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Photophonics

A collection of compositions for a variety of ensembles and musical media, based on a selection of African landscape photographs by Merryl Riley.

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All photographs used by permission from Riley Photographic.

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Introduction.

"Every artist is a transformer; all artistic creation is but a transmutation."
Jean d'Udine [1]

This portfolio comprises a collection of musical compositions which are conceptually bound together, each being related to a selected photograph by Merryl Riley[2]. In the process of creating the portfolio, I have considered some different methods that could be used to translate meaning from a visual artistic medium to a musical composition, and I have made a brief investigation into some of the ways that parallels have occurred - or have been constructed - between the arts in the history of Western music. Although the compositions in this portfolio are based on photographic art, I have expanded the field of comparison to include paintings in order to gain a broader perspective.

I think it is a natural phenomenon of human consciousness to want to express itself. For whatever reason: to make a statement, share experience or simply to create art for its own sake an artist will spontaneously express him/herself in whatever medium gives satisfaction. It is a way of imprinting one's 'self' on the world. The concept behind the portfolio was sparked by seeing one of Riley's photographs (Appendix 1) and responding to certain elements of content and form. I was drawn to the idea of re-expressing these in music.

A 'unified theory' of art.

"Les beaux arts réduit à un même principe."
Abbé Batteux 1746 [3]

Predating scientists' search in the twentieth century for a 'theory of everything' which would explain all physical phenomena, was the preoccupation of artists in the nineteenth century with the idea of finding a unifying principle that underlay and connected all the arts. Painters and composers looked to each others' creations for inspiration, and attempted to connect visual and musical components. There are numerous examples in history. In 1874[4] Mussorsgsky composed *Pictures at an Exhibition* to immortalise his friend Victor Hartmann's drawings[5]. Scriabin synthesised a light show with his composition *Prometheus* (1910), using a colour organ to project the colours that he associated with the music. Rachmaninov's tone poem *Isle of the Dead* (1908) captured the sombre mood and dark

1 Langer *Philosophy in a New Key* p226
2 Alan and Merryl Riley have been photographers for about 12 years and are primarily nature and landscape photographers. They reside in KwaZulu-Natal and present photographic workshops for those wishing to pursue photography as a creative outlet.
3 Kivy *Philosophies of Arts* p4
4 Mussorgsky's piano score was only published in 1886. The work is now more widely known in Ravel's orchestration of 1922.
5 Some music references are scores, some recordings. In the reference section, these are divided into 'scores' and 'discography'. All musical works referenced will be in one of these two sections.

colours of Böcklin's painting of the same name. Wagner pioneered the concept of *Gesamtkunstwerk*, a fusion of the arts that influenced the work of many composers extending into the twentieth century. Artist and musician Kandinsky's paintings influenced Schoenberg's progression of styles from expressionism to atonality, and a performance of Schoenberg's *Second String Quartet* served as the inspiration for Kandinsky's painting *Impression III (Concert)*[6]. Styles in art and music paralleled each other – whether by intention or inference - in 'movements' such as classicism, impressionism, expressionism and symbolism. In New Age music, ambient atmospheric electronic music is often inspired by, or at least linked to landscape images; for example Thom Brennan's *Silver* and Steve Roach's *Australia: Sound of the Earth*. The fact that I have found fewer examples in more recent music is not the result of a reduced interest in the reinterpretation of media, but rather that the focus has shifted to fusing music with the moving image, which is outside the scope of this study.

There are fundamental differences inherent in visual art and music that make it difficult to sustain a solid concept of commonality. These problems facing a unified theory can be broken down into temporal, perceptional and interpretive.

Temporal problems.

> *"A painting, regardless of implicit dynamics, still exists passively fixed in time."*
> *John Whitney*[7]

Visual art - a photograph or a painting – is concrete; it can exist in space without reference to time. Once created, it is always the same, and can be observed repeatedly and for any duration of time. In contrast, when abstracted from its source of sound, music is completely non-physical. It exists only in performance, and no two (real time) presentations of any one piece of music can ever be the same. In painting, space is the canvas, in music, time is the canvas. Whitney would go a step further and say "Music doesn't just pass time. Music shapes time."[8]

I think that in many cases the composer experiences more freedom in translating the visual image into music than the artist does in attempting to capture music in some static visual form. A series of etchings by Elizabeth Harington based on Bach's compositions from *The Well Tempered Clavier* re-expresses the music in abstract and geometrical shapes[9]. While the explanation given in the catalogue can explain the translations to some extent, and in at least one etching, the appearance of quasi musical symbols forces the connection, I had the feeling that the images were rather like a display of stuffed animals in a museum; beautiful in their own context but stripped of the life and movement of the original musical ideas.

6 Oteri *Music and Art beneath the surface*
7 *Digital Harmony* p37
8 *Digital Harmony* p16
9 Harington, Elizabeth. 2005. *Bach in Art : Etchings on Johann Sebastian Bach's The Well Tempered Clavier.* Catalogue compiled by University Museum, University of Stellenbosch.

Perceptional problems.

"we...have less difficulty in perceiving movement and change as independent realities if we appeal to the sense of hearing."
Henri Bergson[10]

Differences in the nature of sensory perception result in visual and aural data being processed cognitively in dissimilar ways. With visual art the viewer instantly sees the overall big picture, and can then take time to drill down to observe and consider detail. Music (like words) is linear. The listener has to absorb and remember the details in order to construct an understanding of the big picture, in the process creating an expectation of what is still to come. This 'bottom up' technique requires more active participation on the part of the listener, although of course once the same piece of music has been heard often enough, the whole picture can be acquired by virtue of memory. Music is in fact closer to the nature of consciousness itself, making sense of the world by a process of integrating perception, memory and imagination. As Bergson maintained, the continuum of time is reality. Zeno's discrete frozen time frames are the illusion[11].

There also exists a hierarchy of the senses. Sight is direct and overriding (leading to maxims such as "seeing is believing"). Hearing is not direction-specific. It comes from all around and is therefore more pervasive, but the identification process is less precise. Identification of a sound is often verified by locating its source visually. Vision rules, and seeing a thing changes the way that one hears it. The performances of several of the compositions in this portfolio were accompanied by the projection of images or series of images, which 'programmed' the audience to interpret the music in a specific way.

Interpretive problems.

"The information extracted from an image can be quite independent of the intention of its maker."
E. H. Gombrich[12]

The problem of interpretation is that art has no standard of 'meaning' and without a common system of syntax it is incapable of intrinsic representation. Interpretation is subject to the cultural expectations of the viewer and the context he/she brings, and meaning is constructed subjectively by each individual recipient.

Giving no indication of the intended meaning, I played the recording of the composition *Feng Shui* to a group of people of differing musical backgrounds in order to analyse the responses and compare the perceptions of the listeners with the intention of the composer. The listeners' interpretations varied widely, although none was completely inappropriate, and there were some common feelings of perceived motion: indecision, resolve and direction. In all cases, the meaning was a subjective interpretation of the listener. Edward

10 *The Creative Mind* p147
11 "The great Greek philosopher Zeno of Elea (born sometime between 495 and 480 B.C.) proposed four paradoxes in an effort to challenge the accepted notions of space and time" - http://mathforum.org
12 *The Visual Image*. Scientific American, 227.

Cone states ".. the content of instrumental music is revealed to each listener by the relation between the music and the personal context he brings to it."[13]

Whichever way the concepts and ideas are translated, they are so subjective as to be discernible only by those informed by means of programme notes (words) of the connection, or at least by recognition of some common cultural symbols. Any intellectual idea is transmitted through the distorting prism of the artist's imagination, and coloured by the perception of the recipient.

Points of correlation.

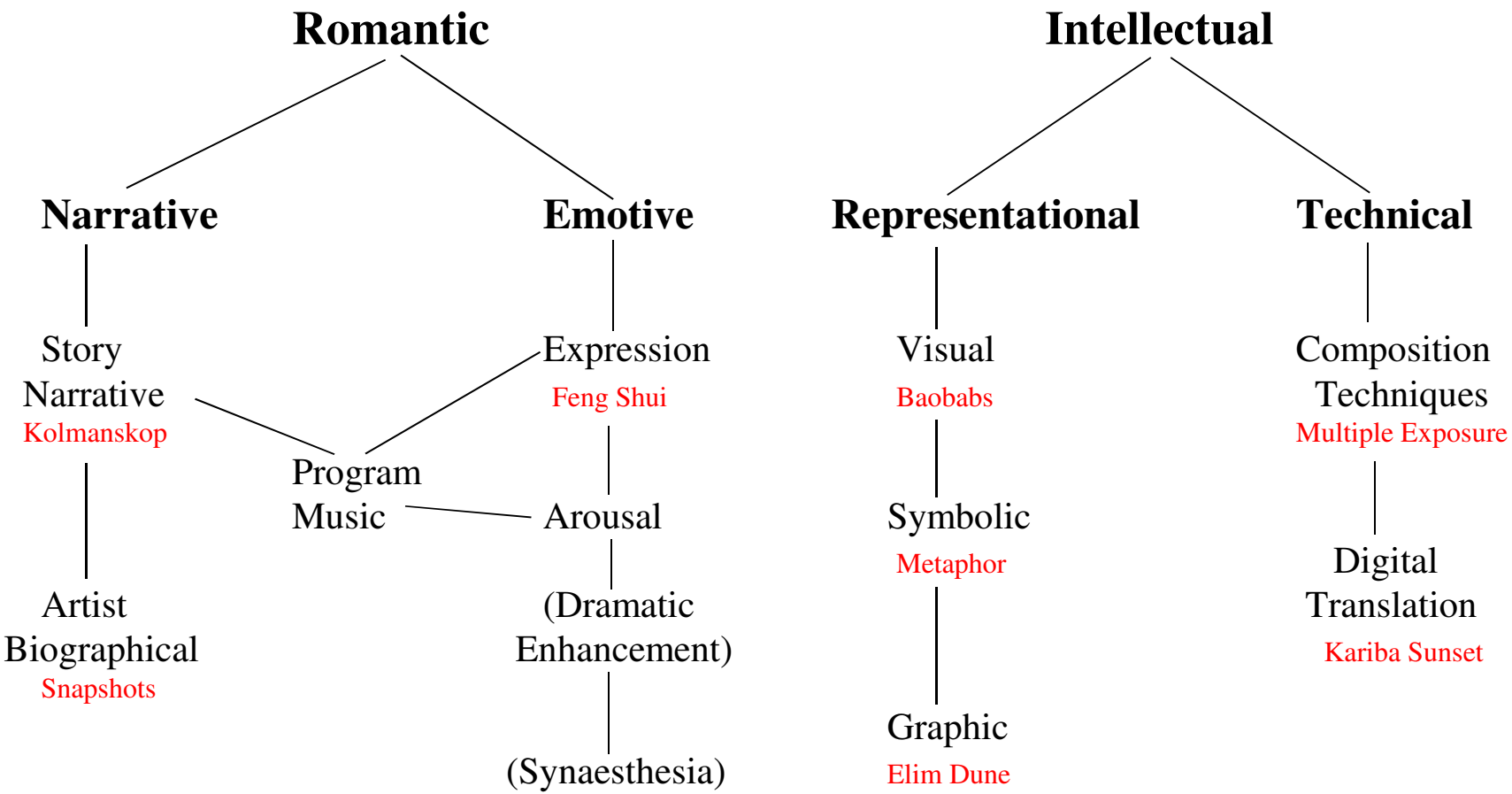
"Ultimately, all the arts spring from the same basic sources and kinship is undeniable."
Dore Ashton[14]

In spite of these basic differences, there are also many shared features that can be used as points of conceptual correlation. Every work of art is multi-faceted; there are many aspects to its creation – the selection of the subject, the way the subject is presented, the construction process, the medium used, and the intended function of the work. In my selection of photographs Merryl Riley noted that I had chosen ones with aspects of image composition that have parallels in music composition, such as balance, proportion and repetition. Kinship is strengthened by communal terms used to describe works, particularly spatial tags used in music such as high and low pitch, thin and thick sound, or colour references like dark and bright sounds. The reverse situation occurs in the composition of moving pictures which take on musical terms of reference.

The chart on the following page presents a breakdown of some of the elements that could be used to link a visual composition with a musical parallel. Each of the portfolio's compositions uses one of the correlation points as its core concept.

13 *The Composer's Voice* p171
14 Ashton *The Unknown Shore: A View of Contemporary Art* pp200-201

Points of correlation between visual art and music



The portfolio in context.

"The way things beheld by the eye get translated
into sound is in the ear of the composer."
Frank Oteri[15]

The major divisions on the chart are headed 'Romantic' and 'Intellectual'. These provide a primary breakdown into two expectations of music; the one is to be emotionally moved, the other to be intellectually interested. The two are not mutually exclusive. Like the T'ai Chi symbol, there is usually an element of one in the other, and a good musical work will most likely satisfy both criteria. However, they do serve the purpose of separating and categorising the concepts.

Romantic Category.

I have used the term 'Romantic' in the sense of the nineteenth century movement in Western classical music, which saw the aim of music as an expression of the artist, and the music itself as a vehicle of communication. Communication can be descriptive - conveying some kind of information (often also fulfilling some emotive agenda), or emotive - expressing feelings. Accordingly, I have used these as a further breakdown into the categories of 'Narrative' and 'Emotive'.

Narrative.

While a picture may arguably paint a thousand words, it is generally accepted that, without the guidance of programme notes, or a formal syntax of prescribed meaning, music is incapable of conveying information. Musical symbols such as Wagner's 'leitmotif' and Berlioz' 'idée fixe' were artificial constructs, only able to convey meaning within a work by repetition in association with some recurring event. However, many of the composers of the late nineteenth century attempted to tell stories with music. Tone poems of the period included Strauss' *Don Quixote* and Berlioz' *Symphonie Fantastique.* Richard Strauss' *Till Eulenspiegels lustige Streiche* follows the antics of the folklore character as he performs his pranks. The listener, primed by the word-based information of the programme notes, can follow the story in his/her imagination while the music accompanies the action like a movie score.

In the accompanying chart, I have shown a connection between programme music and story narrative. I differentiated between them because I feel that programme music - such as Smetana's *Moldau* or Rachmaninov's *Isle of the Dead* - has a greater descriptive element, while narrative music is more representative of some form of human activity and accompanies or underscores action. I have also linked programme music to the emotive sub-categories of expression and arousal, as the scenes painted by the music nearly always have an emotive element to enhance the drama.

There are examples of narrative music in which the composer has extracted a story from a painting and re-expressed it in a musical composition. One of the best known of these is Mussorgsky's *Pictures at an Exhibition*. Some of the piano sketches are descriptive, for example the rich Jew and

15 *Music and Art Beneath the Surface*

poor Jew character portraits, while others portray action implied in the picture, such as the children playing in the park, the marketplace and the troubadour singing outside the castle. In reality, the main value of these connections rests in the inspiration that the pictures provide, and in the constraints placed on the development of the music.

Story Narrative.
I have composed two pieces in the narrative category. The first of these is based on a collection of photographs of a ghost town in the region of Africa now known as Namibia [*Kolmanskop* : analysis page 30]. Kolmanskop was a mining town established in the early twentieth century after the discovery of diamonds in the surrounding desert. The town grew and quickly became one of the wealthiest in Africa, with a population of about three hundred German settlers and eight hundred local mine workers. There was a hospital, casino, theatre, ice factory and luxurious residences. But the prosperity was short-lived. By 1930 the local diamond deposits were depleted and the inhabitants started to move away, the last few finally leaving in 1956. The desert reclaimed the space, covering over the evidence of human activity and filling buildings with sand. Although work has been done to restore some of the buildings as a tourist attraction, the desolation of the ruins captured in the photographs prompted me to create a piece of music which would give the ghosts a voice. I have created a collage of some of the sounds I imagine would have been heard when the town was alive, and then subjected the recording to deterioration to tell the story of its subsequent reclamation by the desert.

Artist Biographical.
The other narrative composition is one that is based on the life of the artist. The music constitutes a biographical narrative, and is about the context rather than content of the art. Examples of works in this category include Hindemith's opera *Mathis de Maler*, concerning the life and times of the painter Matthias Grünewald, and Don McLean's *Vincent*, which is about Vincent van Gogh. In both these examples it is not only the music that tells the story. They rely respectively on dramatic device and words to fully convey the information. My composition in this category also relies to some extent on words. I have made voice recordings of people discussing the photographs, capturing their responses in different languages. I have then extracted some diverse elements of the speech patterns and used them to inform a series of solo piano sketches [*Snapshots* : analysis page 15].

Emotive.

There is an extensive body of literature that examines the question of whether music can be used to communicate emotion or emotive meaning from composer to listener, none of which appears to be able to draw a completely satisfactory general conclusion. Music can be said to produce an emotive response, or trigger the idea of an emotion in a listener, but in my experience there are no two people who will have the same response to any one piece of music. In fact a single person will most likely have different responses at different times to the same piece. Music appeals to the subconscious in an indivisible emotional and intellectual process that involves experiential associations, cultural norms and personal expectations. Many people are often not fully aware of exactly why they like a certain piece of music. (It is always easier to explain why a piece of music is not liked, perhaps because it involves a more intellectual cognitive process.) In spite of this difficulty in quantifying its emotive nature, music is still perceived as being a vehicle for personal expression. Even though words may be able to describe more accurately the precise nature of a feeling, music has the added advantage of letting the listener share the experience and the process of development of that emotion in real time. Music can enhance the process. On analysing a

hypothesis of Susan Langer, Budd states “The arts educate feeling by developing its scope and quality.”[16]

I have shown four separate sub-categories on the chart that deal with emotive communication in music.

Expression.
The first, expression[17], is the intention of the composer to convey specific moods or feelings. This often equates music with scenes from nature, but has also been used to re-express a mood conveyed by a painting. Examples would include Rachmaninov's *Isle of the Dead* and Mussorgsky's interpretation of Hartmann's sketch of the Paris catacombs.

Arousal.
The second, arousal[18], is the intention of the composer to instill a certain mood or feeling in the listener. All functional music falls into this category, for example, music for relaxation or meditation is designed with no harmonic tension and minimal movement. Dance music appeals to a natural proclivity for physical movement by providing a beat and instilling a sense of energy and excitement with fast tempo or strong dynamics. Religious music is designed to inspire. Elevator music is, I suspect, designed to anaesthetise the senses. Visual art with equivalent intentions would involve manipulating colour or room décor to have particular associations in order to generate the desired atmosphere or, in the case of religious art, to inform and inspire. Not all functional music qualifies as art, but the fact that it is functional does not preclude it from being so.

Dramatic enhancement.
The third category, dramatic enhancement, is really an extension of the second. The music is designed to generate specific emotions, but in a synthesis of visual and audio stimuli. Although the visual action is paramount and the function of the music is supportive, the music highlights underlying facets of meaning in the scene so that the whole is more than the sum of the parts. All movie music would fall into this category. I have included it in the chart because it is related to the subject of interaction between visual imagery and music. However, the action can be experienced visually and is not a function of musical imagination and, because enhancement does not constitute a translation, I have not used this category for the portfolio.

Synaesthesia.
Any investigation into relationships between the arts is going to encounter the physiological phenomenon of synaesthesia, the confusion or mixing of the senses. The most prevalent manifestation is between hearing and colour perception, but it can apply to any of the senses[19]. 'Colour hearing' has been widely documented and “composers as unsimilar as Alexandr [sic] Scriabin, Morton Feldman and Michael Torke all hear color in specific tone combinations”[20]. The process however is of such a subjective nature that no two experiences seem alike. Scriabin assigned colours to specific tones, which he translated into a colour scale using Rimington's colour organ. Messiaen felt that certain colours belonged with different modes, but seldom explained it in a specific way. Goethe's colour triangle constituted one of the most precise theories that related colour combinations to emotional response, and fueled the interest in the synaesthetic connection from the eighteenth century onwards. The theories that have been put forward rarely reach any

16 *Music and the Emotions* p113
17 Laird Addis in *Of mind and Music* uses the term 'composer causal'
18 Addis : 'listener causal'
19 Richard Cytowic's *The Man who tasted Shapes* presents an in depth study.
20 Oteri *Music and Art beneath the surface*

consensus about how the colour is perceived, whether it is related to pitch, harmony or orchestral texture. I have interviewed two local musicians who 'hear' colours[21]. One associated colour more with instrumental arrangement or music genre. The other equated specific pitches with colour – leading to a dislike of jazz because the mixing of colours results in everything being a muddy brown – but also related colour to key. I have not composed for this category either, as not being synaesthetic myself, any media translation would have to be second hand.

These sub-categories are not mutually exclusive. The sound track of a film can be played without the movie, and often a composition is intended to engender the same emotion that the composer felt when writing. The music that I composed for the emotive category falls in the first sub-group because it is composer causal [*Feng Shui* **:** analysis page 18]. The composition is based on the mood of a photograph [Appendix 7] which, for me, creates a calm meditative atmosphere, with a suggestion of the force and energy contained in the falling water.

Intellectual Category.

The 'Intellectual' category is concerned with the exploration of ideas. I have divided the ideas into concepts derived from the content of the work (representational) and those derived from its method of construction (technical).

Audience appreciation of works of this nature is dependent on the interest of the recipient and the extent of his/her knowledge of the language of the genre. Understanding in many cases rests on some foreknowledge of the idea being presented, indicated in the form of a catalogue in the case of visual art, or programme notes in the case of music. The music (or image) has to add to the idea in some way, otherwise it could simply be conveyed in words. The core concept provides the spark that initiates the piece and the glue that holds it together, but the music must be able to justify its own existence in terms of sound, outside of the abstraction of the inspiration.

Representational.

I have divided this section into three methods of representation. There is an associated composition for each method.

Visual.
Plato's theory of 'Forms' embodies the metaphysical and immutable idea of an object as a subsistent reality that is more than just what is perceived. The tree that we see is itself a representation of the fundamental idea of a tree. Visual representation takes the content of the picture as an idealised Platonic Form, and translates it into a musical equivalent. An example might be found in Mussorgsky's music for the *Gate of Kiev*. This elevates Hartmann's sketch of the proposed triumphal arch intended to honour the czar from a simple architectural drawing into a full-blown concept of the underlying idea of the edifice.

My composition for this category is based on a photograph of a stand of baobab trees in Namibia, unusual in that they are growing near water. They have become known as Baines' Baobabs, having been painted by Thomas Baines in 1882. The music in *Baobabs* [analysis page 19] constitutes a literal description of the three enormous trees and their reflection in the water. The different visual

21 Composer Étienne van Rensburg and rock musician and luthier Kerry Callaghan.

aspects of the photograph have been given equivalents in the music. The three trees are represented by three instruments of different sizes, all featuring wood in their construction. The reflection of the trees in the water is represented by a duplicate trio of instruments, which are prepared in order to slightly alter their sound and underline the fact that the reflection is not the real thing. The music focuses on the mirror image quality of the photograph, presenting themes and their inversions, and extending the inversion element to the overall form of the work.

Symbolic.
A symbol is "a thing that stands for or represents another, usually something concrete or material representing an idea or an emotion."[22] Art itself has been considered a symbolic system. Susan Langer asserts that music constitutes "a presentational symbol of the morphology of feeling."[23] However, usually a symbol is only used as a signpost to direct attention to the concept it symbolises, a means to an end, whereas art is also – or even primarily – an end in itself. It may be considered a symbol, but it is in fact more significant than what it symbolises.

Symbols have been extensively used within art to represent ideas. Some of these have become part of a cultural system of symbols, such as the colour red representing anger or, in religious art, the butterfly representing resurrection. The surrealist movement in art used objects out of context to make their point, for example many paintings from Salvador Dali's surrealist period.[24] In music, such symbols are harder to define. Artifices such as *leitmotif* and *idée fixe*, as mentioned earlier, are usually set up within a single work as an internal point of reference. But whole pieces of music can become symbolic by association. For instance, a time period in a film can be established with a well known piece of music from the era, or a geographical location highlighted with a national anthem.

The composition *Metaphor* [analysis page 20] constitutes a symbolic interpretation of the photograph titled *Deadpan, Sossussvlei, Namibia* [Appendix 3]. Although the image was not designed to be a metaphor, I have given it my own meaning, which I have then 'described' with the music. The symbolism used here is not part of a convention or a system but is determined entirely by my intention. I have interpreted the scene as a metaphor for the singularity of the occurrence of life in an essentially hostile environment and its ability to survive against all odds. A symbol needs to share elements with that which it symbolises, and there are several points of comparison which triggered the conception of the metaphor.

- The perspective of the photograph enhances the vastness and emptiness of this expanse of desert, evoking a comparison with the enormity of space-time in our universe.
- The solitary tree, slightly off-centre in the picture, symbolizes the Earth and human existence. Its presence shows that the generation of life was possible in this unlikely place and, although it is now dead or in the process of dying, conditions must once have been ideal for life to flourish. Similarly, in our particular location in the universe, elements came together that made the creation of the solar system, planets and life possible, a singularity from which consciousness evolved. As with the tree in the desert, conditions in the solar system will not always remain supportive of life as we know it.
- The tree as a focal point is analogous to the human race, with its self-absorbed focus on its own survival. Like the tree, we will hold on to our existence as long as possible, until conditions are so hostile that survival is no longer an option. Desert or supernova – only the scales of time and space differ.

22 Chambers Concise Dictionary 2004.
23 Budd *Music and the Emotions* p115
24 Examples on website http://www.virtualdali.com/

- Contemplation of the nature of the metaphor led to the concept of cosmic recycling, which is examined in Part IV. Life established itself and flourished while conditions were ideal, but is in the process of facing extinction as a natural and inevitable result of universal entropy. In the universe, matter is a form of energy, and energy cannot be created or destroyed, only transformed. So what we perceive as birth and death – whether of a life form, a star system or a universe - is merely a part of the transformation process.

The composition utilises music quotes such as plainsong, Wiccan chant[25], quotes from classical and popular music and references to movies about the universe. These also serve as symbols that consolidate the connection between the music and the concept.

Graphic.
The visual image and a piece of music can be most directly connected where the composer, in an attempt to overcome the limitations of conventional notation, has used the image itself as the score. The spatial elements of the image are designed to be interpreted by the player(s) or conductor. Interpretations would differ from performance to performance, but some norms would be expected. For example, the vertical dimension might represent pitch, straight lines would equate to long continuous notes, density could signify dynamics. Composers who have created graphic scores include Cornelius Cardew, Anestis Logothetis and Earle Brown. The types of images used vary from quasi-conventional notation symbols to completely abstract shapes. Earle Brown's *December 1952* was a groundbreaking composition that consists of horizontal and vertical lines of varying widths. Cardew's *Treatise* uses a combination of numbers, musical symbols and geometric shapes[26] in a score of 193 pages. Those scores which use more conventional musical symbols invite a deeper cognitive understanding of the images, as pitch and dynamics markings are given their traditional interpretation.

The level of control imposed by composer varies and is generally done by written instruction. Cardew's *Treatise* leaves the interpretation, and even the instrumentation, entirely up to the performer, whereas the score for Logothetis' *Labyrynthos* contains instructions for the players on how to read the graphics as follows:

> The score consists of two sections. The inner section is self contained and is intended for soloist or soloists. The player(s) may begin and end anywhere within the section. The outer section for orchestra has two breaks which may be used either as a beginning or an end. When the system is repeated, long rests are to be inserted at those points, during which the solo section continues. The bold-face "scissor-like walls" of the labyrinth denote the rise and fall of the dynamic level.

Graphic scores, particularly the abstract ones, are essentially two dimensional, although the degree of density for example in *Labyrinthos* could suggest a third dimension, and Earle Brown in his notes for *December 1952* "suggests that one consider this 2D space as 3D and imagine moving through it."[27] In looking at a photograph, the third dimension is reconstructed involuntarily. So in writing the music, I have allowed the interpretation to take cognisance of the third spatial dimension, and the fourth dimension of time.

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25 Wicca is a neopagan religion loosely associated with early earth-goddess (Gaia) worship. Chants invoke a pantheistic god/goddess and nature's elements.

26 There is an interesting analysis of interpretational possibilities of one page of Cornelius Cardew's *Treatise* at http://www.blockmuseum.northwestern.edu/picturesofmusic/pages/anim.html

27 Wikipedia

Elim Dune [analysis page 24] for saxophone quartet uses a photograph of a Namibian desert landscape scene as the score. Tuning the picture sideways or upside down would have had the effect of reducing the recognition of the multi-dimensional aspect of the image, but I decided to allow the players to make use of the extra perceived dimensions as part of the interpretation. I have specified two performance options. One allows the players the freedom to interpret the visual image in their own way, only specifying the division of the score into sections for each instrument on the horizontal axis, and into a relative time scale on the vertical axis. I have made my own interpretation of the image according to these rules, and created a conventional score that constitutes the other option. I initially tried a third option, which was a combination of player interpretation and my own suggestions, but having tested this at the Stockholm Saxophone Quartet workshops in Grahamstown, I decided that this option lacked the benefit of both the others – on one hand the freedom of the players to exercise their own imagination, and on the other the cohesion that I expected from my own ideas – so I abandoned the idea.

Technical.

I have composed two pieces for this category. One parallels the composition technique of the photograph, and the other explores the possibilities of the digital equivalence of sight and sound.

Composition techniques.

In many instances, the connection between the visual image and music is evidenced in the similarities in their method of construction. The precision and balance of form of classical paintings is matched by the forms of classical period music. The impressionists' preoccupation with the effect of light manifests in composers' focus on instrumental tone colour. Stephen Sondheim's musical *Sunday in the Park with George* recreates the shifting quality and pointillist technique of the painting *Sunday Afternoon on the Island of La Grande Jatte* by Georges Seurat. Frank Oteri states "the music actually goes quite far in imitating Seurat's careful dots of individual colours which blend into an image at a distance by creating melodies from a series of ostinatos and tiny dot-like motives"[28] .

My composition in this category is *Multiple Exposure* [analysis page 26], originally composed for four marimbas, and related in its method of construction to the photograph titled *Watsonia pillansii* abstract [Appendix 5]. The photographer decided to capture the subject – a field of flowers - in several exposures, each shifted up a fraction, in order to create a completely different composite image. The music is constructed using a conceptually similar technique.

Digital translation.

Although fortunate to have been born late enough to experience the development of electronic music, I am still rooted in the past to the extent where I prioritise the integration of the human element in the creation of organised sound - the physical movement that creates the sound waves rather than the minute vibrations of a speaker cone. Two of the ways that electronic music has augmented the musical vocabulary are in the reduction (and I do not say removal for a reason) of the subjectivity of the composer, and the expansion to almost limitless proportions of the possibilities that exist for sound creation.

28 *Music and Art Beneath the Surface*

Subjectivity.

Composition is a subjective process. It is the intention of the composer that turns sounds into music, and makes them more than just noise. In a reaction to the excess of personal expression in compositions of the romantic period, composers of the twentieth century tried to find a way of removing the subjective element. In the words of Wim Mertens, "... the composer strives for impersonality and the removal of subjectivity from music."[29] The introduction of external elements such as chance (John Cage) or mechanical processes (Steve Reich) can reduce but never entirely eliminate the subjective element involved. Cage expressed a purpose "to free sound of all psychic intentionality"[30]. Mertens maintained that genuine objectivity "requires the negation of the composing subject itself."[31] In my view this level of objectivity would remove the composition's reason for existence.

Sound potential.

The discovery and rapid development of digital data storage and manipulation in the twentieth century opened the way for a new common element between visual and audio media. This was preceded and predicted by experimentation with the possibilities offered by analogue recording devices. To composers like Edgard Varèse, with visions of sound at the time beyond their means, it must have seemed a slow process but in retrospect it happened over a short period of time. Varèse's statement "I am handicapped by a lack of adequate electrical instruments for which I can conceive my music"[32] shows that he foresaw the possibilities.

> And there are the advantages I anticipate from such a machine: liberation from the arbitrary paralyzing tempered system; the possibility of obtaining any number of cycles or, if still desired, subdivisions of the octave, and consequently the formation of any desired scale; unsuspected range in low and high registers; new harmonic splendors obtainable from the use of subharmonic combinations now impossible; the possibility of obtaining any differential of timbre, of sound-combinations, and new dynamics far beyond the present human-powered orchestra; a sense of sound projection in space by the emission of sound in any part or in many parts of the hall as may be required by the score; cross rhythms unrelated to each other, treated simultaneously, or to use the old word, "contrapuntally," since the machine would be able to beat any number of desired notes, any subdivision of them, omission or fraction of them- all these in a given unit of measure of time which is humanly impossible to attain.[33]

Although I sometimes find myself reluctant to get involved and learn new techniques, I can quickly find myself immersed in the possibilities that it can offer. Goethe stated, "In der Beschränkung zeigt sich der Meister"[34] but I suspect that the real genius is shown in making exactly the right selection out of a myriad of choices.

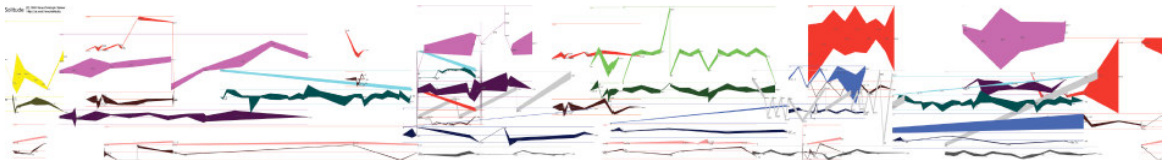
Computers as composers.

Having a computer generate the sounds and form of a composition is about as close as one can get to objective composing. Even then, it is not completely objective because the human element is still involved in choosing the parameters and in most cases judging and filtering the outcome. But it

29 *American Minimal Music* p101
30 *American Minimal Music* p 106
31 Ibid.
32 Russcol *The Liberation of Sound* p55
33 Russcol *The Liberation of Sound* p53
34 Translation: "Only when given limitations does the master really show himself."

does introduce an aspect of an external control over the composition process. The following score was created by Hans-Christoph Steiner using Pd graphical data structure software, and the score itself controls all aspects of the sounds generated[35].

> In the score, time flows from left to right. Each color represents a sample. Each sample controller has two arrays: the brighter, bigger one on top controls sample playback; and a smaller darker one at the bottom controls amp and pan. The lowest point of the sample array is the beginning of the sample, the highest is the end, and the height of the array is how much and what part of the sample to play starting at that point in time. There are between 50 and 100 voice polyphony for the samples [sic]. The height of the amp/pan array is the amp, and the y location is the pan.



My composition in the digital category, *Kariba Sunset* [analysis page 28], has been created using the software MetaSynth. This converts the pixels that make up the image of the photograph into digital information which it then reinterprets as audio data. The subjective element has remained in my selection of input samples, application of my aesthetic judgement to the output, and my construction of the form in which I have placed the final selections.

35 http://at.or.at/hans/solitude/

Analyses of works.

Snapshots
for piano and recorded speech

Score : Page 37 CD audio track 1

Snapshots evolved out of an interest in the musical parameters of speech; how much the non-syntactical portion of it could convey meaning, and how the musical elements differ from language to language. I made speech recordings in thirteen different languages[36] of responses to photographs selected by the participants, the idea being to construct a musical portrait of the artist through the eyes of those viewing the art. From each recording I have extracted one or more characterising features, for example, rhythm, pitch, tempo and dynamics, and composed a short (one minute) solo piano sketch based on these components. Responses varied from the straightforwardly descriptive to the recollection of memories or emotive introspection evoked by the images. I have incorporated the resulting vocal inflections as pointers to the emotional and intellectual responses of the participants. Four of the speakers made more than one language recording. I found that a large number of elements were common to the speaker rather than the language itself and, in view of the similarities, chose the more unusual language, while trying at the same time to capture some of the elements of the second language.

One of the difficulties in translating speech into music is that in the need for speed and clarity, speech has evened out a lot of the variation in its musical elements. Rhythms of speech do not lend themselves to standard divisive musical notation and pitches are not specific. However, on listening to the recordings, a pitch range could generally be ascertained. In some cases a predominating approximate pitch, together with the notes around it, suggested an implied key. I used these features as well as the timing of phrases and the overall tempos in composing the piano sketches. In the pursuit of musical light and shade, I have tried to create as much contrast as possible between the sketches, so have used a large degree of poetic licence in my translations.

The level of integration between live music and the pre-recorded or electronic component can vary widely. In some compositions, such as Jürgen Bräuninger's *DDD,* the electronic factor is inextricable from the live part of the performance. In others, for example Edgard Varèse's 1954 composition *Déserts*, the instructions in the score read “The instruments and the interpolations of organized sound are never heard simultaneously, but must follow each other without a break.”[37] I have opted for the alternating arrangement. It has the advantage of greater ease of performance, and the work can also be performed without the recorded sections as a series of solo piano pieces.

Speech component processing.
Track 1 – introducing Afrikaans.
Layered mix of short excerpts of all thirteen languages, placed in a wide stereo perspective. The languages fade out to allow the Afrikaans phrases to be heard.
Track 2 – introducing Mandarin.
Fewer languages in more continuous sound clips, with the Mandarin and Taiwanese languages emerging from the mix.

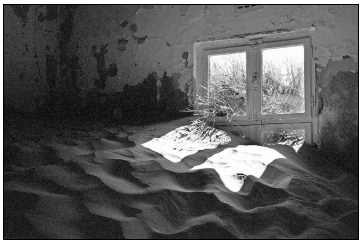
36 Selection of languages was random and depended on accessibility of speakers.
37 Edgar Varèse *Déserts* for wind, percussion and tape. 1974. New York : Franco Colombo Inc.

Track 3 – introducing Zulu.
Layered mix of Zulu and Xhosa phrases, overlaid by the extractions of the characteristic clicks of the languages.
Track 4 – introducing German.
Layered clips of German demonstrating the rising pitch at the end of phrases.
Track 5 - introducing Kechua.
Long excerpts of Kechua and Spanish, with rhythmic interjections of the hard consonants “k” and “ch” extracted from the speech.
Track 6 - introducing English.
Layered phrases describing the caricatures that feature in the music. This track is a little longer to allow time to prepare the piano.
Track 7 - introducing Italian.
Mix of the “umm” hesitations of some of the speakers, merging into continuous Italian phrases using heavy reverb at the stereo extremes. This track is also a little longer to allow time to 'unprepare' the piano.
Track 8 -introducing Changane.
Layered phrases of Changane and Portuguese accenting the overall deep pitch and smooth flow of the speech.
Track 9 - introducing French.
Layered French phrases contrasting happy and sad emotive expression, and featuring mention of the frogs that are caricatured in the music.

