for composing. They all tap into a variety of visually inspired compositional processes. In some cases, the visual-musical connection is used as an extra-musical compositional tool to generate material or to formalise compositional decisions. In other cases, there is clearly a more interdisciplinary approach, where the visual and musical is more profoundly interconnected. Such is the case of Sedje Hemon and Chiyoko Szlavnics, since they both create visual works as a part of their creative and compositional process. Although a visual-musical association when experiencing these works might exist, in many cases the visual-musical connection concerns mainly the composer, and the composer's compositional process for 'translating' of 'mapping' an image as a compositional tool. I believe that this ends up leaving the visual element somewhat relegated, and removed from further creative process.

This research project addresses the possibilities of taking these visual-musical associations a step further. A fundamental aspect of my work is the involvement of images beyond a process of mapping or gathering of material for composing. I aim to integrate visual elements to my compositional process, as well as during the process of communicating and collaborating with performers. In some cases, images are also part of the score. The presence of visual elements during the performance of a piece also plays an important role in some of my works. My intention when showing images during a performance is to enhance the perceptual experience (for the audience) and the interpretation of the piece (for the performers), thus creating a deeper visual-aural connection, and adding something that would not exist without the involvement of the visual elements.

This musical-visual bond does not necessarily entail that the musical elements will be mirroring or reproducing the visual elements. My work is about a synergic combination of both mediums, which can signify a number of associations: a parallel or corresponding relationship between mediums, an opposed or conflicting one, a very clear and transparent connection, or a vague one. The connection between the aural and the visual in my work is however always the starting point of each work, and the visual elements permeate every step of the development of each piece. Nevertheless, it is not my purpose to have a comprehensible or even balanced connection

between both mediums, nor do I aim to create works in which it is possible to *hear* the images or the other way around.

I also believe that the use of images represents an alternative way of connecting with the public in contemporary music. I consider it important to bring new audiences into the new music scene, and I have found that audio-visual pieces are a good way of doing that. Experiencing contemporary music can be challenging for new listeners, who may complain about not understanding the music or not finding a thread to follow it. Having a visual element present places something between the public and the act of listening, allowing the sense of sight to act as a doorway into an unfamiliar sound world. John Berger says that "Our vision is continually active, continually moving, continually holding things in a circle around itself, constituting what is present to us as we are" (Berger, 1972: 9). I take advantage of vision as an experiential element and as a compositional and performative tool on different levels (see 2.4 Degrees of musical-visual bond in my music), in pieces such as *Constelaciones*, *Megi*, and *8 mosaïques*.

1.2 A deeper visual-aural interconnection

Christian Marclay wrote for the foreword of Elliott Sharp's Foliage:

> I find that musicians often come up with images that visual artists would not create, because they have the advantage of "hearing images", a synaesthesia that comes from years of practice and playing, a unique synchronization between the eyes, the hands, and the instrument (Marclay, 2012: online).

Fred Frith's photographic scores *Stone, Brick, Glass, Wood, Wire* consist of a series of images taken by Frith himself of a variety of surfaces, objects, and landscapes. The images, chosen because of their patterns and lines, serve as graphic scores. Each score also contains a set of rules –some more precise than others– on how the performers are to interpret the visual elements of the photographs. According to Frith, it was during an improvisation workshop that he realised how visual information was a helpful way in to the improvisation.

These improvisation experiments developed into the idea of using '*(photo) Graphic Scores'* that could serve as a guide for a *'structured improvisation'*. On each score of *Stone, Brick, Glass, Wood, Wire,* Frith includes a series of rules to follow which include form, duration,

dynamics, material, and instrumental density. In most of the photographs, time is read from left to right, and pitch is read vertically. In the album's booklet, he writes:

> As far as I'm concerned anyone is free to invent whatever rules for interpretation work for them. My own are a mixture between the metaphorical (once you understand them you don't necessarily need to see the picture) and literal (the image re-interpreted according to 'normal' notational parameters such as pitch (vertical) and time (horizontal), not to mention density and dynamics (Frith, 1999: CD).

For example, for *Bricks for six* (Figure 9), and *Skylight IV* (Figure 10), the instructions are the following:

Figure 9: Bricks for six (Frith, 1986-96)

Bricks for six

Each of six players takes one of the staves, and interprets, in as consistent manner as possible, whatever aspect of what falls between the top and bottom line of the staff they find interesting. (Color, texture, density, growth, etc). Divisions (white lines) are played by all other players, as conducted. (Frith, 1999)

Skylight IV

Three duos and a solo, accumulative and staggered. A – drums/harp; B – baritone sax/piano; C – drum machines/bass clarinet; D – trumpet. Black vertical lines = silence. Time left to right. First duo plays first line. At 30 seconds, second duo starts second line. First duo re-enters at white dotted line, repeating first line as exactly as possible. Process continues in the same way. Note that black 'blocls' within the playing frame represent silence also. Duration: 4.00. Conducted. (Frith, 1999).

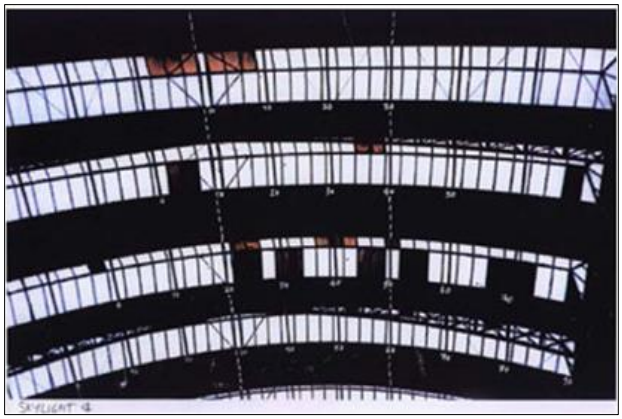


Figure 10: Skylight IV (Frith, 1986-96)

For these pieces, the photographs serve as a starting point in terms of defining a number of musical parameters, as well as a way of communicating with performers. Although these pieces were written for improvisers, and allow much freedom for performers, I have employed a very similar process when using my own photographs as scores, and I identify strongly with Frith's photography-to-music process. A number of my pieces, such as *Traversing Wires* and *Intervened memory* use photographs in a similar way as the pieces of *Stone, Brick, Glass, Wood, Wire.*

With *Treatise*, Cornelius Cardew designed a 193-page graphic score with no performance instructions. He encouraged players to formulate rules in advance, but the interpretation of the graphic score is completely left open. I believe that with *Treatise,* Cardew intended to continue exploring a number creative possibilities in terms of non-traditional scores, where performers could discover and creatively respond to graphic notation. His decision to use almost no musical symbols, as well as the lack of any type of rule or instructions comes from his background as a graphic designer, inviting players to engage *Treatise* from a visual point of view rather than an educated musical one.

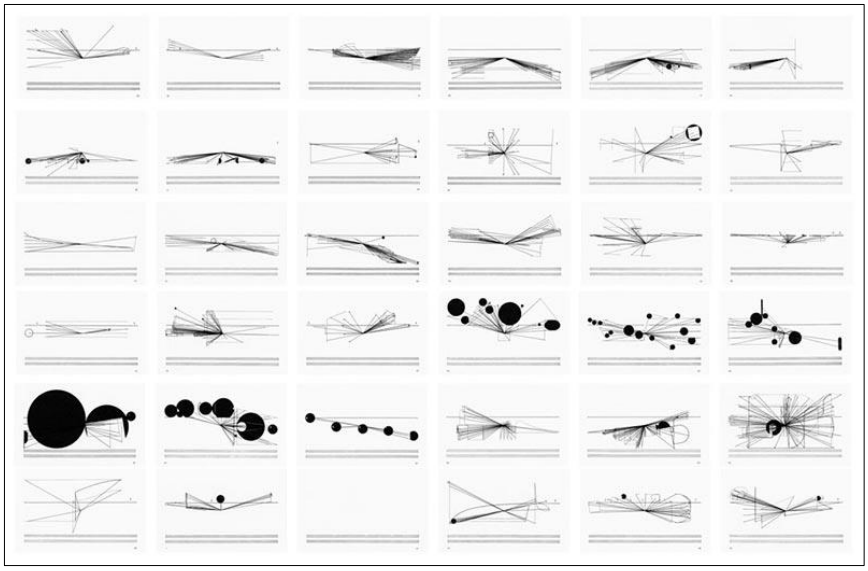


Figure 11: Treatise pages 140-175 (Cardew, 1963-67)

His way of organising shapes throughout the score indicates an intention to aid the pairing of the visual elements with musical parameters or material. "For *Treatise* is a further stage on the route away from notations which are only of use to trained musicians" (Nyman, 1999: 117). With such an open and vast visual world, it makes sense that Cardew imagined performers who had a strong visual awareness. I share this background in visual education, which I believe has

given me a heightened perspective when working with visual elements. My compositional approach and use of images as a creative process is very idiosynchratic, as I will explain in chapters two and three.

As a synaesthetic composer, Deborah Pritchard's work has a deep relationship with colour. She writes music based on artworks and also produces retrospective visualisations which act as visual guides for her music, as well as music by other composers. In an interview with PRS for Music's M Magazine, she talks about her process and states:

> Sometimes I paint images before I write – a bit like a plan – sometimes I paint retrospectively, like a visual guide, and sometimes I create graphic scores, designed to be interpreted by a musician. With a visual guide, it can be quite common for me to imagine the colour and shape of the image whilst I'm writing (Pritchard, 2018: online).

Her work *Inside colour,* for solo violin, is based on the colours of an aurora seen from space. For this piece, Pritchard translated subjectively the colours, shape and movement of the aurora into musical parameters with the idea of taking the listener on a journey through colour.

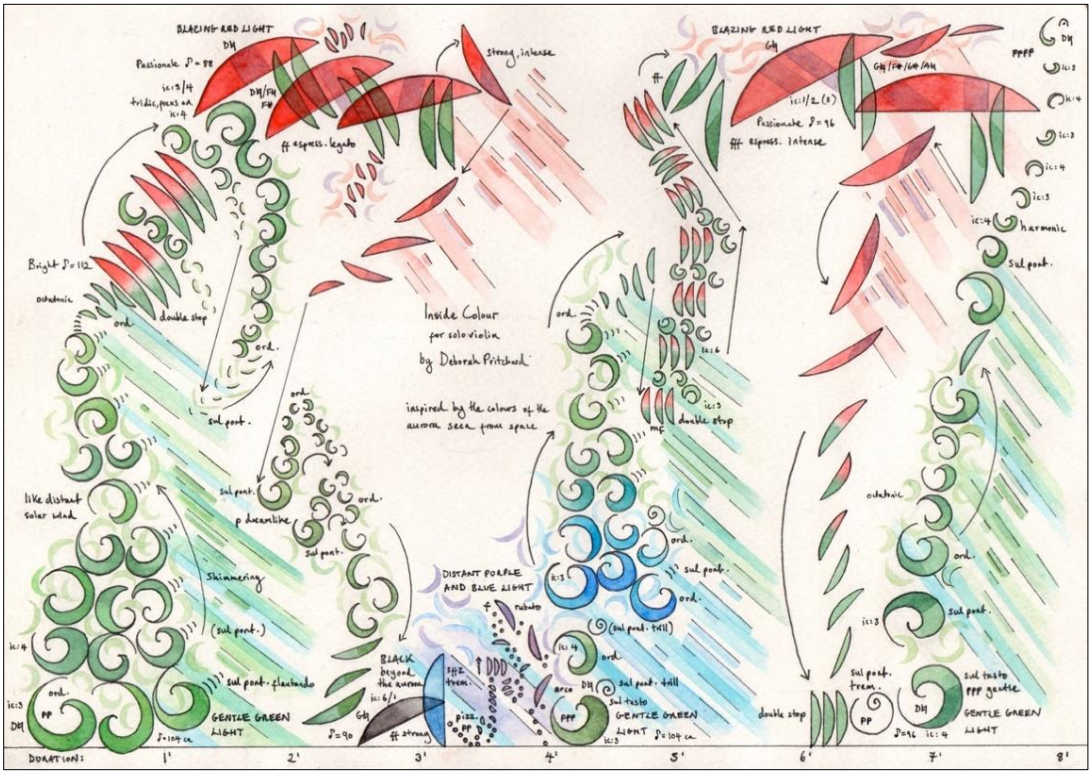


Figure 12: Inside Colour visualisation (Pritchard, 2017)

> For my visual guide to my solo violin piece *Inside Colour,* I painted almost every musical gesture in a continuous visual narrative, with a timeline below. There are elegiac green forms at the beginning of the work and more solid, blazing red gestures in the middle of the piece. The images and music are linked so closely that I can also paint live to this piece, showing in real time how colour links to sound (Pritchard, 2018: online).

Pritchard also believes that audiences who are not used to contemporary classical music can sometimes better follow it with the help of a visual guide. She has been developing music maps with the London Sinfonietta, included on the programme notes of complex contemporary music. Figure 13 shows the music map created by Pritchard for Harrison Birtwistle's *Silbury Air*, a piece that has a visual connection itself.

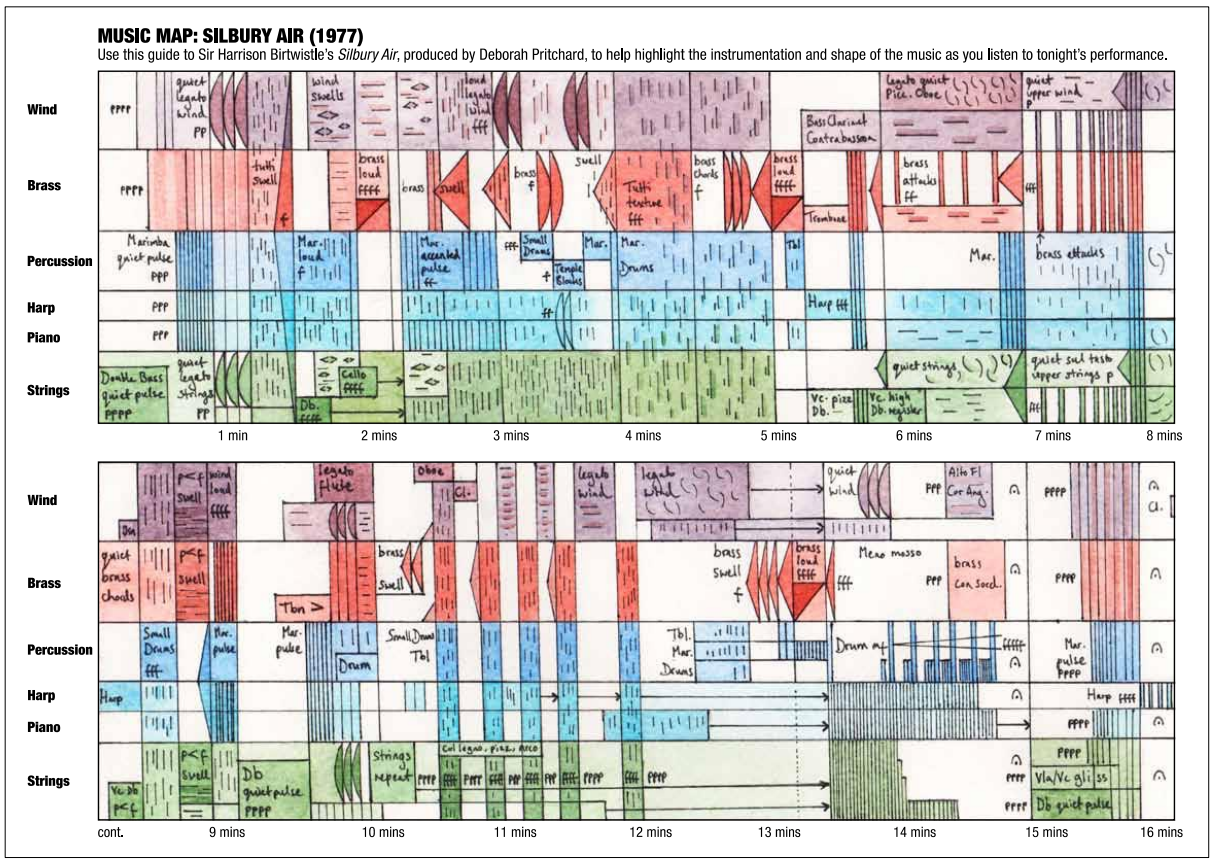


Figure 13: Music Map to Harrison Birtwistle's Silbury Air, produced by Deborah Pritchard

During this research project I have experienced how Marclay's idea of *"hearing images"* can have a deep impact on how a piece is created, performed, and presented. A visual input certainly

opens the door to creative outlets which would not happen –or would happen very differently– if the visual element had not been part of the creative process. I believe that visual elements also provide interesting possibilities in terms of the perception of the piece, and on the way an audience can experience it. One's perceptual listening experience immediately changes when adding the sense of sight. In the case of my music, the act of seeing is a choice, where the spectator can decide not to look –or not to pay attention– at the visual element of a work (and this applies to both the performer and the audience). My argument is that, if one does decide to observe, the listening experience will be affected by the associations that one's perception will make between the aural and the visual. What those associations are will depend on a very wide range of personal and subjective motives regarding how visual elements can be interpreted, as I will discuss further on section 2.2 of this commentary.

A good example of this compositional-performative-experiential synergy is the piece *Quad*, by Samuel Beckett. Although conceived as a television play, *Quad* has been performed on stage a number of times. The piece consists of four players/actors dressed in robes of different colours, who walk around and through a square stage following fixed patterns. Each walker has a specific percussion instrument which plays when the walker marches along the stage. Beckett specifies on the score that the piece is written "for four players, light and percussion" (Beckett, 1982: 289), which implies that all three elements are equally important.

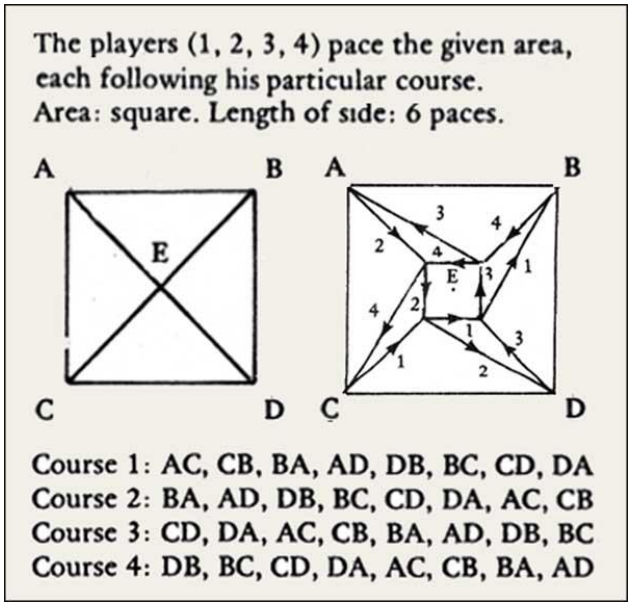


Figure 14: : Quad 's script (Beckett, 1982)

What interests me about this piece is the relationship between the moving actors and their connection with sound. As each walker is related to a percussion sound, and because walkers enter the stage at different moments, the relationship between sound and walker immediately becomes evident. This has an effect on the audience's experience: by discovering the sound-movement relationship, it is possible that their attention will be focused on this relationship and how it develops throughout the rest of the piece.

Beckett gives no further instructions for the percussion part, apart from stating that four different types of percussion are required. Even though percussionists have complete freedom, I believe that the hectic movement of the walkers, as well as the colours of the robes, communicate a strong statement which influences the interpretation of the percussion parts of the piece. Finally, the quality of individual walks, as well as the different combinations of walkers on stage, have a direct impact on the density of the music. Beckett asks for the percussion part to be intermittent, to allow the footsteps of the walkers to be heard at times. This also adds to the experience of the piece.

Figure 15: Quad performance by PANPAN Company

Beckett wrote a second part, *Quad II*, which is very short and where the players wear only white robes. There is also no percussion, which makes the second part a completely different experience.

I find the clarity and simplicity of the script very interesting and very effective. *Quad* was an important inspiration for me for composing my piece *Constelaciones*.

A similar exploration of music, visuals and movement can be found in *Nine Bells*, by Tom Johnson. For this piece, nine bells of different pitches are suspended on the stage as a 3x3 grid, all at the same distance from each other. The piece is written for one performer, who follows a number of patterns on stage to get to the different bells and play them. The player has to memorise the trajectories and the bells to play. The piece is divided into nine sections, each focusing on each of the bells as a sort of harmonic centre. The score indicates the duration of each bell attack (written in traditional notation), a metronome mark, the amount of paces per bar, and the foot with which the player should begin each section. There are also nine charts which provide the basic path for each section of the piece. The player must memorise each of the sections, so these basic paths are essential to remembering the one-hour long piece. Apart from the sound of the bells, the sound of the player's steps is very present and becomes an important part of the performance. This, as in *Quad*, creates a counterpoint between the aural and the visual, affecting the audience's experience of the piece. If, for example, the nine bells were to be arranged very closely together in a line, the experience would be completely different (both for the audience and the performer). The sound of the performer's steps would disappear, removing a layer of both auditory and visual experience. It would also remove the player/dancer character that the player adopts when moving around the spatialised bells –which engages the audience to experience both the visual and the aural–. As in *Quad*, the option is available for the audience to try and find the movement-sound relationship throughout the nine sections of the piece.

Figure 16: Tom Johnson performing Nine Bells around 1980

Nine Bells is a very challenging piece to perform, involving one-hour of memorised movement and bell playing. The basic path of each section helps with memorising the movement, but the player must still memorise the bells to play and their duration, which is not always the same.

One of the performers of *Nine Bells* wrote:

> I like everything about the piece, and it is fascinating that eight pitches are enough for an hour of very interesting music. Next to that it is a visible music, because after a short while the audience knows which pitch will be next. Of course (and here starts Tom's humor), sometimes one approaches a bell without playing it (Kaul, 2008: score).

With this type of work, which includes movement, scoring can be very challenging. This will be addressed in Chapter 2 of this commentary. *Nine Bells* was also an important source of inspiration for my piece *Constelaciones.*

A subject which interests me, and which has had a deep impact on my work, is the importance of a performance space and its influence on a compositional process. In Johnson's *Nine Bells*, the use of the space –and its visual significance– is a consequence of a musical idea. Feldman's *Rothko Chapel* is the opposite, as the musical idea was conceived from the significance of a certain space. It was the series of Rothko's paintings, created for, and placed in this specific space –the Rothko chapel– which influenced Feldman's compositional decision making and aesthetic outcome.

> To a large degree, my choice of instruments (in terms of forces used, balance and timbre) was affected by the space of the chapel as well as the paintings. Rothko's imagery goes right to the edge of his canvas, and I wanted the same effect with the music – that it should permeate the whole octagonal-shaped room and not be heard from a certain distance. The result is very much what you have in a recording – the sound is closer, more physically with you than in a concert hall (Feldman, 2000: 125).

Then it was not only Rothko's paintings, but also the space –and its spiritual significance– that influenced Feldman's compositional decisions. This also could have an effect on the performers, and ultimately on the audience, especially when experiencing a live performance at the chapel. The space was created for visitors to use as a place for meditation. I believe that the experience (both as a player and an audience) of being surrounded by Rothko's monumental paintings –and at such a close distance from the viewers–, combined with the enveloping octagonal setting and the correspondingly meditative quality of Feldman's music, enhance the

idea of a meditative perceptual state. I am convinced that experiencing this work at the chapel is very different than experiencing it in a concert hall.

When starting this research project, my concern was to find possible ways of taking the relationship between visual elements and the act of composing a step forward. My aim was to explore the idea of creating works in which this relationship could be exploited in terms of a compositional, communicative, performative and experiential synergy. The challenge has been to find successful ways of approaching this visual-musical connection, and to take two very different mediums and combine them in order to enhance what I now believe to be an almost inexhaustible creative and compositional sea of possibilities.

2. Musical-visual interconnection and creative practice

When beginning this research project, my idea was to first find elements of visual theory that could help me establish a method of using images musically. Once I had that, I would be able to compositionally explore a number of possible ways in which the visual-musical exchange could happen.

Nevertheless, before I could decide on a plan to do that, I was given the opportunity to be part of a project which involved collaborating with a visual artist and composing a piece based on his work. Similar experiences dictated the course of this research project, where opportunities emerged in which I was able to compose pieces that would explore a visual-musical synergy. In most cases, I was given an instrumentation to write for and, depending on the nature of the project, I would choose the visual counterparts I would work from. For a couple of the pieces I wrote, it was the opposite: an image prompted the idea for a new work, which I incorporated to existing collaborations or new commissions. These circumstances allowed me to explore and develop the compositional methods that I will explain within this chapter.

2.1 Aural versus Visual

> One of the most important paradigms in the audio-visual field is rooted in the different nature of the musical and visual domains. The musical language is developed over time, while the graphical expression is created over space. Metaphors, abstract relationships, and even methodic mappings have been developed in order to merge both domains. In the case of music and static images, the relationships tend to be more subjective, but at the same time they possess a subtlety that is lost with the use of dynamic graphics (Solís García, 2004: 37).

I have found a number of challenges when attempting to find shared components between aural and visual elements, especially when using static images. Each medium has its own qualities and characteristics, which can sometimes make the association of both mediums difficult. The first important difference is time: music develops over time, whilst static images do not. Similarly, there is no beginning or end in an image, nor an entrance or exit from it. Nevertheless,

in every visual construction there are elements that can guide the eye and provide a route for transiting it. In my compositional practice, these visual guides eventually lead to a musical counterpart, creating a connection that ultimately becomes the base for an image-based piece. I use both static images and moving elements within fixed images –usually through animations– in my work, which tackle the time and space challenges in different ways. My training as a photographer and knowledge of visual theory have been useful in terms of finding possible shared components between the visual and the aural, and are now deeply rooted in my compositional practice.

2.2 Reading, transiting and interpreting an image

Roland Barthes asserts that there are two messages in any reproduction of reality (paintings, drawings, cinema): a denoted message, which is the content of the reproduction, and a connoted message, which is the manner in which the observer perceives the reproduction and the way that their personal associations inform those perceptions. How each person interprets a reproduction of reality is impossible to guess or even understand. For me, this opens an exciting door for creative and collaborative artistic practice when working with images.

According to Barthes, there are three messages within an image: the linguistic message, which has to do with a possible caption or title accompanying an image; the literal message, where the message is the scene itself, the literal reality; and the symbolic message, which involves the visual composition of the image, plus the possible messages which enforce the message –such as colours, shapes, proximity of the elements, etc.– (Barthes, 1977: 33-35).

These three messages are present in my compositional practice, in my communication with the players performing my works, and subsequently during the audience's experience of my work in performance. All the pieces that I have composed as part of this research project have a combination of visual elements, notated elements, and text. The *linguistic message* usually comes in the form of text instructions on how to navigate an image, or rules on how to interpret the visual-musical connection. It is also embedded in the title of a piece –or the title of the image on which a piece is based–, thereby already playing an important role in interpreting the piece. The *literal message*, which Barthes describes as the literal reality, is the starting point for all of my works, as it gives me raw visual information that I can interpret and use in a number

of ways. However it is the *symbolic message* which I find the most important within my creative process: it is here where the most detailed part of the musical-visual connection happens. From the composition of an image, as well as from the visual elements within it, I gather the information with which, based on a series of mostly subjective decisions, I am to musically interpret and navigate the visual medium.

When beginning to compose a piece, I ask myself: Where does this image start? Where does it end? How is it possible to navigate it? How can I decode the information that I see in an image? How does that information connect with musical elements such as structure, pitch material, process, rhythm, density, dynamics, notation?

In *Art and Visual Perception*, Rudolph Arnheim analyses visual perception from the following principles: balance, shape, form, growth, space, light, colour, movement, dynamics and expression (Arnheim, 1974). Within all of those principles, a series of aesthetic rules exist that have been a part of the visual art's language for a long time. My training as a photographer involved learning how to use these principles in order to compose (and analyse) photographs. When composing music, I think of these principles as a possible bridge for the aural-visual connection, along with Barthes' three messages.

One of the first steps for me when beginning to work on an image-based piece is to decide on a route to read or follow the image, and to decide on the important elements within it which I will use musically. In *Experimental music since 1970,* Jennie Gottschalk writes:

> One key feature of any map is the line. Whether it traces a geographical formation, a border, a transit route, or a guided tour, it details a way to traverse or circle a given territory (Gottschalk, 2016: 227).

When discussing the relationship between language, music and notation within the subject of 'lines', Tim Ingold mentions the linear designs created by the Shipibo and Conibo Peruvian Amazonian ethnic groups, and how "the visible lines of the designs are themselves lines of sound" (Ingold, 2016: 38). He speculates about the possibility of those designs having acted as a system of musical notation.

> Shipibo-Conibo designs form neither a script nor a score, they no more represent words or concepts than they do musical sounds. They are rather the phenomenal forms of the voice as they are made present to the listening eye (Ibid: 38).

I particularly like the notion of the potential interchangeability of visual and aural perception, and the possibility of a *"listening eye"*. In my work, a line or route can mean following an obvious visual pattern or process, but can also be the opposite, where I decide to ignore the most evident and work with less prominent visual information. The route can help me determine if I am to read an image from right to left or vice versa, or from top to bottom. But it can also determine the order within a sequence of visual components on which I will base, for example, the structure of a piece. The pieces included in the accompanying portfolio all display different approaches in terms of image-reading and visual-musical correspondence. Possible methods include using visual elements to determine aspects such as a piece's process (in terms of i.e. pitch, rhythm or ornamentation), structure, pitch material, system, instrumental density, and colour.

My compositional decision-making is different when working with a photograph taken by myself or when using someone else's image. Using an existing image means that I have to decide on the parameters of the visual-musical connection of an image that was composed by someone else. When using my own images, the connection is different. Sometimes it happens very early on, from the moment that I see something, think of it as a possible musical source, and then compose and shoot a photograph. On other occasions, it happens later, when I decide to use one of my existing photographs. It is not always an immediate connection, and I sometimes have to spend a long time looking at an image before I know what to do with it. For example, when composing *One to nine*, I decided to create a photographic series from an existing photograph by altering it digitally, as I will explain later on.

2.3 Image-based compositional process

My compositional method when working with images draws on the various stages shown on the diagram below:

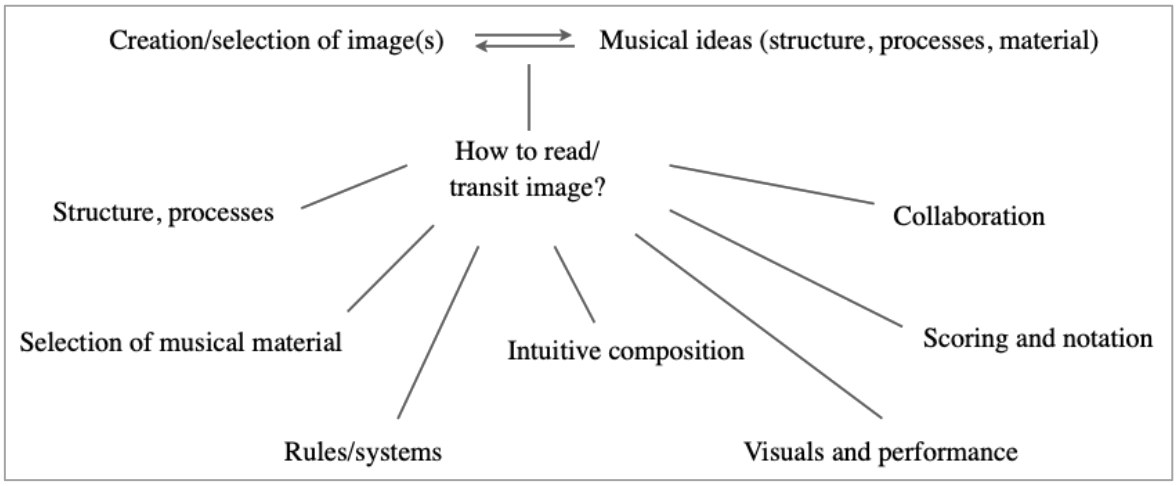


Figure 17: Image-based compositional process

The first steps usually involve a back and forth evaluation process between the visual elements and the music. Whether I am creating the visuals myself or using someone else's existing work of art, I start by thinking of the musical possibilities when looking at an image. When taking photographs, I also tend to be drawn to things that could later serve as a future score. Visual elements initially help me decide on an overall process for a piece, as well as its general form. This sometimes happens in an instant, but can sometimes take weeks of looking at an image – or constructing one–.

Then comes the challenge of deciding on how the image, or series of images, will be read. This is often a complicated step, but it is sometimes very obvious and straightforward. For me, deciding on a 'route' to read and transit an image is essential to figuring out a piece.

Once I have decided on a reading route, I start developing the musical material as well as the system (rules). Once I have more or less an idea of what I want to do, I start composing. This process usually involves a lot of intuitive composing, which often means ignoring the rules or system I decided on at the beginning. Having a system or plan helps me get started with the compositional process, but this eventually becomes more free. When possible, I try things out

with the performers I am working with. This is one of the most important parts for me when collaborating closely with performers (see performers' visual involvement section). In these cases, I re-work the piece based on the findings of the workshops, and finally create the final score.

Jennie Gottschalk describes experimental music as:

> a position — of openness, of inquiry, of uncertainty, of discovery. Facts or circumstances or materials are explored for their potential sonic outcomes through activities including composition, performance, improvisation, installation, recording, and listening (Gottschalk, 2016: 1).

I would add to this description the act of ***seeing***. Visual elements add a very interesting explorative path not only for composing, but for notating, performing and experiencing a piece. In his introduction to his piece *Foliage*, Elliott Sharp writes that "any visual input to a musical interpreter will somehow affect their output and thus, the performer creates a unique manifestation of that provided material" (Sharp, 2012: score).

In the particular case of photography, it is possible that the sense of three dimensionality it conveys can bring something different to the creative process both for composer and performer. This three dimensional perception, even if appearing in a two dimensional plane, adds an experiential component which affects the compositional and the performative unfolding, and which I believe cannot always be expressed though conventional or even graphic notation because of their two dimensional nature. This experiential component is the known awareness of space –distance, height, width, proximity–, that is, three dimensionality. This 'experience' of a three dimensional space led me to create the rules for pieces like *8 mosaïques* and *Traversing wires*, where space has perhaps a more important meaning than time. In such works, performers react to the image-scores –and the instructions– from a three dimensional understanding.

The term *experimental music* usually encompasses characteristics such as: unknown/indeterminate outcome and chance procedures, graphic scores, text scores, minimalism/simplicity of material, and relinquishing of control. My image-based work uses a number of these characteristics in order to develop the musical material of my pieces. In a sense, a few of the pieces included in this portfolio could be seen as graphic scores. These pieces use

images or shapes in order to communicate with performers, and as a guide to navigate the musical material. Nevertheless, my work is usually very clear in terms of structure, processes and material, and provides the performers with specific rules to develop the piece. In order to do this, I often use a combination of text instructions, traditional notation, and of course visual elements. I usually explore minimal material in terms of pitch and rhythm, and aim to develop inner changes through specific processes. I am attracted to transparency of sound and processes. I often work with complex layers of visual-aural relationships, which sometimes leads me to using minimal material in order not to obfuscate the visual-aural layers. Even though I tend to have a very clear idea of what I want in my music, I do relinquish a certain amount of control in some of my works. That way, performers have some freedom (for which images serve as the guide), but always within a carefully planned structure and with a very specific sound-world in mind. My compositional processes fluctuate between: visual elements-traditional music notation; control-freedom; formal-intuitive; movement-stasis.

2.4 Degrees of musical-visual bond in my music

Even though the pieces I have written during this research project all have their visual counterpart, I have had to devise diverse methods to deal with the visual-musical bond for each of the works. This comes as a consequence of the fact that each of the visual artworks all have specific characteristics and are different from one another. As a result, I have had to find a number of individual solutions in approaching how to musically treat each individual visual source. Therefore, each musical work has varying degrees of connection/interaction with its visual counterpart.

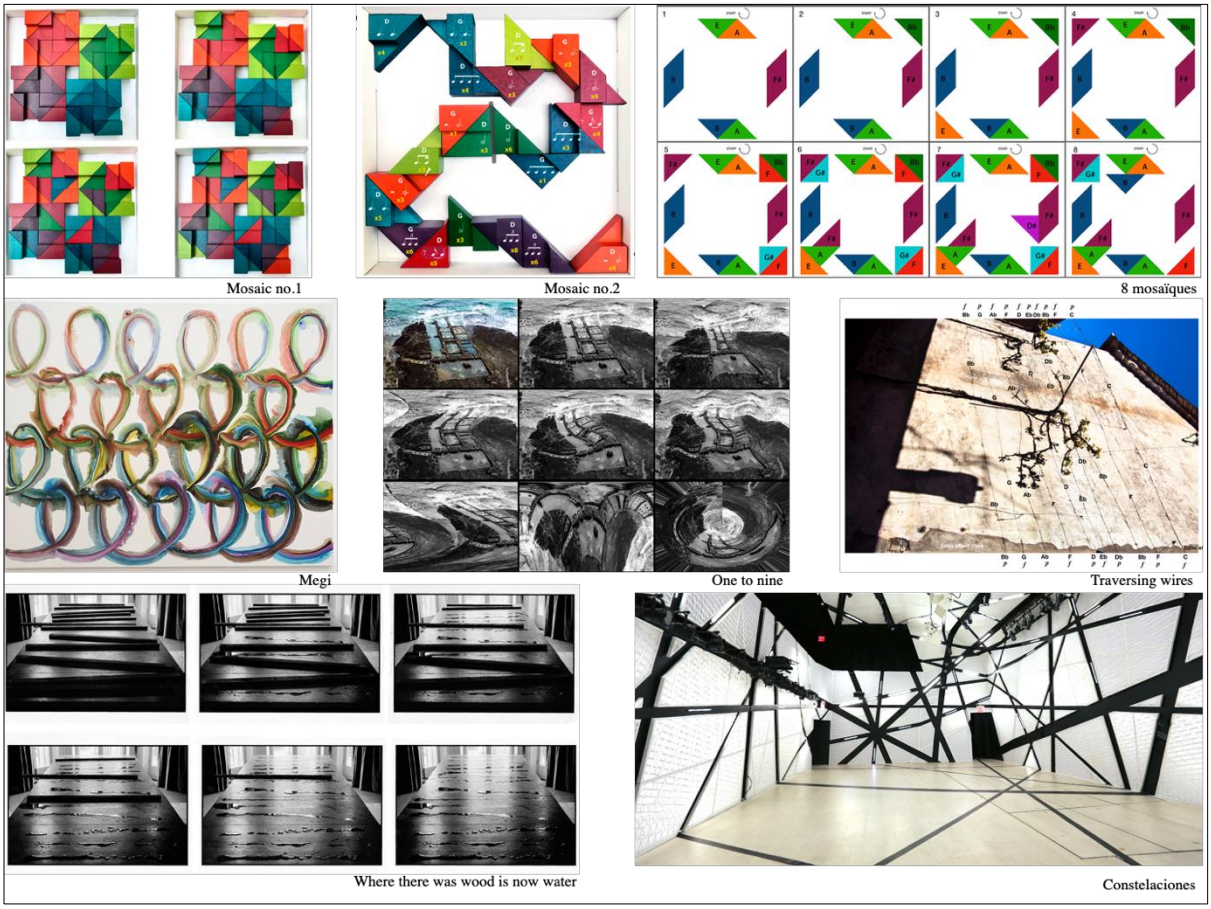


Figure 18: Visual counterparts of the eight works included in my portfolio

These different degrees of visual-musical connection affect compositional decisions, notation choices, and interactivity with the visuals for performers and audience. Working with visuals allows me to imagine fresh things with each new piece I compose, particularly in terms of deciding on an overall structure and specific processes. Both tend to emerge very clearly from an image and, contrary to other decisions I make when composing, they rarely change throughout the process of composing a piece.

Usually, I either see an image and immediately imagine very clear musical ideas that can be developed or transformed through a specific process, or I put together/arrange visual elements in a certain way because of their possible musical qualities and potential musical transformation. Processes are for me a very clear and organic way of connecting music and visuals, since they provide some sense of linearity: a beginning and an end; an entrance and an exit. They also open the door to the idea of transforming and developing material. I am very drawn to images or series in which a visual process occurs, such as *Megi*, by Bernard Frieze and *Water Table*, by Anthony McCall, both of which I have used to compose pieces. I have also

created photographic series which have visual processes, such as the one for *One to nine* and the *Mosaic pieces* series.

The results of this working method are pieces that have diverse relationships in terms of visuals-music-notation-performance-experience. I have identified the following variety of factors that play a part in the visual-musical relationship within my work:

-Use of image as photo-score

A number of my pieces use photo-scores, where players are required to perform the music from an image itself. These photo-scores contain the musical material to perform from (accompanied by a set of instructions). Two of the most important questions to explore within this research project are:

-What addition can visual elements bring to a creative process (for both composer and performer)?

-What are the unique results that come from these additions?

Using an image as a score gives the performer an extra path for creative interpretation and depth to develop a piece. Reading and interpreting from an image forces one, as a performer, to react to an image from a very personal and unique point of view. It asks for a greater creative input from the performer, as they have to think about what visual elements mean or could mean rather than simply executing the notation. This could mean for example imagining and playing a certain quality of sound as a response to a colour in the score (see 3.1.2 *Mosaic No.1)*, or deciding on the duration of a rest in response to an empty space within an image *(*see 3.1.3 *8 mosaïques).* Most of these ideas would be impossible to convey using conventional notation.

The results depend very much on the performers and the level of freedom that each piece has. For example, the four performances (by different ensembles) that *Mosaic No.1* has had are very different from one another. Firstly because of it being an open instrumentation score, but also in terms of how each ensemble has decided to interpret and navigate the rules of the score. In the case of a piece like *Constelaciones*, even when there is not very much freedom or room for interpretation in the score, playing it without the movement element had a very negative result, removing a number of layers which were an important part of the piece (see *3.4.1 Constelaciones)*.

The use of image as photo-score is fully present in: *8 mosaïques, Mosaic. No.2, Megi,* and *Traversing wires;* and partly present in: *Mosaic No.1* and *Constelaciones.*

-Use of conventional notation

Two of my pieces use standard notation and are fully traditionally notated: *One to nine* and *Where there was wood is now water*. In those cases, the visual counterpart is not essential in terms of notation or communication with performers.

There are pieces that use a combination of both visual and standard notation (*Mosaic No.1, Constelaciones, Megi)*. In others, I give the performer the choice of following a more traditional notation, in case they prefer that to a visual score (*Mosaic No.1, Mosaic. No.2)*.

-Use of a visual-based process

Most of the works included in my portfolio were composed responding to a visual process that happens to an image or series of images. In two of the pieces, it is the other way around: the image does not evolve; it is the musical material which does (from a static and unchanging visual element). With these two pieces –*Traversing wires* and *Constelaciones*– the image is fixed: the first being a photograph of a wall with wires, the latter being the lines on a stage. I created a map to navigate them, and rules to develop the musical part. Nevertheless, all the compositional decisions are based on the specific characteristics of both static visual counterparts.

-Performer's visual interaction

Depending on the piece, different forms of interaction between the performer and the visuals exist. I would argue that the visual-musical relationship is always there, although in some cases it is less immediate. For most of the works, except *One to nine* and *Where there was wood is now water*, there is a clear interaction between the performance and the visual counterpart, where players react in real time to what they see.

-Musical-visual experience

Visuals are an essential aspect of experiencing my works. This can come in many forms, such as projecting the visual counterpart of the piece during a performance or showing it on the programme note. In some pieces, the relationship is very transparent and noticeable for the audience, but in other pieces it is not. In the case of works such as *Constelaciones*, the relationship is impossible to separate, as I will explain in chapter 3.

Painter Bernard Frize says that the spectator should adopt a heuristic approach when experiencing his work:

> in order to assemble everything that has gone into the work: the ideas, the materiality, and the desire to exist. I always think to leave traces of what I've done behind, so that people can retrace my footsteps (Frize, 2019: 84).

I share this intention to leave traces of the visual-musical synergy for the audience to experience if they choose to. Most of the pieces included in my portfolio are to be experienced, when possible, along with their visual counterpart.

2.5 Scoring and performance: notation as a compositional and performative tool

> I think there is a great deal of difference between the traditional role of notation as a means of transcription and a more experimental approach in which notation can act as a compositional tool. For me, the way I use [...] notation to organize material on the page has a very direct consequence on the spatial and durational aspect of the music itself as well as helping to preserve a sense of continuity to the whole piece (Harrison, 2005-2006: online).

During this research project I have discovered how challenging it can be to notate some of my image-based pieces. Having a transparent and clear synergetic relationship between the visual and the musical elements is essential in my work; however, this has not always been easy to translate into a score.

In my experience, notation certainly acts as a compositional tool when working with images. Deciding on a way to notate a piece has had significant consequences on my compositional decision making, and consequently on the aesthetics of a work. I believe that choosing a type of notation –whether it is conventional or not– has the same degree of impact in terms of compositional options and limitations as for example having a fixed instrumentation to write for. It is something that needs to be considered from the beginning, and something that will define a series of compositional choices throughout one's creative process.

A score is how we composers communicate with performers, but what happens when an essential aspect of that communication is an image? Then the decision on how to notate a piece, and how to embed the visual aspect to the score becomes key to the performance of a piece.

I am convinced that having visual elements as part of a score opens an alternate path for the interpretation of a piece. Apart from the given rules and instructions on how to read a visual score, performers will inevitably be affected by the visual elements. This process is very personal and subjective: an image may evoke a feeling or a memory; a colour might bring up a certain sensation. But from a more concrete and objective point of view, I believe that it is important for a player to understand the work that they are to perform. Having a visual complement to the score might give a player a better sense of, for example, the overall structure of the piece, or a slow-changing process in terms of colour and articulation throughout a piece. This is the case with *One to nine* and *Where there was wood is now water*. The former having a gradual and meticulous metamorphosis through nine sections, which is clearly laid out in the photographic series (regardless of the subjective decisions in terms of visual-musical equivalence). The latter providing the player with a graphic representation of the natural notes to harmonics process of the piece. Beyond any deeper –subjective, less understandable– visual impact in an image-based performance, these examples illustrate the power and the impact that an image, or series of images can have on a player and their performance of a piece.

For my first explorations with image-scores during this research project, I wrote a series of three pieces based on Tangram puzzles. In *Mosaic No. 1*, performers read the score written in traditional notation, but the tangram mosaics for each movement are included in the score for the performers to follow at any point of the performance of the piece. This is a very free piece, and it would be impossible to notate it in a fully traditional way. Conversely, *Mosaic No. 2* is a very precise piece in terms of rhythm, where players must be very careful with not getting lost within the photo-score. Nevertheless, it is a very free piece in terms of register, density, dynamics and articulation, which players are to explore amply. This is where I intend for the visual elements to affect the performers' decisions and creativeness and why I decided not to notate in a conventional manner. In figures 19 and 20, a comparison of both notations can be seen. I will address *Mosaic No. 2* in more detail in Chapter 3.

Figure 19: Mosaic No.2, first section

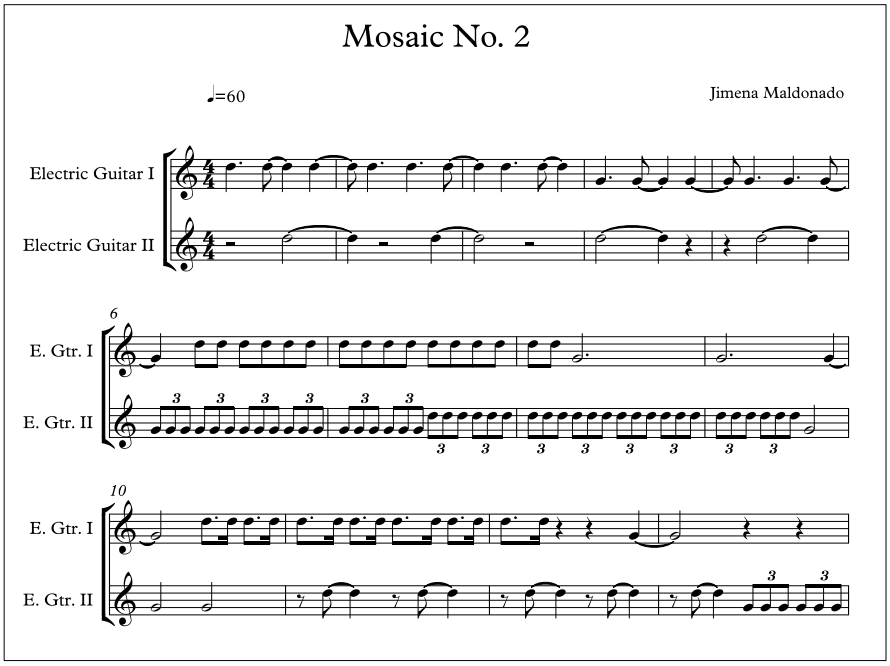


Figure 20: Mosaic No.2, first section written with traditional notation

These two previously mentioned works show the limitations of conventional notation for some of my works. As I mentioned earlier, *Mosaic No. 1* would be impossible to conventionally notate. Although *Mosaic No. 2* would be technically possible to traditionally notate, I am convinced that this option would remove the openness required for the piece in terms of register, voicing, density, and effects. It would also remove the interactive element between the performers. Using conventional notation would have forced me to make a series of compositional decisions, leaving the performers very little room for musical exploration, making the piece completely different.

Graphic notation promotes the desire to convey ideas to the performers through symbols, images and text. It appeals to the performer's imagination, initiative, taste, and subjective interpretation in a way that conventional notation simply does not allow. My photo-scores take some elements from the graphic notation approach, combining it with text instructions and conventional notation. It promotes flexibility, imagination and inventiveness, but always within a series of carefully planned set of rules, defined musical processes and overall structure.

2.6 Performers' visual involvement: working with players

Working with performers who are interested in exploring my visual-musical ideas has been key to making some of my pieces work. For a number of my image-based pieces, a special type of commitment from the player is required: to be open to explore a different type of notation and to be interested and curious about where a visual-based musical process may lead to. I have had the opportunity to work with a number of performers and ensembles throughout this research project, and the experience when collaborating on image-based pieces has not always been completely positive. I have learned that my way of working is not for everyone, and that I need to be careful when choosing the people I want to be working with.

The compositional process for *8 mosaïques* is a good example of a very fruitful collaborative experience. I had the fortune of having a good amount of try-out time with the players during the compositional process of this piece, which was very useful in terms of deciding on how to score the piece. I had initially used a combination of traditional notation along the visual elements –the 8 mosaics–, as shown in figure 21. Nevertheless, when presenting this version to the players, I was asked to remove the music staves because, according to both players, they

were distracting them from the visual input. They found the image-score version much more clear, and they felt that it gave them more room to interact with each other from the images of the mosaics. The final version of the score is shown on figure 22.

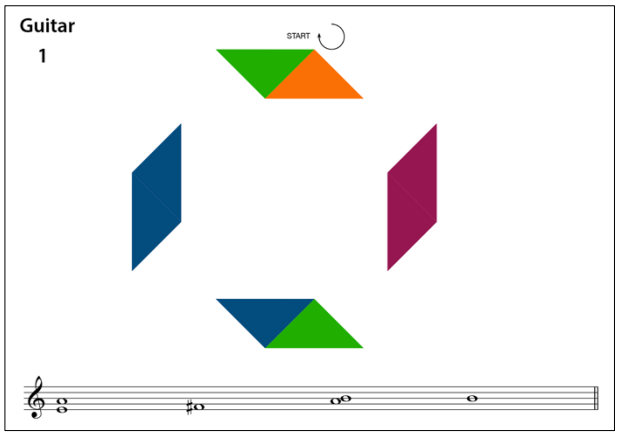


Figure 21: 8 mosaïques. First version of the score

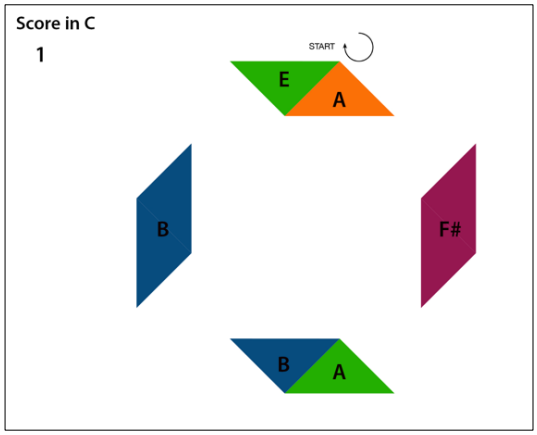


Figure 22: 8 mosaïques. Final version of the score

In pieces such as *One to nine* and *Where there was wood is now water*, the players' interaction with the visuals on which the works are based is less present. In *One to nine*, the photographs are part of the score with the intention of providing the players with the visual transformation throughout each one of the nine sections, and with the idea of this having an impact in their interpretation. In *Where there was wood is now water,* the photographic series on which the piece is based is not part of the score. However, the diagram I made to explain the visual process happening on the series and its musical significance is included on the score and the programme note of the piece. I also have encouraged both performer and listeners to observe the photographic series –*Water table,* by Anthony McCall– whilst listening to the piece.

Figure 23: Anthony McCall, "Water Table", 1972. Set of six silver gelatin prints. Each image 22.2cm x 33.6cm. Courtesy of the artist and Sprueth Magers Berlin and London

> One of the interesting aspects of working with an artist from a different medium is that it makes you have to look at what you do in a different way (Harrison, 2005-2006: online).

Working with images has undeniably changed many aspects of my compositional practice: from the way I think of both music and visuals to the way that I notate my works, it has opened the door to a series of creative explorations. In the next chapter, I will go deeper into the individual compositional and performative experiences for each of the eight pieces that comprise my portfolio.

3. Portfolio compositions

I have included eight pieces in my portfolio of compositions. In this chapter I will discuss each of the works individually. The portfolio pieces are organised into four sections as an attempt to explain the different branches of my compositional practice: mosaic studies, development of image-scores, image transformation pieces, and movement as a visual element. This classification more or less corresponds to the chronological order in which the pieces were composed.

Mosaic studies	Development of image-scores	Image transformation	Movement as a visual element
-Mosaic No.1 -8 mosaïques -Mosaic No.2	-Traversing wires -Megi	-Where there was wood is now water -One to nine	-Constelaciones

Figure 24: Classification of portfolio pieces

I have also included an extra work as an appendix of this commentary, which is a large-scale, collaborative project for viola da gamba and electronics called *Intervened memory*.

3.1 Mosaic studies

These three pieces were written during a composition residency in the South of France in the spring of 2019. I came across a Tangram puzzle in the house where I was staying, which gave me the idea of writing a series of works based on different designs of the puzzle, and which could explore different musical-visual relationships. My idea was that a tangram puzzle could be an interesting starting point for a series of visual-based pieces, as it would help me determine a clear structure and a musical process in a very straightforward manner. Also, the colours and arrangement of the puzzle would provide the players with visual elements to enhance a visual-musical connection in their performance.

3.1.2 *Mosaic No. 1*

For two or more melodic instruments (originally written for clarinet in Bb and alto saxophone)

This is the first of three works that I wrote using a tangram puzzle. For this piece I firstly arranged the puzzle pieces into four squares, which gave me the first mosaic. I organised the colours following the order of colours in a colour wheel (figure 25), with the idea of having colour combinations based on the grouping of colour schemes. The puzzle pieces are organised in the following colour groups: orange-red, light green-dark green, turquoise-blue, light purple-dark purple (figure 26).

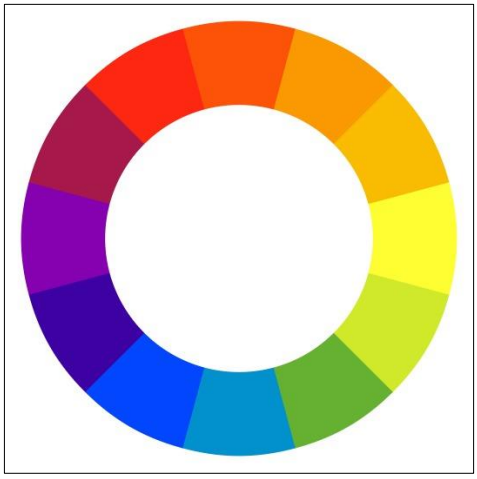


Figure 25: Colour wheel

Figure 26: Mosaic No.1. First movement's mosaic

Each colour represents a pitch, and the distance between the pitches within the same colour scheme (i.e. red-orange) is either a tone or a semitone –close colours schemes for me meant close intervals–. Players follow a path on each of the mosaics and play trills or tremolos between both the pitches that form a rectangle along the given path. The piece has four movements, each based on a different puzzle mosaic with different colour combinations, which get more varied and complex in each subsequent movement. The piece is about the different possible combinations of colour (literal and musical) when shifting the puzzle pieces around, and the musical consequences of these changes. For the second mosaic, I rearranged the two puzzle

pieces of each of the four outer edges of the squares. For the third mosaic, I moved the outer puzzle piece of each of the four inner edges of the puzzle. Finally, for the last mosaic I changed each of the outer puzzle pieces of the four outer edges of the mosaic. These changes gave each mosaic more variety in terms of the trill/tremolo combinations (figure 27), making the harmonic combinations richer. The trills/tremolos decision came from the idea of having big clouds of changing sound, and it provided me with an organic way of having a number of options in terms of dynamics, speed and articulation, despite having a limited set of pitches. It is also a musical idea which I thought could eventually work for most instruments in an open instrumentation version of the piece.

Figure 27: Mosaic transformations movements I-IV (2019)

Mosaic No.1 was initially written for Bb clarinet and alto saxophone, but was later arranged for open instrumentation. Players follow either of two paths on each movement: the outer and the inner. Each group should follow a different path clockwise (figure 28). The group doing the outer part starts each movement. The second group (reading the inner part) joins in shortly after. Since the inner part is smaller, it will take less time to complete than the outer part and thus, will have to be played more than once. Each movement ends when the group playing the outer part of the mosaic completes the loop. The group doing the inner part must be cued when this happens in order for both groups to finish the movement together. Then, the players proceed to the next movement and swap paths: the player who previously followed the inner part now follows the outer, and starts the movement.

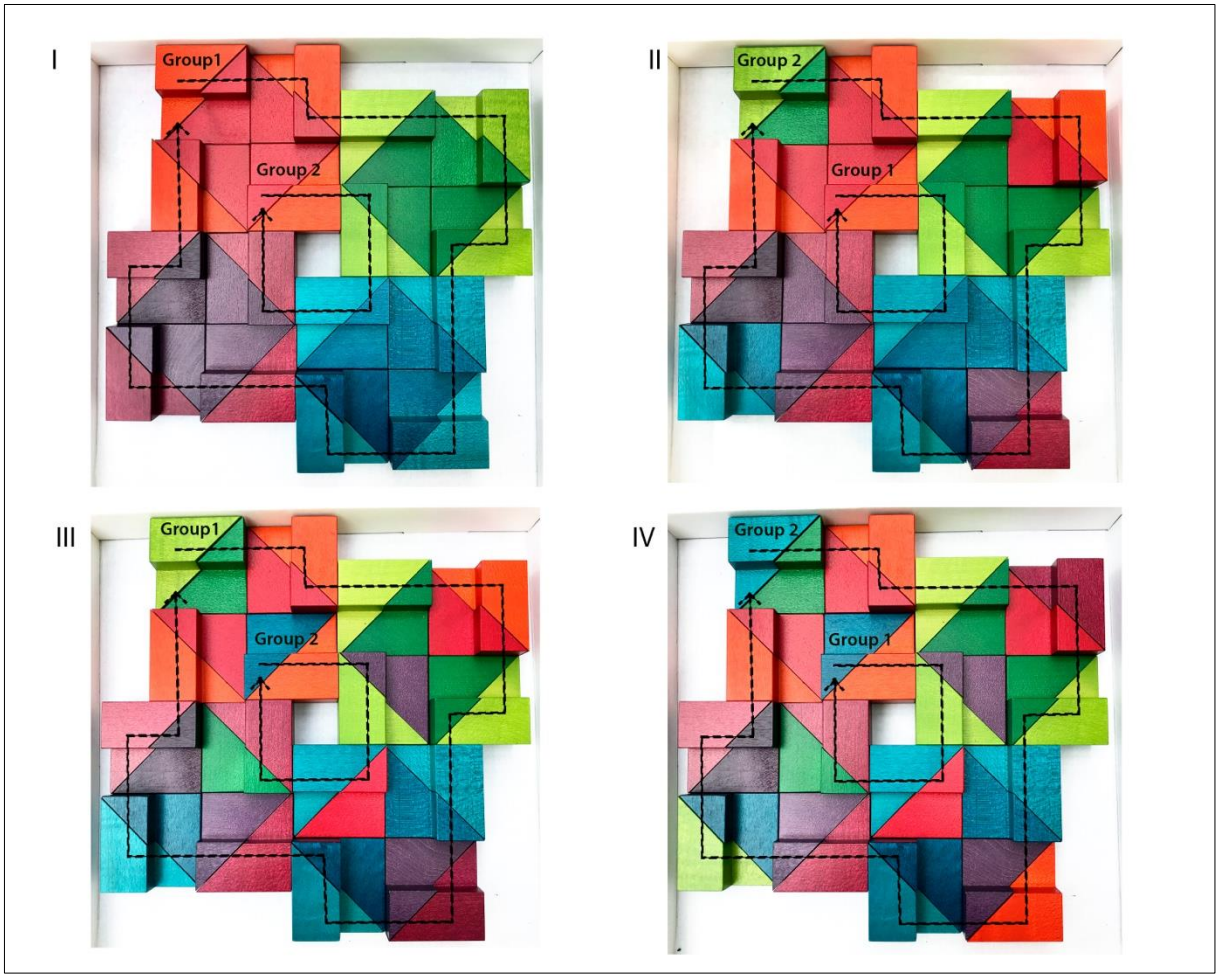


Figure 28: Reading paths for the four movements

One last visual element of the mosaics is the two dimensions within the tangram puzzles. Given the shape of the puzzle pieces, the mosaics have two dimensions: a lower one and a relief. I

then decided that the lower parts (present only on the outer parts) would be represented by either rests or long notes which swell to silence.

It was through working with the clarinet and saxophone players during rehearsals that I decided to give complete freedom in terms of dynamics, speed of the trills, registers and direction of the tremolos. The only thing I specified was a character for each movement, using only one or two words to encourage the players to establish a certain identity or process to develop on each movement, and to give each movement a different character. This worked well and gave the players a starting point to try out new things and set a few rules and processes for each of the movements.

For this first piece using tangram puzzles, I used a combination of both traditional notation and images to score the piece. The score contains all the notated combinations of trills and tremolos as well as the image of each of the four movements.

Undoubtedly, the construction of the puzzles was the starting point for my compositional process and the main idea of the piece. The puzzles dictate the pitch material and the overall form of the piece, leaving enough freedom for the performers to further develop the piece from these set parameters. The idea of having undetermined numbers of repetitions as well as the combination of a longer 'outer part' and a shorter 'inner part' also creates the possibility of aleatoric combinations of pitches (within the given pitch material).

Regarding the notation, it could be argued that the score works well enough without the images of the mosaics. Nevertheless, I find it important to include the visual counterparts in the score for two reasons:

1. I believe that it is important to include the visual counterpart used for creating the piece for the performers to see. In this case, the mosaics are essential to understand the trill/tremolo process and the overall form of the piece; but most importantly to emphasize the importance of the players' inventiveness to make the piece work, beyond a seemingly simple idea. Which leads to the second reason:

2. The relationship between colours and pitches can be a very straight-forward way of creating a visual-musical relationship. In this piece, performers could choose to memorise the colour-

pitch relations and play the piece by only looking at the tangram mosaics. This way removes the immediate register and intervallic correlation between pitches given by the conventional notation version. Then perhaps the performer could find their own colour-pitch interpretation and have an impact on musical decisions (for example the orange/red –C/Bb– combination might 'feel' louder than the orange/blue –C/A– one).

Performance experience

For the first performance of the piece it was decided that the movements would be played interspersed with other pieces of the programme, in order to allow the players to rest in between movements.

See digital file 'Mosaic No.1_Duet'

Video Example 1: Mosaic No.1, clarinet and alto saxophone performance (performed by Annick Odom and Rob Jones).

Even though it was a decision made for technical reasons (trilling for so long was very challenging for the clarinet and saxophone players), I decided to add this option to the final score. Then, players can decide to perform the four movements together (I to IV), or to have other pieces in between the movements.

Mosaic No.1 had a second performance by Attica! Ensamble in Mexico City in May 2021.

For the third performance in June 2021, Attica! joined Glasgow's Ensemble Thing, forming an ensemble of: clarinet, electric guitar, percussion, synthesizer and double bass. The piece was performed during an online event, within a programme of pre-recorded pieces. I worked with the performers separately as they recorded their layers individually (from their houses, due to lockdown), reacting to the other players' layers for each movement. I then put all the layers together along with the video of the individual performances and the images of each movement (figure 29).

See digital file 'Mosaic No.1_Ensemble'.

Video Example 2: Mosaic No.1, ensemble performance (performed by Ensembles Attica!/Thing).

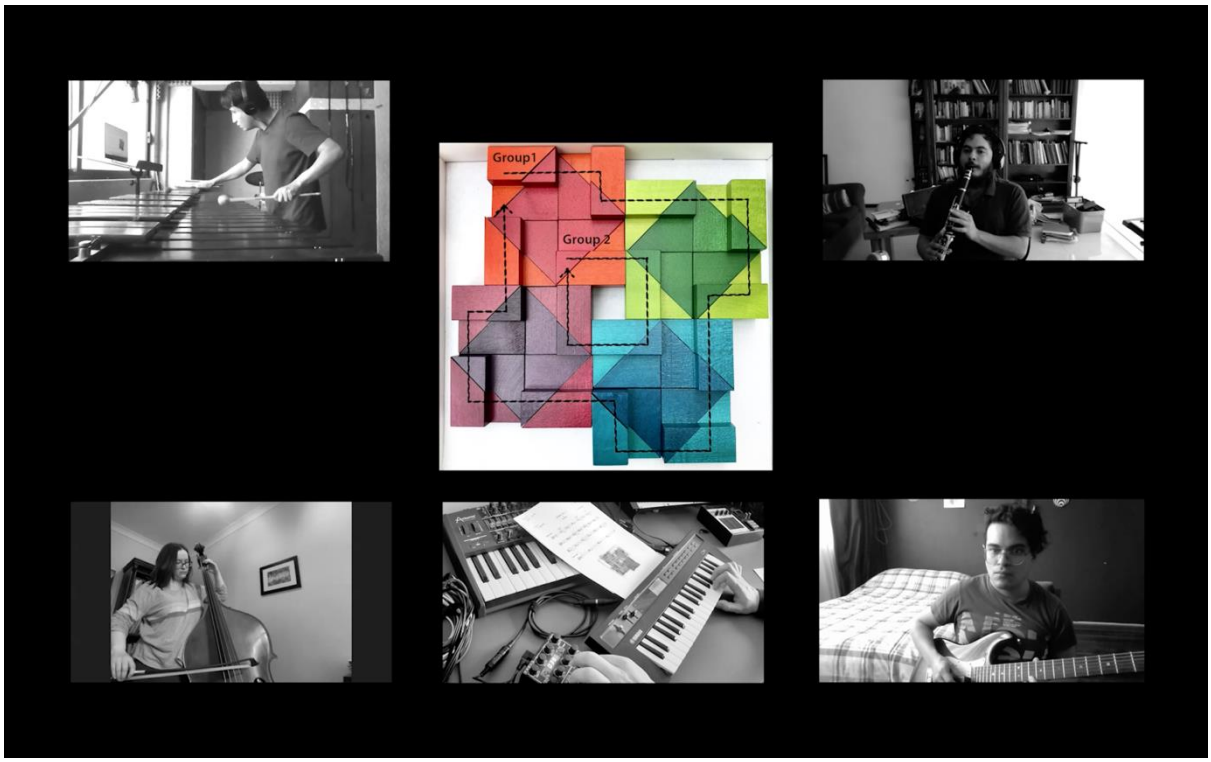


Figure 29: Mosaic No.1 ensemble performance at Face to Face online symposium

A fourth performance followed in October 2021 in New York, by Blackbox Ensemble.

3.1.3 *8 mosaïques*

For two players (originally written for clarinet and electric guitar)

For this piece I used the colour-pitch relationship in a similar way to *Mosaic No.* 1, where each component of the tangram puzzle represents a pitch. Nevertheless, the form and process of *8 mosaïques* is completely different. This piece is based on a series of eight mosaics, which players read clockwise one time, before moving on to the next. Within each mosaic there are either single puzzle pieces (one pitch) or combinations of 2 or more pieces together (intervals or chords). The first mosaic contains a certain number of puzzle pieces, arranged in a certain way. Each new mosaic adds at least one new component, making each new mosaic increasingly full and complicated. The added puzzle components fill previously unoccupied blank spaces, leading to having less space in between events, as shown in figure 30.

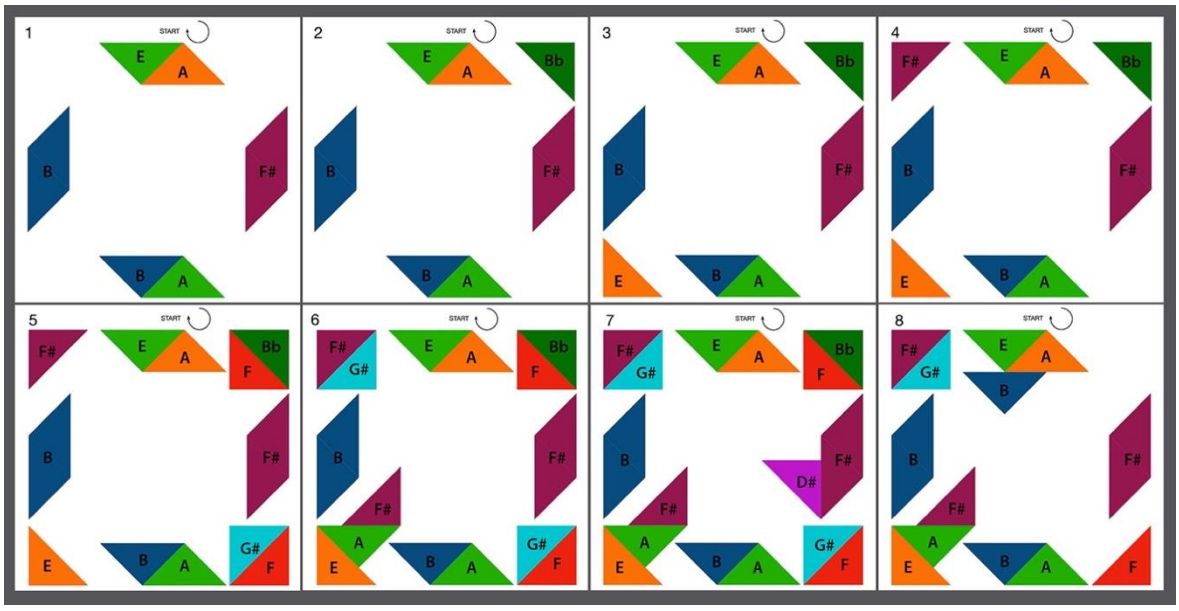


Figure 30: 8 mosaïques image-score (2019)

Performers are to play the individual or combinations of pitches freely. The idea is for players to go clockwise through each of the mosaics by repeating certain musical ideas which can be recognised on each mosaic, since the original elements from the first mosaic remain in the same place throughout the eight mosaics. For example: the interval E-A is always the first interval of each mosaic. Therefore, players should try and play it in a similar or recognisable way on each mosaic.

Each player reads the mosaics independently, choosing their own way of playing the pitches or intervals and the amount of time that they will 'stay' on each puzzle piece, but always cueing each other in order to begin each new mosaic together. Players have complete freedom in terms of register, colour, speed, density, and dynamics; but they are encouraged to develop a specific musical process (or processes) whilst following the mosaics (i.e. dynamics, effects, colour, phrasing, etc.). The duration of the piece is open, and the piece ends when both players have played through the eight mosaics.

Performance experience

The performers who premiered this piece reacted very well to the final version of the score (explained on section 2.6) and did a very good job at developing a musical process throughout the eight mosaics. The guitar player decided to add more guitar effects and more density with each mosaic, leading to an increasingly complex sound world. The clarinet player reacted to this process by also adding more effects and extended techniques with each mosaic.

See digital file '8 mosaïques_Duet'.

Video Example 3: 8 mosaïques, clarinet and electric guitar performance (performed by Louise White and Fred Anthouard).

I have rearranged this piece for open instrumentation (for two performers).

3.1.4 *Mosaic No. 2*

For two electric guitars

For this piece, I wanted to continue exploring the idea of using a tangram puzzle. However, this time I decided to relate the colours of the puzzle to rhythm, instead of to pitches. Therefore, each colour represents a specific rhythmic figure which is to be repeated, using the indicated pitch, a certain number of times. Players follow the given path, playing the indicated rhythm, pitch, and number of repetitions before moving on to the next puzzle piece. I assembled two tangram mosaics, and created each player's playing path as follows:

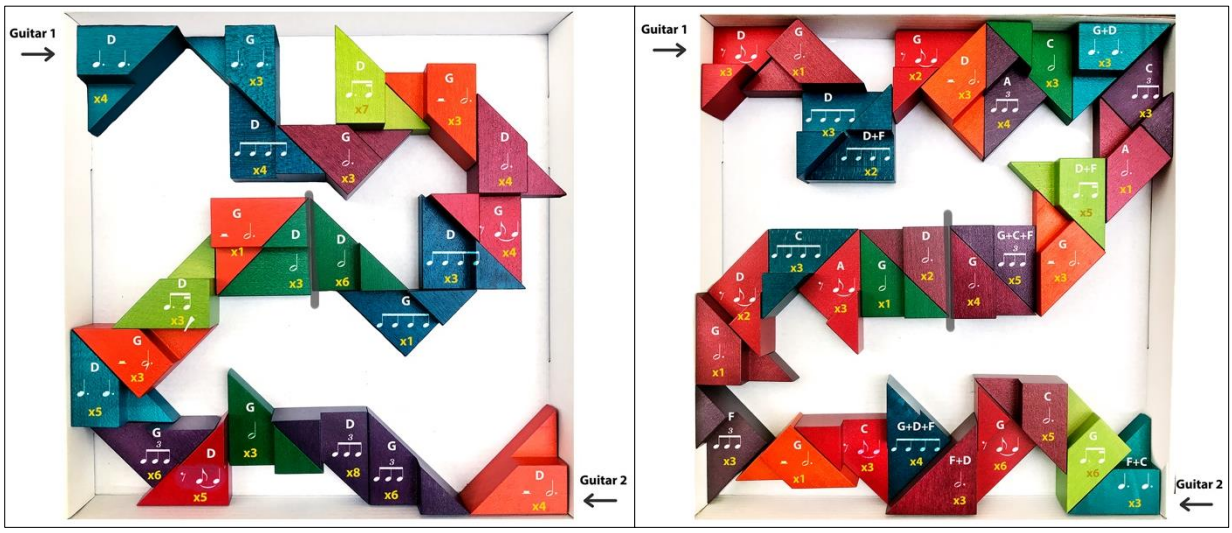


Figure 31: Mosaic No.2. First and second mosaics (2019)

I first made both mosaics following a 'z' shaped path, each using different combinations of puzzle pieces (figure 33). I then assigned each colour a rhythmic figure and a certain number of repetitions, so that each full 'z' shaped path would have a duration of 200 beats, and each half path (indicated by a grey line on figure 31) a duration of 100 beats.

I then divided each of the two mosaics into two different paths (splitting them at the centre of the mosaics), each of 100 beats. This gave me four paths per guitar part, which I treated as sections. As shown in figure 32, guitar 1 begins reading from the top left of the mosaic towards the centre, and guitar 2 from the bottom right towards the centre. After 100 beats, both players meet at the centre of the mosaic, and move onto the next section, which is the next mosaic. On

the third and fourth mosaics (sections), both guitars start at the centre of the mosaics: guitar 1 towards the bottom right corner and guitar 2 towards the top left corner.

Figure 32: Guitar 1 and guitar 2 reading paths

I chose the previous order of sections (paths) in order to have as much rhythmic and pitch variety between both guitar parts as possible. The very precise beat count on each section allows players to begin and end each section –and the entire piece– at the same time. Each player reads from their own part of the puzzle, using a beat of 63 bpm. Since there is no way of knowing where the other player is at any point during the piece, and there are not many clear cues, the challenge lies in not getting lost. If a player were to do so, they could be cued by the other player to begin the next section at the right time.

The indicated pitches are to be played using a variety of registers, colours, voicings, and effects. The combination of the guitar parts create polyrhythms throughout the piece, and once again it is the players' series of musical choices which give the piece substance. The idea is that one player's musical gesture informs and enhances the creativeness of the other, and vice versa.

Performance experience

After sending the image-score to the two players prior to the premiere of the piece, I was asked to write a traditional score for them. At the time I tried convincing the players to work from the image-score, but as they were short on rehearsal time before the premiere, in the end I agreed to write a traditionally notated version of the piece. Nevertheless, I believe that the image-score works better as it allows the players, once they become used to the visual score, to let go of the idea of a 'notated' part and focus more on the freedom that the piece allows them, guided by the colourful mosaics in the image-score.

See digital file 'Mosaic No.2_ElectricGuitars'.

Video Example 4: Mosaic No.2, two electric guitars (performed by Sascha Thiele and Jannik Steudter).

Composing the Mosaic studies gave me the opportunity to try some things which I later developed in other pieces in a more detailed manner. These studies helped me lay out important foundations in terms of using images as a starting point for defining the structure of a piece, as well as the idea of musical processes that are developed based on a visual transformation, which I later explored in works such as *One to nine, Megi* and *Where there was wood is now water.* The rhythmic ideas used in *Mosaic No.2* later influenced the rhythmic construction of *Constelaciones.*

3.2 Development of image-scores

The following two pieces use images as scores. In *Traversing wires*, composed during my residency in France in 2019, the score comes in the form of a still image. In *Megi*, written in 2020 for Decibel ensemble, the score comes in the form of animated videos based on a painting by Bernard Frize. In both works, players read their musical material from the visual counterparts of the piece, and the images are to be shown to the audience during the performance of the pieces. Nevertheless, the compositional approach for these two works is very different, as I shall explain below.

3.2.1 *Traversing wires*

For two or more players (originally written for clarinet in Bb and electric guitar)

This piece is based on a photograph I took in St. Germain-de-Calberte, France. The photograph shows a wall with shadows of wires on it, as well as some plants. I changed the orientation of the image from its original portrait orientation to landscape in order to get a different perspective of the visual elements. The idea for this work was to use the image as concretely as possible. The photograph serves as the score of the piece (along with an instructions page), and the musical material comes from the following decryption of the photograph:

Each of the wires on the wall represents a pitch (figure 33), and players are to transit the wires from right to left until one of the players gets to the last wire on the left. They start on the first wire on the top right side of the image, playing the indicated pitch with the indicated dynamic towards the bottom of the image, moving from the given dynamic to the one indicated at the bottom of the wire. On each of the wires, players have a choice: either to go all the way down to the end of the wire (at the bottom of the image), or to 'traverse' to any of the wires to the left.

Figure 33: Traversing wires image-score (2019)

Each player decides on their own path independently from the other. There are a series of rules that accompany the image-score explaining how to transit through the wires, which gives the piece many possibilities in terms of combination of pitches, rhythm, colour, and dynamic swells. As the players move towards the left, they encounter more visual elements which signify more choices, and therefore more musical possibilities. The duration of the piece is free, and it depends on how long it takes for one of the players to get to the last wire on the left. Once a player gets there, they must cue the other players in order to finish the piece together.

Performance experience

For this piece I had the opportunity to work on an initial sketch of it with the clarinettist and the guitarist. I was able to try out a few ideas with them before deciding on the final rules, which was essential for the creation of the final score. I found the combination of the two instruments –electric guitar and clarinet– an interesting feature for this piece, even though both instruments had challenges and limitations regarding the instructions of the piece. For example, the clarinet player found it harder to stay on one wire for a long period of time playing uninterruptedly. The consequence of this was that the clarinet player tended to move through the wires more quickly (when the player decided not to 'traverse' within one wire). On the other hand, the guitarist was able to stay on a single wire for longer, although he found the dynamic swellings challenging, which for the clarinet player was a more natural thing to do. I found it peculiar to see how different the duration of this piece was every time the players performed it. Even though its duration when it was premiered was less than 4 minutes, during the rehearsals there were versions of up to nine minutes.

See digital file 'Traversing wires_Duet'.

Video Example 5: Traversing wires, clarinet and electric guitar performance (performed by Louise White and Fred Anthouard).

Traversing wires allows more freedom for the performers than any of the other photo-pieces that I have composed. Once the instructions are fully understood, players have endless creative options. The given musical material is quite simple, and it is up to the performers to take responsibility for the sounds and to make the piece interesting.

I also decided to re-write this score for open instrumentation (for a minimum of two players). As a result, *Traversing wires* had a second performance, this time by an ensemble of: clarinet, violin, electric guitar, electric bass, melodica and cello. It was performed during an online event, with players performing from different parts of the world through the online platform Aejaa. The piece worked very well in this format, this time having a duration of ca 7 minutes.

See digital file 'Traversing wires_Ensemble'.

Video Example 6: Traversing wires, ensemble performance (performed by Ensembles Attica!/Thing).

3.2.2 *Megi*

For variable ensemble (originally written for recorder, clarinet, saxophone, trombone, electric guitar, vibraphone, piano, violin and double bass)

This piece was written for the Decibel Ensemble and is based on the painting *Megi* by French painter Bernard Frize (figure 34). His process to create the painting consisted of drawing four looping lines, from right to left, using only one brush stroke for each line. As a result, the lines begin with a lot of paint, but as the paint runs out, the lines fade. Also, as the loops intersect, the paint mixes, giving new colours and textures to the painting. My idea for composing this work was to musically emulate the visual processes: it starts being energetic and dense, becoming more sparse and slow as the piece progresses; also, the combinations of pitch material become more complex as the colours of the looping lines mix.

Figure 34: Megi, by Bernard Frize

I divided the ensemble into four groups of two or three instruments each (figure 35). I created an animation in which a moving figure traces each of the four lines (figure 36). Each group of instruments follow their own looping line from right to left –guided by the animation– shadowing musically the rising and falling contours of the lines.

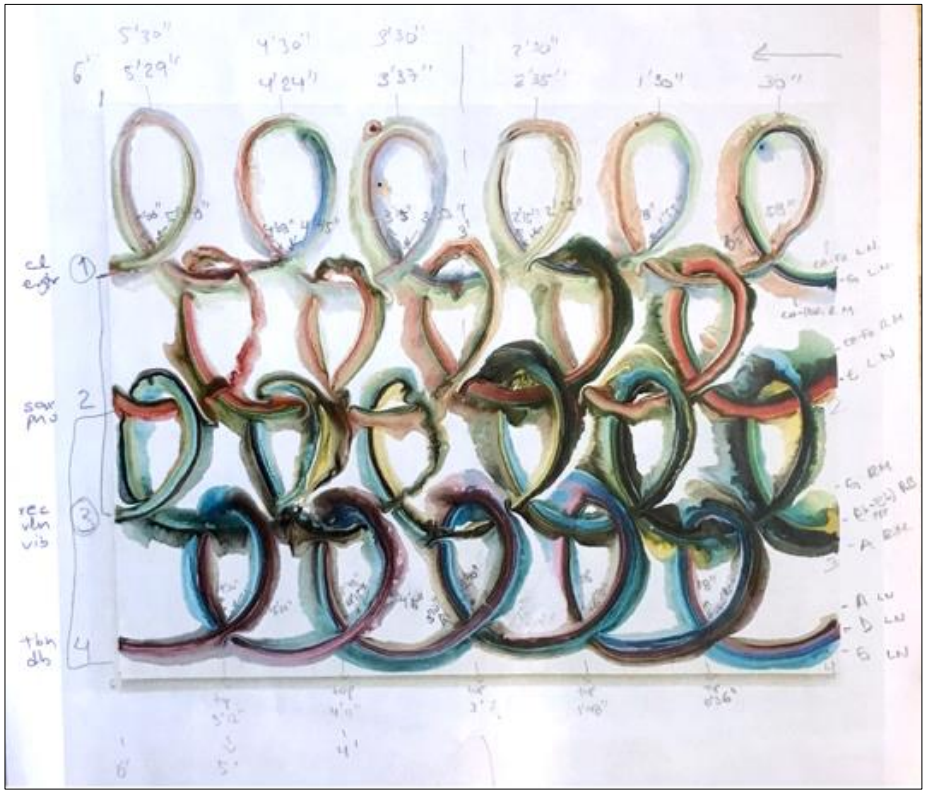


Figure 35: Instrumental groups

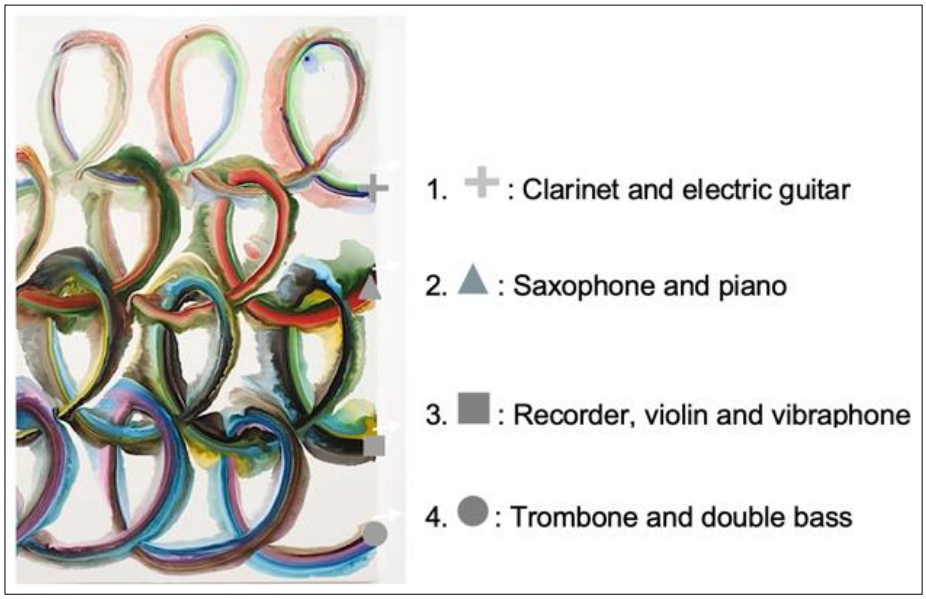


Figure 36: Moving figures per instrumental group

This piece has two main musical gestures, which are derived from the painting: ascending/descending scales and sustained/rhythmic single notes/intervals/chords. Essentially, the scales are used when ascending/descending a loop, and the sustained/rhythmic pitch material when at the top or the bottom of a looping line (figure 37).

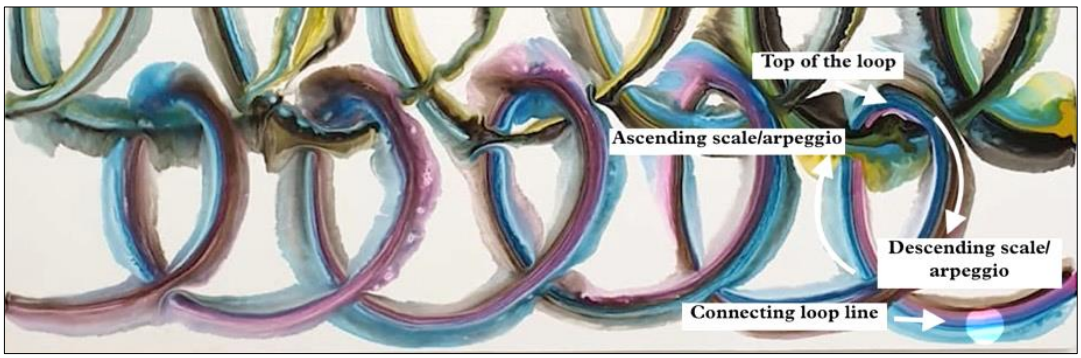


Figure 37: Musical gestures

The score for this piece comprises a set of instructions and a video-score for each group of instruments. Performers are to play from the provided video-scores, which contain the trajectory animation as well as all the musical material they are to play.

The given musical material has some specific rules, but generally gives the players freedom in terms of register, doubling, voicing, and speed of gestures. The given scales are to be played either fully or partially, from one to another pitch of the given scale (always following the direction of the loop), and repeated as many times as the animation allows it.

A video showing the painting with the moving symbols is to be shown to the audience during the performance of the piece (figure 38).

Figure 38: Projected animated video

I have arranged this piece for open instrumentation, creating video scores for instruments in C and Bb and Eb transpositions. The suggested instruments for each group are shown on figure 39 below:

Instrumentation At least 8 players divided into 4 groups of even -if possible- players.
*Suggested instruments for each group: 1a: flutes, clarinets, soprano/alto/tenor saxophones, violin, viola 1b: electric guitar, keyboards/piano, vibraphone/marimba 2a: flutes, clarinets, soprano/alto/tenor saxophones, violin, viola 2b: electric guitar, keyboards/piano, vibraphone/marimba 3a: flutes, clarinets, soprano/alto/tenor saxophones, violin, viola 3b: flutes, clarinets, soprano/alto/tenor saxophones, violin, viola 4a: trombone, tuba, tenor/baritone saxophones, bass clarinet 4b: cello, double bass, electric bass, trombone, tuba

Figure 39: Suggested instrumental groups

I also created a 'guidance score' to help with conducting the piece during future performances (figure 40).

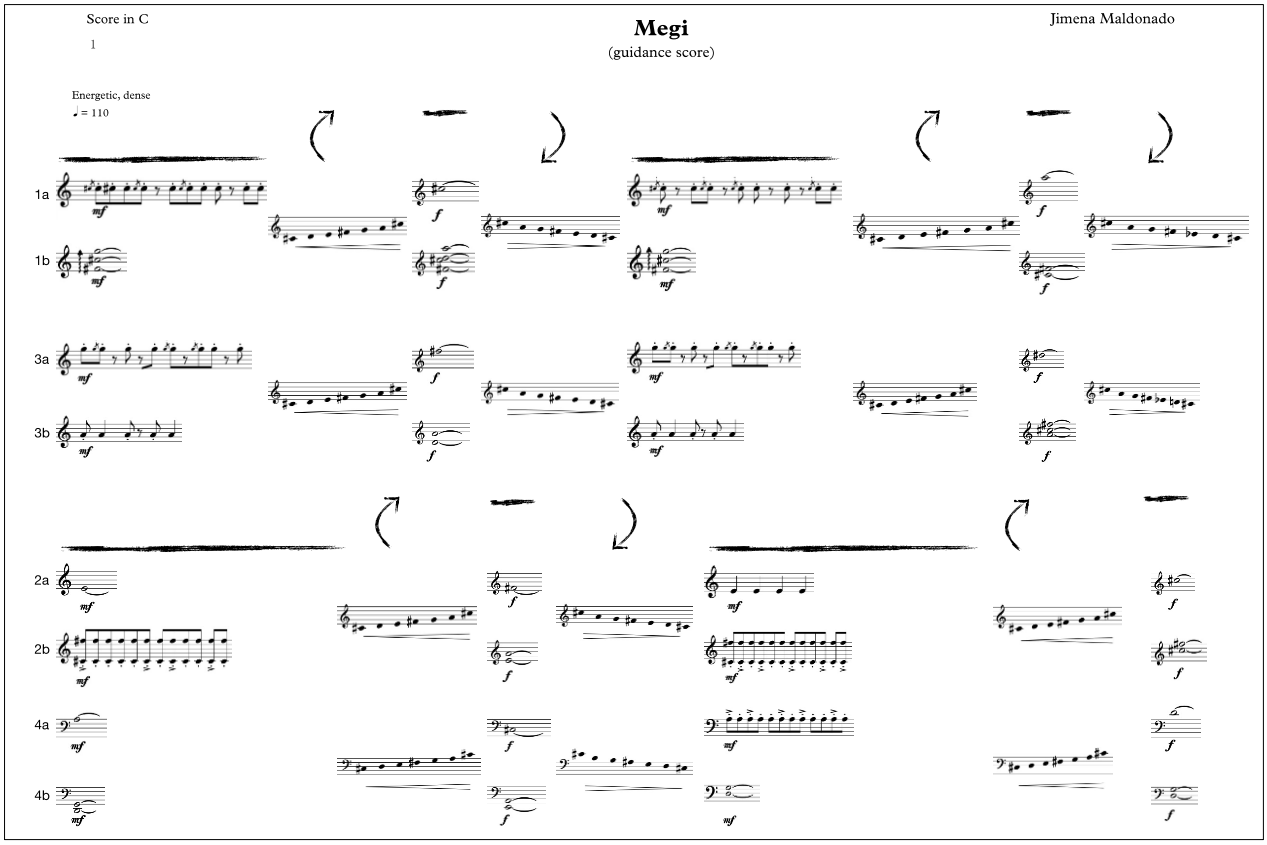


Figure 40: Page one of guidance score

Performance experience

Megi was premiered by Decibel Ensemble at the Royal Birmingham Conservatoire in February, 2019. When I wrote the piece, I knew that the rehearsal time before the concert would be limited. Just as with pieces such as *Mosaic No.1* and *Traversing wires,* the material and rules for this piece are relatively simple. Nevertheless, just as in the other pieces, it requires the performers to understand and commit to developing the idea of the work, beyond the seemingly simple surface of it. The problem is that this requires time, which in this case there was simply not enough. Even though the performance by Decibel Ensemble was very good, I would like to see this piece performed again with a longer rehearsal and development period beforehand.

See digital file ‘Megi_DecibelEnsemble’

Video Example 7: Megi, ensemble performance (performed by Decibel Ensemble).

3.3 Image transformation pieces

The following two pieces are based on photographic series. In these series –one by Anthony McCall, the other one by myself– a visual transformation process occurs. In both works, these visual progressions set-out a number of musical metamorphoses, as I will explain next. Both works use a more traditional notation, although their visual counterparts are the core of the compositional process.

3.3.1 *Where there was wood is now water*

For viola and fixed media

This piece was commissioned by violist Laura Sinnerton for her debut album 'Inner Voices'. It is based on the photographic series *Water table*, by Anthony McCall, which consists of six photographs that have a very clear, linear developmental process (figure 41).

Figure 41: Anthony McCall, "Water Table", 1972. Set of six silver gelatin prints. Each image 22.2cm x 33.6cm. Courtesy of the artist and Sprueth Magers Berlin and London

The first photograph shows a table with thirteen wooden beams on it. From the second photograph, a process of removing beams from the table begins. Every time a wooden beam is

removed, it leaves a trace of water on the table. In each of the subsequent images there are gradually fewer beams on the table –and therefore more water– until, on the last photograph, only water traces remain.

This is the only piece in this portfolio which is completely traditionally notated. I wanted to write a piece where I could follow a strict process of visual-musical translation which would not involve anyone else's interpretation of the image but my own. I also wanted to have complete control over the material and the processes, and wanted to truly dive into composing a solo viola piece which could be technically challenging for the player.

Although using traditional notation, the whole piece was composed based on the photographic series and its process. The overall wooden beams to water on the table process is represented by layers of natural notes becoming harmonics. Therefore, the piece begins with only natural notes, and ends with only harmonics.

After looking extensively at the photographic series, and taking advantage of the fact that the piece was to be recorded in a studio, I decided to work with several layers of pre-recorded viola. I divided the thirteen wooden beams into five groups with different number of beams each, which gave me five viola layers. The wood-to-water process then affects each beam group in different moments of the piece, as shown on the diagram below (figure 42).

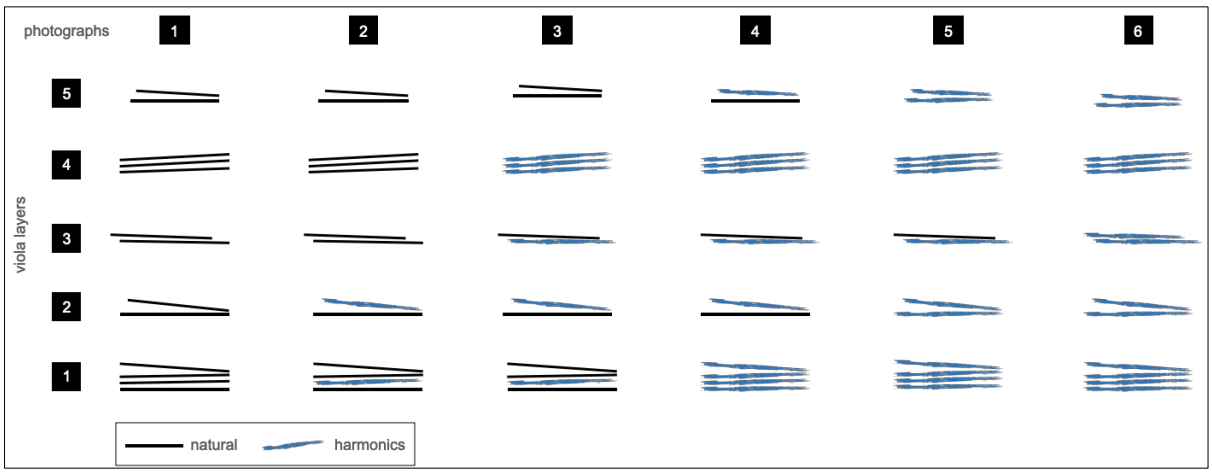


Figure 42: Wood-to-water process diagram

The groups of wooden beams also provided me with a general idea of the kind of gestures each layer would have, as well as the initial pitch material of each group. For example, layers two

and three mostly have a melodic gesture between two pitches (both layers have two beams each), while layer four has a recurring three note chord which rotates between bow and pizzicato (layer four has three beams). Layer one, being the only group with four beams, is the layer with the most colour, technique, and pitch variety. Layer five, having the smallest beams (due to the perspective of the image), has the constant semiquaver rhythmic gestures which drive the piece forward.

For this piece I worked closely with violist Laura Sinnerton, who was kind enough to record versions of the five viola layers throughout my compositional process. She recently said the following about my image-based work, during an interview with Kate Walker for NMC's Discover platform:

> I kept the series of photographs quite close while I was preparing Jimena's music. I think sometimes as instrumentalists, when we think about a composer having very specific processes, we assume there will be something mechanical and mathematical about it. But that is just not true, and it's certainly not true of Jimena's work – processes as there may be, there's a great sense of how it's very organic in its development. There's a warmth and there's a heart to it (Sinnerton, 2021: online).

This piece was recorded by Sinnerton for her album 'Inner Voices', released by Birmingham Record Company in June, 2021. It has not had a live performance yet, but when it does, it will be performed as a solo viola and fixed media piece, where layer five will be performed live and layers one to four will sound through a quadrophonic speaker system. It could also be performed by an ensemble of five live violas.

See digital file 'Where there was wood is now water_viola'

Video Example 8: Where there was wood is now water, solo viola album recording (performed by Laura Sinnerton).

Birmingham Record Company gives permission for use of the recording of *Where there was wood is now water.*

3.3.2 *One to nine*

For string quartet

One to nine was written as part of a workshop project with Quatuor Bozzini. It is based on a series of nine images I created where each image is digitally distorted, gradually becoming more transformed than the previous one, almost to the point of no recognition (figure 43).

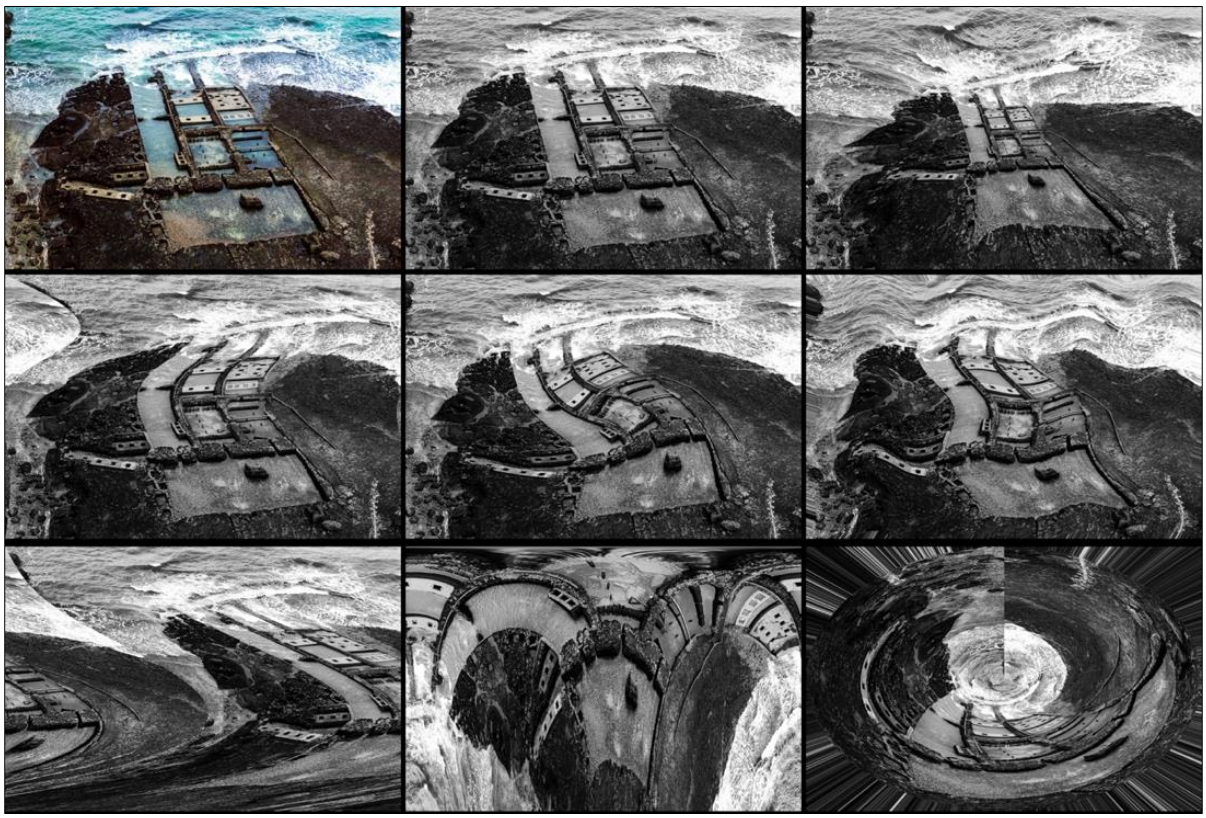


Figure 43: One to nine series (2020)

The piece is divided into nine sections of an equal duration of ca. 1'10'', each based on a photograph. The first image is the original photograph in colour, and musically it is the most basic section. From image two, the photographs are in black and white and begin their transformation. The music represents the visual changes in terms of the following elements:

-Pitch material: the more altered each image is, the more complicated the pitch material becomes.
-Colour and timbre: becomes richer and more varied in each section.
-Register: goes from a more condensed to a wider register.
-Intonation: the more abstract each image becomes, the more microtonal inflections appear.
-Material variety: the more the image changes, the more varied the musical material becomes.

Visually, it is possible to identify the original image in all the eight transformed images, with number eight and nine being the least recognisable. Musically, I decided to represent this idea by having a consistent D pitch drone present throughout the whole piece. Even though each section evolves, the essence of the original image –represented by the D drone– remains present throughout the piece.

I composed each section by deciding on a musical gesture to represent the visual transformations of each image, apart from the overall processes mentioned above. Figure 44 shows the specific musical gestures which correspond to each visual element.

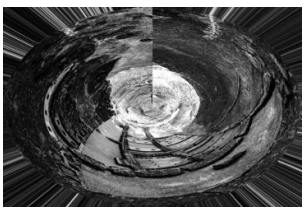
		
<u>One: Colour</u> -Violins and cello play D on one string -Viola plays D on two strings and with colour changes -All in the same register	<u>Two: Black and white</u> -Violins join viola's doubled D and colour changes -Vln. I opens the register to a higher D -Cello introduces a D harmonic and then opens the register to a low D	<u>Three: Shrinkage</u> Introduction of new pitch (E) and idea of shrinkage, represented by glissandi
		
<u>Four: Vertical curved lines 1</u> Introduction of new gesture (representing the curved lines): perfect fifth jump from E to B	<u>Five: Vertical curved lines 2 + shrinkage</u> -Combination of glissandi and perfect fifths/fourths -New pitch: F# -First microtonal inflections	<u>Six: Vertical + horizontal curved lines + shrinkage</u> -New gesture (representing the horizontal curved lines): trill-like melodic lines, combined with fifths/fourths jumps and glissandi -More microtonal inflections
		
<u>Seven: Wide curved lines</u> -New gesture (representing wide curves): Wide interval glissandi, combined with previously used gestures -New pitch: C# -More microtonal inflections	<u>Eight: From the centre outwards</u> -All players to initial D drone (with microtonal inflections) -Violins represent visual movement from centre to outwards right by doing glissandi from D upwards -Viola and cello play the movement from centre to outwards left with glissandi from D downwards	<u>Nine: Whirlpool</u> Starting from different pitches, all instruments play downwards glissandi, from a higher register towards a lower register

Figure 44: One to nine transformation processes

Performance experience

The images of the photographic series had a big impact on the notation of the piece. Just as all the images are equal in size and in framing, I also wanted each section to be of the same duration. On the other hand, I wanted to notate it in a way where there was some elasticity and freedom in terms of accents, gestures, and interaction between players. Therefore, I chose to use proportional notation. After the workshop with the Bozzini Quartet, I made a couple changes to the score: sections One to Seven are written with proportional notation and are to be played with the help of a stopwatch. The timecode helps with specific moments which should be synchronised, but is to be followed with a certain degree of elasticity within the given musical gestures of the piece. Sections Eight and Nine are traditionally notated and in 4/4, and are to be played with precise rhythm and tempo. This change responds to my musical reading of images eight and nine, which although being the most abstract images (represented by the very present microtonal inflections), are also the most symmetric and visually clear ones (represented by precise rhythm and musical gestures), prompting the change in notation.

See digital file ‘One to nine_StringQuartet’

Video Example 9: One to nine, string quartet (performed by Quatuor Bozzini).

3.4 Movement as a visual component

I have been a little obsessed with Tom Johnson's *Nine Bells* and Samuel Beckett's *Quad* for years. Both works made me want to write a piece which would include movement as part not only of the performance experience, but also of the compositional process and even the notation. It seemed like a natural step of my research to create a piece where I could use a visual component as a literal on-stage map or path which performers could literally move through whilst playing as an ensemble. My chance came after deciding to enter National Sawdust's Hildegard Competition, for which I proposed to write an in-situ work where the visual layout of the National Sawdust Concert Hall would be the main visual element and which would include movement for half of the ensemble. To my surprise, I won the competition –along with two fellow composers– and was commissioned to write the piece I proposed.

3.4.1 *Constelaciones*

For flute, clarinet, violin, violoncello, piano and percussion

This piece was conceived as a site-specific work for the concert hall of the National Sawdust in New York (figure 45). I wanted to take advantage of the striking visual layout of the venue, and make it part of the compositional process, the score, and the performance of the piece.

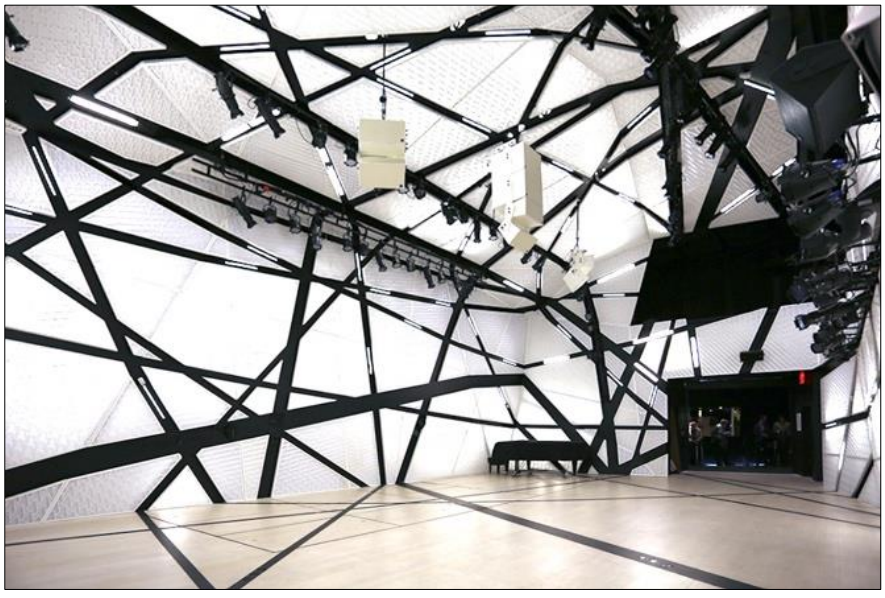


Figure 45: National Sawdust Concert Hall

The main idea of the piece is to have three players walking around the venue by following the black lines on the floor whilst playing, and the other three reacting to the walking players' movements. The ensemble is then divided into two groups: the **moving players** (flute, clarinet, violin) and the **stationary players** (vibraphone, piano, cello). The moving players' trajectories along the black lines generate a pitch-adding process for the three players, as well as the stationary players' musical material, as I will explain next.

Moving players have six routes in total (referred to as 'walks'). During these walks, they enter the stage through one of the five stage exits, follow a certain route and then leave the stage before starting a new walk. Whilst on stage, moving players follow directions given to them through a click track, which also provides them with a click of 60 bpm. They walk on the black lines, being able to go right, left, forward, or back where two black lines intersect (Figure 46).

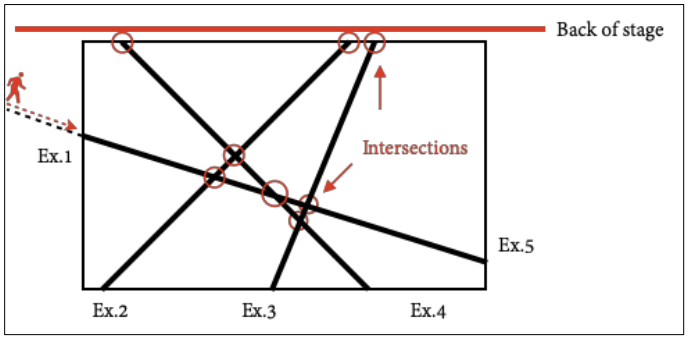


Figure 46: Stage trajectories

The distance between intersecting lines as well as on stage/off stage points are measured in steps. Steps are always timed with the 60 bpm beat, but the duration of individual steps varies per walk/route, as shown in figure 47:

1st walk - 1 step lasts **4 beats** (4 seconds)
2nd and 3rd walk - 1 step lasts **3 beats**
4th and 5th walk - 1 step lasts **2 beats**
6th walk - 1 step lasts **1 beat**

Figure 47: Step-beat relation per walk

Since each of the moving players' walks have different durations and start at different times, walking players always have a separate 'downbeat', thus creating diverse polyrhythms throughout the piece.

Moving players have an additive pitch process for each of the walks. There are a total of five pitches used in the piece: A-B-G#-C#-D#. During the first walk, all players use only the pitch A. From the second walk, the additive pitch process begins, where players go from playing a single pitch (A) on the first walk, to having all 5 pitches on the fifth walk. During the sixth and last walk, only the last added pitch (D#) is used. Each walk begins with the new pitch. After that, on every intersection a new pitch from the cycle must be added in the given order until all the pitches for that walk have been added. Once they have, the series of pitches is to be repeated over and over in the cycle order until the end of that walk –regardless of crossing any more intersections– as follows:

1st walk: A
2nd walk: B — A, B (on 1st intersection and during the rest of the walk)
3rd walk: G# — A, B (on 1st intersection) — G#, A, B (on 2nd intersection and during the rest of the walk)
4th walk: C# — A, B (on 1st intersection) — G#, A, B (on 2nd intersection) — C#, A, B, G# (on 3rd intersection and during the rest of the walk)
5th walk: D# — A, B (on 1st intersection) — G#, A, B (on 2nd intersection) — C#, A, B, G# (on 3rd intersection) — D#, A, B, G#, C# (on 4th intersection and during the rest of the walk)
6th walk: D#

The pitch material is always played in coordination with the taken step, each pitch lasting however long the step is. Moving players are to memorise the pitch material process and follow the walking routes indicated on their click track. An example of the flute player's fourth walk is shown on figure 48:

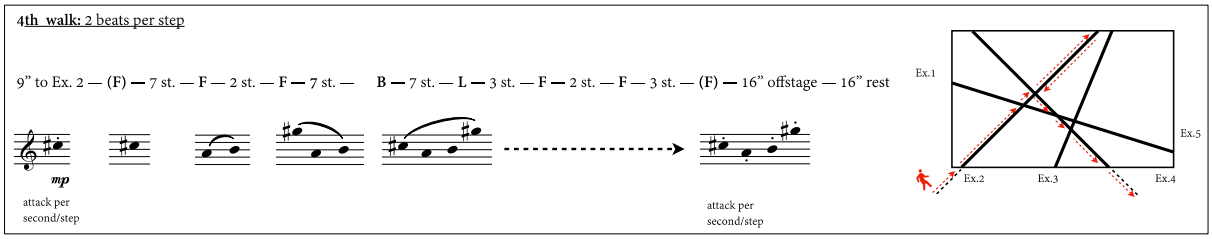


Figure 48: Flute part of the fourth walk

Each moving player is paired with a stationary player (piano-violin; cello-flute; vibraphone-clarinet). Stationary players react to the trajectories of the moving players, who also provide them with the beat. Stationary players play when their moving partner is on stage, and rest when they are offstage. All of the musical material of the stationary players responds to the steps and movement of their moving partner and is notated on their individual parts with a music box. It also includes the trajectory of their moving partner (L equals left, R is right, etc.) and the number of steps (and beats) between movements (figure 49):

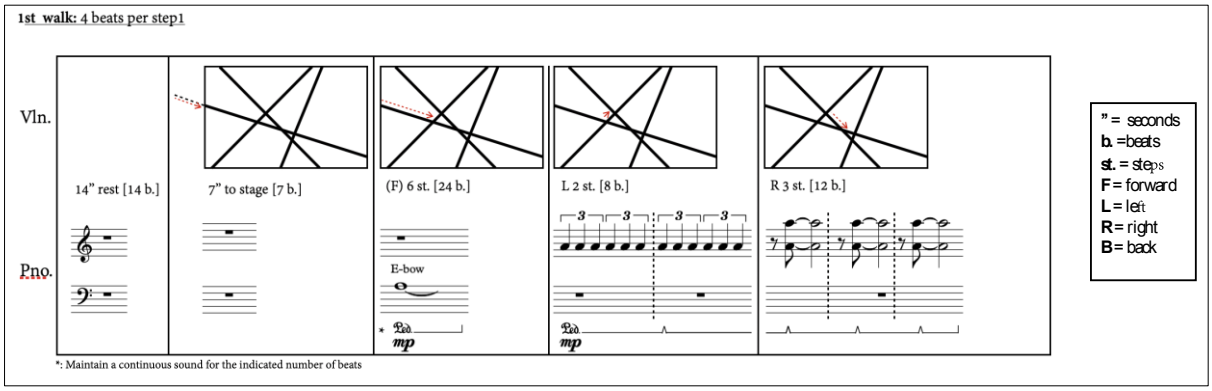


Figure 49: Piano part instructions

I choreographed and calculated all the moving players' parts thinking about the musical consequences, and vice versa. The pitch-adding process was the first thing I decided on, and from that idea I began choreographing the walks. It took a very long process of calculating distance, steps, beats, and routes to obtain the final walks. Choreographing the walks was very complicated: every time I made a change on one part, I had to fix the other two parts, which produced new complications. I recreated the stage of the National Sawdust in my front yard (figure 50) and tried all the parts until I got the result that I wanted. Only by doing that was I able to get the final versions of all the walks. I then video recorded myself doing all six walks of each moving player and then superimposed the three videos together to be able to see all three moving players' walks together (Figure 51). After having the final versions of all the walks, I perfected the pitch adding process for the moving players, developed the rules for the collisions and composed the stationary players' parts.

Figure 50: Stage set-up

Figure 51: Combined video layers

'Collisions' between moving players play an important role during the piece. These collisions happen when two moving players cross each other whilst walking towards opposite directions of the same black line. These collisions have different musical consequences. I choreographed them carefully and planned three moments where pairs of moving players collide, as well as one final near-collision between all three moving players, which marks the climax of the piece.

The first collision happens between the clarinettist and flautist, who, after colliding, must stop playing until their next change of direction. The cello has a change of material as a result of the collision. The second collision happens between the flautist and the violinist, who, after

colliding, must rest until their next change of direction. The cello rests after the collision and until the end of that walk. The piano rests for a few beats. The third collision happens between the violin and the clarinet player, the former resting for the rest of the walk and the latter until the next intersection. The piano and the vibraphone both change material after the collision.

There is only one moment where all three moving players converge at the centre of the stage, just after finally playing all five pitches. This climax only lasts for a few beats, after which there is a three seconds rest for all the players. The moving players remain static at the centre of the stage for some time before each of them begins to move (at different moments) and do the final walk whilst playing only the last added pitch (D#).

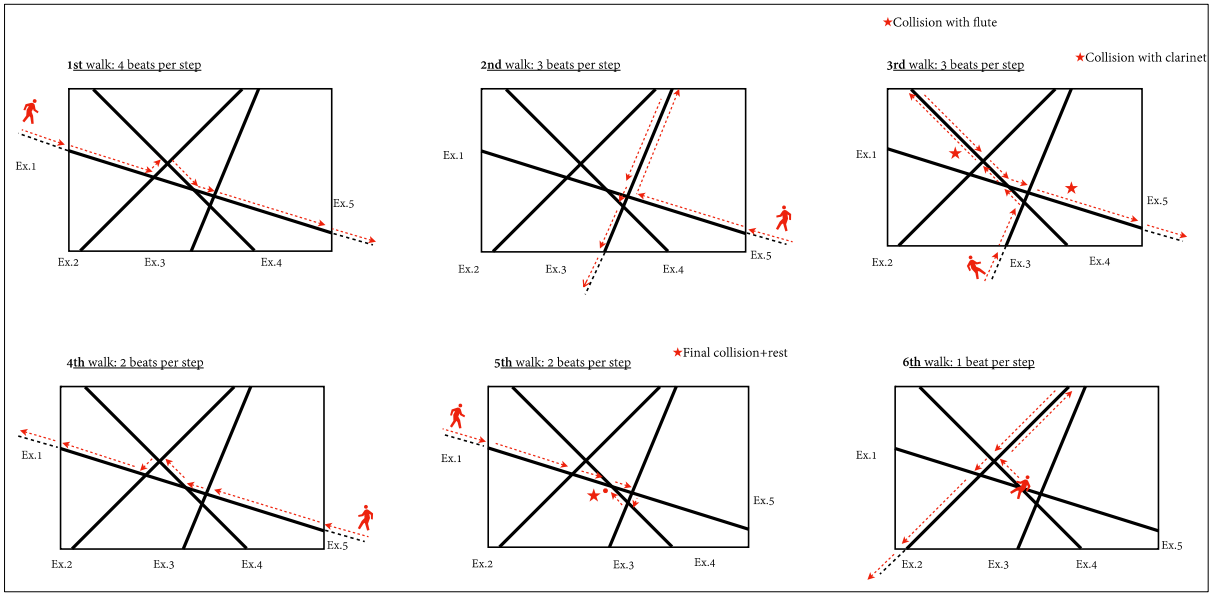


Figure 52: Violin part, walks 1 to 6

Constelaciones was written from the idea of using the venue's visual layout as the main pillar of the piece. Tempo, pitch material, density, rhythm, dynamics, rests, and colour are all determined by the movement of the walking players, which is in turn determined by the black lines of the venue. The visual layout affected the entire construction of the piece and the notation, and is present in the visual and aural perception of the live performance. Throughout the piece, moving players transit the venue and walk through the audience, which adds a layer of spatialisation during the live performance (Figure 53).

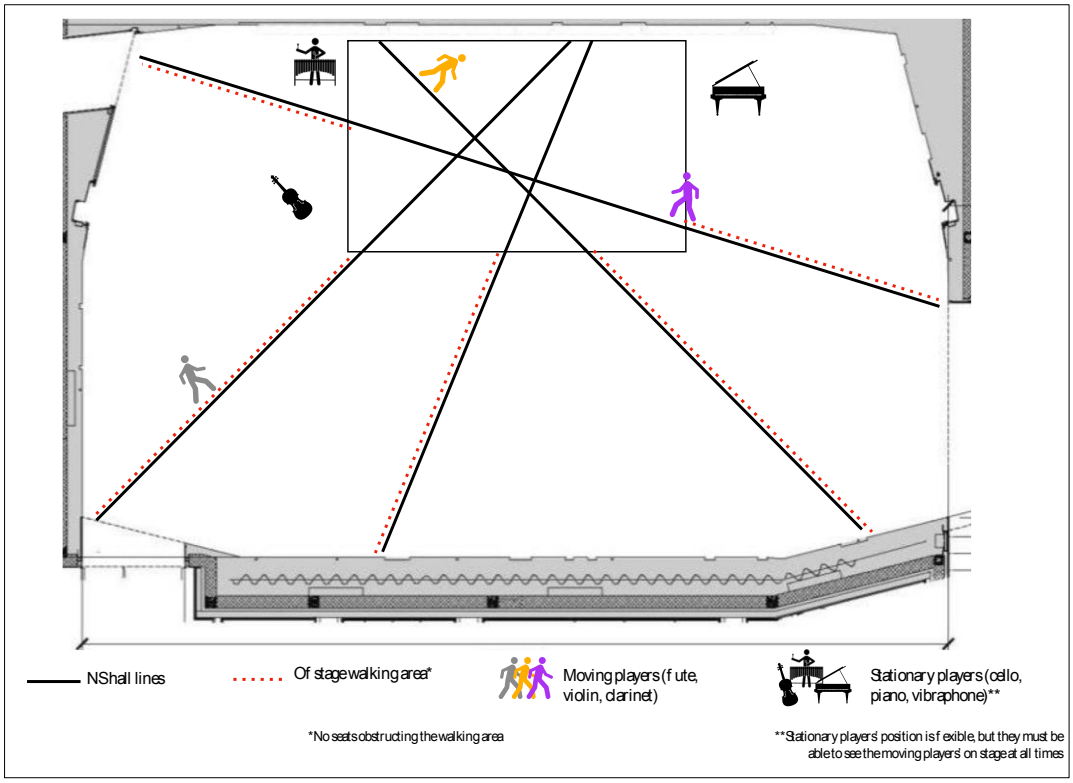


Figure 53: Proposed hall layout

Performance experience

Constelaciones was premiered during an online broadcast of National Sawdust's Hildegard Competition Concert. All the pieces were pre-recorded. For *Constelaciones*, there were several complications due to the nature of my piece and the COVID-19 restrictions for concert venues at that time. This meant that it was not allowed for the moving players to walk whilst playing, so I was offered the option of working with the Constelations Chor ensemble, who were able to pre-record the choreography in the venue beforehand (figures 54 and 55).

Figure 54: Screenshot of choreography video recording with collision example

Figure 55: Screenshot of choreography video recording

Due to the circumstances, this was the only alternative for premiering the piece, so I agreed to it. The problem was that not having the 'moving players' doing the choreography whilst playing, and having the six players react to the pre-recorded choreography video instead, made the rehearsal process complicated. The accents that individual 'steps' from the 'moving players' bring to the piece, as well as the precise coordination between the pairings of moving and stationary players were both absent because of the last-minute changes, and this had a big impact on the resulting performance.

In the end, the players did their best to make my piece work under the circumstances, but the result was not the one I intended when I composed the piece. I hope to have another opportunity to have this piece performed, without any restrictions.

See digital file 'Constelaciones_NSEnsemble'

Audio Example 10: Constelaciones, ensemble (performed by the National Sawdust Ensemble).

Figure 56: Screenshot of Hildegard Competition Concert at National Sawdust

4. Conclusions and future aspirations

The eight pieces included in this commentary and portfolio are a selection of a larger set of works I have created during the length of this research project. With each piece, I have tried different approaches to combine my visual and compositional ideas, depending on the specific characteristics of each of the projects such as instrumentation, duration of the piece, type of ensemble, available time for rehearsing, etc. The result is a set of works, collaborations and experiences which have only deepened my desire to continue exploring the visual-musical bond.

The works I have created in the past three years have made me realise how deep the notion of synergising music and image can be. This bond has many layers and can be done from very different points of view and through different interpretations. I cannot claim to have found the perfect way of doing this, nor can I say that I have found a single system which works to create a holistic sonic-visual bond in my compositional practice. I can however assert that a very deep connection between my visual and compositional creative practice has developed during the course of this research project. It has evolved and broadened as a consequence of the visual drive, and the eight pieces that comprise my portfolio of works are proof of this creative unfolding.

I have also added one more piece as an appendix. This large-scale work, the *Intervened memory* project, has been a big part of my research project since the beginning and has been an incredible opportunity to explore the visual-musical bond through an almost three-year-long collaboration with two performers and a visual artist. This is a project that I am still working on, but that will be soon completed and released as an album with Birmingham Record Company.

All the pieces that I have included in my final portfolio came from the desire of doing this research and exploring composition through a visual counterpart. Nevertheless, many of the works are the consequence of a series of opportunities that arose and which gave me the chance to explore this visual-musical connection in different ways. This made it possible for me to collaborate with a number of performers and ensembles, and to compose from the work of different visual artists. These opportunities forced me to respond creatively –and at times

pragmatically– to a series of circumstances, which in some cases ended up determining the viability of some of the works. Bernard Frize says that: *"reality eventually breaks the system"*, which in my opinion is sometimes what eventually makes an idea work. I really appreciate all of the opportunities I have had during this three-year period, as I feel like they have made my compositional practice grow in many ways.

For the time being, my way –as a composer/photographer– of seeing-hearing-composing is deeply rooted in my creative process, and therefore is inescapably engrained in my work. Whether this relationship is evident or not, recognisable or not, is not important. The aim was never for this musical-visual bond to be perceivable or identifiable. In some works –such as *Megi*– the connection is quite transparent, but in others –such as *Traversing wires*– it is not.
I also realise that this music-image synergy is something that might not resonate creatively with everyone. Therefore, all I can do is to try and share my ideas, and invite performers, ensembles, fellow composers, visual collaborators and audiences to explore this music-image synergy. After past experiences, I am convinced that more open pieces will work better with performers/ensembles that are happy to explore the works beyond a traditional reading and interpreting process, therefore this is something that I will continue to look for. On the other hand, my work also welcomes a more traditional performance –and experiential– approach. Pieces such as *Where there was wood is now water* and *One to nine* use conventional notation and, even though I invite performers to refer to the visual counterparts of the pieces during their interpretation, require no further visual-musical explorations. In terms of scoring, I am not against treating some of my image-base scores in a more traditional manner. Again, the visual-musical synergy is certainly present in the core of all the works presented in this portfolio, however this has many layers and is to be explored as deeply as possible. Notation is only one of those layers, and when possible, I do not see why it should not be moulded to the performers' comfort. In a similar way, I am convinced of my adjusting capabilities as a composer, which means that my compositional practice in the future will adapt to projects where I can explore this visual-musical synergy in a number of ways.

At least three of the works I discussed in this commentary are open enough to have very different resulting performances. Not all of them have had second or third performances, but this is something I look forward to: seeing how a different ensemble interprets the scores and make their own version of the piece. Hence the idea of making open instrumentation versions of those pieces.

After *Constelaciones*, I would like to further explore movement as an extension of the visual-musical relationship; all as part of a compositional and performance practice, as well as experiential.

I maintain my belief in visuals being a window for creative compositional and performance practice. I strongly believe that all the works created during this research project are what they are because of the visual counterpart in which they are based, and I do not believe I would have come up with some of the ideas that I have without the visual counterparts. I wish to continue collaborating with players who find this possible visual-musical synergy as exciting as I do. I also continue to believe that this holistic sonic-visual approach is a good way of communicating with audiences who might not be used to a contemporary music language, and I am convinced that having the visual element makes music easier to approach. Finally, I would invite performers, audiences, and fellow composers to try and experience this visual-musical bond that I am so enthusiastic about. It might open as many interesting doors as it has for me, and bring future collaborations and exchange of creative practices.

Appendix

Deciding on which works to include on my final portfolio and written commentary was not an easy task. I composed several works throughout the length of this practice-based research, all based on the idea of a visual-musical connection. In the end, I decided on eight works that could help me explain my methodology and my creative process and which could be grouped together within four categories of compositional practice. However, there is one work which is too broad and complex to be included in chapter three, yet too important to not include in this commentary at all. It is also a work which has been created in a deeply collaborative way, making it difficult for me to include it within a chapter that comprises works that have been created solely by myself. Finally, it is a project which it still in the process of being completed.

Intervened memory

For viola da gamba and electronics

In 2019, I was invited by Mexican artist Cristian Pineda to create a piece based on his work as part of his retrospective exhibition in Eupen, Belgium in March 2019. From that invitation, the *Intervened memory* project was born. I decided to compose a long scale piece for viola da gamba and electronics based on Pineda's series *Yo soy mi casa* (I am my house). The series is composed of ten photographs which have been digitally intervened by drawings. The photographs were taken by Cristian Pineda in Juchitán, Oaxaca after the earthquakes in September 2017. According to the artist, the drawings which intervene the photographs were made as a way of imaginatively repopulating the places that were destroyed by the earthquakes (figure 57).