Piano sketches.
Afrikaans.
The phrasing for the Afrikaans section comes in short staccato bursts as the speaker was leafing through the photographs and commenting briefly on each one. The piano picks up the staccato nature of the phrasing in the right hand, and makes it more forceful by adding cluster chords in the left hand. The atonal pitch organisation adds to the random nature of the atmosphere..

Mandarin.

I used the string glissandi played inside the piano to convey the smoothness of a language which has soft consonants and emphasises vowel sounds. The hammering on the strings with a soft mallet was an interesting variation. I omitted barlines to enhance the feel of continuous flow. The pitch of the notes in the right hand reflects the high pitch of the female voice, while the pentatonic scale and harmonies in fifths underscore what is probably a common western expectation of oriental music. A cliché perhaps, but one that worked. The speaker was a photography student who was concentrating on the technical structure of the photograph, so there is minimal emotive content.

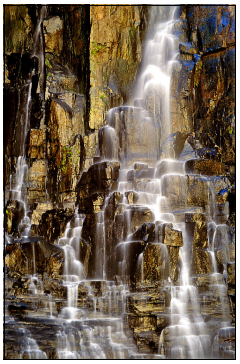
Zulu.

This is probably the 'loosest' translation as I took the overall ambience and flow of the language and translated it into an ostinato pattern with contrasting rhythms. African languages, and Zulu in particular, are well suited to expression of feeling, so I allowed the composition to be largely intuitive. The characteristic clicks of the language I translated into percussion by using (sparingly) a metal bar attached to the foot to tap on the pedal.

German.

I used the rising pitch at the end of each phrase or sentence as the core idea. Pitch is difficult to decipher precisely in speech, but the feel is of consonant fourths and fifths, so I made the piece an exercise in rising fourths and fifths. The run in fifths at the start is balanced by the faster repeat in fourths at the end. The tempo is slow but not hesitant, and the forward movement decisive.

Kechua.

Kechua is a South American language indigenous to Bolivia, and is quite distinct from both the European and African languages. It has a smooth flow with hard “ch” and “k” consonants, which I translated into percussion using the cabasa. I added a hint of a Spanish habanera rhythm because Spanish is the other language of the country. The two languages have borrowed from each other and acquired some similarity, particularly in the enunciation of a common speaker.



English.

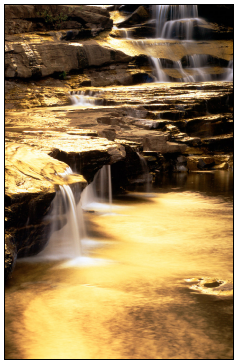
It is next to impossible to ignore the meaning of words in one's own language. Accordingly, I allowed myself to interpret the discursive element rather than just the sound of the voice. The selected photograph was of a waterfall and the speaker described the figures and faces she imagined she could see in the rock. For the waterfall, I have used descending glissandi the full length of the piano keyboard, slowly increasing in tempo and volume throughout. These are interrupted by caricatures of the images described in the rock, a penguin, Tutankhamun with a snake, a lady with long hair, an owl and a hippo. The piano is prepared with light metallic pipes laid across the strings. This provides a contrast to the standard piano sound of the other sketches.

Italian.

I found the Italian speech lightly melodic, but very even and uninflected. I based the quiet melodic composition on the rhythm of the speaker's opening phrases, using the approximate pitch centre of A♭ and keeping the structure tonal. The expectations generated by the standard tonal structure invited such parodies as the overrun on repetition, crossing of hands on runs, missing accidentals on transposition and the 'stuck record' effect.

Changane.

Changane is an indigenous language of northern Mozambique, and the speaker used it expressively and with a deep pitch. I picked up the approximate pitch centre of the voice as E, and placed the whole score in the bass clef. The piece is based on one cycle of a twelve bar blues progression, but in a modal rather than major key. The percussion fixes the constant beat in the slow time signature's elusive rhythm.

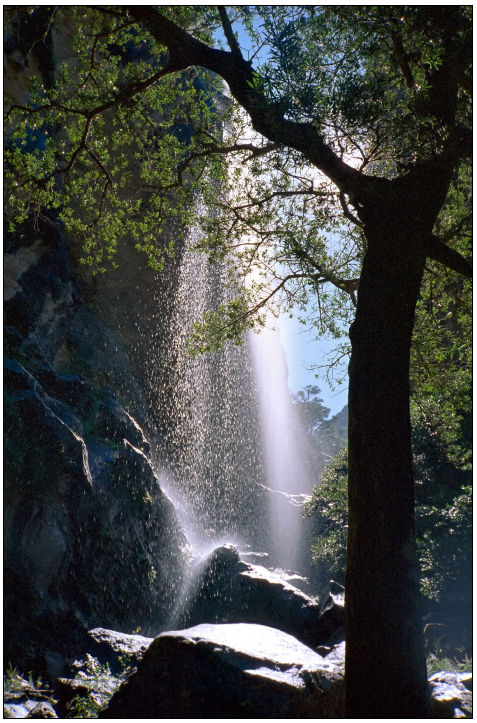


French.

I translated the emotive quality of the speaker's voice into contrasting moods of exuberant pitch changes and moments of quiet reflection as the speaker reminisced about a childhood experience. I used major and minor keys to highlight the contrast. As with the English sketch, because I understood the content, I wrote the sense of the text into the caricature of frogs hopping around on the keys, with the guiro at the end replicating the croak of a frog.

Feng Shui

for guitar and flute



Score : Page 47
CD audio track 2

Feng Shui was written over a period of time. Keeping in mind the gentle ambience of the photograph, and starting with a guitar tuning based on fifths which gives a consonant but slightly unusual effect, I allowed the guitar sounds to inform the progression of the music. Because the piece represents the category of emotive expression, I allowed it to develop intuitively. Once I added in the flute part, the composition acquired a more defined form. The up-tempo section at bar 96 really suggested itself. It added an interesting change of tempo and to me seemed relevant in its reflection of the force of nature – the energy and destructive potential of falling water – which is muted by the effect of the light and the lack of sound in viewing the original photograph. I added the rainstick later as a direct link to the sound of falling water.

The flute techniques were worked out in consultation with the player. Dynamics are used to create effect on long notes, with fluttertonguing, glissandi, off-beat rhythms and a growl (bar 114) to add interest to the up-tempo section. The flute harmonics at bar 122 return the piece to the meditative mood of the opening.

As an exercise in reverse engineering, I gave a recording of the work to the photographer and asked her to choose a photograph that she felt matched the mood of the music. Her immediate response was to try to apply moving images to match the flow of the music through time – she effectively created her own imaginary movie to accompany the music. She finally settled on the image (right) as embodying the overall ambience of the piece.

Baobabs
for double trio basso

Score : Page 56
CD audio track 3

I selected instruments for their wood construction and warm timbre, also for their large size to match the trees. I elected to represent each tree with a different sized instrument, choosing double bass, cello and viola as the three largest of the string family. This allowed potential for a wide range of pitches. Because of the nature of the photograph, *Baobabs* is an exercise in inversions. Each tree has its corresponding reflection, so the three instruments are doubled. The reflection instruments are prepared by threading paper through the strings, which adds a slight buzz to the natural timbre. The sound is changed, showing that the reflections are slightly different from the original trees. Each player experimented with types of paper, the individual instruments having different string thickness and vibration quality. In the end we used standard 80 gram typing paper for the double basses and cellos, and cellophane for the violas. The paper was threaded either near the bridge or higher up the fingerboard, depending on the individual instrument, and out of the way of the player's bow.

The ostinato patterns of descending scales and the slightly off-beat rhythm are designed to match the African habitat of the trees. The 17/8 time signature is divided into 8+9, marked with a dotted barline, to make it easier for the players to count. Everything the 'original' trio (Trio A) plays is played in inversion by the 'reflections' (Trio B). A percussive element is added by the use of col legno technique and drumming with fingers on the wood of the double basses.

A rhythmic pizzicato section marks the mid-point of the piece. The second half of the work becomes an imperfect retrograde inversion of the first by figuratively turning the score upside down. The viola parts become the double bass parts and vice versa, and all parts are in retrograde inversion. I have changed the time signature to 4/4 to highlight the imperfection of the reflection, and this also has the advantage of making the retrograde patterns easier to play. In the first half of the work, the Trio A instruments are slightly louder than Trio B, while in the second half the situation is reversed as the reflection assumes the role of the real image. The paper has the effect of muting the Trio B instruments slightly, so Trio A instruments use mutes from the mid point onwards.

The two trios should be arranged in angled rows facing each other. This will add a stereo effect to the interaction of prime and inverted patterns. Ideally the work should be performed showing a projection of the photograph. In the middle of the percussive interlude there is a pause during which the projected photograph is turned upside down (the players can turn to look at the projection before resuming). If it is not possible to show the projection, the players can at that point make a show of turning their scores upside down.

Metaphor
for mixed choir (SATB) and percussion

Score : Page 74
CD audio track 4

The singers are positioned across the stage and up the sides of the auditorium to create surround sound and give the audience a sense of being inside the music. The choir is divided into eight groups to optimise the positioning of different sound events. The division into groups also allows for easy expansion of sound in a larger venue, which can be achieved by adding voices to each group. For percussion, my initial idea was to use timpani, on which dice could be thrown to create a unique sound. In the actual performance, a timpanist was not available and, as this is a situation which could realistically occur for future performances and as the alternatives used in the actual concert worked adequately, I wrote the other options into the score. The alternatives to the timpani are noted in the score as bass drum, isgubu drum[38] or toms. Other percussion instruments required are stand cymbal, tibetan cymbal, djembe, shakers containing loose coins (for the 'money' sequence) and rainstick. Optional extra percussion includes a full drum kit and other shakers.

The throwing of the dice is designed to introduce an element of theatre into the performance, and is a reference to Einstein's famous statement “God does not play dice with the universe.” The sound of the dice being shaken and thrown becomes an integral part of the soundscape, linking the different sections together. If necessary, a microphone can be used to amplify the sound of the dice to ensure that it can be clearly heard. The dice also introduce an aleatoric element, in that the conductor uses the numbers thrown to determine the length of selected events in the score. This will make every performance unique in terms of duration and relative balance of events.

Structure.
Part I - *Whisper of Black Holes* - represents the initial generation of multiple universes. The title refers to a phrase encountered in *The Fabric of the Cosmos*[39], which equates the faint X-ray sounds emitted by the creation of black holes with whispers[40]. The shout at the beginning represents the 'big bang'. This is followed by the fluctuating whispers which are passed around the groups.

Part II - *Harmony* - is a sound-allegory for the development of our solar system. As the elements of our universe coalesced to create the conditions conducive to the evolution of life, so the music suggests increasing harmony and greater organisation of elements – the opposite of entropy. The male voices create a drone which gradually builds the harmonic series. The drone is maintained by having the members within a group breathe in turn and make the entries and exits unobtrusive. This results in constant and even sound. After a brief reference to Strauss' *Also sprach Zarathustra*, the

38 A Zulu drum with a deep sound which stands vertically and is played on both sides.
39 Brian Greene *The Fabric of the Cosmos : Space, Time, and the Texture of Reality*
40 *Science Journal* : Summer 2001 -- Vol. 18, No. 2 “Researchers Utilize Chandra for Record Observation, Hear Whisper of Black Holes” www.science.psu.edu/journal/Sum2001/Whisper-Sum01.htm
“The team has revealed new information about the X-ray glow that pervades the sky. Previously X-rays from only massive black holes—the brightest and loudest contributors—could be observed, but the team now has revealed small and very distant black holes only a few times the mass of our Sun, whose dim X-ray emissions are the equivalent of only a whisper.”

altos and, subsequently, sopranos continue to add natural harmonics in short staccato bursts of sound which come randomly from all sides. The quote at the end of Part II, taken from the movie *Close Encounters of the Third Kind*, has become an almost universal theme which refers to the notion of extra-terrestrial life.

Part III – *Singularity* - is a short representation of the time line of human consciousness as expressed in music (and speech). This idea was in a way the hardest to convey. Although in terms of actual time-scale it is much more fleeting than the creation of a star system, there are so many possible quotes that there was no way to cover a representative sample. I tried to use quotes that would be universally recognised, but am painfully aware of the fact that the sources are Eurocentric and the more modern extracts are all from western popular music. However, as the time frame of the music was, as always, limited and, as the composer, I have to work with who I am and what I know, the choice of quotes will nevertheless hopefully convey the message I intended. The quotes are almost chronological, moving from religious chants through western classical music to modern popular songs. The section starts with a drum like a heartbeat, the basis of life. The chant which follows, in a phrygian mode, recalls early woman-dominated religions, using the name of the mythological earth goddess, Gaia, and standard wiccan texts. This is superseded by male-dominated religious chant in the form of plainsong, in mixolydian mode. The text is designed to sound like Latin but not mean anything in particular. The plainsong is followed by other quotes that morph gradually from one to the next.

The use of existing (and largely copyright) material for the quotes is a form of sound piracy, although in this case I am only transgressing composer rights, not production rights, as I have not used actual recordings[41]. Incorporation of previously composed material into new pieces has always taken place, whether consciously or subconsciously, and I have credited all consciously borrowed material as follows:

- *Also sprach Zarathustra* (Richard Strauss), used in the 1968 movie *2001: A Space Odyssey*
- The five note theme from the 1977 movie, *Close Encounters of the Third Kind*, score by John Williams.
- *Messiah* (George Frideric Handel)
- *Fifth Symphony* (Ludwig van Beethoven)
- *Eine kleine Nachtmusik* (Mozart)
- *Jesu Joy of Man's Desiring* (Johann Sebastian Bach)
- The aria *Un bel di vedremo* from *Madame Butterfly* (Giacomo Puccini)
- *Over the Rainbow* (music Harold Arlen, lyrics E.Y. Harburg) from the movie *Wizard of Oz*
- The Beatles' *Here comes the Sun* (George Harrison)
- Deep Purple's *Smoke on the Water* (Roger Glover)
- *Staying Alive* (Bee Gees)
- Abba's *Money, Money, Money* (Benny Andersson and Björn Ulvaeus)
- Madonna's *Material Girl* (Peter Brown and Robert Rans)
- *Black or White* (Michael Jackson with rap lyrics by Bill Bottrell)
- *It's the end of the world as we know it* (REM)
- The lyrics for the chant section starting in bar 22 are taken from wiccan chants available on the internet (no copyright noted).

41 Chris Cutler's article, "A History of Plunderphonics", is a much-quoted source of information on the creation of new works from pre-existing ones.

The 'radio broadcasts' section, shown in graphic form in the score, introduces quotes from speeches and examples of radio and television broadcasts, as well as radio signal interference noises. Suggestions for the quotes include radio dramas and shows such as *War of the Worlds* and *The Goon Show*, general news and weather forecasts, sports commentaries, television shows such as Oprah Winfrey and soapies, and cell phone conversations. The idea is that these transmissions have probably found their way into outer space and could be freely circulating around the galaxy, becoming louder and denser as we increasingly pollute space with our noise. The section could be realised acoustically, with the texts being read by the choir members, but if a sound system is available, it can be very effective to pre-record a collection of quotes and play these back, with the crackles and whistles of static noise being reproduced live by the choir. The pre-recording option also allows for the inclusion of non-Western broadcasts (for example, Chinese or Indian) where they would be more appropriate to the performance. As one form of static noise, I have introduced 'whumming', which is whistling and humming at the same time, with both sounds being capable of independently varying pitch. The 'rap section' uses a solo rapper and a 'beat box' group, and needs to be amplified. I have included rap lyrics with the score, but these could also be ad-libbed by the performers themselves. The section closes with the "end of the world" quote and whumming, fading away to the last heartbeats of the drum and the whisper of the rainstick.

Part IV - *Life Recycled* - is a kind of epitaph that considers the nature of the metaphor and the continual recycling of life in the universe. It is based on a series of five haiku[42] which I wrote myself, presented in the form of a theme and variation – or theme and evolution as I prefer to call it. Because the first line of the haiku consists of five syllables, I worked the number five into the music – in the time signature, which is 5/4 throughout, and in some recurring harmonic intervals.

Haiku lyrics:

Here water once ran
The tree of consciousness bloomed
Then returned to dust

No desolation
Only promise and endless
Possibility

Life once established
Clings to its existence with
Such tenacity

Matter to matter
Energy to energy
Neither birth nor death

Metaphor for life
Oasis of awareness
In a desert land

42 A Japanese poem of seventeen syllables, divided into three lines of five, seven and five.

Performance practicalities and feedback.
The premiere performance of *Metaphor* by the Ferrum High School choir conducted by William Silk took place on 26 November 2007 at the St. John's Anglican church in Durban. William Silk included the piece in the programme for his master's degree final concert, and was actively involved in the development and arranging of the score. I visited Newcastle, where the choir is based, only once at the beginning of the project, and we worked through Part I and the beginning of Part II. Thereafter, our communication was by telephone and email. This was sufficient to enable an effective collaboration, but did not allow me to be as involved as I would have liked in the practical development process.

There were certain features that William Silk introduced into the performance:

- Using pre-recorded 'radio quotes' (in Part III) while the choir added acoustic static sounds. This worked well, and I incorporated it into the score as a preferred option.
- Projecting a visual slide show during the performance. This was an interesting innovation and was put together in an impressive way but, in retrospect, I feel it is not essential. The music should be able to convey the message on its own; visuals have a tendency to take precedence, with the danger of diluting, or even confusing, the meaning.
- The use of lighting for dramatic effect. This involved turning all the lights off for certain sections which, while effective, brings its own problem of having to light the conductor so he can be seen. It is very dependent on the nature of the venue, so I have not mentioned it in the score.
- Repositioning of the choir. I had imagined the female voices moving to the front for Parts III and IV. William repositioned the whole choir to completely surround the audience, which was very effective. I have written the option into the score, dependent on the nature of the venue and the size of the choir.
- Using a solo singer for the plainsong. Having the plainsong section sung as a solo was another good idea which I incorporated into the score. In the performance, the singer walked from the back up the aisle of the church, which was also effective, although only really viable if using the surround sound option.
- Using a full drum kit. Two percussionists were involved and a full drum kit used for the popular music section. I have written it into the score as an option.
- The use of microphones was introduced for the beat box performer and rapper, which are essential to make it sound authentic. In the performance, the rapper wrote and used his own lyrics, which I have left as an option, but I have subsequently included my own rap lyrics with the score.

To compose a work in collaboration with the performer(s) is an organic process that optimises the viability of the performance. New ideas and options emerge from ongoing interaction, but the danger does exist of discarding some interesting innovations that might work given a different environment.

Elim Dune
for saxophone quartet

Score : Pages 101, 118
CD audio tracks 5,6,7

The work *Elim Dune* originated as an example of a graphic score composition. As such, it was intended to be performed in three ways: full improvisation by the players using the photograph alone as the score, an improvised piece using suggestions from the composer, and a detailed score being the composer's interpretation of the images. After experimenting with the second performance option at the workshops with the Stockholm Saxophone Quartet, I decided that it did not do justice to the composer's ideas and did not allow the players sufficient freedom to create their own interpretation. Consequently I reduced the options to either the score or the improvisation.

My original detailed score of *Elim Dune* was composed for a workshop with the Stockholm Saxophone Quartet at the Grahamstown New Music Indaba in July 2006. Each section of the landscape in the photograph is represented in any of the possible dimensions mentioned in the score notes. With a total duration of two minutes, the proportions of each section of the photograph were strictly adhered to, even to marking the time durations on the score. [Score page 118, Audio CD track 7]

After the first performance at the Indaba, I made substantial changes. The work in its two minute format felt too compressed. Events happened too quickly to be digested before moving on to something else, and the texture was too consistently dense. I extended each section, allowing myself more flexibility with timing, and letting the musical flow take some precedence over the rigid time divisions, although this was in fact moving away from the original graphic intent.

The final version. [Score page 101, Audio CD track 5]

The Dune.

The two (and three) dimensional aspect of the surface ripples of the dune is represented by continual fluctuating pitches. In bars 25-36, this is done using a breathy subtone technique, at minor third intervals, which creates a constantly moving diminished chord. The fluctuations recur in bars 43-48 (tenor then baritone) as a backdrop to the 'desert life' effects. Ripples are also suggested by harmonic beats created between tenor and baritone (bars 37-42).

The ideas of wind and sand are respectively represented by breath sounds and pointillistic pitches in randomly arranged 12 tone series, played with slap-tongue technique. The 'sand' feature is reintroduced in the soprano part (bars 37-42) and alto (bars 43-48).

The descending motifs in bars 53-62, and the glissandi in bars 63-65, are a subjective projection of walking down the dune. The increase in overlap of the phrases and the shortening of the glissandi motifs attempt to create the impression of increasing speed.

The fifth dimensional concept of imagining unseen elements in the landscape is introduced in the graphic or associational references to insect life between bars 37 and 52. This is shared between all the players.

The Plain.
This landscape feature is introduced by the baritone, which uses a different phrase for the rocky outcrop on the right of the photograph (bars 67-69). The phrase predicts the blues/rock feel used later for the mountains. Multiphonics are used for the plain itself (bars 70-87) to create feeling of empty space and lack of movement.

The Mountains.
The smaller hills in front of the distant mountain range are represented by short motifs whose contours on the score are shaped like the hills (bars 79-87).
A louder dynamic and stronger attack are used to accentuate the transition from the plain.
I tried to use the idea of rock music for the mountains. Although a saxophone quartet is never going to sound like a rock band, I made the suggestion of it with the blues/rock bass line, in F minor for a dark feel. Over that I created a coordinated cohesive pattern of hard chords, with jagged rhythms and steep pitch changes (bars 88-99), with a suggestion of a lead guitar riff in the soprano (bars 97-101).

The Sky.
I used long soft notes, which fade in and out unobtrusively creating a consonant shifting harmony. This was extended in the final score so that it started and finished on B♭ in a kind of reference to the circular nature of space.

The Improvised Version. [Audio CD track 6]

The saxophone quartet put together for the improvised version, consisting of Reanne Leigh, Jeff Robinson, Chris Wigen and Kirsty Madgen, met on Tuesday 5th September 2006. Apart from introducing the piece with my programme notes, I particularly tried not to project my ideas into the discussion. However, many parallel interpretive concepts occurred naturally, for example trills to represent ripples, multiphonics to create the feeling of suspension. Ideas initially discussed were of an abstract nature on how to translate things like dimension, distance, depth of colour, and the subjective point of view of being in the landscape. Technical considerations became secondary, but it was agreed that cohesion was necessary to blend the overall sound into one picture.

For the recording session, the technical arrangement was agreed as follows, with baritone cueing the section changes and introducing the new concepts:

- To start with breath sound, evolving into quiet notes with slight multiphonic suggestion. Dune ripples to be represented by gently fluctuating pitches, using pentatonic scales based on C and F# (concert) to give an overall diminished aspect.
- The plain represented by long notes with slight variations for visual events such as bushes.
- The mountains to use ascending chromatic scales.
- The sky to be multiphonic, ending in breath sounds.

Conclusion.
In some way, the improvised version seems to be easier to relate back to the photograph, although obviously as an improvisation, performances by different players are going to be quite distinct from each other. I would have expected this, as not only are the people creating the images using a familiar medium to work with (i.e. the saxophone) but also the translation process is closer to the source. Players working from a conventional score are performing an interpretation of an interpretation.

Multiple Exposure
for four marimbas

Score : Page 127
CD audio track 8

The original version of Multiple Exposure was composed for four marimbas, and parallels the selected photograph in its method of construction. The photograph was created by taking several exposures of the same subject, each shifted vertically through space. I tried initially to take the musical phrase and shift it vertically through pitch, but the result was a dark muddy sound, a pitched equivalent of white noise, that did not match the visual image which is bright and warm. Making use of the fourth dimension, I shifted the theme in time[43], creating a phase effect suggestive of minimalist Steve Reich's work[44]. The multiple layering of the theme becomes a process, which "inexorably works itself out"[45] to its conclusion. In the opening section, the theme is stated by the first player, and then repeated with each successive entry being delayed by a semiquaver. Each performer plays two consecutive 'exposures', until eight repetitions have been completed. The theme is based on a dorian mode scale. It naturally transposes up a perfect fourth at the end to its next entry, and the full range of the extended range marimba is used in completing eight cycles.

Having completed eight phase shifts (ending bar 64), I then explored the elements of the theme: rising runs, and falling thirds, fourths and sixths. Eventually a completely new theme emerges (introduced tentatively in bar 104 by player 4, and fully formulated in bar 112) that creates a warm, slightly out-of-focus ambience similar to the end result of the photograph. At this point, players change mallets to achieve a softer sound. The key continues to transpose up in fourths.

At the end, the original theme returns in quavers with a longer phase delay, while player 4 simultaneously repeats the second theme.

The standard concert marimba has a 4½ octave range, but some have been custom-made with extended ranges. The first marimba needs an extended range down to C_1 in order to fit in the full extent of the eight phases. At this time, there are fewer than ten 5-octave marimbas in South Africa.

43 The photograph could also be considered as being constructed using a fourth dimension, as the multiple exposures were taken over time.

44 For example, *Piano Phase* and *Violin Phase* 1967 (published by Universal Edition and Kalmus Alfred respectively).

45 Paul Griffiths on Steve Reich in *Modern Music and After* p212

Multiple Exposure
for piano quartet

Score : Page 156
CD audio track 9

I re-orchestrated *Multiple Exposure* to be workshopped by the Schubert Ensemble piano quartet at the New Music Indaba composition masterclasses in 2007. The nature of the instruments required that I relinquish some of the speed and nearly all of the percussive qualities that had made the marimbas so successful in generating the phase effect. I also had to overcome the problem of the different sound quality of the piano in a piece that originally relied on the similarity of the four instruments, as well as the fact that the strings could not reproduce the phasing effect in the same octave. However, as I had actually written the original theme with a cello in mind, it lent itself to the melodic capabilities of the stringed instruments. I used the strings for only one repetition each, and allowed the piano two, doubling the time and adding the percussive quality to the second repetition (bar 33). This reduced the total number of phases to five, so I shifted the starting key to put the central section in the same key as the marimba version. The difference in the piano sound became useful for highlighting the new theme, while the strings lent a textural density to the overall work that was rewardingly effective. I liked the way the return of the phase section worked for this version and, because it was performed first, I took the opportunity of working the ideas back into the marimba score.

Kariba Sunset

CD audio track 10

My work for the digital category was composed using a program called MetaSynth, which works by scanning an image from left to right, translating pixels into sound frequencies. The horizontal axis is the time duration, and the vertical events are represented by pitch. Pixel density translates as dynamics, and the green/red colour spectrum provides the stereo image.

There are several variable input parameters.

- The input sound sample can be chosen from a variety of existing sounds, or in fact any sound sample created by the composer. Much experimentation revealed that the best input sound is a short signal rich in harmonics. Anything else had a tendency to produce nothing much more than white noise. Sample sounds can also be synthesised from basic waveforms or taken from preset instrument sounds.
- The time duration of the scan can be selected - functionally anywhere from a few seconds to several minutes - which speeds up or slows down the occurrence of events.
- The musical scale can be chosen from a variety of standard scales: major, minor, chromatic, pentatonic or quartertone, or can be custom designed.
- The image can be subjected to various visual effects which affect the final rendering of the subject. There is also a paint function which allows one to draw freehand.
- There are preset filters which can be applied to manipulate the stereo image.

MetaSynth screen.

On the upper segment of the MetaSynth screen, the sample editor displays the waveform of either the input sample or the rendered sound. The Image Synth, where the picture is shown, has its own set of tools and effects to be applied to the visual image. In the screen shown, the image has been rendered and the resulting sound placed back into the sample editor, and the coincidence of horizontal events can be seen.

The image.
I chose the Kariba photograph because the repetition of vertical events made it ideal for translation. I found that using a photograph as input gave the program too much information. A simple line drawing creates more defined events. So I applied effects to the photograph to outline the events, and added a filter to give it some stereo effect.

Parameters.
For input samples, I used a combination of my own recordings of crickets and cicadas, and a few of the presets which provided interesting results from my experimentation. Varying the time duration of the image scan resulted in different rhythms. I experimented with durations ranging from 10 seconds to 4 minutes, favouring ones that created some kind of rhythmic expression. I selected the pitch scales that gave me output that I liked, working mostly with whole tone and quartertone scales.

Output processing.
Processing the results of the computer translations afforded the greatest opportunity for imposing subjective aesthetic judgement on the outcome of the composition. I selected the output which I felt offered the most musical solutions and arranged these in a structure that allows the listener to hear the occurrence of the visual events. The final mix consists of :

- A 30 second rendition of the picture using a quartertone scale and input sample of cricket sounds.
- A 30 second rendition using a wholetone scale and cicada sounds.
- A 60 second rendition using cricket sounds as input, layered with other renditions using presets as input and using various scales including exponential and microtonal.
- A short coda repeating the end of the first sample.

Kolmanskop

CD audio track 11

I constructed *Kolmanskop* using a collection of recorded audio clips to create a collage that tells the story of the ghost town. It is, in a way, a movie without visuals, but is not meant to be a historically accurate account of the growth and decay of the town. It is rather an expression of how I imagine it to have been. Ghosts are a projection of personal imagination; these are *my* ghosts.

I have built the final soundscape out of several audio layers: the relentless wind, the synthesized sound symbolising the presence of diamonds, the ticking of the clock (representing time), the sounds of human activity which degenerate as the town slowly dies and the faint ghostly voices that remain behind afterwards. DJ Malcolm Blake collaborated with me on some of the processes of synthesis and digital sound manipulation.

The wind.
The wind sounds were created using a free-ware plug-in synthesizer called *Sounds of Nature*, which can be downloaded from the internet and works with most Windows-based sequencing software. "Several groups of modulators are applied to a bank of bandpass filters for this emulation."[46] I have taken three sample wind sounds in different frequency bands, and woven them together across the stereo spectrum. This sound provides a continuous base for the entire piece, blending into the background while human activity is in progress.

46 http://www.xoxos.net

Diamonds.
The sound that symbolises diamonds was created by Malcolm Blake in the digital audio workstation *Reason* using the Thor polysonic synthesizer. A triangle waveform with a zero-attack and short-release envelope was subjected to frequency modulation, and further processed using tap delay, an arpeggiator with two levels of automated randomiser, and a gate to shorten the sounds. I have used selected sections of the resulting audio track.

The clock.
I recorded the old wall clock at the Mission House Museum at Hermannsburg. The museum is situated on the site of the first mission station established in 1854.

Human activity.
The human activity sounds are a collection of field recordings made in a variety of locations: Hermannsburg School, the Deutsche Schule in Durban, the residence of the Fechter family and a family residence in Germany. Kolmanskop was a German settlement, so all the speech recordings are in German. I added short excerpts from old recordings of The Comedian Harmonists[47] and other cabaret artists and radio broadcasts from German culture of the 1930s. I also included a few building construction sounds.

The effects used to make the composite sounds degenerate over time included:

- A granulator plug-in (Jitter by Hosebeast).
- An erosion plug-in applying distortion.
- An automated low pass filter gradually reducing the frequencies affected.
- The application of micro-editing to remove sections of waveform, causing the sound to break up.

The ghosts.
I incorporated the ghost voices as short audio clips at low volume, adding dense reverb and scattering them across the stereo spectrum.

47 Published by EMI 1932-1934

Performances and recordings.

Snapshots

Performance : Howard College Theatre 14th May 2008
Piano : Catherine Morrow

Recording : UKZN studio 29th July 2008
Piano : Catherine Morrow
Sound engineer : Jürgen Bräuninger

Feng Shui

Performance : Howard College Theatre 14th May 2008
Guitar : Fiona Tozer
Flute : Keri Povall

Recording : Live recording of performance.

Baobabs

Performance : Howard College Theatre 14th May 2008
Viola : Jabulani Dlamini and Claire Hamilton
Cello : Jennifer Cox and Fiona Grayer
Double Bass : Simon Milliken and Andreas Kappen

Recording : Live recording of performance.

Elim Dune

Performances : (1) New Music Indaba workshop, Grahamstown July 2006
Stockholm Saxophone Quartet
(2) Howard College Theatre 7th May 2007
Improvised version : Jeff Robinson, Jeff Judge, Chris Wigens

Recordings : (1) Final version UKZN studio 3rd June 2007
Baritone : Jeff Robinson, Tenor : Dave Holland
Alto : Chris Wigens, Soprano : Jeff Judge
Sound engineer : Jürgen Bräuninger
(2) Improvised version Cinnamon Express Studios 12th September 2006
Baritone : Jeff Robinson, Tenor : Chris Wigens
Alto : Kirsty Madgen, Soprano : Reanne Leigh
Sound engineer : Marciano Monjane
(3) Short version live at New Music Indaba July 2006

Metaphor

Performance : St. John's Anglican church, Durban 26th November 2007
The Ferrum High School Choir conducted by William Silk

Recording : Live recording of performance

Multiple Exposure (marimba)

Performance : Howard College Theatre 5th March 2008
Concert sponsored by SAMRO Endowment for the National Arts and the Distell Foundation for the performing arts.
Marimba : Magda de Vries, Ilse Minnie, Cobie van Wyk and Bryan Clarke

Recording : Audio and video live recordings of the performance.

Multiple Exposure (piano quartet)

Performance : Sunnyside Concert Hall, Unisa 13th October 2007
Piano quartet : Schubert Ensemble

Recording : Live recording of performance.

Kariba Sunset

Created : UKZN studio in 2007, mixed at my home studio

Performance : Howard College Theatre 14th May 2008

Kolmanskop

Recording : Production was completed at my home studio in September 2008.

CD Track List :

1. Snapshots
2. Feng Shui
3. Baobabs
4. Metaphor
5. Elim Dune (final version)
6. Elim Dune (improvisation)
7. Elim Dune (short version)
8. Multiple Exposure (for marimbas)
9. Multiple Exposure (for piano quartet)
10. Kariba Sunset
11. Kolmanskop

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SCORES

Snapshots

for piano and recorded speech

Fiona Tozer

(2008)

Dedicated to Catherine Morrow

Program Notes.

Snapshots for piano and recorded speech is a series of biographical sketches of the photographer, seen through the eyes of people looking at her work. Each speaker articulates his/her analysis of a selected photograph in a different language, and each response is then captured in a short piano sketch, using various musical elements, such as pitch or rhythm, which are inherent in the speech pattern.

Performance Notes.

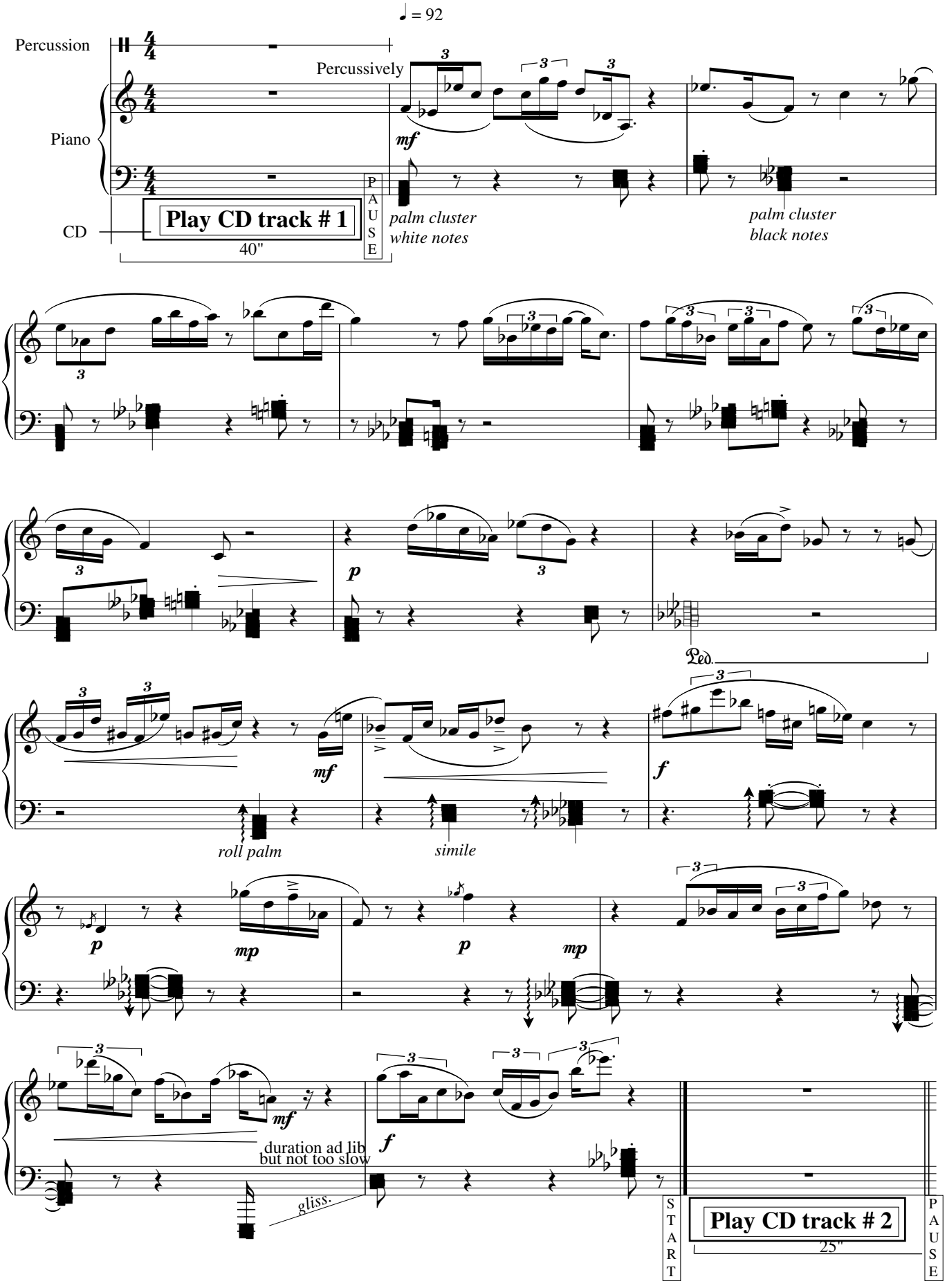
1. Chord clusters are the played with palm placed sideways on keys roughly over the notes indicated (black or white as notated). Arpeggiate by rolling the palm in the direction indicated.
2. Use the back of the fingers/nails for the glissandi. Synchronisation of glissandi with the played notes is ad lib but the notes are played in tempo. The tremolo is created using a reasonably heavy and soft-headed percussion mallet.
3. The foot tap is made using a piece of metal attached to the bottom of the shoe, tapping on the pedal. Make the sound with pedal and tap (no pedal) where shown.
5. Hold the cabasa against left forearm and make a short turn for given note value. Turn back and forth freely in the last bar.
6. Place metal pipes across all strings. The metal should be light enough to bounce – short lengths of aluminium are ideal. Glissandi of white notes (left hand) and black notes (right hand) increase in tempo and volume very gradually from start to finish, interspersed with caricatures roughly at tempos shown. The glissandi are short and overlapping, with the top note of each always descending.
7. The percussion in bars 157-158 simulates 'stuck record' sounds. They can be vocalised, or the foot tap device from sketch 3 and the guiro can be used.
8. Sound the initial chord very softly before depressing middle pedal to sustain chord tones. Percussion consists of a shaker, which should be soft - not harsh - attached to the player's leg. (Imifeci, a Zulu leg rattle made from seed pods, mounted on strip of leather and tied to the calf, is ideal.)
9. This is a half happy-half sad childhood memory with frogs in the story. Accentuate the mood contrasts and exaggerate staccato movement to caricature frogs. The guiro at the end should resemble a frog sound as much as possible.

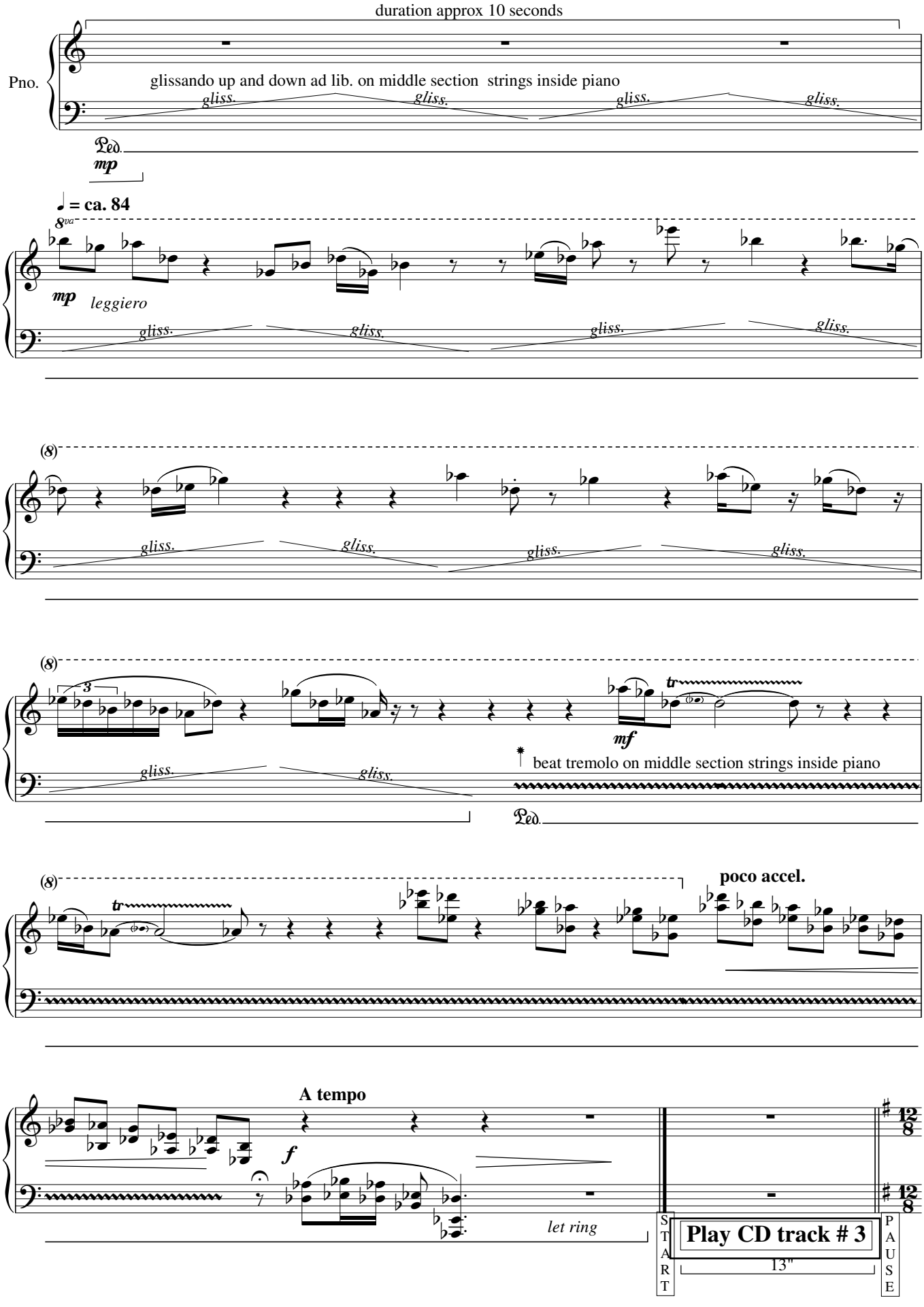
Snapshots

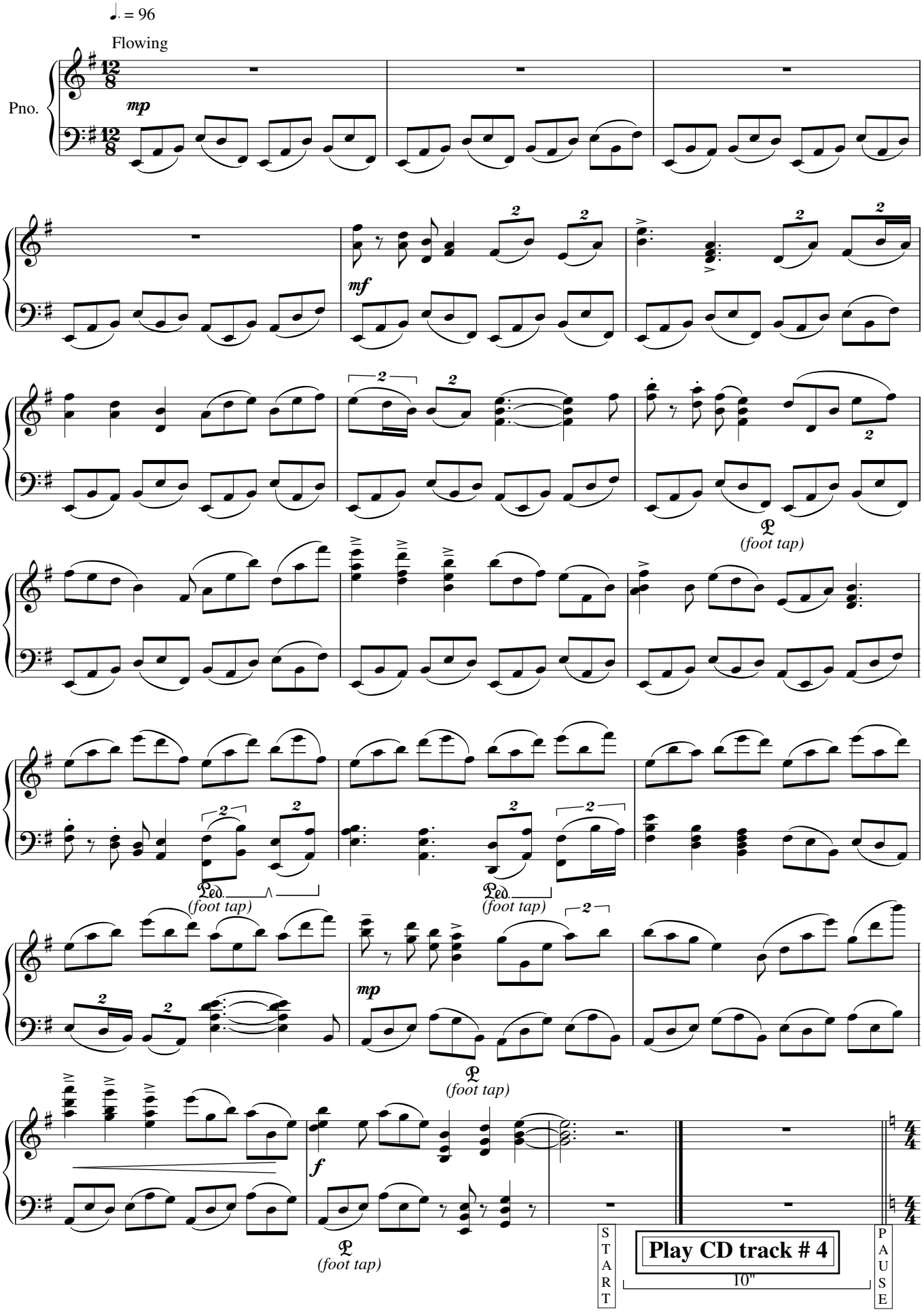
for piano and recorded speech

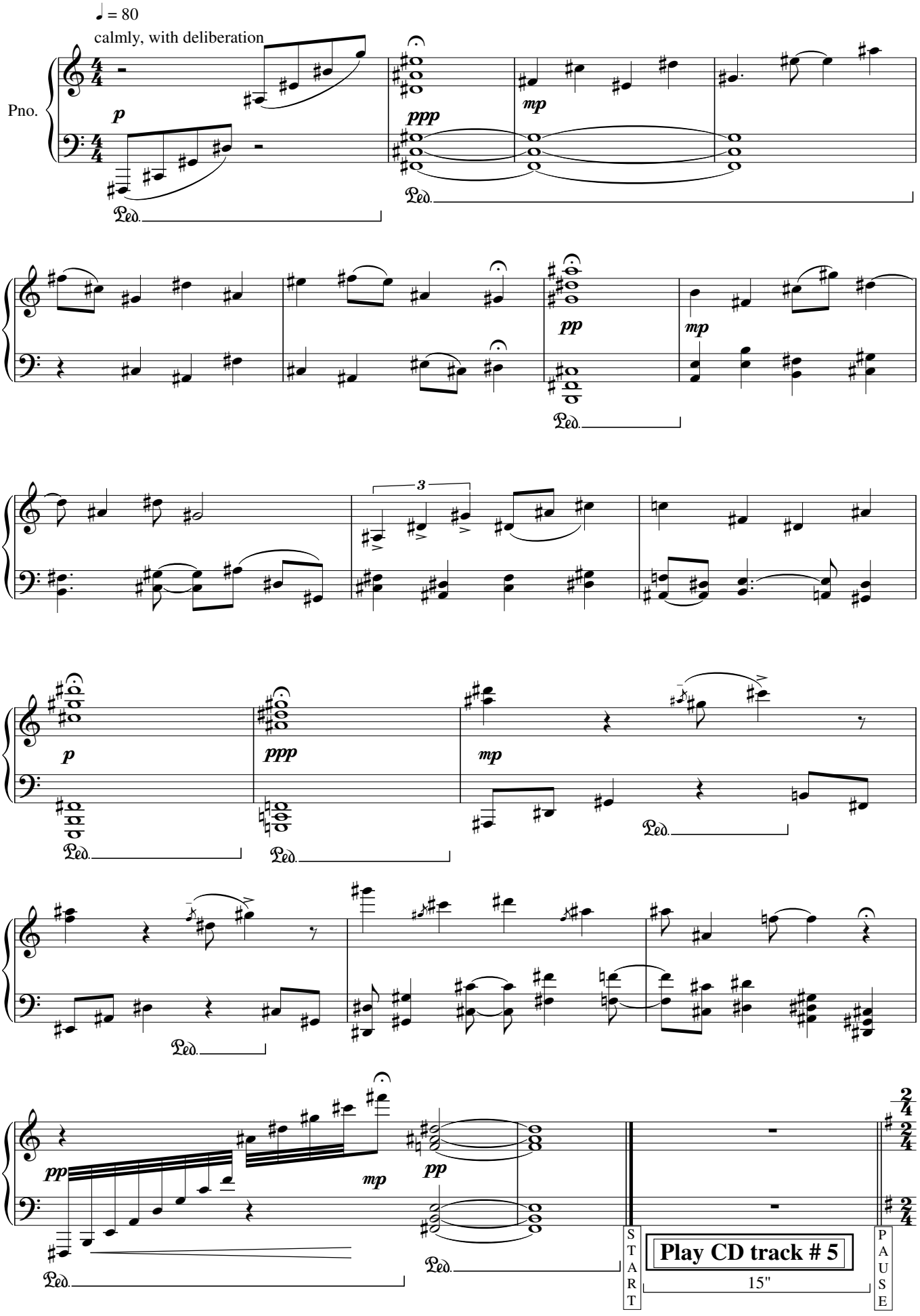
1. Afrikaans

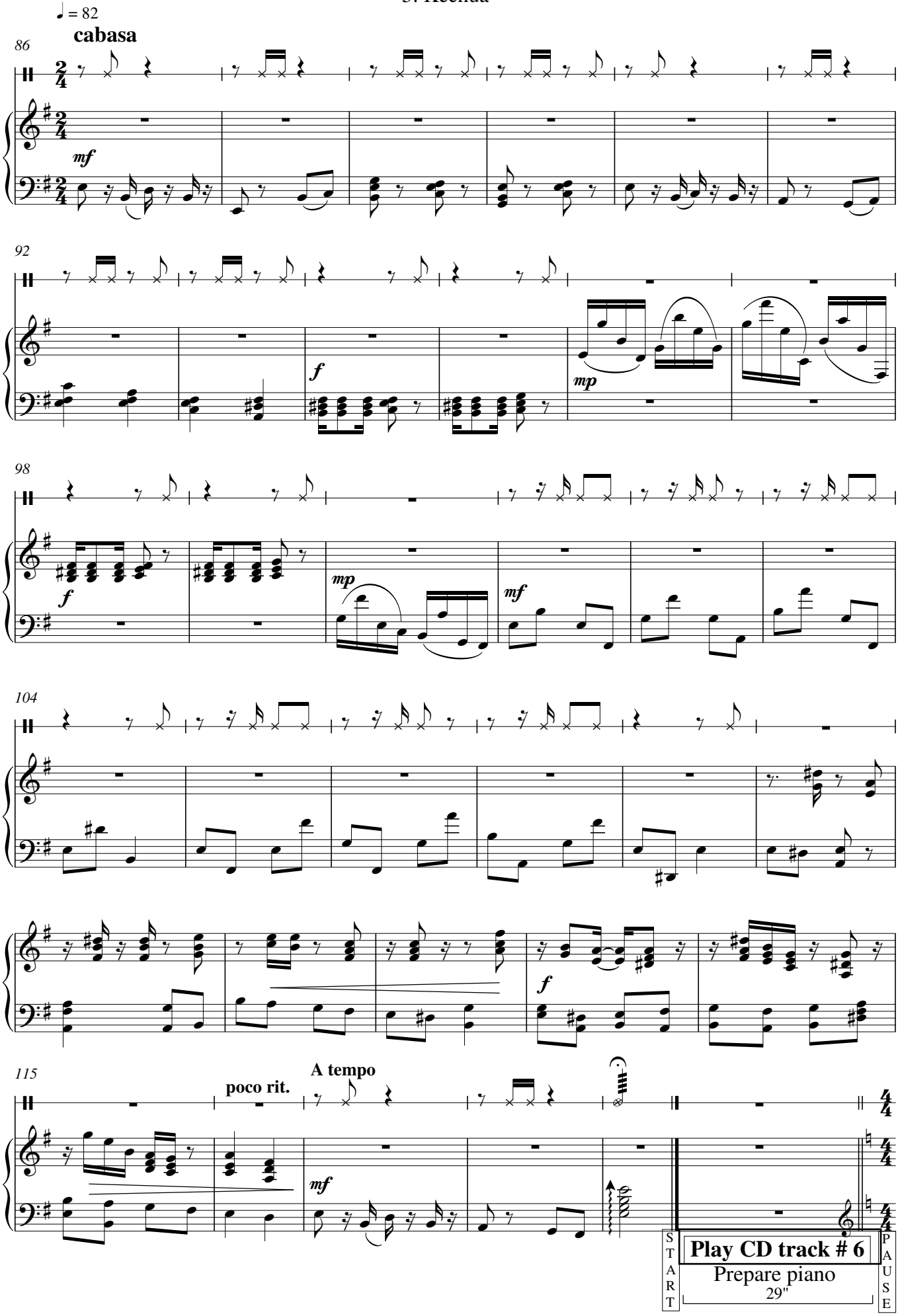
Fiona Tozer
2008

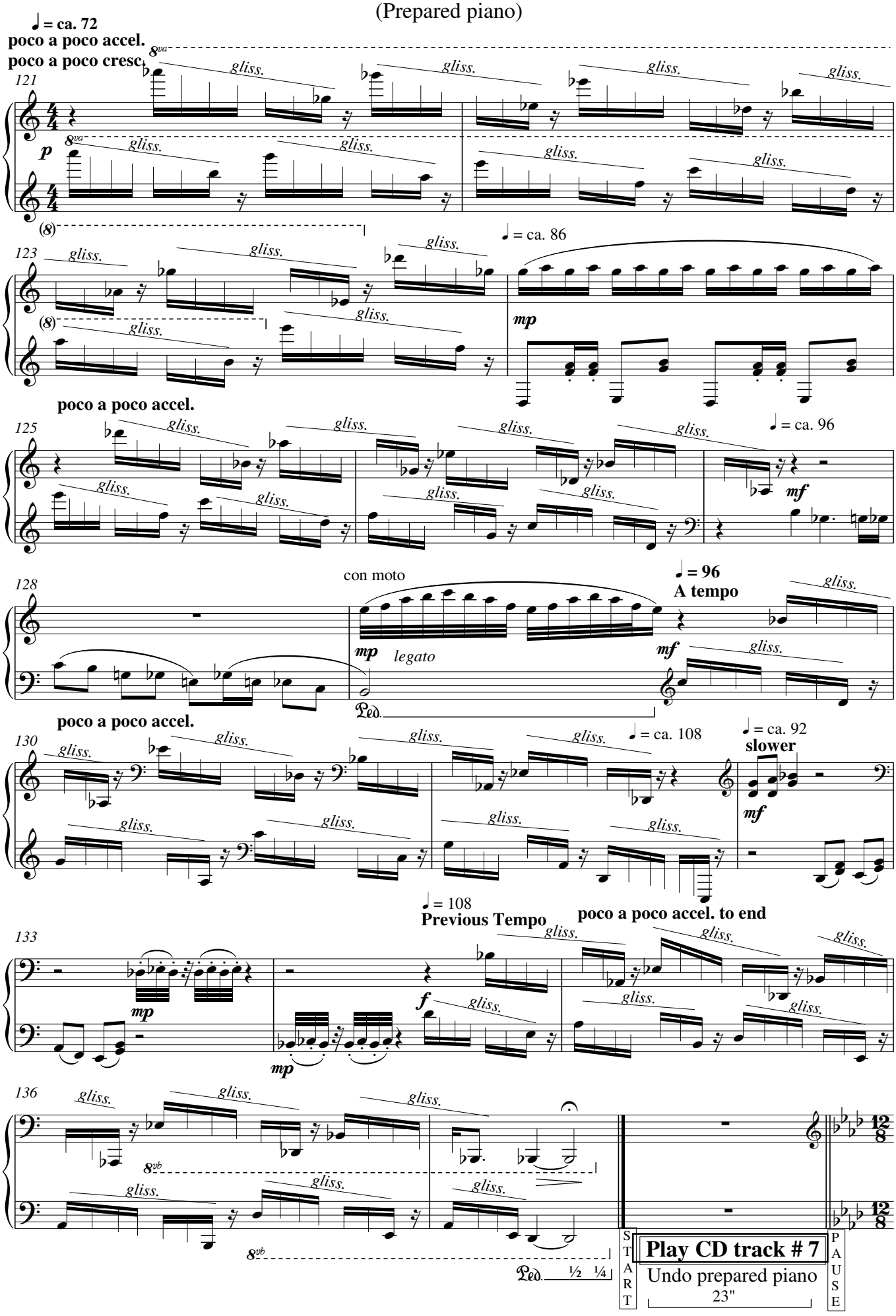


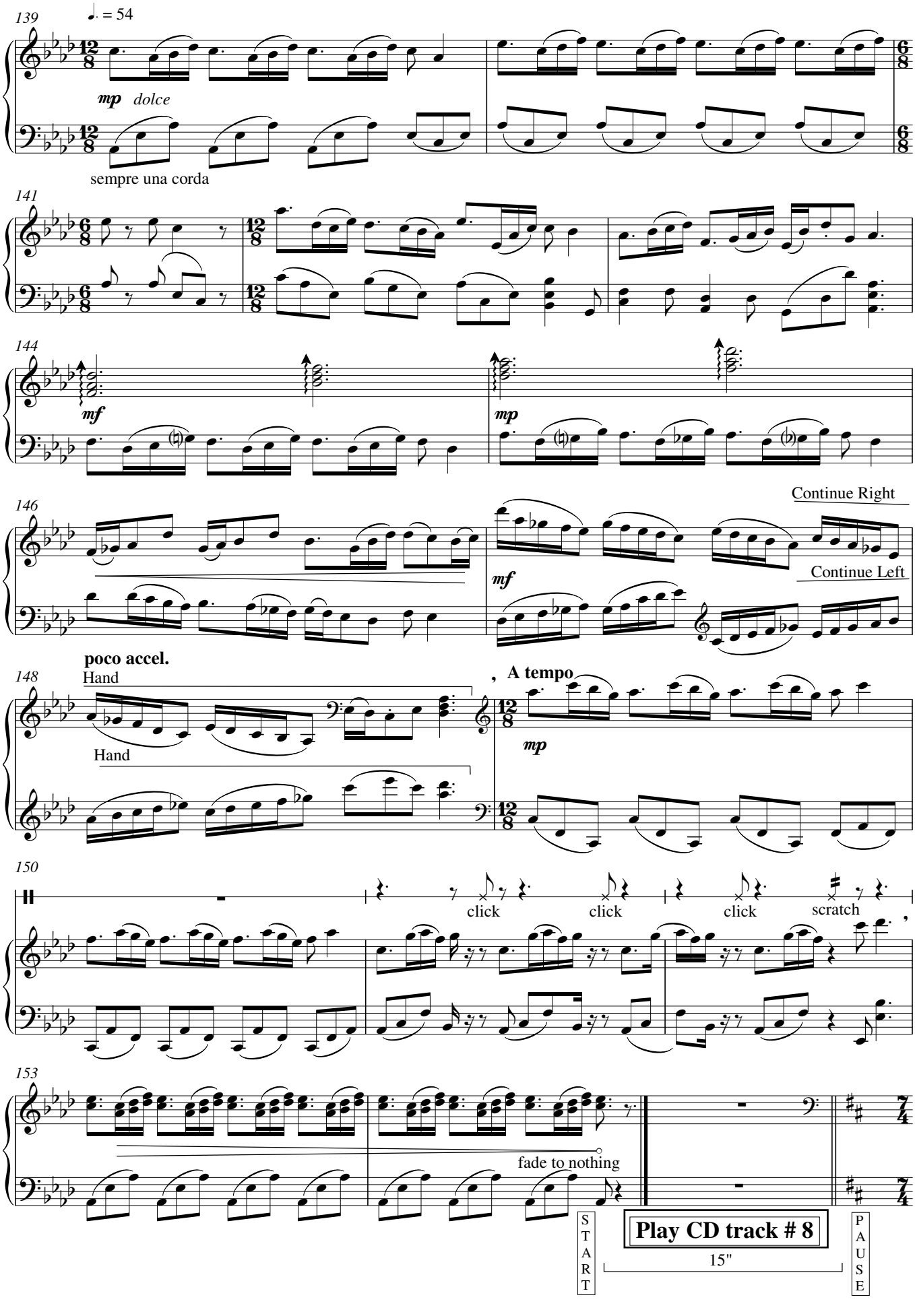

duration approx 10 seconds
Pno.
glissando up and down ad lib. on middle section strings inside piano
gliss.
Ped.
mp
♩ = ca. 84
8va
mp
leggiero
(8)
3
mf
tr
beat tremolo on middle section strings inside piano
poco accel.
A tempo
f
let ring
Play CD track # 3
START
PAUSE
13"

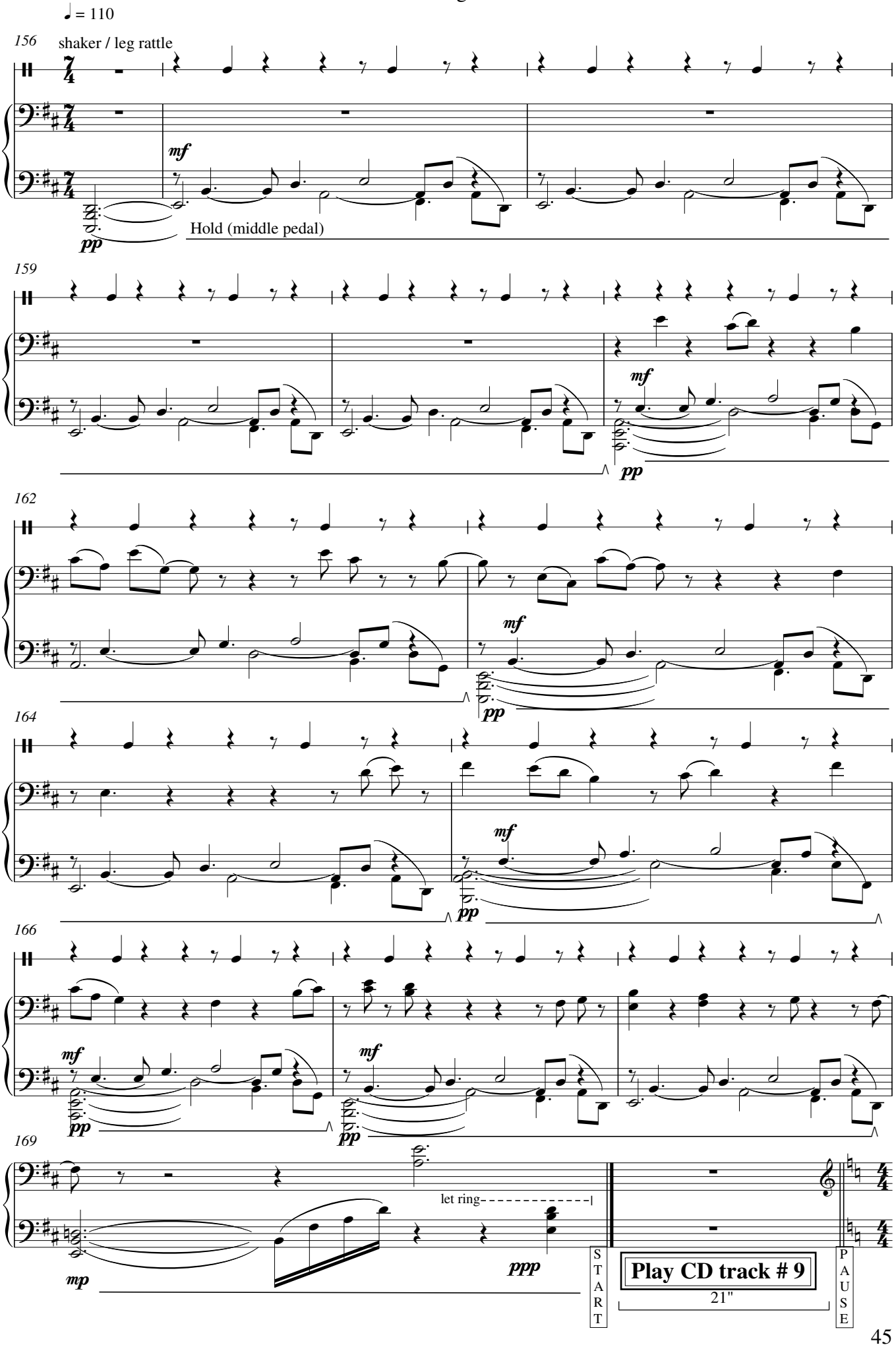

♩. = 96
Flowing
Pno.
mp
mf
(foot tap)
Ped.
(foot tap)
Ped.
(foot tap)
mp
(foot tap)
f
(foot tap)
START
Play CD track # 4
10"
PAUSE

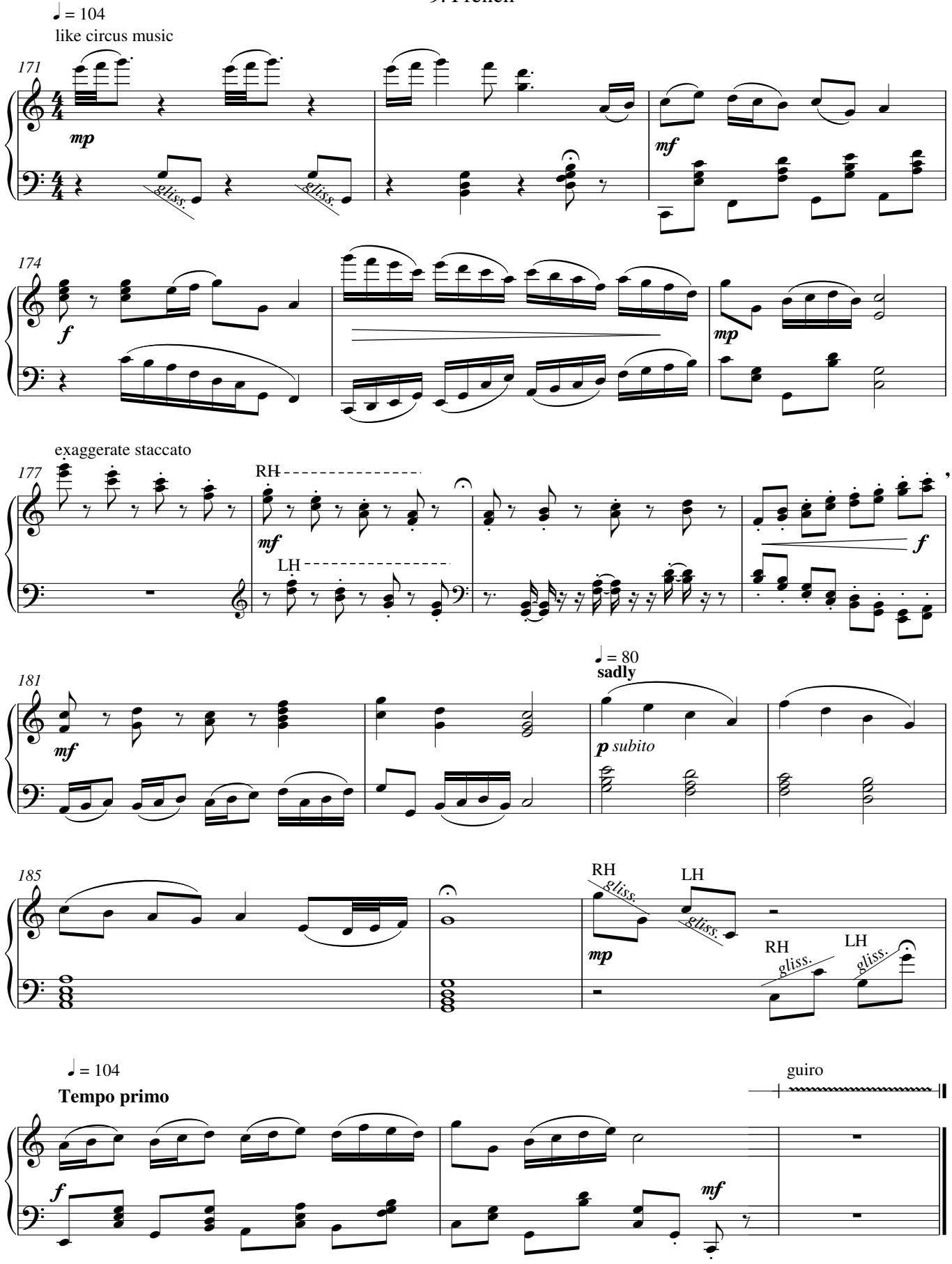

♩ = 80
calmly, with deliberation
Pno.
p
ppp
mp
pp
3
START
Play CD track # 5
15"
PAUSE


♩ = 82
cabasa
86
mf
92
f
mp
98
f
mp
mf
104
f
115
poco rit.
A tempo
mf
Play CD track # 6
Prepare piano
29"
START
PAUSE


♩ = ca. 72
poco a poco accel.
poco a poco cresc.
121
8va
gliss.
p
(8)
123
♩ = ca. 86
mp
poco a poco accel.
125
♩ = ca. 96
mf
128
con moto
mp
legato
Ped.
♩ = 96
A tempo
mf
poco a poco accel.
130
♩ = ca. 108
♩ = ca. 92
slower
mf
133
mp
f
♩ = 108
Previous Tempo
poco a poco accel. to end
136
8vb
Ped.
½
¼
START
Play CD track # 7
Undo prepared piano
23"
PAUSE


139
♩. = 54
mp dolce
sempre una corda
141
144
mf
mp
146
Continue Right
mf
Continue Left
poco accel.
148
Hand
Hand
, A tempo
mp
150
click
click
click
scratch
153
fade to nothing
START
Play CD track # 8
15"
PAUSE


♩ = 110
156
shaker / leg rattle
mf
pp
Hold (middle pedal)
159
mf
pp
162
mf
pp
164
mf
pp
166
mf
pp
mf
pp
169
let ring
mp
ppp
START
Play CD track # 9
21"
PAUSE

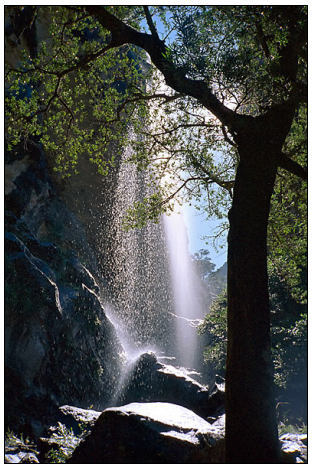

♩ = 104
like circus music
171
mp
gliss.
gliss.
mf
174
f
mp
exaggerate staccato
177
RH
mf
LH
f
181
mf
♩ = 80
sadly
p subito
185
RH
gliss.
LH
gliss.
mp
RH
gliss.
LH
gliss.
♩ = 104
Tempo primo
guiro
f
mf

Feng Shui

for guitar and flute

Fiona Tozer

(2008)



photograph by Merryl Riley

Program Notes.

Feng Shui found its inspiration in the above photograph by Merryl Riley. The meditative mood of the opening is broken by a change of tempo which reflects the forces of nature at work in the energy and destructive potential of falling water. Flute and guitar harmonics introduce the return to the original gentle ambience. The guitar uses a non-standard tuning in fifths. This generates a feeling of suspension above which the flute melody hovers. The rainstick is a direct representation of the sound of the water.

Performance Notes.