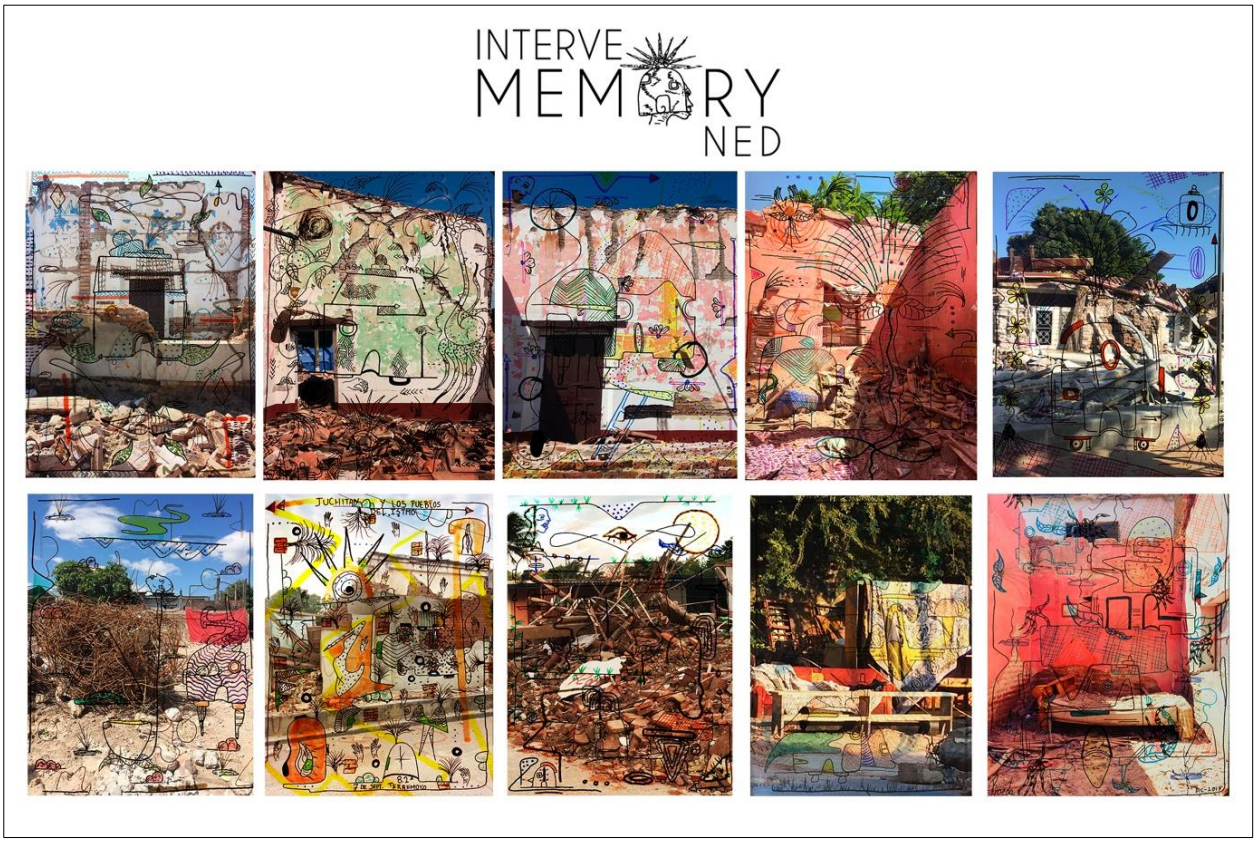


Figure 57: Graphics 1-10 of 'Yo soy mi Casa' series, by Cristian Pineda

The aim was to compose a piece where both visual and musical elements could be synergised during the compositional and collaborative process with the performers, and eventually presented together with Pineda's *Yo soy mi casa* series.

The result, after over three years of work, is a large-scale collaborative work for viola da gamba (performed by Israel Castillo) and electronics (performed by Juan Luis Montoro), which is composed of 10 pieces of between three and seven minutes, each based on a different image from the *Yo soy mi Casa* series. The work will be released as an album with Birmingham Record Company in November, 2022.

The creation of this work has happened throughout different periods. The first five pieces were created, workshopped, and performed between January 2019 and August 2019. I had the opportunity to present them live in Eupen, Belgium during Pineda's retrospective exhibition *Human Mobility* (figures 58 and 59) in early 2019. The concert was held in the exhibition room of the *Yo soy mi Casa* series.

Figure 58: 'Yo soy mi Casa' exhibition room

Figure 59: Me presenting the compositional process of each piece

A second performance of the first half of the project happened in Saint-Germain-de-Calberte, as part of my composition residence in France. This time, the images were projected during the performance (figure 60).

Figure 60: Concert set-up in Saint-Germain-de-Calberte

The second part was created between August 2020 and July 2021. All ten pieces were recorded at the Royal Birmingham Conservatoire in February, 2022 and are now in post-production process.

This work has several layers in terms of collaboration and artistic response due to the nature of the work itself and the creative process. There are a number of factors which played an important role in the creation of this piece from the beginning:

-The visual artist's own connection with the photographs and his creative process in producing the digital interventions as a response to what happened in his hometown and his family home.
-My own reading and interpretation of the photographs and the digital interventions as a composer/photographer.
-My own relationship with the event (the earthquake happened in my home country) and its impact in my creative decisions.
-The gamba player's own interpretation and reading of the images. His own emotional response to the event, himself having family from the same area where the photographs were taken.
-The electronics collaborator and his own interpretation of the images and the events, and his creative response when working on the electronics.
-The audience's perception of the performed pieces, experienced along with the ten images, contextualising texts and music.

Even though the piece has been composed in parts, the creative process has followed the same steps:

1. Since there are two layers that exist within the images –the original photograph and the intervening drawings– there are always two possible readings of the visual elements. Therefore, the electronics material is based on the photographs, and the viola da gamba material is based on the drawings.
2. In order to gather musical material from the images, I created a specific path on each graphic based on the way each photograph is composed, in combination with the drawings that intervene it (figure 61).

Figure 61: Left: original image. Right: Purple line showing the path I created to read the image.

3. I then composed a sketch for each image, using a mapping process in combination with the reading path, which gave me specific musical elements such as pitch and register (figure 62).

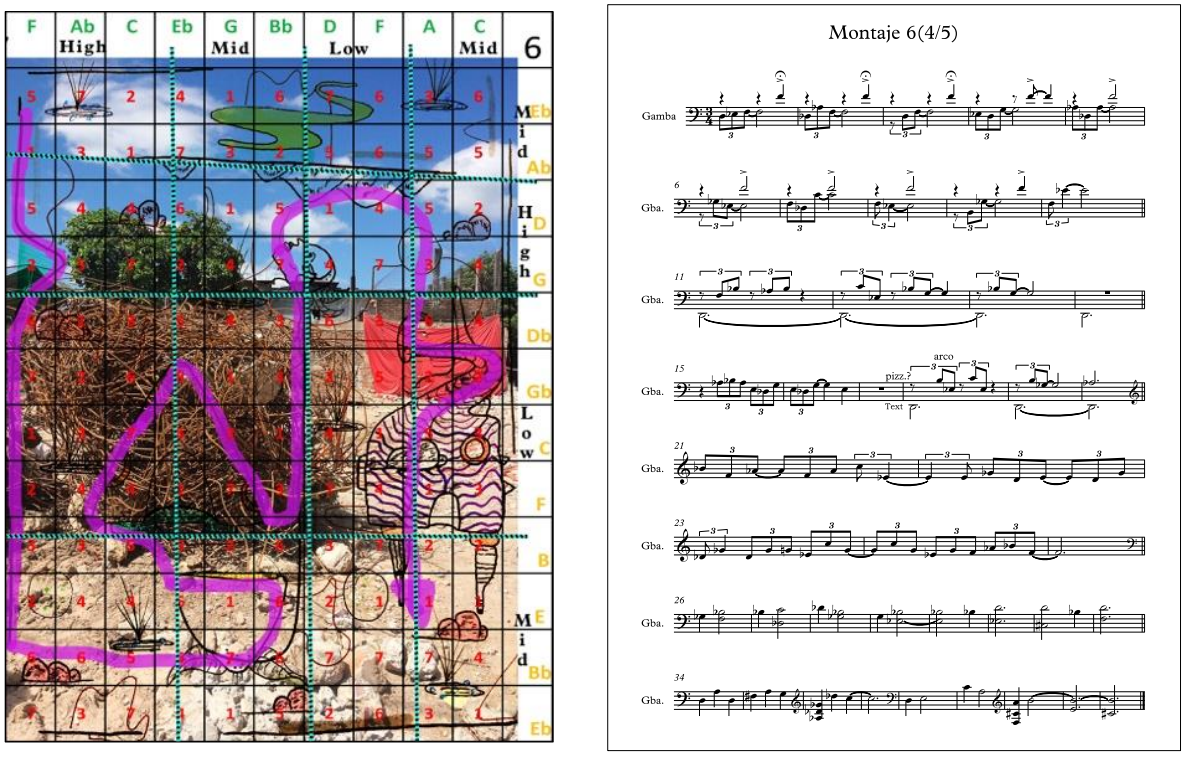


Figure 62: Mapping process and first sketch of 'Montaje 6'

4. I then worked with the gamba player, who played the sketches with the images and improvised on the given material. I would record those try-out sessions and afterwards I composed the final gamba part.
5. Then the gamba player would record his part and with it I worked with the electronics collaborator and we then developed the electronics layer for each piece together.
6. Finally, both performers would play each sketch together, we would try things out in terms of live interaction of the gamba and the electronics, and create the final versions of each piece.

One of the most interesting aspects of this collaboration was to see how a number of the creative decisions made by the three participants had to do with their individual perception of the images. It was fascinating to see how each individual could see such different things within the same image and how they would translate that musically in their instrument. The musical-visual bond had an impact on each of our individual participation –composer, gamba player and electronics– but also in our collaboration and creative interchange.

The *Intervened memory* album will be the culmination of over three years of research, collaboration with the performers, and compositional work. The recording process was an exciting event which gave me the opportunity to experience the studio recording of a large-scale piece. The next process, which is post-production, will also be an interesting experience, which will be the last step for completing this project. Once the album has been released, the plan is to perform the work live, along with Pineda's images. Pineda also wants to include the *Intervened memory* recordings in future exhibitions of his *Yo soy mi casa* in the form of audio files next to each image in the room where the series is displayed.

See digital folder 'Intervened memory I–V_Gamba and Electronics'

Audio Example 11: Intervened memory I–V, viola da gamba and electronics (performed by Israel Castillo and Juan Luis Montoro).

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List of attached scores

The numbers refer to the chapters in the commentary in which each piece is discussed and the number in the score.

3.1.2. Mosaic No.1

3.1.3. 8 mosaïques

3.1.4. Mosaic No.2

3.2.1. Traversing wires

3.2.2. Megi (instructions)

3.3.1. Where there was wood is now water

3.3.2. One to nine

3.4.1. Constelaciones

3.1.2

Mosaic No.1

for two or more melodic instruments

April 2019

Commissioned by Le Tout-petit Festival Musical de Saint-Germain-de-Calberte

First performance: May 2019
St. Germain-de-Calberte, France
Performed by Annick Odom and Rob Jones

Second performance: May 2021
Teatro Sergio Magaña, Mexico City
Performed by Attica! Ensamble

Third performance: June 2021
Face to Face online Symposium
Performed by Ensemble Thing and Attica! Ensamble

Fourth performance: October 2021
Uncommonly Studio, New York City
Performed by The BlackBox Ensemble

Duration: 12'-20'

This piece has four movements, each based on a pattern of a tangram puzzle. Two different colours form rectangles along the puzzle (i.e. red-orange, blue-turquoise, etc.). Each colour represents a pitch.
The idea of the piece is to trill or tremolo between both pitches of each rectangle. The players transit the score by following the path clockwise and by repeating the trills or tremolos any number of times before moving on to the next rectangle. Each movement has different colour combinations, which get more varied and complex with each image. By changing the pieces on the puzzle, new combinations of trills are obtained.

How to read and perform the piece

Players follow either of two paths on each movement: the outer and the inner. Each group should follow a different path clockwise. The group doing the outer part starts each movement. The second group (reading the inner part) joins in shortly after. Since the inner part is smaller, it will take less time to complete than the outer part and thus, will have to be played more than once. Each movement ends when the group playing the outer part of the mosaic completes the loop. The group doing the inner part must cued when this happens in order for both groups to finish the movement together. Then, the players proceed to the next movement and swap paths: the player who previously followed the inner part now follows the outer, and starts the movement.

Rules

- Trills and tremolos can start on any of the two pitches provided and can be played in any register.
- The direction between the trills and tremolos may be inverted.
- Pitches can be as close or as far away from each other (in terms of register) as the players want.
- The speed of the trills or tremolos is completely free, but should be different from the other player's. The speed should also change freely throughout the piece.
- In the outer part, there are indentations between some of the rectangles. In these moments, the players can decide to either hold a long note (the last note of the previous trill or tremolo) or rest.
- The speed and dynamics of the trills and tremolos should change gradually, like waves.
- Each movement has a specific indicated character. Players should agree on a way of interpreting each indication of the character in order for each movement to have its own personality.
- Movements can be performed one after the other, but can also be performed interspersed with other pieces of a programme.
- The duration of each movement should be between 3 and 5 minutes.

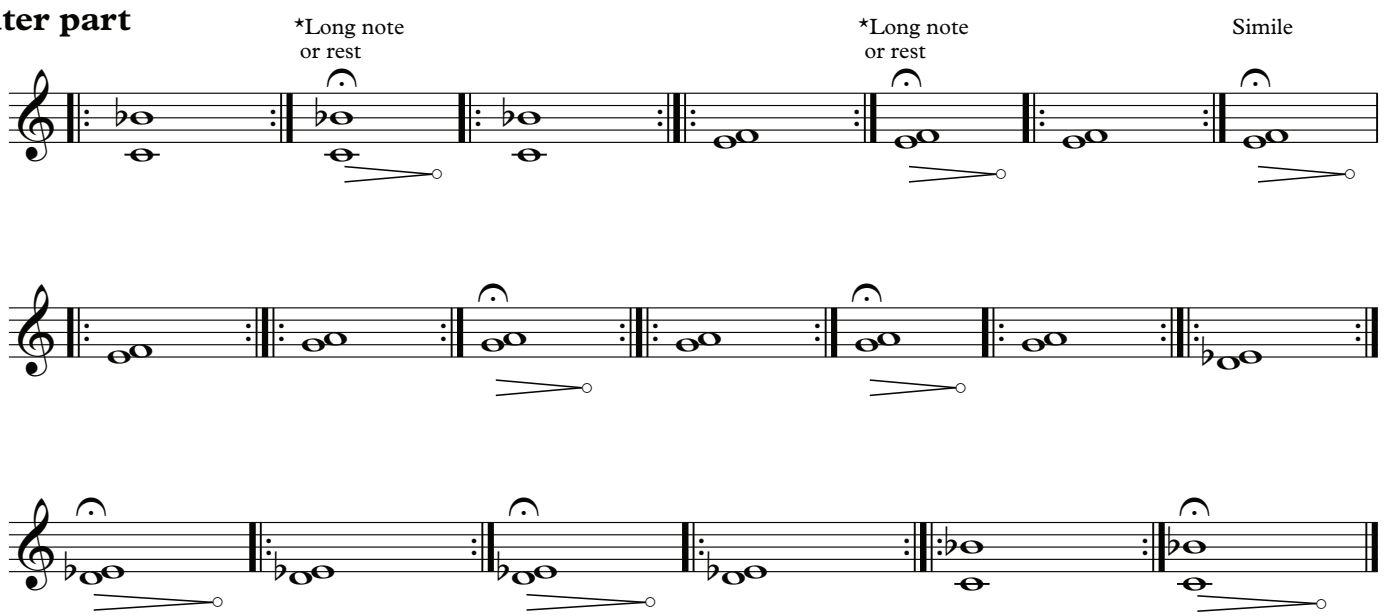
Mosaic No. 1

I

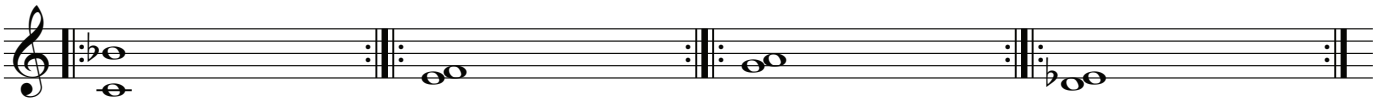
Energetic

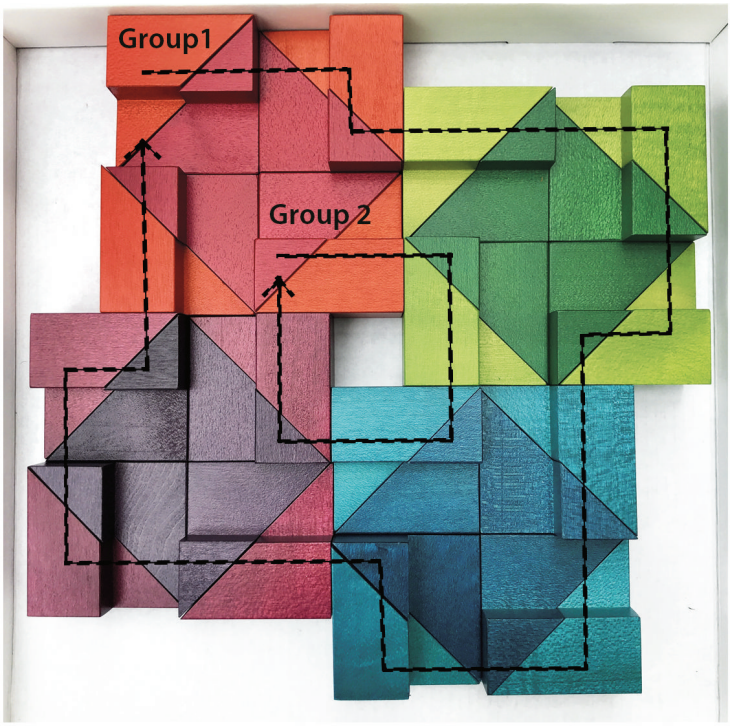
Jimena Maldonado

Outer part



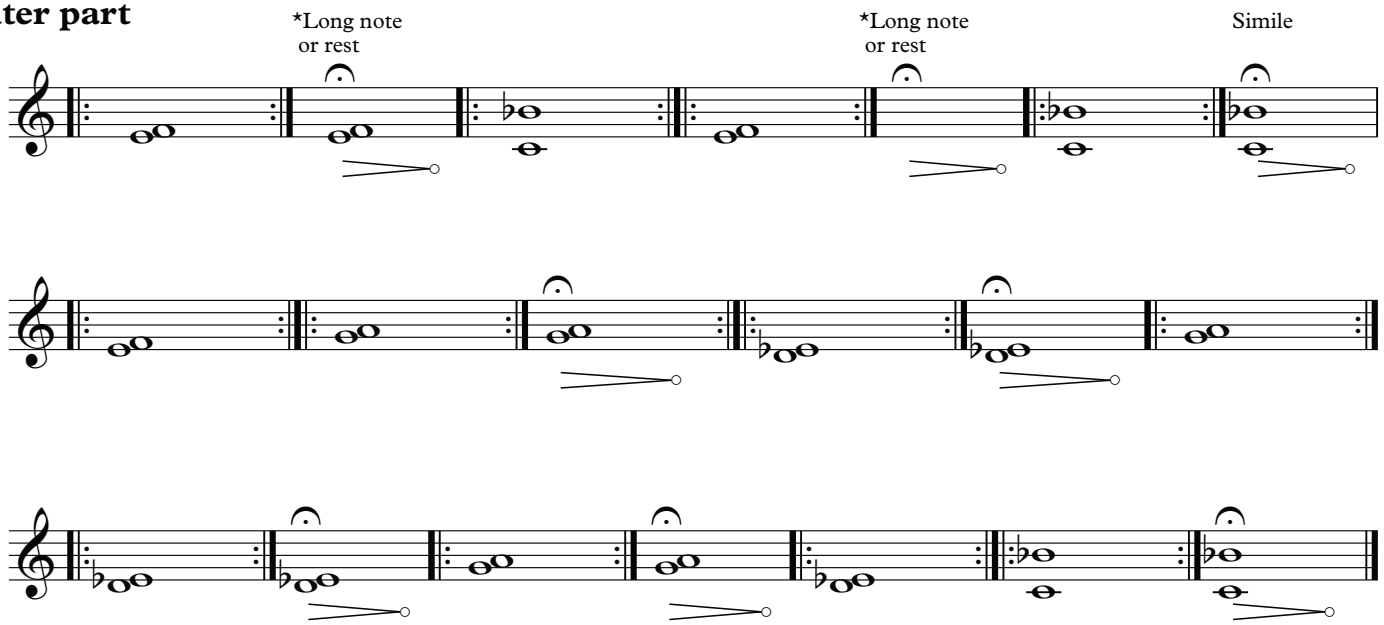
Inner part



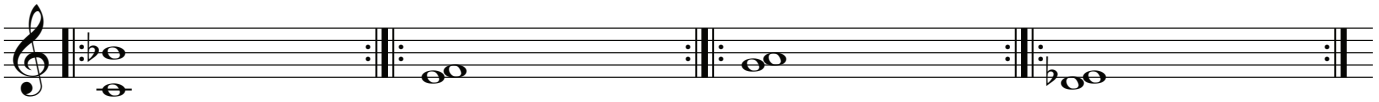


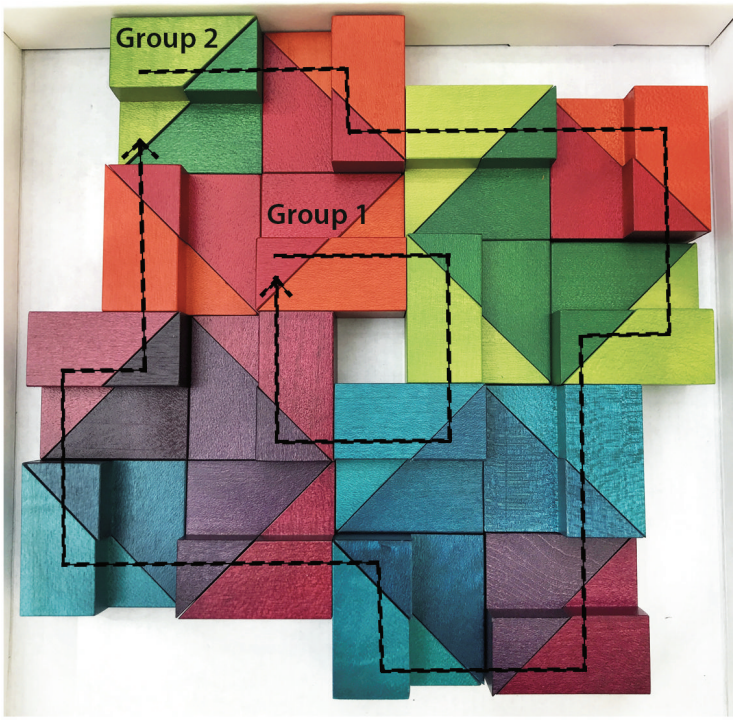
II
Contrasting

Outer part



Inner part

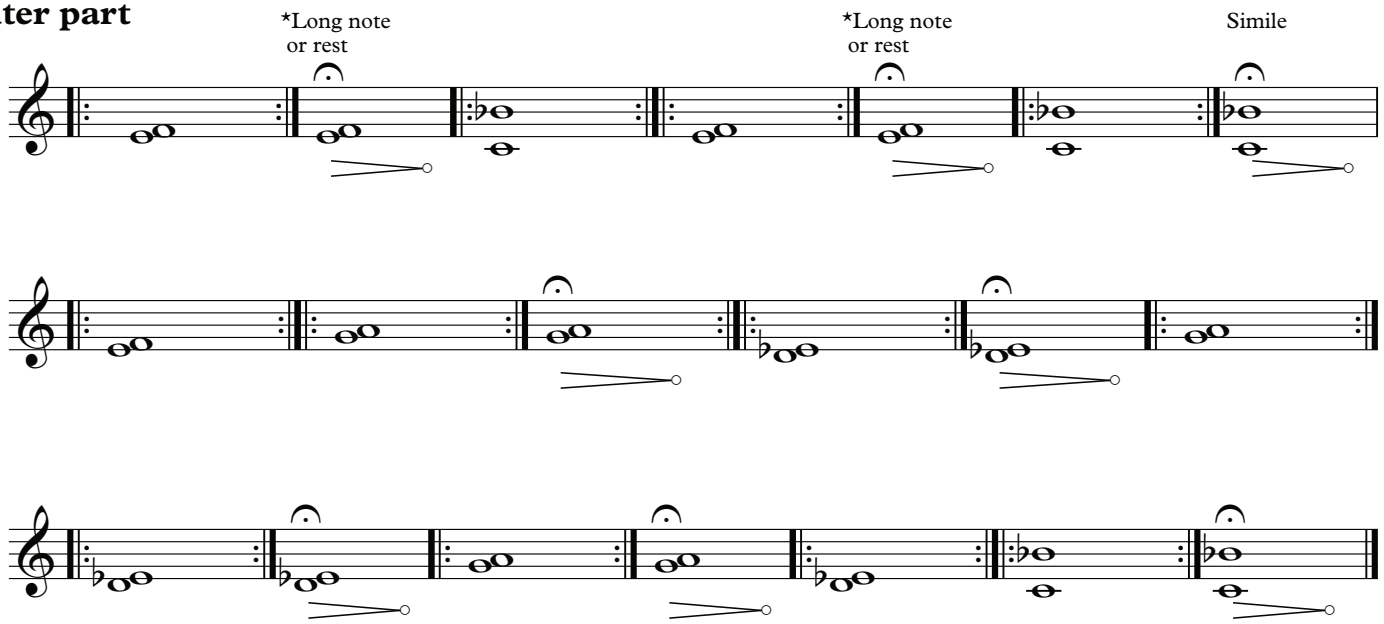




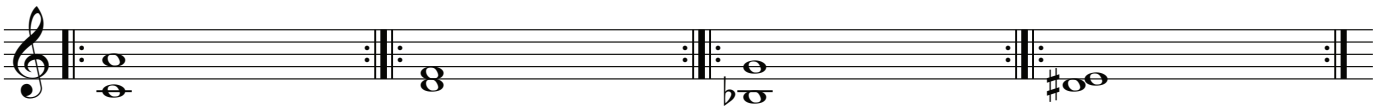
III

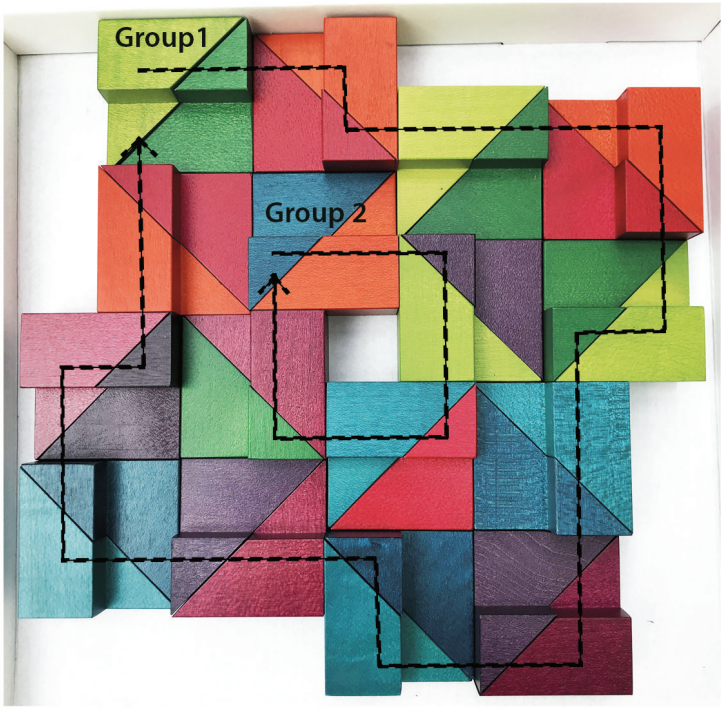
Soft and gentle

Outer part



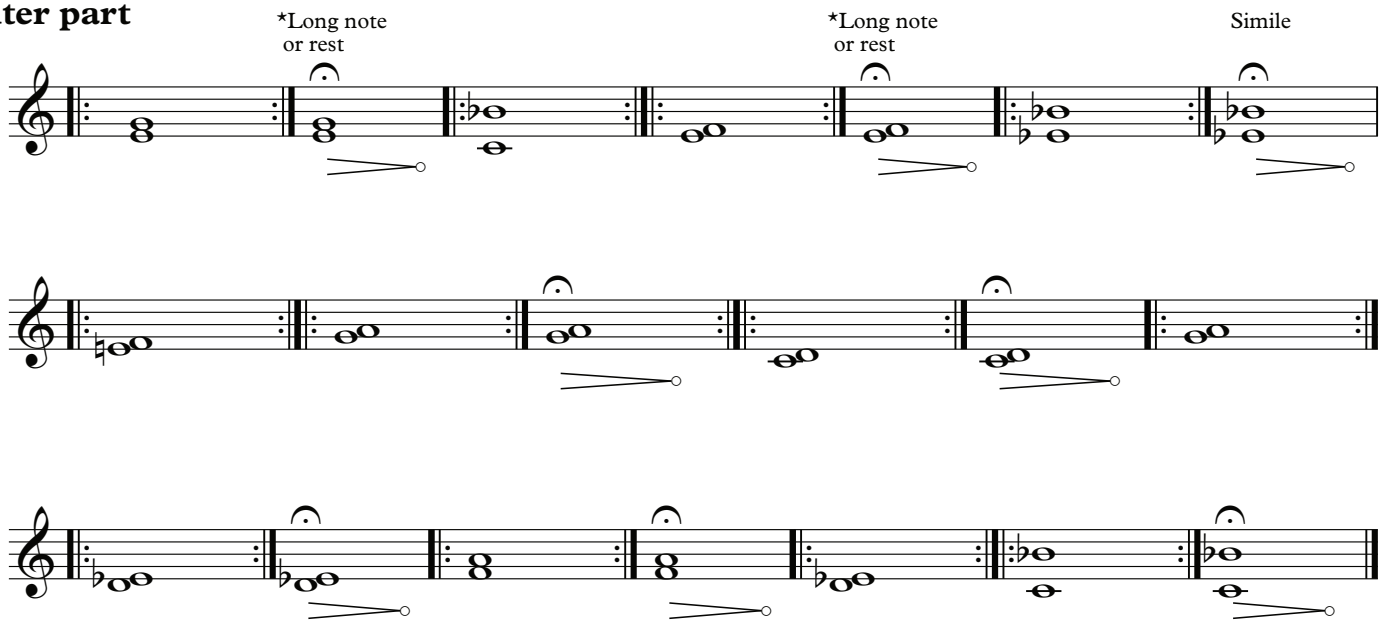
Inner part



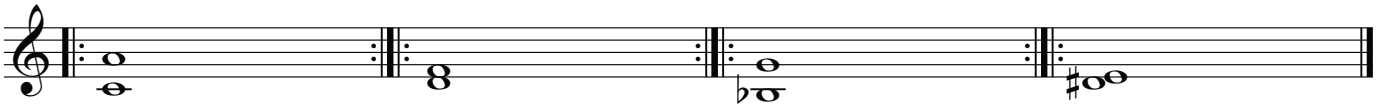


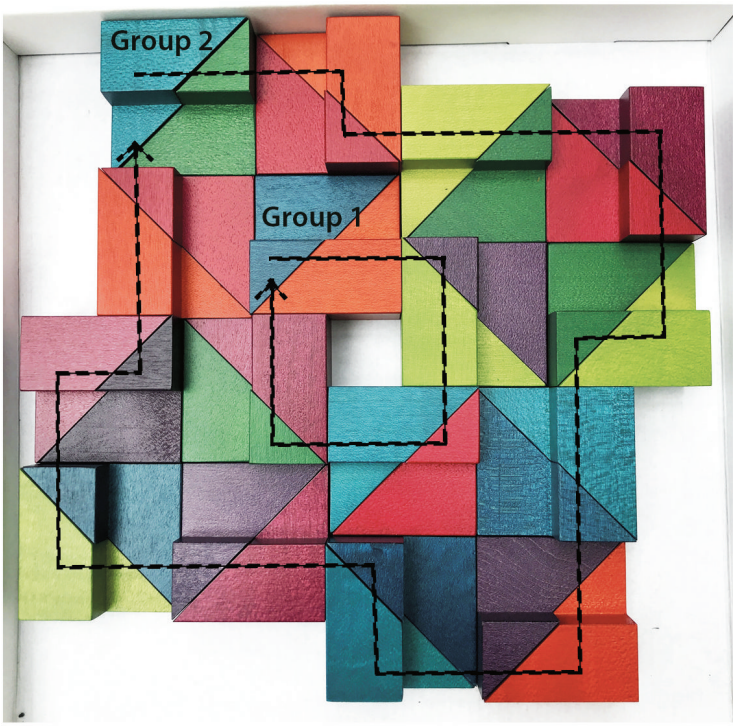
IV
Playful

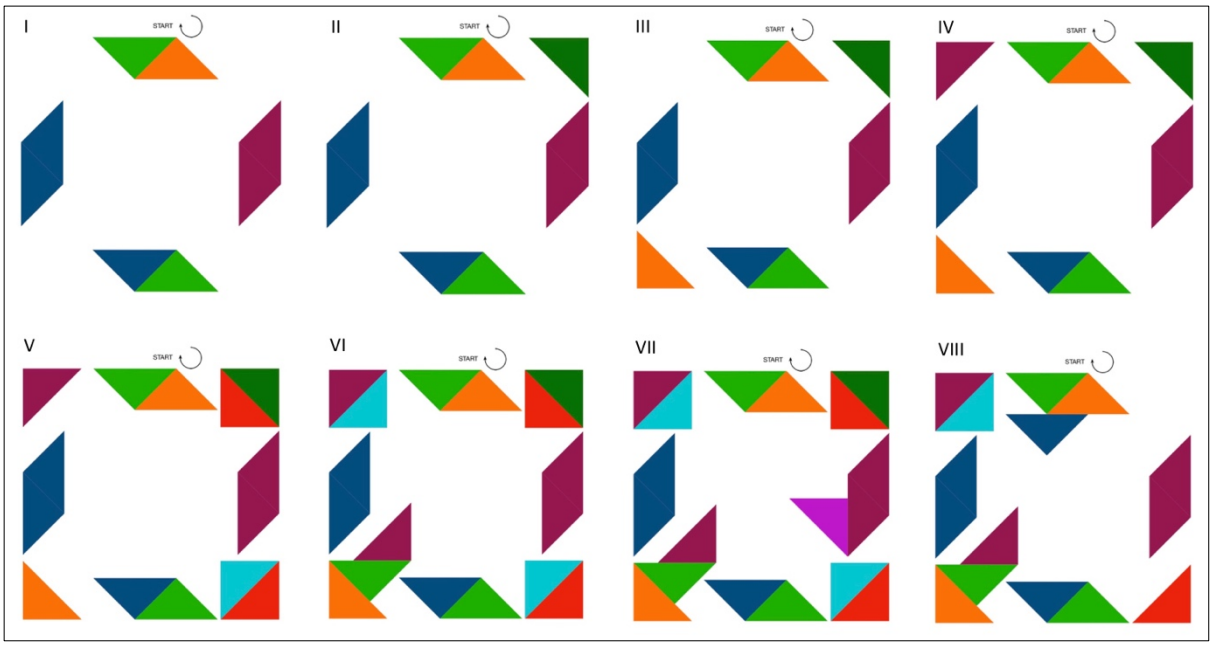
Outer part



Inner part







3.1.3

8 mosaïques

for two performers

May 2019

Commissioned by Le Tout-petit Festival Musical de Saint-Germain-de-Calberte

First performance: June 2019
St. Laurent-de-Trèves, France
Performed by Louise White and Fred Anthouard

Duration: free

Instructions

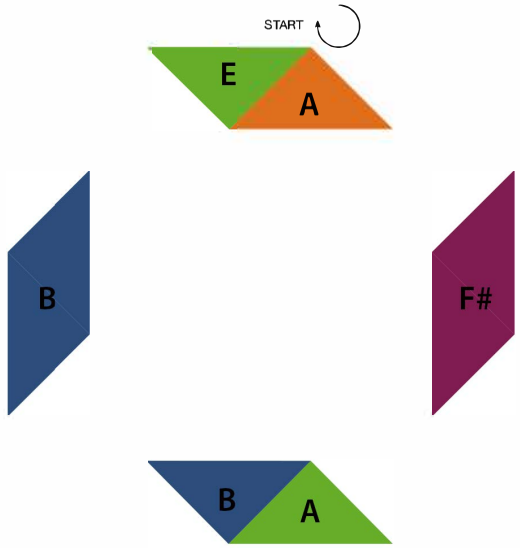
This piece is based on a series of 8 mosaics, made from tangram patterns. Each piece of the puzzle represents a pitch. Both players read each mosaic clockwise, and after finishing a mosaic, they then move on to the next. The first mosaic contains a certain number of puzzle pieces. Each new mosaic adds at least one new puzzle piece, with the mosaics becoming increasingly full and complex every time. On each mosaic there are either single pieces (one pitch) or combinations of 2 or more pieces (intervals of two or more notes). There are also blank spaces between the different puzzle pieces, which are gradually filled with new puzzle pieces. Musically, these blank spaces will also be filled by new musical material on each new mosaic.

Each player reads each mosaic independently, choosing their own way of playing the musical material and the amount of time they 'stay' on each puzzle piece, as well as how to fill the blank spaces between the puzzle pieces. The players must always cue each other in order to begin the next mosaic together, waiting for each other when necessary. It is encouraged that the players decide on a certain form in terms of the character of each mosaic and the overall form of the piece (regarding dynamics, rhythms, effects, density, etc.). It is also recommended that the players look for certain memorable ideas within the repeated elements of each mosaic in order to emulate musically the visual process of repetitions and additions that happen in the 8 mosaics.

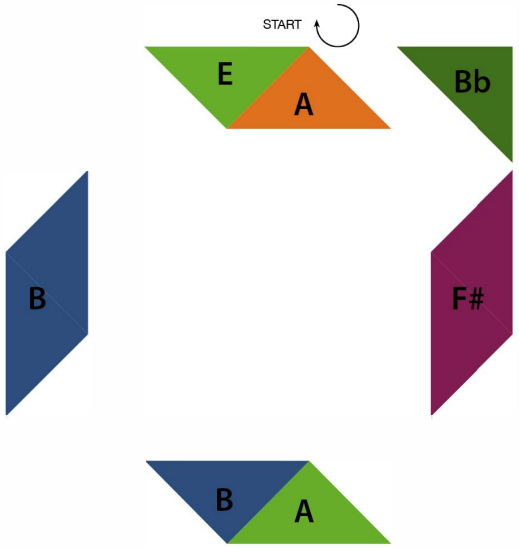
The duration of the piece is free.

Score in C

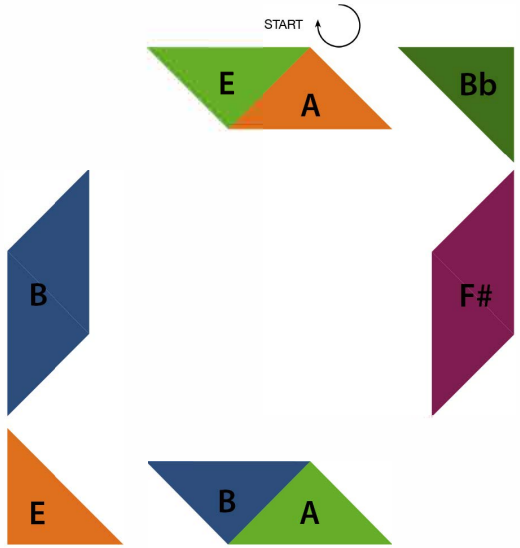
1



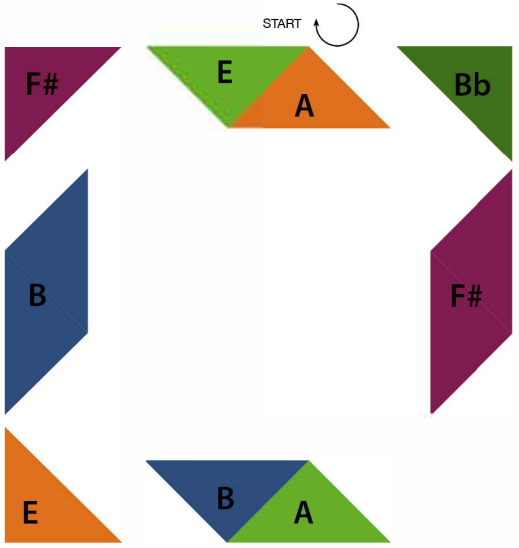
2



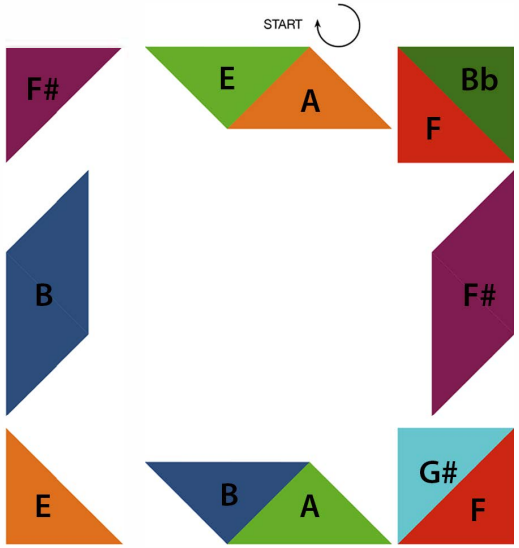
3



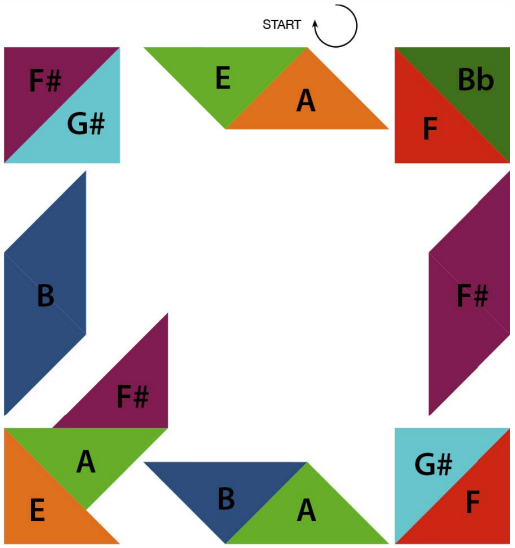
4



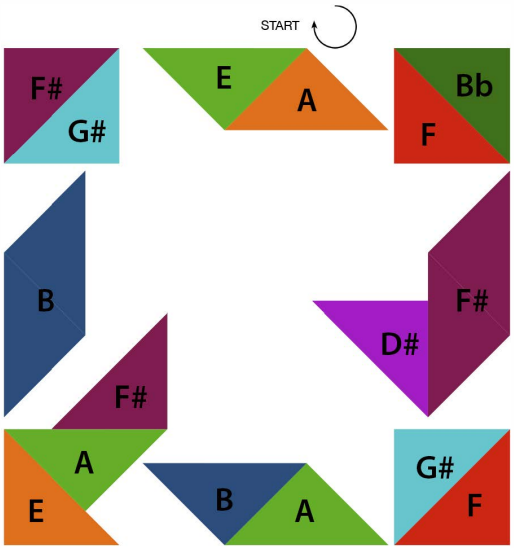
5


START
F#
E
A
Bb
F
B
F#
E
B
A
G#
F

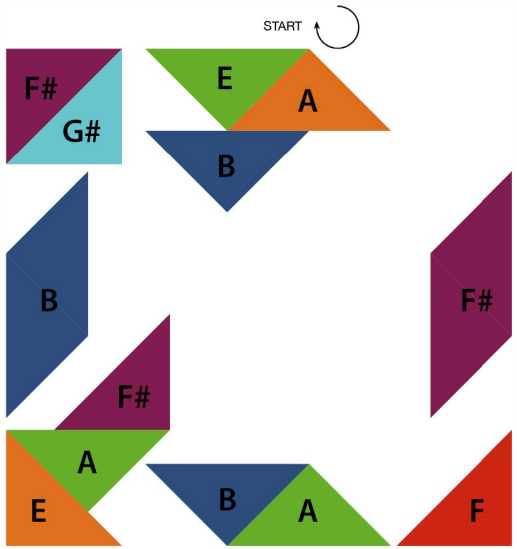
6


START
F#
G#
E
A
Bb
F
B
F#
F#
A
E
B
A
G#
F

7


START
F#
G#
E
A
Bb
F
B
F#
D#
F#
A
E
B
A
G#
F

8


START
F#
G#
E
A
B
B
F#
F#
A
E
B
A
F

3.1.4

Mosaic No.2

for two electric guitars

July 2019

Commissioned by Le Tout-petit Festival Musical de Saint-Germain-de-Calberte

First performance: July 2019
St. Germain-de-Calberte, France
Performed by Sascha Thiele and Jannik Steudter

Duration: 6’21’’

Instructions

This piece is based on different mosaics made with a tangram puzzle. The mosaics have different combinations of coloured blocks from the tangram puzzle.

Each player follows their own score, which contains 4 different mosaics (two on each page). Each mosaic is to be read by following the direction indicated by the arrow at the beginning of each mosaic. All 4 mosaics are to be played subsequently, with no pause in between them.

Every coloured block in the mosaics represents a specific rhythmic figure. Using a steady beat of 63 bpm, each performer plays the rhythmic figure indicated on each block of the mosaic using the indicated pitch (i.e. D), and repeats the rhythmic cell for the number of times indicated (i.e. x3). There should be no rest between the rhythmic cells and all notes should be allowed to resonate (even when the next cell begins with a rest). All the rhythmic cells should **always** be read from left to right, even when the reading direction of the mosaic changes.

All the pitches should be played using a variety of registers, colours, and dynamics chosen by each performer.

It is advised that the players use an click track in order to maintain the tempo and finish the piece together.

The duration of the piece is 6'21''

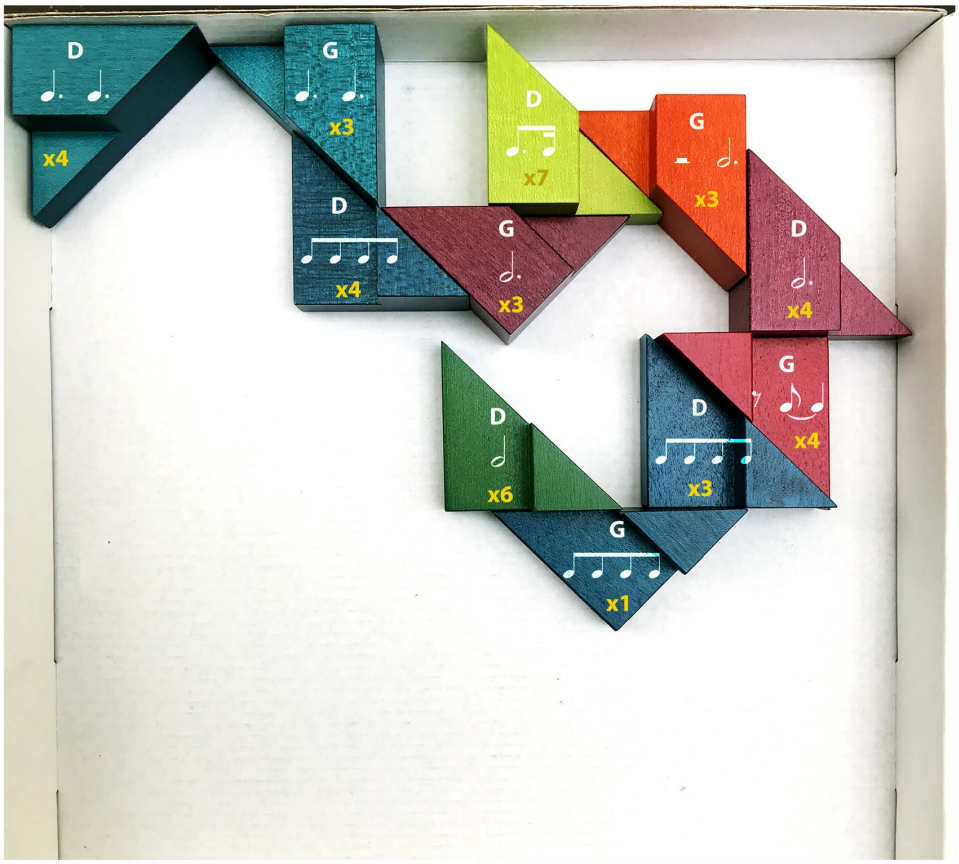
Note: Due to the construction of the piece and the mosaics, there is no score for this piece. Instead, I have included in this portfolio the Guitar 1 and Guitar 2 parts.

Mosaic No.2

♩=63

Jimena Maldonado

Guitar 1

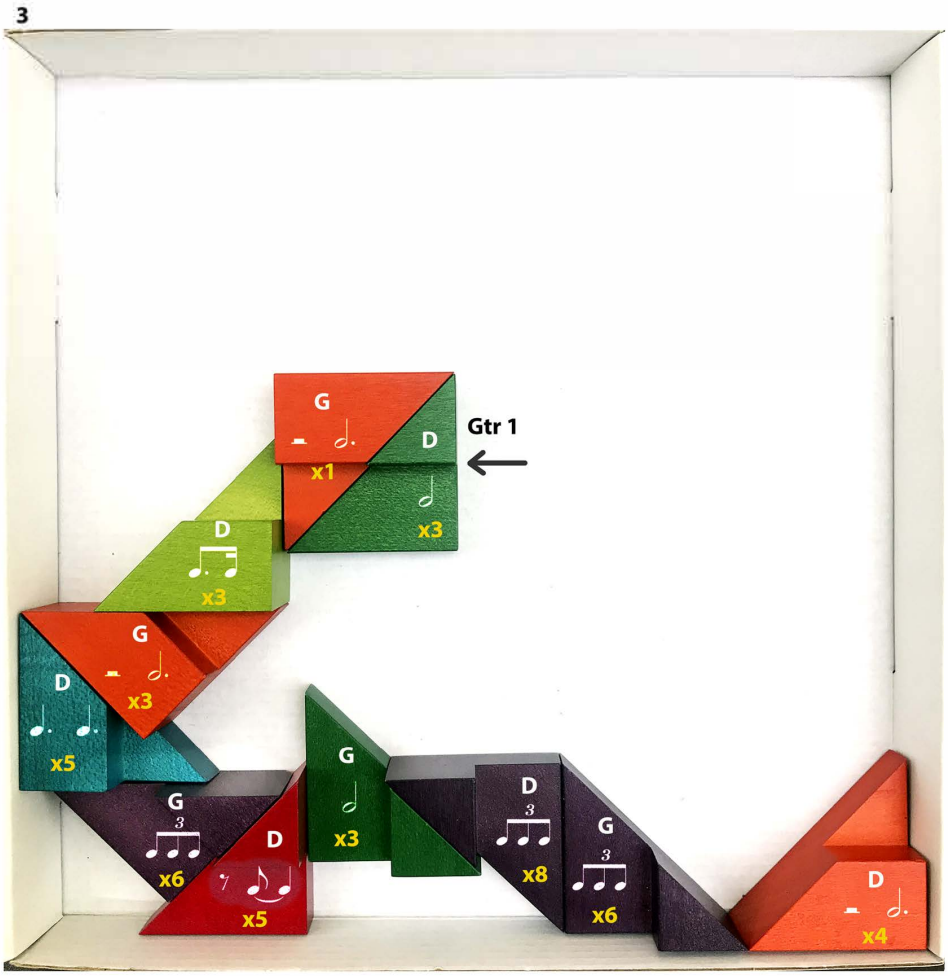


2

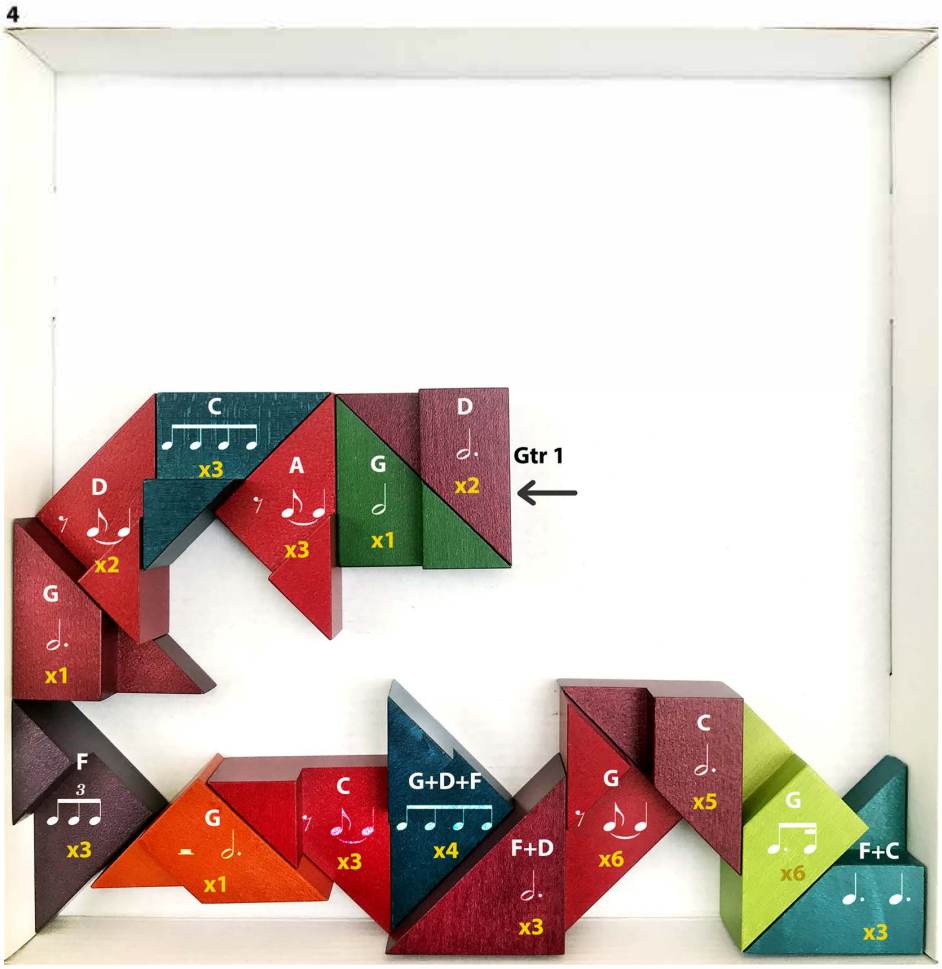
Gtr1

Guitar 1

3


G
x1
D
x3
Gtr 1
D
x3
G
x3
D
x5
G
3
x6
D
x5
G
x3
D
3
x8
G
3
x6
D
x4

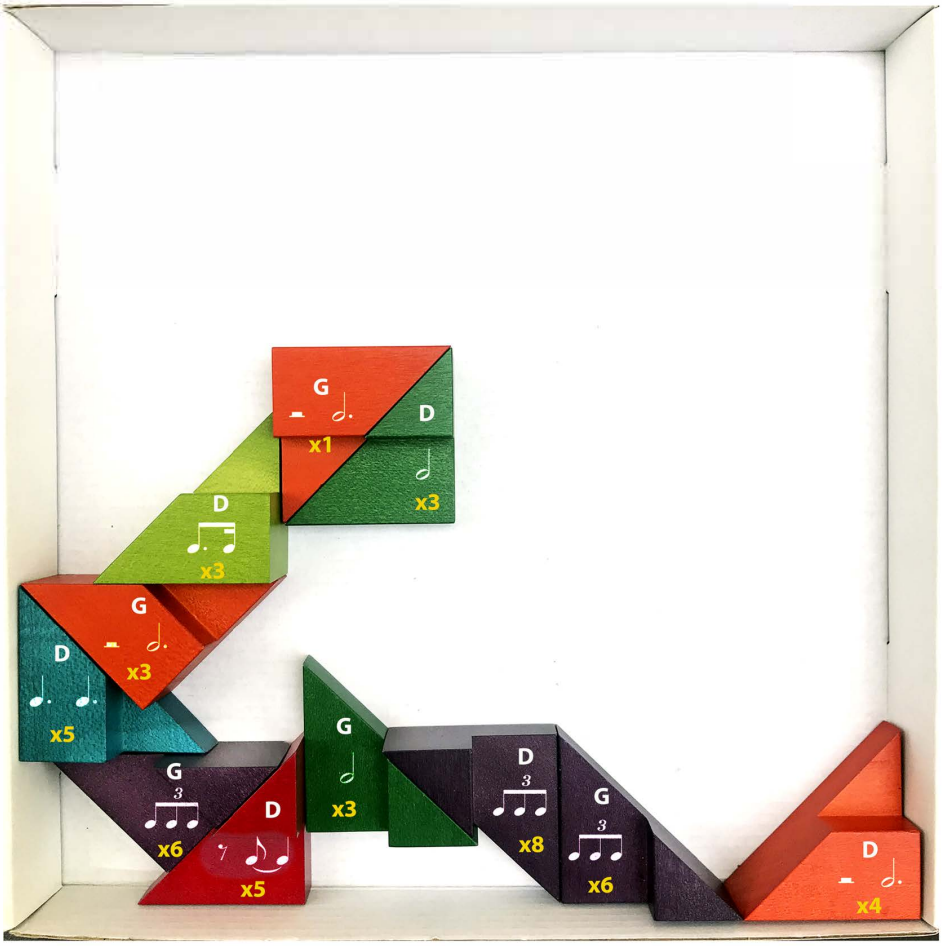
4


C
x3
D
x2
A
x3
G
x1
D
x2
Gtr 1
G
x1
F
3
x3
G
x1
C
x3
G+D+F
x4
F+D
x3
G
x6
C
x5
G
x6
F+C
x3

Mosaic No.2

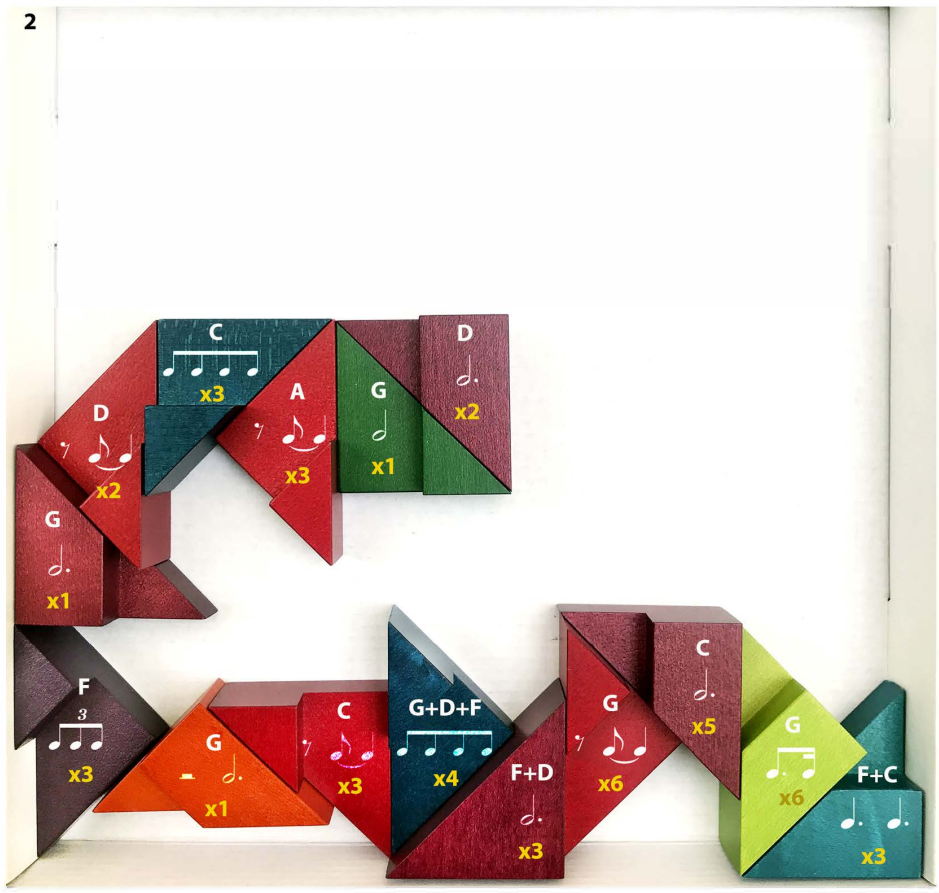
♩=63

Jimena Maldonado



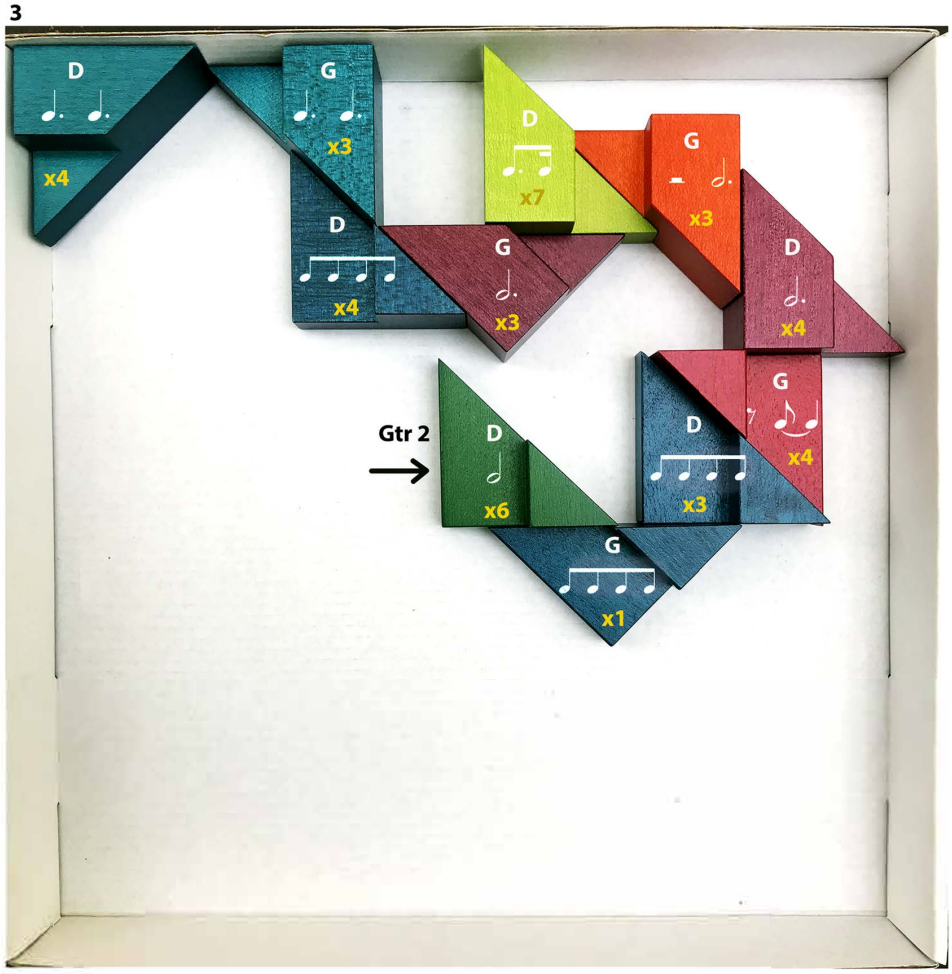
Guitar 2 ←

2



Gtr 2 ←

3


D
x4
G
x3
D
x4
D
x7
G
x3
G
x3
D
x4
G
x4
D
x3
G
x1
Gtr 2
D
x6

4


D
x3
G
x1
D
x3
D+F
x2
G
x2
D
x3
A
x4
C
x3
G+D
x3
C
x3
A
x1
F+D
x5
G+C+F
x5
G
x3
Gtr 2
G
x4

3.2.1

Traversing wires

for two or more players

May 2019

Commissioned by Le Tout-petit Festival Musical de Saint-Germain-de-Calberte

First performance: June 2019
St. Germain-de-Calberte, France
Performed by Louise White and Fred Anthouard

Second performance: June 2021
Face to Face online Symposium
Performed by Ensemble Thing and Attica! Ensamble

Duration: free

Instructions

Each wire represents a pitch, and the players traverse through the wires following certain rules. They transit the wires from right to left and the first player to get to the last wire on the left, finishes the piece. The rules are as follows:

1. The wires represent a single pitch, which can be played using any type of colour change, rhythmic character or effect, but always taking into account the dynamic swells (from loud to soft and the other way around).

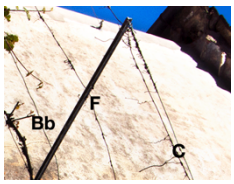
2. All players begin on the first wire on the top right hand side of the photograph. They begin at the top of the wire, playing the indicated pitch (C) and following the indicated dynamic towards the bottom of the image (*p* to *f*). They then each have a choice: either to get to the end of the wire (at the bottom of the page) or to 'traverse' to any of the wires to the left of the current one. Each player decides their path individually and independently from the other players' decisions.

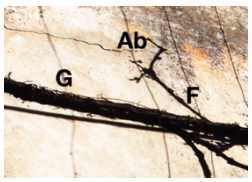
    a) If the players choose to continue until the end of the wire, they must follow the dynamic marked on the bottom of the wire and they must finish by doing an echo-like effect (from fast to slow, getting gradually quieter), using the pitch of the current wire.

    Only then they are allowed to continue playing the next adjacent wire to the left - always starting at the top of the wire- where they will have to decide once again either to stay on the wire or not.

    b) If the players choose to 'traverse' the wires, there are two ways of doing so:

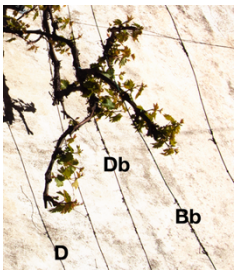
- Players can decide to 'traverse' a wire when there is an intersecting line (another wire or the shade of a tree branch) which crosses perpendicularly or diagonally between the wires.

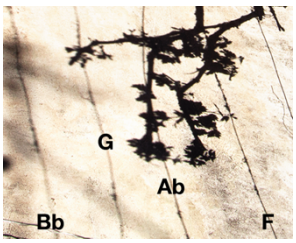




Players can opt to move to either one or as many of the adjacent wires to the left or right as they like. This can be played as a musical phrase or as a chord or interval. Whichever pitch (or chord or interval) they choose to 'finish' on, the players must swell to either *p* or *f* and then go back to the top of the wire from which they 'traversed'. Players can choose to 'traverse' from their initial wire as many times as they like, but having in mind that they can only continue playing the adjacent wires to the left once they have 'completed' the initial wire until the bottom of the page.

- When coming across a tree shadow with branches and leaves, players can choose 'traverse' by using any of the wire pitches that the branches touch, but they must play them using short, rapid notes as if they were rain drops.





Also in this case, after finishing the rain drop effect, players must come back to the top of the wire from which they 'traversed'.

3. The piece ends when one of the players has arrived to the last wire on the left of the image. That player must then cue the other player and finish the piece.

4. The duration of the piece is free.

Traversing wires

Jimena Maldonado

f *p* *f* *p* *f* *p* *f* *p* *f* *p*
Bb G Ab F D Eb Db Bb F C

Bb G Ab F D Eb Db Bb F C
p *f* *p* *f* *p* *f* *p* *f* *p* *f*

3.2.2

Megi

for variable ensemble

January 2020

Written for Decibel Ensemble

First performance: February 2020
Royal Birmingham Conservatoire, UK
Performed by Decibel Ensemble

Duration: 6'

Note: This piece uses a different video score for each instrumental group. The four video scores in C can be found in the '3.2.2.Megi_video scores in C' digital folder.

Instrumentation

At least 8 players divided into 4 groups of even –if possible– players.

*Suggested instruments for each group:

1a: flutes, clarinets, soprano/alto/tenor saxophones, violin, viola
1b: electric guitar, keyboards/piano, vibraphone/marimba

2a: flutes, clarinets, soprano/alto/tenor saxophones, violin, viola
2b: electric guitar, keyboards/piano, vibraphone/marimba

3a: flutes, clarinets, soprano/alto/tenor saxophones, violin, viola
3b: flutes, clarinets, soprano/alto/tenor saxophones, violin, viola

4a: trombone, tuba, tenor/baritone saxophones, bass clarinet
4b: cello, double bass, electric bass, trombone, tuba

General instructions

This piece is based on the painting *Megi* by French painter Bernard Frize. He used a very simple and clear process to create the painting:
From right to left, he drew four looping lines with one brush stroke for each line. As a result, the painting starts with a lot of paint, but as the paint runs out, the lines fade. Also, although at first having 4 very clear paths with a defined combination of colours, the lines intersect and therefore the paint mixes, giving new colours and textures to the painting.

The idea is for the piece to emulate these two aspects. It starts being very energetic and dense, but from around minute 3 it should become more sparse and slow. The combinations of pitch material also become more complex when the colours of the lines mix.

Players use the 4 looping lines to transit the image on the video scores from right to left. They follow their own line on the video score and are grouped as follows:

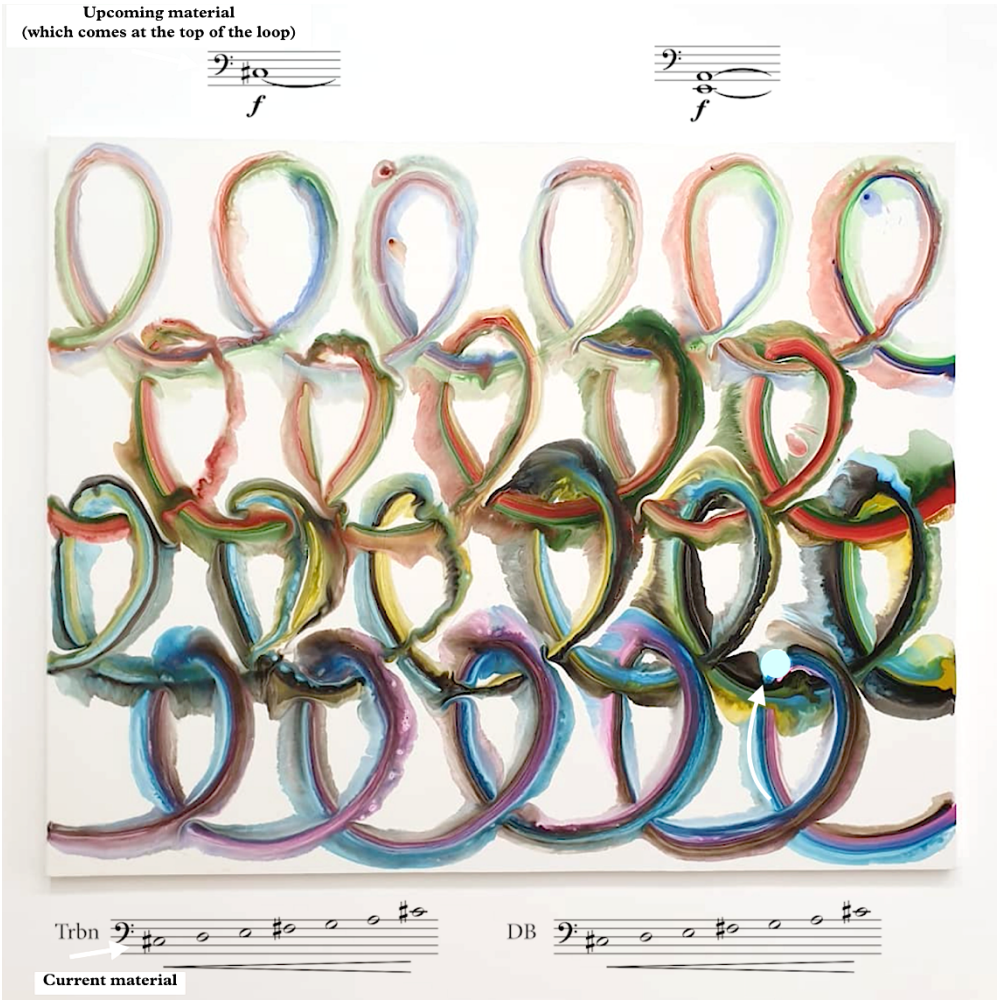
1. : Material 1a and 1b
2. : Material 2a and 2b
3. : Material 3a and 3b
4. : Material 4a and 4b

Groups 1 and 3 share the same general trajectory, as well as groups 2 and 4.

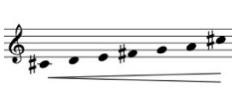
The musical material works as follows:

Ascending and descending scales are used when going up or down a loop.
Sustained or rhythmic single notes, chords or intervals are used when at the top of the loops or on the lines connecting loops.

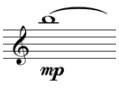
The musical material for each group of players is given on the video-scores. Players are to follow their respective symbol through the looping lines and play the given musical material. When necessary, the upcoming musical material is shown at the top of the image in order to help players prepare for the material that follows.



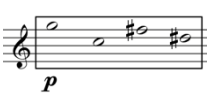
Types of musical material (all free in terms of speed and register)



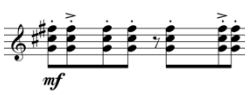
Ascending/descending scale



Sustained note, interval or chord

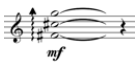


Play given pitches in any order and speed

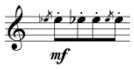
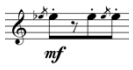


Rhythmic material

Rules

- Performers can play the given musical material in any register. Polyphonic instruments may also double in any octave.
- The given musical material is to be played as many times as each player wants, during the time indicated on the video score. For example, this given material 

can be played any number of times before the upcoming material (i.e. a scale) begins.

- Scales are to be played from any to any adjacent note of the scale (always following the direction of the scale).
- Scales can be repeated any number of times for as long as the animation allows it. The tempo and phrasing are free, but when repeated, scales should be played using the same tempo/phrasing until the top/bottom of the loop.
- Each player should play their scales independently from the rest of the players.
- Ascending scales should always go from quiet to loud, taking into consideration that the note on the top of the loop is always the loudest. Descending scales should go from loud to quiet.
- Rhythmic material may be varied, but always following the main idea of the given material. i.e.  may become  .

- The piece starts on ♩ = 110 but once the scales begin, the tempo will disappear. When asked to play rhythmical material, players should try to follow other players' tempo.
- Players should try to move from one musical material to the next as smoothly as possible. For example, players should arrive at the material at the top of the loop using the previous ascending scale to get to it.
- If given two or more notes, monophonic instruments should choose one note.
- Keyboards/pitched percussion can play the given material with either or both hands.
- It is important for players to listen to each other in order to maintain balance between the materials and the instruments.
- Players should cue each other in order to start their videos at the same time. A video showing the painting with the moving symbols should be shown to the audience. All the videos should be as synchronised as possible.

3.3.1

Where there was wood is now water

for viola solo and fixed media

April 2020

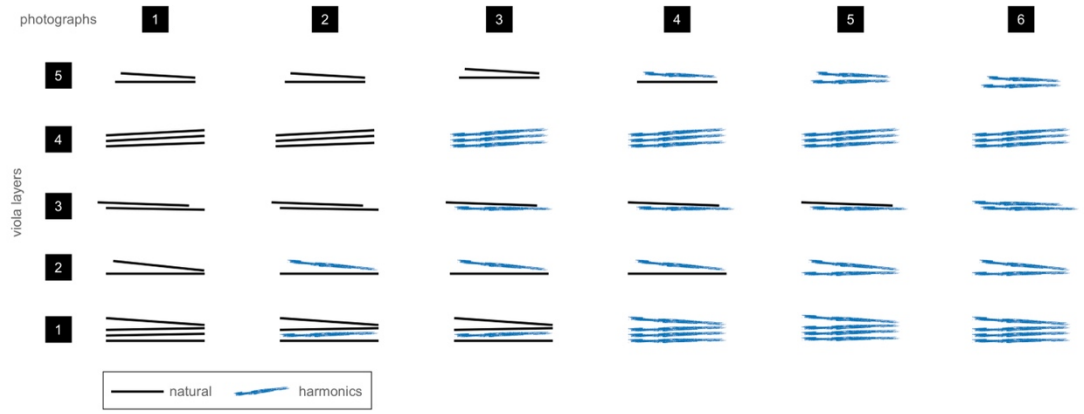
Commissioned by Laura Sinnerton for her viola solo album 'Inner Voices'
Released by Birmingham Record Company

Duration: 7'30''

This piece is based on the photographic series *'Water table'*, by Anthony McCall. The series consists of 6 photographs which have a very clear, linear process that develops throughout the series. The first photograph shows a table with 13 wooden beams on it. From the second photograph, a process of removing beams from the table begins. Every time a wooden beam is removed, a trace of water is left on the table. On each of the following images there are gradually fewer beams on the table -and therefore more water- until, on the last photograph, only water traces remain.

The overall wood-to-water process is represented by layers of natural notes becoming harmonics. Therefore, the piece begins only with natural notes, and ends only with harmonics. I divided the 13 wooden beams into 5 groups and I composed 5 separate layers of music. Each group is represented by a layer of pre-recorded viola.

Although conceived as a piece for viola solo and fixed media, it can also be performed by 5 live violas, as well as a combination of 2 or 3 violas of along with the remaining pre-recorded layers.

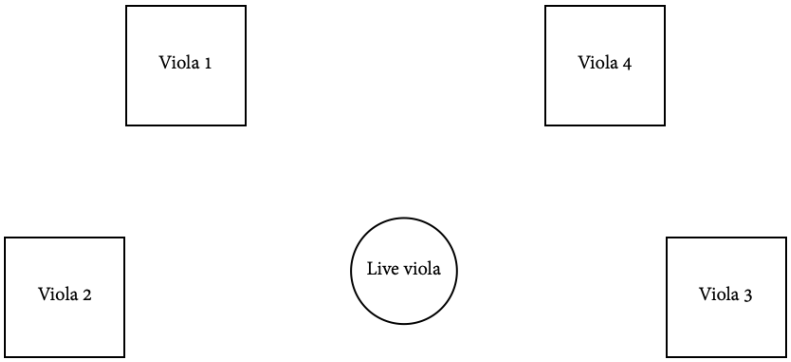


Fixed media layers recorded by Laura Sinnerton
Mixed and mastered by David Birnie

* Birmingham Record Company gives permission for use of the recording of *Where there was wood is now water*.

Technical requirements:

- Amplified live viola
- Click track
- Fixed media on quadrophonic system: pre-recorded viola layers 1-4 will be provided and are to be set-up as follows:

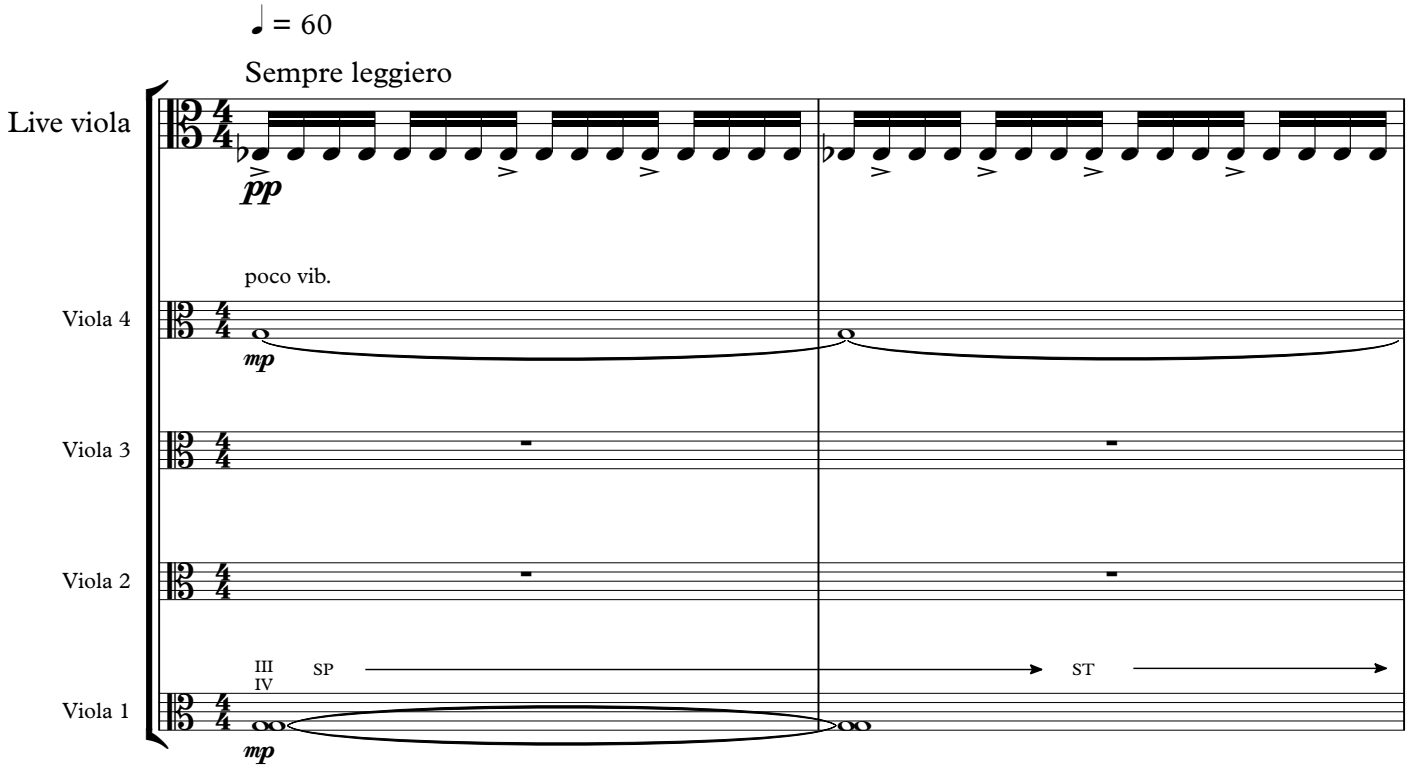


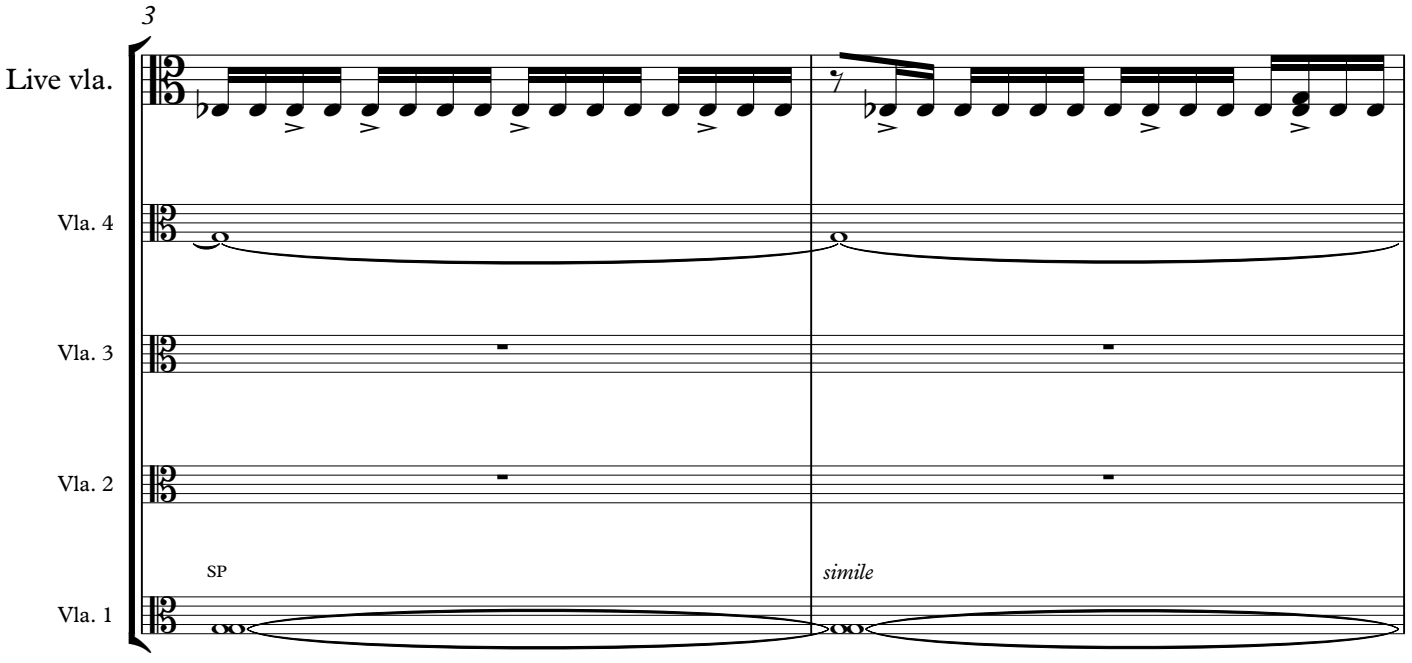
Performance notes:

-The live viola's material should begin in the background and become more and more present throughout the piece.
-*Sempre leggiero* : Always play with a light touch.
-  : Harmonics are not meant to be perfect. They should sound like the 'ghosts' of the lower notes.
- SP: sul ponticello
- ST: sul tasto
- LHP: left hand pizzicato
- A click track will be provided for the live viola.

Jimena Maldonado

Where there was wood is now water





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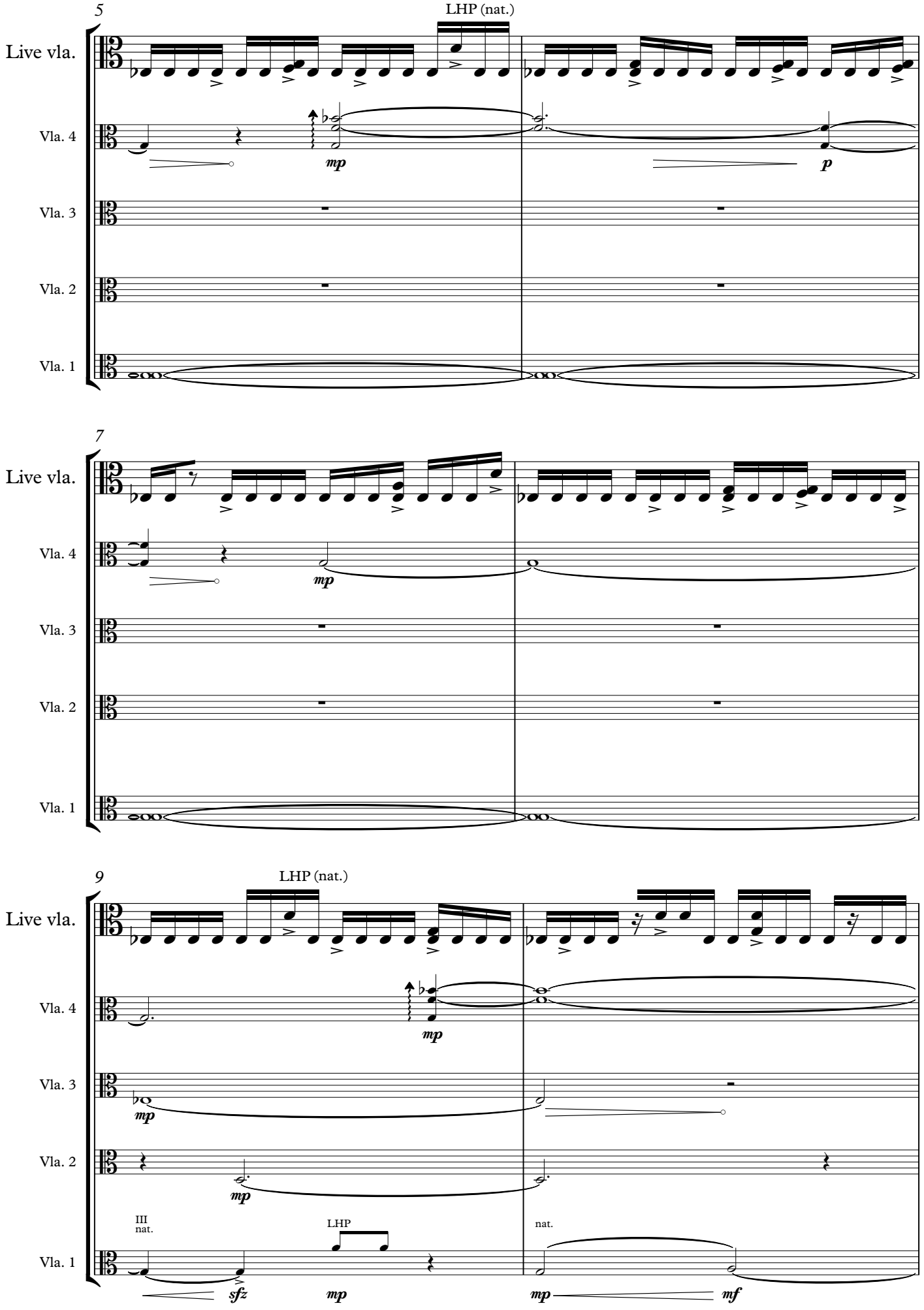
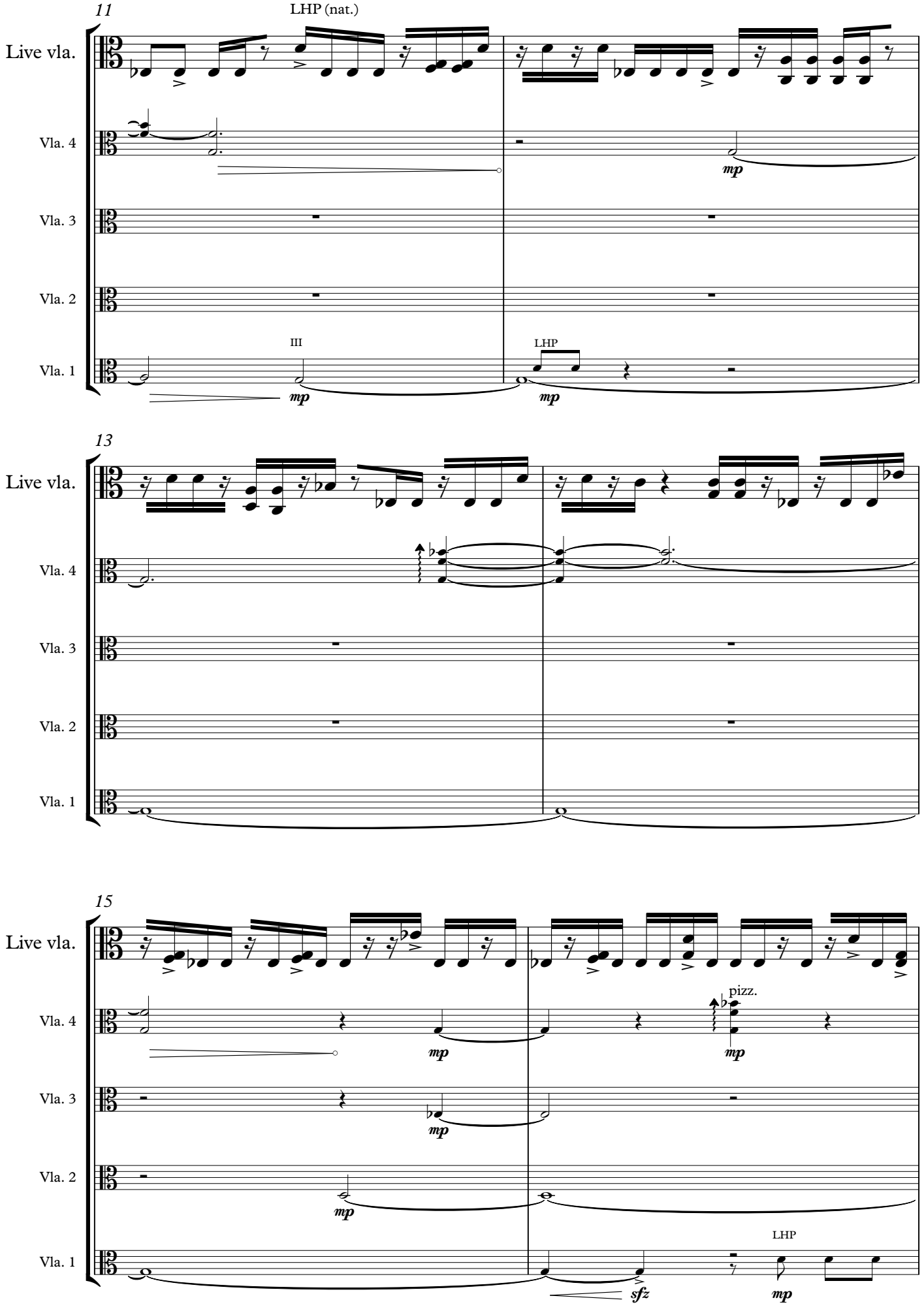
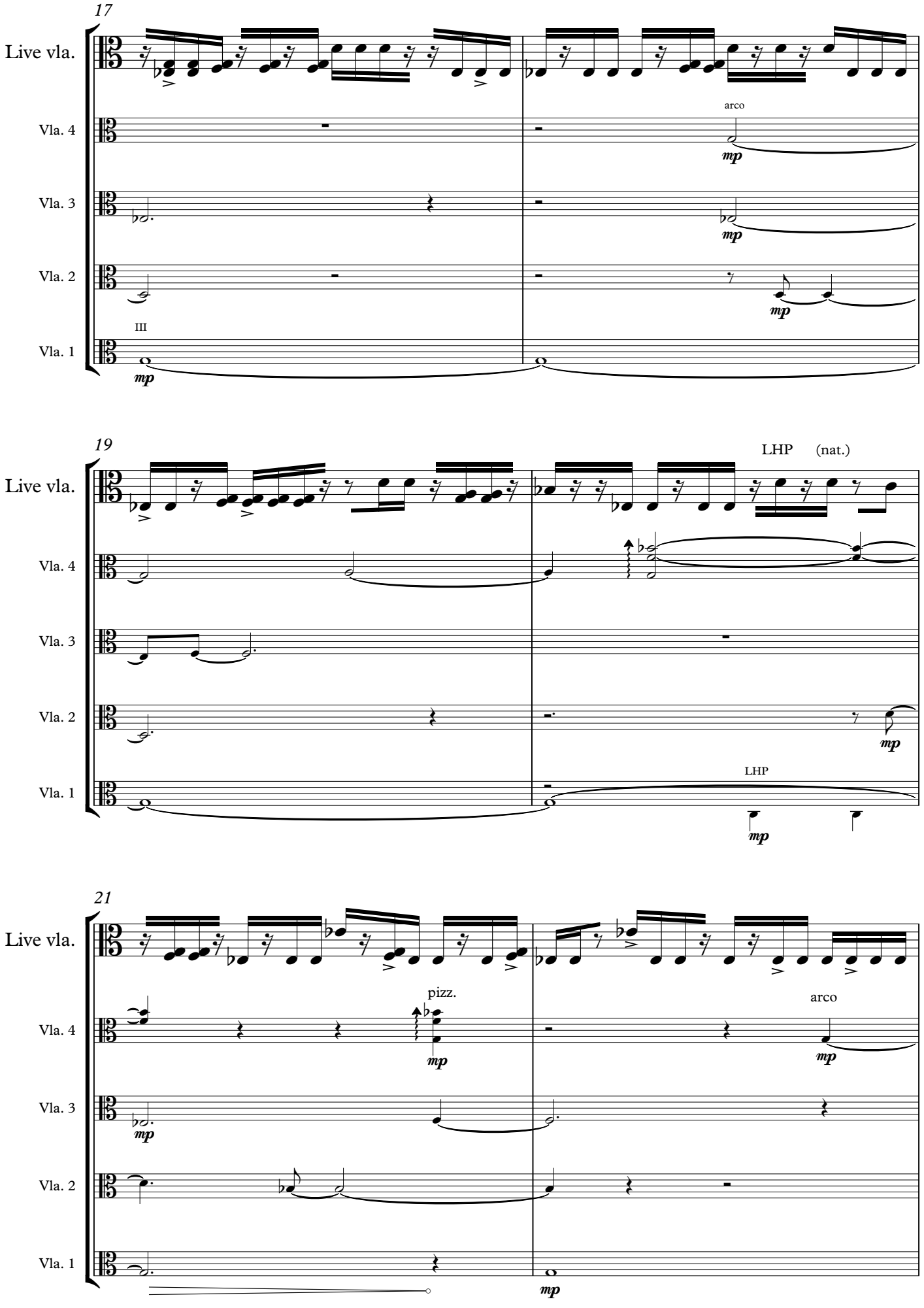
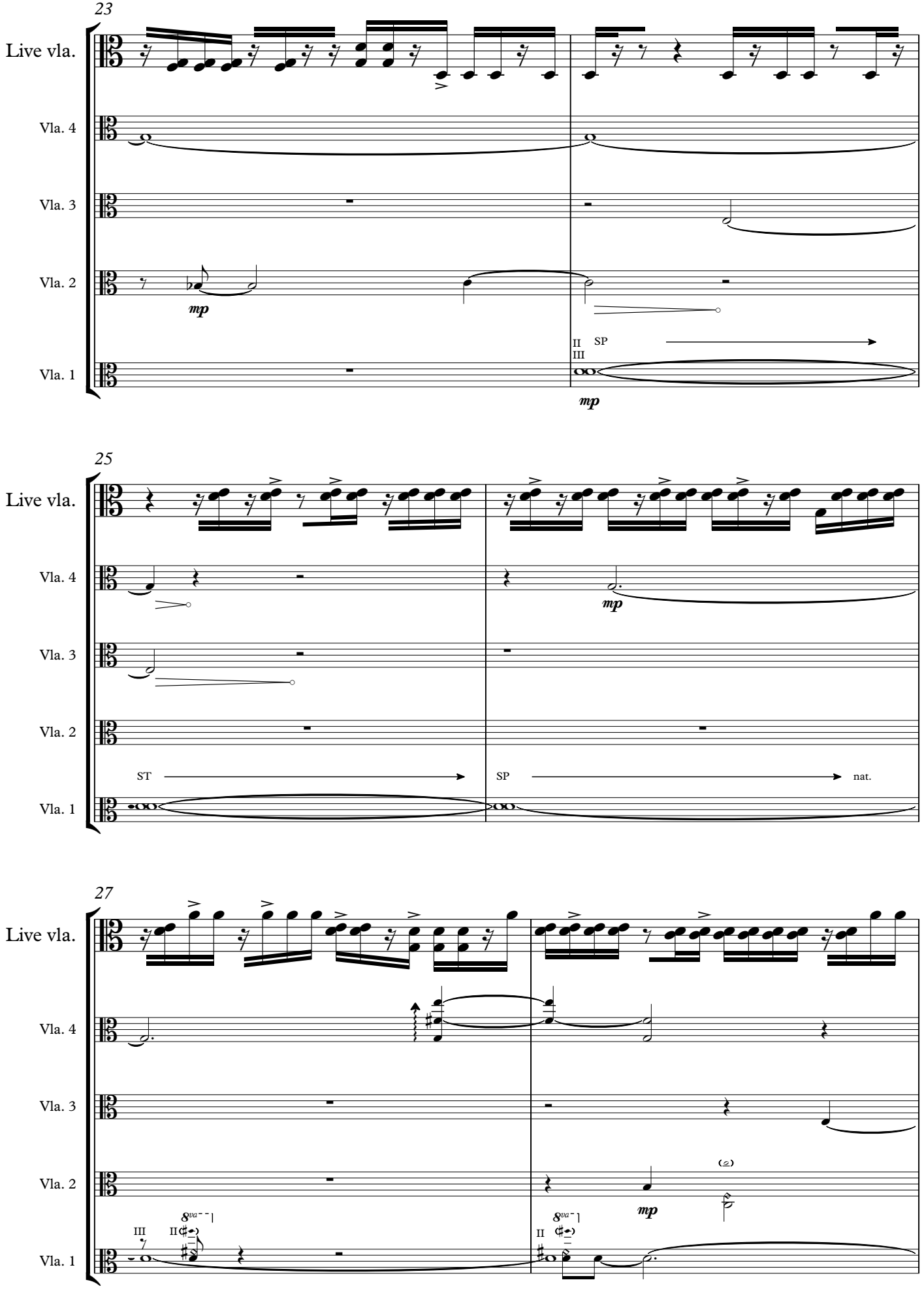
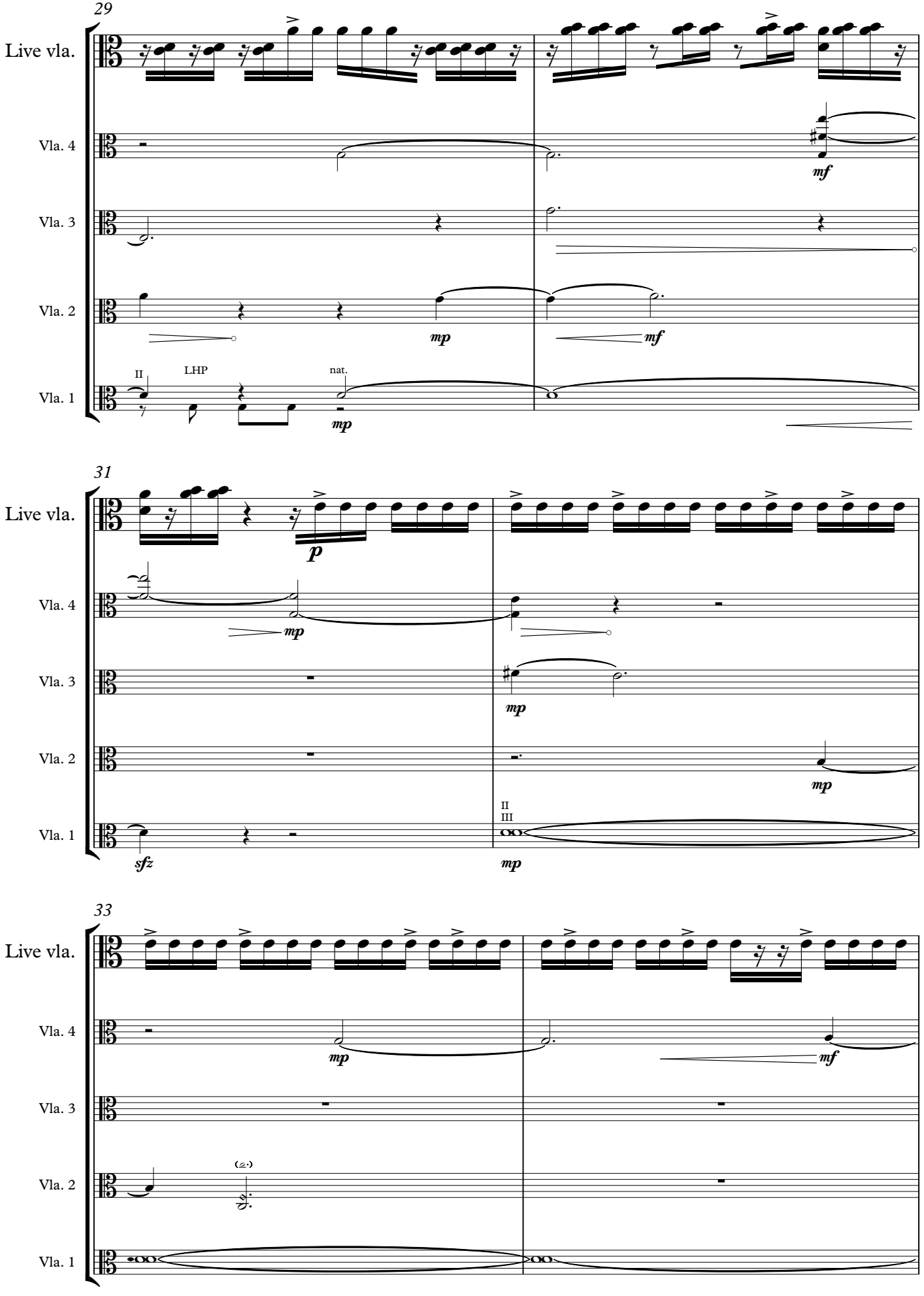
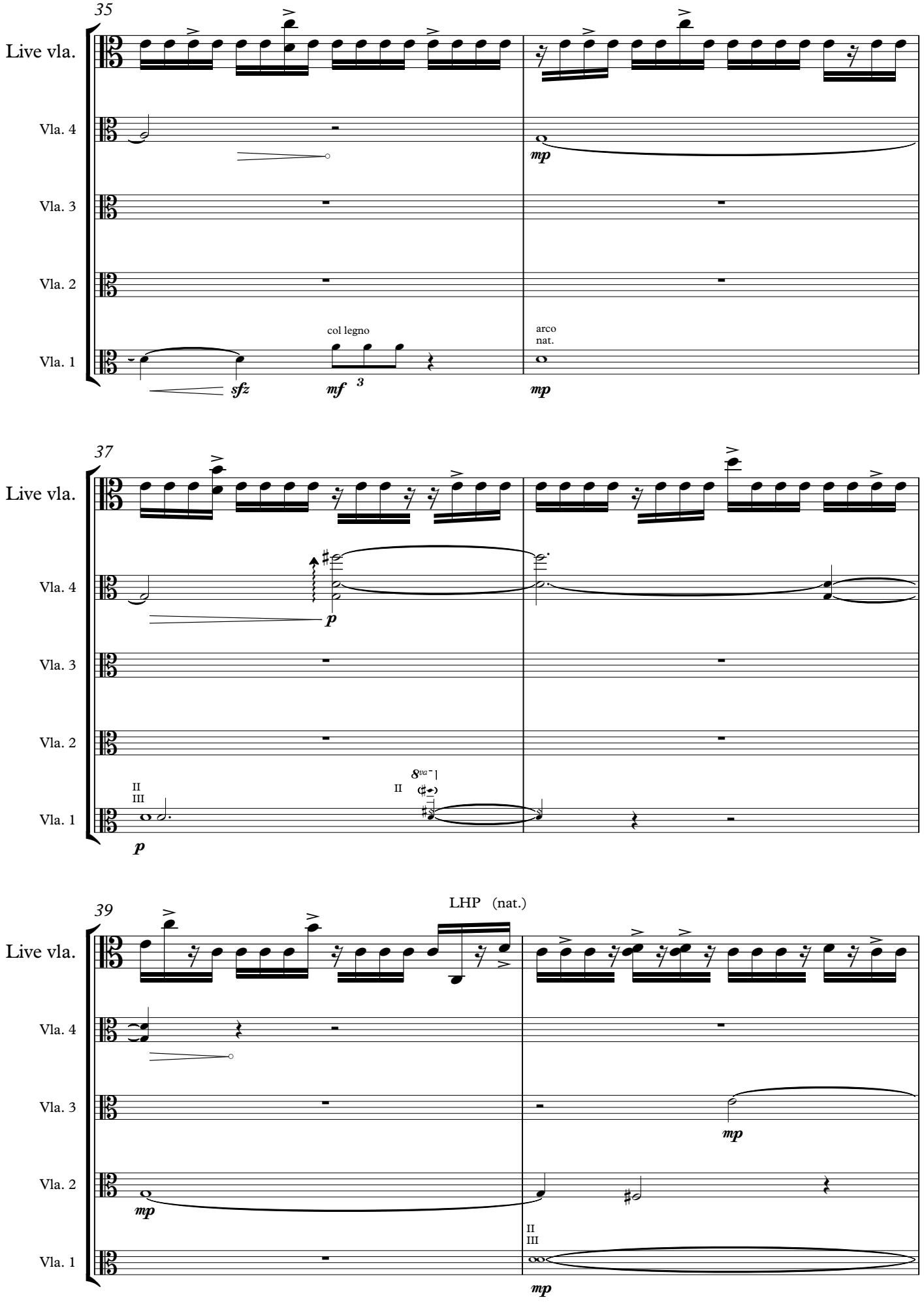

5
LHP (nat.)
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
p
7
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
9
LHP (nat.)
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
III
nat.
LHP
nat.
sfz
mp
mp
mf

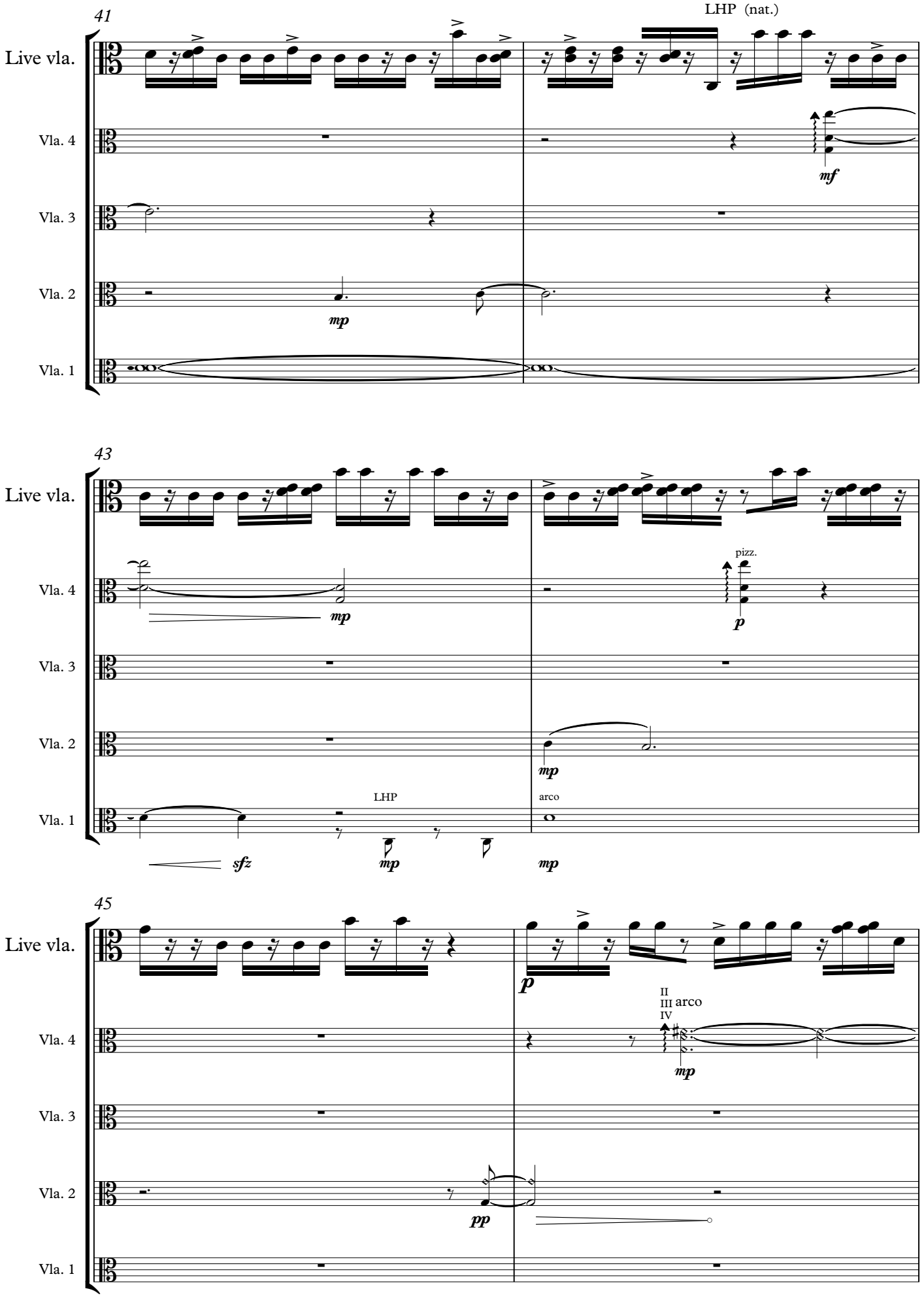

11
LHP (nat.)
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
III
LHP
mp
13
15
pizz.
sfz

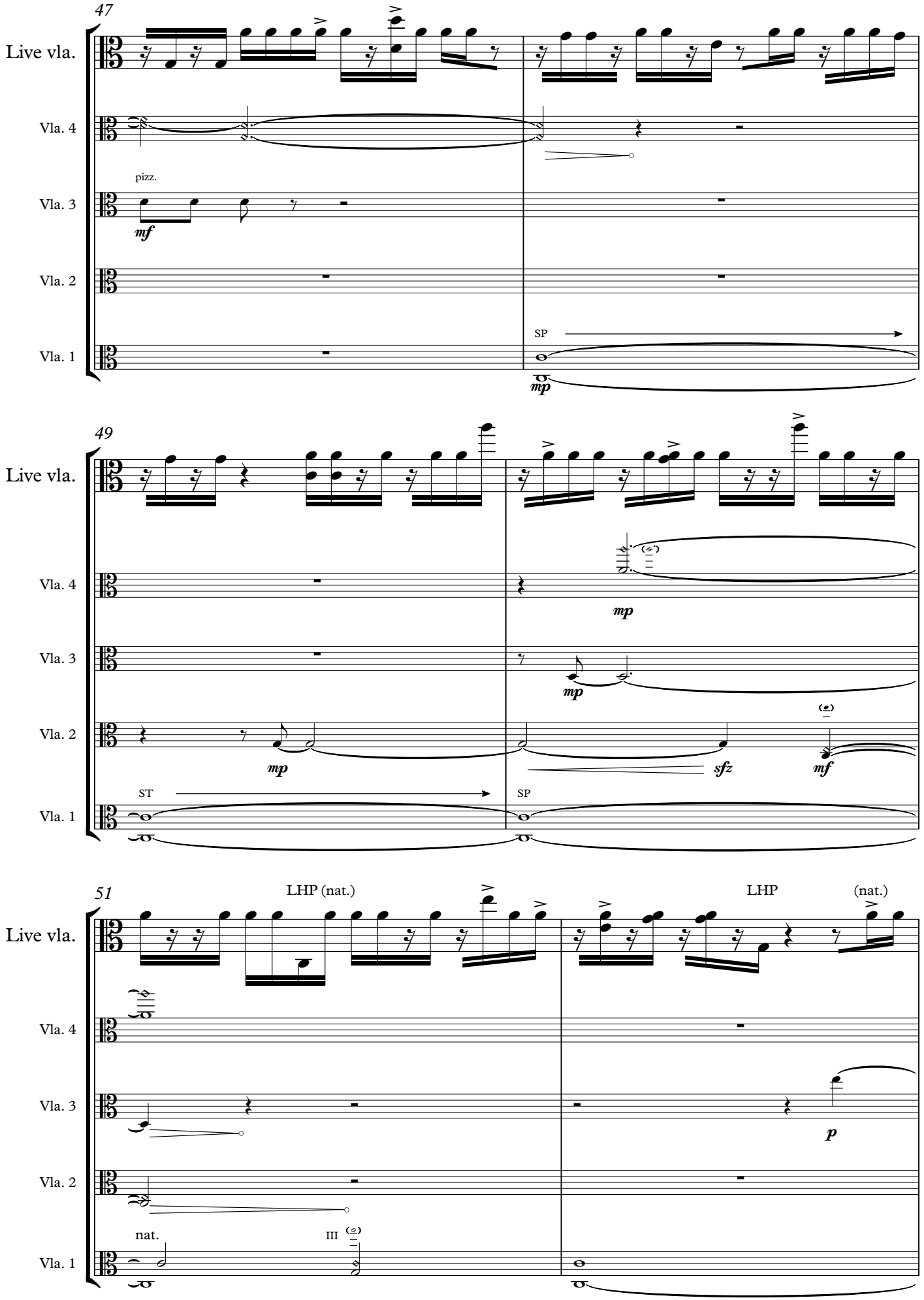

17
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
III
mp
arco
mp
mp
mp
19
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
LHP (nat.)
mp
LHP
mp
21
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
pizz.
mp
mp
arco
mp
mp

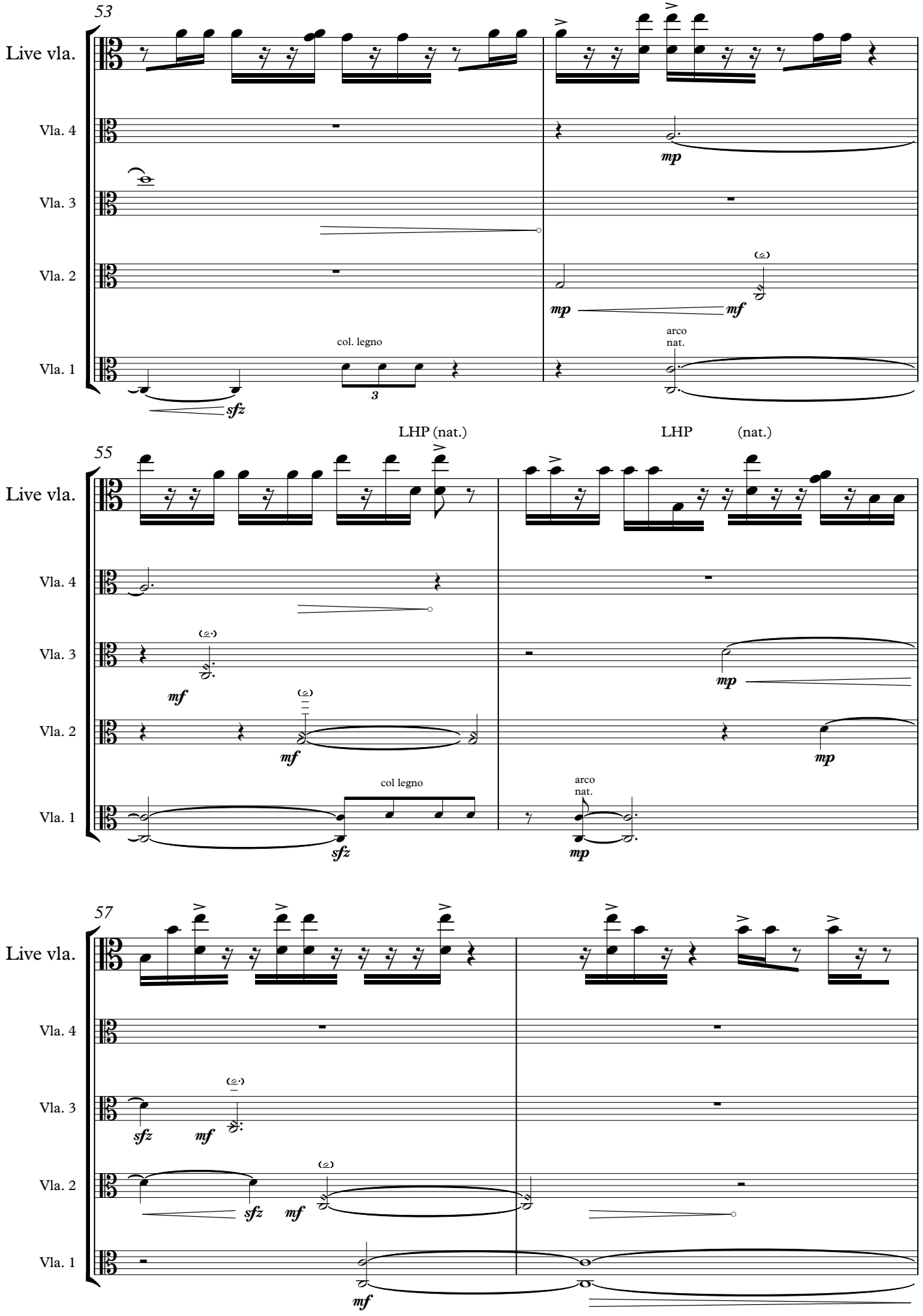

23
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
II SP
III
mp
25
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
ST
SP
nat.
27
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
III
II
8va
II
8va

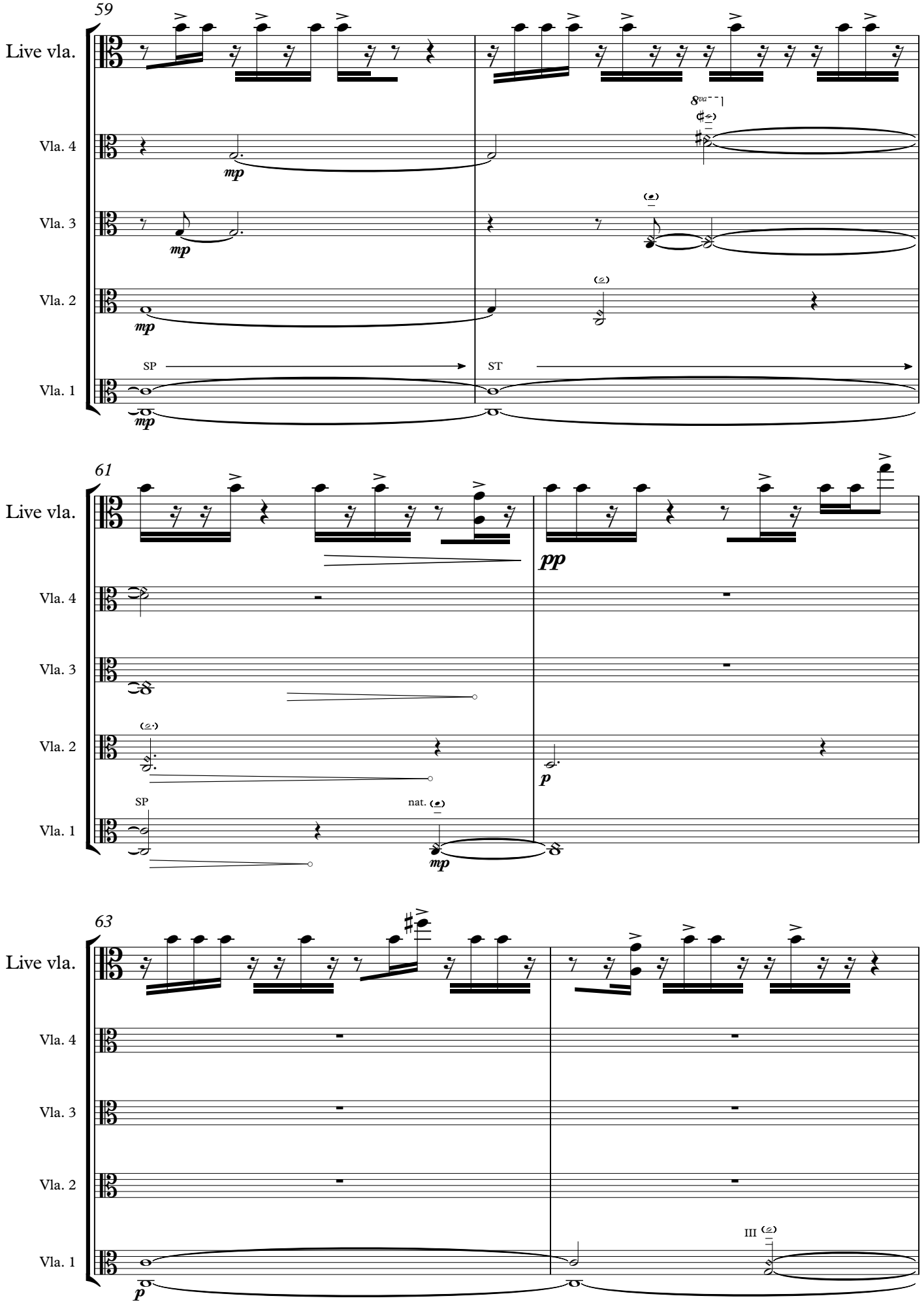

29
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mf
mp
mf
II
LHP
nat.
mp
31
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
p
mp
mp
mp
II
III
sfz
mp
33
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
mf

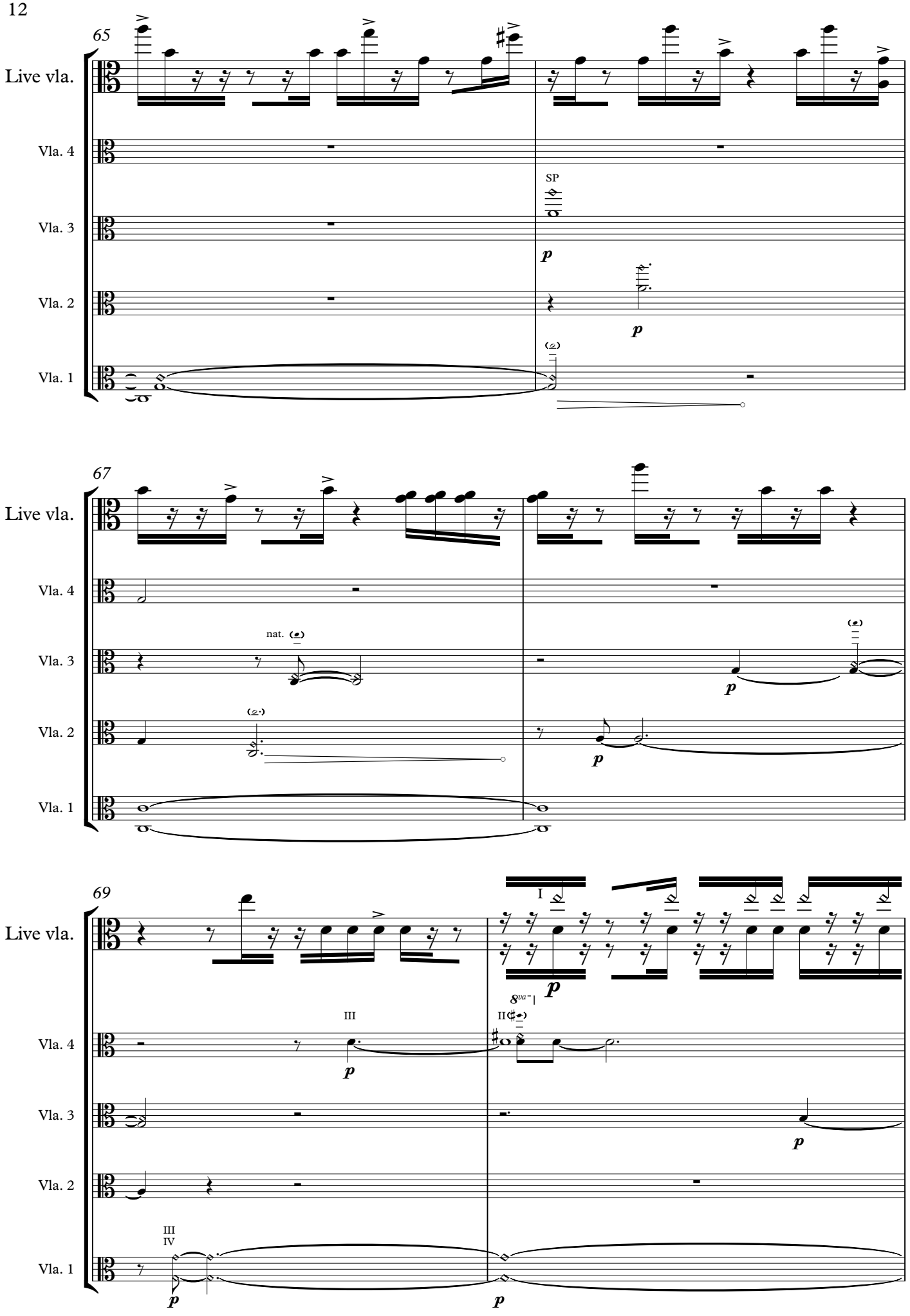

35
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
col legno
arco
nat.
sfz
mf
3
mp
mp
37
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
p
II
III
8va
II
p
39
LHP (nat.)
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
mp
II
III
mp