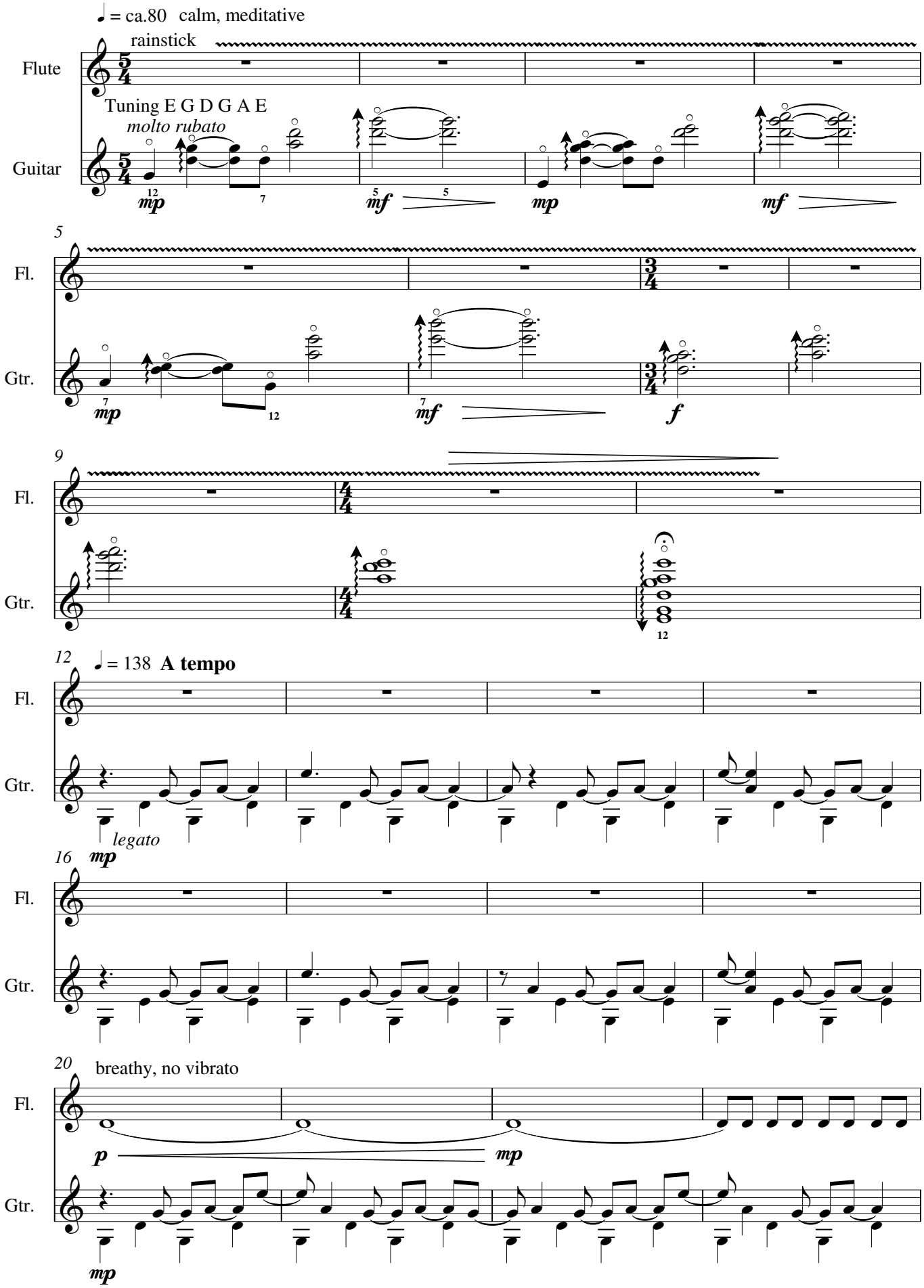
Instrumentation :

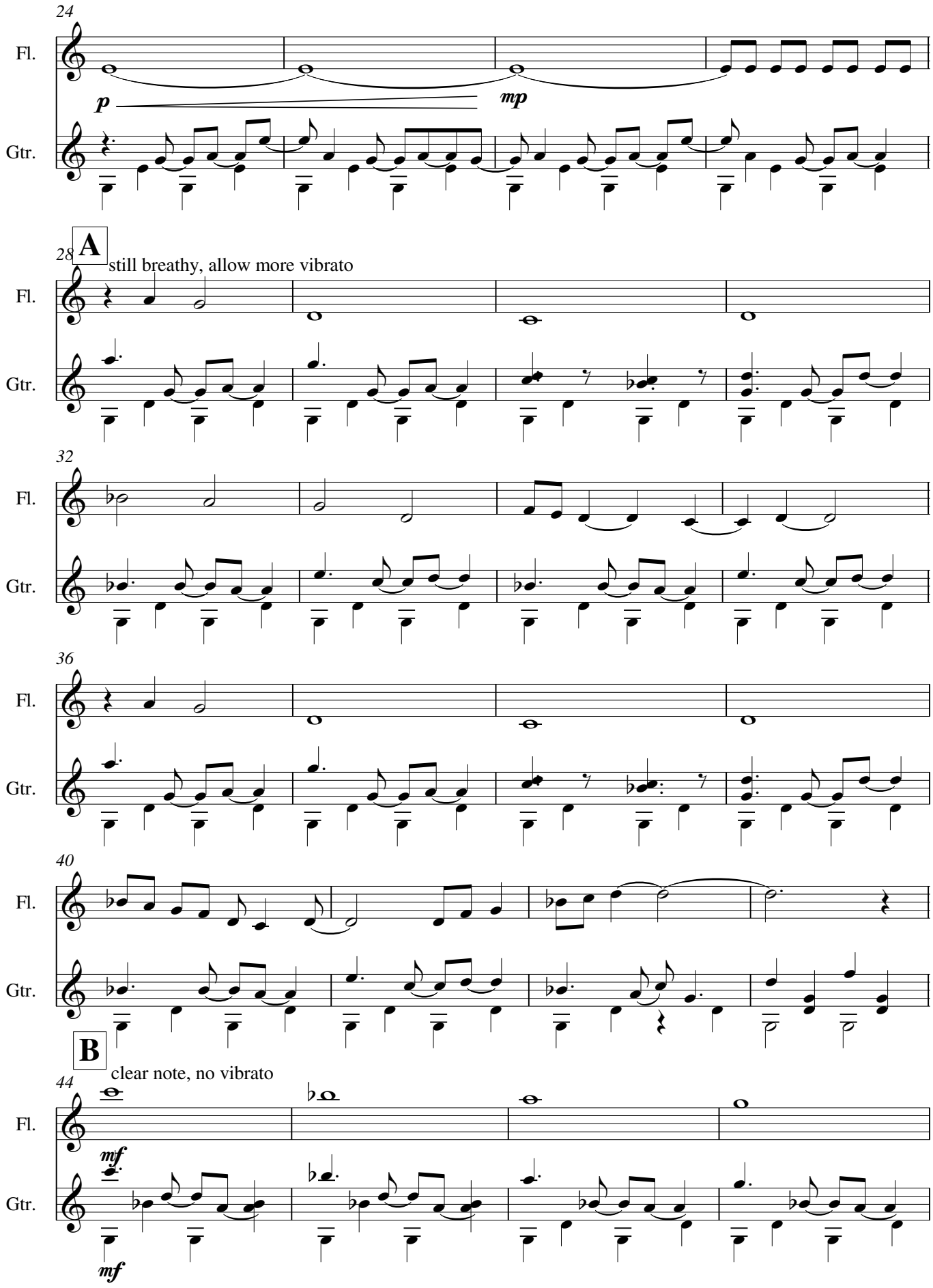
Acoustic Guitar :	Tuning E_6 G D G A E_1
	The guitar can be steel or nylon string as preferred by the player. In anything other than a very small venue, the guitar will need to be amplified.
Flute :	The harmonics from bar 124 are to be played by fingering the lower note and overblowing to sound the harmonic as notated. The harmonic note is more important but, if possible, allow the lower note to be heard.
Rainstick :	Can be played alternately by the flute and guitar players, or by a third player.

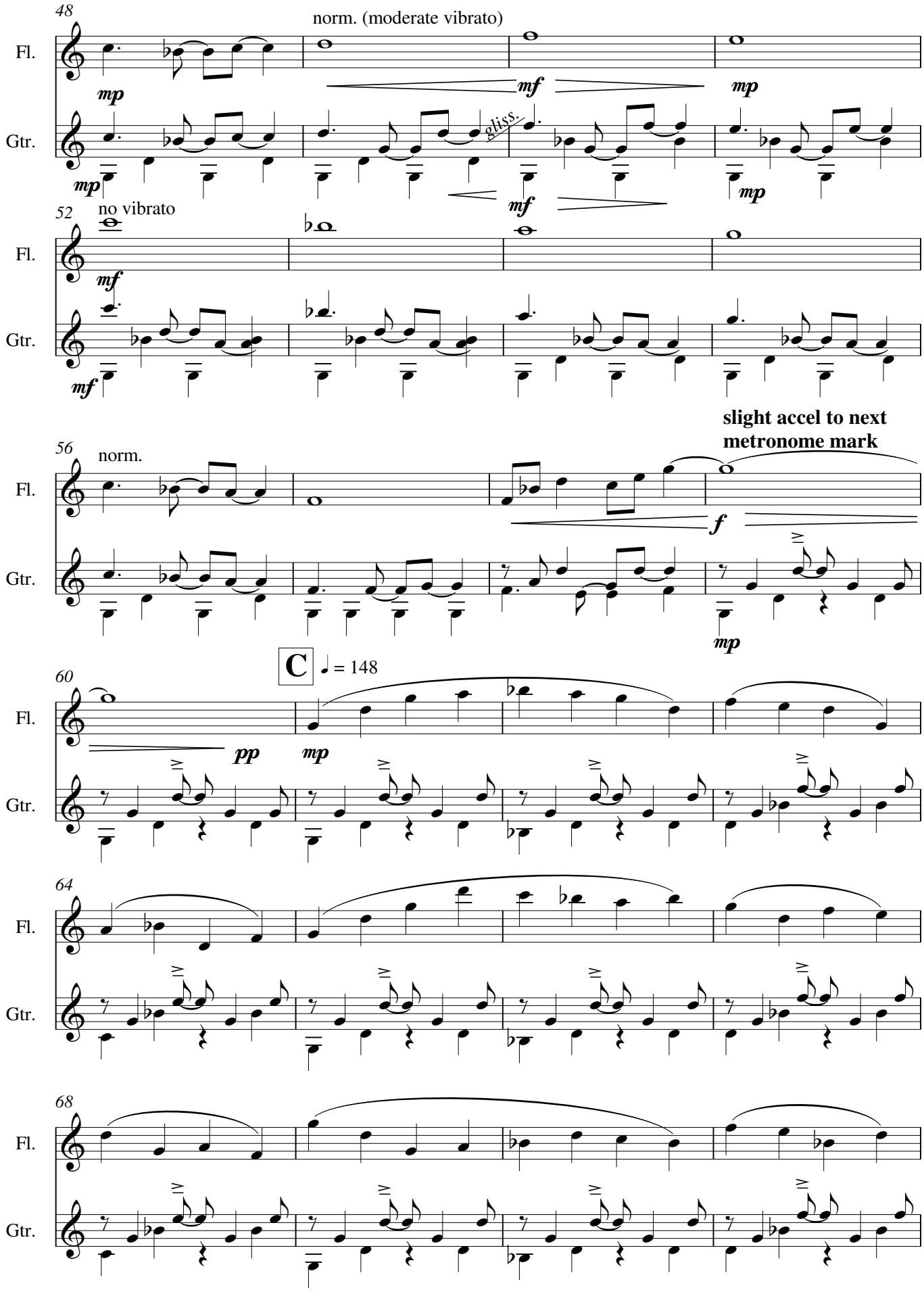
Feng Shui

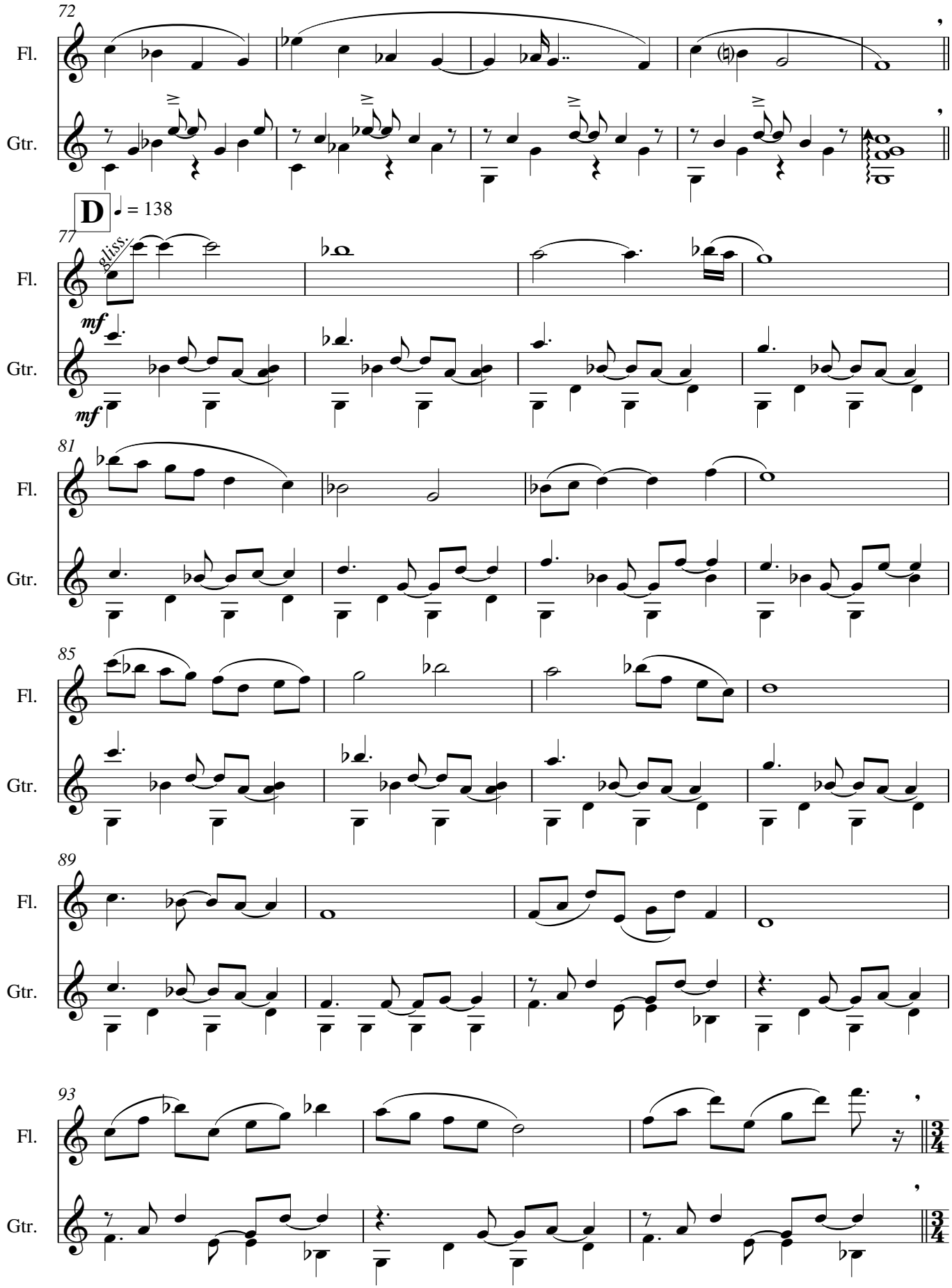
for guitar and flute

Fiona Tozer
2008

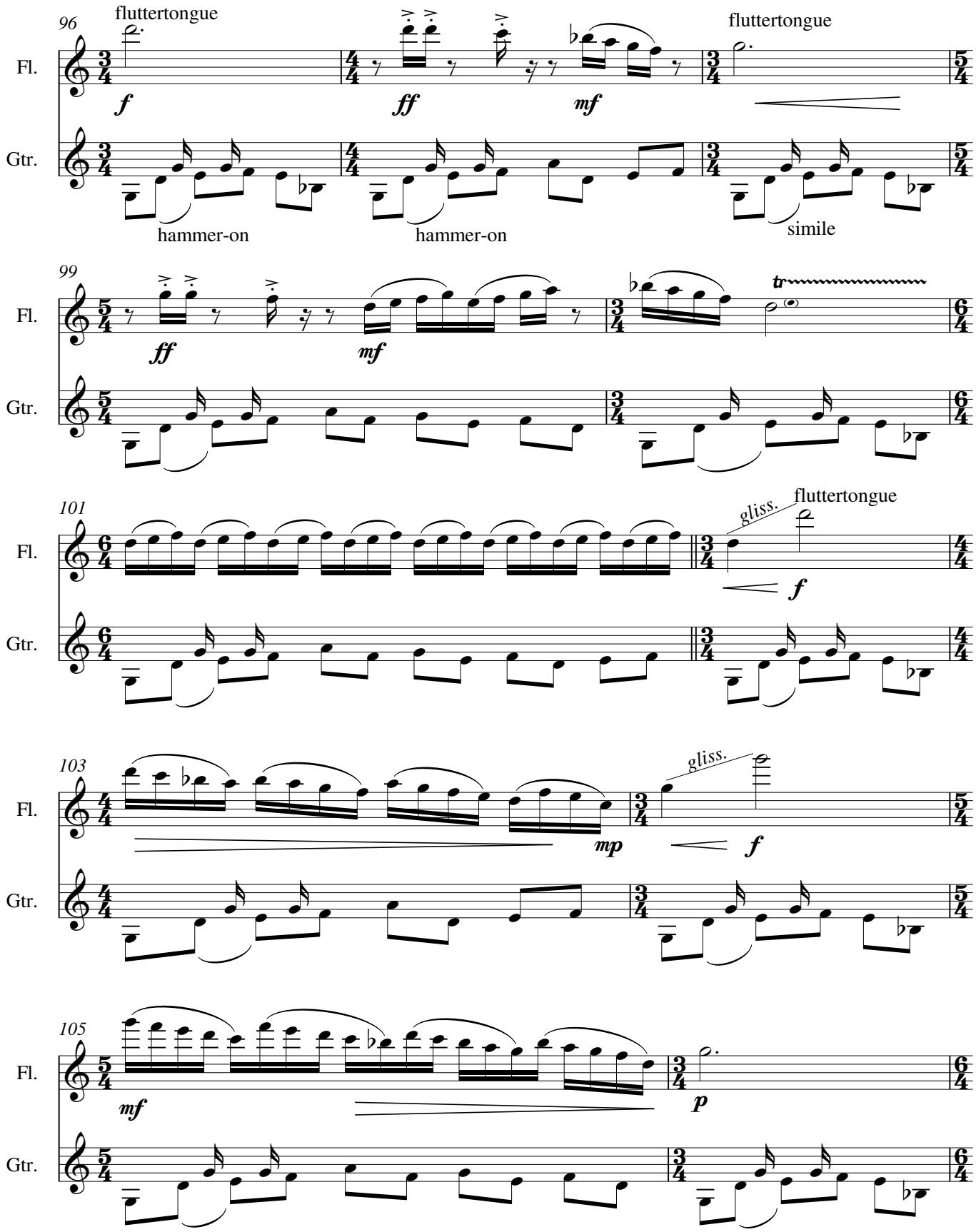


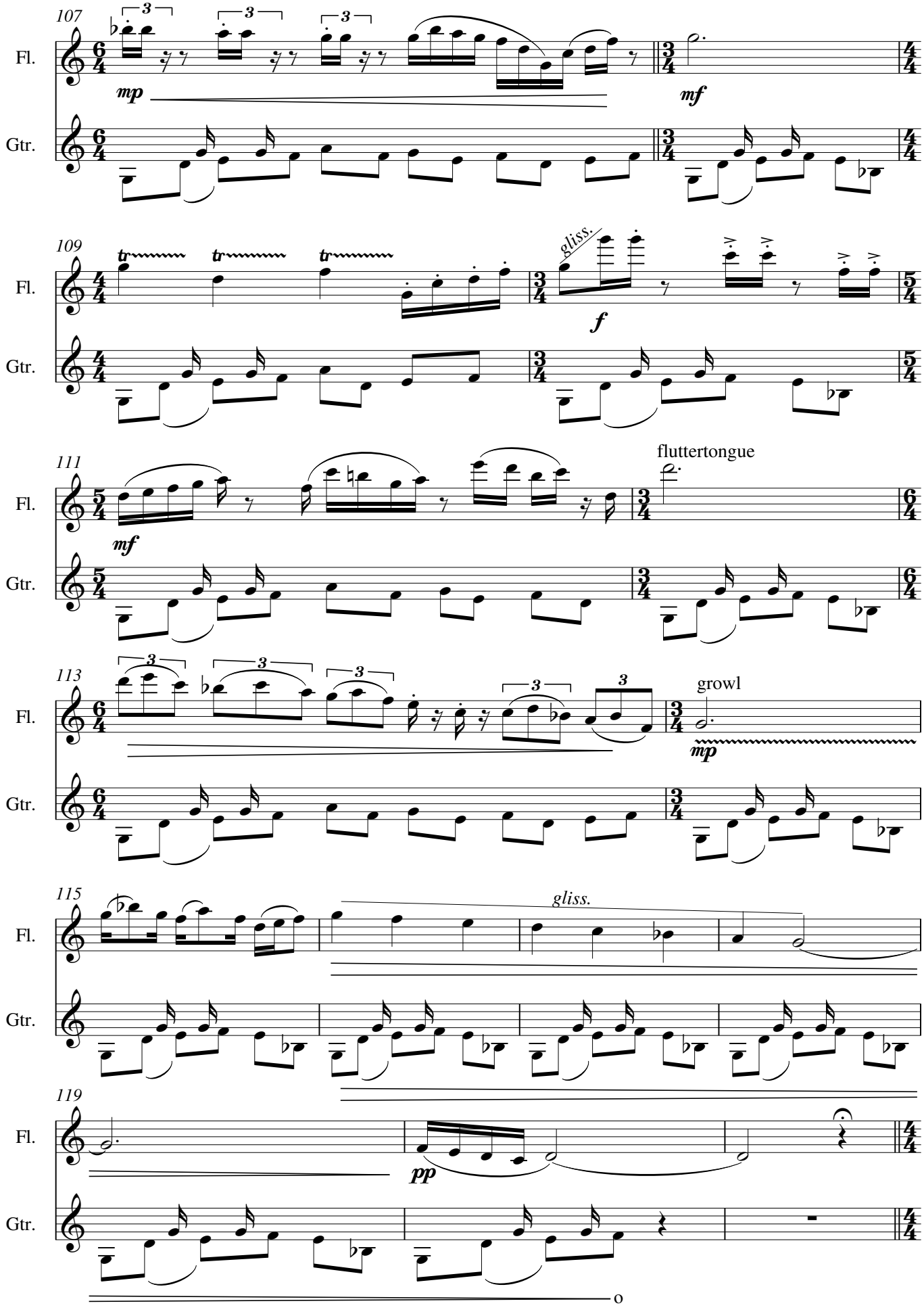

24
Fl.
Gtr.
p
mp
28
A
still breathy, allow more vibrato
32
36
40
B
clear note, no vibrato
44
mf
mf

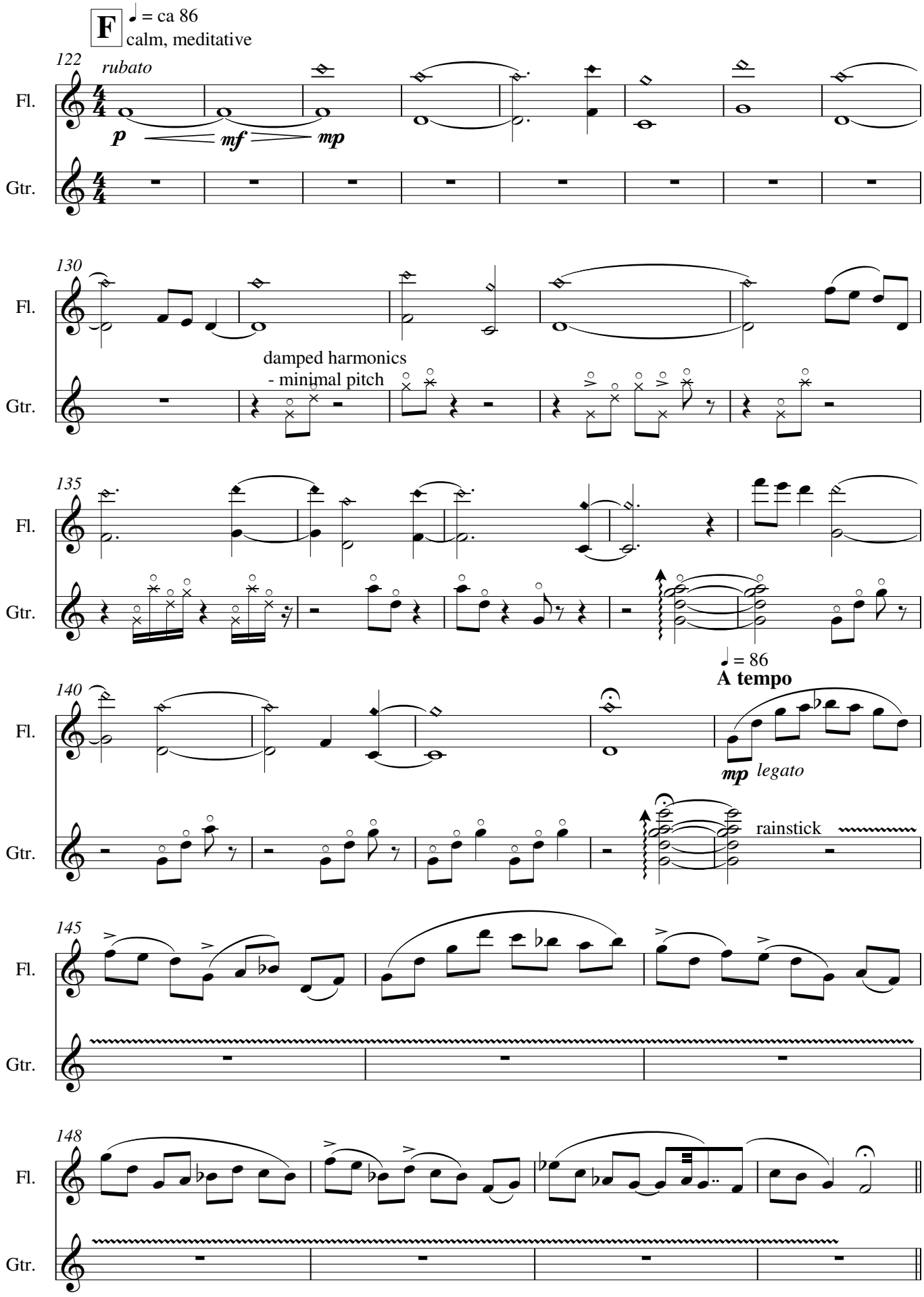

48
norm. (moderate vibrato)
Fl.
Gtr.
mp
mf
mp
gliss.
mf
mp
52
no vibrato
Fl.
Gtr.
mf
mf
56
norm.
slight accel to next
metronome mark
Fl.
Gtr.
f
mp
C
♩ = 148
60
Fl.
Gtr.
pp
mp
64
Fl.
Gtr.
68
Fl.
Gtr.

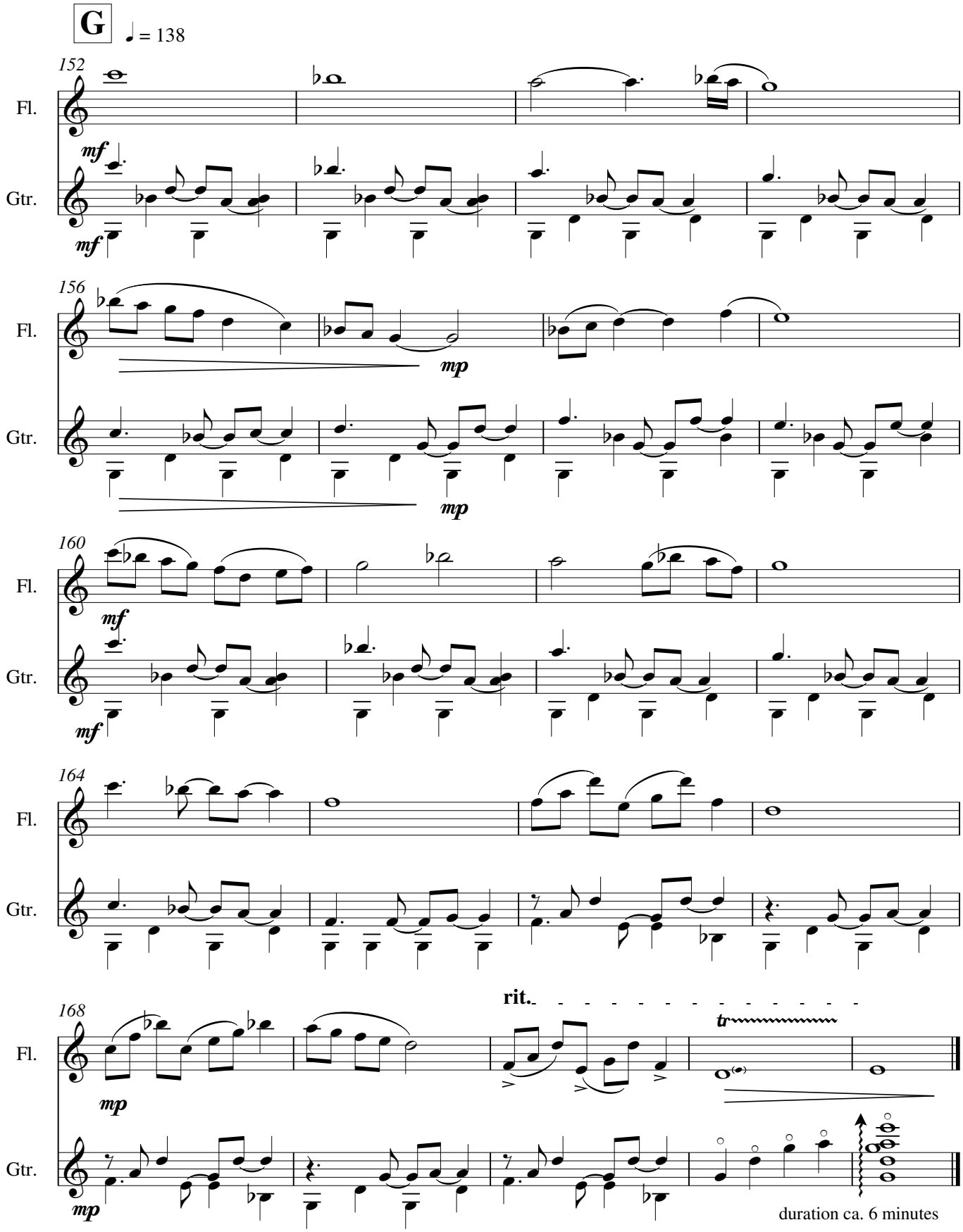

72
Fl.
Gtr.
D
♩ = 138
77
gliss.
mf
mf
81
85
89
93
3/4
3/4

E ♩ = 96
More movement




107
Fl.
Gtr.
mp
mf
109
gliss.
f
111
fluttertongue
mf
113
growl
mp
115
gliss.
119
pp


F
♩ = ca 86
calm, meditative
122
rubato
Fl.
Gtr.
p
mf
mp
130
damped harmonics
- minimal pitch
135
140
♩ = 86
A tempo
mp legato
rainstick
145
148


G
♩ = 138
152
Fl.
mf
Gtr.
mf
156
Fl.
mp
Gtr.
mp
160
Fl.
mf
Gtr.
mf
164
Fl.
Gtr.
168
rit.
tr
Fl.
mp
Gtr.
mp
duration ca. 6 minutes

Baobabs

for double Trio Basso

Fiona Tozer

(2007)

photograph by Merryl Riley

Program Notes.

Baobabs is a descriptive composition depicting the subject matter of the above photograph. The nature of the trees is captured in the selection of wooden instruments with their warm timbre, and the large size of the double basses. The African origin of the trees is reflected in the repeated ostinato patterns of the music, and the two-against-three rhythms. One trio represents the real trees while the other three instruments represent the reflection in the water. The 'reflection' instruments are prepared with strips of paper threaded through the strings, slightly altering their sound to show that the reflections are not exact replicas of the originals. The music explores the idea of mirror images in its use of themes and their inversions, and the second half of the work constitutes an imperfect retrograde inversion of the whole of the first half.

Performance Notes.

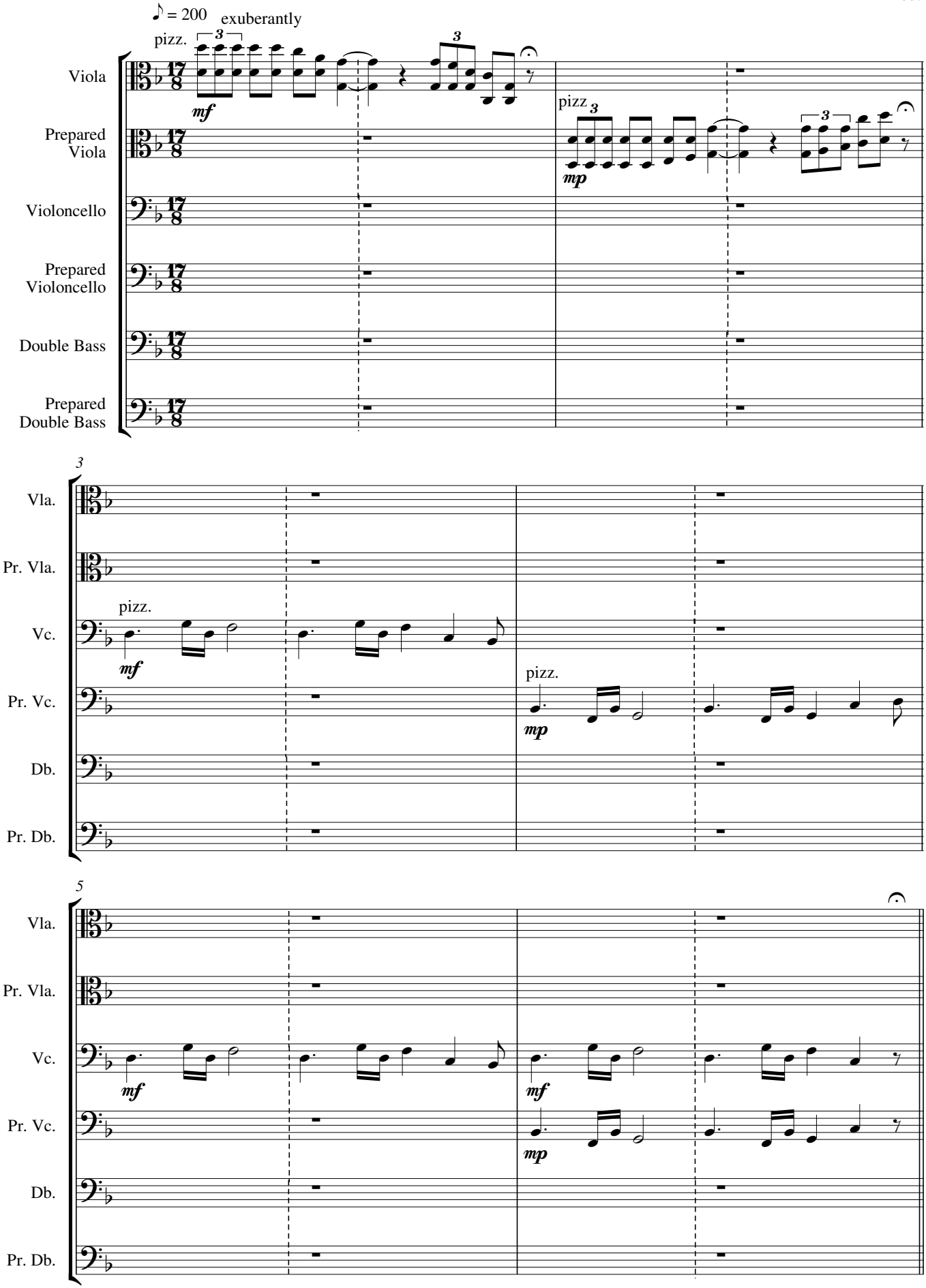
Instrumentation :	Viola	Prepared Viola
	Cello	Prepared Cello
	Double Bass	Prepared Double Bass

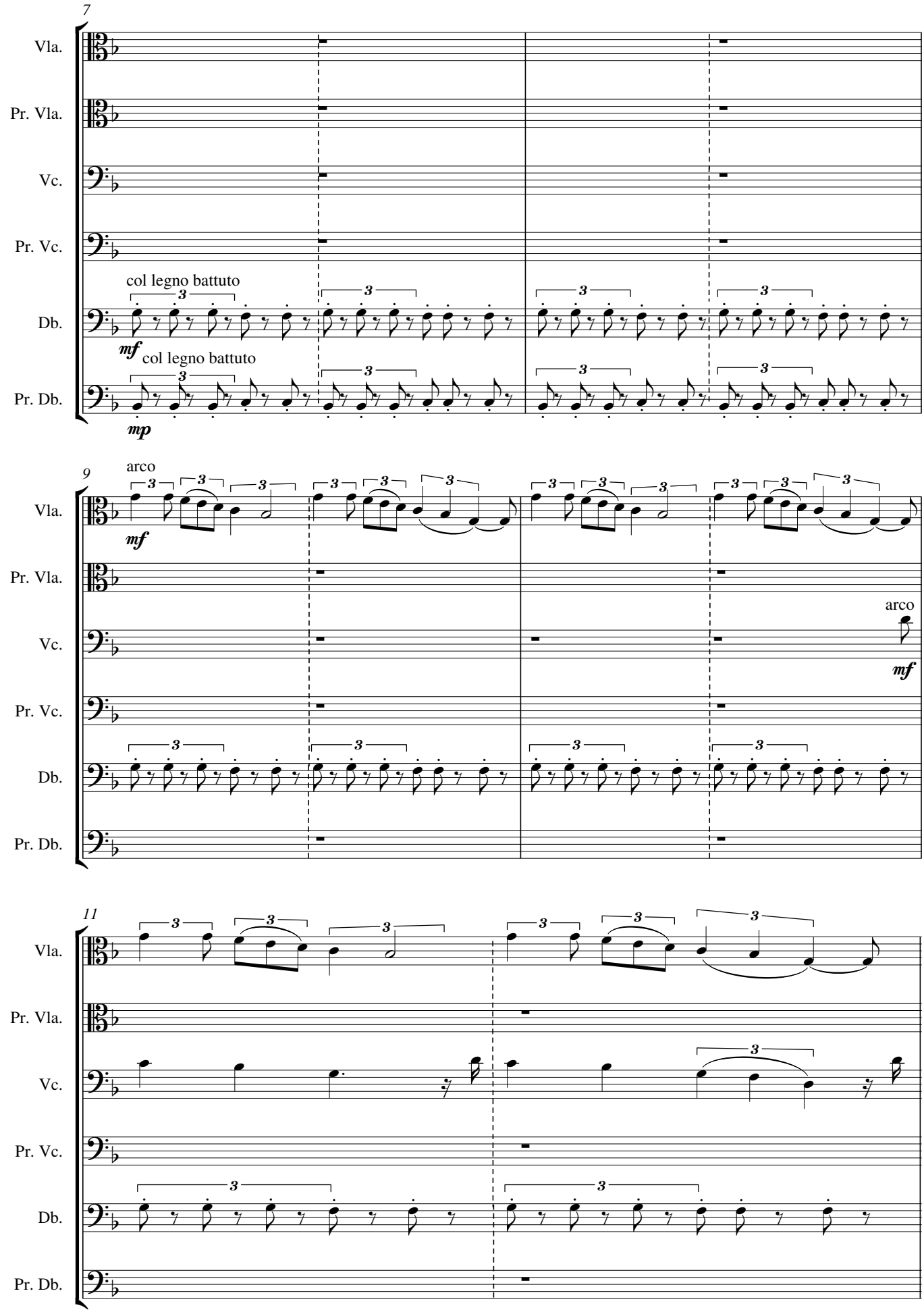
- Each prepared instrument has a strip of paper threaded through the strings near the bridge, secured to itself to prevent it from slipping out.
- In the first half of the work, the 'real image' is dynamically slightly louder than the 'reflection', while in the second half, the 'reflection' is louder than the 'real image'.
- The time signature 17/8 should be counted as 8 and 9, shown by the dotted line.
- When the photograph is turned, the players can look at the projection before continuing. If it is not possible to show the projection, the players may at that point make a show of turning their scores upside down.