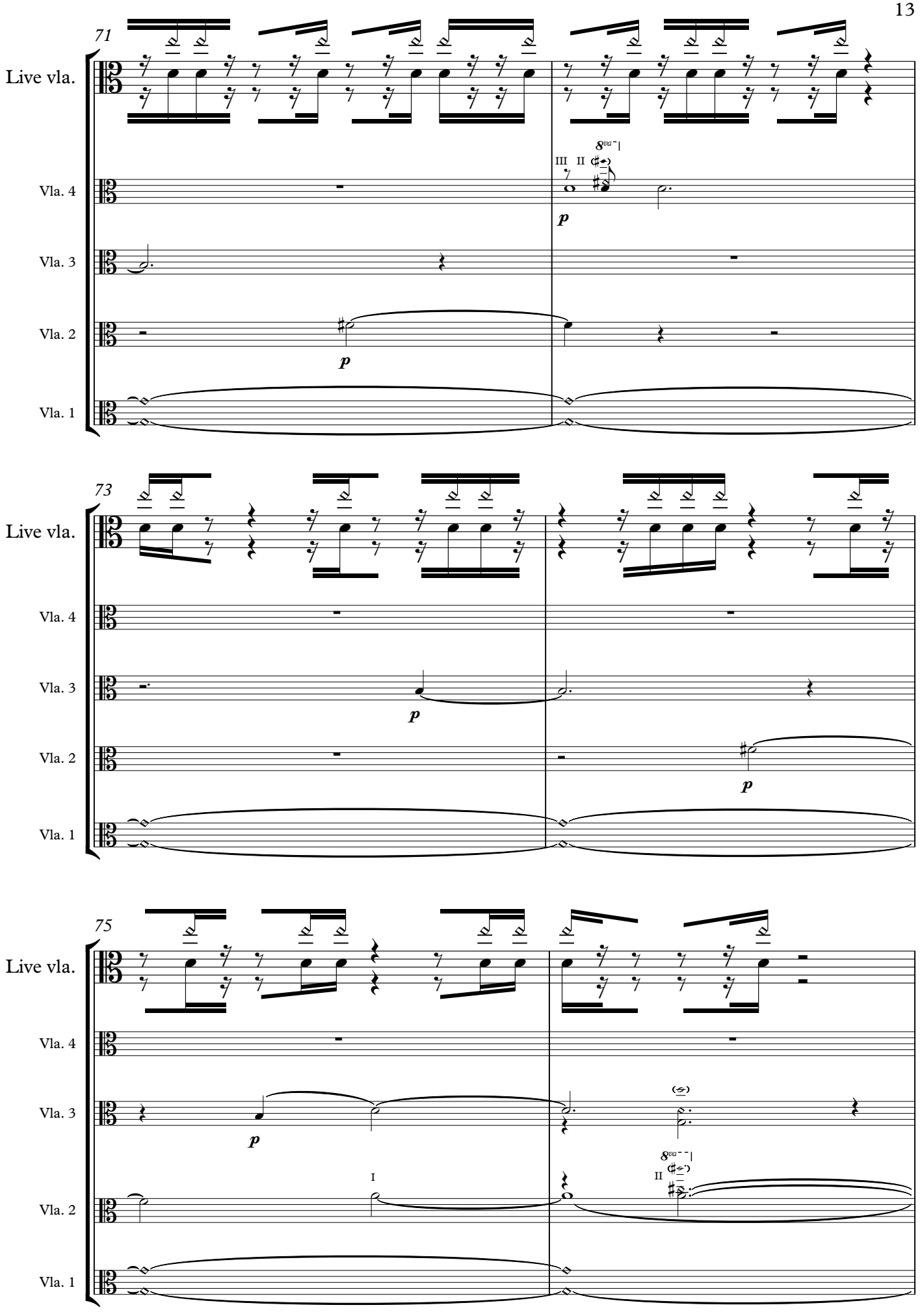

41
LHP (nat.)
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mf
mp
43
pizz.
p
LHP
arco
sfz
45
II
III arco
IV
pp

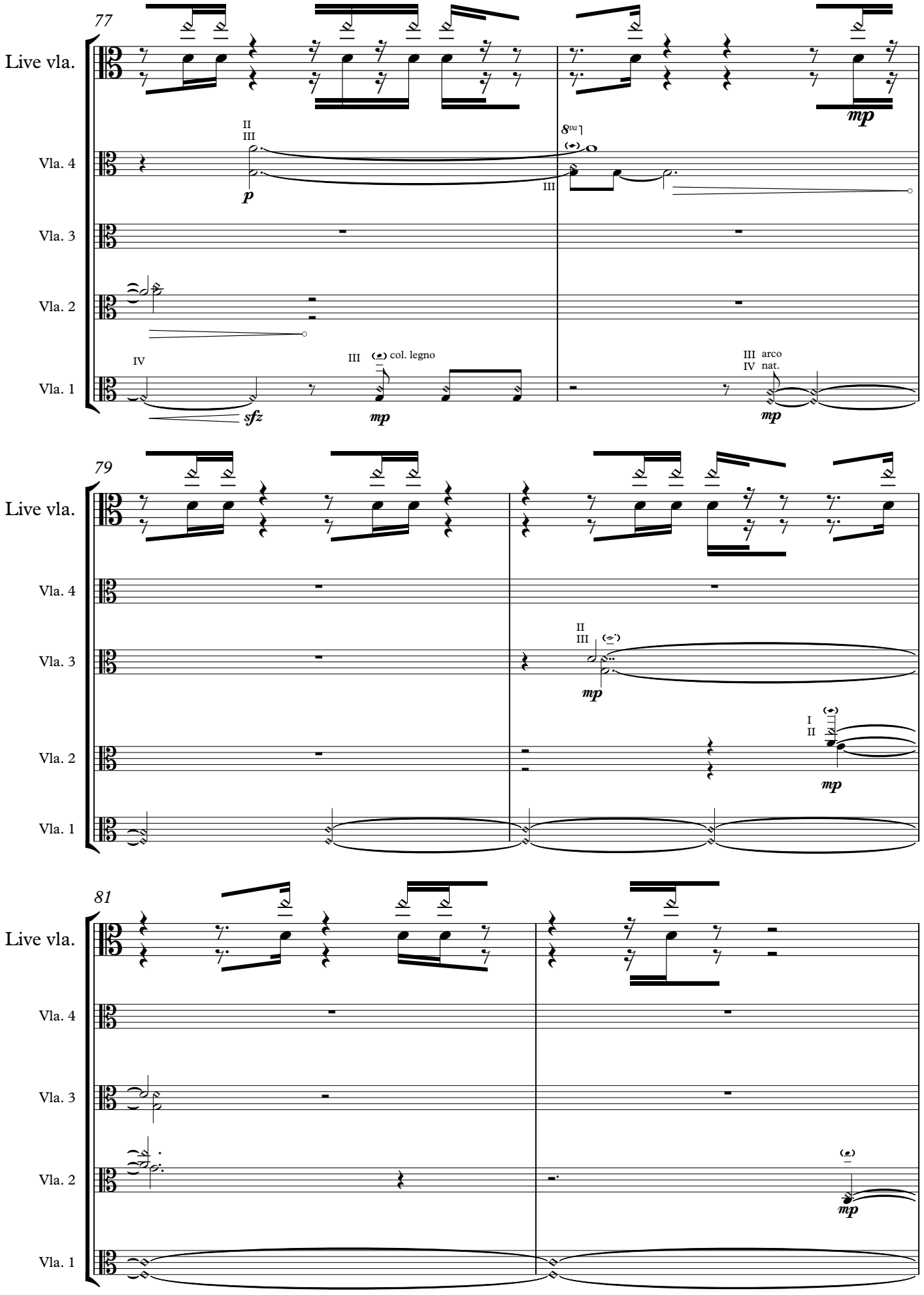

47
Live vla.
Vla. 4
pizz.
Vla. 3
mf
Vla. 2
Vla. 1
SP
mp
49
Live vla.
Vla. 4
mp
Vla. 3
mp
Vla. 2
mp
sfz
mf
ST
SP
Vla. 1
51
LHP (nat.)
LHP
(nat.)
Live vla.
Vla. 4
Vla. 3
p
Vla. 2
nat.
III
Vla. 1

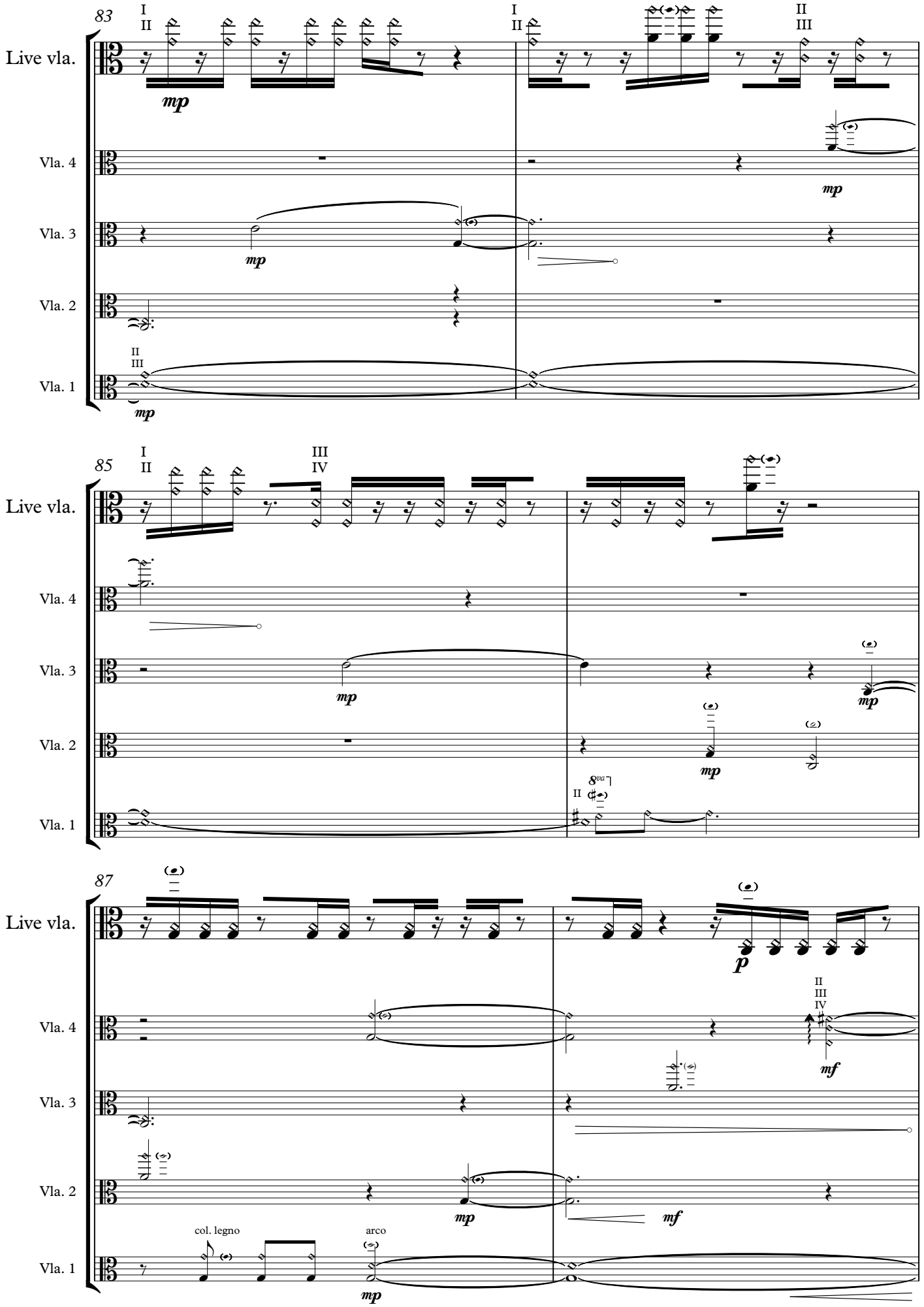

53
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
mp
mf
col. legno
arco
nat.
sfz
3
55
LHP (nat.)
LHP
(nat.)
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mf
mf
mp
mp
col legno
arco
nat.
sfz
mp
57
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
sfz
mf
sfz
mf
mf

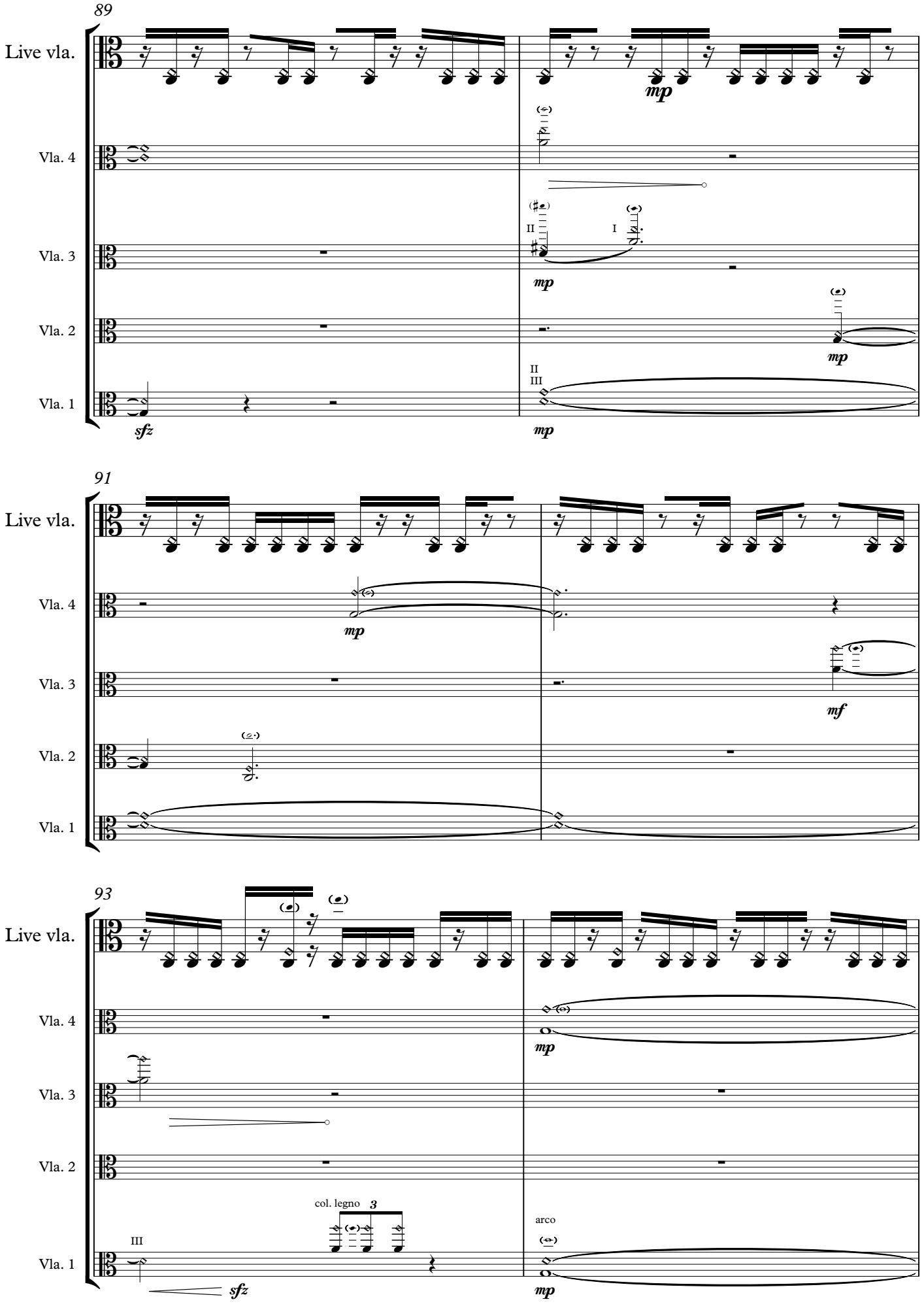

59
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
SP
ST
8va
61
pp
p
nat.
63
III

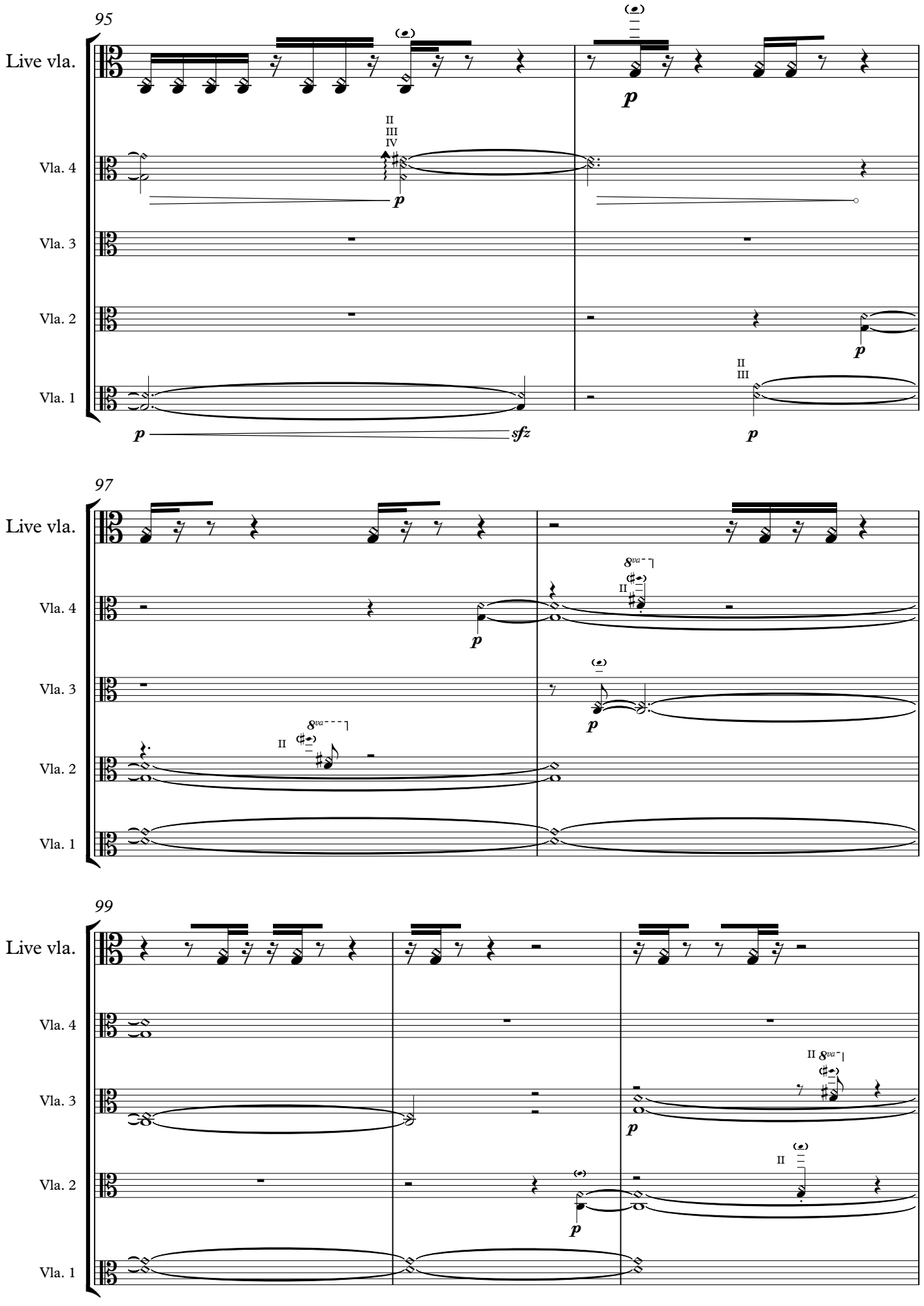

65
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
SP
p
67
nat.
69
I
III
II
III
IV

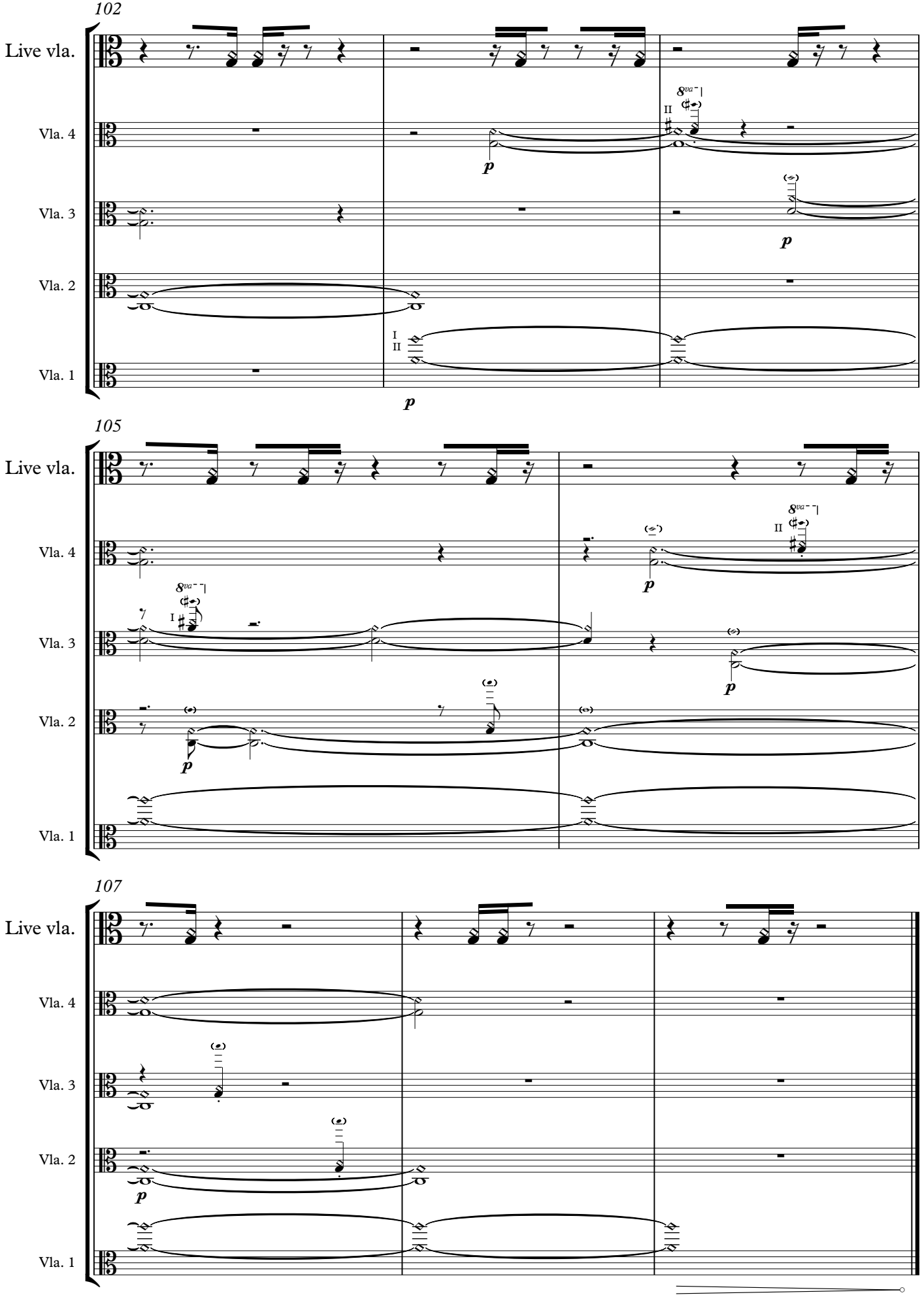

71
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
8va
III II
p
p
73
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
p
p
75
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
p
I
8va
II

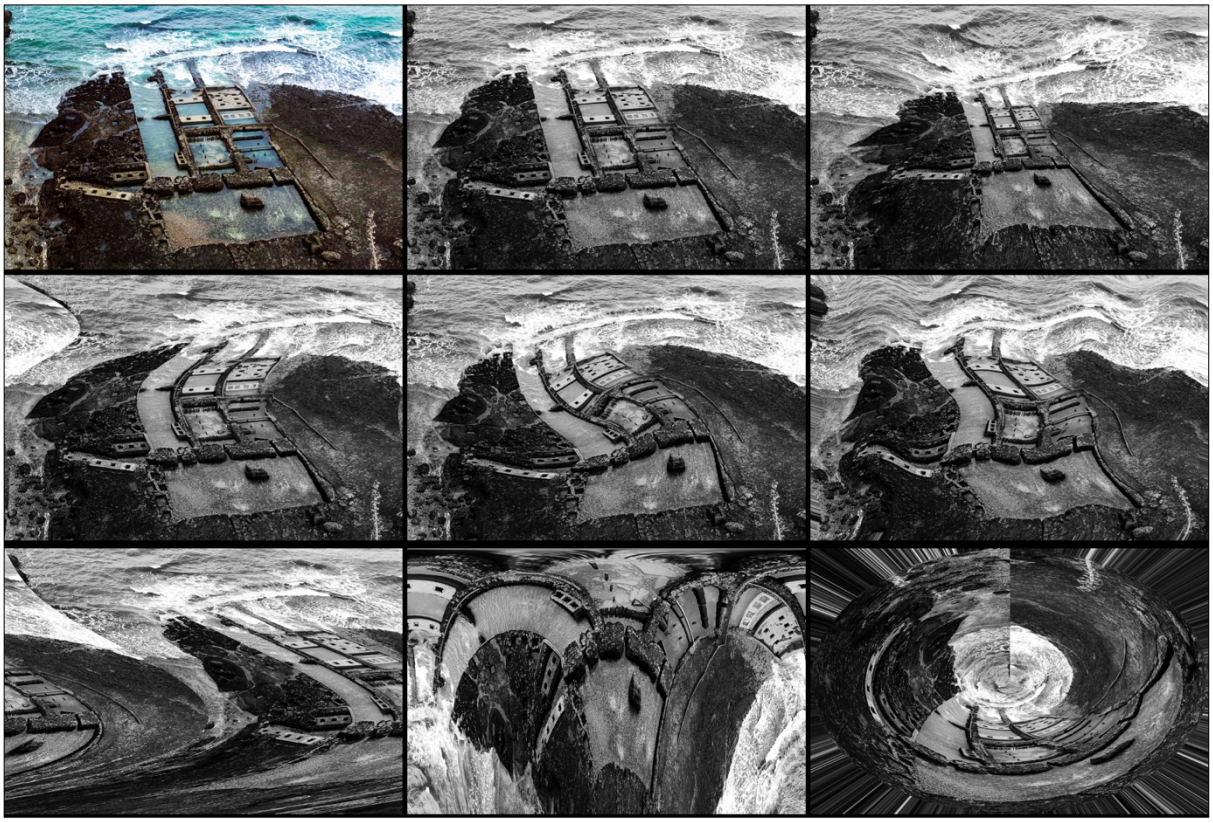

77
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
II
III
p
8va
III
mp
IV
sfz
III
col. legno
mp
III arco
IV nat.
mp
79
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
II
III
mp
I
II
mp
81
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp


83
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
85
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
mp
8va
87
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
p
mf
col. legno
arco
mp


89
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
sfz
mp
II
I
II
III
91
mf
93
col. legno
3
arco


95
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
II
III
IV
p
sfz
97
8va
99


102
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
8va
I
II
p
105
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
8va
I
II
p
107
Live vla.
Vla. 4
Vla. 3
Vla. 2
Vla. 1
p



3.3.2

One to nine

for string quartet

February 2021

One to nine is based on a series of nine images I created which are distorted gradually, from image one to nine, almost until the point of no recognition. The whole piece is based on this idea, and the material comes from a musical reading of the images' transformations, going from a natural scene to an abstract one.

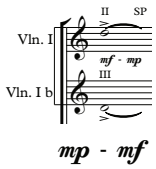
The piece is divided into nine sections of ca 1'10'' each. Sections One to Seven should be played with the help of a stopwatch. The timecode helps with specific moments which should be synchronised, but is to be followed with a certain degree of elasticity within the given musical gestures of the piece. Sections Eight and Nine are written in 4/4 and should be played with precise rhythm and tempo.

I have placed the images on both the score and the parts, with the idea of them providing a visual stimuli for the resulting sound.

The whole piece should have a continuous drone with inner movement in the details and many colour changes.

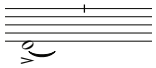
*If possible, the quartet should read from the score using an ipad and a pedal page changer.

Notes

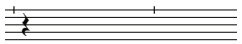


Each instrument has two staves, the 'b' stave mostly showing the drone note, which is always on an open string. Dynamics, bowing and articulations are only indicated on one of the two staves but naturally affect both staves.

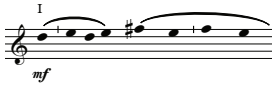
Swell freely between given dynamics



Hanging ties indicate a continued long note which should carry on until either a rest or a new attack.



Rests are always indicated with a quarter note rest and should continue until the next attack appears.



White note-heads indicate long notes; black note-heads indicate short notes. Spacing between note-heads should affect the speed of the gestures. More space equals slower gesture.

1/8 tone inflections

1/4 tone inflections

One to nine

Jimena Maldonado

One

0" 20"

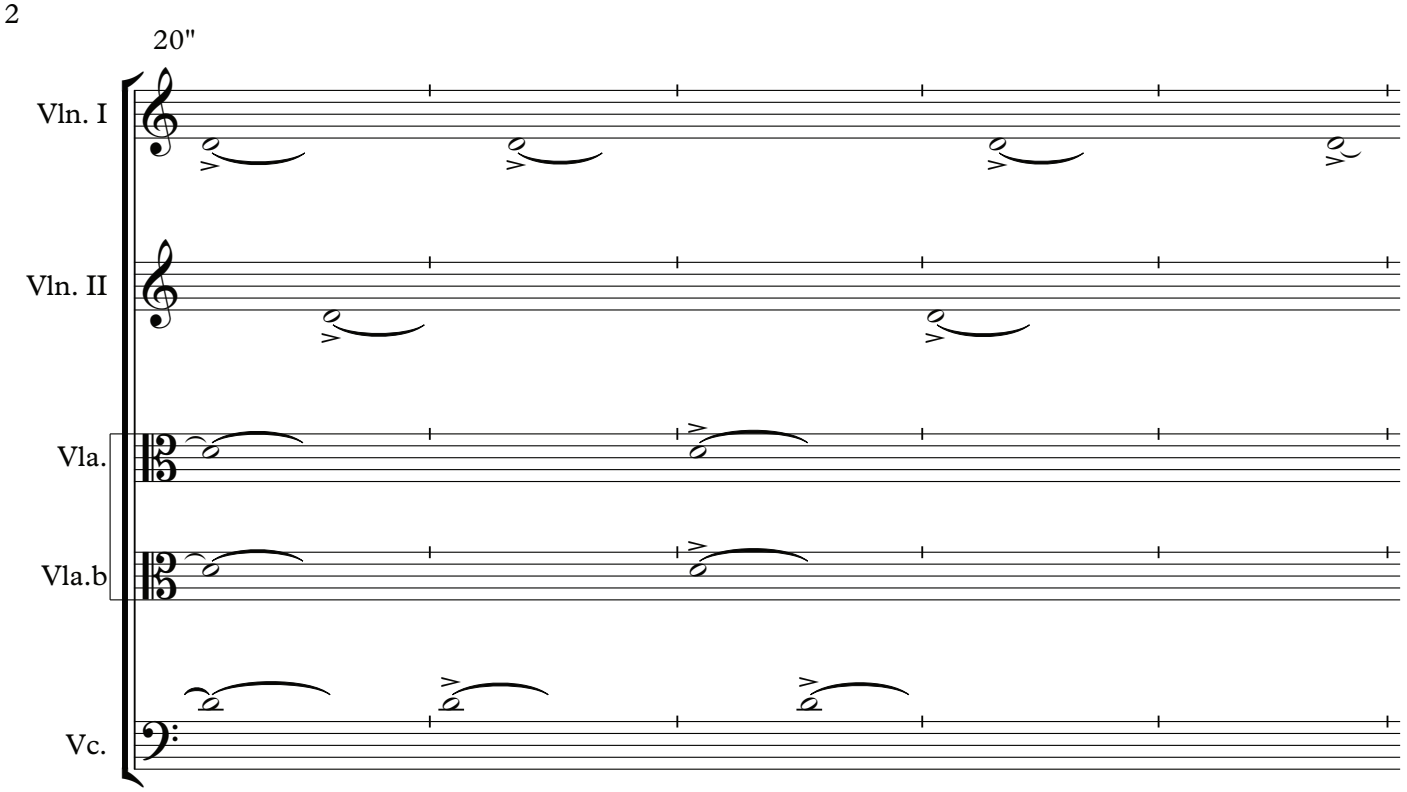
Violin I
III
mp - mf

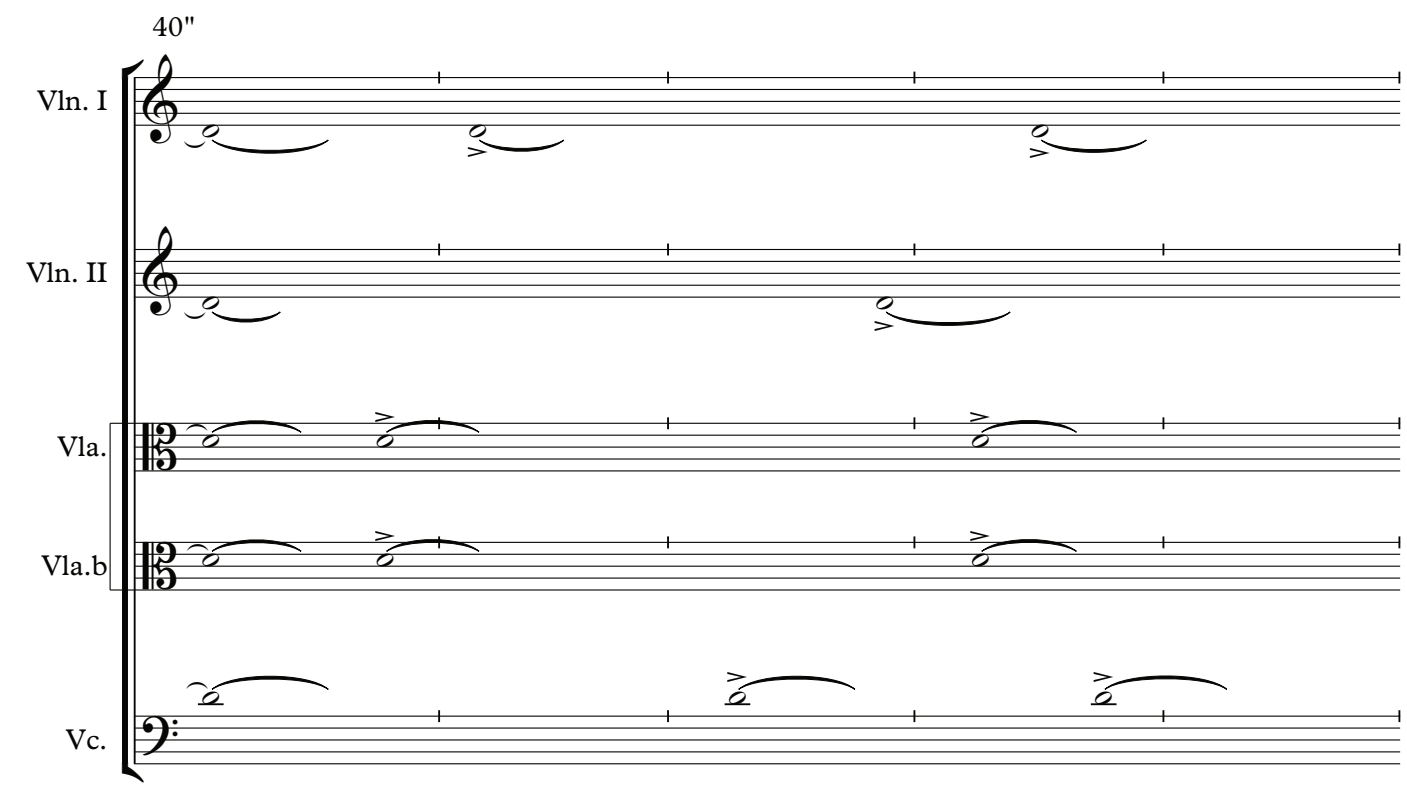
Violin II
IV senza vib.
mp - mf

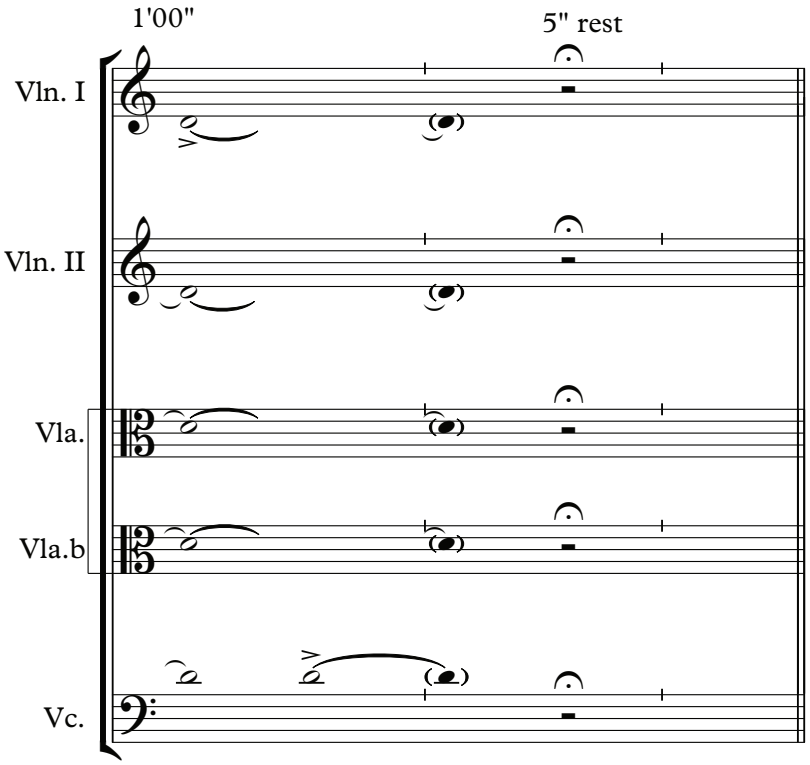
Viola
III senza vib.
SP ST SP ST simile
mp - mf

Viola b
II senza vib.
SP ST SP ST simile
mp - mf

Violoncello
senza vib.
mp - mf

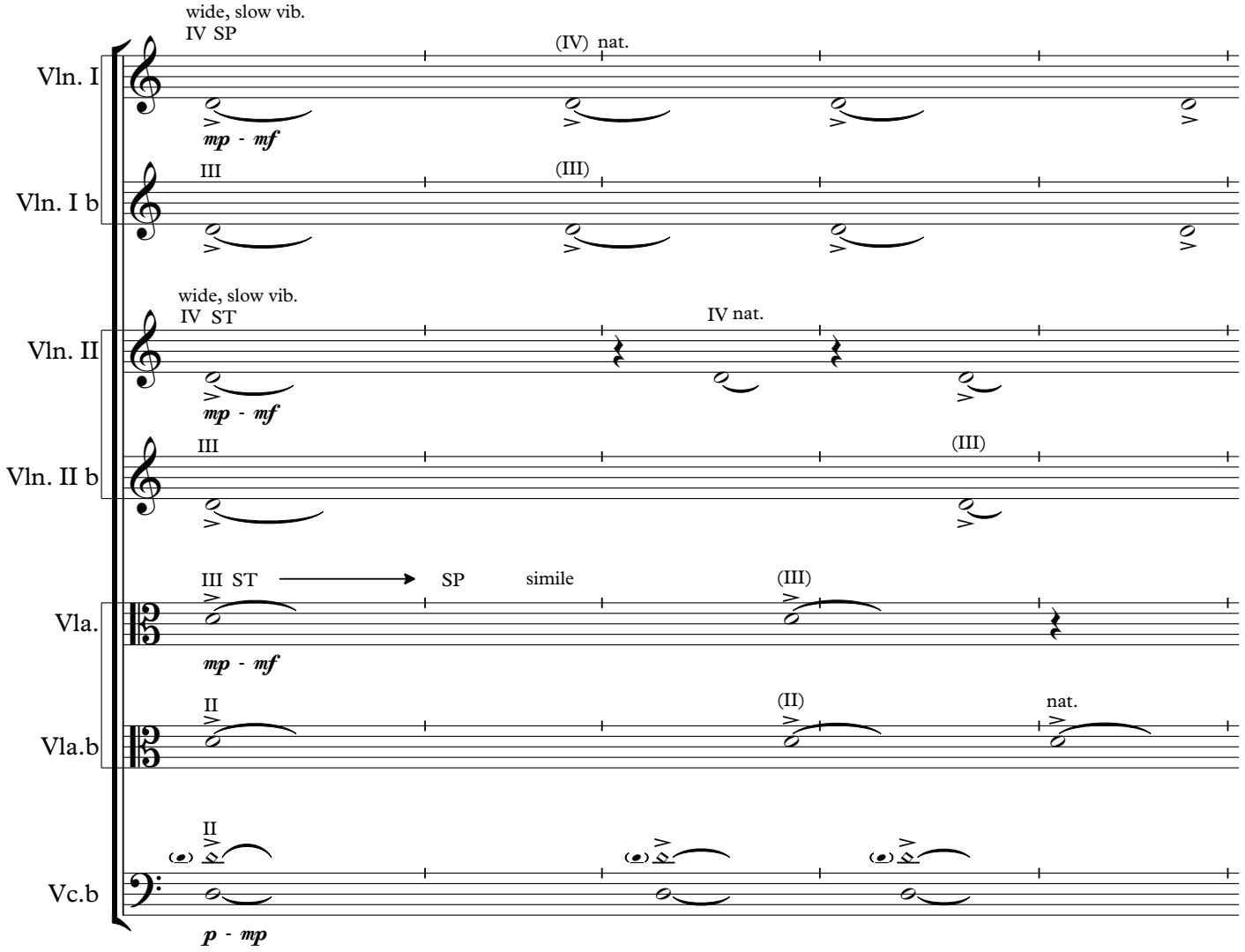

20"
Vln. I
Vln. II
Vla.
Vla.b
Vc.

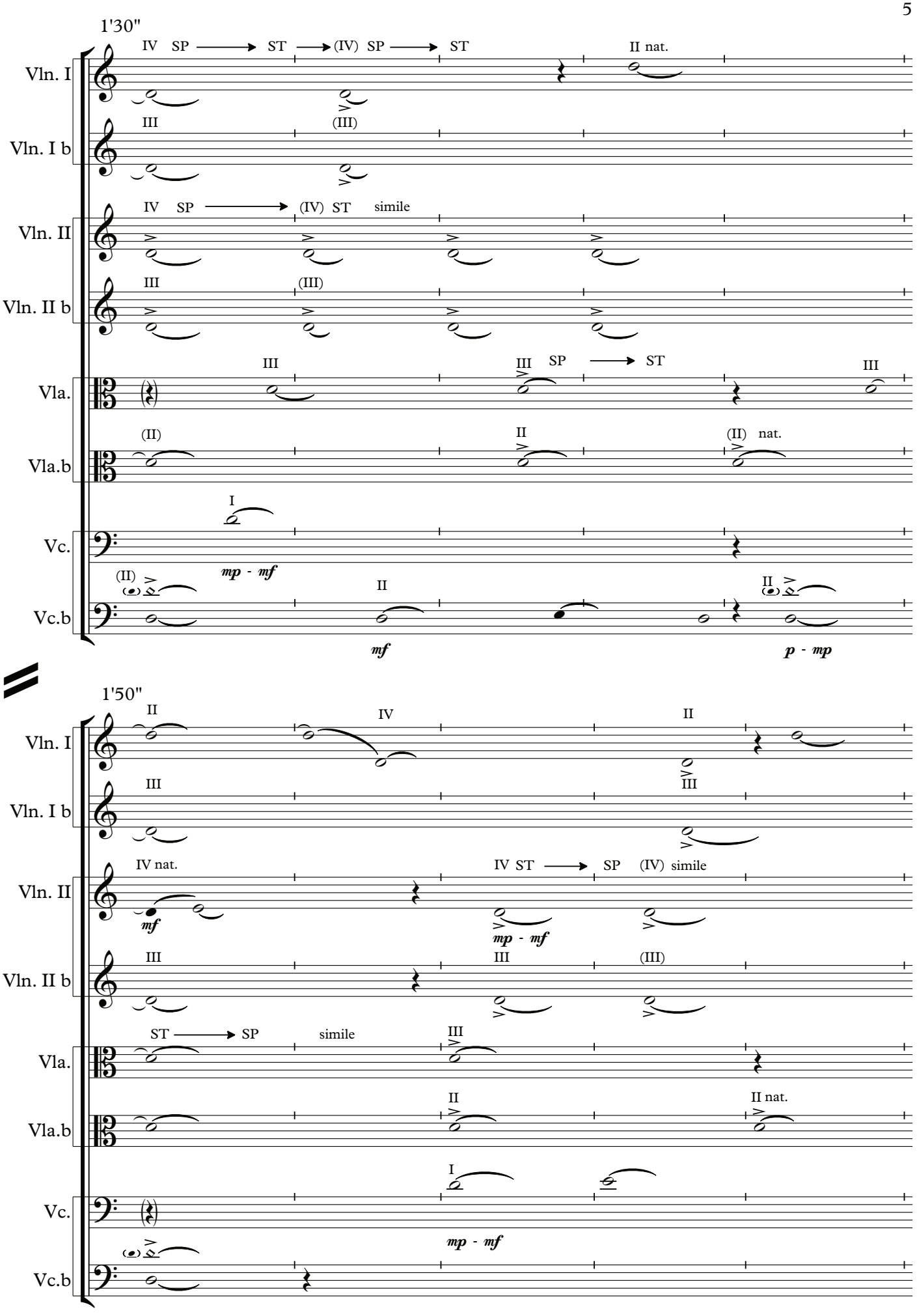

40"
Vln. I
Vln. II
Vla.
Vla.b
Vc.

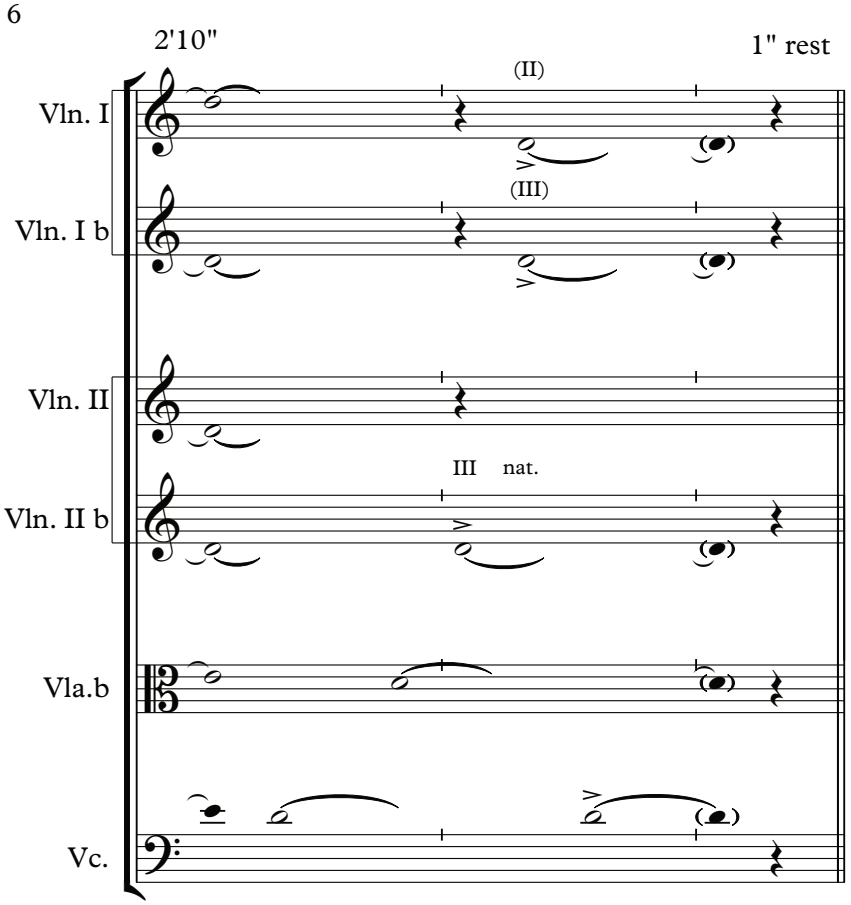

1'00"
5" rest
Vln. I
Vln. II
Vla.
Vla.b
Vc.

Two

1'10"

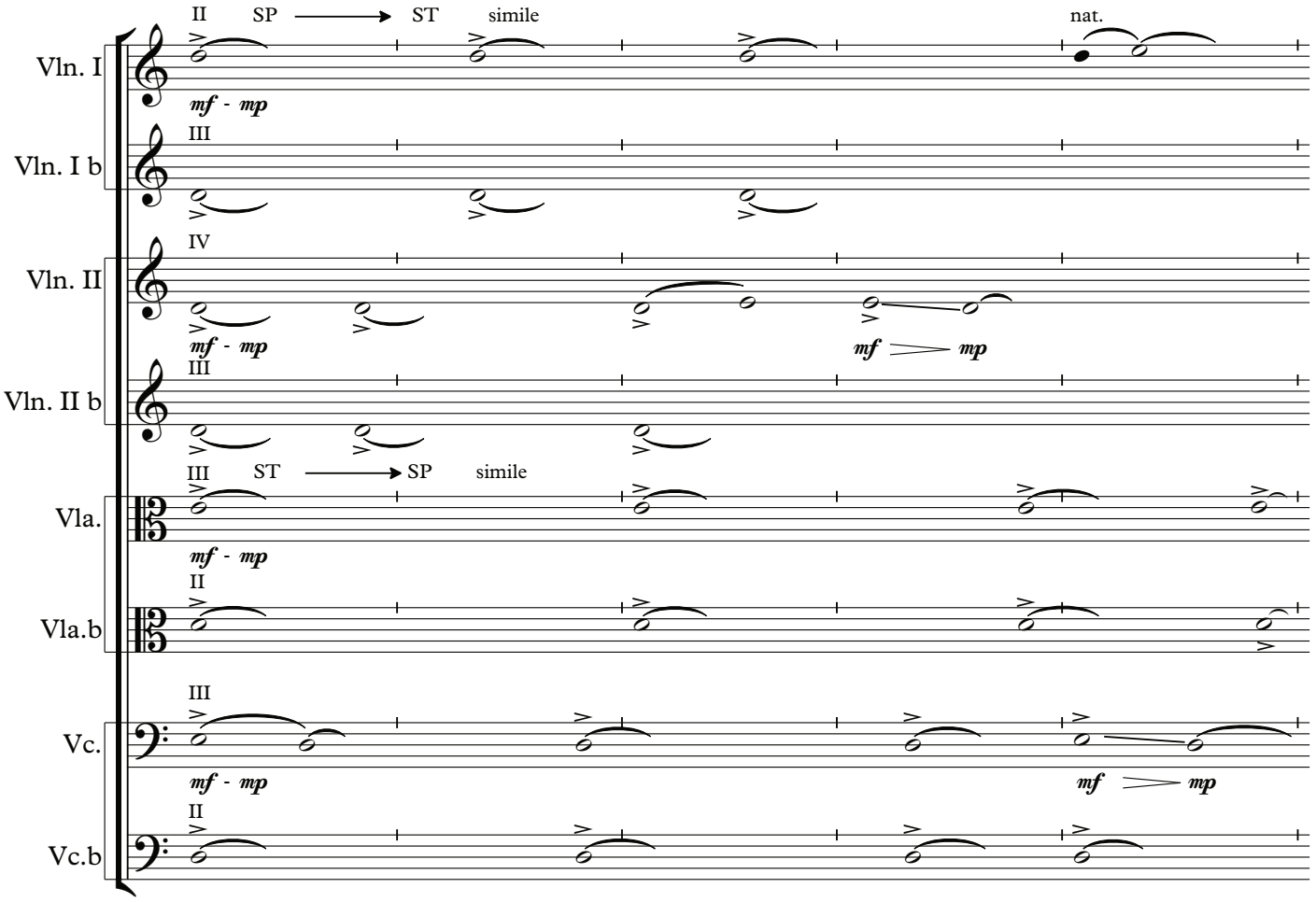

wide, slow vib.
IV SP
(IV) nat.
Vln. I
mp - mf
III
(III)
Vln. I b
wide, slow vib.
IV ST
IV nat.
Vln. II
mp - mf
III
(III)
Vln. II b
III ST
SP
simile
(III)
Vla.
mp - mf
II
(II)
nat.
Vla.b
II
Vc.b
p - mp

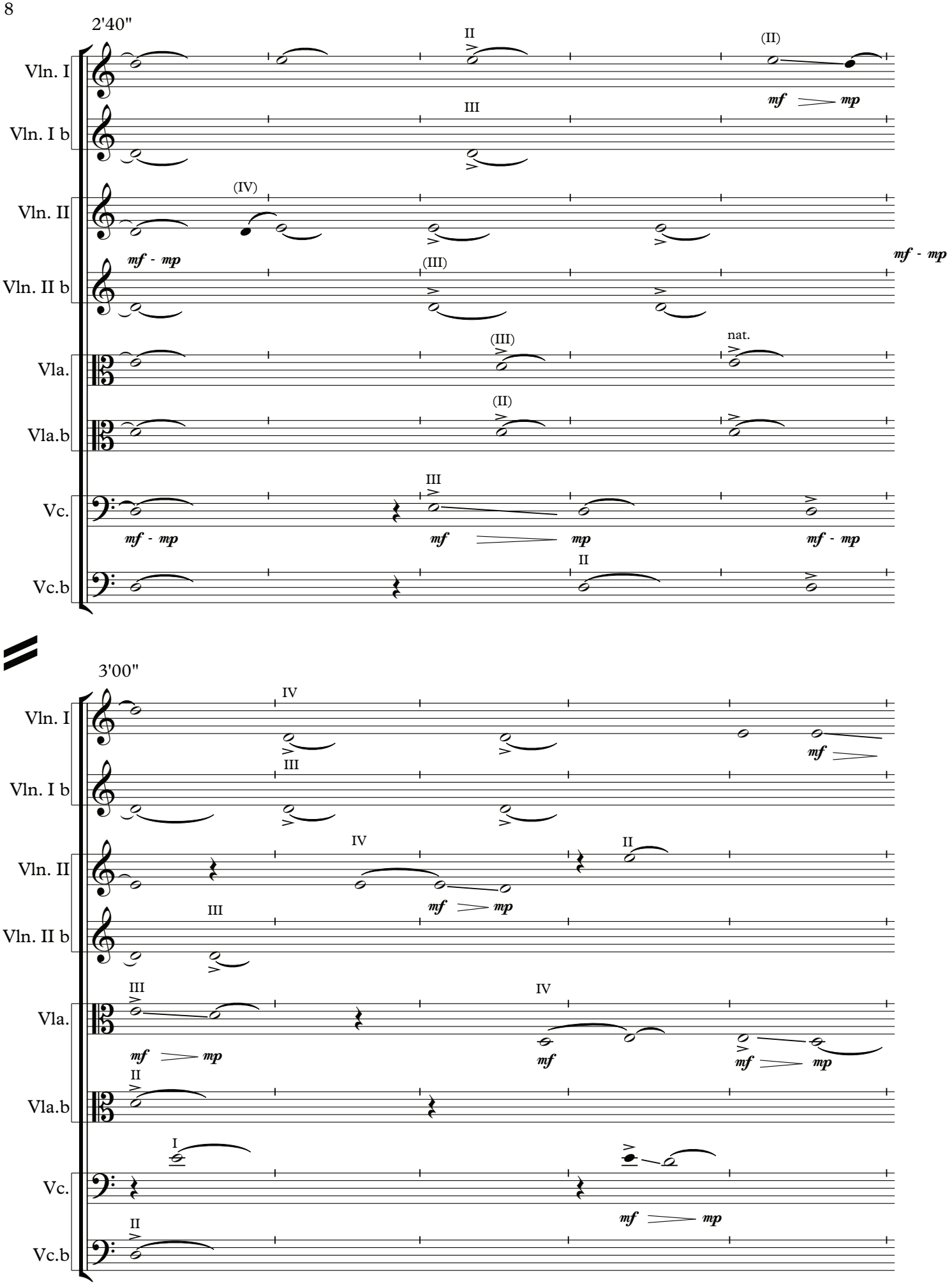

1'30"
Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
Vc.b
IV SP ST (IV) SP ST
II nat.
III (III)
IV SP (IV) ST simile
III (III)
III III SP ST III
(II) II (II) nat.
I
mp - mf
(II) II II
mf
p - mp
1'50"
II IV II
III III
IV nat.
mf
IV ST SP (IV) simile
mp - mf
III III (III)
ST SP simile III
II II nat.
I
mp - mf

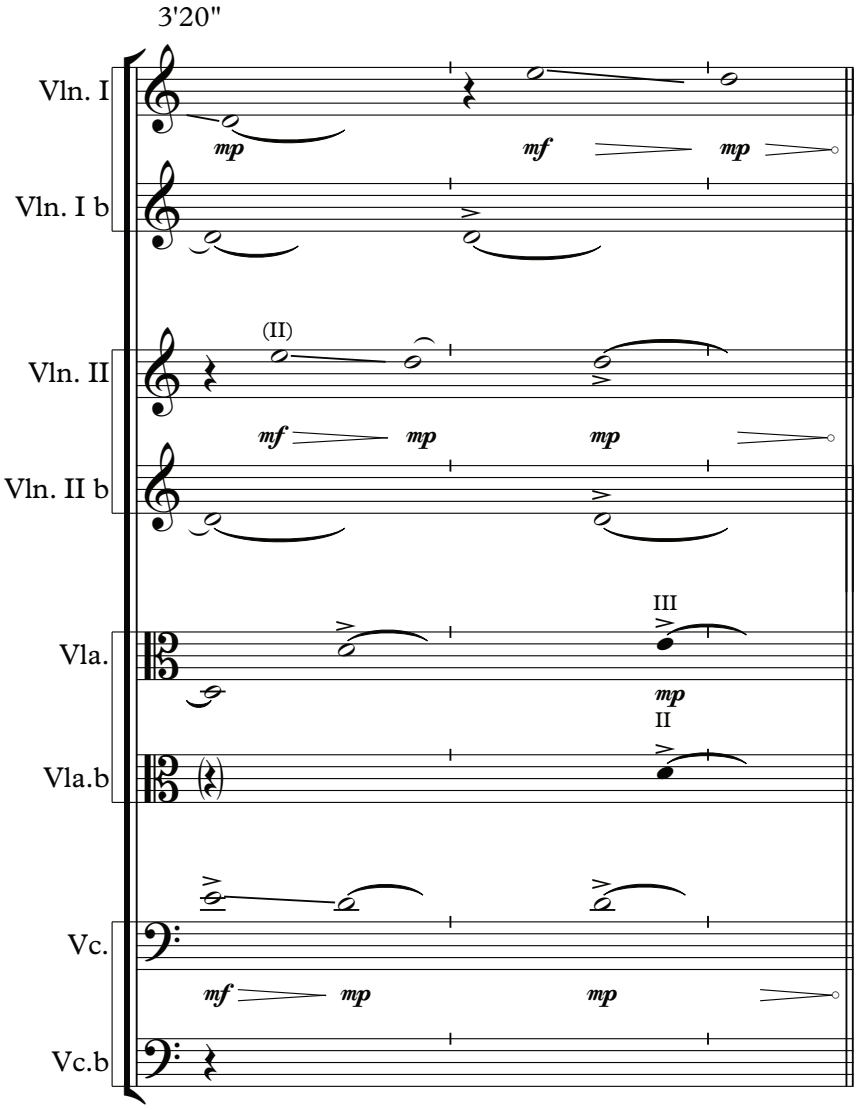

2'10"
1" rest
(II)
(III)
III nat.
Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.b
Vc.