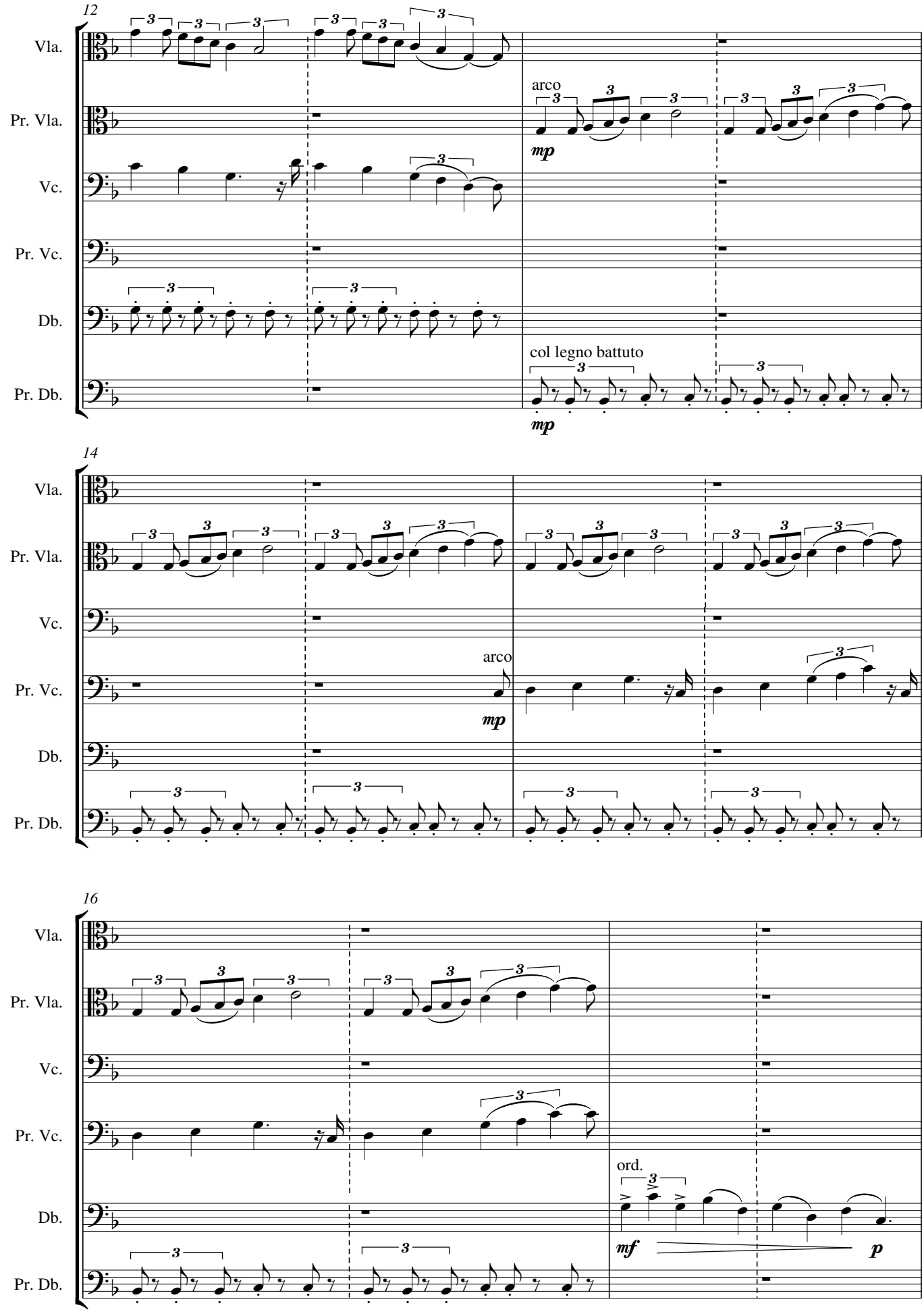
Baobabs

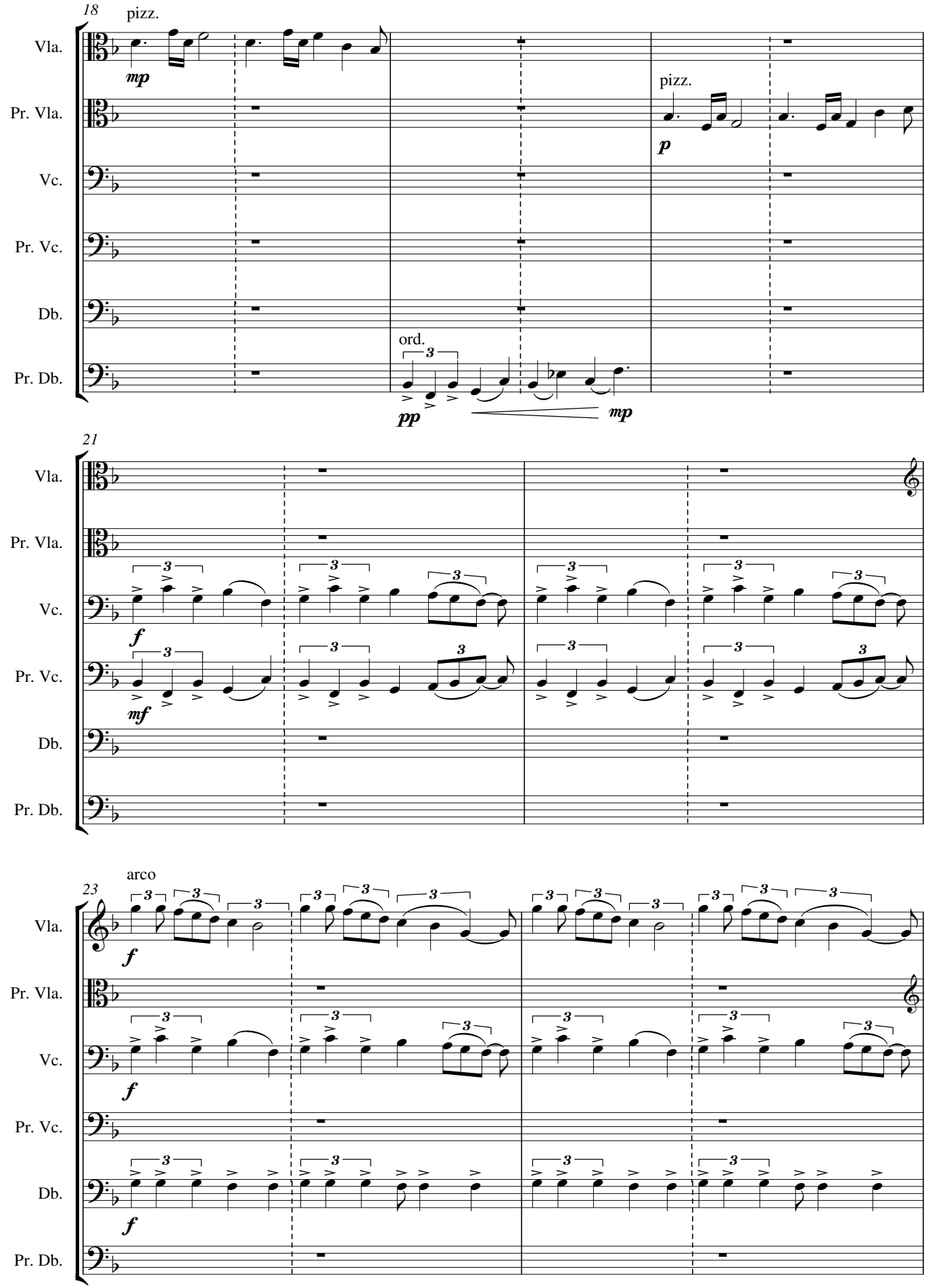
for double trio basso

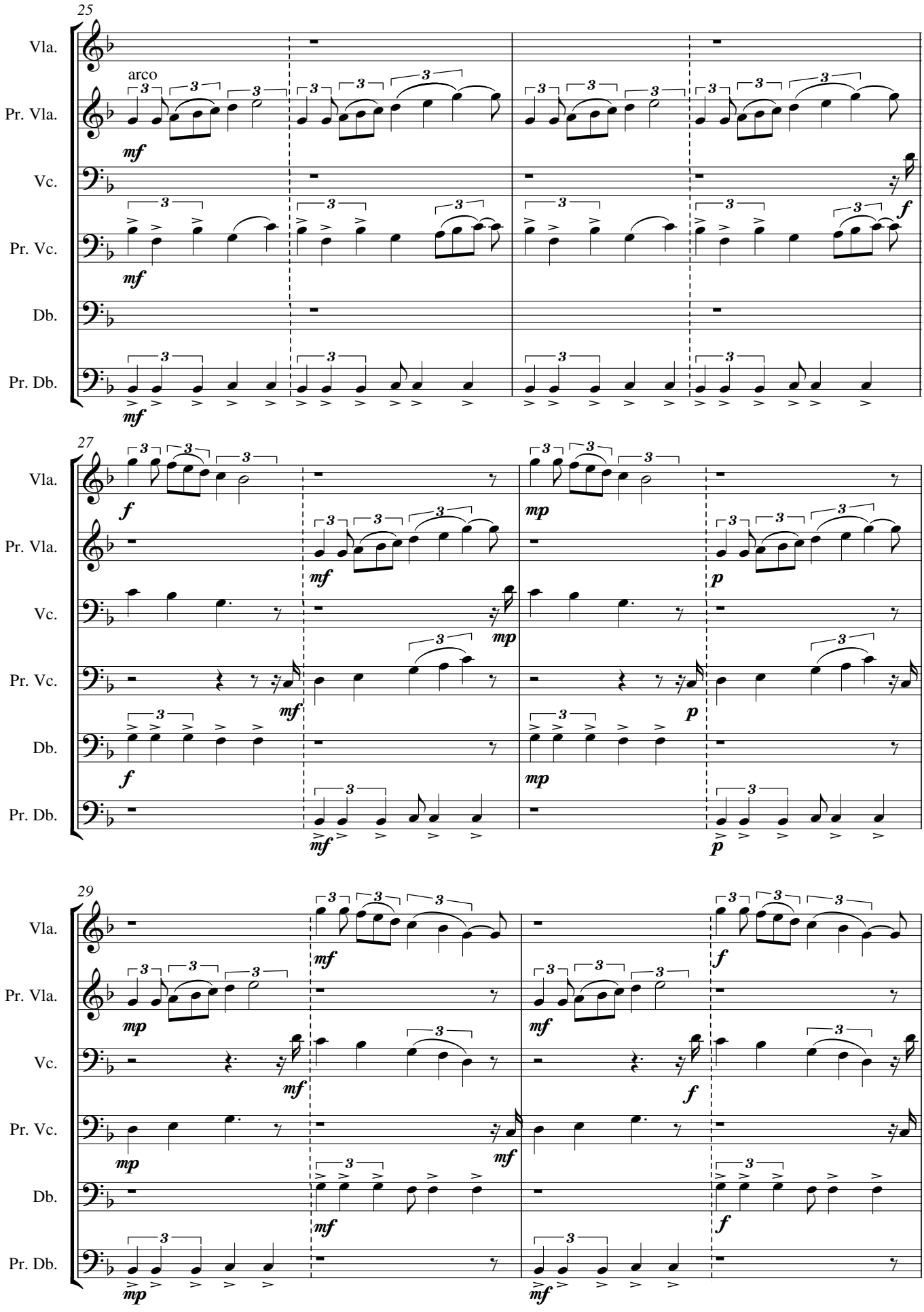
FIONA TOZER
2007

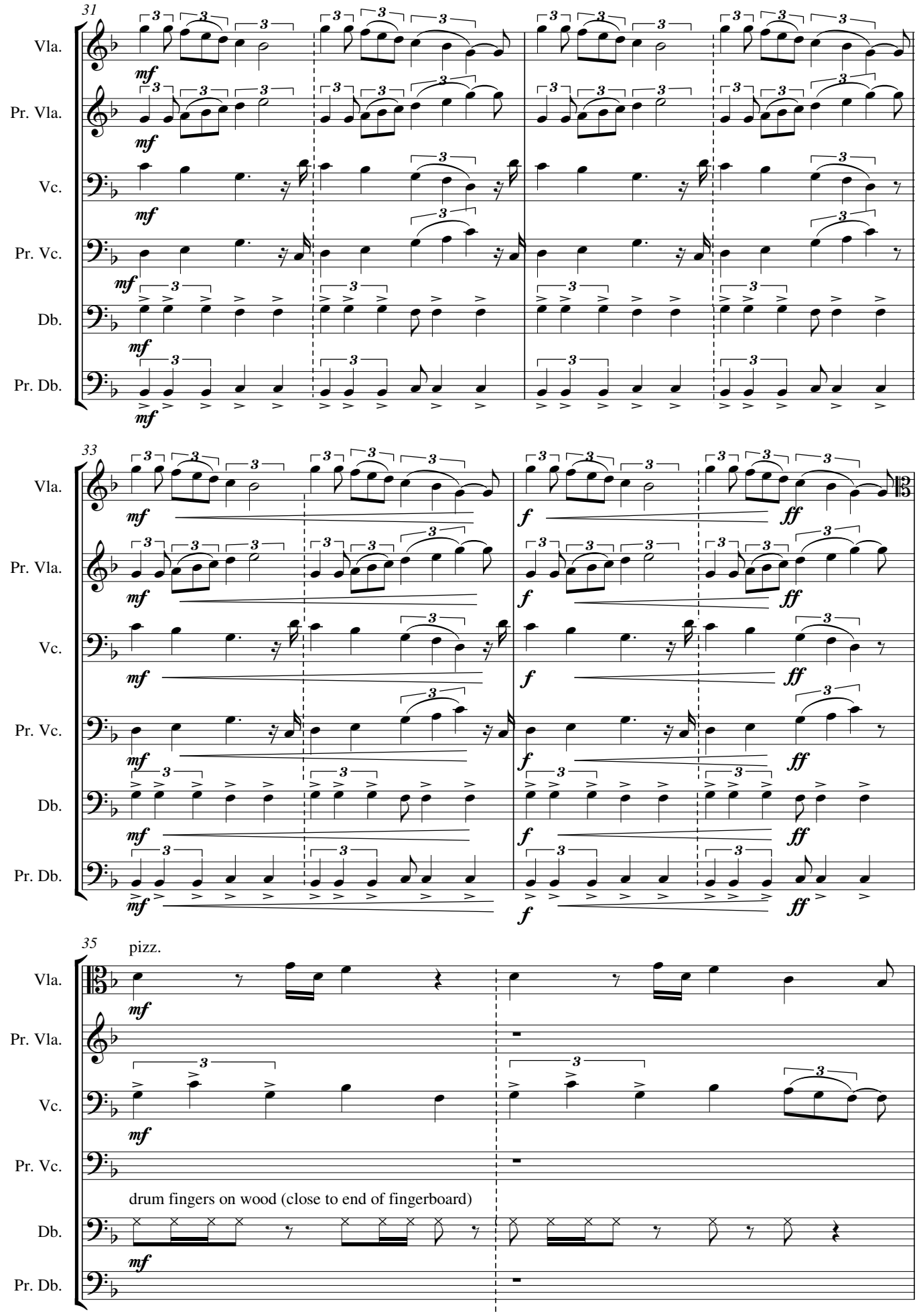


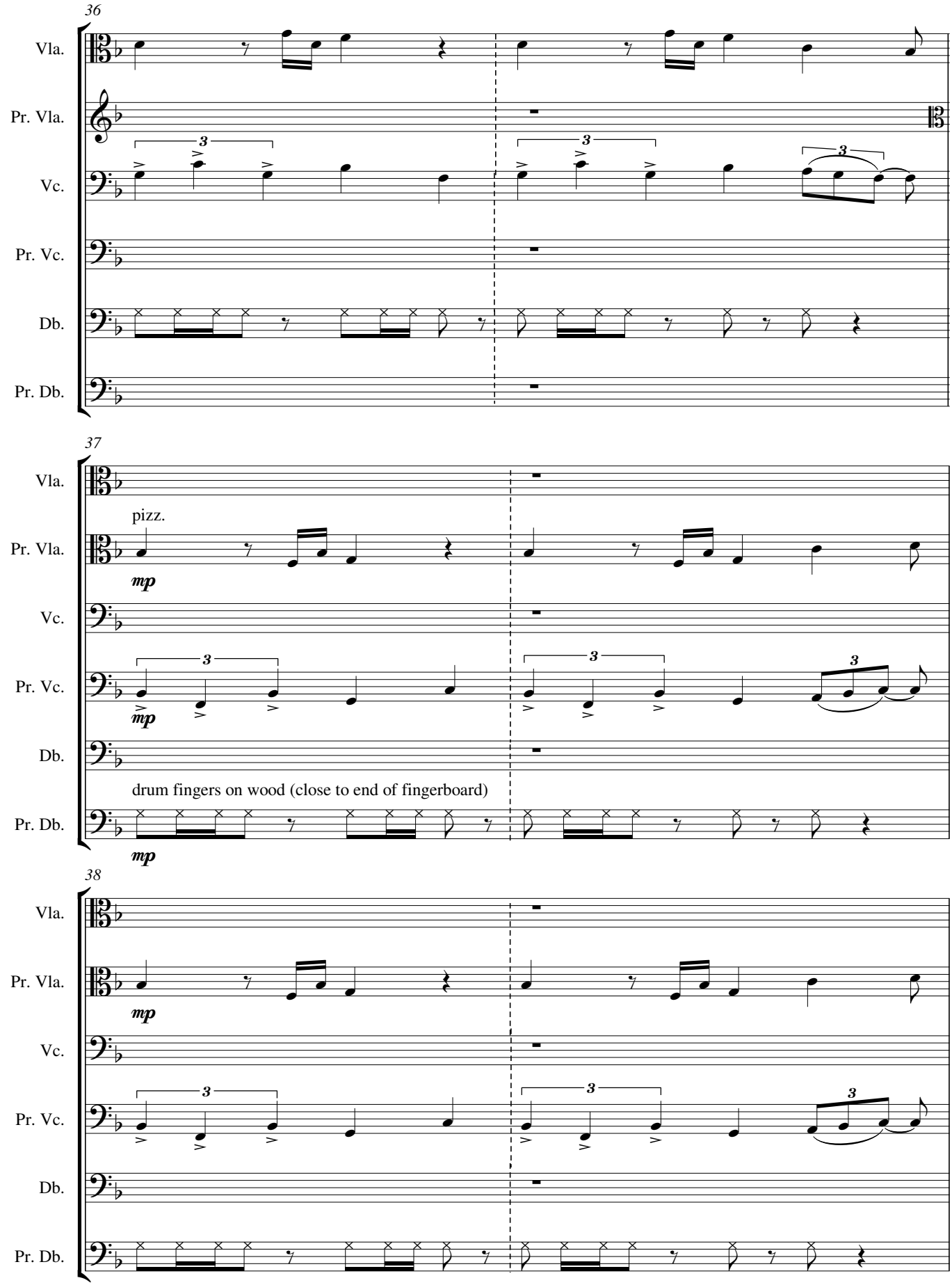

7
Vla.
Pr. Vla.
Vc.
Pr. Vc.
col legno battuto
Db.
mf
col legno battuto
Pr. Db.
mp
9
arco
Vla.
mf
Pr. Vla.
arco
Vc.
mf
Pr. Vc.
Db.
Pr. Db.
11
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.

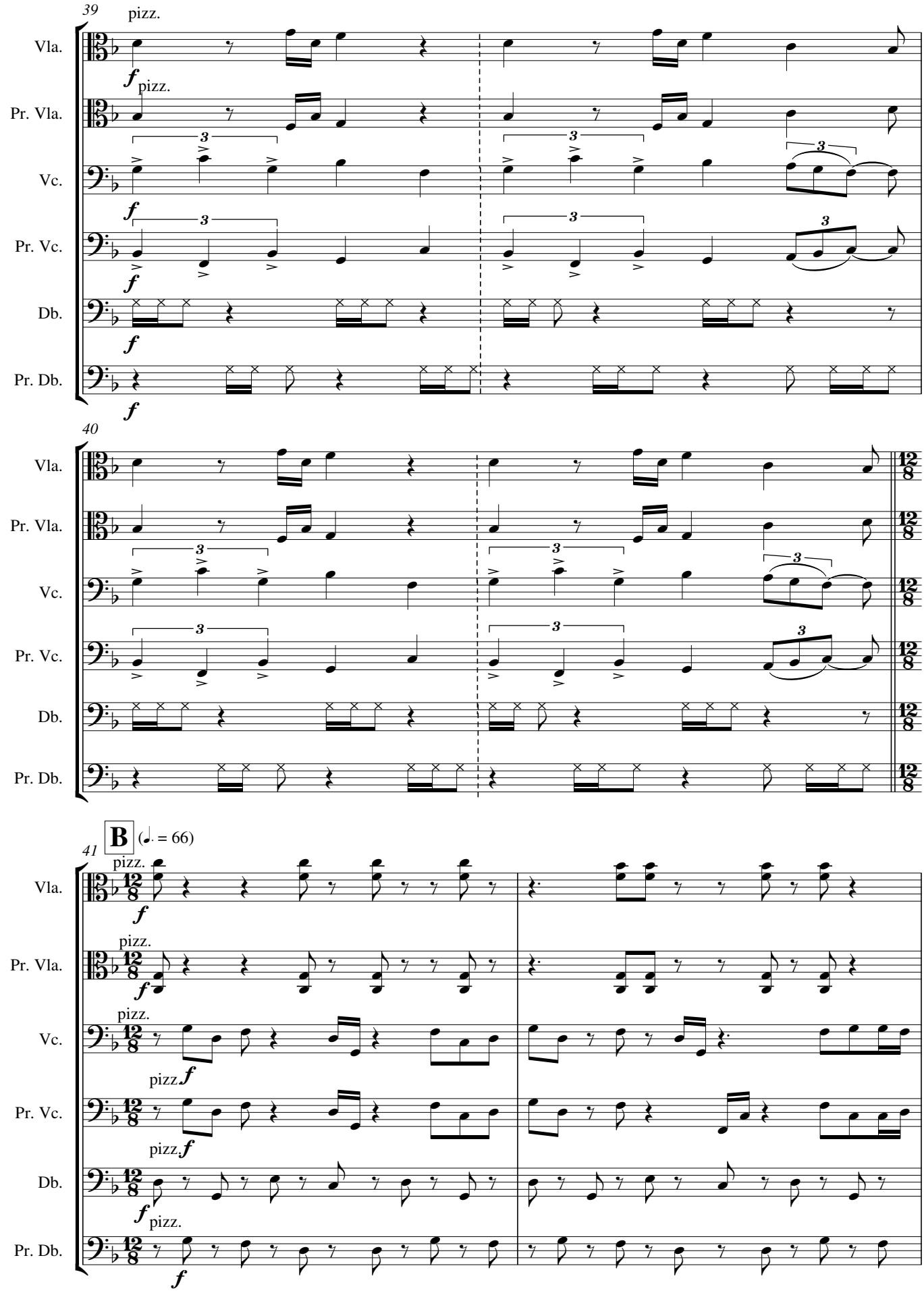

12
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
arco
mp
col legno battuto
mp
14
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
arco
mp
16
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
ord.
mf
p

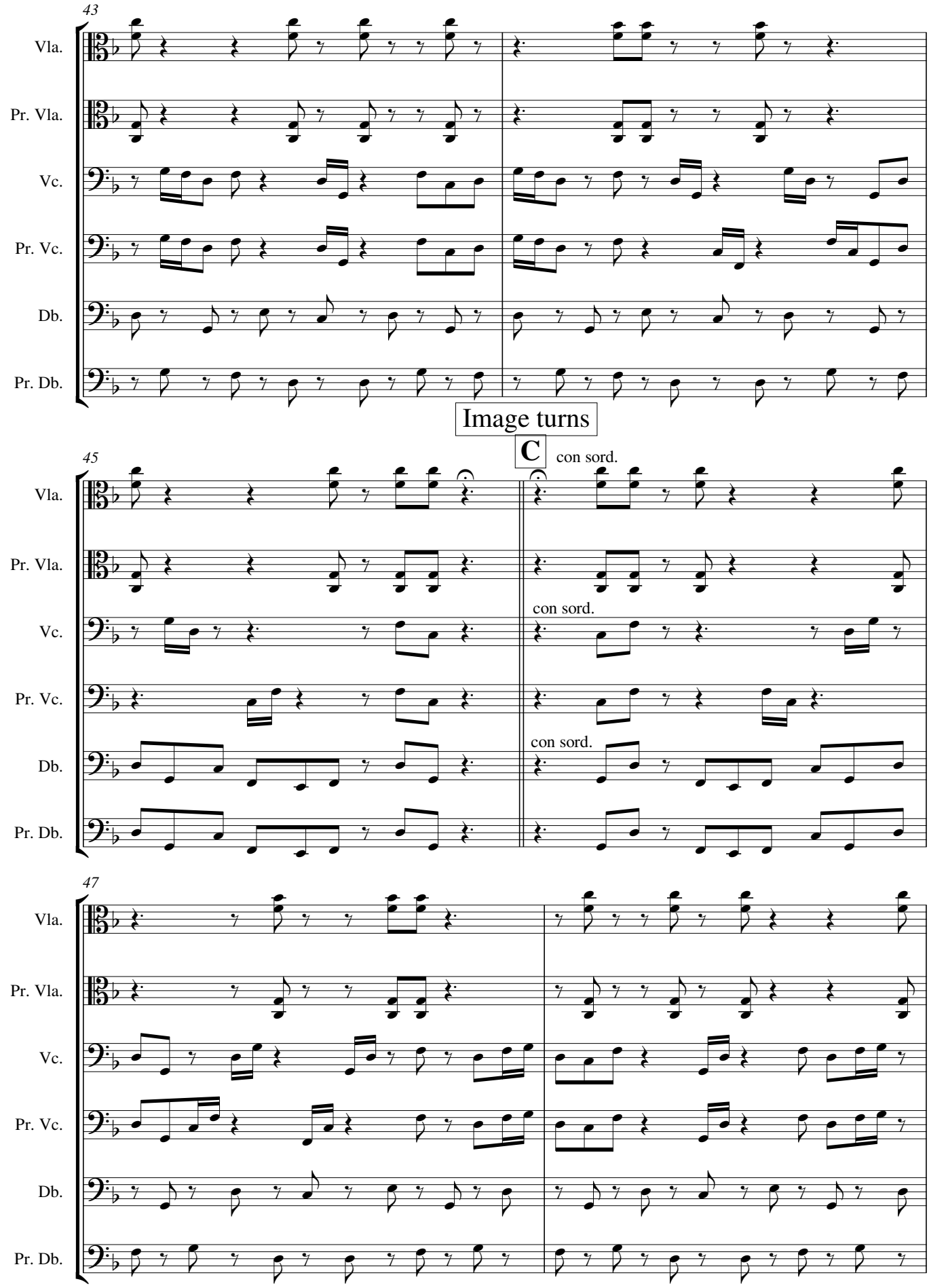

18
pizz.
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
mp
pizz.
p
ord.
pp
mp
21
f
mf
23
arco

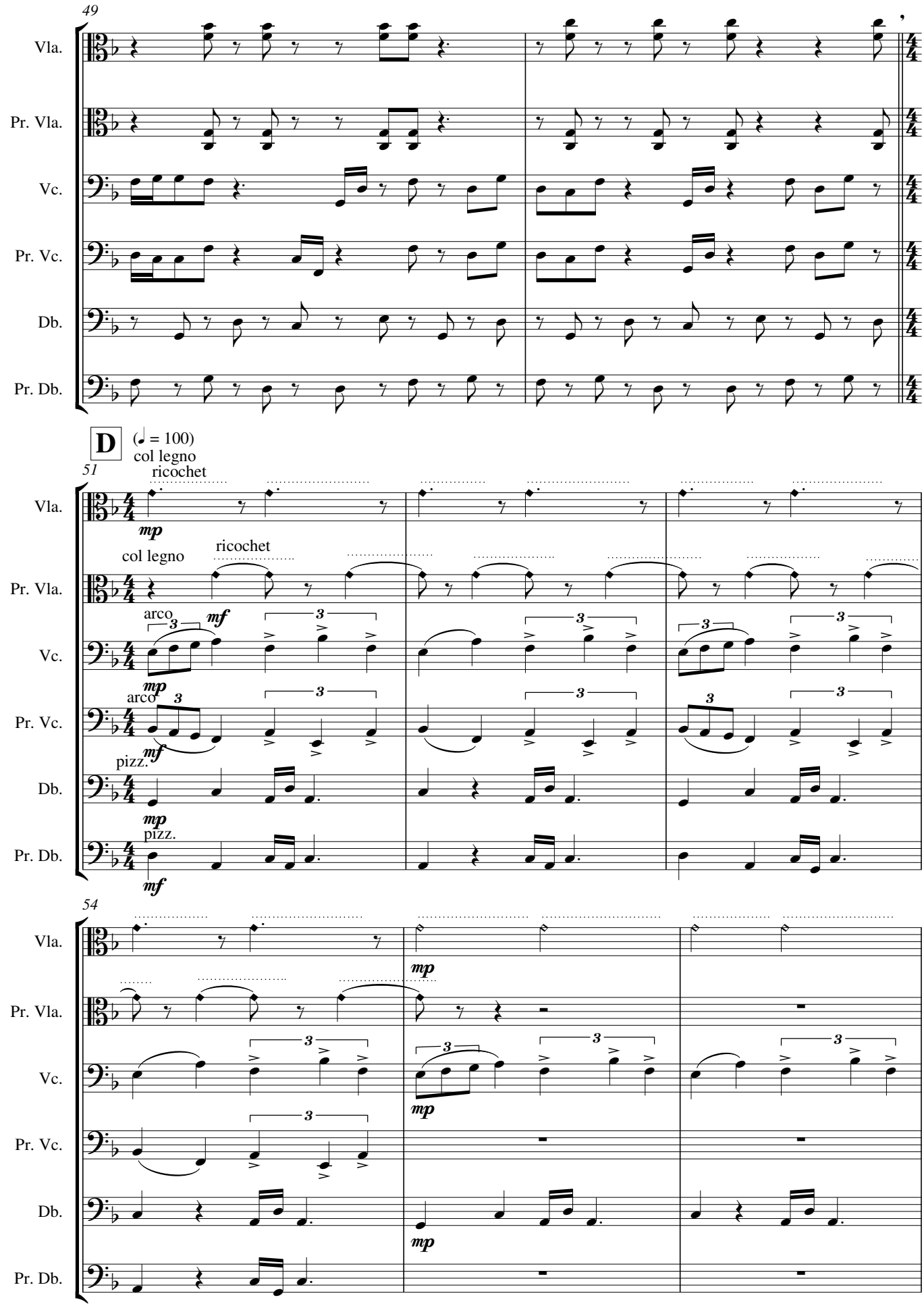

25
Vla.
arco
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
27
29

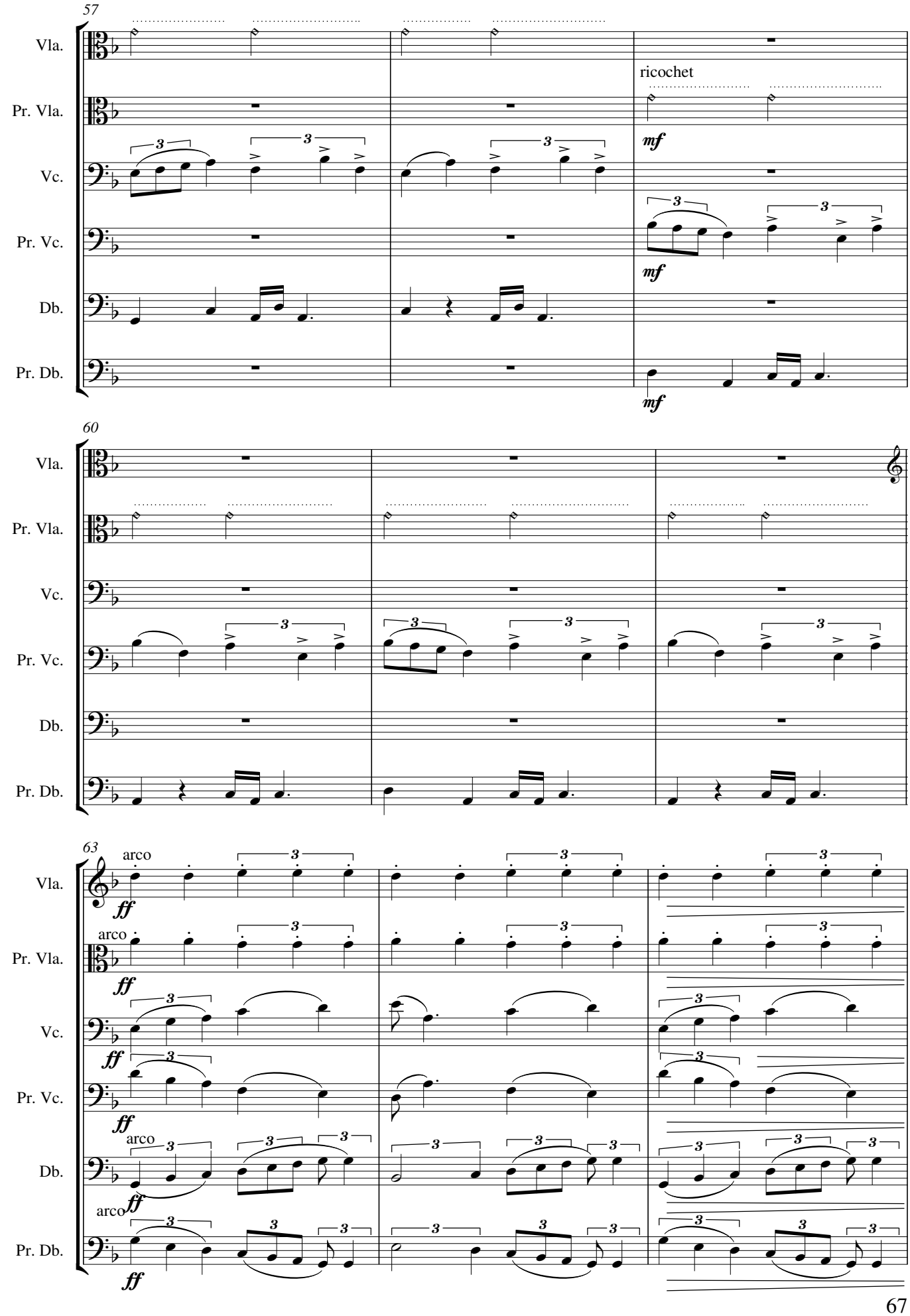

31
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
mf
33
f
ff
35
pizz.
drum fingers on wood (close to end of fingerboard)

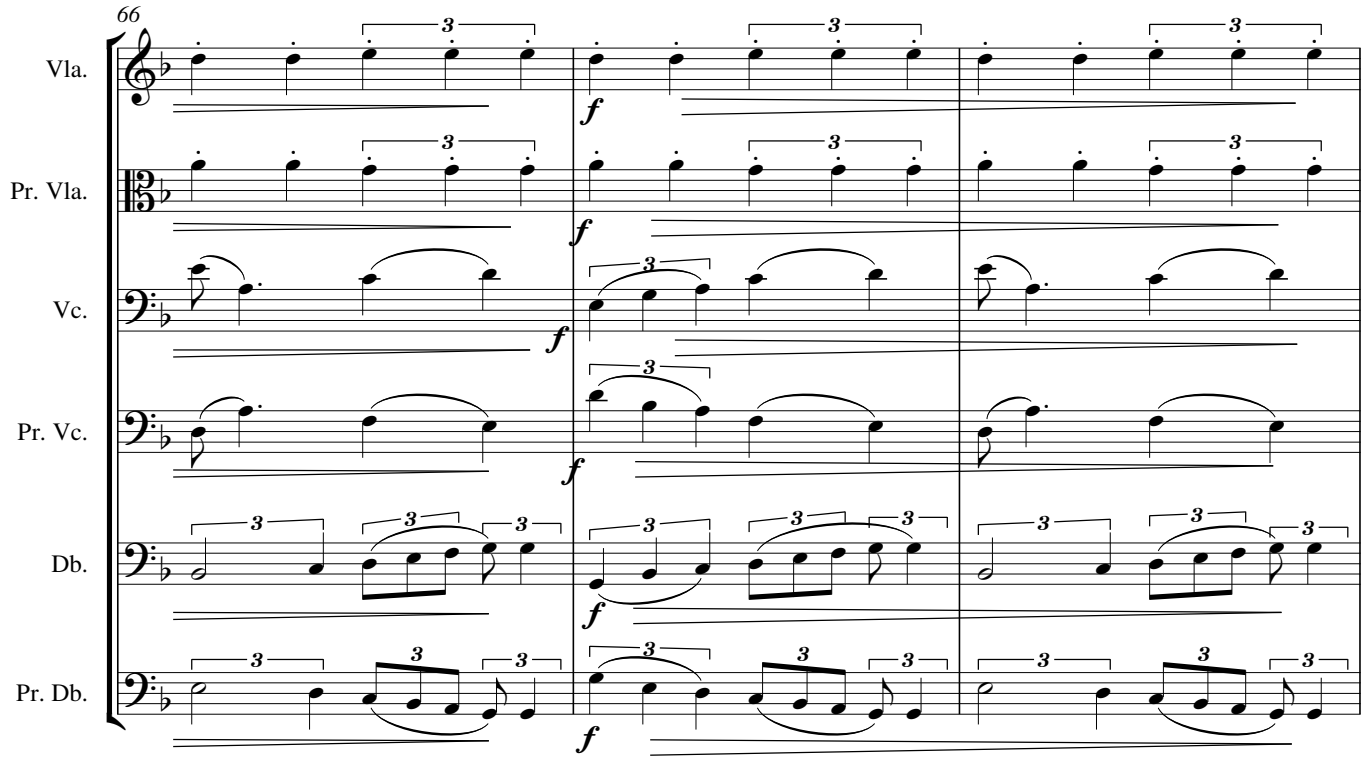

36
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
37
Vla.
pizz.
Pr. Vla.
mp
Vc.
Pr. Vc.
mp
Db.
drum fingers on wood (close to end of fingerboard)
Pr. Db.
mp
38
Vla.
Pr. Vla.
mp
Vc.
Pr. Vc.
Db.
Pr. Db.

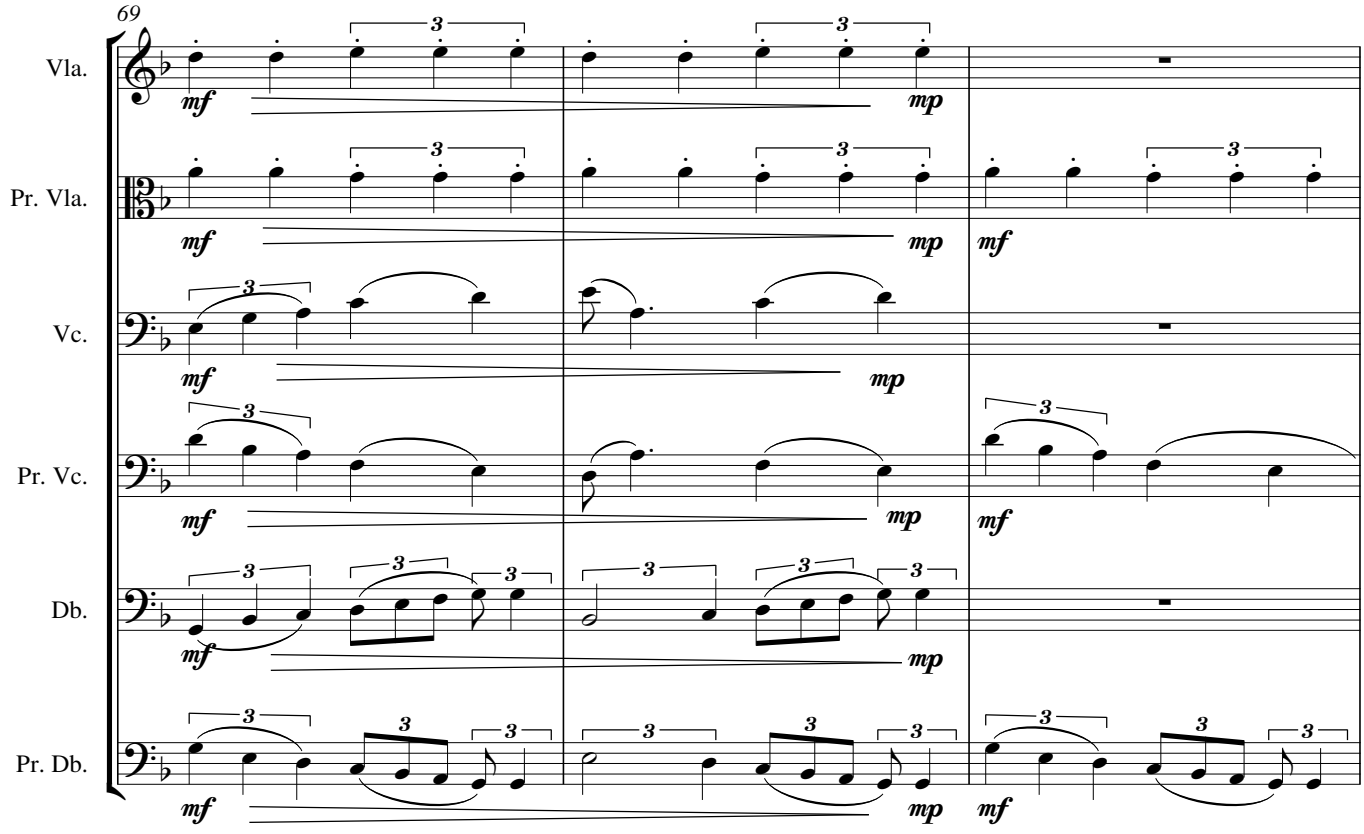

39
pizz.
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
40
41
B
(♩. = 66)

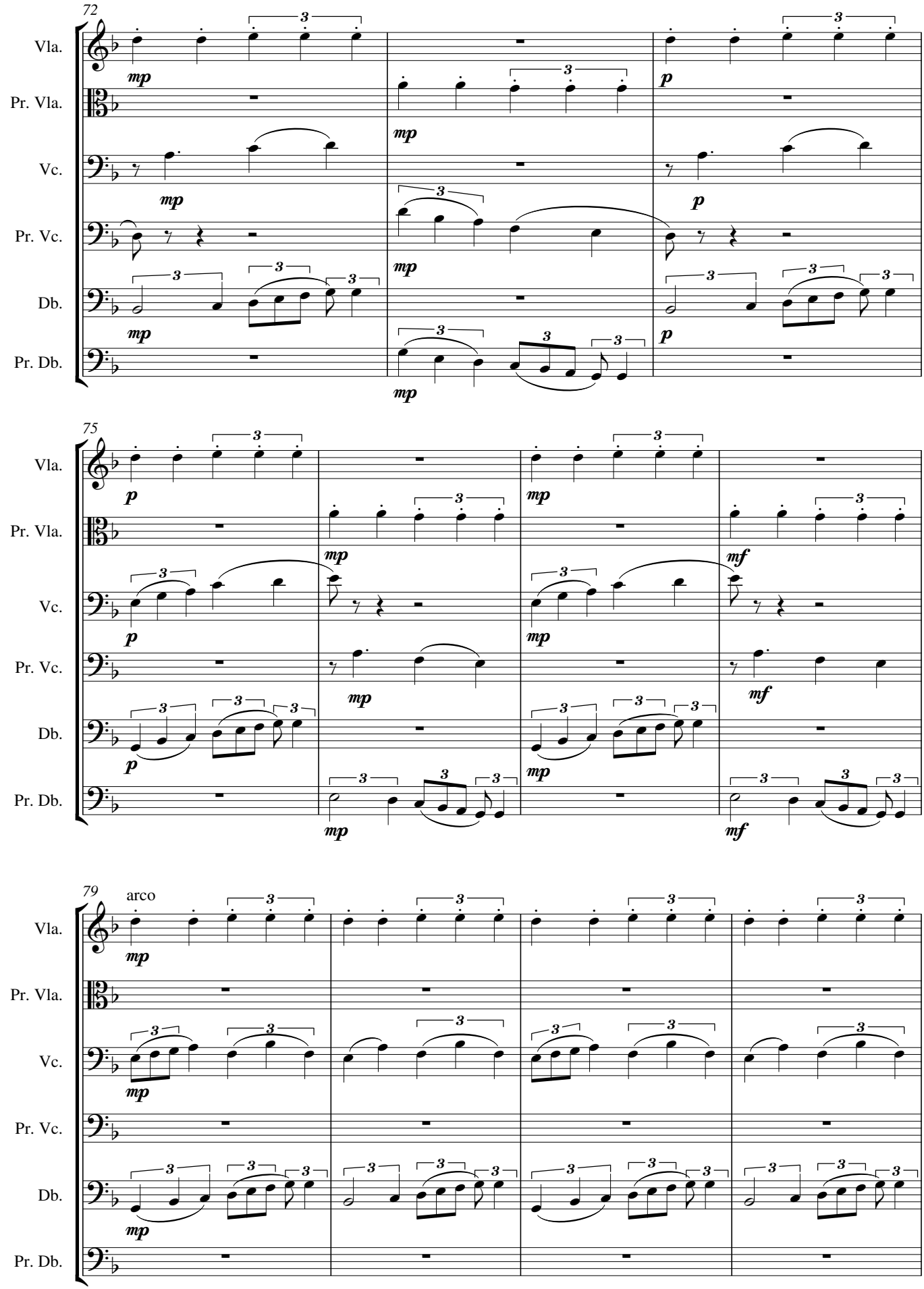

43
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
Image turns
C
con sord.
45
con sord.
con sord.
47

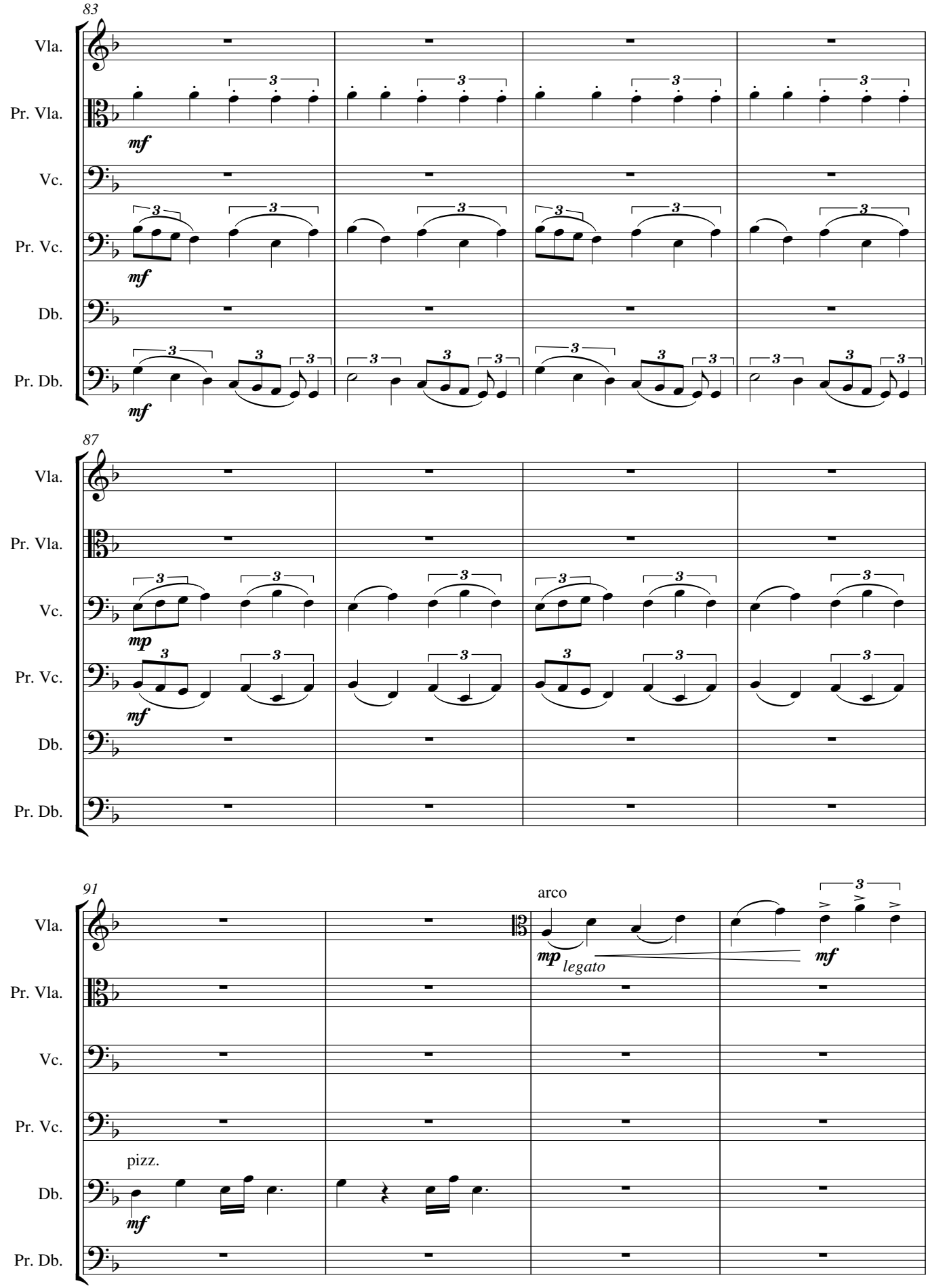

49
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
D
(♩ = 100)
col legno
51
ricochet
mp
col legno
ricochet
arco
mf
3
mp
arco
mf
pizz.
mp
pizz.
mf
54
mp
mp
mp

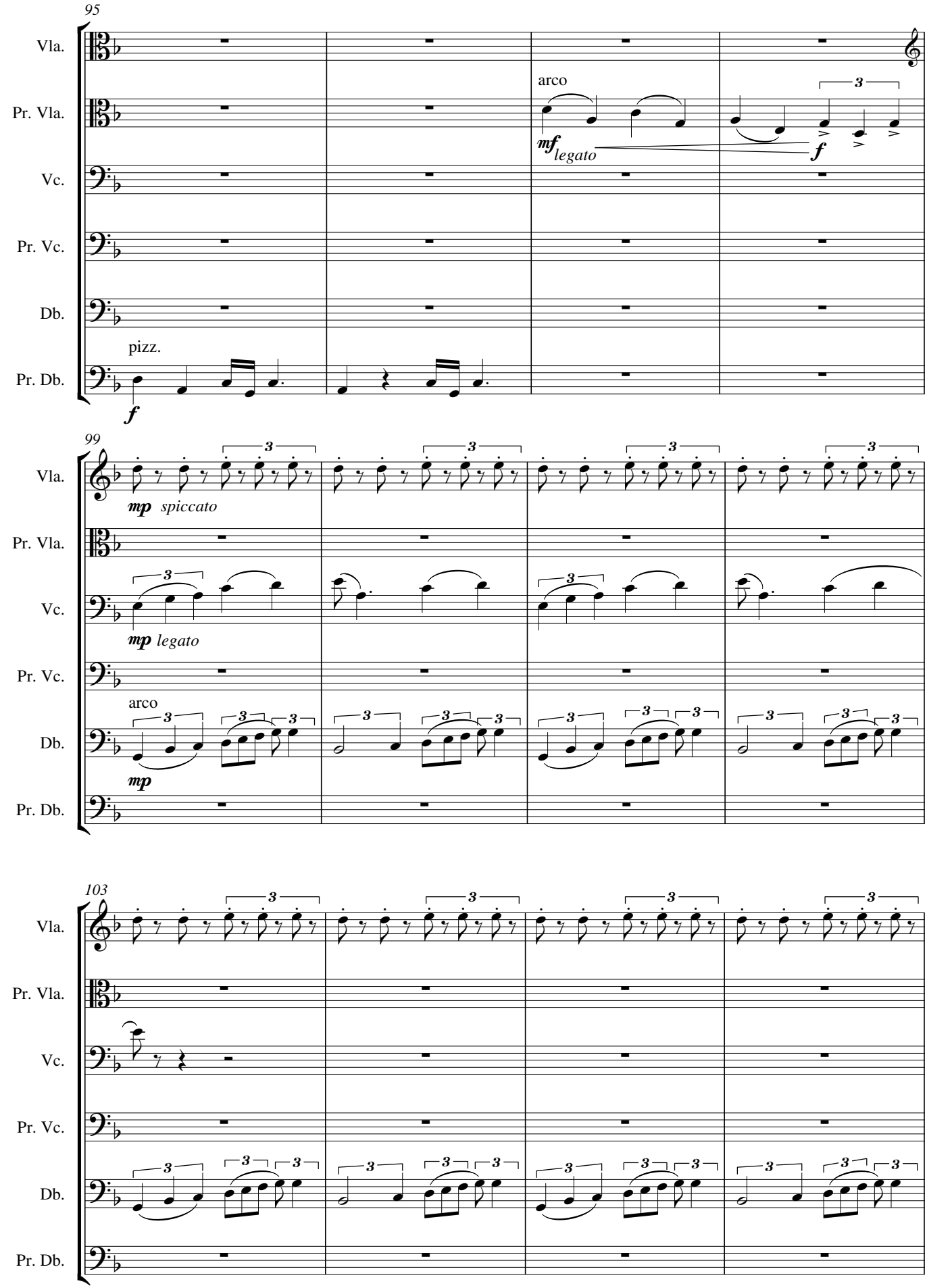

57
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
ricochet
mf
60
63
arco
ff

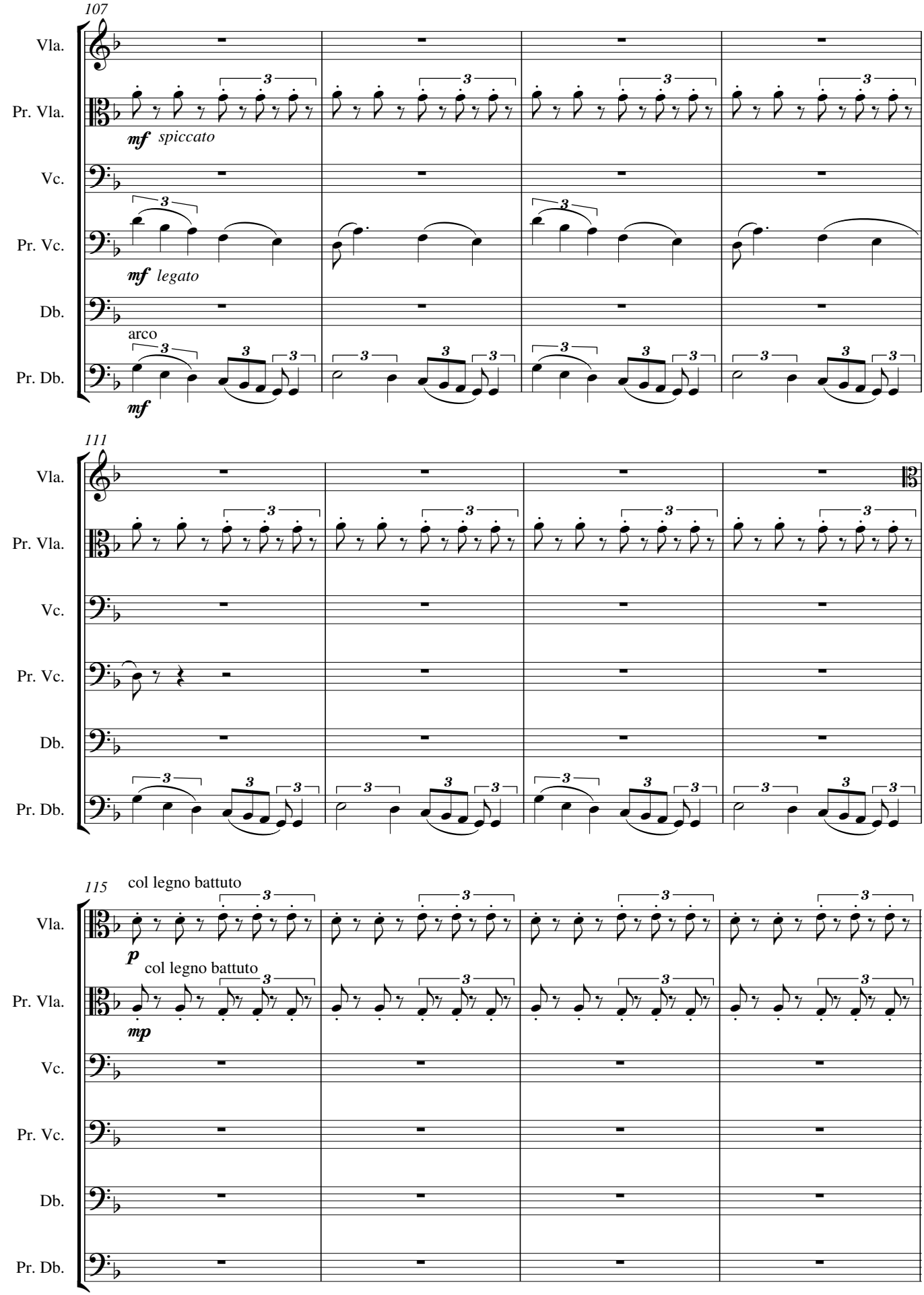

66
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
f
3

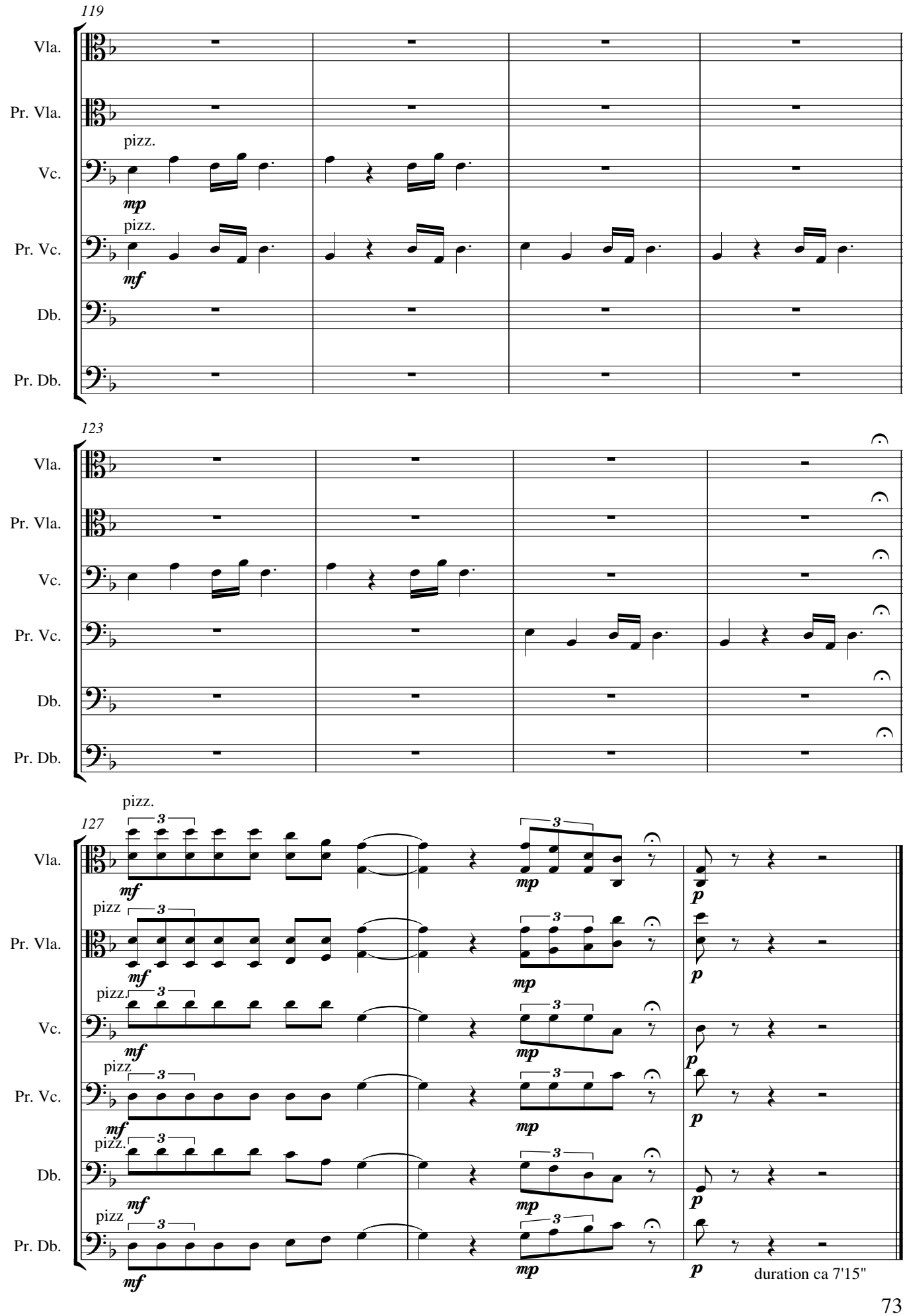

69
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
mf
mp
3


72
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
mp
p
75
mf
79
arco


83
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
mf
87
mp
91
arco
mp
legato
mf
pizz.


95
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
arco
mf legato
f
3
pizz.
f
99
mp spiccato
mp legato
arco
mp
103


107
Vla.
Pr. Vla.
mf spiccato
Vc.
Pr. Vc.
mf legato
Db.
arco
Pr. Db.
mf
111
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
115
col legno battuto
Vla.
p
col legno battuto
Pr. Vla.
mp
Vc.
Pr. Vc.
Db.
Pr. Db.


119
Vla.
Pr. Vla.
pizz.
Vc.
mp
pizz.
Pr. Vc.
mf
Db.
Pr. Db.
123
Vla.
Pr. Vla.
Vc.
Pr. Vc.
Db.
Pr. Db.
pizz.
127
Vla.
mf
3
mp
p
pizz
Pr. Vla.
pizz.
Vc.
Pr. Vc.
Db.
Pr. Db.
duration ca 7'15"

Metaphor
for SATB choir and percussion

Fiona Tozer
(2007)

Photograph by Merryl Riley

Program notes.

This work is a musical representation of the above Namibian desert landscape by photographer Merryl Riley. The scene is interpreted as a metaphor for the singularity of the occurrence of life in an essentially hostile environment and its ability to survive against all odds. The expanse of empty desert symbolizes the extent of space-time in the known universe, while the tree, as a focal point, represents the Earth and human existence, where life established itself and flourished while conditions were ideal, but which will inevitably face extinction as a natural result of universal entropy.

The work is divided into four sections.
Part I : *Whisper of Black Holes*. Distant black holes broadcast faint whispers of X-ray emissions as multiple universes are born.
Part II : *Harmony*. The elements of our universe coalesce to create the conditions conducive to the emergence and evolution of life.
Part III : *Singularity*. A brief history of the growth and projected decline of consciousness, captured in a few quotes from human civilization that may have found their way into outer space as radio signals. (References for quotes are shown in the score.)
Part IV : *Life Recycled*. A series of five haiku, presented in the form of a theme and evolution, considers the nature of the metaphor and the continual recycling of life in the universe.

Instrumentation.

The choir : Mixed choir (SATB) divided into eight groups. Each group must consist of a minimum of two, or ideally, three male voices (four groups of tenor voices

and four bass), with one alto and one soprano per group. The groups can be expanded proportionately to fill a larger venue.

Percussion : Timpani (tuned A and D) (alternatives : bass drum, isgubu drum or toms)
Rainstick
Djembe drum
Shakers containing loose coins
Tibetan cymbals
Optional : Cymbal (on stand)
Drum kit
Shakers

Performance instructions :

Choir positioning: The choir should be positioned for a 'surround sound' effect, as shown on the stage plan. Alternatively, if the venue and size of choir allow, the groups can be positioned completely surrounding the audience.

Dice throw: The throwing of the dice makes reference to Einstein's statement “God does not play dice with the universe.” The dice can be thrown by the percussionist. They should be shaken audibly (at least four dice), and thrown on a resonant surface such as the timpani (or its substitute drum) in a somewhat theatrical gesture. After Part III, the dice should be shaken but purposely not thrown – optionally, the percussionist can pocket the dice and leave the stage.

Part I.
The shout that starts Part I is representative of the big bang. “Hau” is pronounced like the English word “how”. If a second percussionist is available, a cymbal crash can be added.

Whispers follow a very brief pause after the shout, dropping in and out on conductor's cue, and with an abrupt stop at the end of the section. Singers should whisper 'sense', i.e. any story, poem or song lyrics. The content of the whispers within a group should be unsynchronised, but the sound should crescendo and decrescendo together. The words are never vocalised. The soprano(s) and alto(s) can also whisper in coordination with their associated group. The entire duration of Part I is flexible, but should ideally be about 2 minutes, which gives each whisper event a duration of 20 to 25 seconds.

Part II.
The drone builds a harmonic series based on fundamental note D. Arrange the basses with deep enough voices to hold the low note between the outer bass groups. “Om” is pronounced “oom” as in Buddhist chant. Close the lips on the “m” but keep resonance in the mouth. Each singer in the group breathes in turn - entries and exits should be imperceptible to create a continuous drone. Durations before each voice entry are variable, at the discretion of the conductor – use multiples of the numbers thrown on the dice.

The altos and sopranos sing staccato notes – timing can be rubato but the effect must be that the notes occur sparsely and randomly from all sides.

Apart from the scored percussion, shakers and other percussive instruments could be added for sparse background effect after the rainstick in measure 27.

Part III.
Durations of the altos' “Gaia” chant are variable - use the dice to establish the number of repetitions.

Radio broadcasts section at measure 73: Spoken quotes from various radio and television shows and broadcasts can be made acoustically or can be pre-recorded and played back, ideally from surround-sound speakers. The sound should become increasingly dense and be interspersed with static noises, which should be made acoustically by the singers.

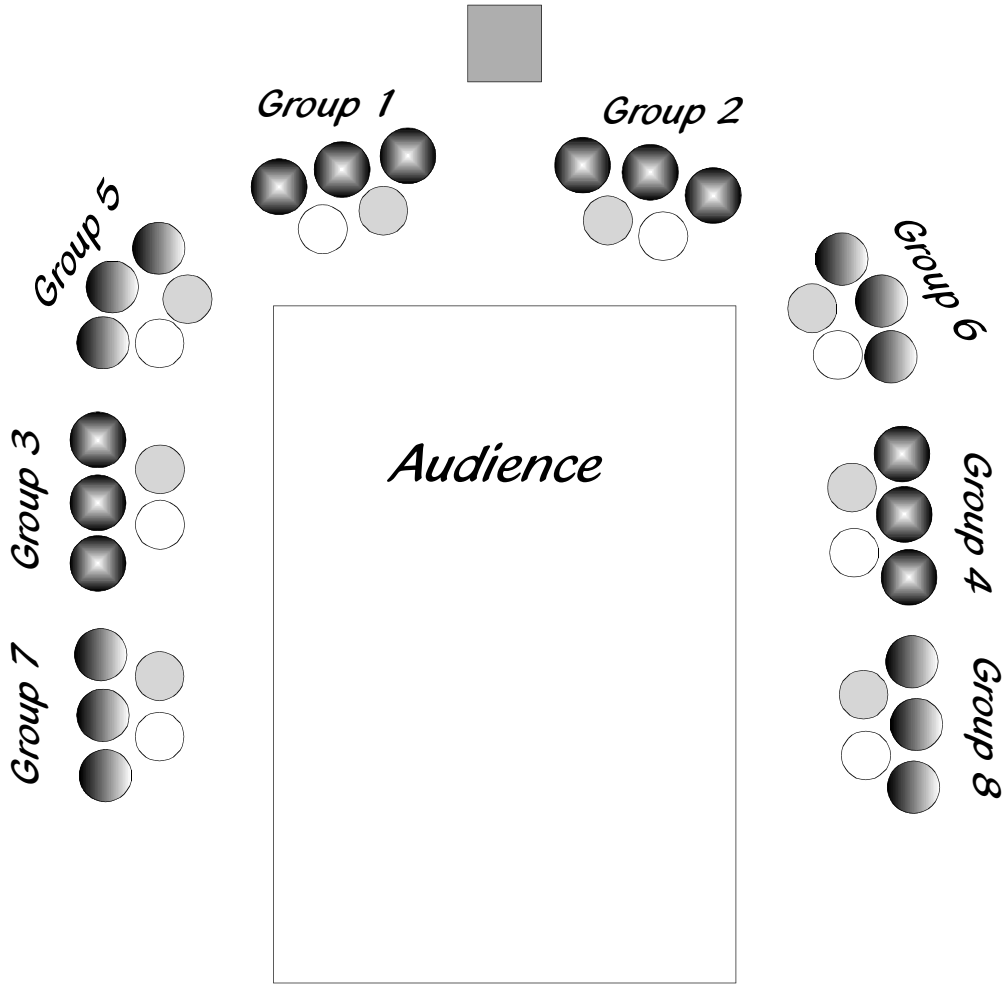
Rap section: Use the included rap lyrics for the 'rap section' at bar 84 or, alternatively, have the rapper make up his/her own lyrics. The rapper and the beat box performers will need microphones and amplification.

Whumming is whistling and humming simultaneously – the pitch of both sounds can be varied independently.

Rap Lyrics :

The tree in the desert symbolizes dissolution
In the dying stages of the planet's evolution
When the rivers run dry and the seeds of life scatter
It's part of the continuum it doesn't really matter
You know matter is just energy and energy's continuous
So life goes on forever – it never - stops changing
See the cosmos rearranging with the whisper in the distance
Of emerging black holes as they pop into existence
And the cycle starts again with a new set of parameters
And life evolves to consciousness before its calamitous
Return to dust - it must - be just - a moment of clarity
That signals the beginning of another singularity
Metaphor for life
Metaphor for life

Metaphor
Stage Plan



Key :