Three

2'20"


Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
Vc.b
II
SP
ST
simile
nat.
III
IV
mf - mp
mf
mp


2'40"
Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
Vc.b
II
(II)
III
(IV)
(III)
nat.
mf - mp
mf
mp
3'00"
IV
I


3'20"
Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
Vc.b
mp
mf
mp
(II)
mf
mp
mp
III
mp
II
mf
mp
mp

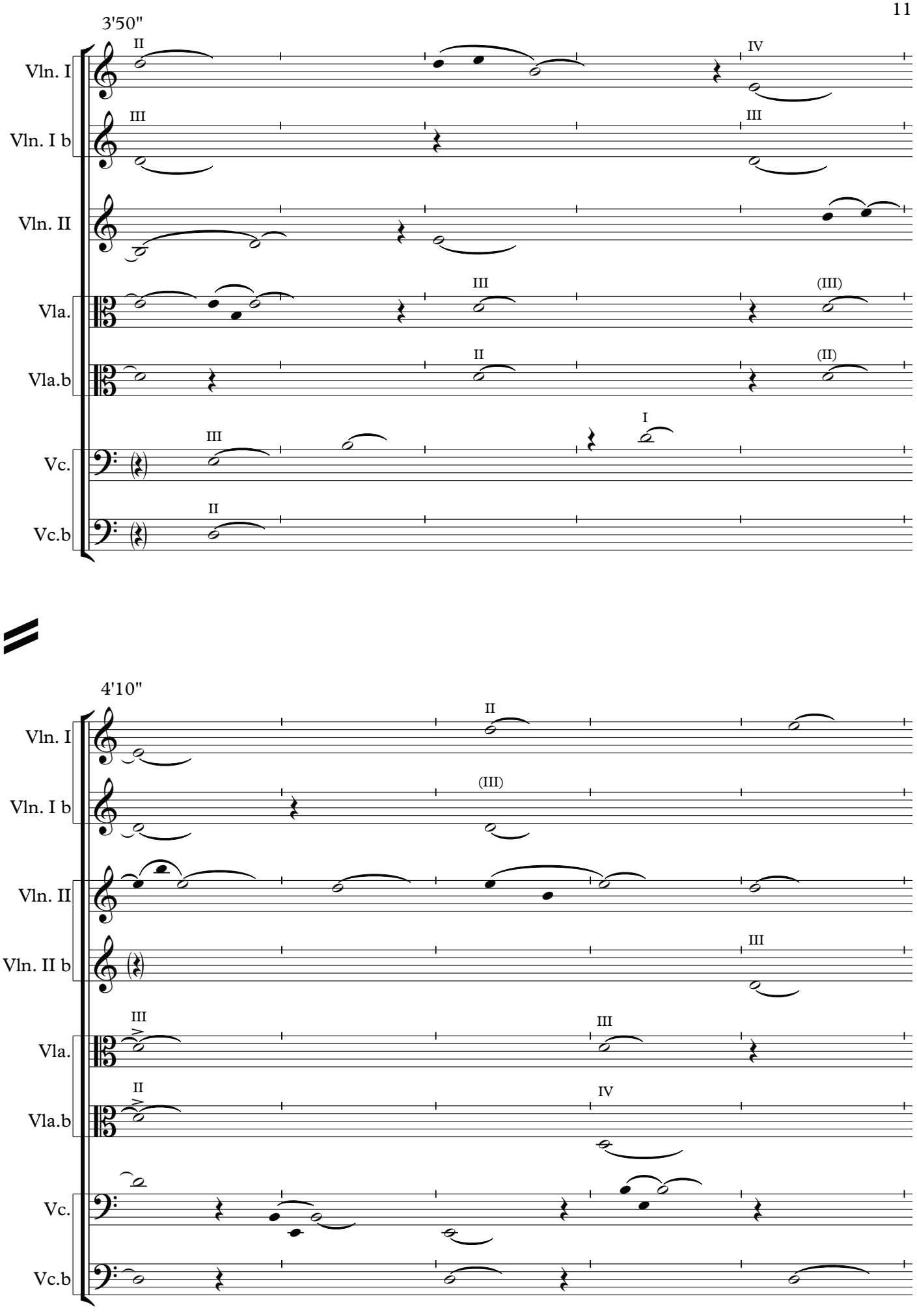
Four

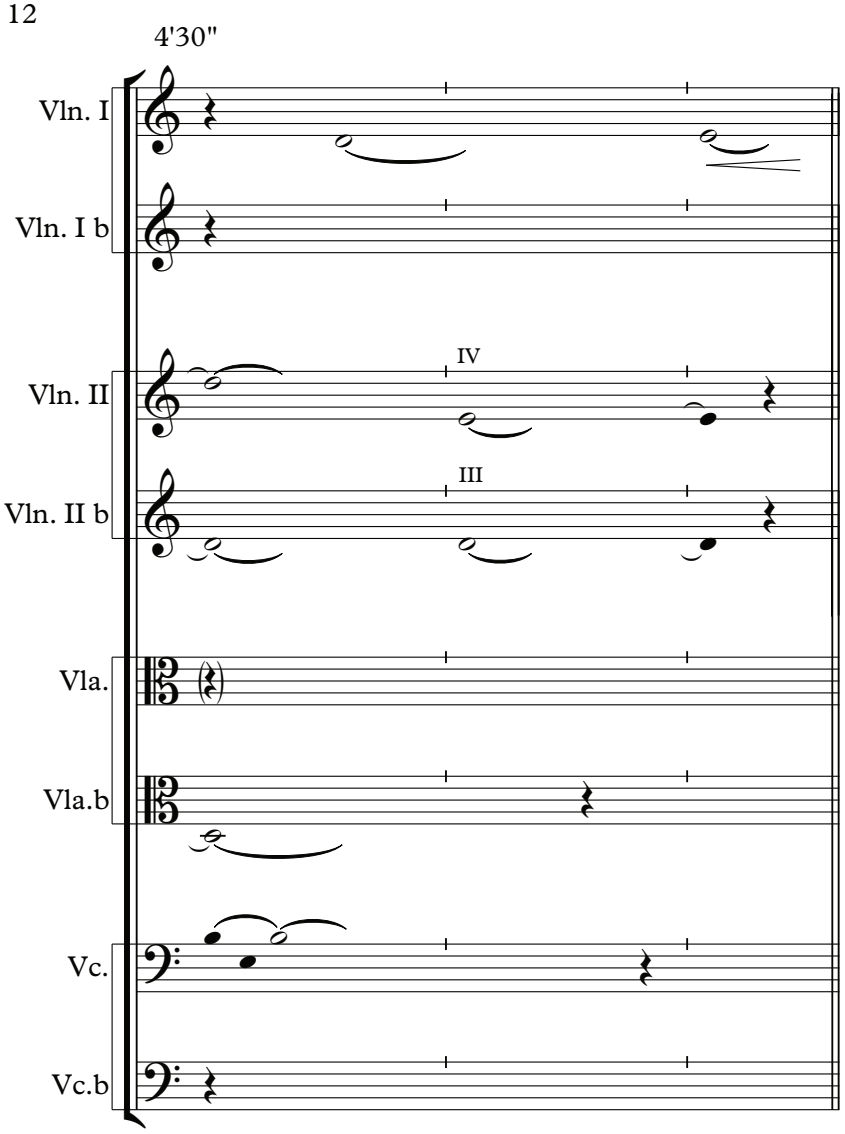
3'30"

Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
Vc.b

II (II)
III
IV
III
(III)
(II)

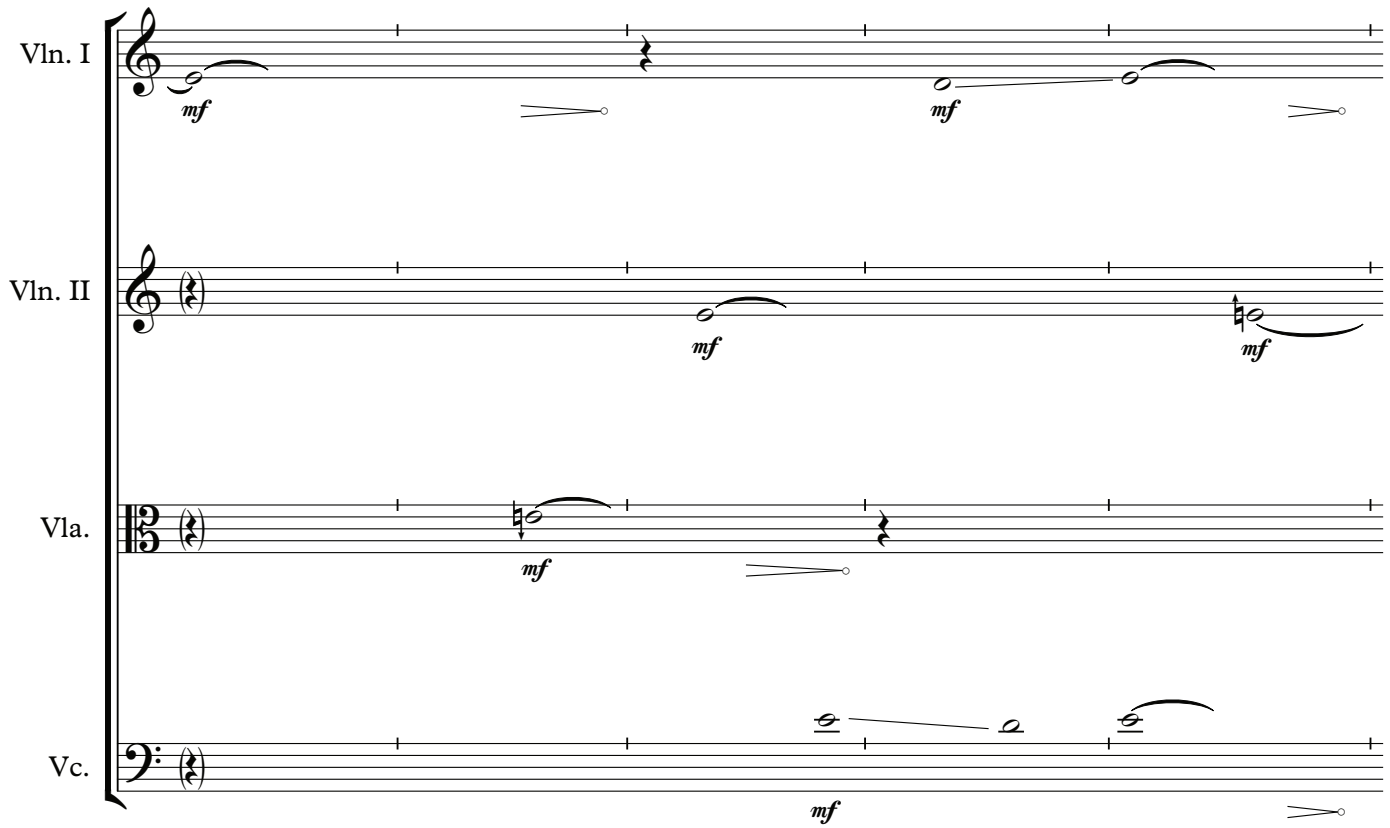
mp molto espress. sempre

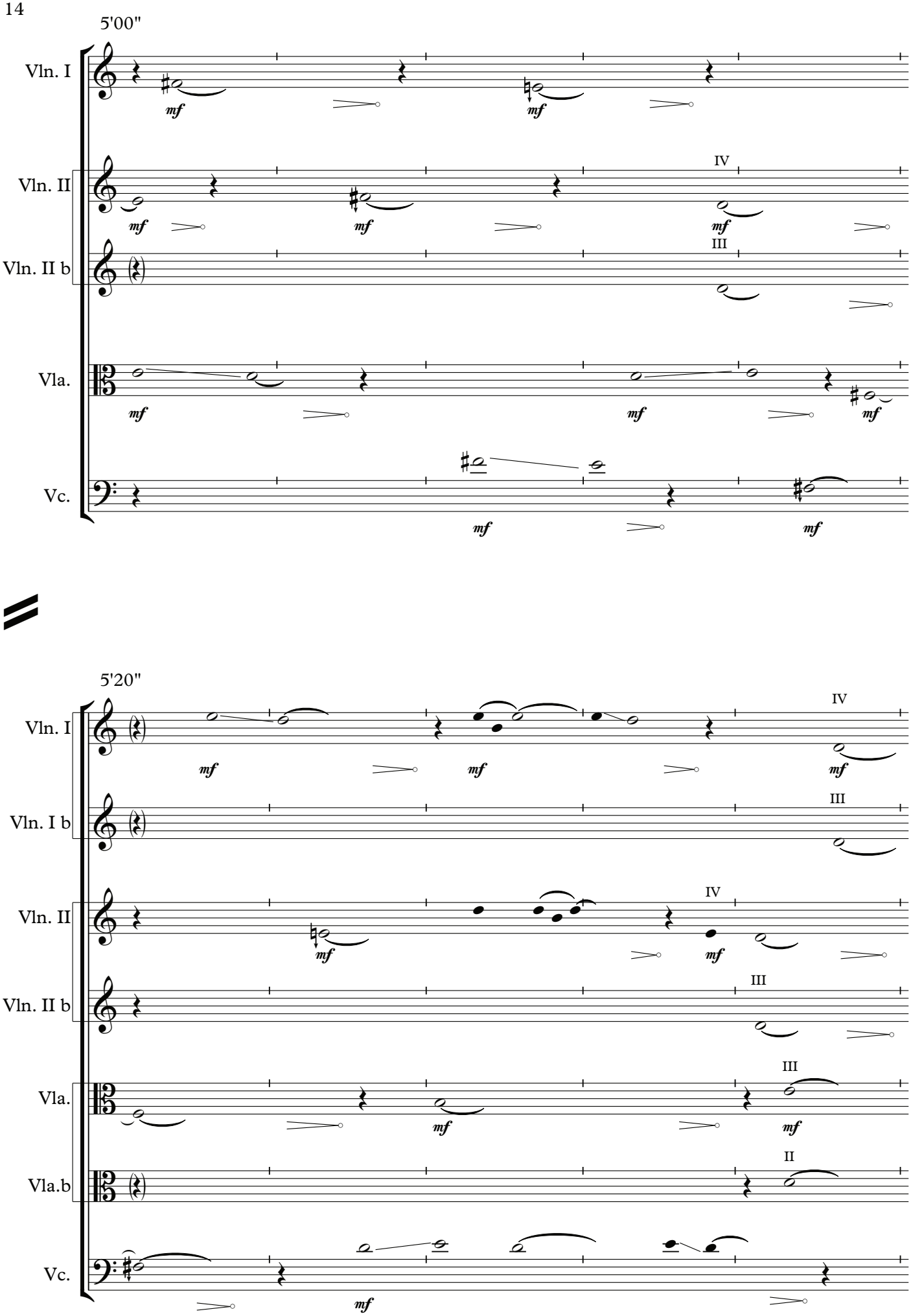

3'50"
Vln. I
Vln. I b
Vln. II
Vla.
Vla.b
Vc.
Vc.b
4'10"
Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
Vc.b

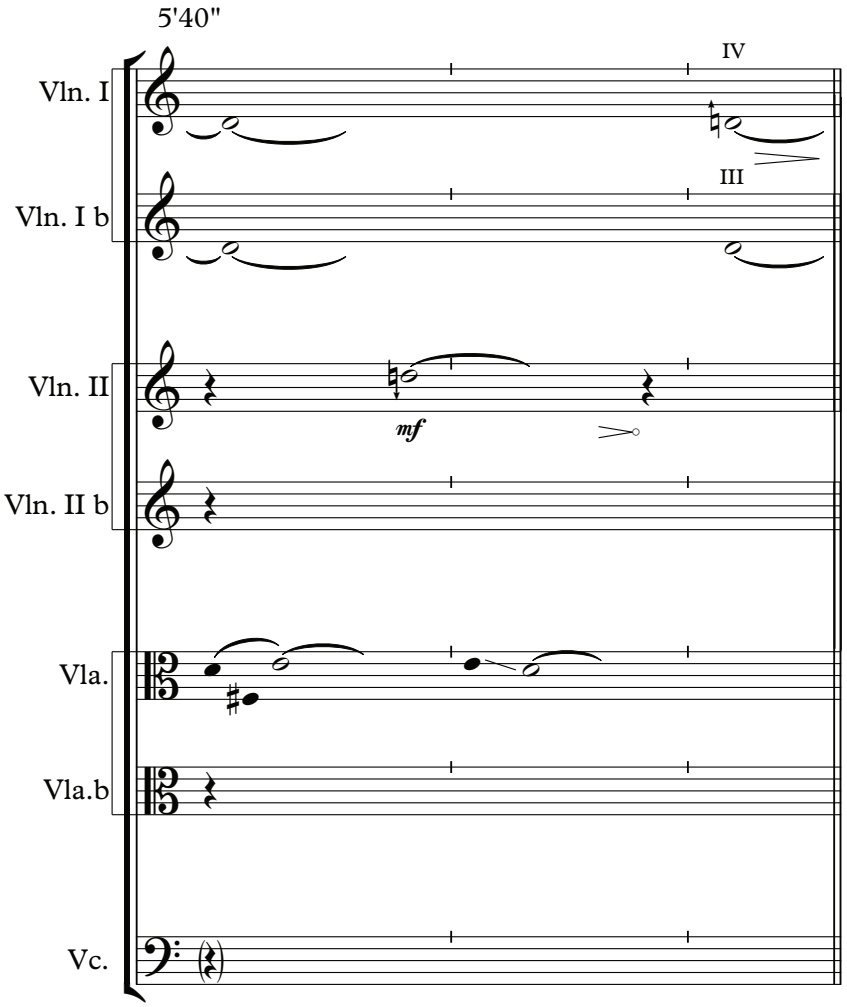

4'30"
Vln. I
Vln. I b
Vln. II
IV
Vln. II b
III
Vla.
Vla.b
Vc.
Vc.b

Five

4'40"

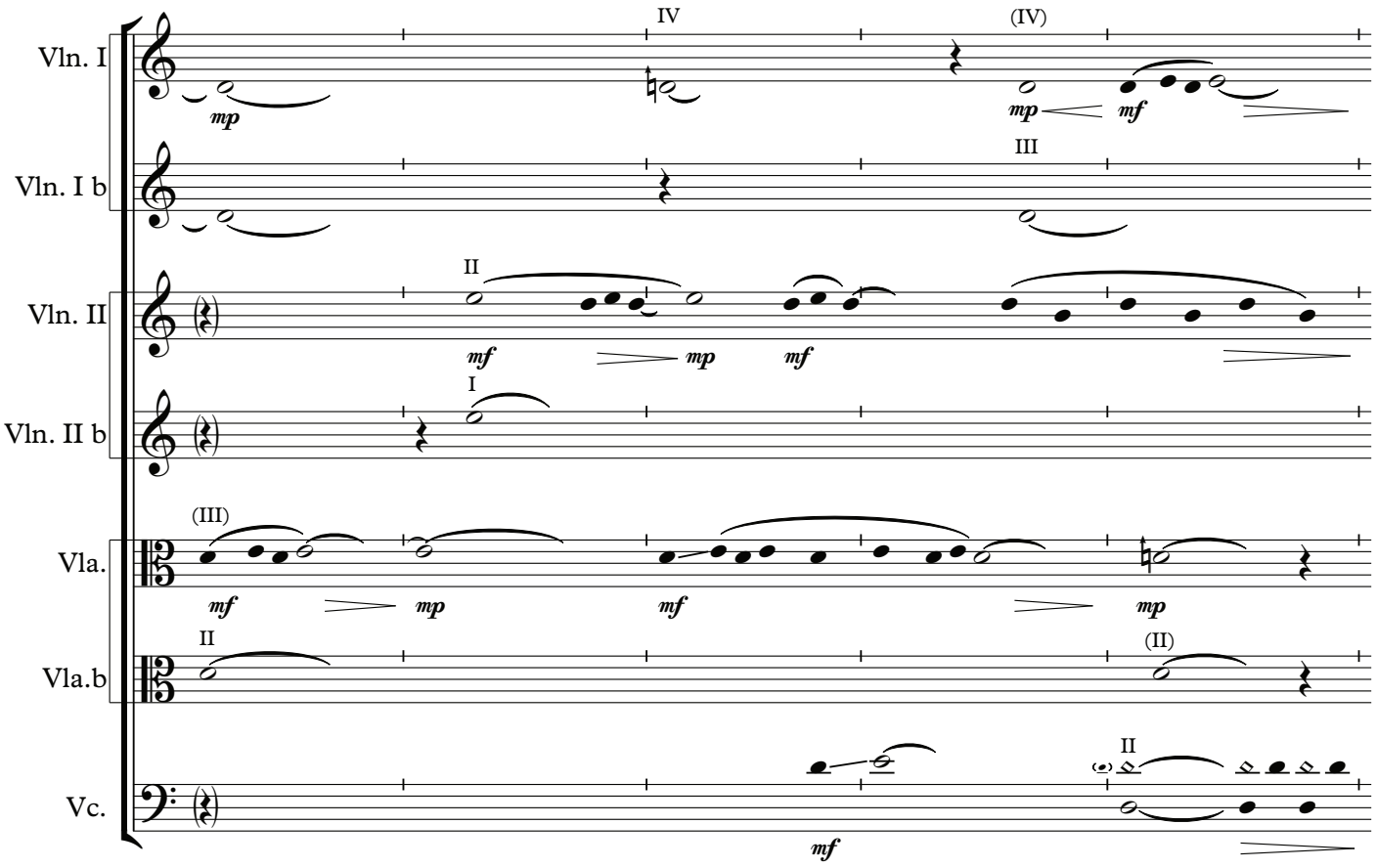


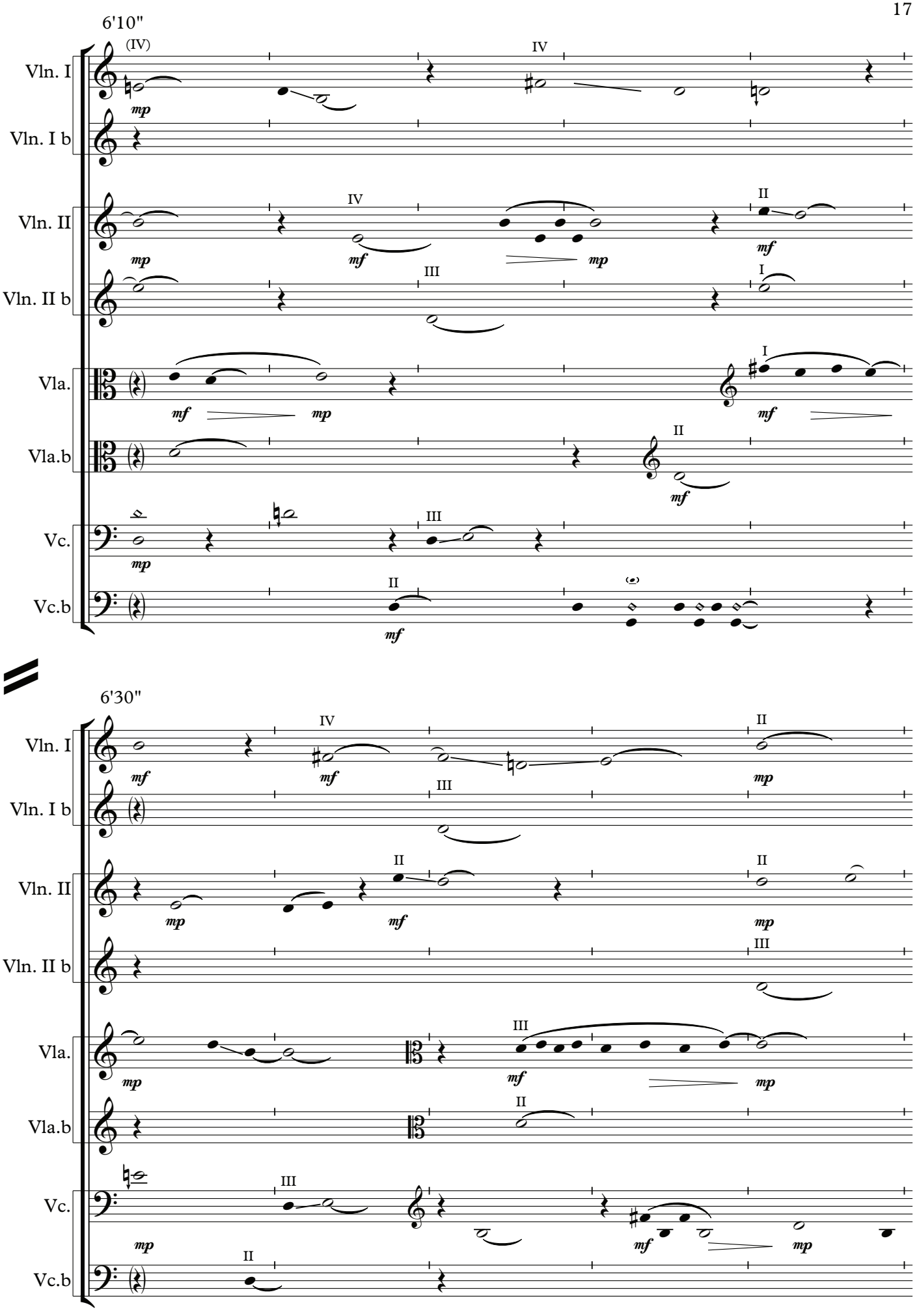

5'00"
Vln. I
Vln. II
Vln. II b
Vla.
Vc.
mf
IV
III
5'20"
Vln. I b
Vla.b
II

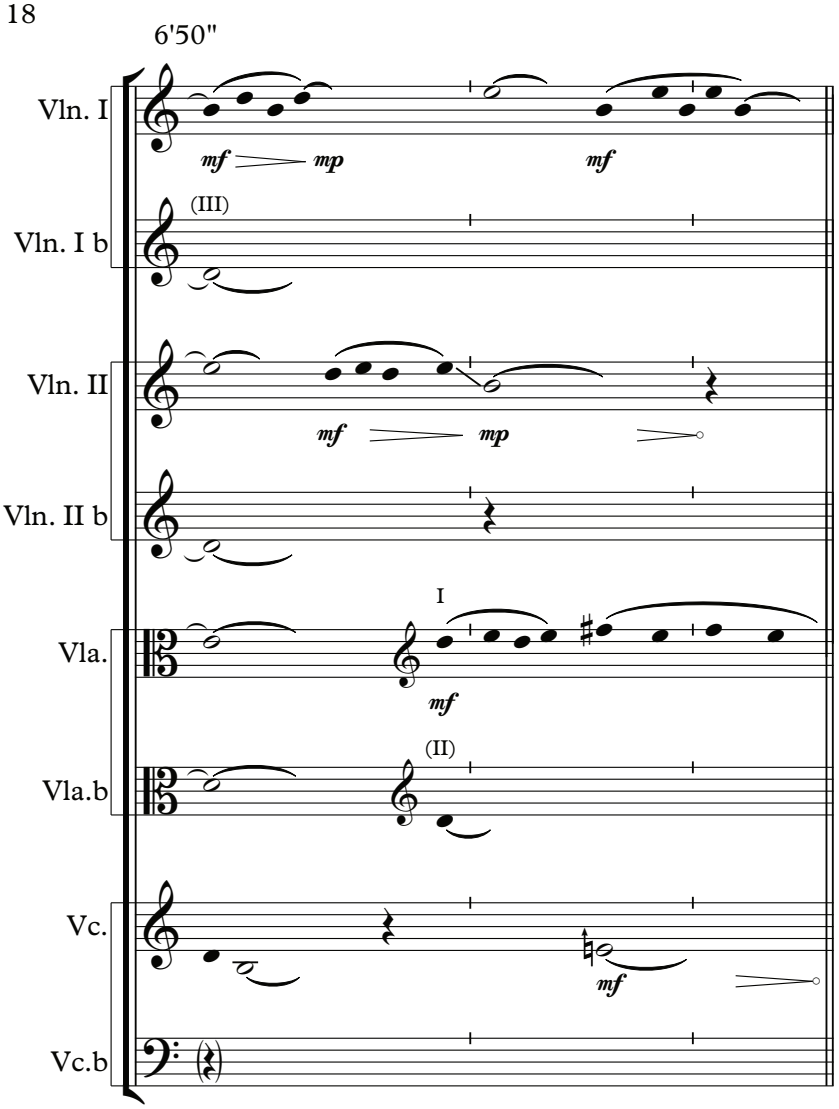

5'40"
IV
III
Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
mf

Six

5'50"

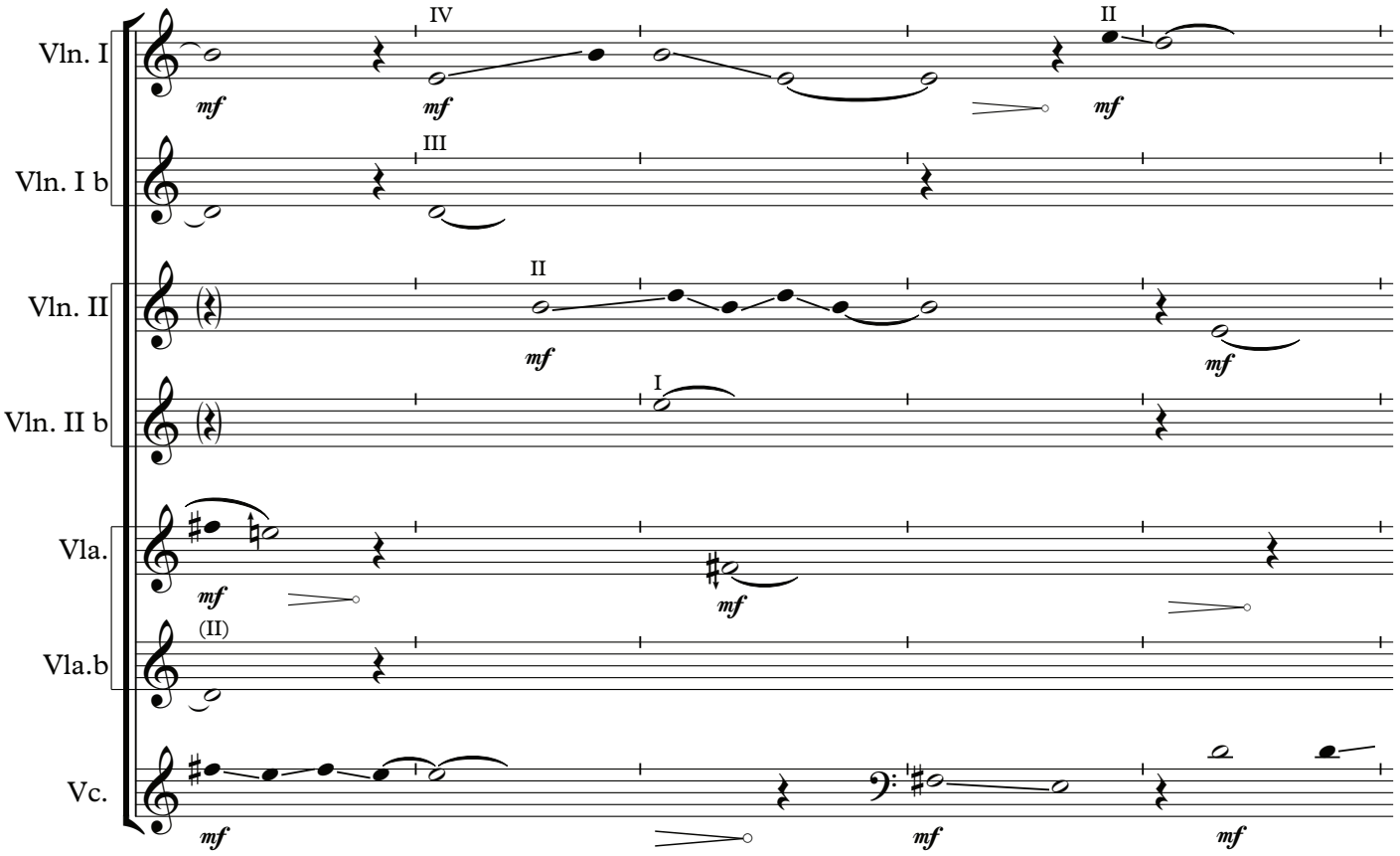

Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
IV
(IV)
III
II
I
(III)
II
(II)
II
mp
mf

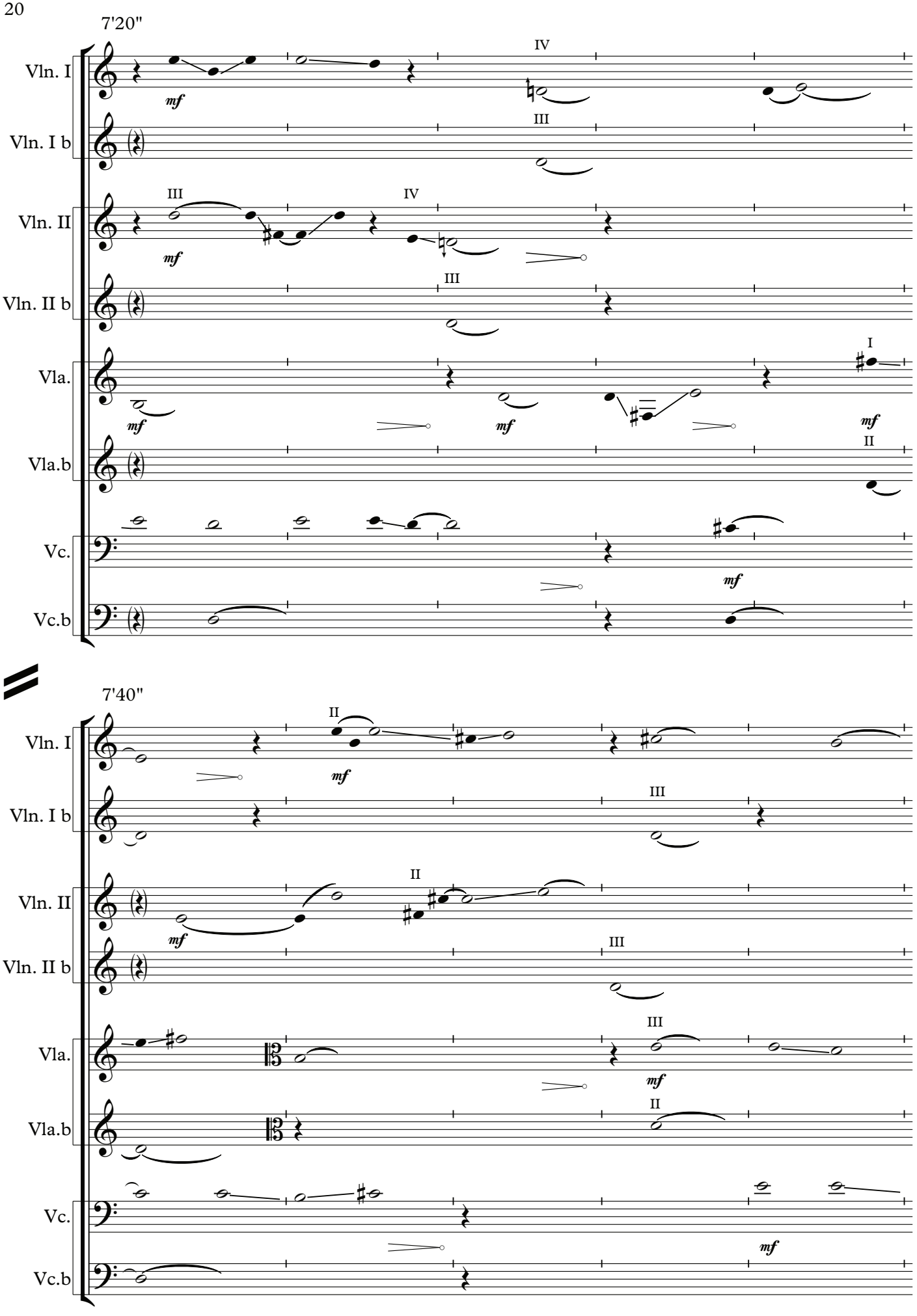

6'10"
Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
Vc.b
6'30"
Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
Vc.b

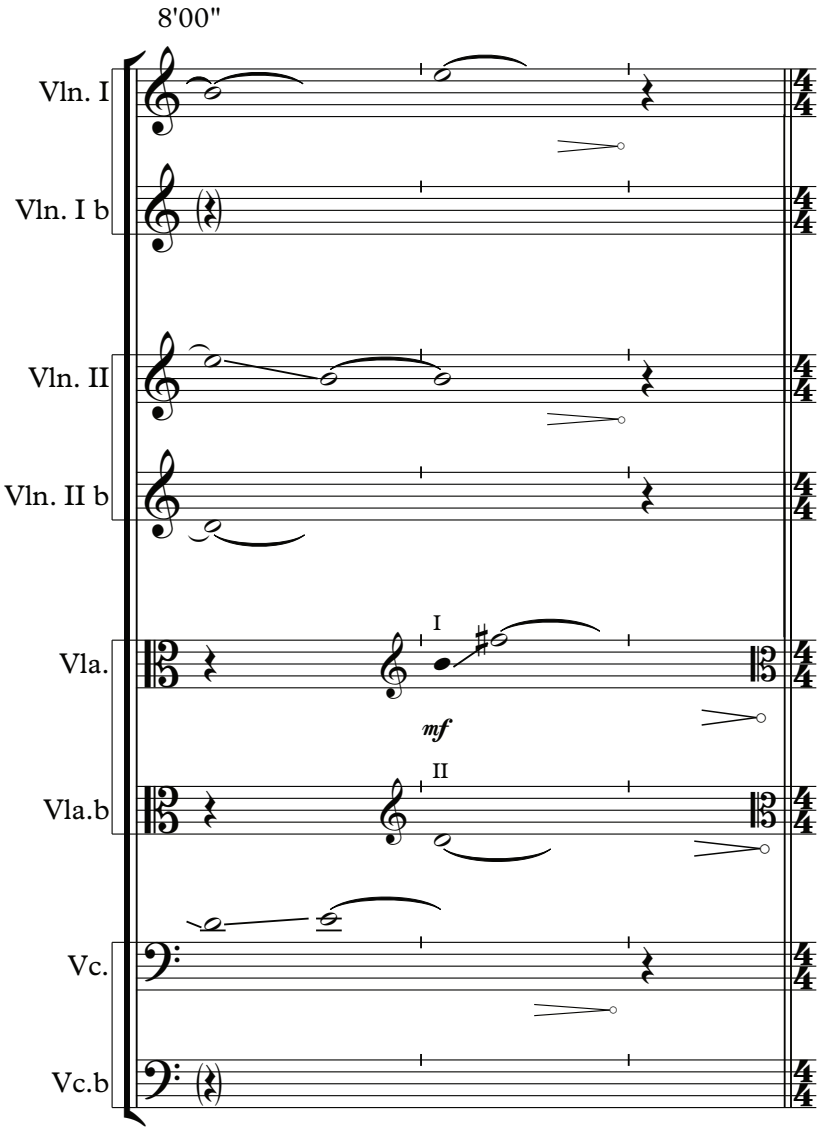

6'50"
Vln. I
mf
mp
mf
(III)
Vln. I b
Vln. II
mf
mp
Vln. II b
I
Vla.
mf
(II)
Vla.b
Vc.
mf
Vc.b

Seven

7'00"



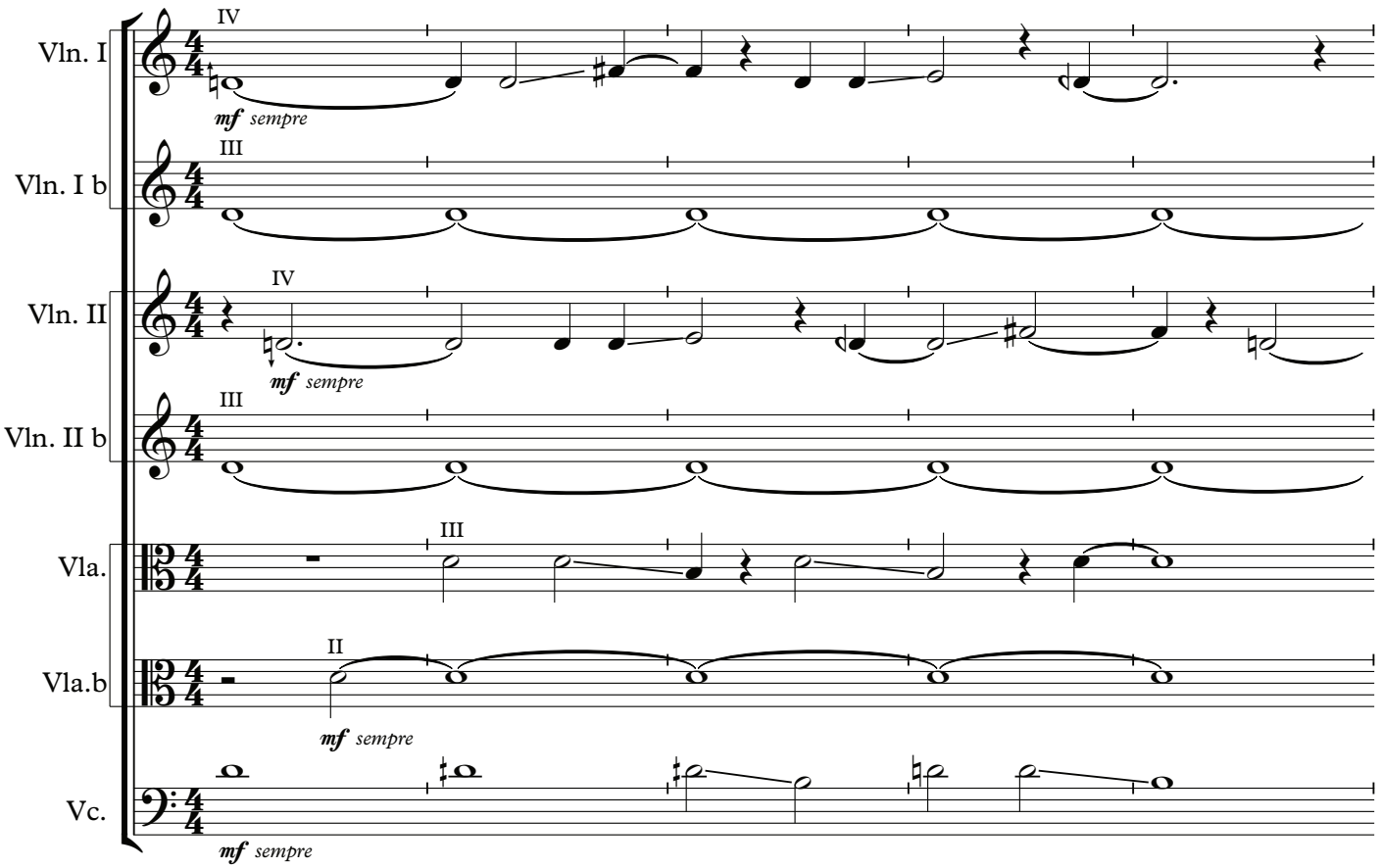

7'20"
Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
Vc.b
mf
7'40"

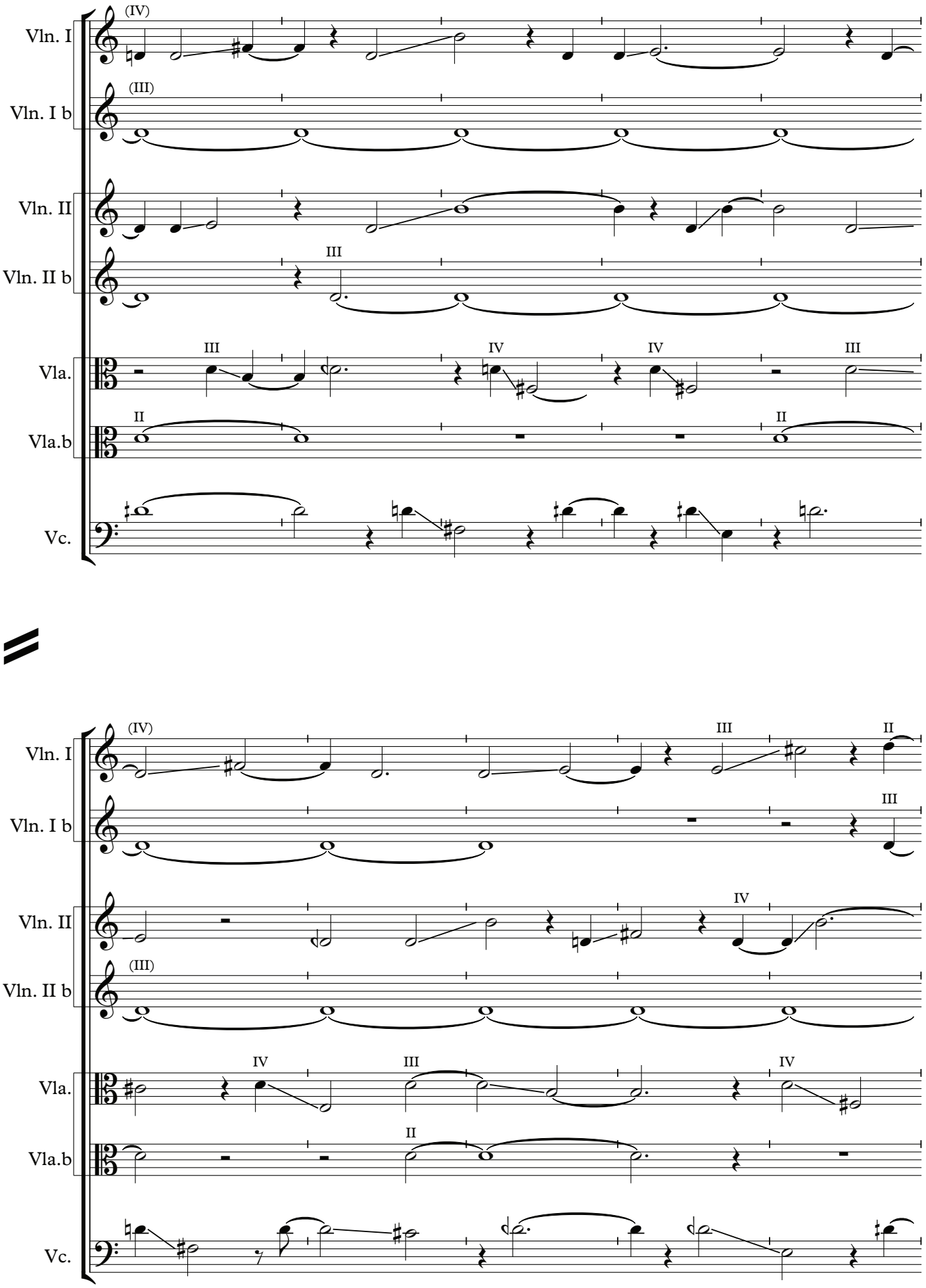

8'00"
Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
I
mf
Vla.b
II
Vc.
Vc.b

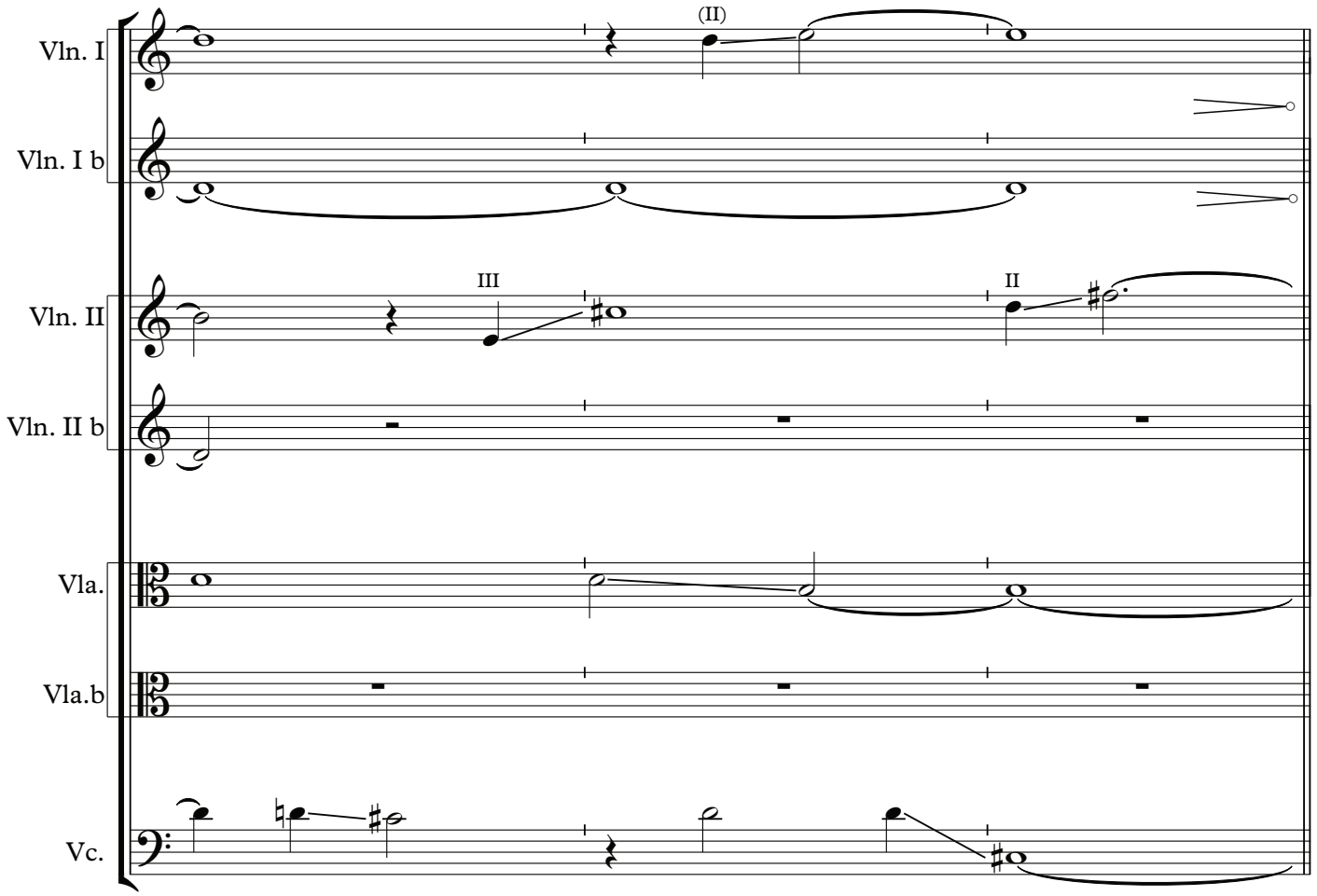
Eight

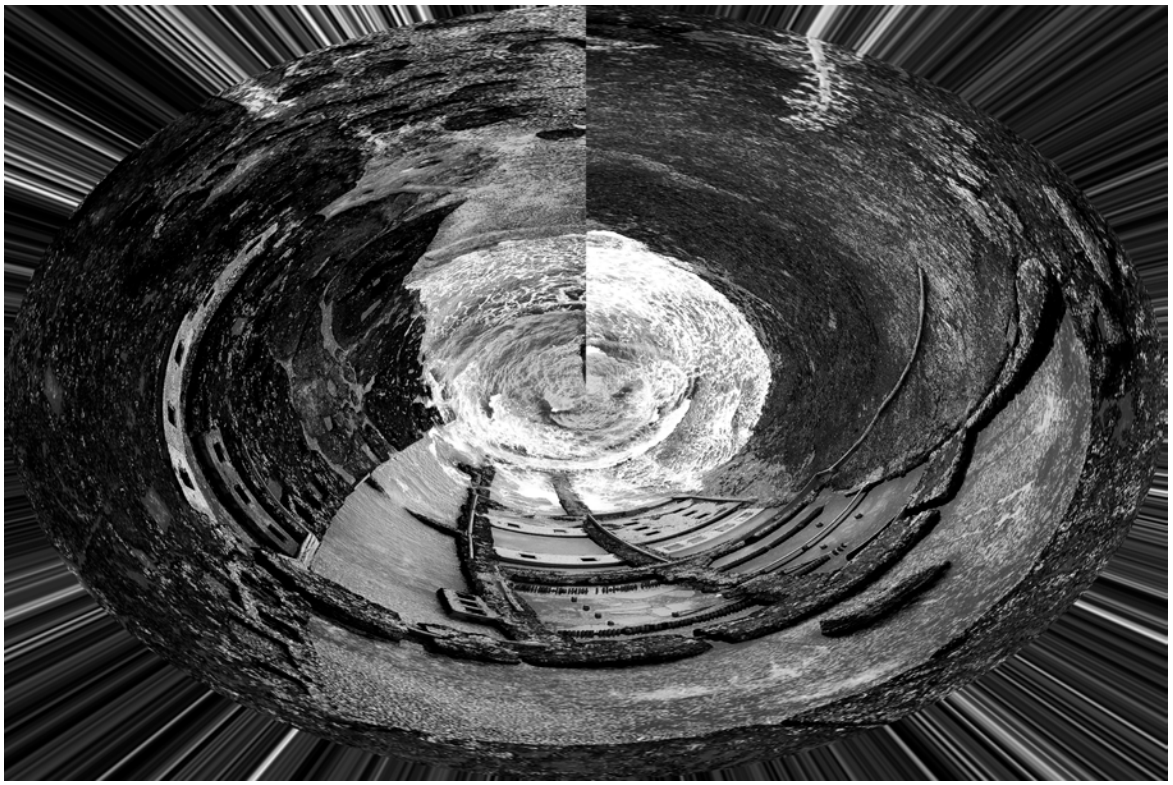
♩ = 60

(8'10")

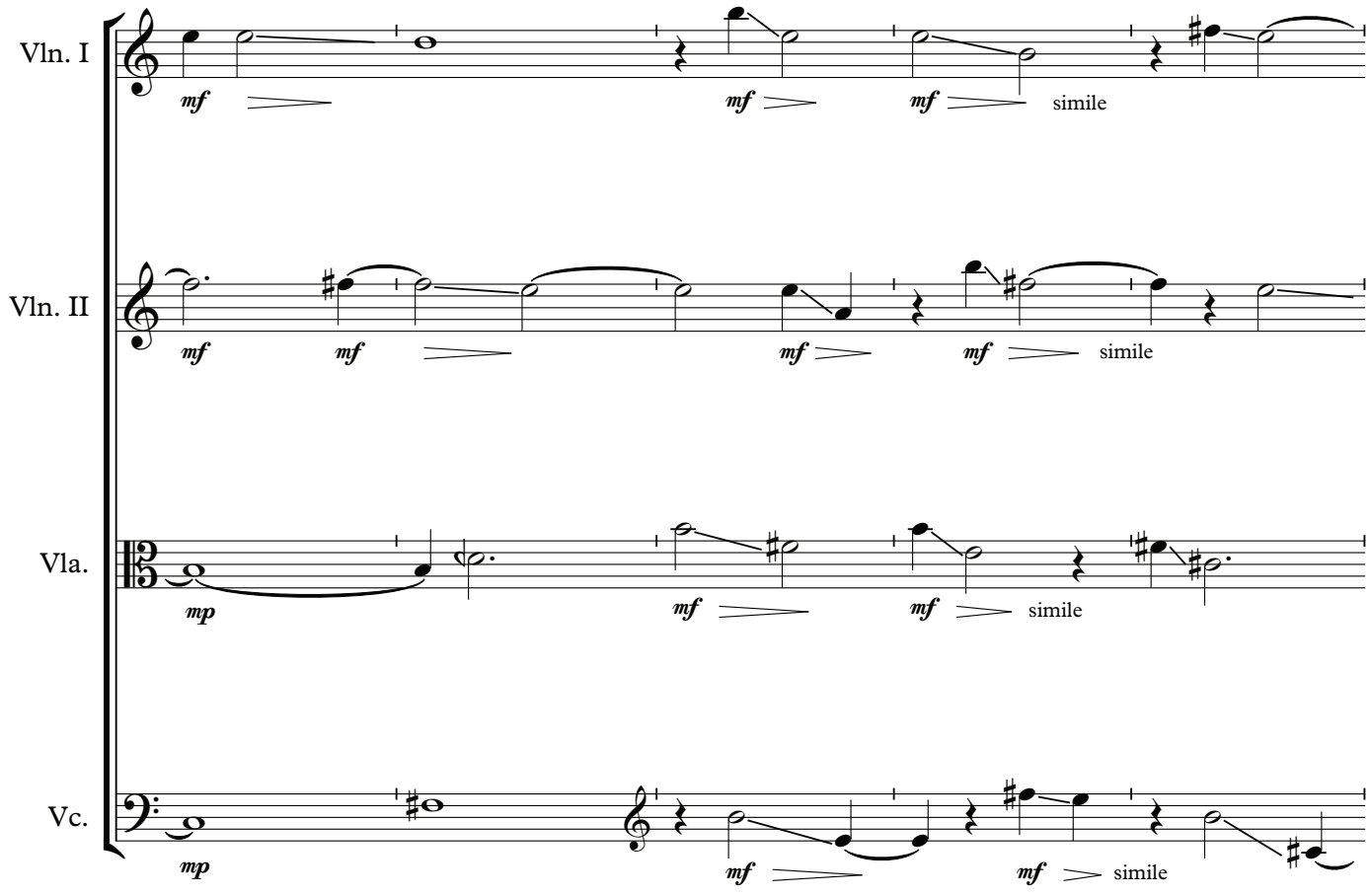

Vln. I
IV
mf sempre
Vln. I b
III
Vln. II
IV
mf sempre
Vln. II b
III
Vla.
III
Vla.b
II
mf sempre
Vc.
mf sempre

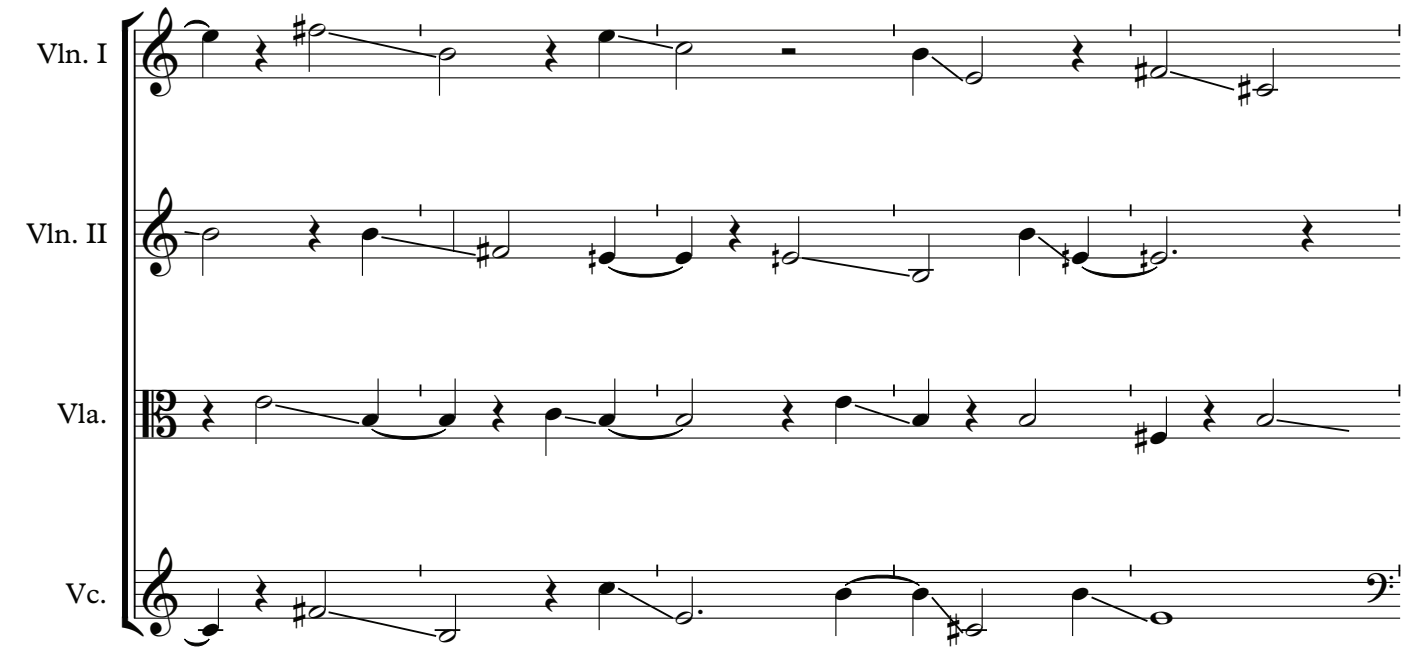

Vln. I
Vln. I b
Vln. II
Vln. II b
Vla.
Vla.b
Vc.
(IV)
(III)
III
IV
II

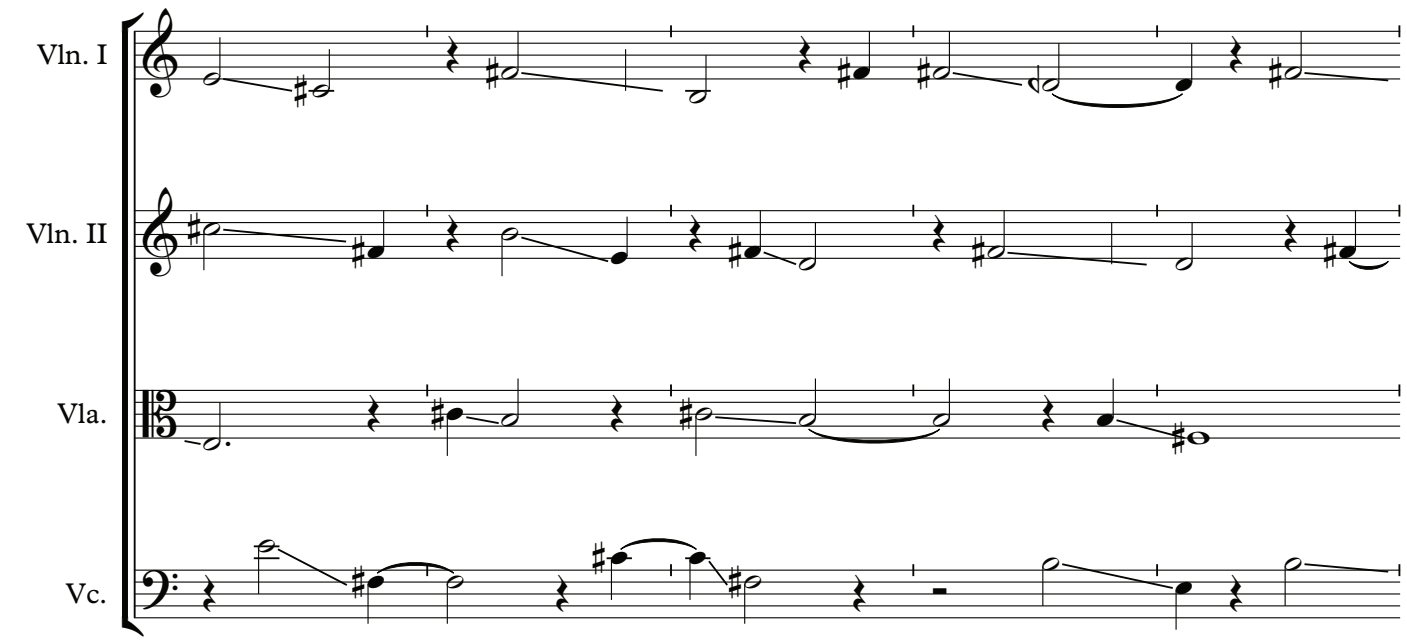

Vln. I
(II)
Vln. I b
Vln. II
III
II
Vln. II b
Vla.
Vla.b
Vc.

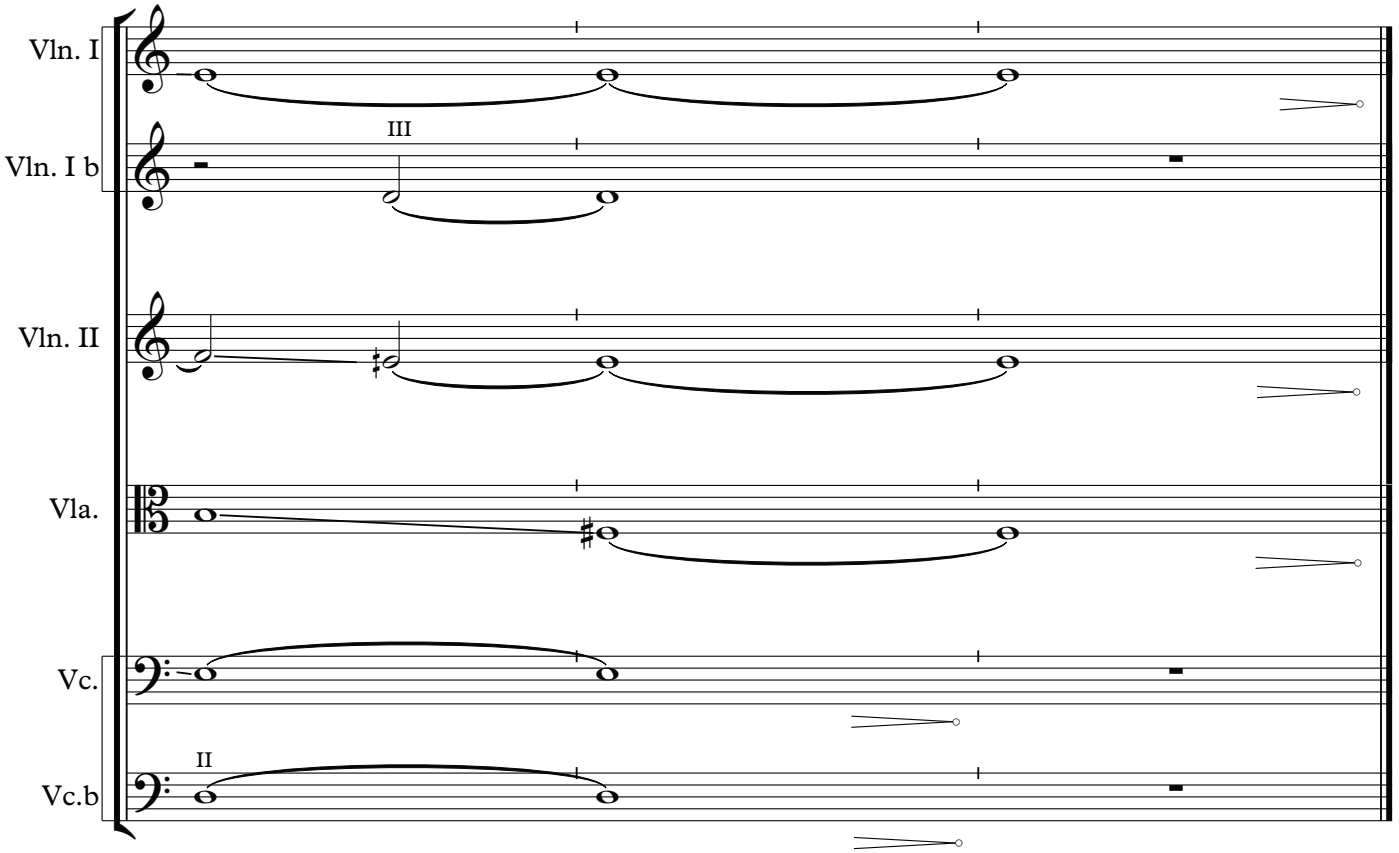


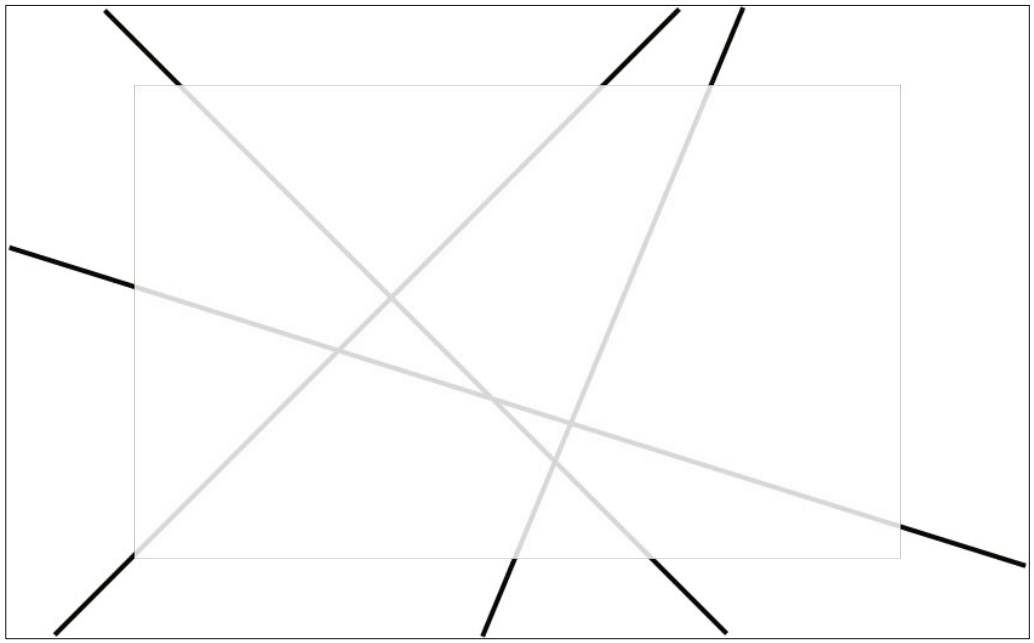
Nine


Vln. I
mf
mf
mf
simile
Vln. II
mf
mf
mf
mf
simile
Vla.
mp
mf
mf
simile
Vc.
mp
mf
mf
simile


Vln. I
Vln. II
Vla.
Vc.


Vln. I
Vln. II
Vla.
Vc.


Vln. I
Vln. I b
III
Vln. II
Vla.
Vc.
Vc.b
II



3.4.1

Constelaciones

for the National Sawdust Ensemble

June 2020

Commissioned by National Sawdust
Hildegard Competition

First performance: March 2021
National Sawdust, New York City
Hildegard Competition Concert
Performed by the National Sawdust Ensemble

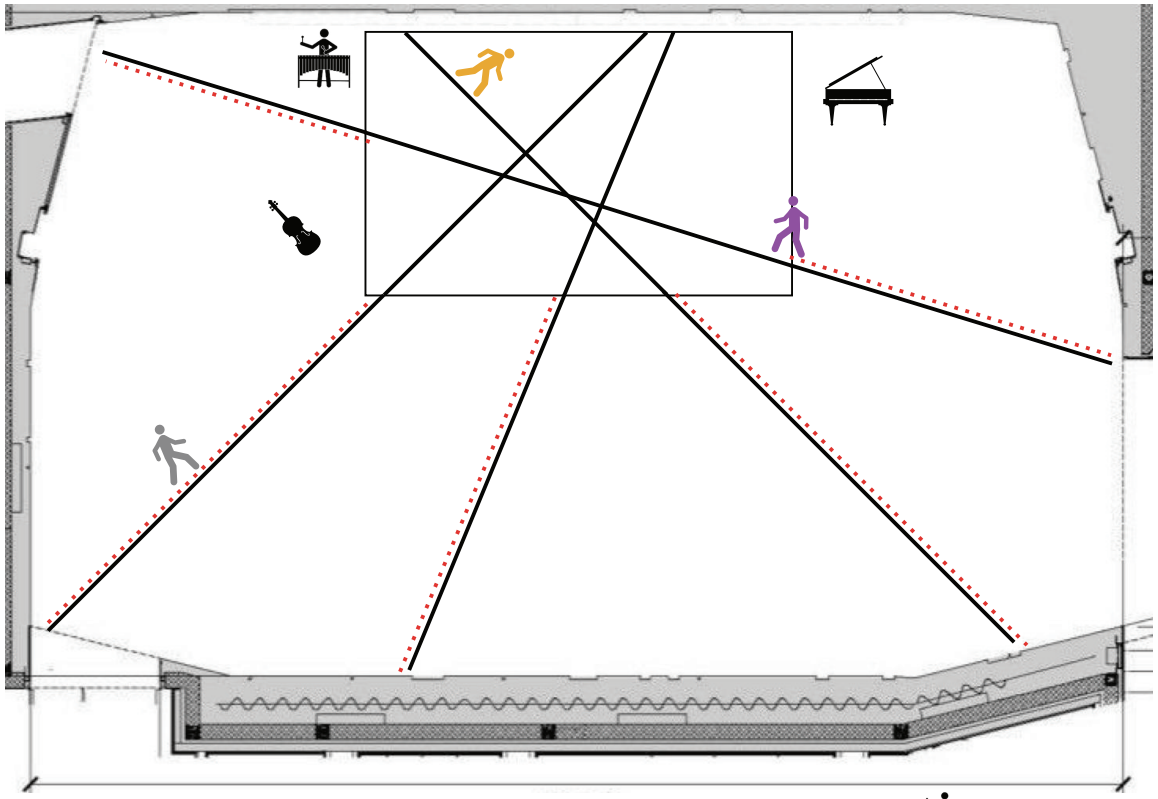
Duration: 9’33’’

Notes:

-Due to the nature of this piece, it is impossible to have a full score for it. Therefore, I have grouped on this document the parts for the ‘moving players’ first, followed by the parts for the ’stationary players’.