Percussion

Bass

Tenor

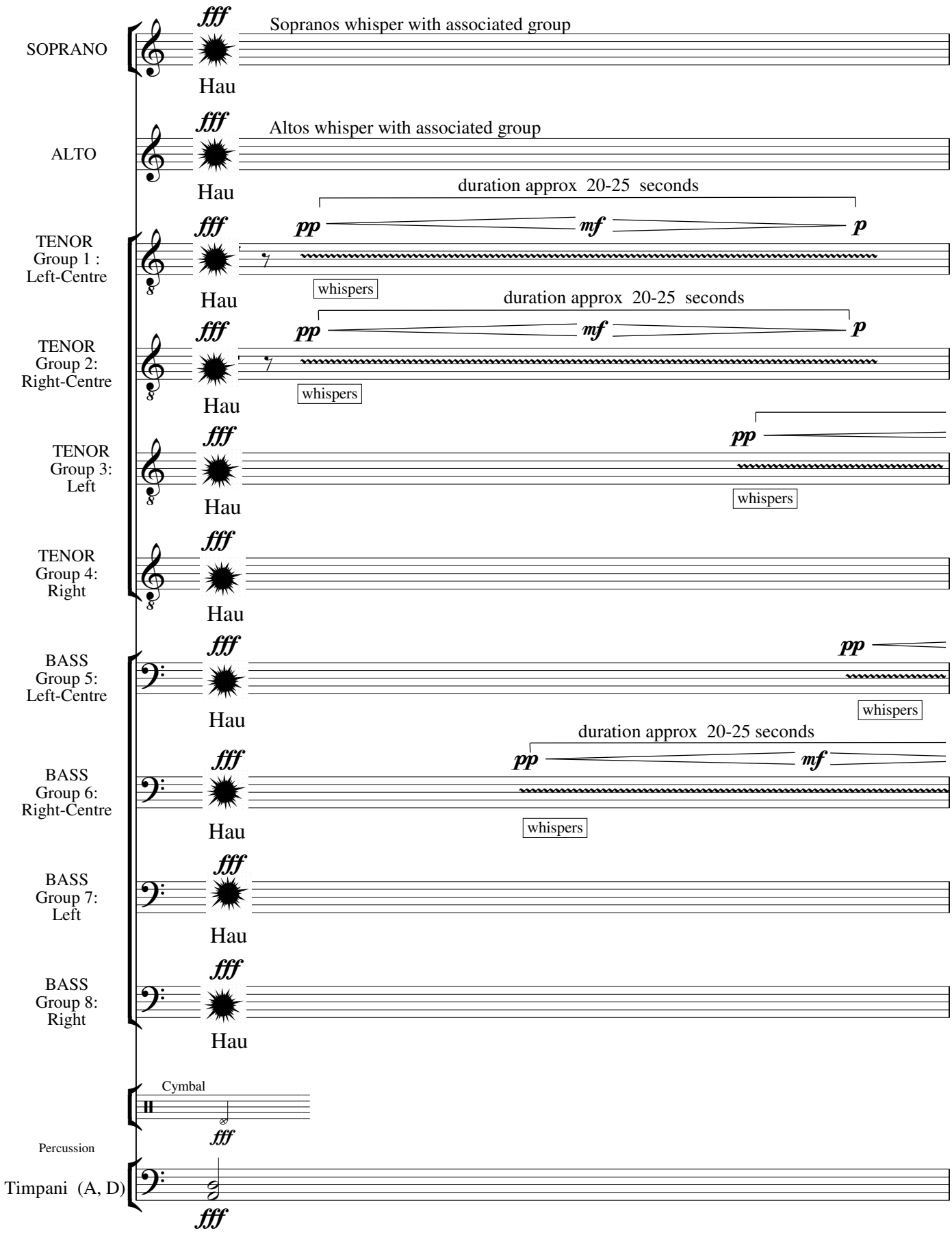
Alto

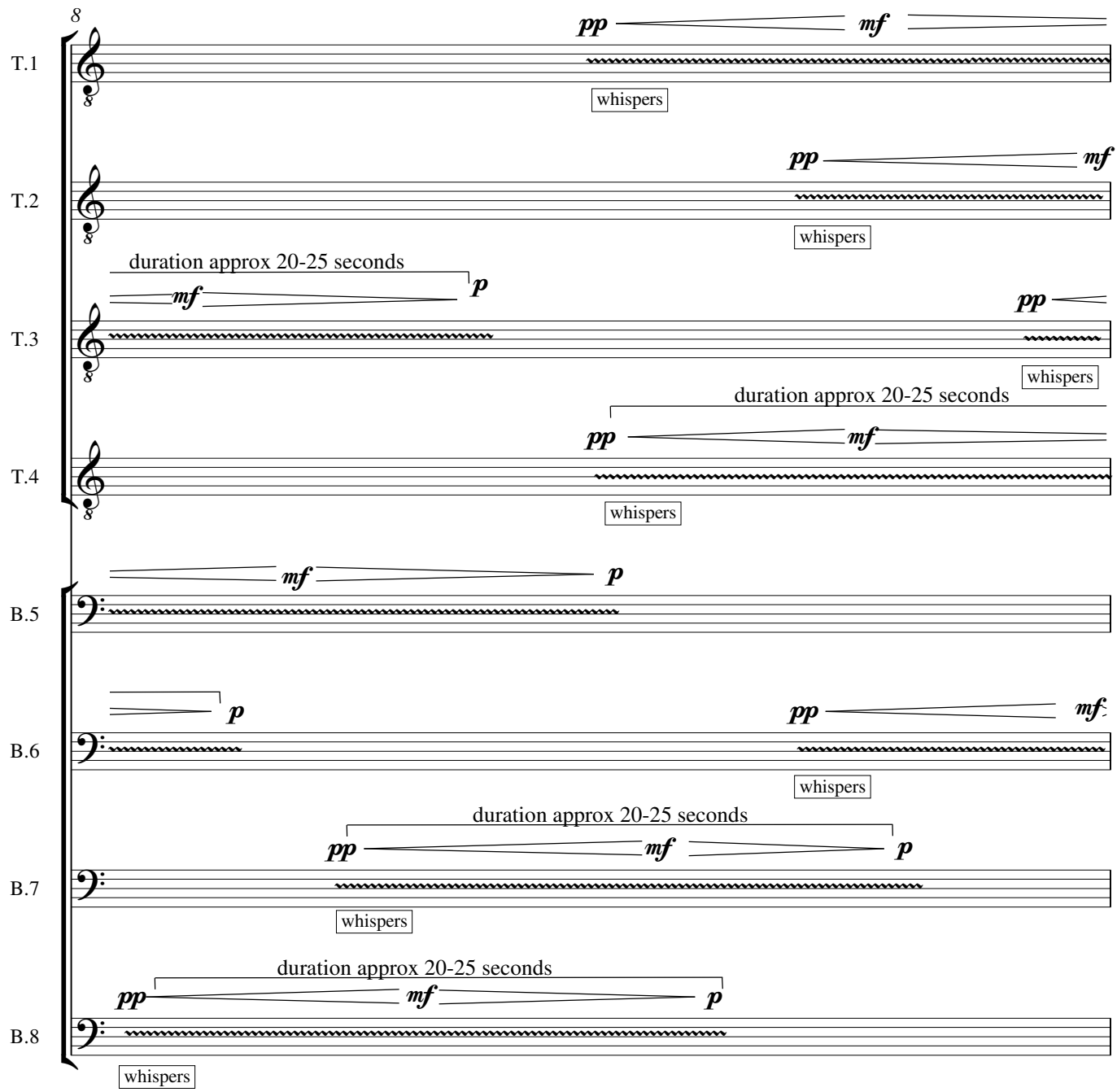
Soprano

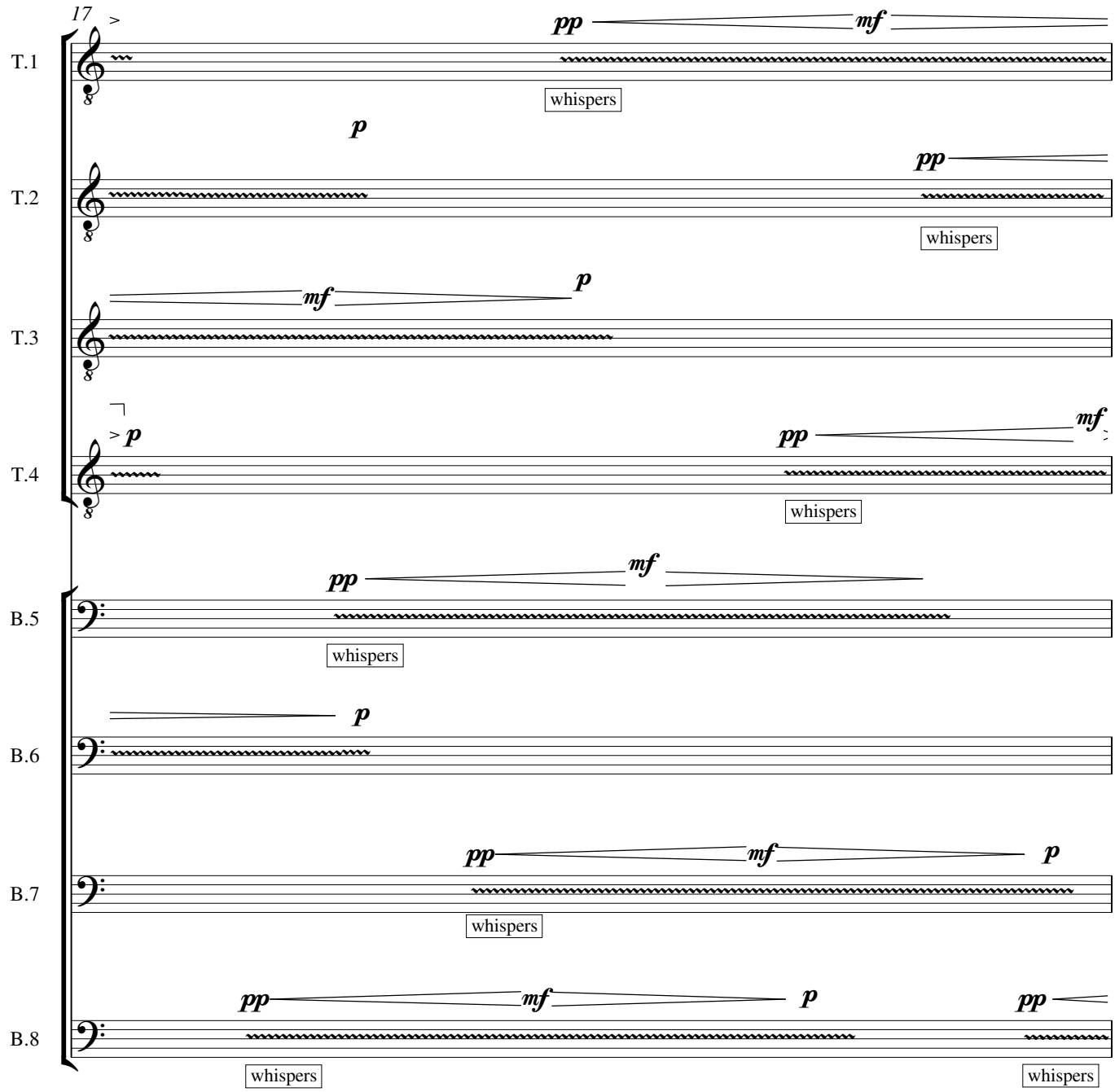
Metaphor

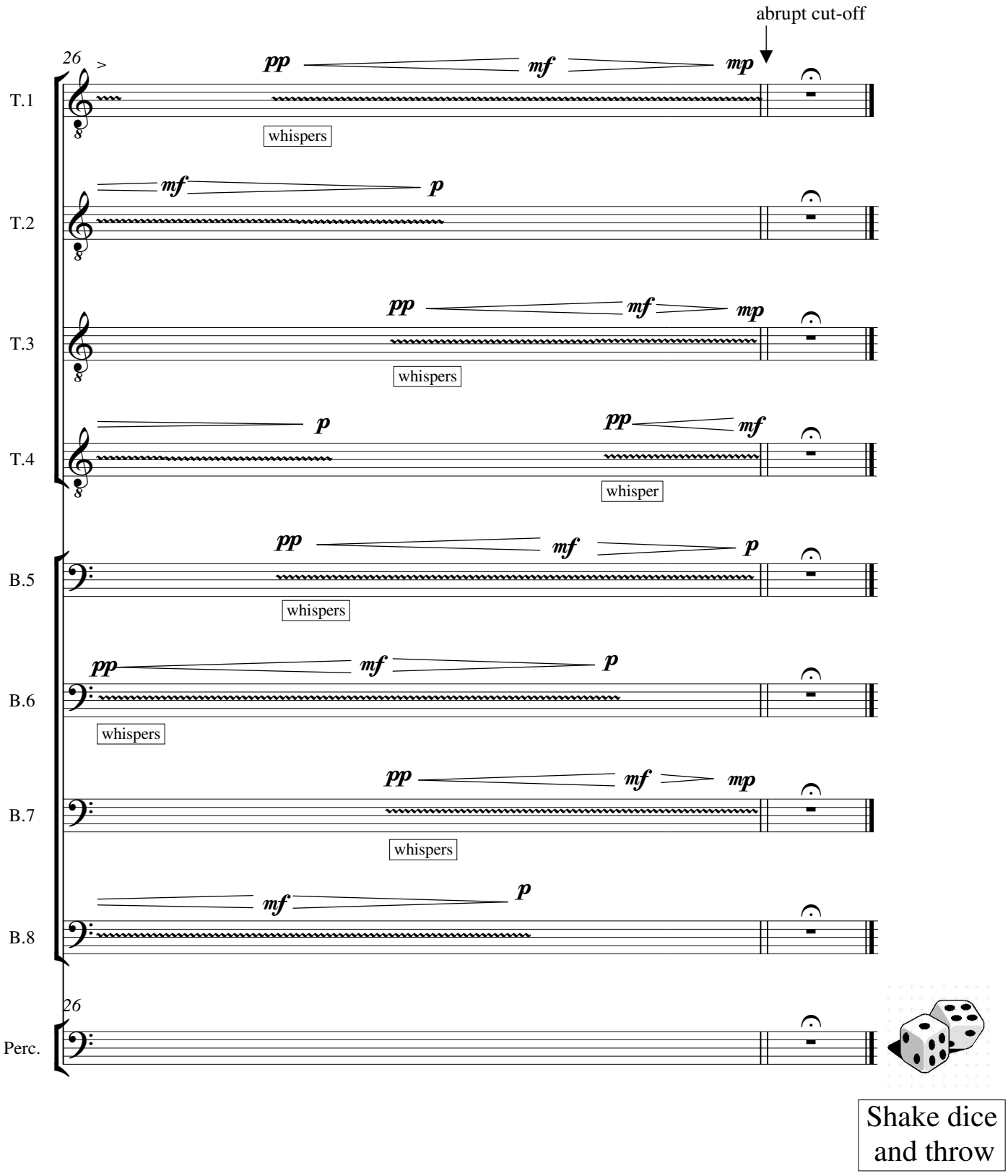
Part I : Whisper of Black Holes

Fiona Tozer
2007




8
T.1
pp
mf
whispers
T.2
pp
mf
whispers
duration approx 20-25 seconds
mf
p
T.3
pp
whispers
duration approx 20-25 seconds
pp
mf
T.4
whispers
mf
p
B.5
p
B.6
pp
mf
whispers
duration approx 20-25 seconds
pp
mf
p
B.7
whispers
duration approx 20-25 seconds
pp
mf
p
B.8
whispers

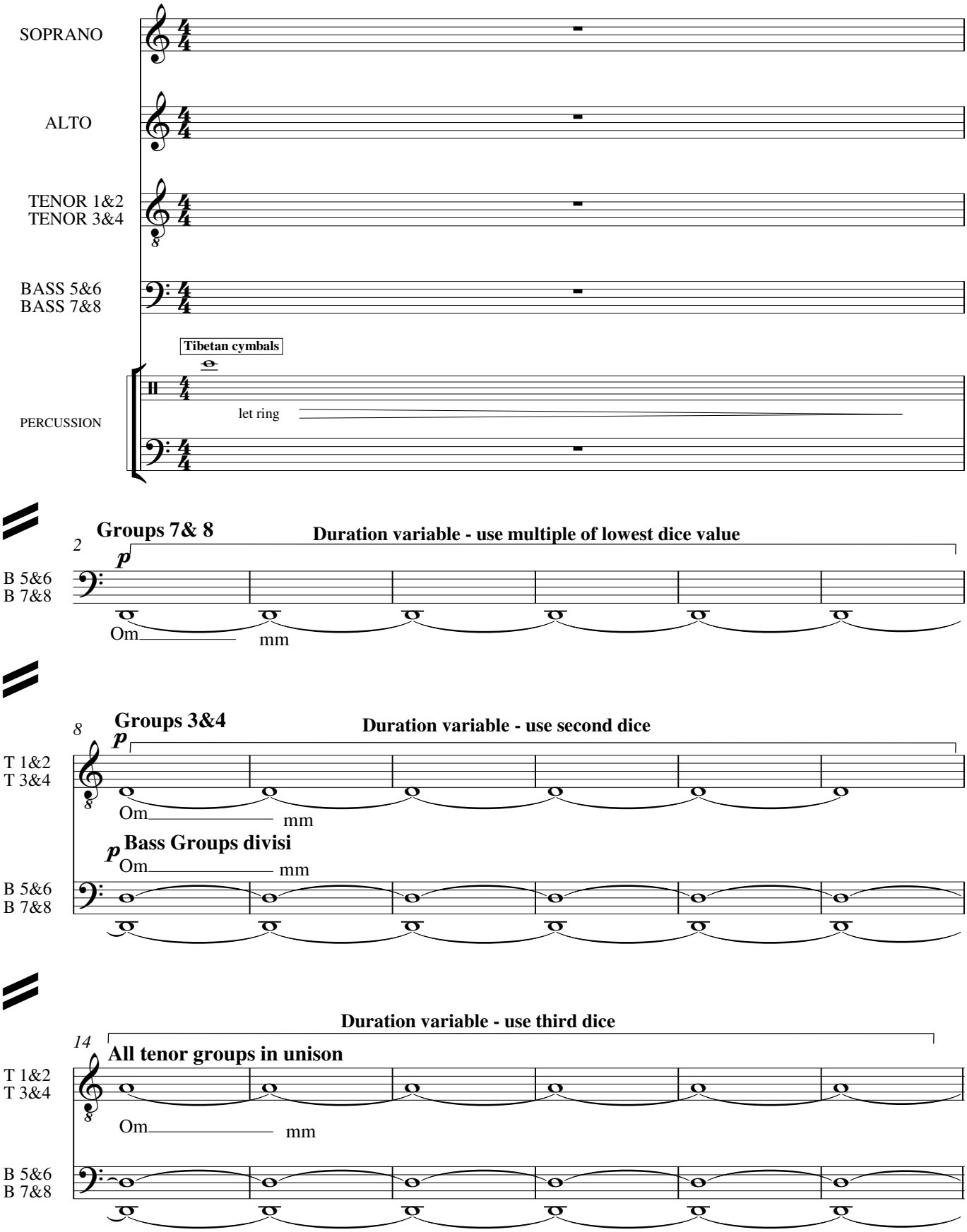

17
T.1
T.2
T.3
T.4
B.5
B.6
B.7
B.8
pp
mf
p
whispers

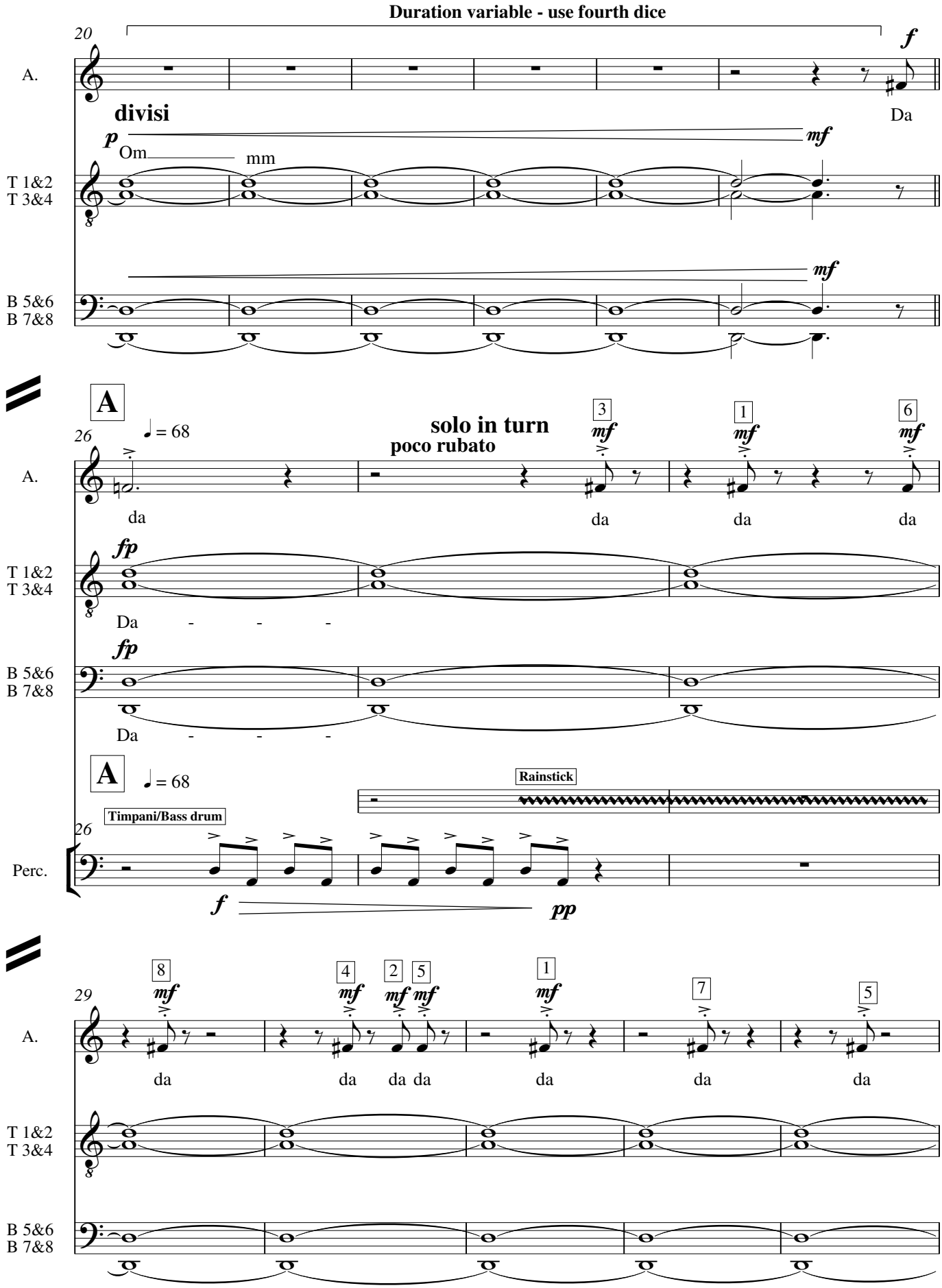

abrupt cut-off
26
T.1
pp
mf
mp
whispers
T.2
mf
p
T.3
pp
mf
mp
whispers
T.4
p
pp
mf
whisper
B.5
pp
mf
p
whispers
B.6
pp
mf
p
whispers
B.7
pp
mf
mp
whispers
B.8
mf
p
26
Perc.
Shake dice
and throw

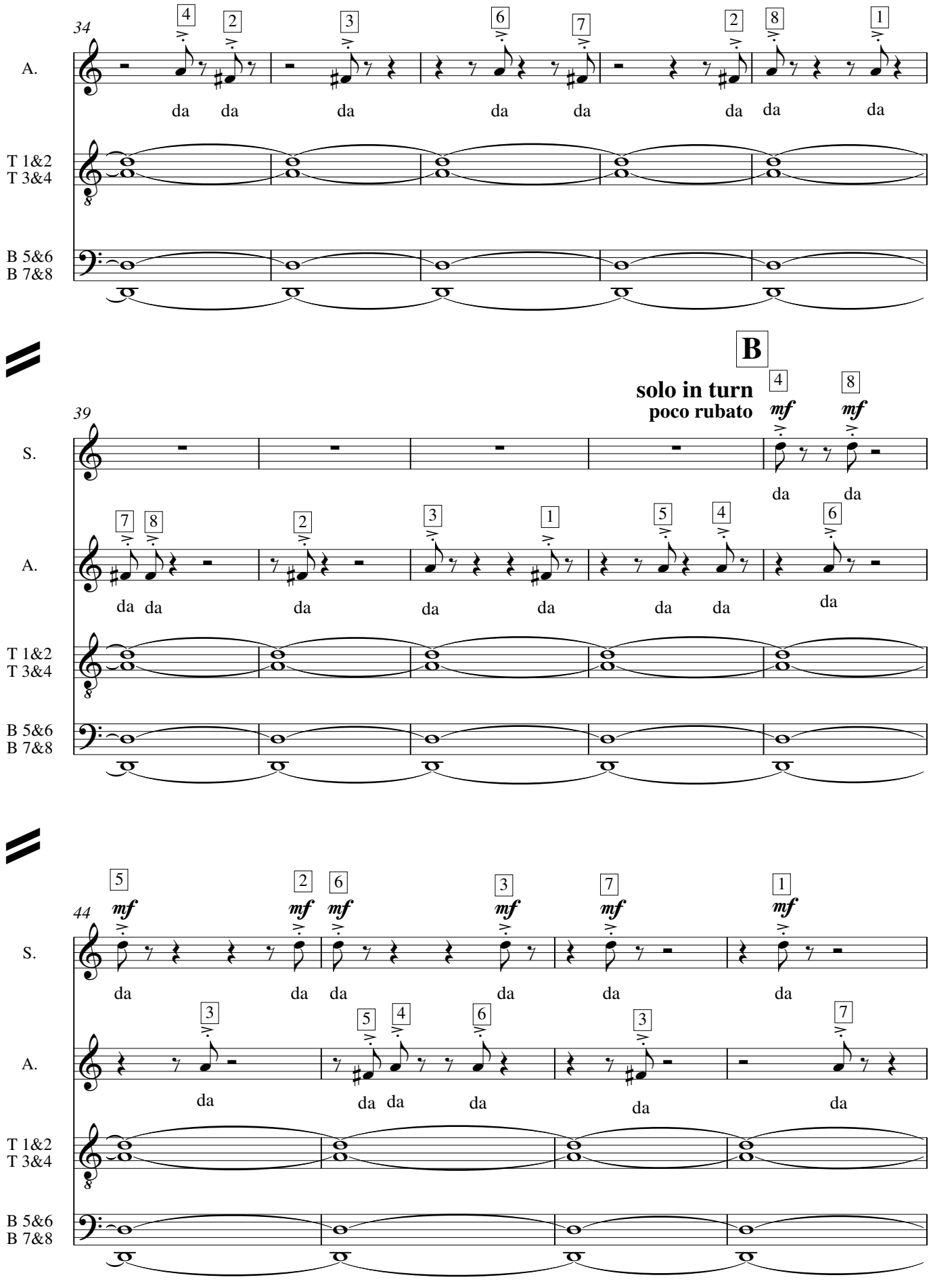
Metaphor

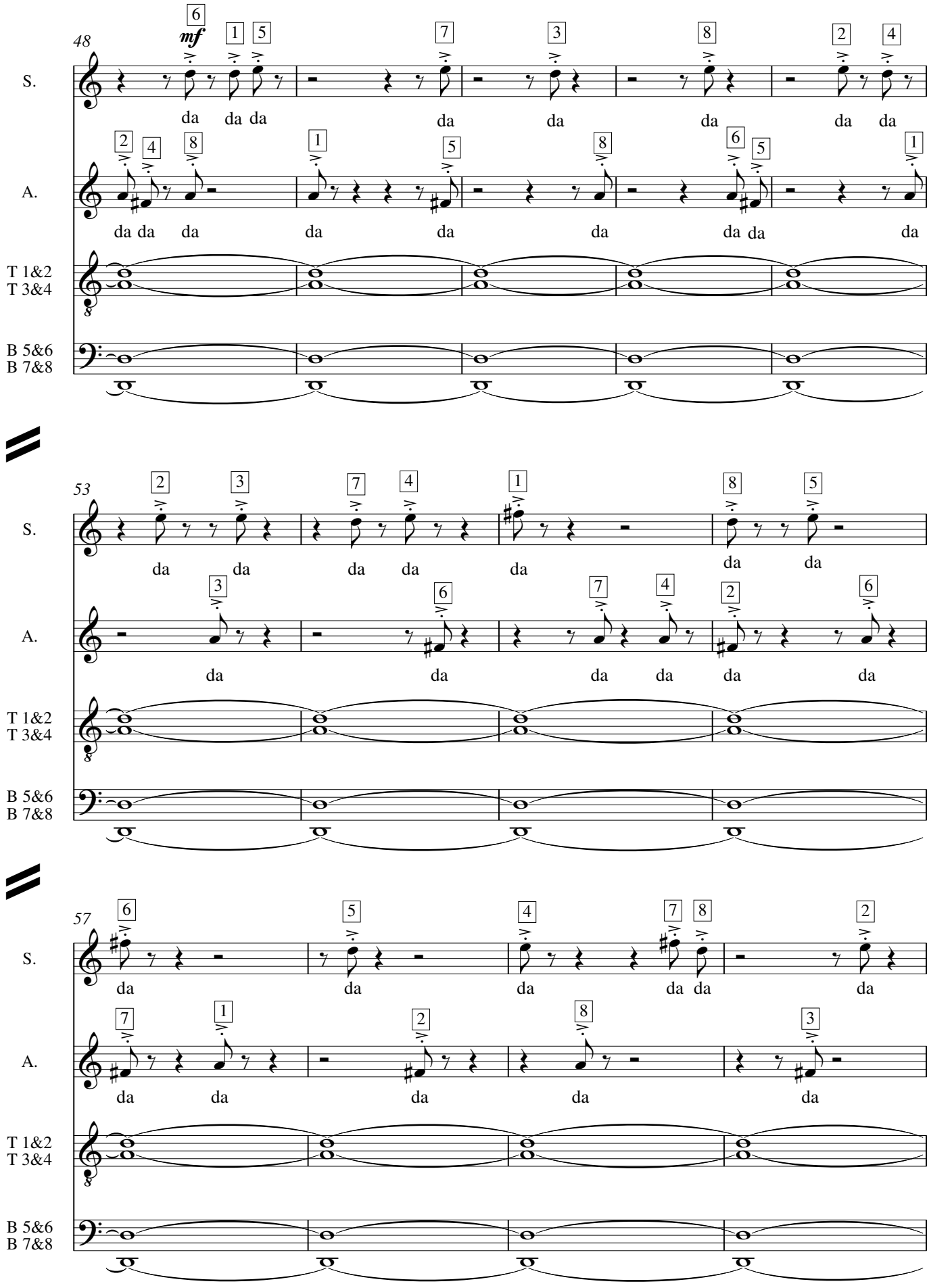
Part II : Harmony

Fiona Tozer
2007




Duration variable - use fourth dice
20
A.
f
divisi
Da
p
Om
mm
mf
T 1&2
T 3&4
B 5&6
B 7&8
A
26
= 68
solo in turn
poco rubato
3
1
6
da
fp
Da
Timpani/Bass drum
Rainstick
Perc.
pp
8
4
2
5
7
29


34
A.
T 1&2
T 3&4
B 5&6
B 7&8
da da da da da da da da
B
solo in turn
poco rubato
39
S.
A.
T 1&2
T 3&4
B 5&6
B 7&8
mf
da da da da da da da da da da da da
44
S.
A.
T 1&2
T 3&4
B 5&6
B 7&8
mf
da da da da da da da da da da da da da da da


48
mf
S.
da da da da da da da da da
A.
da da da da da da da da da
T 1&2
T 3&4
B 5&6
B 7&8
53
S.
da da da da da da da
A.
da da da da da da
T 1&2
T 3&4
B 5&6
B 7&8
57
S.
da da da da da da
A.
da da da da da
T 1&2
T 3&4
B 5&6
B 7&8

61

S. da da da da da da

A. da da da da da

T 1&2
T 3&4

B 5&6
B 7&8

64

S. da da da unison f da da da

A. da da da da da da unison f

T 1&2
T 3&4 da

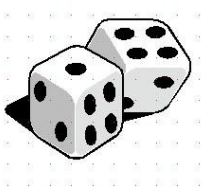
unison f

B 5&6
B 7&8 da

64

Perc.