-Due to COVID-19 restrictions, during the premiere at the National Sawdust it was not possible for the ‘moving players’ to perform their parts with the movement element. Instead, members of the ‘Constellation Chor’ performed the movement part.

Proposed hall layout



NS hall lines

Offstage walking area*

Moving players (flute, violin, clarinet)

Stationary players (cello, piano, vibraphone)**

*No seats obstructing the walking area

**Stationary players' position is flexible, but they must be able to see the moving players' on stage at all times

Moving players' instructions and parts
(flute, clarinet, violin)

Constelaciones

Jimena Maldonado

Ensemble

The ensemble is divided into 2 groups: **stationary players** and **moving players**. Each moving player is paired up with a stationary player and follows a series of instructions regarding movement on stage throughout the piece.

Stationary players	Moving players
Piano	Violin
Cello	Flute
Vibraphone	Clarinet

Movement

The **moving players** follow individual indications heard on their **click track**, following the black lines on the floor of the stage, entering and leaving the stage a total of **6 times**. They **enter** or **leave** the stage through one of the 5 stage **exits**, marked as **Ex.1-5** (see Fig. 1).

Once on stage, at the points where 2 or more black lines **intersect**, they can move in one of four directions (always from the point of view of the **moving player**): **Left**, **Right**, **Forward** or **Backwards.** The only time a **Backwards** direction is given is when reaching the wall at the back of the stage, where they turn around and move **Back** the way they came (see Fig.1).

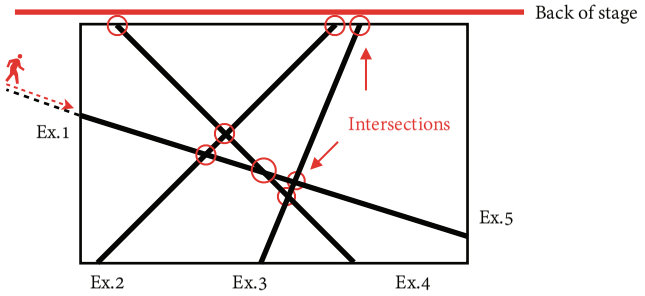


Figure 1

The **moving players'** trajectory is measured in **steps.** The number of **steps** it takes to get from one **intersection** to another -or from an **exit** of the stage to an **intersection**- is always the same throughout the piece. Each of the **moving players walks** on to the stage, follows a certain route and then **leaves** the stage through one of the 5 stage **exits**.

The musical material of the **stationary players** is linked to the trajectory of their **moving partner** and the **steps** of the **moving players** provide the **stationary players** with a consistent pulse throughout the piece. Therefore, it is essential that the **moving players** maintain a steady pulse whilst walking (following the provided click track).
S**tationary players** only play when their **moving parter** is **on the stage**, and rest when they are **offstage**.

Click track

The click track is needed throughout the piece, therefore it should be reproduced on an earpiece through a mobile device. All **moving players'** click tracks **must** be synchronised. The click track contains all the necessary information for the **moving players** in terms of movement, including rests and collisions. **The click track has 8 beats of count in before the first walk.**
Each beat is always equivalent to 1 second (60bpm). Along the 6 walks, the duration of the steps accelerates (in terms of beats) as explained below:

1st walk - 1 step lasts **4 beats** (4 seconds)
2nd and 3rd walk - 1 step lasts **3 beats**
4th and 5th walk - 1 step lasts **2 beats**
6th walk - 1 step lasts **1 beat**

The click track provides the **moving players** with the directions **(L-R-F-B)** and timing **(steps or seconds)** for each of the **6 walks**. It contains a constant click of **60bpm** and a voice which indicates the number of steps -or seconds- to take from one point to the next, as well as which direction to take when arriving at an **intersection**.

The moments **on stage** are always measured in **steps**, where one pitch per step must be played.
The moments **offstage** are always measured in **seconds**, where one pitch per second (step) must be played.

It is important that each **step** is always timed with the **click** and with the number (or instruction) given by the voice on the click track, as the cello player depends on the flute's steps to use as a pulse for their own part.

The voice on the click track always counts down the steps and seconds until the next instruction. For example, the flute's click track begins as follows:

(8 beats of count in)
25" rest (with click) with a countdown of 4 seconds to prepare for next instruction **4…3…2…1…**

FORWARD…6…5…4…3…2…1… (these are the seconds to get on the stage from offstage, where each **second** is a **step**)

(Once on stage):
STAGE…5…4…3…2…1…FORWARD (there are **6 steps** until the first **intersection** before continuing **Forward**.

Each **step** will last **4 beats** (as it is the 1st walk) and the instruction for the change of direction will be given right before the next **intersection**.

The countdown allows the player to do the precise number of steps between **intersections**, adjusting the size of their **steps**.

Collisions

Because of how the **moving players'** routes are choreographed, there are 4 moments during the piece where the **moving players** cross each other on the same black line. These moments, referred to as **'collisions'** have certain musical consequences which are explained in the individual parts. **Collisions** must not interrupt the **colliding players'** trajectory nor the musical flow.

The **1st collision** is between the clarinet and flute
The **2nd collision** between the violin and flute
The **3rd collision** between the violin and clarinet
The **4th and final collision**, between all 3 of the **moving players**

All moving players **collide** at the centre of the stage at the end of the **5th walk**, which marks the climax of the piece. There is musical material specifically notated for this climax. There is a **3 beat rest** for ALL the players (stationary and moving), before beginning the **6th and last walk** from the centre of the stage. The piece ends with all 3 **moving players** offstage.

Pitch material

All three **moving players** have their own trajectories during the **6 walks** of the piece. They all follow the same rules regarding pitch material:

There are 5 pitches used throughout the piece: **A, B, G#, C#, D#**. During the **1st walk**, the only pitch used is **A**. During the **6th walk**, the only pitch used is **D#**.

From the 2nd to the 5th walk, a **new** pitch is added on each walk in the following order:
2nd walk: A and B
3rd walk: A, B **+ G#**
4th walk: A, B, G# **+ C#**
5th walk: A, B, G#, C# **+ D#**, right before the final **collision** and the climax of the piece

Each walk begins with **the new pitch.** After that, on every **intersection** a new pitch from the cycle must be added in the given order until all the pitches for **that walk** have been added. Once they have, the series of pitches is to be repeated over and over in the cycle order until the end of that walk -regardless of crossing any more intersections- as follows:

1st walk: A
2nd walk: B — A, B (on 1st intersection and during the rest of the walk)
3rd walk: G# — A, B (on 1st intersection) — G#, A, B (on 2nd intersection and during the rest of the walk)
4th walk: C# — A, B (on 1st intersection) — G#, A, B (on 2nd intersection) — C#, A, B, G# (on 3rd intersection and during the rest of the walk)

5th walk: D# — A, B (on 1st intersection) — G#, A, B (on 2nd intersection) — C#, A, B, G# (on 3rd intersection) — D#, A, B, G#, C# (on 4th intersection and during the rest of the walk)
6th walk: D#

The pitch material should always be played in coordination with the taken **step**, each pitch lasting however long the step is. If at any point there are not enough steps to play all the indicated pitches, the player will have to interrupt the cycle when arriving at the next **intersection**, where the new pitch is introduced. At the end of the **5th walk** and right before the final collision there is specific musical material notated for each player.

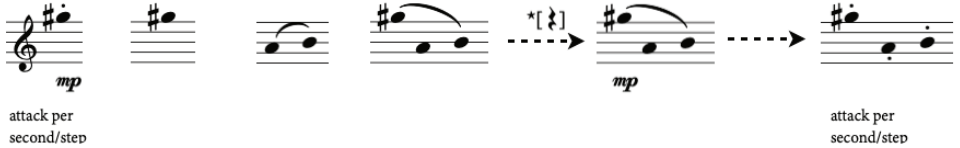
Below is an example of the **3rd walk**, where each step lasts 3 beats. The flute player starts the walk playing a G# and then walks 7 seconds (written as 7”) to the stage (entering through Exit 1). Then walks **Forward** 6 steps, (marked as **F — 6 st.**). At the intersection turns **Left** and walks 2 steps (marked as **L — 2 st.**) playing the indicated pitches (A and B) until next intersection. There turns **Left** and walks 6 steps (marked as **L — 6 st.**) playing the indicated pitches (G#, A, B), always starting with the **new pitch** on the first step; and so on until the flute player leaves the stage (in this case through **Exit 2**), rests for 16 seconds (marked as 16”) and then begins the **next walk**, always entering from the same **Exit** it left through on the previous walk.

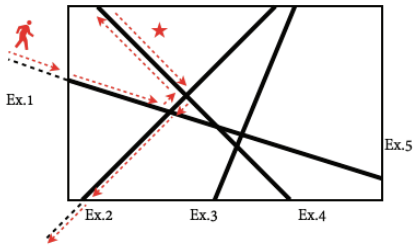
” = seconds
st. = steps
F = forward
L = left
R = right
B = back

3rd walk: 3 beats per step

*Collision with violin: rest when colliding and until next intersection

7” to Ex. 1 — **(F)** — 6 st. — **L** — 2 st. — **L** — 6 st. — **B** — *6 st. — **R** — 2 st. — **F** — 7 st. — **(F)** — **9”** offstage — 16” rest





*A short video will be provided with an example of the 3rd walk with the click track and the pitch material.

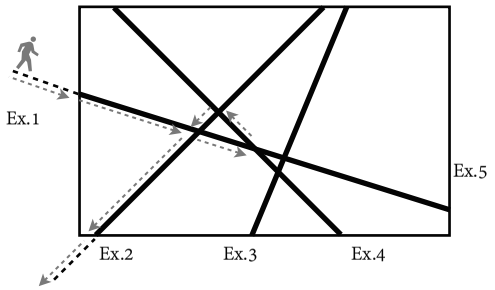
Flute

Constelaciones

Jimena Maldonado

1st walk: 4 beats per step

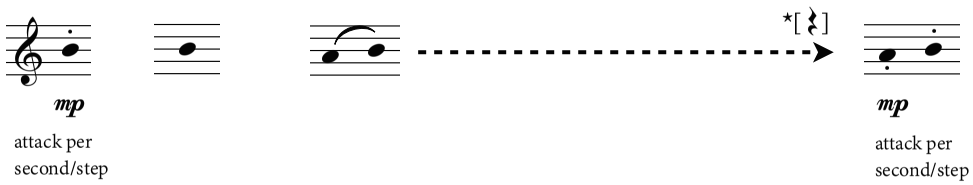
25” rest — 7” to Ex. 1 — **(F)** — 6 st. — **F** — 4 st. — **L** — 3 st. — **L** — 2 st. — **F** — 7 st. — **(F)** — 9” offstage — 5” rest

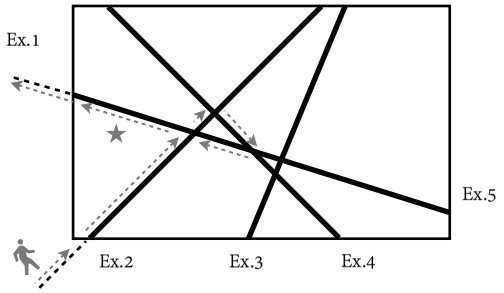


2nd walk: 3 beats per step

*Collision with clarinet:
rest when colliding and
until offstage material

9” to Ex. 2 — **(F)** — **7** st. — **F** — 2 st. — **R** — **3** st. — **R** — 4 st. — **F** — *6 st. — **(F)** — 7” offstage — 16” rest

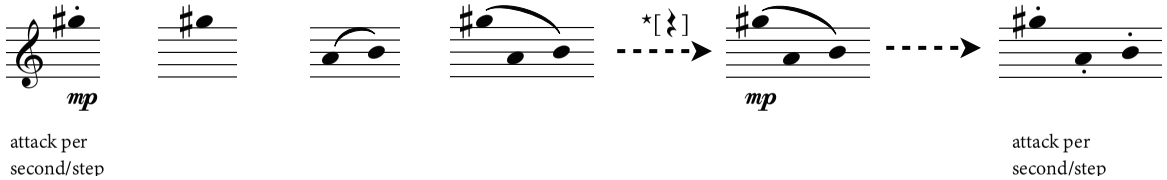


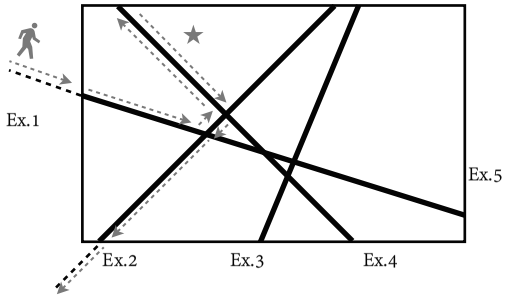


3rd walk: 3 beats per step

*Collision with violin:
rest when colliding and
until next intersection

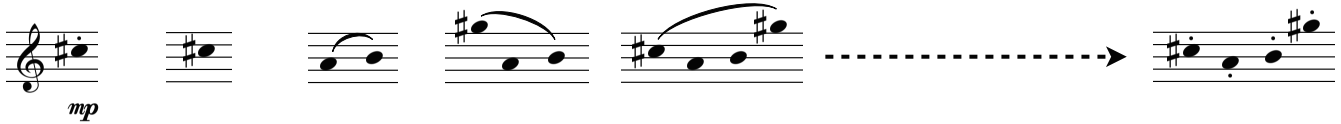
7” to Ex. 1 — **(F)** — 6 st. — **L** — 2 st. — **L** — 6 st. — **B** — *6 st. — **R** — 2 st. — **F** — 7 st. — **(F)** — **9**” offstage — 16” rest





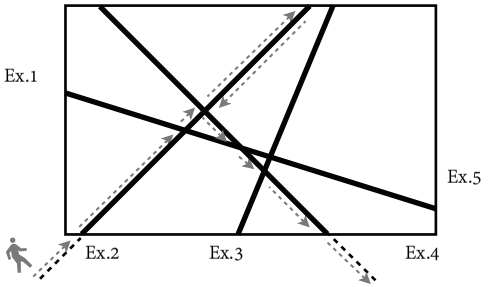
4th walk: 2 beats per step

9" to Ex. 2 — **(F)** — 7 st. — **F** — 2 st. — **F** — 7 st. — **B** — 7 st. — **L** — 3 st. — **F** — 2 st. — **F** — 3 st. — **(F)** — 16" offstage — 16" rest



attack per second/step

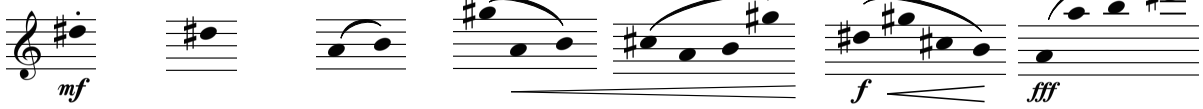
attack per second/step



5th walk: 2 beats per step

*Collision with violin and flute

16" to Ex. 4 — **(F)** — 3 st. — **R** — 1 st. — **F** — 7 st. — **B** — 7 st. — **R** — *2 st. — **stay** 4" — 3" rest

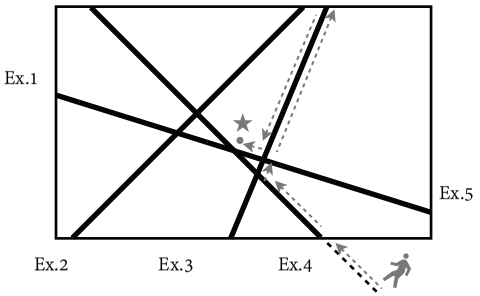


attack per second/step

2 attacks per step

2 attacks per step

attack per second



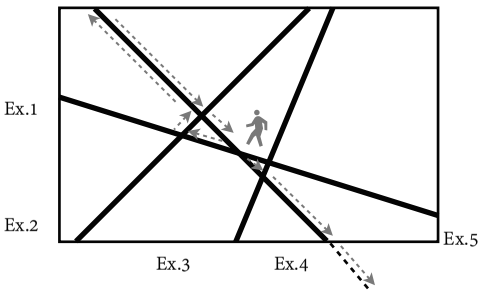
6th walk: 1 beat per step

7" **stay** — **F** — 4 st. — **R** — 2 st. — **L** — 6 st. — **B** — 6 st. — **F** — 3 st. — **F** — 2 st. — **F** — 3 st. — **(F)** — 16" offstage — **END**

alternate between both pitches

long notes: attack when desired

attack per second



Clarinet in Bb (transposed)

Constelaciones

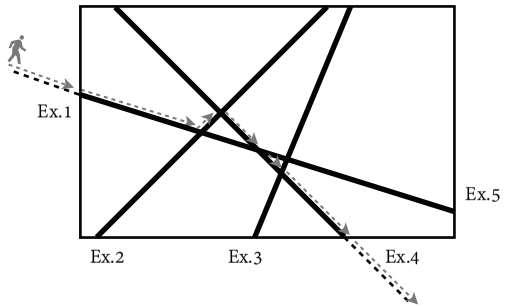
Jimena Maldonado

1st walk: 4 beats per step

7" to Ex. 1 — **(F)** — 6 st. — **L** — 2 st. — **R** — 3 st. — **F** — 2 st. — **F** — 3 st. **(F)** — 16" offstage — 16" rest

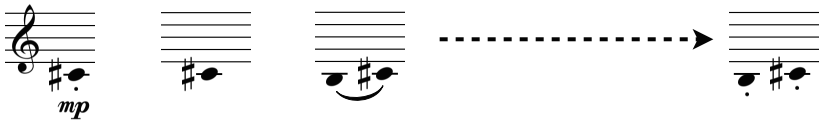
attack per second/step

attack per second/step



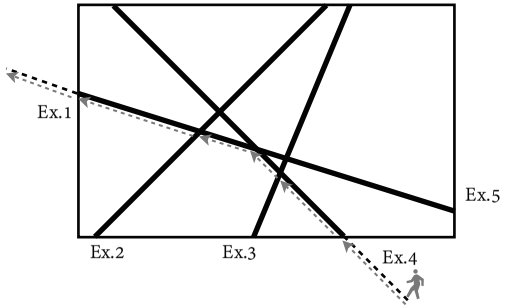
2nd walk: 3 beats per step

16" to Ex. 4 — **(F)** — **3** st. — **F** — 2 st. — **L** — 4 st. — **F** — 6 st. — **(F)** — 7" offstage — 12" rest



attack per second/step

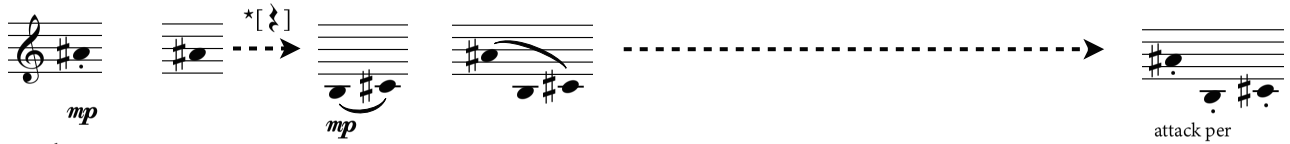
attack per second/step



3rd walk: 3 beats per step

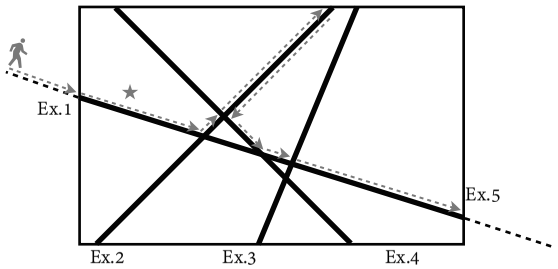
*Collision with flute:
rest when colliding and
until next intersection

7" to Ex. 1 — **(F)** — *6 st. — **L** — 2 st. — **F** — 7 st. — **B** — 7 st. — **L** — 3 st. — **L** — 2 st. — **F** — 10 st. — **(F)** — 8" offstage — 29" rest



attack per second/step

attack per second/step

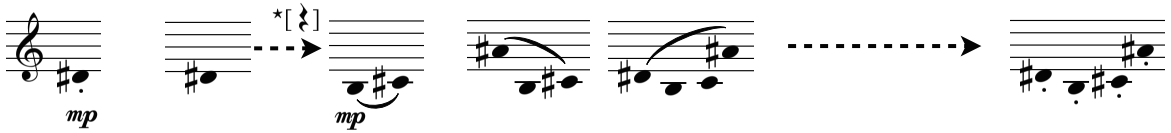


Clarinet in Bb (transposed)

4th walk: 2 beats per step

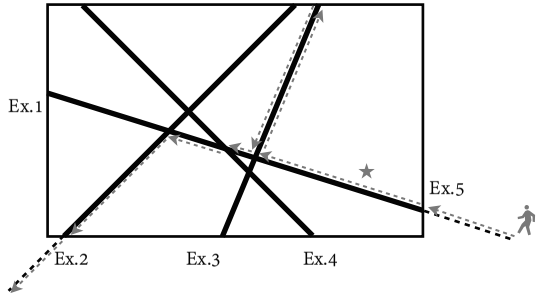
*Collision with violin:
rest when colliding and until next intersection

8" to Ex. 5 — **(F)** — *10 st. — **R** — 7 st. — **B** — 7 st. — **R** — 2 st. — **F** — 4 st. — **L** — 7 st. — **(F)** — **9**" offstage — 20" rest



attack per second/step

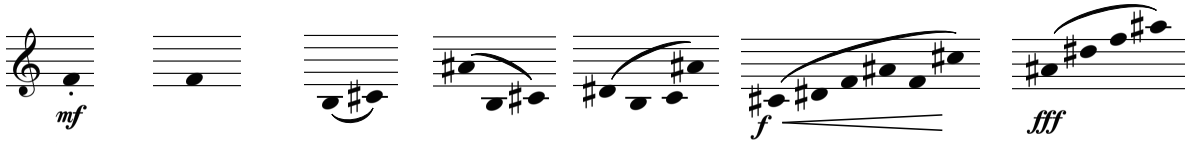
attack per second/step



5th walk: 2 beats per step

*Collision with violin and flute

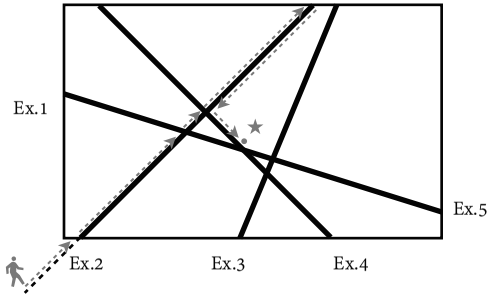
9" to Ex. 2 — **(F)** — 7 st. — **F** — 2 st. — **F** — 7 st. — **B** — 7 st. — **L** — *3 st. — **stay** 4" — 3" rest



attack per second/step

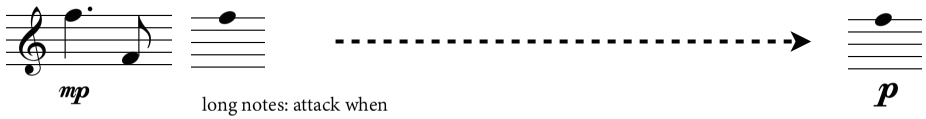
2 attacks per step

attack per second



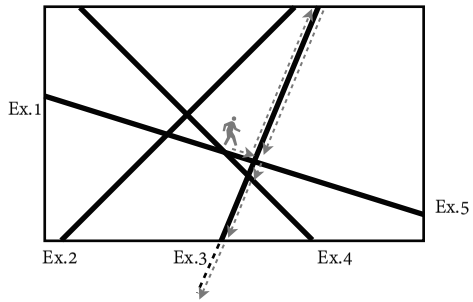
6th walk: 1 beat per step

17" **stay** — **L** — 2 st. —**L** — 7 st. — **B** — 7 st. — **F** — 1 st. — **F** — 2 st. — **(F)** — 13" offstage — **END**



long notes: attack when desired

long notes



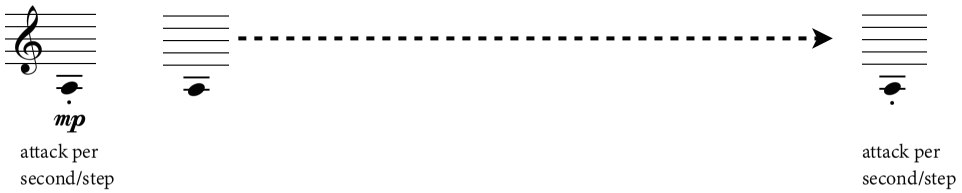
Violin

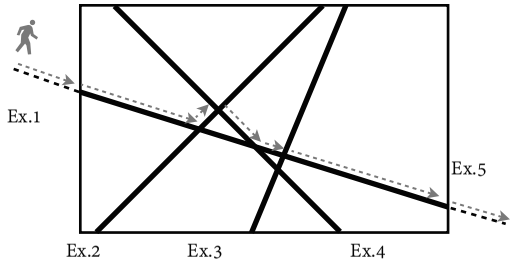
Constelaciones

Jimena Maldonado

1st walk: 4 beats per step

14" rest — 7" to Ex. 1 — **(F)** — 6 st. — **L** — 2 st. — **R** — 3 st. — **L** — 2 st. — **F** — 10 st. — **(F)** — 8" offstage — 16" rest

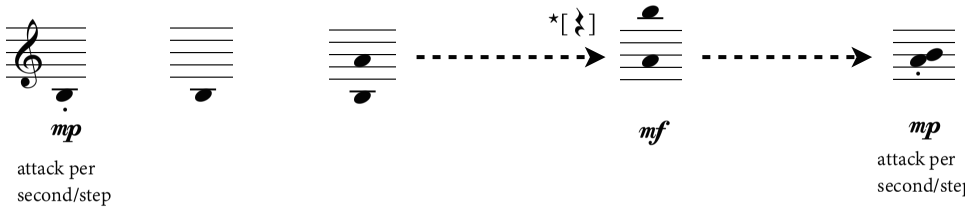


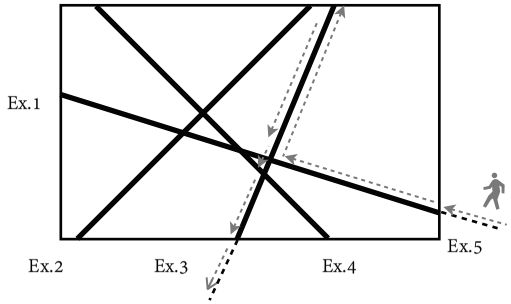


2nd walk: 3 beats per step

*Fl. and cl. collide. All mov. pl. rest until next intersection

8" to Ex. 5 — **(F)** — 10 st. — **R** — 7 st. — **B** — *7 st. — **F** — 1 st. — **F** — 2 st. — **(F)** — 13" offstage — 20" rest



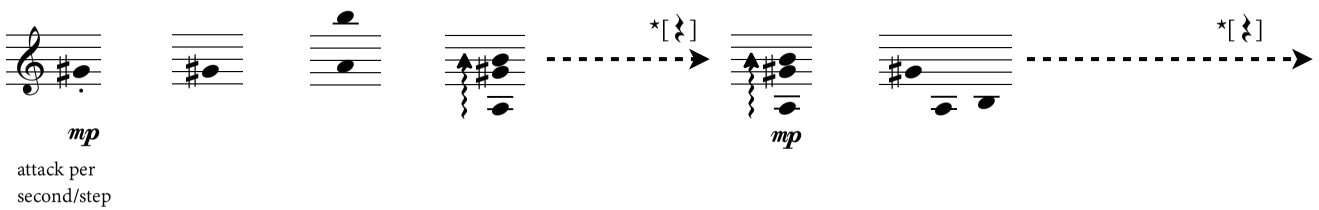


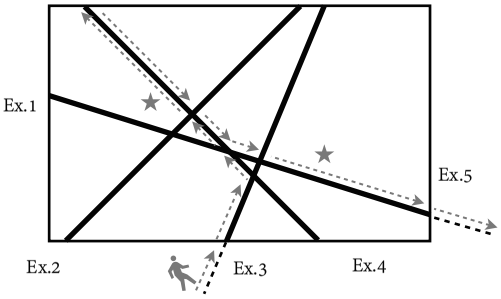
3rd walk: 3 beats per step

*Collision with fl.: rest when colliding and until next intersection

*Collision with clarinet: rest when colliding and for the remaining walk

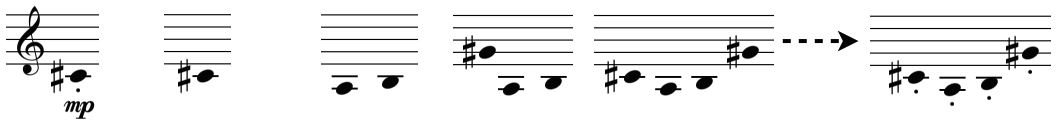
13" to Ex. 3 — **(F)** — 2 st. — **L** — 2 st. — **F** — 3 st. — **F** — *6 st. — **B** — 6 st. — **F** — 3 st. — **L** — 2 st. — **F** — *10 st. — **(F)** — 8" offstage — 12" rest





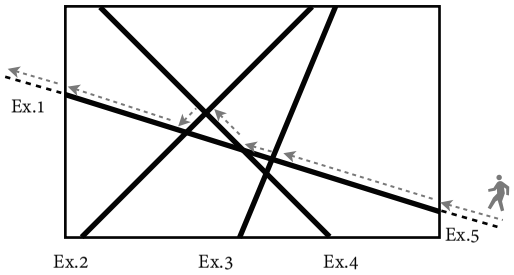
4th walk: 2 beats per step

8” to Ex. 5 — **(F)** — 10 st. — **F** — 2 st. — **R** — 3 st. — **L** — 2 st. — **R** — 6 st. — **(F)** — 7” offstage — 18” rest



attack per second/step

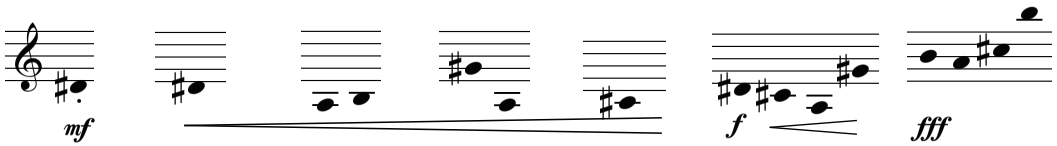
attack per second/step



5th walk: 2 beats per step

*Collision with vln. and fl.

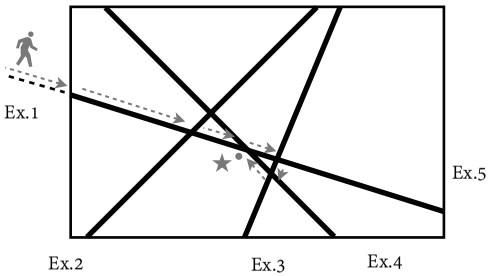
7” to Ex. 1 — **(F)** — 6 st. — **F** — 4 st. — **F** — 2 st. — **R** — 1 st. — **R** — *2 st. — **stay** 4” — 3” rest



attack per second/step

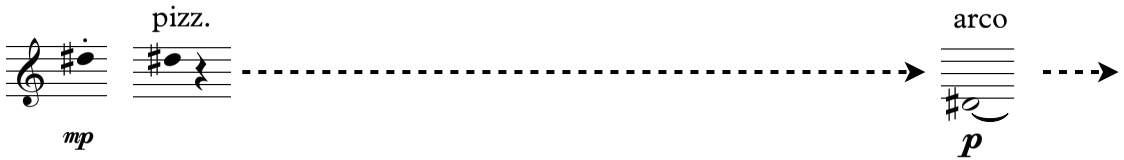
2 attacks per step

attack per second/step



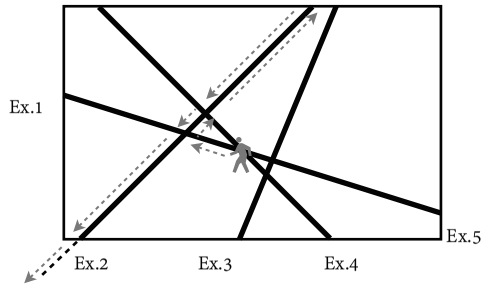
6th walk: 1 beat per step

11” **stay** — **L** — 4 st. — **R** — 2 st. — **F** — 7 st. — **B** — 7 st. — **F** — 2 st. — **F** — 7 st. — **(F)** — 9” offstage — **END**



2 attacks per second

attack per second/step



Stationary players' instructions and parts
(cello, vibraphone, piano)

Constelaciones

Jimena Maldonado

Ensemble

The ensemble is divided into 2 groups: **stationary players** and **moving players**. Each moving player is paired up with a stationary player and follows a series of instructions regarding movement on stage throughout the piece.

Stationary players	Moving players
Piano	Violin
Cello	Flute
Vibraphone	Clarinet

Movement

The **moving players** follow individual indications heard on their **click track**, following the black lines on the floor of the stage, entering and leaving the stage a total of **6 times**. They **enter** or **leave** the stage through one of the 5 stage **exits**, marked as **Ex.1-5** (see Fig. 1).

Once on stage, at the points where 2 or more black lines **intersect**, they can move in one of four directions (always from the point of view of the **moving player**): **Left**, **Right**, **Forward** or **Backwards.** The only time a **Backwards** direction is given is when reaching the wall at the back of the stage, where they turn around and move **Back** the way they came (see Fig.1).

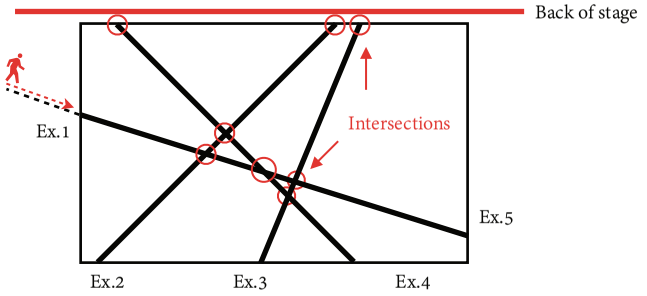


Figure 1

The **moving players'** trajectory is measured in **steps.** The number of **steps** it takes to get from one **intersection** to another -or from an **exit** of the stage to an **intersection-** is always the same throughout the piece. Each of the **moving players walks** on to the stage, follows a certain route and then **leaves** the stage through one of the 5 **stage exits**.

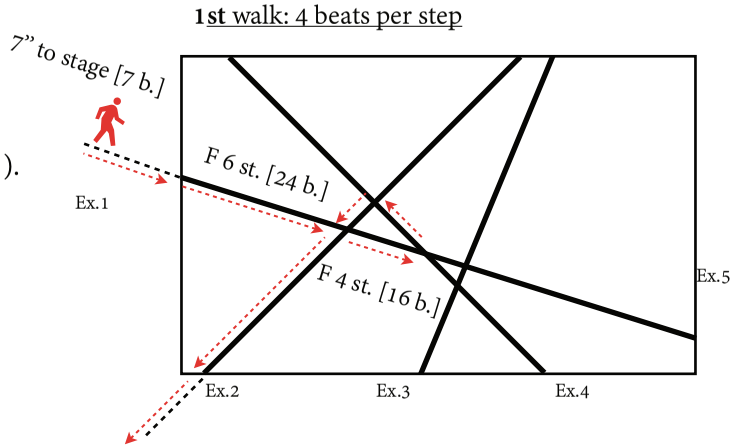
The musical material of the **stationary players** is linked to the trajectory of their **moving partner**, which is why their musical material is notated with a diagram of their **moving partner.** The **steps** of the **moving players** provide the **stationary players** with a consistent pulse throughout the piece. Therefore, it is essential that the **stationary players** always play their musical material taking the **steps** of their **moving partner** into account**.**

S**tationary players** only play when their **moving parter** is **on the stage**, and rest when they are **offstage**.

Each beat is always equivalent to 1 second (60bpm). Along the 6 walks, the duration of the steps accelerates (in terms of beats) as explained below:

1st walk - 1 step lasts **4 beats** (4 seconds)
2nd and 3rd walk - 1 step lasts **3 beats**
4th and 5th walk - 1 step lasts **2 beats**
6th walk - 1 step lasts **1 beat**

On the diagram is an example of the **1st walk**, where each step lasts 4 beats. The **moving player** rests for 25 seconds and then begins by walking 7 seconds or 7 beats (written as **7" and 7 b.**) to the stage (entering through Exit 1). Then walks **Forward** 6 steps, equivalent to 24 beats (marked as **F 6 st. [24 b.]**). Then continues **Forward** at the intersection and walks 4 steps, equivalent to 16 beats (marked as **F 4 st. [16 b.]**); and so on until the **walking player** leaves the stage (in this case through **Exit 2**), rests for the indicated amount of time and then begins the **next walk**, always entering from the same **Exit** they left through on the previous walk.



Collisions

Because of how the **moving players'** routes are choreographed, there are 4 moments during the piece where the **moving players** cross each other on the same black line. These moments, referred to as **'collisions'**, have certain musical consequences which are always indicated on individual parts. **Collisions** must not interrupt the **colliding players'** trajectory nor the musical flow.

The **1st collision** is between the clarinet and flute
The **2nd collision** between the violin and flute
The **3rd collision** between the violin and clarinet
The **4th and final collision**, between all 3 of the **moving players**

All moving players **collide** at the centre of the stage on the **5th walk**, which marks the climax of the piece. There is musical material specifically notated for this climax. There is a 3 beat rest for **ALL** the players (stationary and moving), before beginning the **6th and last walk** from the centre of the stage. The piece ends with all 3 **moving players** offstage.

Cello performance notes

The cello part is linked to the trajectory of the flute. The cello player always rests when the flute player is **offstage** and only starts playing the indicated material once the flute player enters the **stage**. The musical material should always begin in time with the first **step** that the flute player takes on stage. The flute's **trajectory** is indicated on top of the cello's musical material (as shown on the diagram below). The dotted lines indicate the division of the material per step, except when the musical material are long, sustained notes. In this case, the player should sustain the note(s) for the indicated beats.

○ Circular bowing

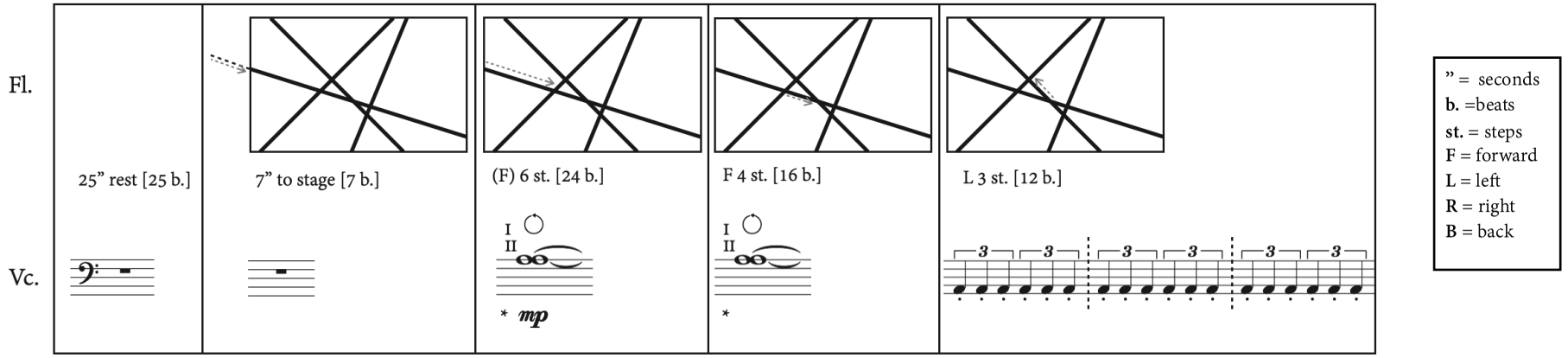
LHP Left hand pizzicato

l.v. Allow to resonate

Bartók pizzicato

Accidentals apply to **entire** box of musical material

1st walk: 4 beats per step

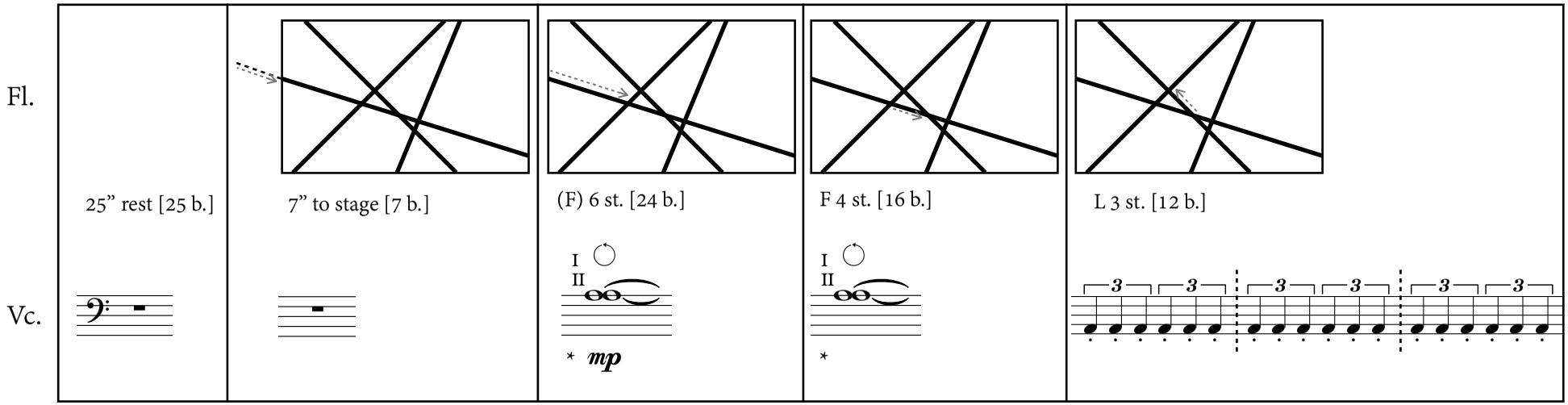


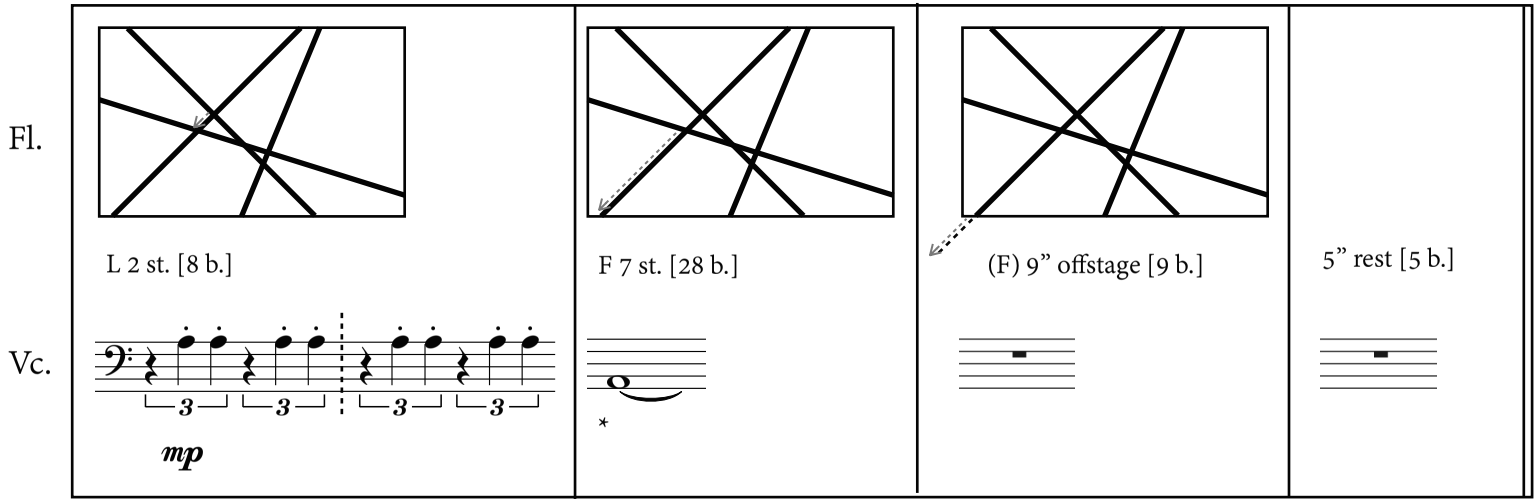
*: Maintain a continuous sound for the indicated number of beats

Constelaciones

Jimena Maldonado

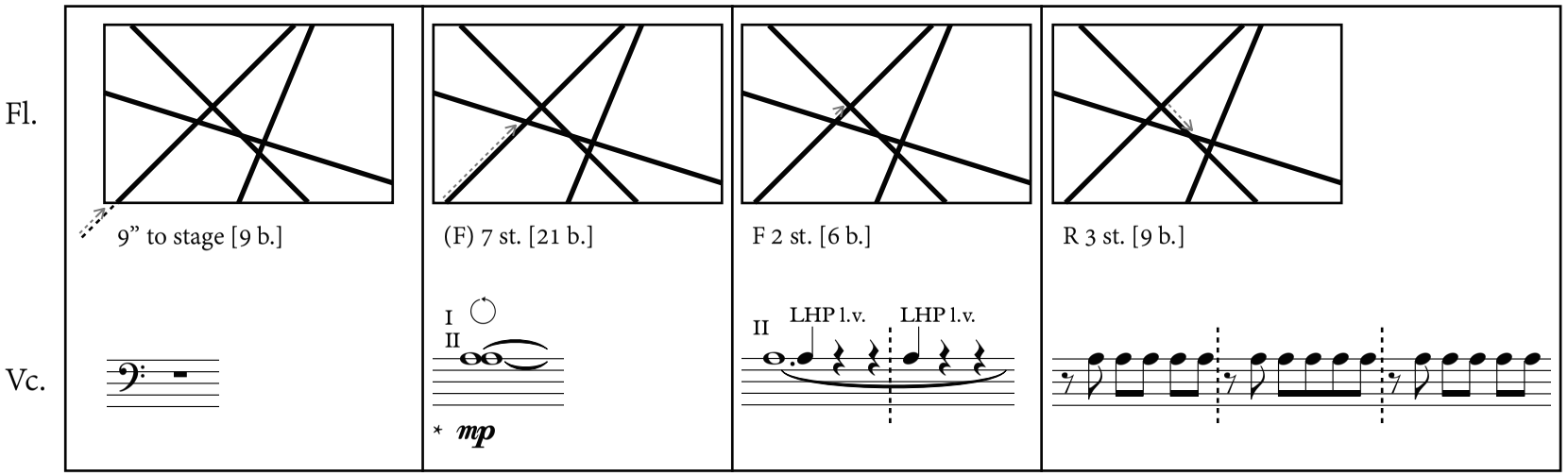
1st walk: 4 beats per step



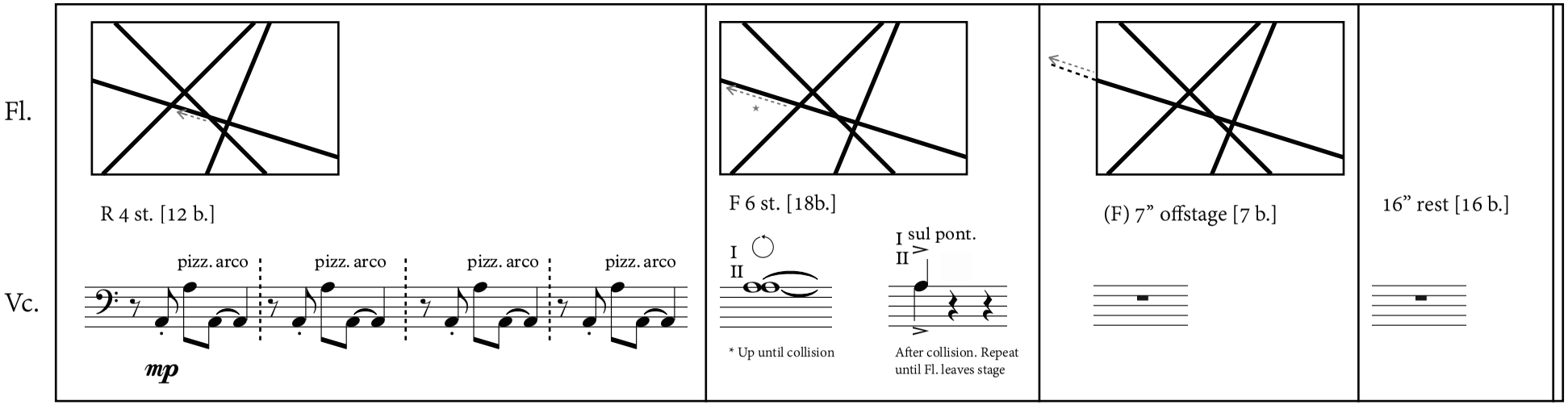


*: Maintain a continuous sound for the indicated number of beats

2nd walk: 3 beats per step

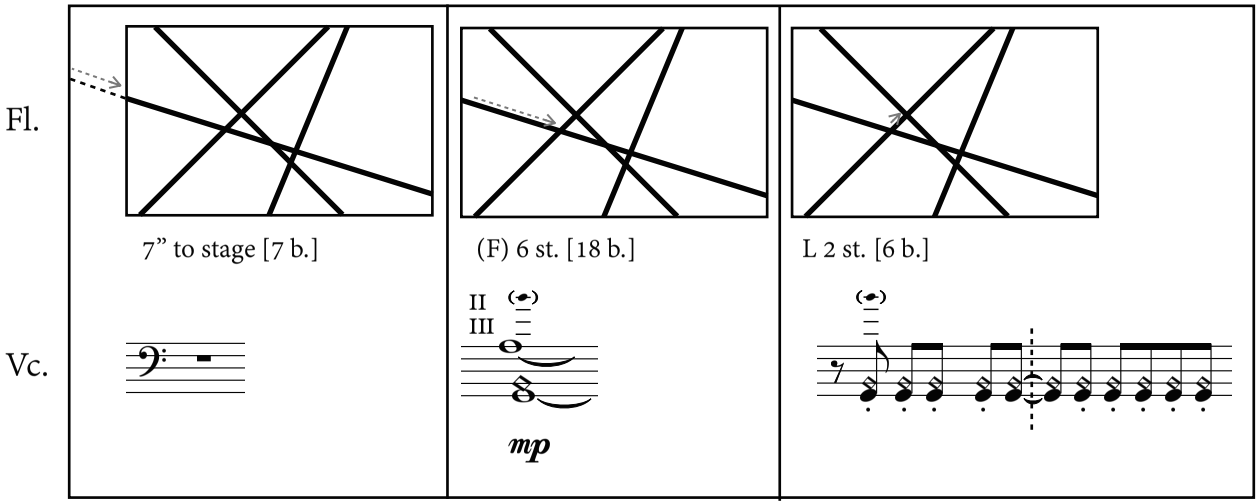


★ Fl. collides with Cl. All mov. pl. rest momentarily.

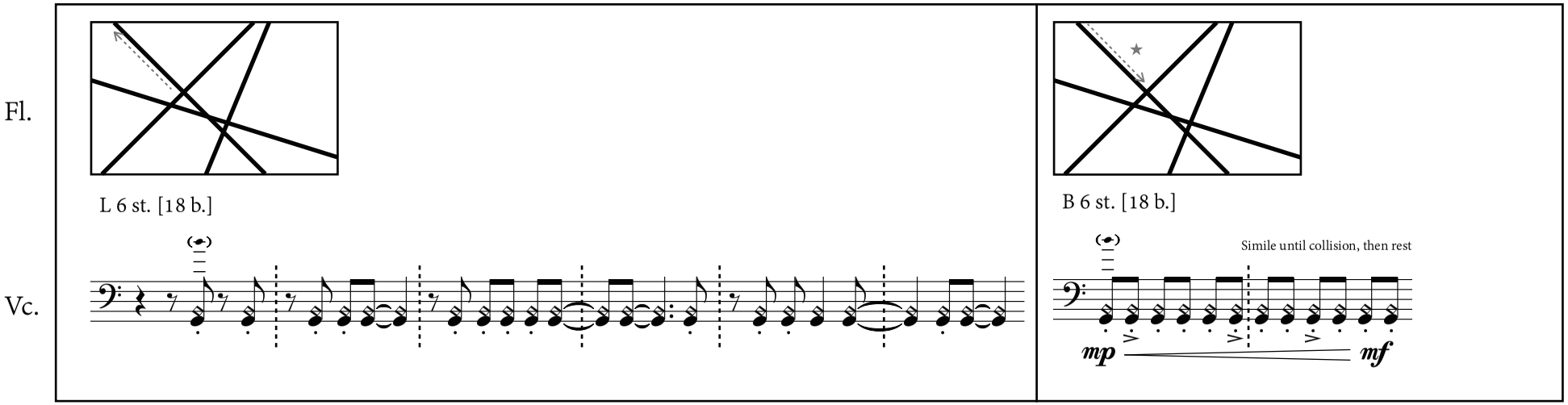


*: Maintain a continuous sound for the indicated number of beats

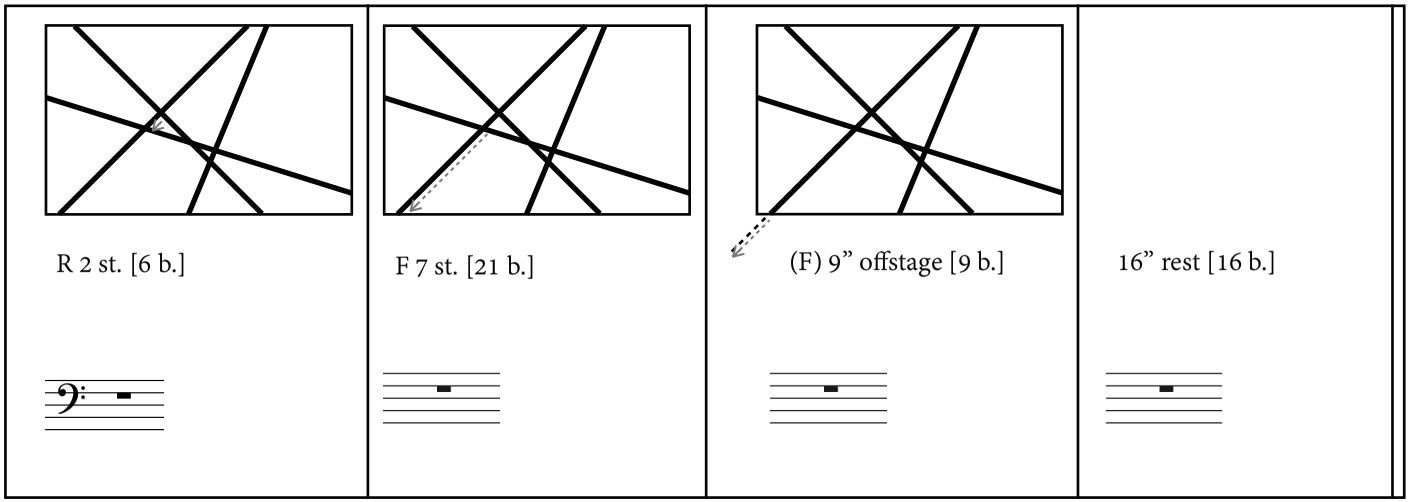
3rd walk: 3 beats per step



★ Fl. collides with Vln. Sudden silence right after collision.



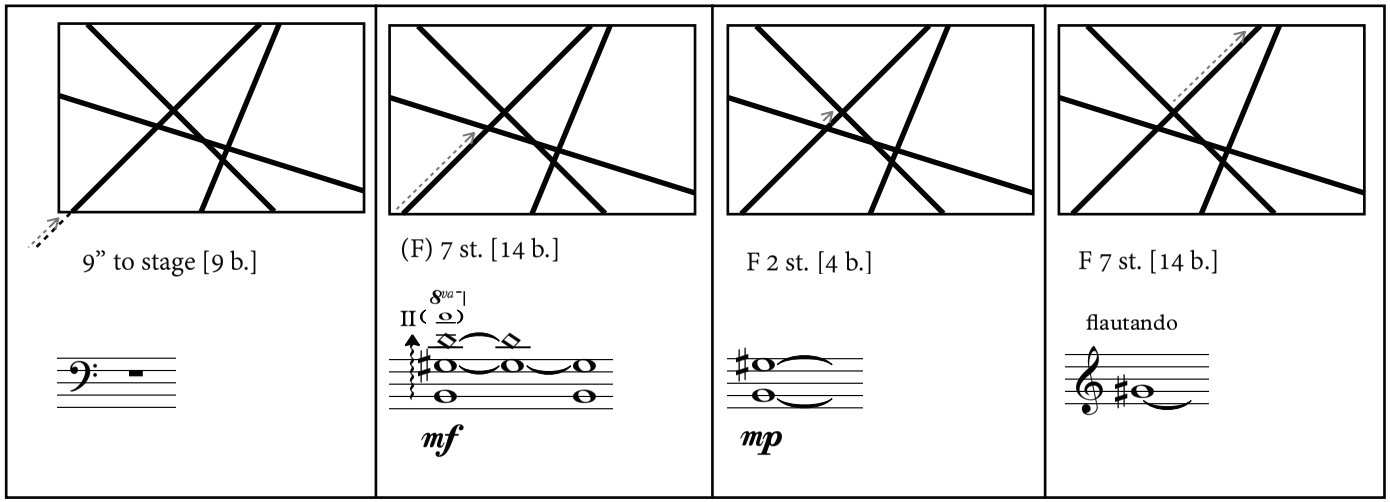
Fl.



Vc.

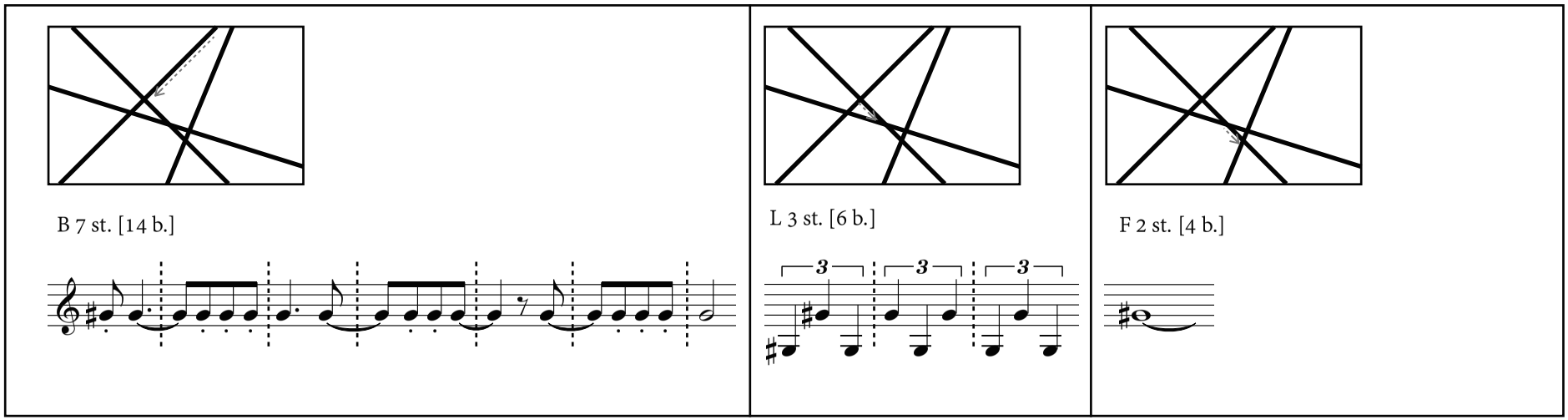
4th walk: 2 beats per step

Fl.



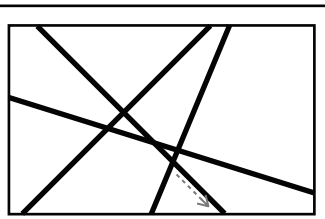
Vc.

Fl.

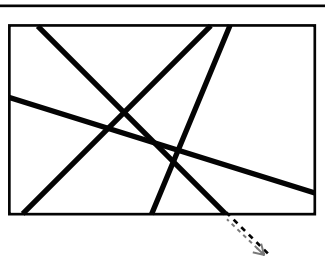


Vc.

Fl.



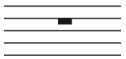
F 3 st. [5 b.]

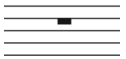


(F) 16” offstage [16 b.]

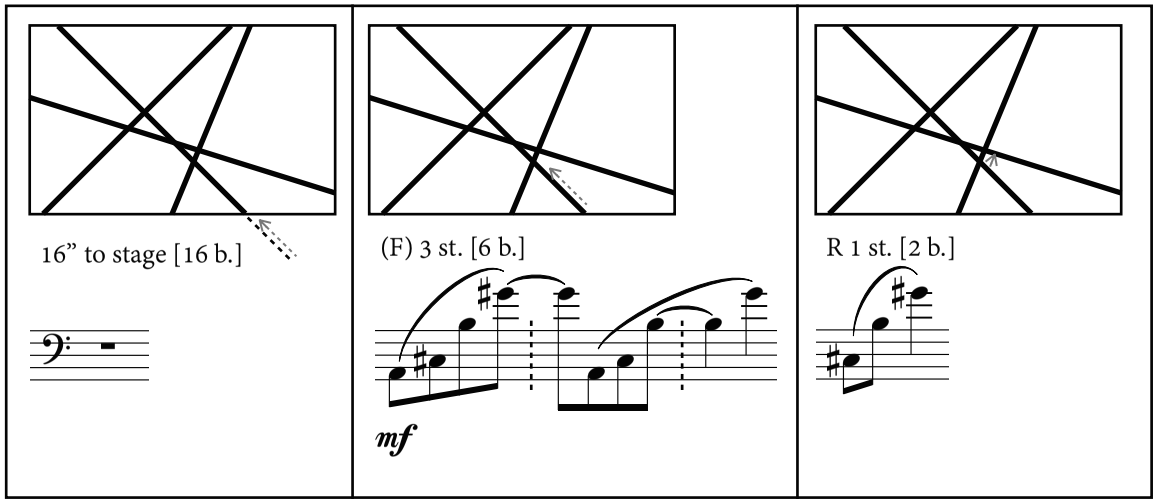
16” rest [16 b.]

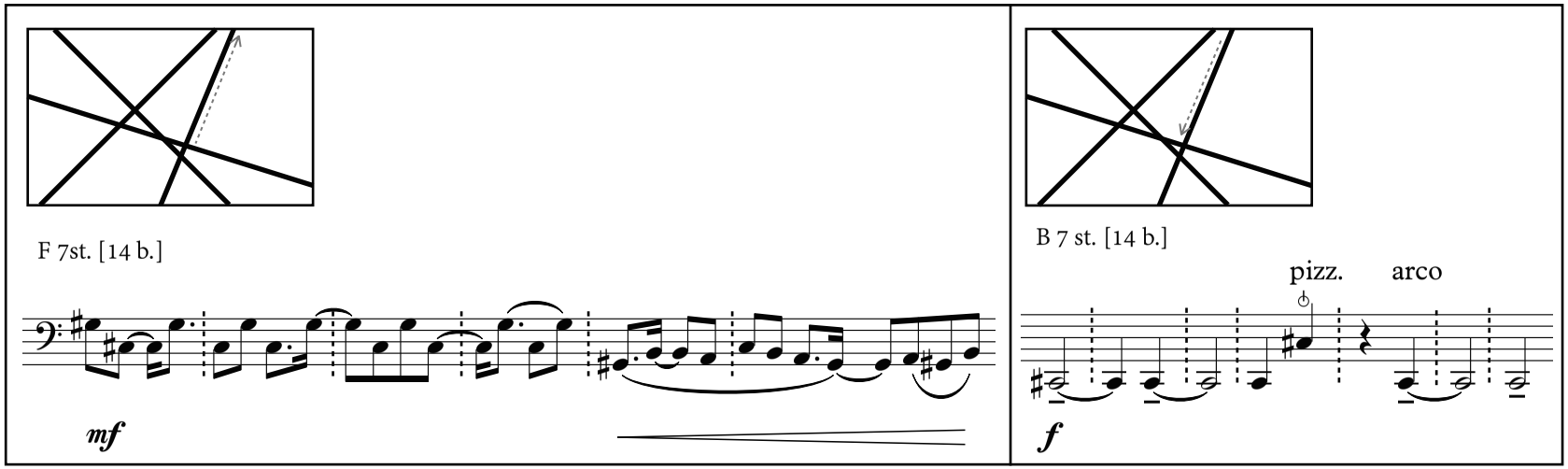
Vc.





5th walk: 2 beats per step

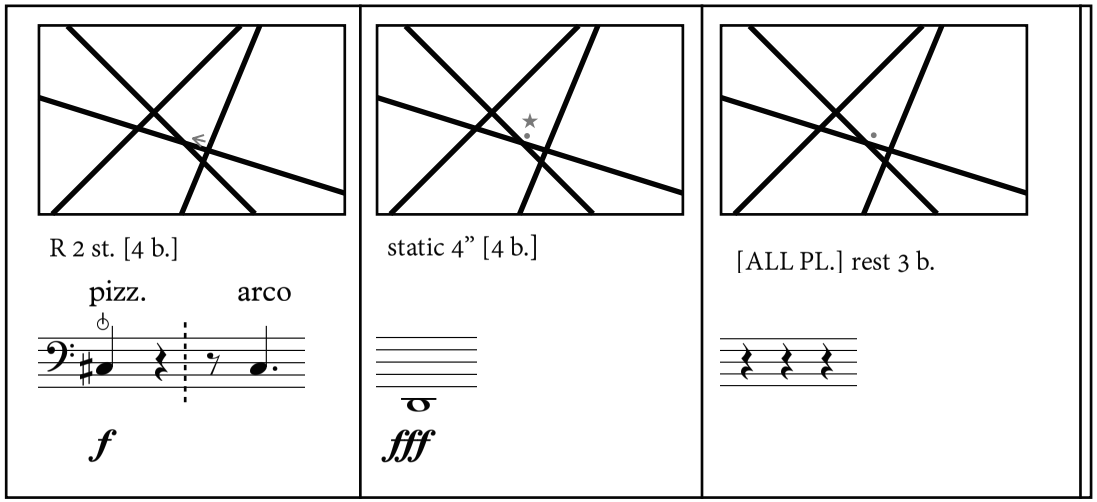




★ All 3 mov. pl. collide

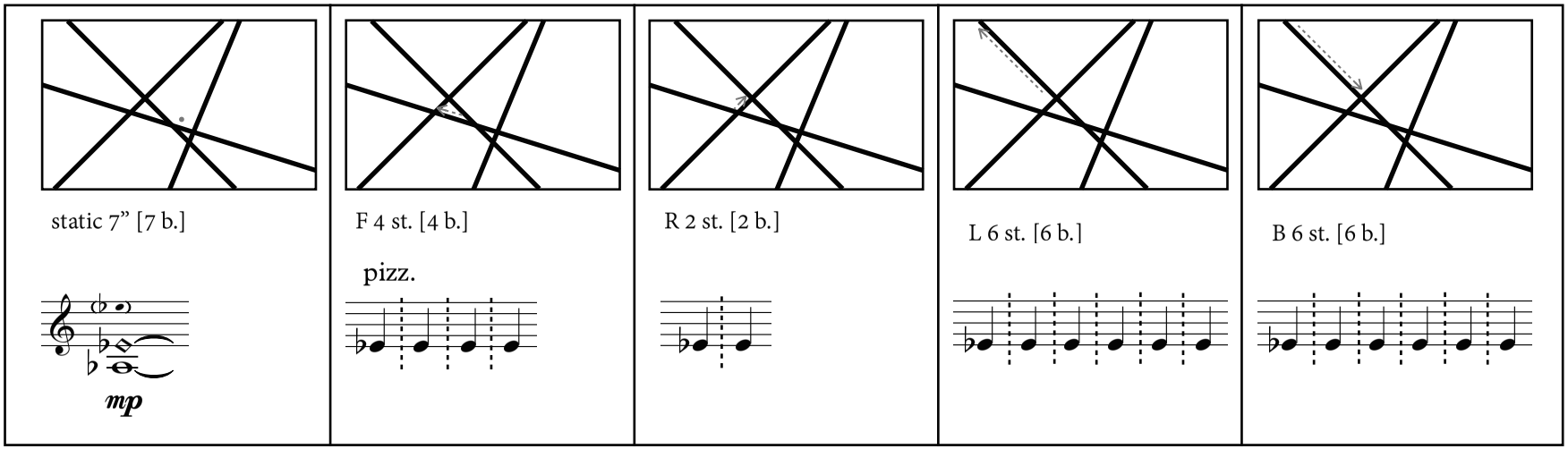
Fl.

Vc.



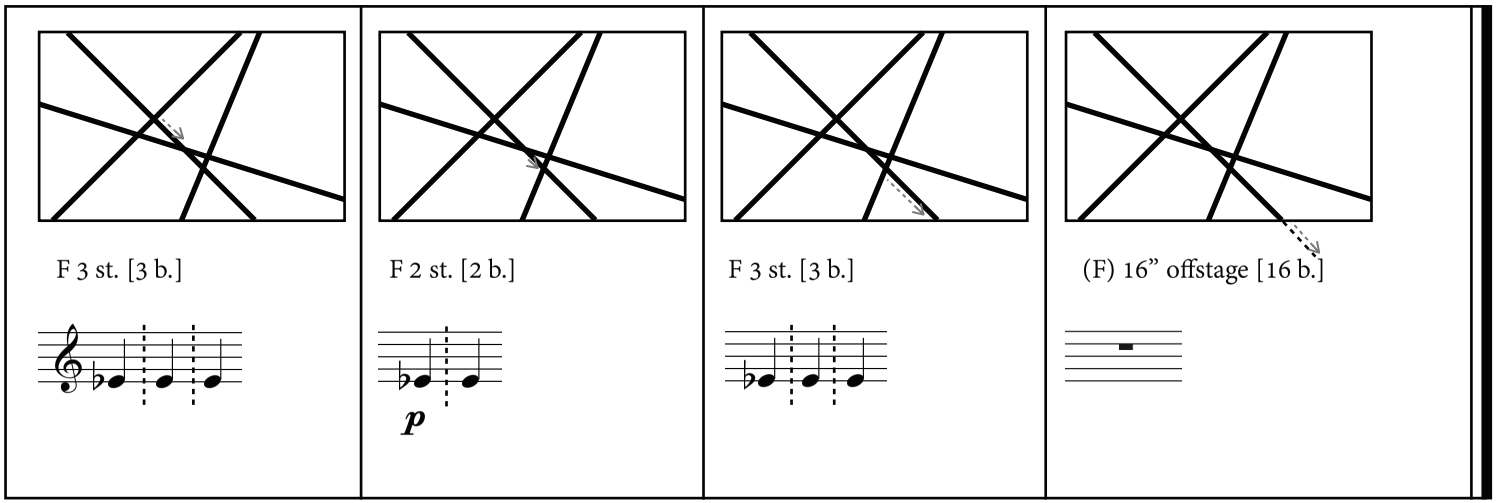
6th walk: 1 beat per step

Fl.



Vc.

Fl.



Vc.

Vibraphone performance notes

The vibraphone part is linked to the trajectory of the clarinet. The vibraphone player always rests when the clarinet player is **offstage** and only starts playing the indicated material once the clarinet player enters the **stage**. The musical material should always begin in time with the first **step** that the clarinet takes on stage. The clarinet's **trajectory** is indicated on top of the vibraphone's musical material (as shown on the diagram below). The dotted lines indicate the division of the material per step, except when the musical material are long, sustained notes. In this case, the player should sustain the note(s) for the indicated beats, attacking any number of times desired.

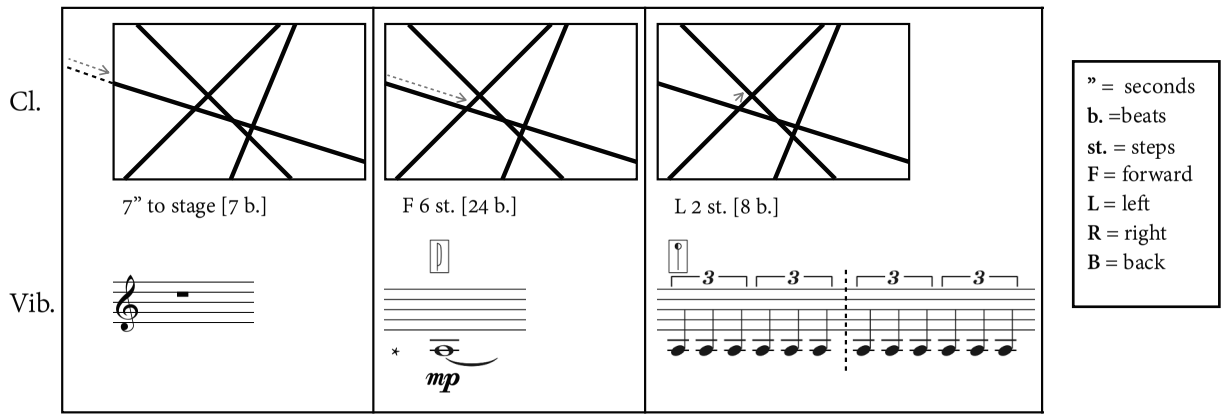
Bow

Medium mallet

l.v. Allow to resonate

Accidentals apply to **entire** box of musical material

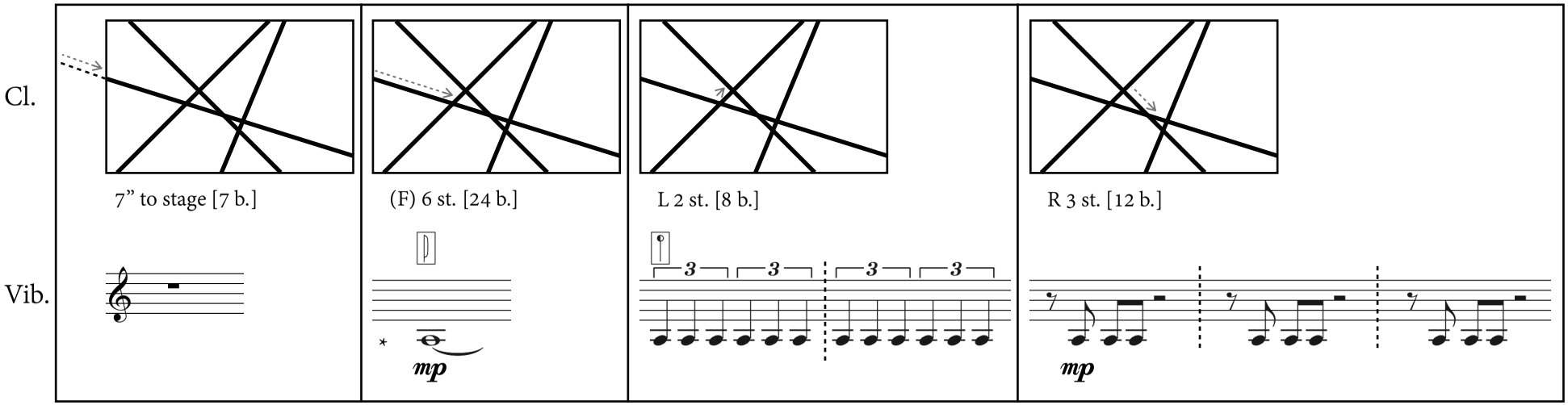
1st walk: 4 beats per step

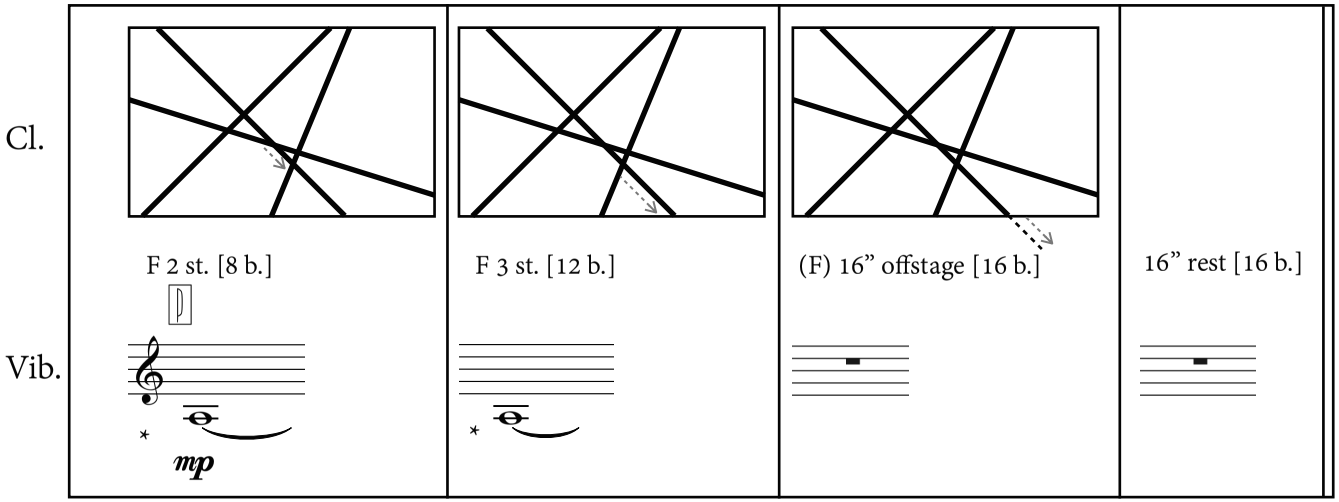


Constelaciones

Jimena Maldonado

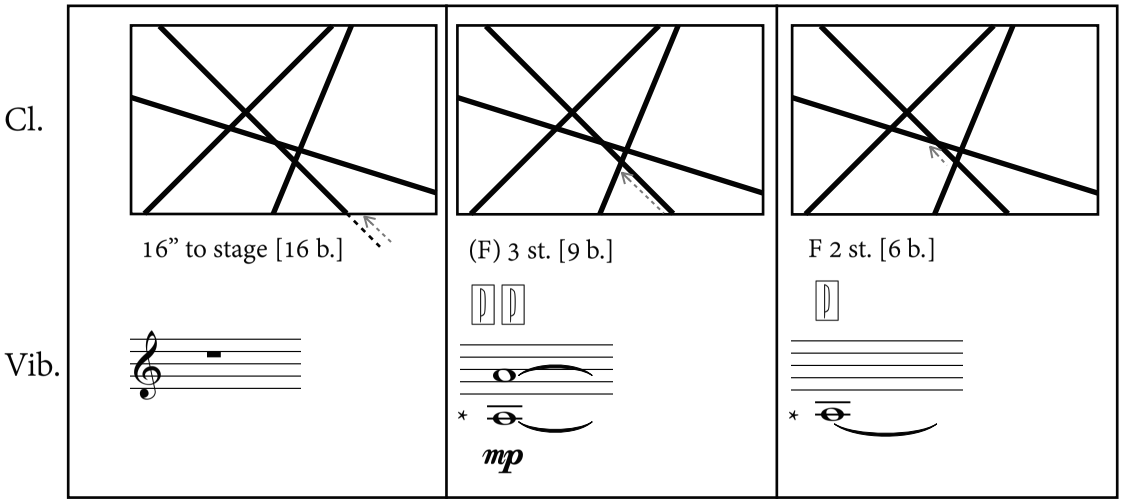
1st walk: 4 beats per step

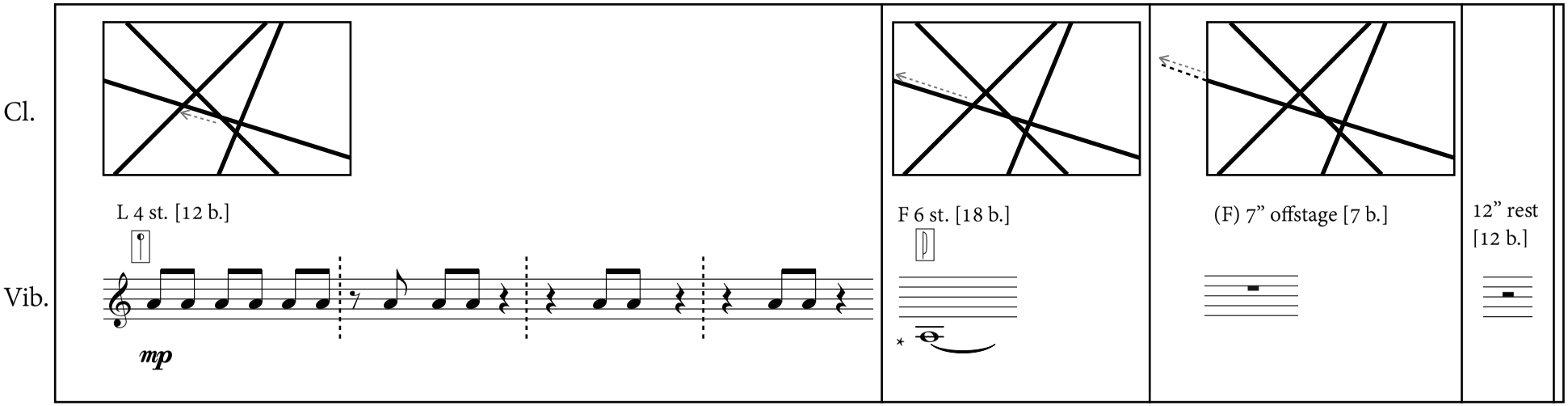




*: Maintain as continuous a sound as possible for the indicated number of beats, starting on different parts of the beat

2nd walk: 3 beats per step

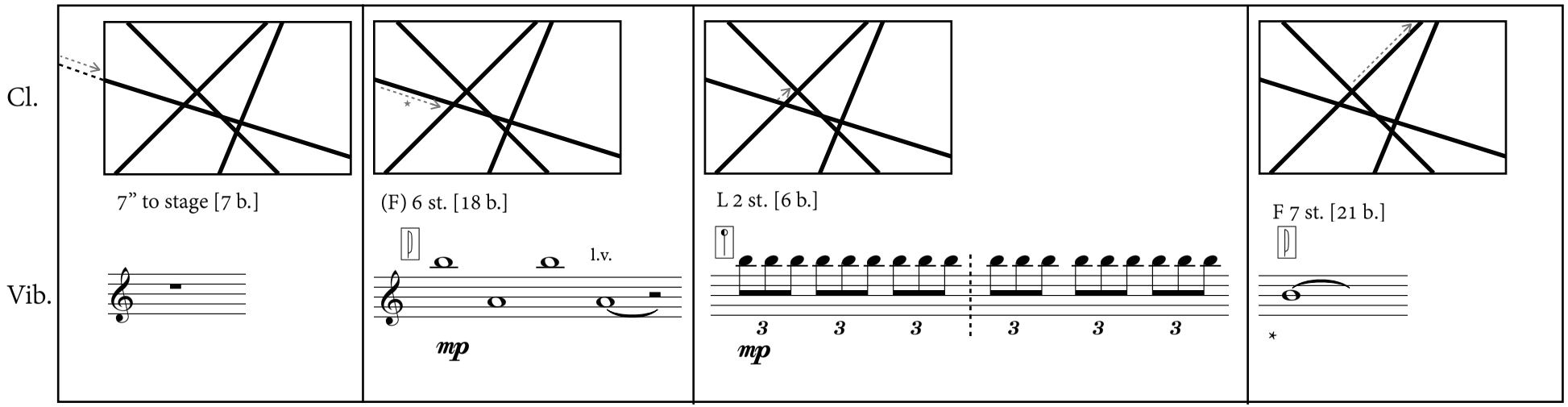


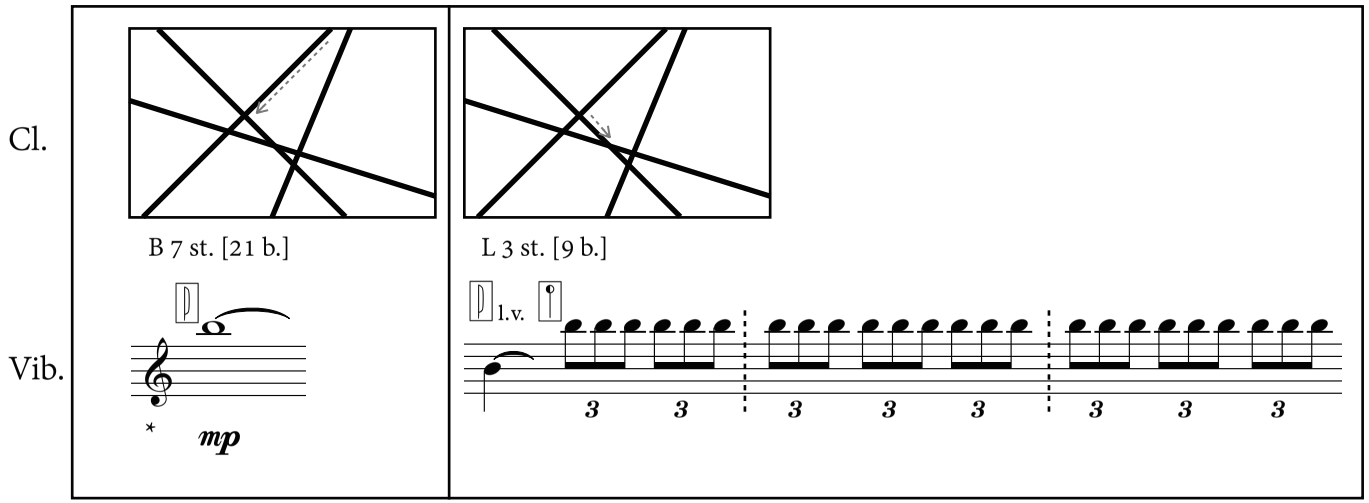


*: Maintain as continuous a sound as possible for the indicated number of beats, starting on different parts of the beat

3rd walk: 3 beats per step

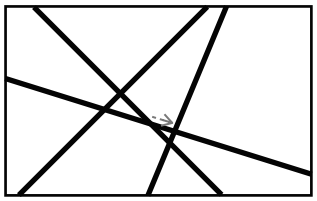
★ Cl. collides with Fl. All mov. pl. rest momentarily.





*: Maintain as continuous a sound as possible for the indicated number of beats, starting on different parts of the beat

Cl.



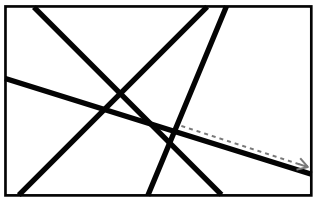
L 2st. [6 b.]

Vib.

l.v. l.v.

3 3 3 3

mp

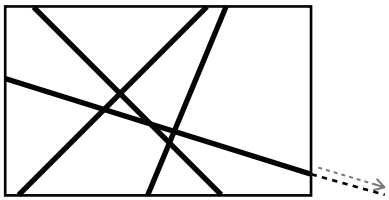


F 10 st. [30 b.]

*Continue until collision between flute and violin, then rest.

l.v. l.v. simile

Cl.



8” offstage [8 b.]

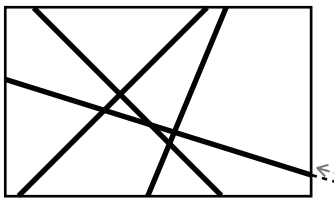
29” rest [29 b.]

Vib.

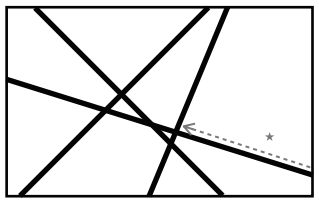
4th walk: 2 beats per step

★ Cl. collides with Vln. All mov. pl. rest momentarily.

Cl.



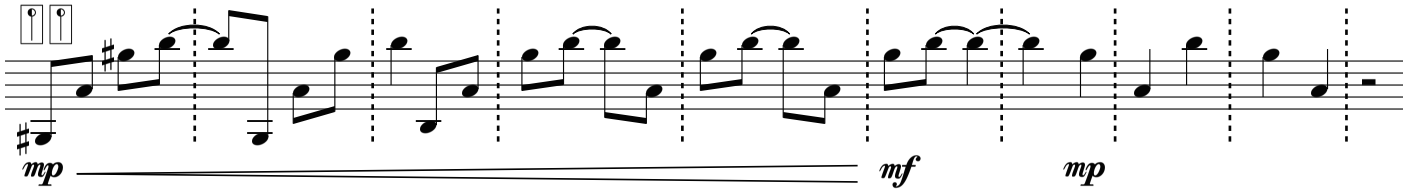
8" to stage [8 b.]



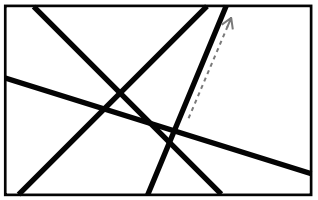
(F) 10 st. [20 b.]

Crescendo to collision

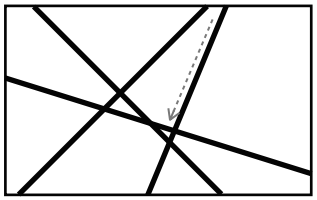
Vib.



Cl.

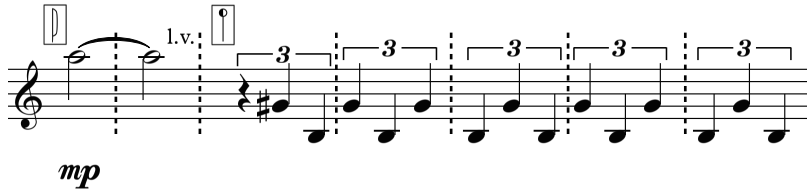


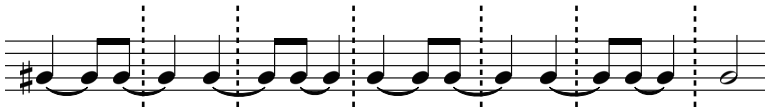
R 7 st. [14 b.]



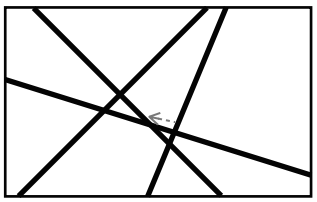
B 7 st. [14 b.]

Vib.

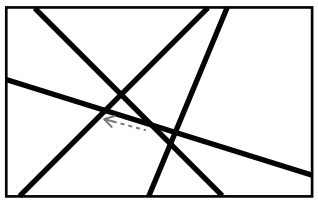




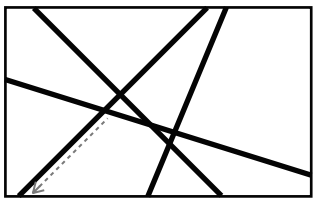
Cl.



R 2 st. [4 b.]

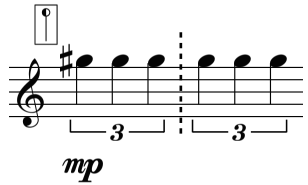


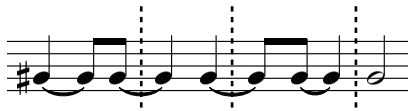
F 4 st. [8 b.]

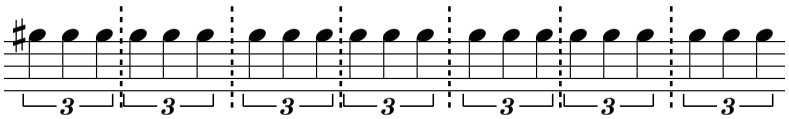


L 7 st. [14 b.]

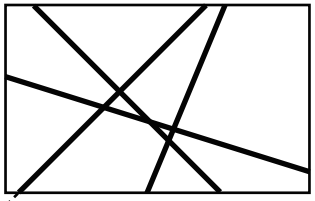
Vib.







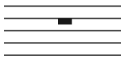
Cl.



9” offstage [9 b.]

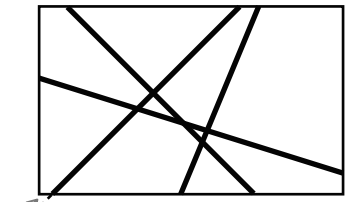
20” rest [20 b.]

Vib.

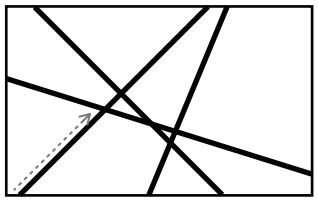


5th walk: 2 beats per step

Cl.

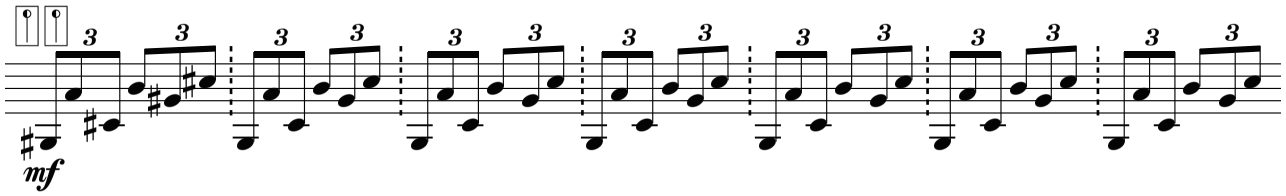


9” to st. [9 b.]

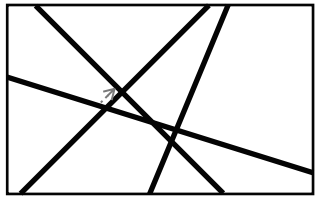


(F) 7 st. [14 b.]

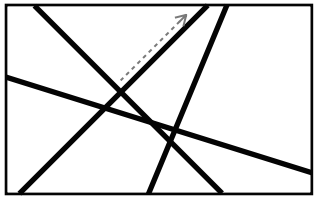
Vib.



Cl.

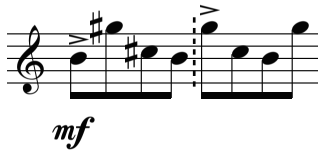


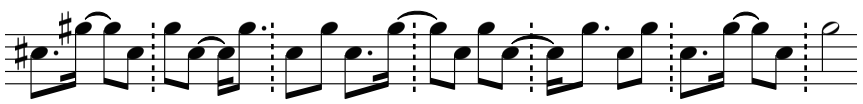
F 2 st. [4 b.]



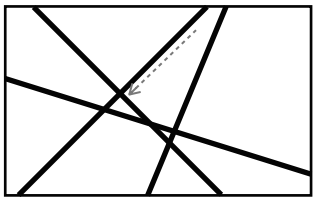
F 7 st. [14 b.]

Vib.





Cl.



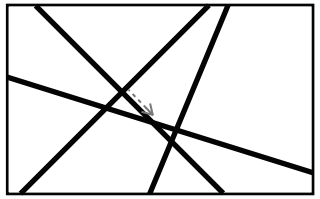
B 7 st. [14 b.]

Vib.

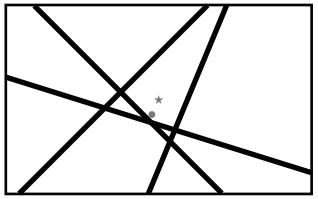
mf

★ All 3 mov. pl. collide

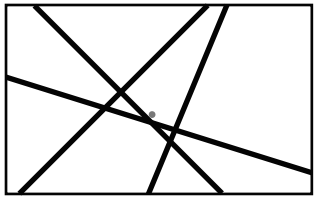
Cl.



L 3 st. [6 b.]



static 4 b.



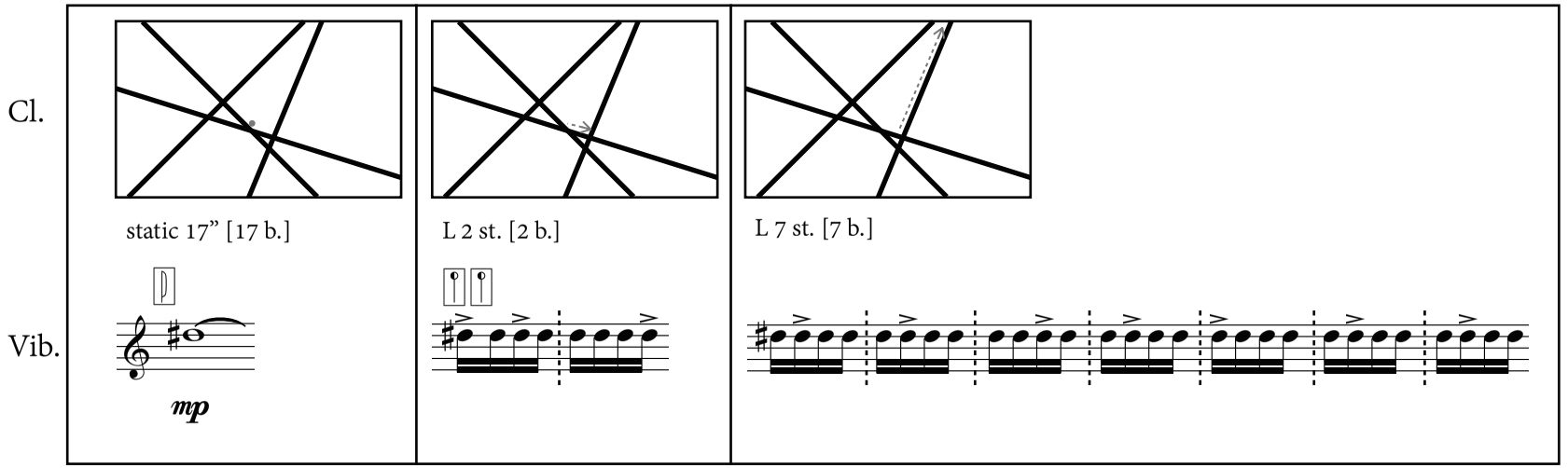
[ALL PL.] rest 3 b.

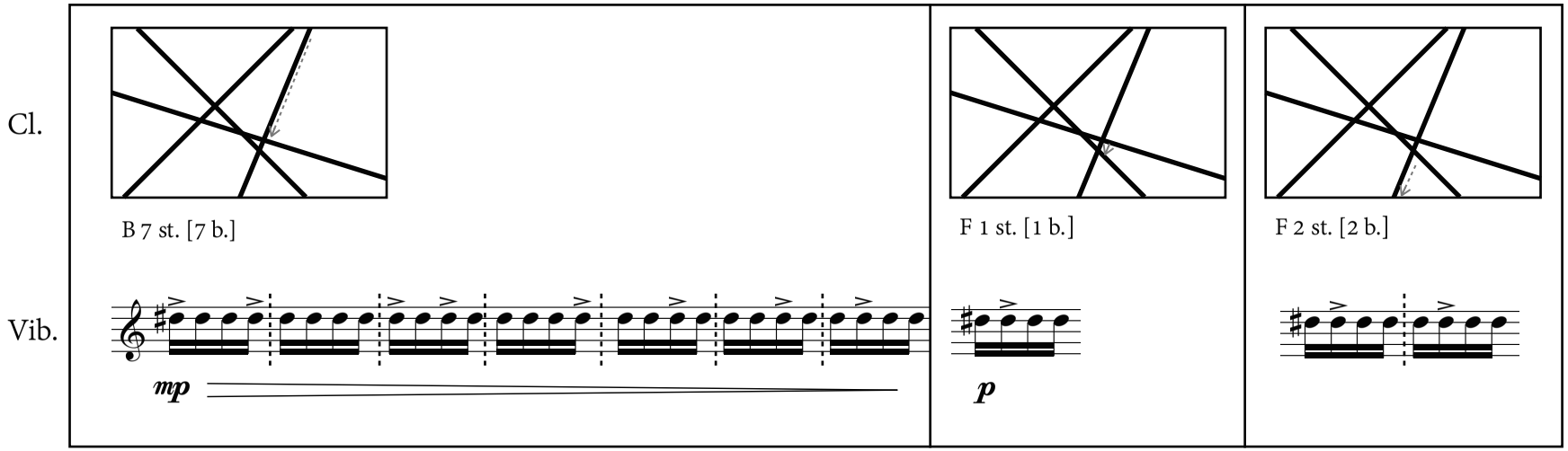
Vib.

f

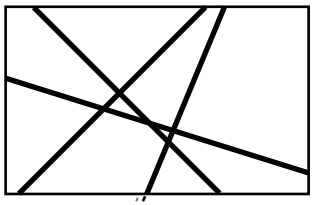
fff

6th walk: 1 beat per step



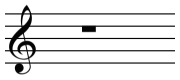


Cl.



13” offstage [13 b.]

Vib.



Piano performance notes

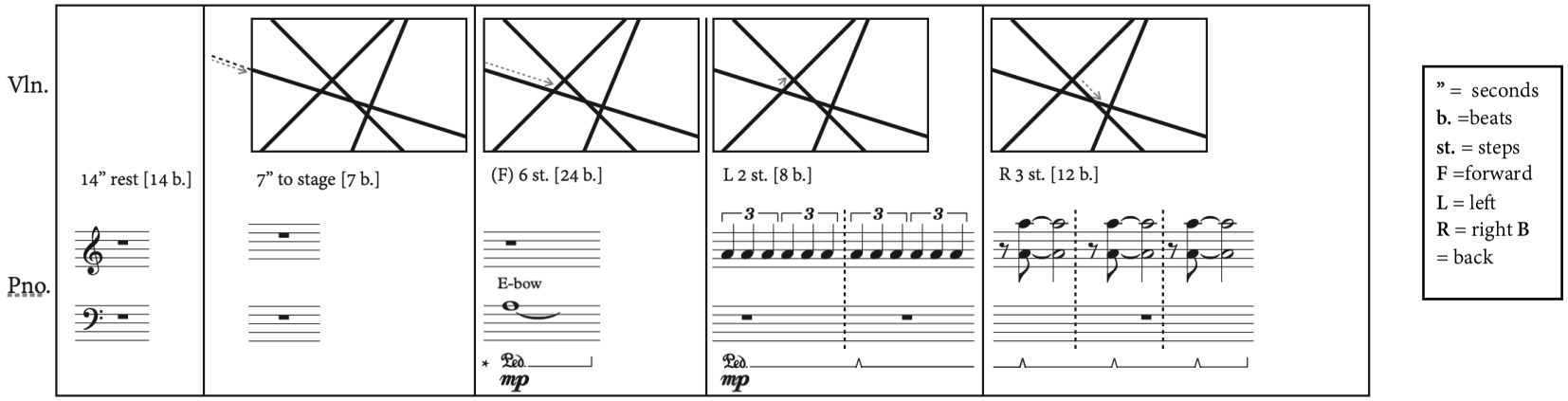
The piano part is linked to the trajectory of the violin. The piano player always rests when the violin player is **offstage** and only starts playing the indicated material once the violin player enters the **stage**. The musical material should always begin in time with the first **step** that the violin player takes on stage. The violin's **trajectory** is indicated on top of the piano's musical material (as shown on the diagram below). The dotted lines indicate the division of the material per step, except when the musical material are long, sustained notes. In this case, the player should sustain the note(s) for the indicated beats.

E-bow sustained note: activate with piano pedal previously prepared

E-bow sustained note with attack

Accidentals apply to **entire** box of musical material

1st walk: 4 beats per step1

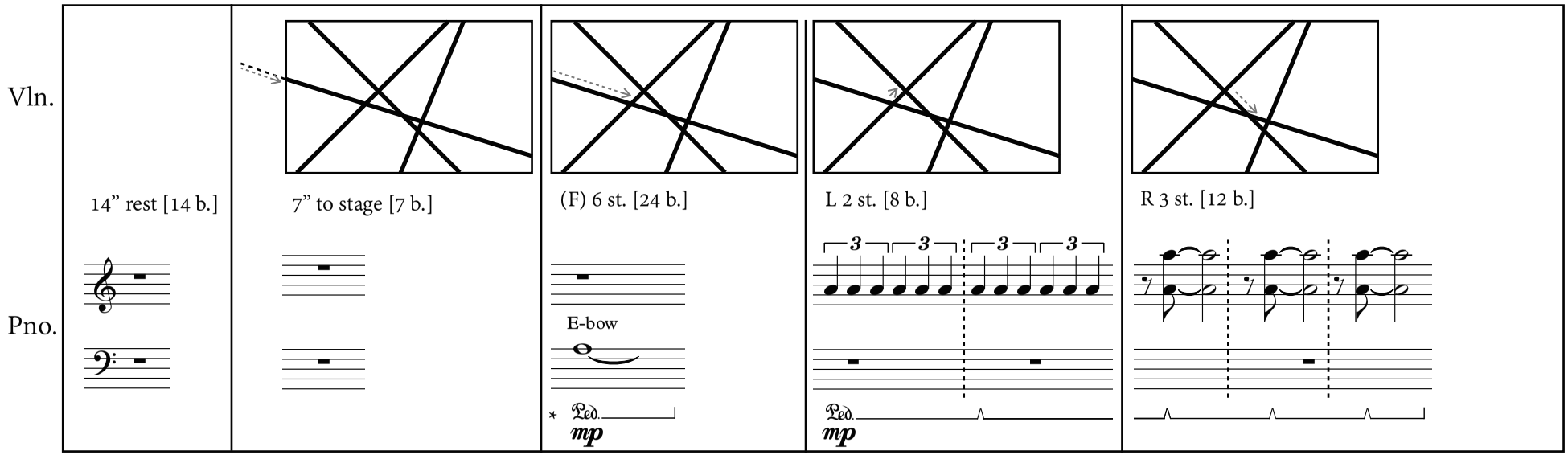


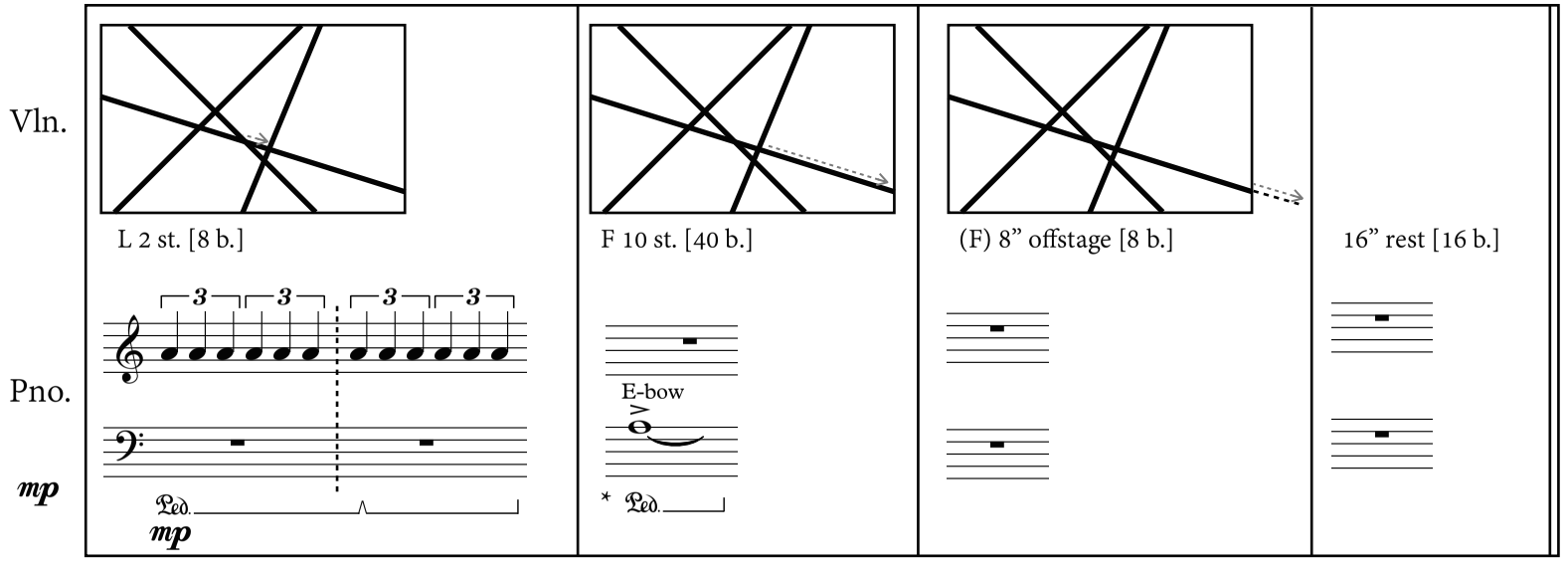
*: Maintain a continuous sound for the indicated number of beats

Constelaciones

Jimena Maldonado

1st walk: 4 beats per step

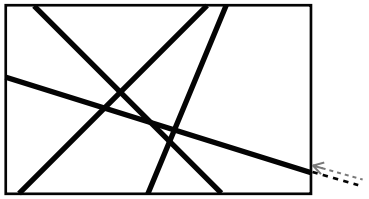




*: Maintain a continuous sound for the indicated number of beats

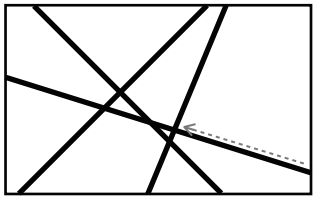
2nd walk: 3 beats per step

Vln.



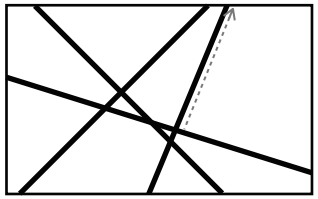
8” to stage [8 b.]

(F) 10 st. [30 b.]

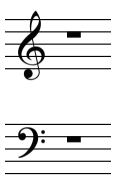


E-bow

R 7 st. [21 b.]

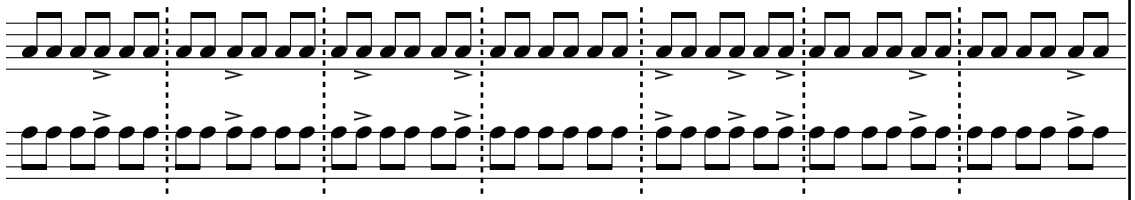


Pno.



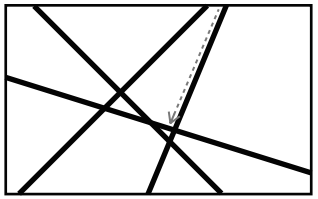
* Ped.

mp



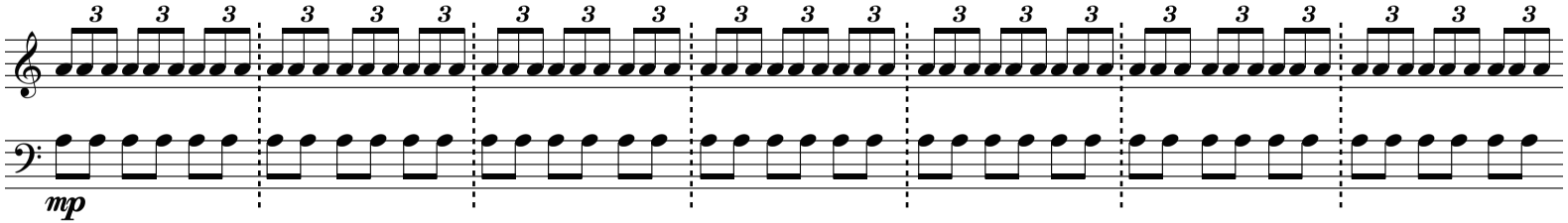
mp

Vln.



B 7 st. [21 b.]

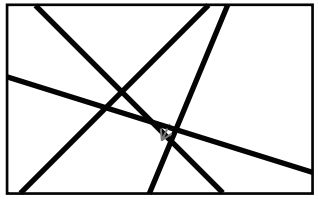
Pno.



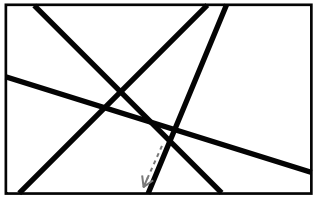
mp

*: Maintain a continuous sound for the indicated number of beats

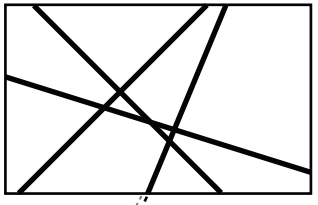
Vln.



F 1 st. [3 b.]



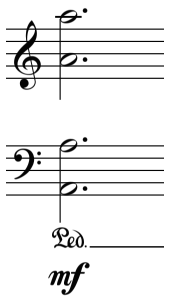
F 2 st. [6 b.]

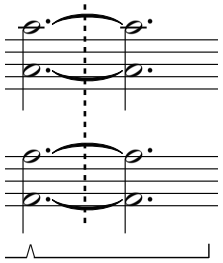


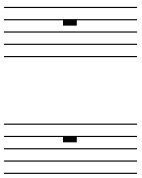
(F) 13” offstage [13 b.]

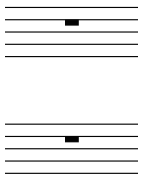
20” rest [20 b.]

Pno.



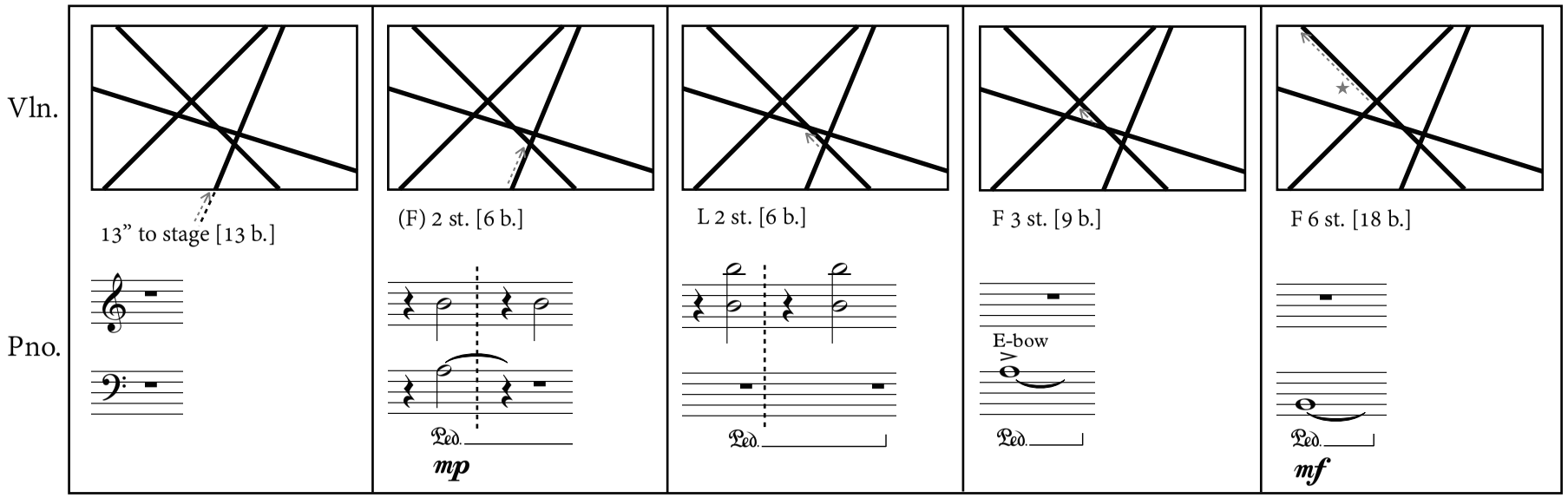


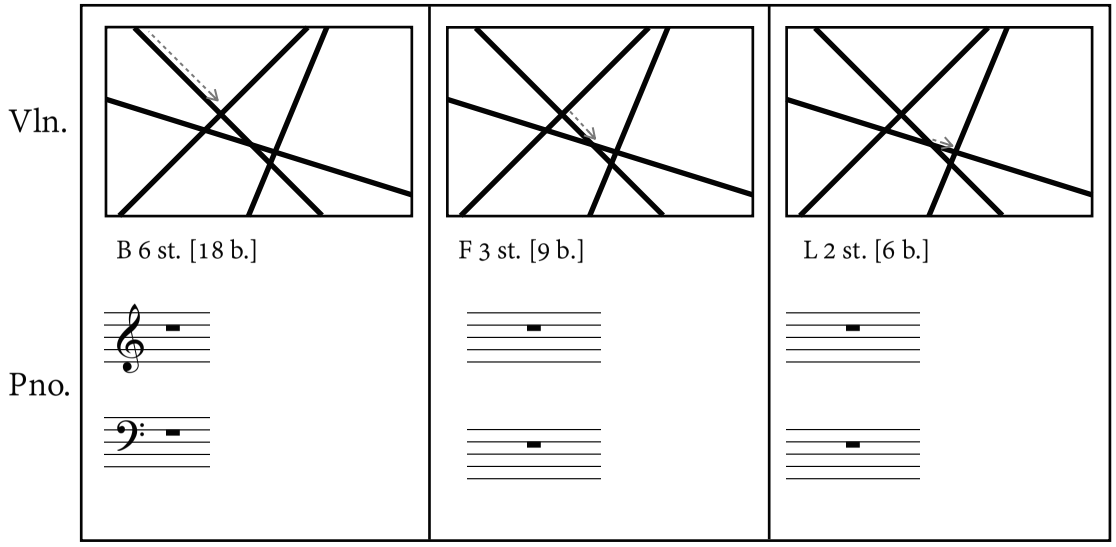




3rd walk: 3 beats per step

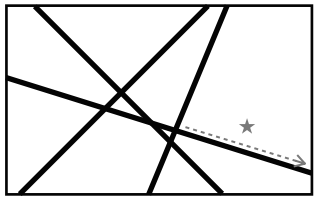
★ Vln. collides with Fl. Rest after collision





★ Vln. collides with Cl. Change material after collision

Vln.



F 10 st. [30 b.]

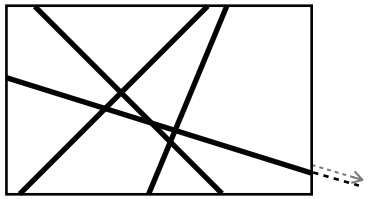
*After collision

Pno.

Ped.

mp *mf* *mp*

Vln.



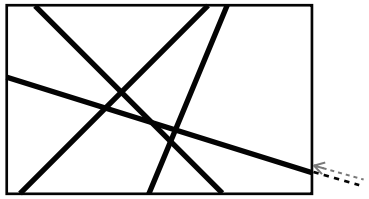
(F) 8” offstage [8 b.]

12” rest [12 b.]

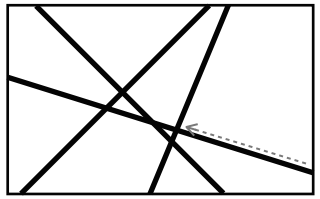
Pno.

4th walk: 2 beats per step

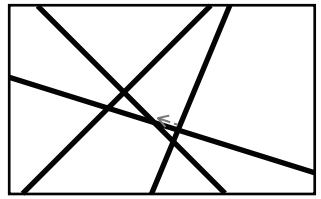
Vln.



8" to stage [8 b.]

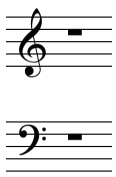


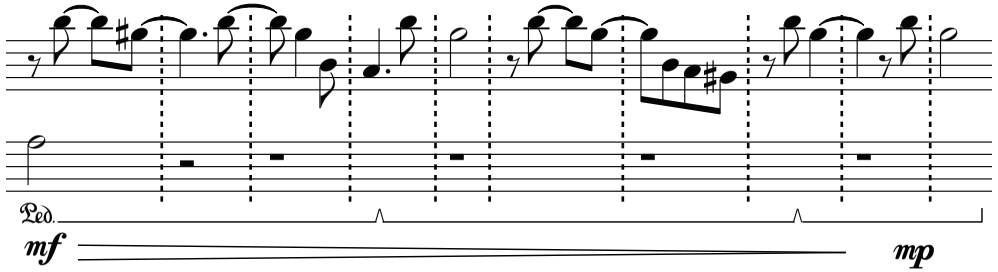
(F) 10 st. [20 b.]

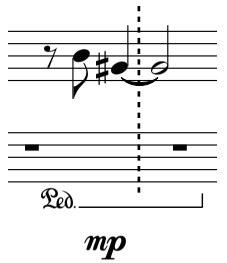


F 2 st. [4 b.]

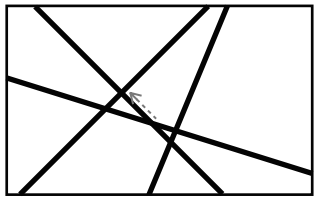
Pno.



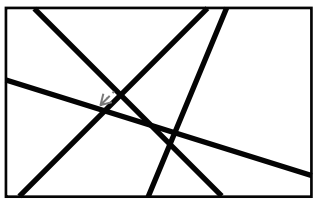




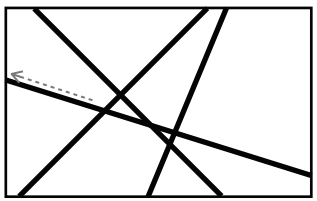
Vln.



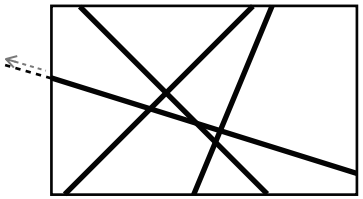
R 3 st. [5 b.]



L 2 st. [4 b.]



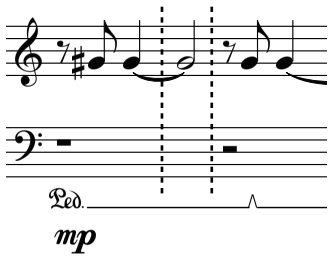
R 6 st. [12 b.]

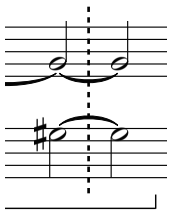


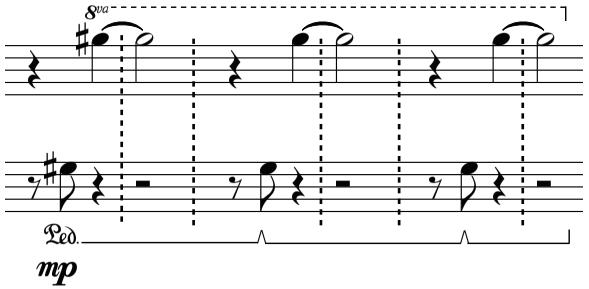
(F) 7" offstage [7 b.]

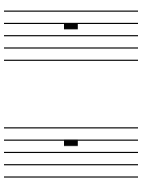
18" rest [18 b.]

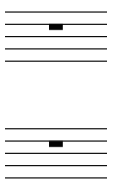
Pno.





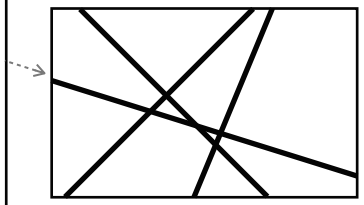




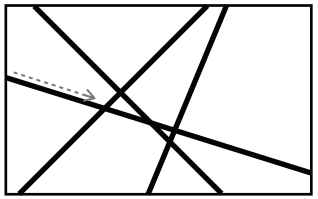


5th walk: 2 beats per step

Vln.

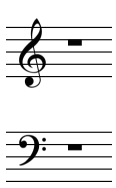


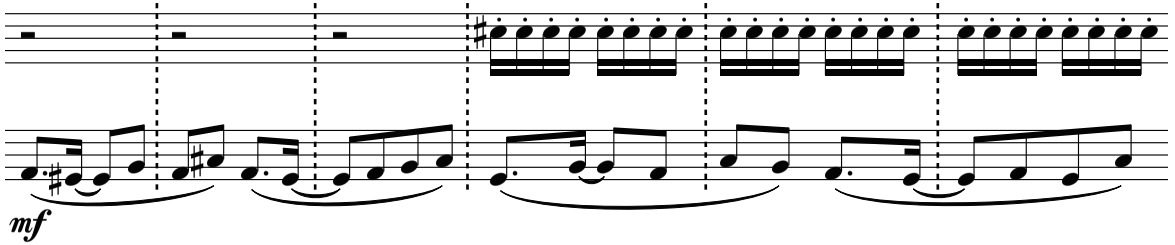
7" to stage [7 b.]



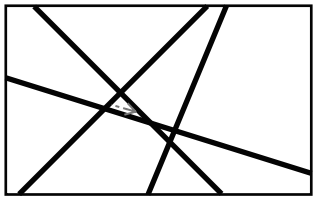
(F) 6 st. [12 b.]

Pno.

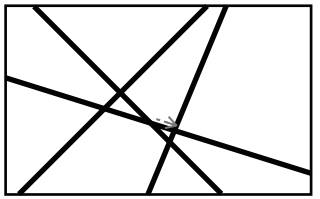




Vln.

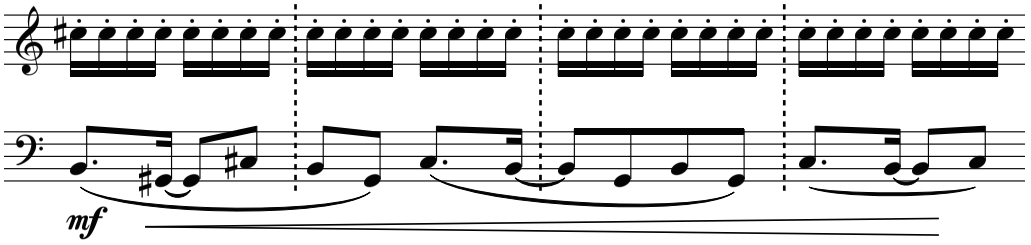


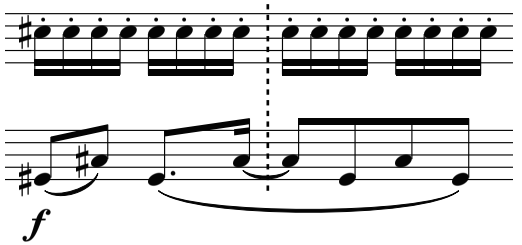
F 4 st. [8 b.]



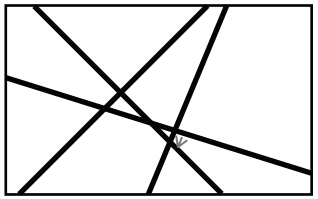
F 2 st. [4 b.]

Pno.

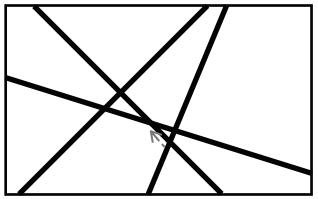




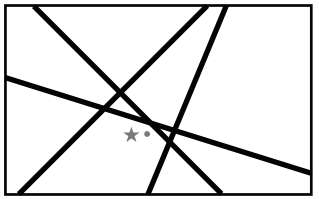
Vln.



R 1 st. [2 b.]

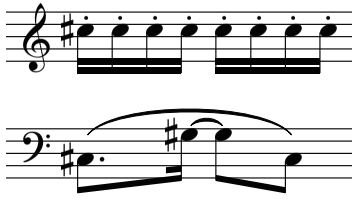


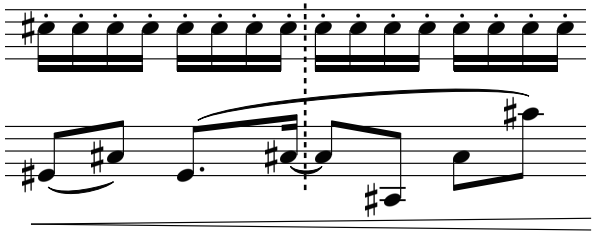
R 2 st. [4 b.]

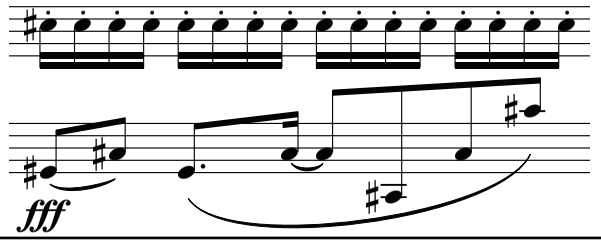


static 4” [4 b.]

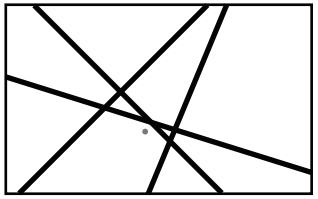
Pno.





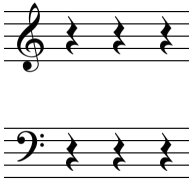


Vln.



[ALL PL.] rest 3 b.

Pno.



6th walk: 1 beat per step