Shake dice and throw

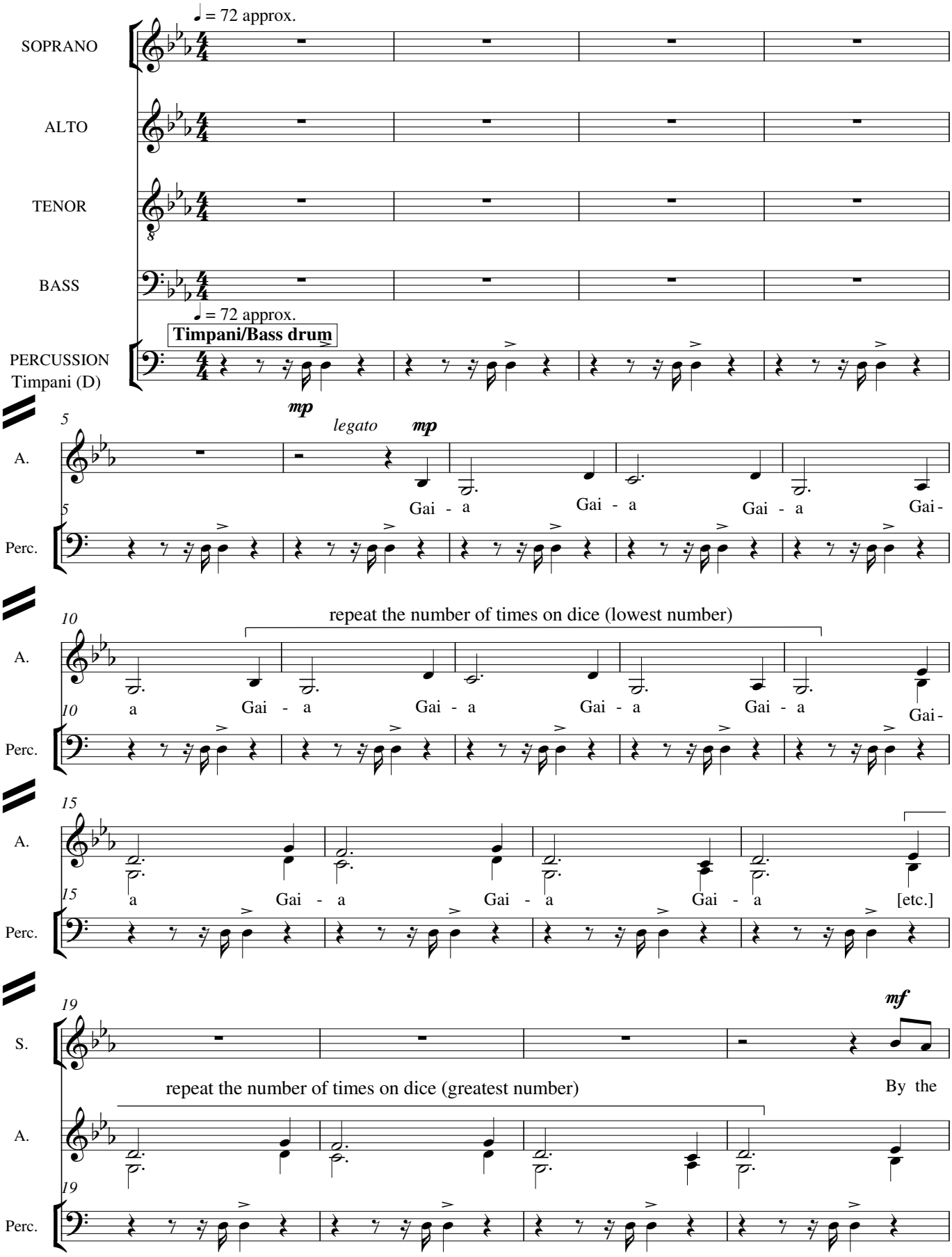


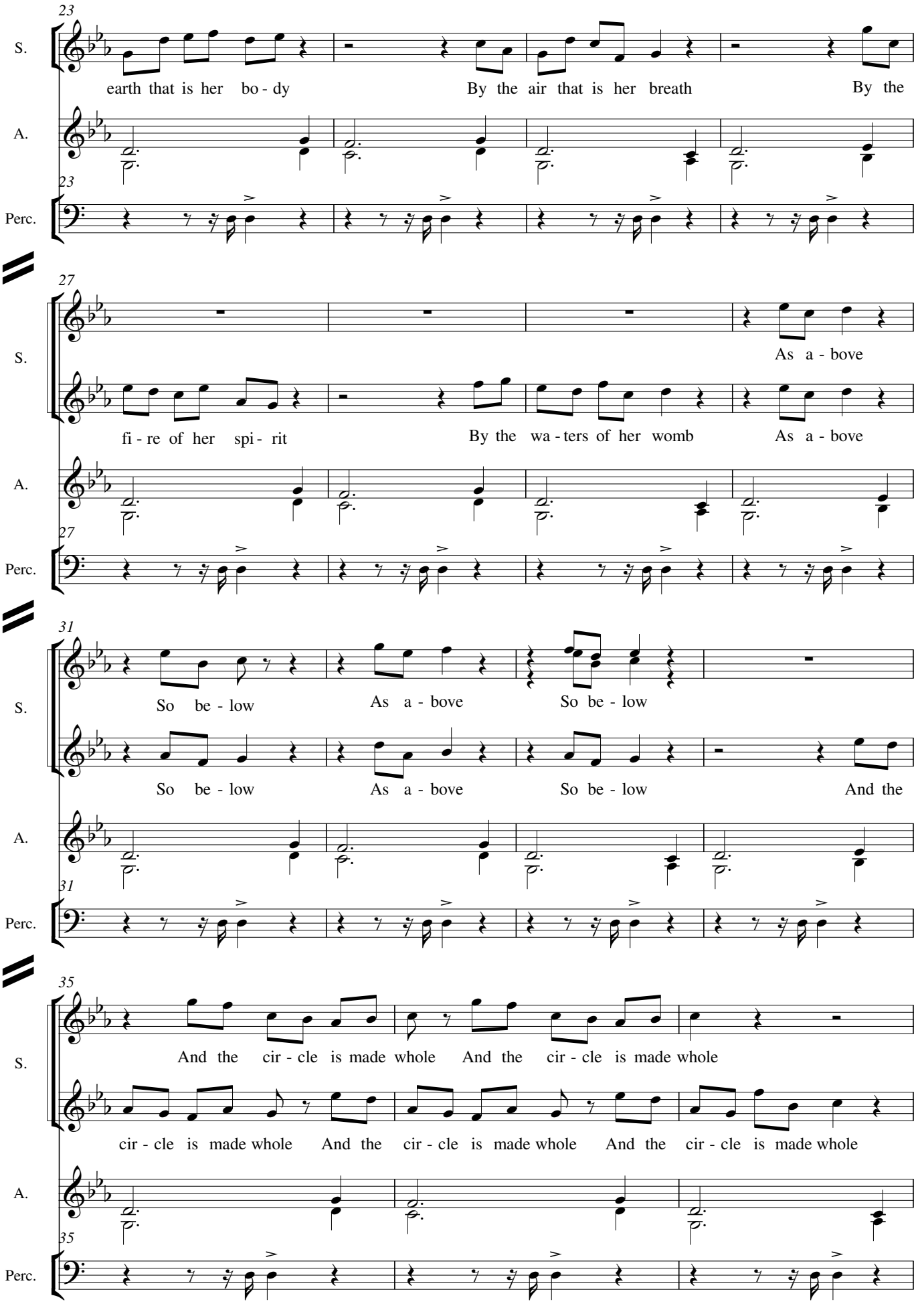
Rainstick

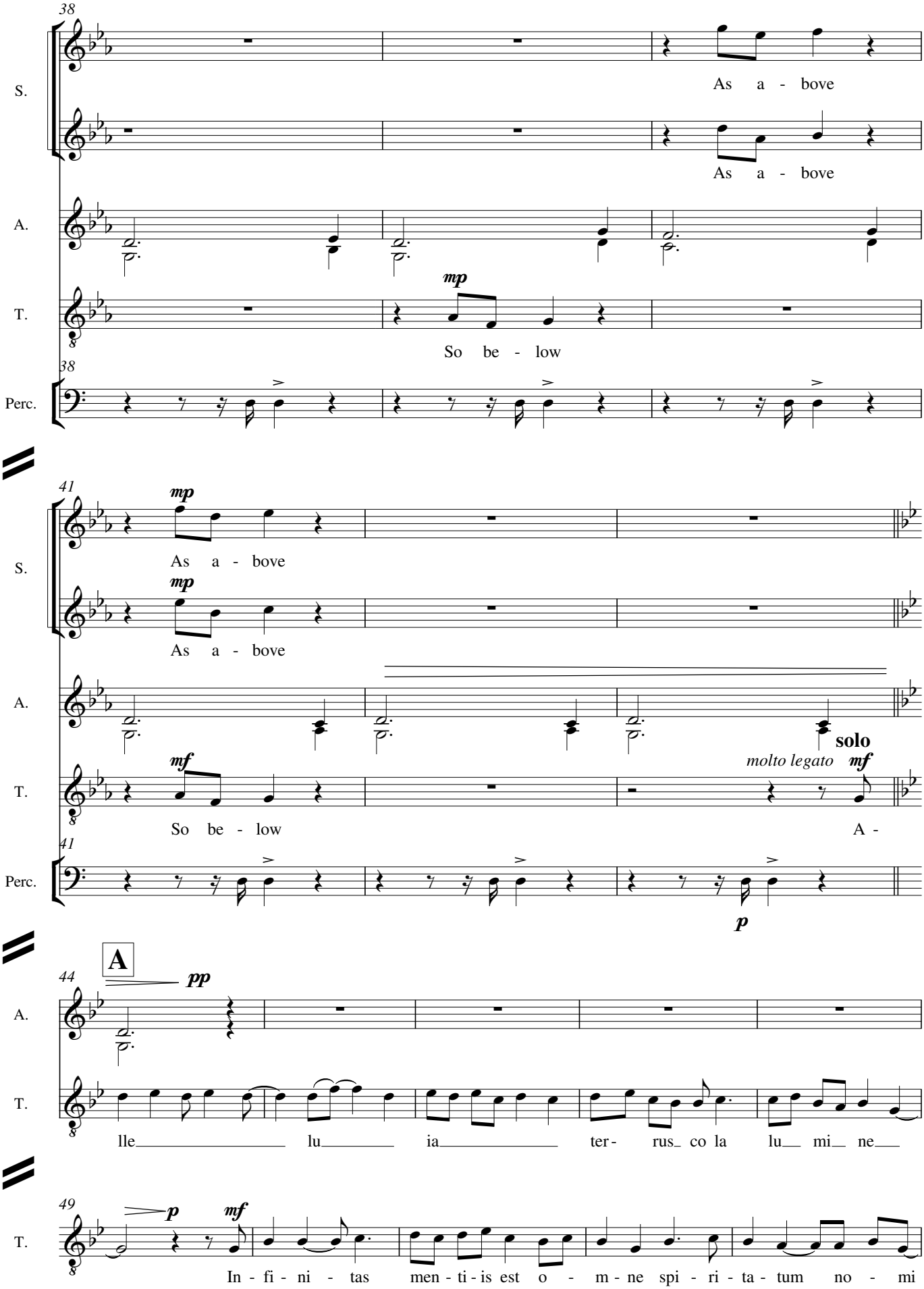
Metaphor

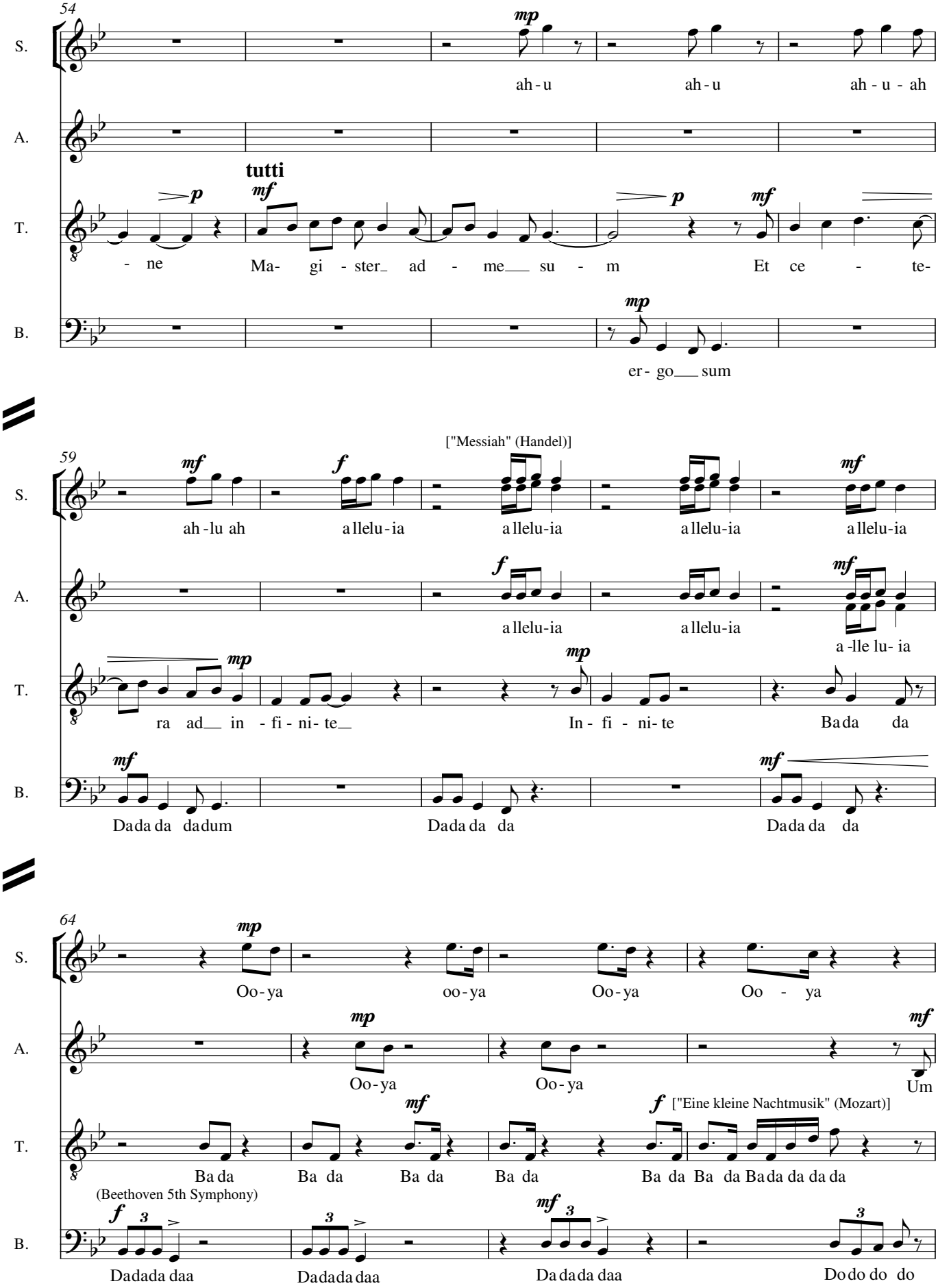
Part III : Singularity

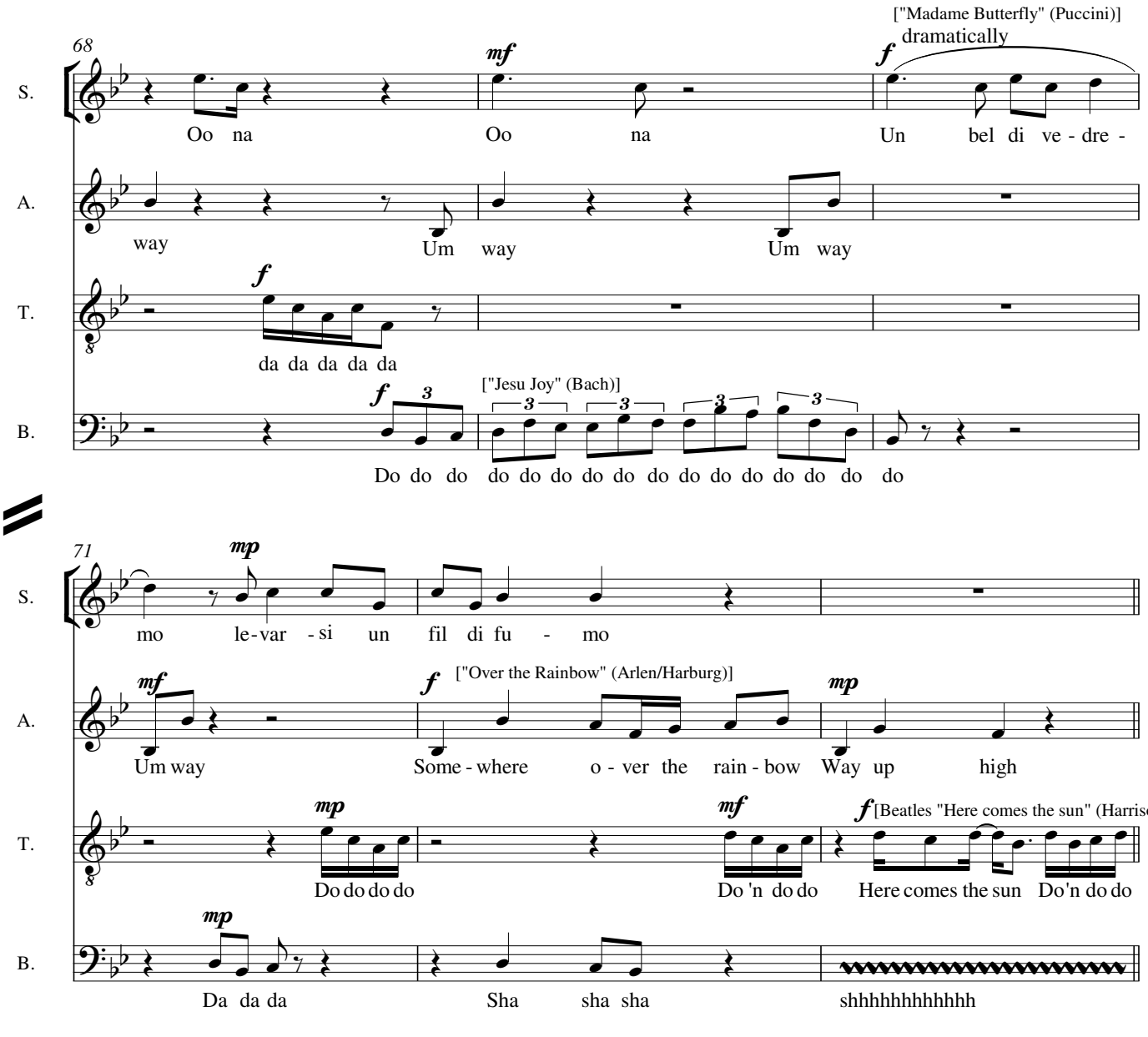
Fiona Tozer
2007

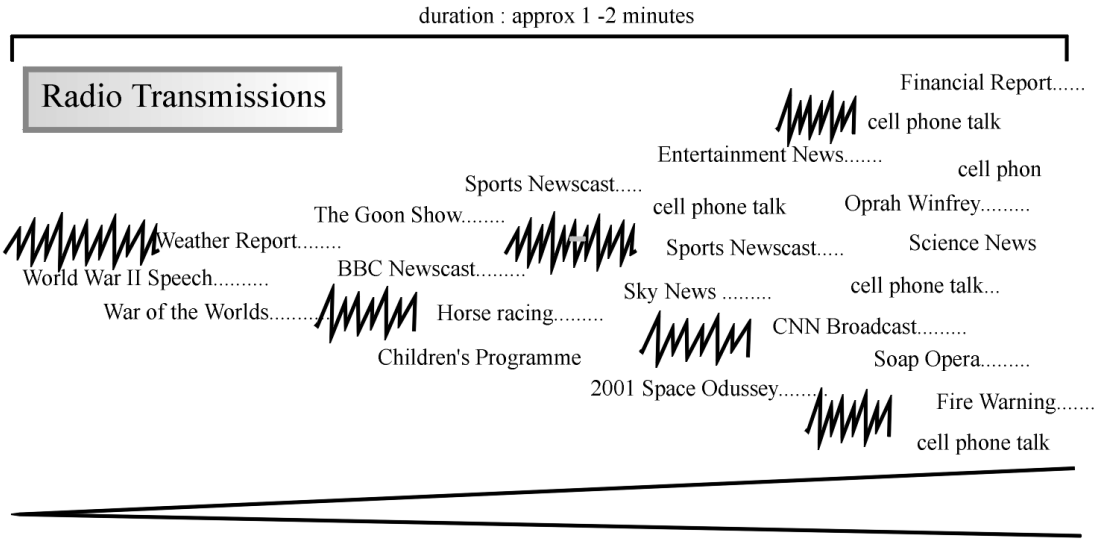


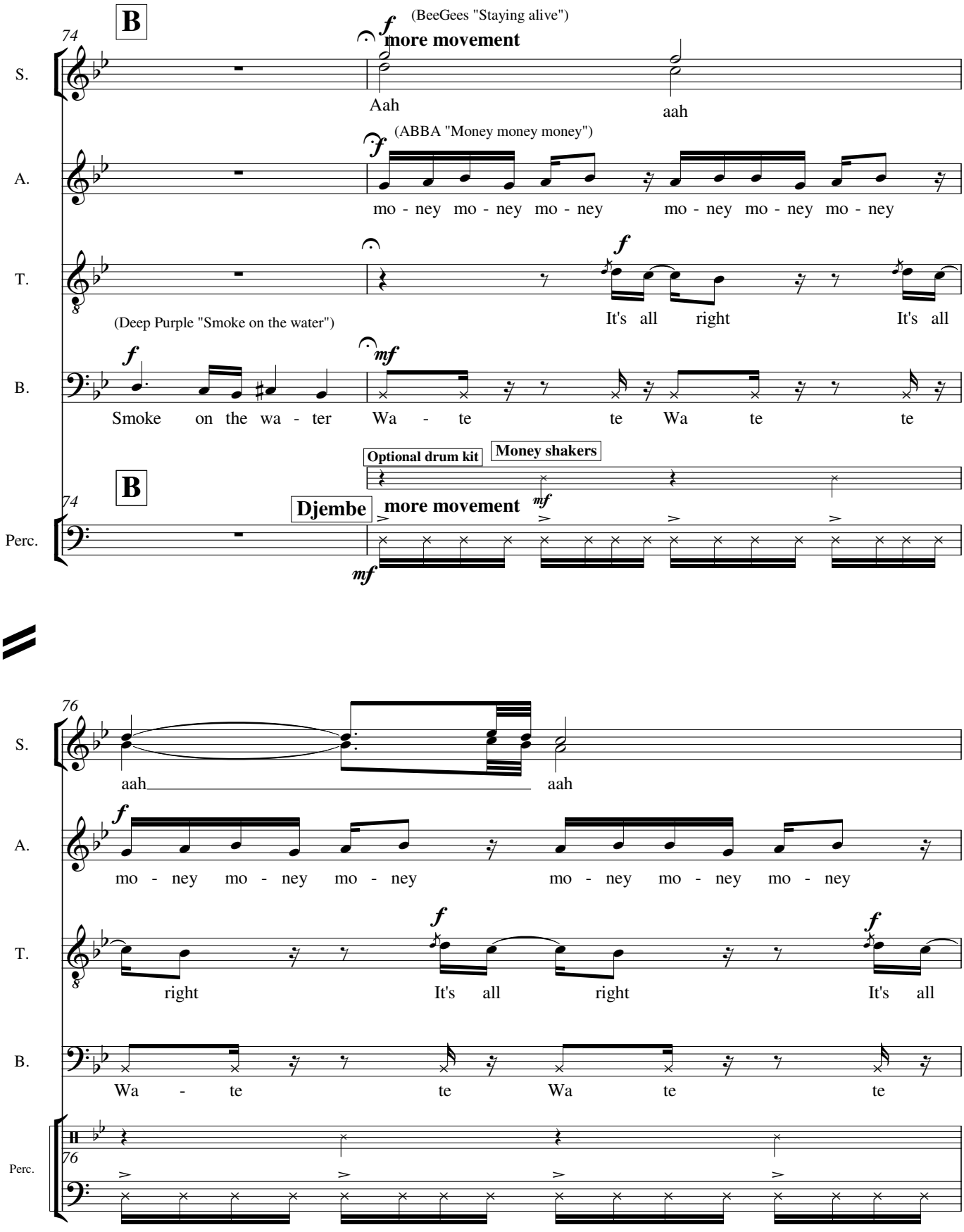

23
S.
earth that is her bo - dy
By the air that is her breath
By the
A.
Perc.
27
As a - bove
fi - re of her spi - rit
By the wa - ters of her womb
As a - bove
31
So be - low
As a - bove
So be - low
And the
35
And the cir - cle is made whole
cir - cle is made whole
And the cir - cle is made whole
And the cir - cle is made whole

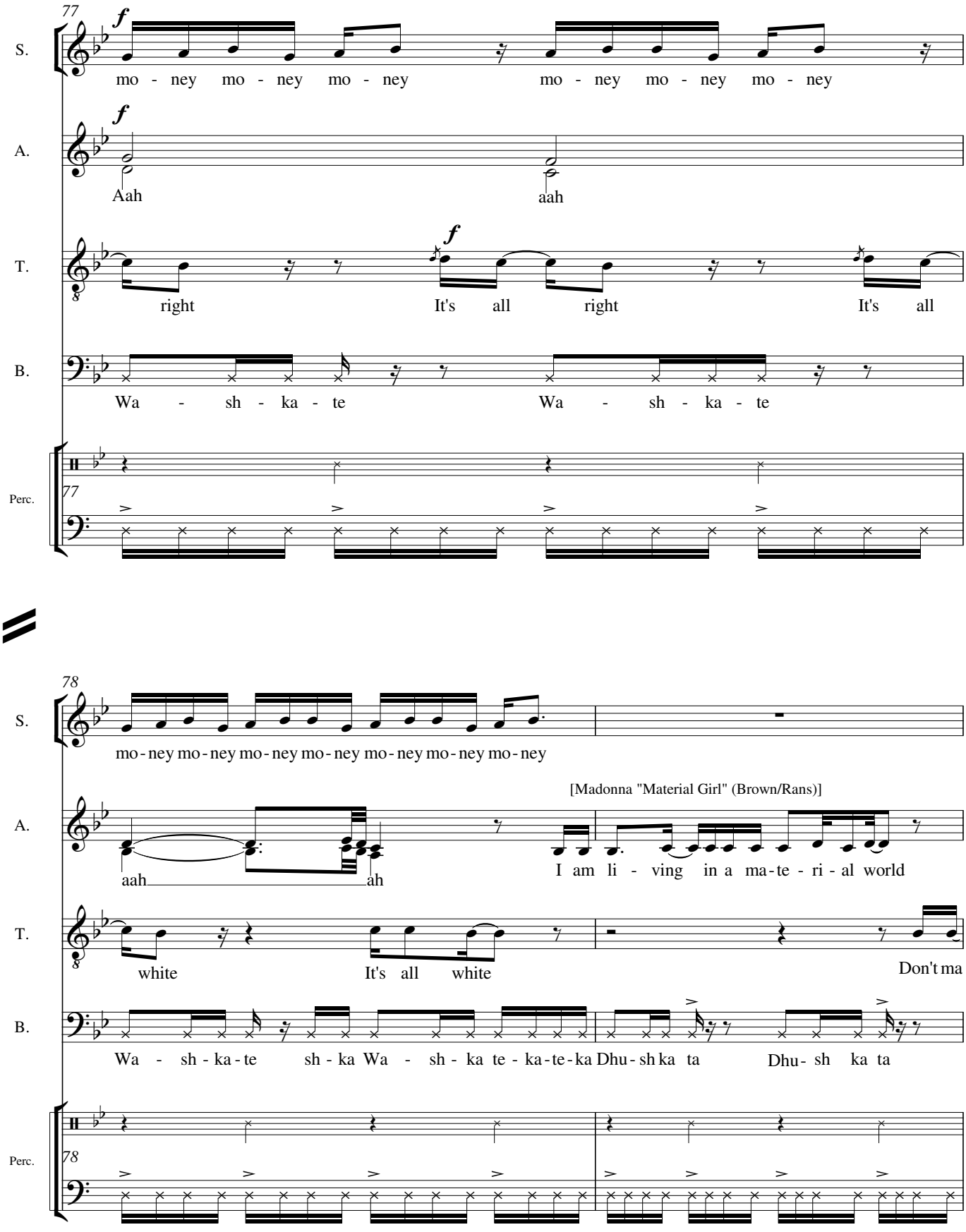

38
S.
As a - bove
As a - bove
A.
T.
mp
So be - low
38
Perc.
41
mp
As a - bove
mp
As a - bove
A.
solo
molto legato mf
T.
mf
So be - low
A -
41
Perc.
p
A
44
pp
A.
T.
lle lu ia ter- rus co la lu mi ne
49
p
mf
T.
In - fi - ni - tas men - ti - is est o - m - ne spi - ri - ta - tum no - mi

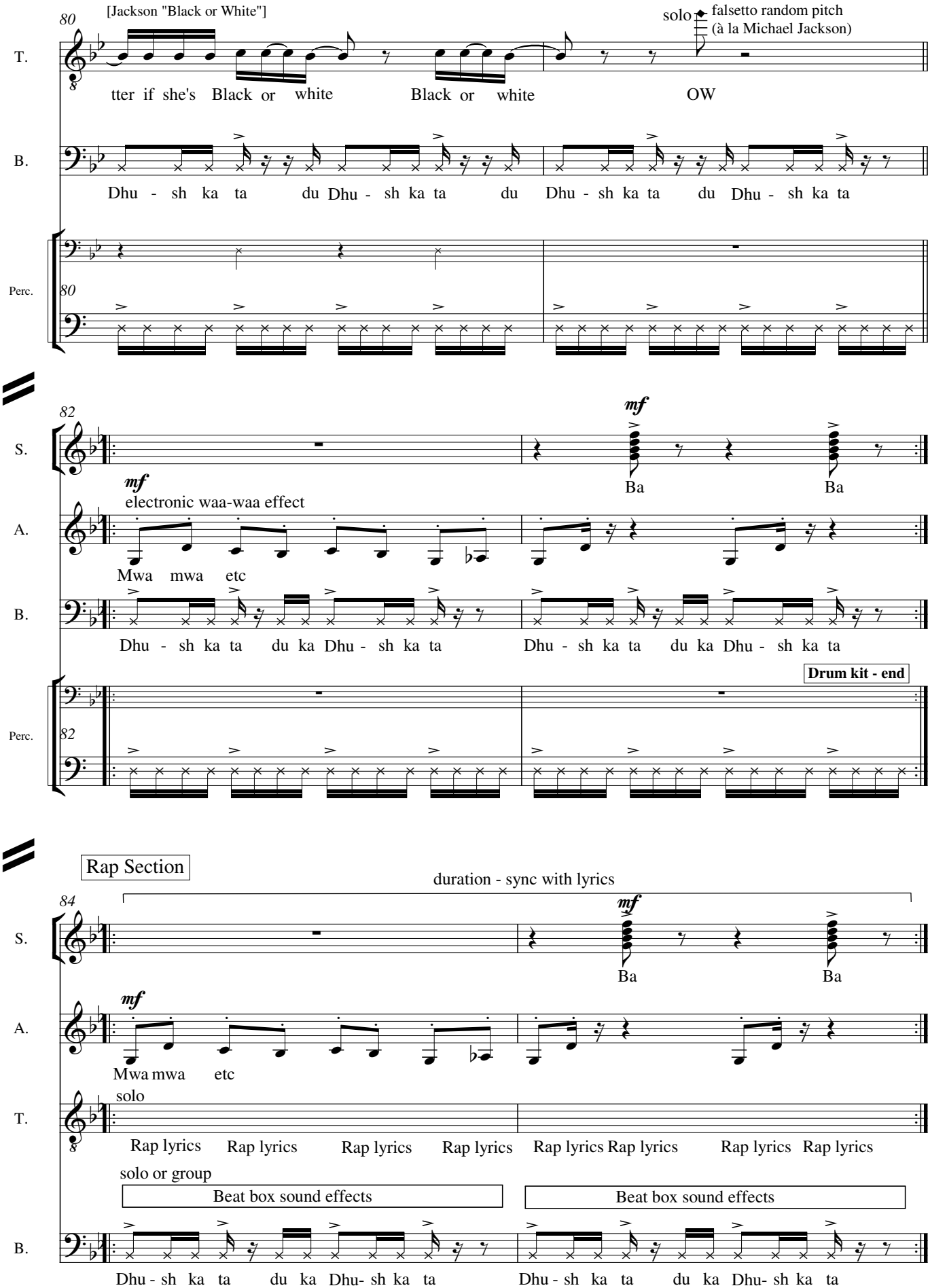

54
S.
A.
T.
B.
mp
ah - u
ah - u
ah - u - ah
tutti
mf
p
- ne
Ma- gi - ster_ ad - me___ su - m
Et ce - te-
er - go___ sum
["Messiah" (Handel)]
59
ah - lu ah
a llelu - ia
a llelu-ia
a llelu-ia
a llelu-ia
a -lle lu- ia
ra ad___ in - fi - ni- te_
In - fi - ni- te
Ba da da
Da da da da dadum
Da da da da
Da da da da
64
Oo - ya
oo - ya
Oo - ya
Oo - ya
Oo - ya
Oo - ya
Um
Ba da
Ba da
Ba da
Ba da
Ba da Ba da Ba da da da da
["Eine kleine Nachtmusik" (Mozart)]
(Beethoven 5th Symphony)
Da da da daa
Da da da daa
Da da da daa
Do do do do

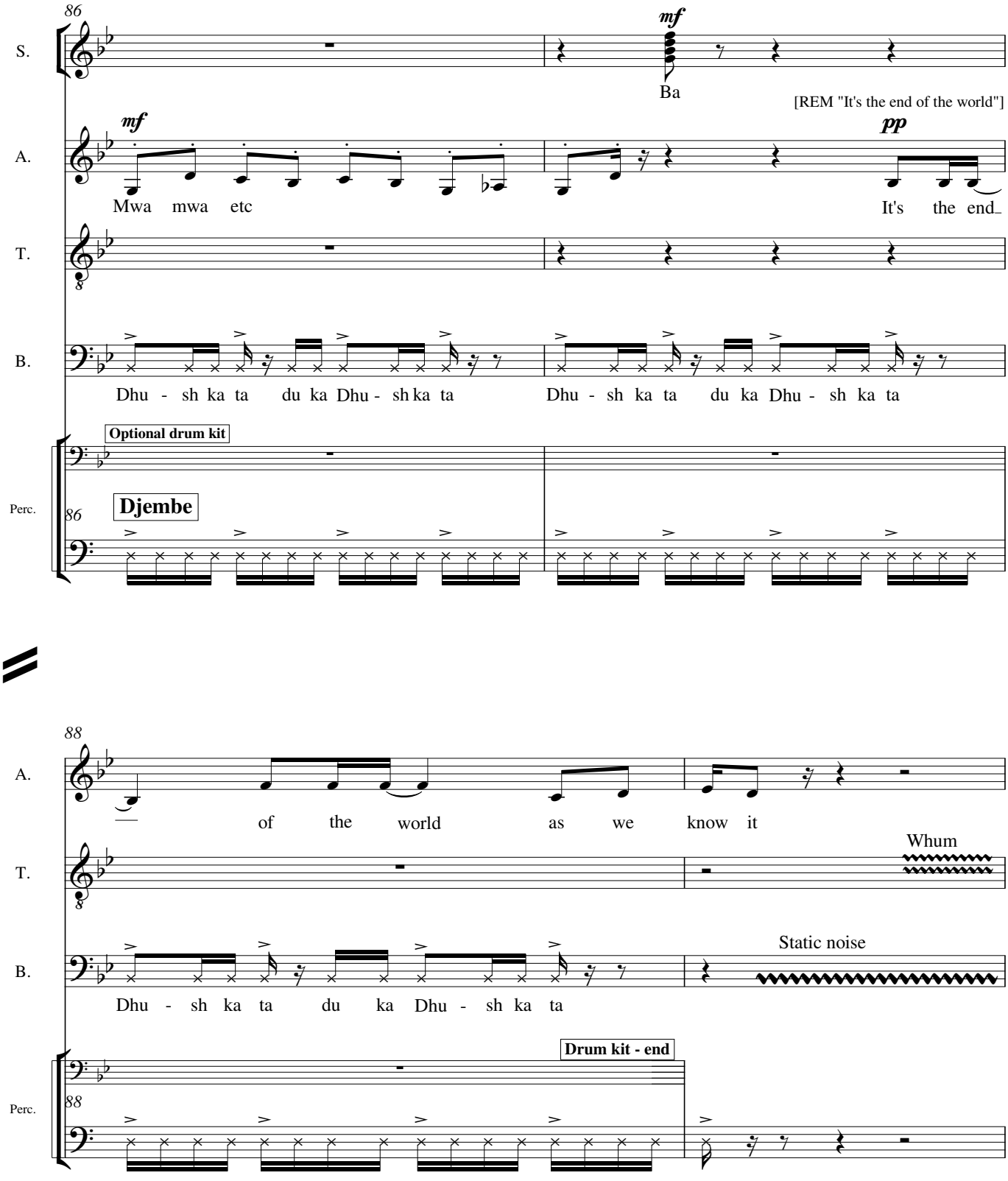

["Madame Butterfly" (Puccini)]
dramatically
68
S.
A.
T.
B.
mf
f
Oo na Oo na Un bel di ve - dre -
way Um way Um way
da da da da da
["Jesu Joy" (Bach)]
Do do do do do do do do do do do do do do do
71
mp
mo le - var - si un fil di fu - mo
["Over the Rainbow" (Arlen/Harburg)]
Um way Some - where o - ver the rain - bow Way up high
Do do do do Do 'n do do Here comes the sun Do'n do do
[Beatles "Here comes the sun" (Harrison)]
Da da da Sha sha sha shhhhhhhhhhhh

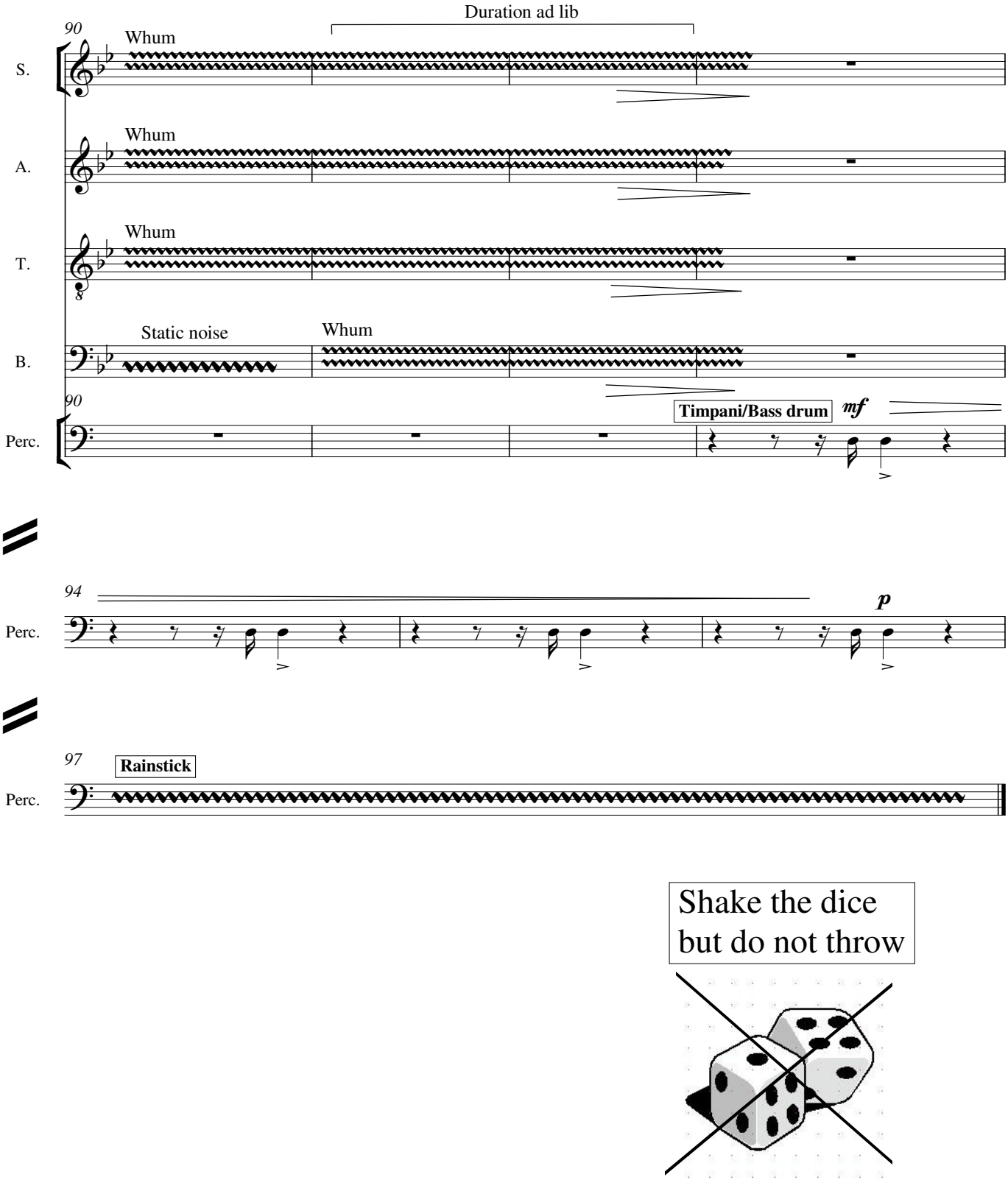

duration : approx 1 -2 minutes
Radio Transmissions
Financial Report.....
cell phone talk
Entertainment News.....
cell phon
Sports Newscast.....
cell phone talk
Oprah Winfrey.....
The Goon Show.....
Weather Report.....
Sports Newscast.....
Science News
World War II Speech.....
BBC Newscast.....
Sky News .....
cell phone talk...
War of the Worlds.....
Horse racing.....
CNN Broadcast.....
Children's Programme
Soap Opera.....
2001 Space Odussey.....
Fire Warning.....
cell phone talk


B
74
S.
A.
T.
B.
Perc.
(BeeGees "Staying alive")
more movement
Aah
aah
(ABBA "Money money money")
mo - ney mo - ney mo - ney mo - ney mo - ney mo - ney
(Deep Purple "Smoke on the water")
It's all right It's all
Smoke on the wa - ter
Wa - te te Wa te te
Optional drum kit
Money shakers
Djembe
more movement
76
aah aah
mo - ney mo - ney mo - ney mo - ney mo - ney mo - ney
right It's all right It's all
Wa - te te Wa te te


77
S.
mo - ney mo - ney mo - ney mo - ney mo - ney mo - ney
A.
Aah aah
T.
right It's all right It's all
B.
Wa - sh - ka - te Wa - sh - ka - te
Perc.
78
mo-ney mo-ney mo-ney mo-ney mo-ney mo-ney mo-ney
[Madonna "Material Girl" (Brown/Rans)]
aah ah
I am li - ving in a ma-te - ri - al world
white It's all white
Don't ma
Wa - sh-ka-te sh - ka Wa - sh - ka te - ka-te-ka Dhu - sh ka ta Dhu- sh ka ta


80
[Jackson "Black or White"]
solo
falsetto random pitch
(à la Michael Jackson)
T.
tter if she's Black or white
Black or white
OW
B.
Dhu - sh ka ta du Dhu - sh ka ta du Dhu - sh ka ta du Dhu - sh ka ta
Perc.
80
82
S.
mf
Ba
Ba
mf
electronic waa-waa effect
A.
Mwa mwa etc
B.
Dhu - sh ka ta du ka Dhu - sh ka ta
Dhu - sh ka ta du ka Dhu - sh ka ta
Drum kit - end
Perc.
82
Rap Section
duration - sync with lyrics
84
S.
mf
Ba
Ba
mf
A.
Mwa mwa etc
solo
T.
Rap lyrics Rap lyrics Rap lyrics Rap lyrics Rap lyrics Rap lyrics Rap lyrics Rap lyrics
solo or group
Beat box sound effects
Beat box sound effects
B.
Dhu - sh ka ta du ka Dhu- sh ka ta
Dhu - sh ka ta du ka Dhu- sh ka ta


86
S.
mf
Ba
[REM "It's the end of the world"]
A.
mf
Mwa mwa etc
pp
It's the end
T.
B.
Dhu - sh ka ta du ka Dhu - sh ka ta
Dhu - sh ka ta du ka Dhu - sh ka ta
Optional drum kit
Perc.
Djembe
86
88
A.
of the world as we know it
T.
Whum
B.
Static noise
Dhu - sh ka ta du ka Dhu - sh ka ta
Drum kit - end
Perc.
88

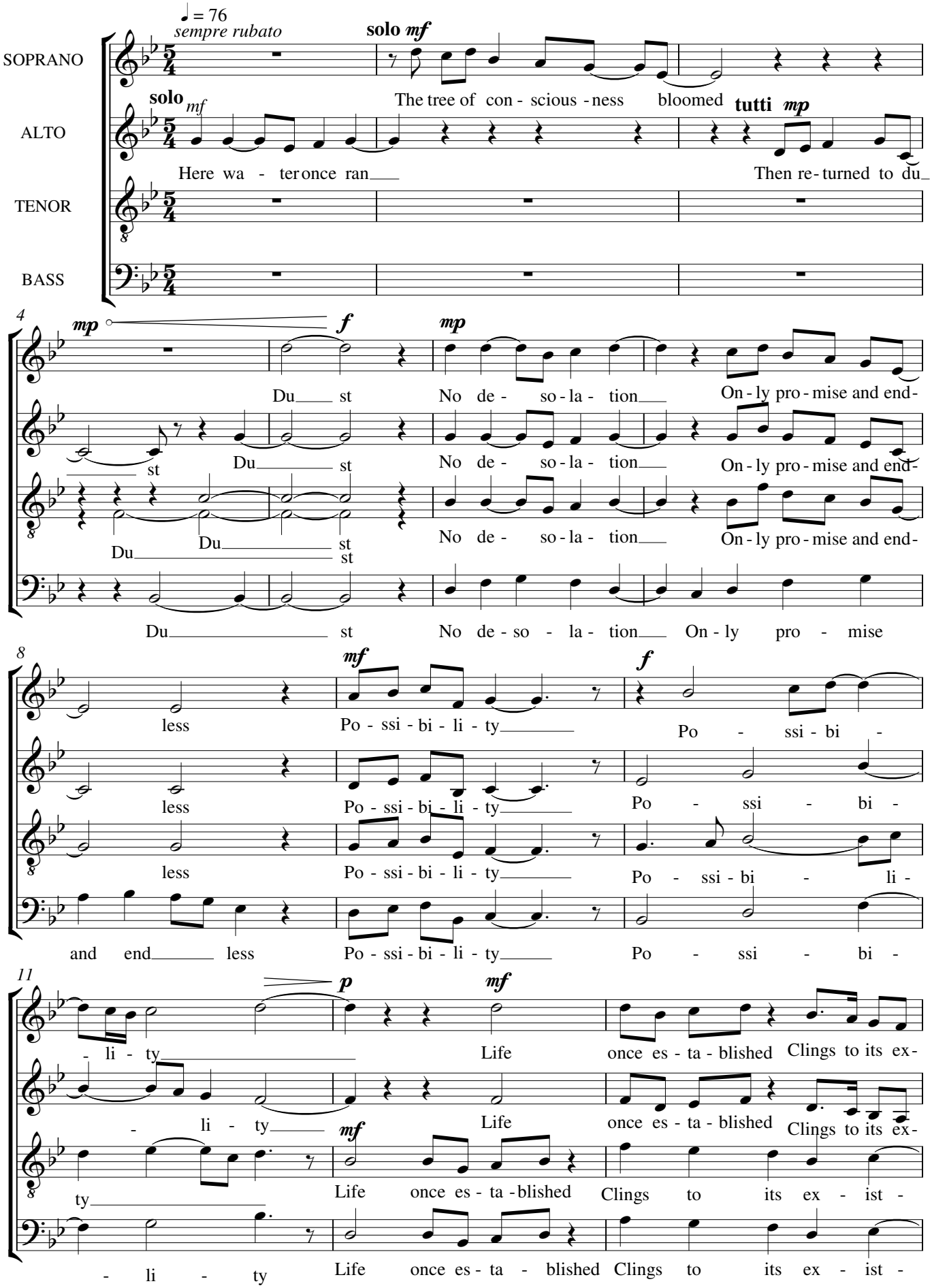


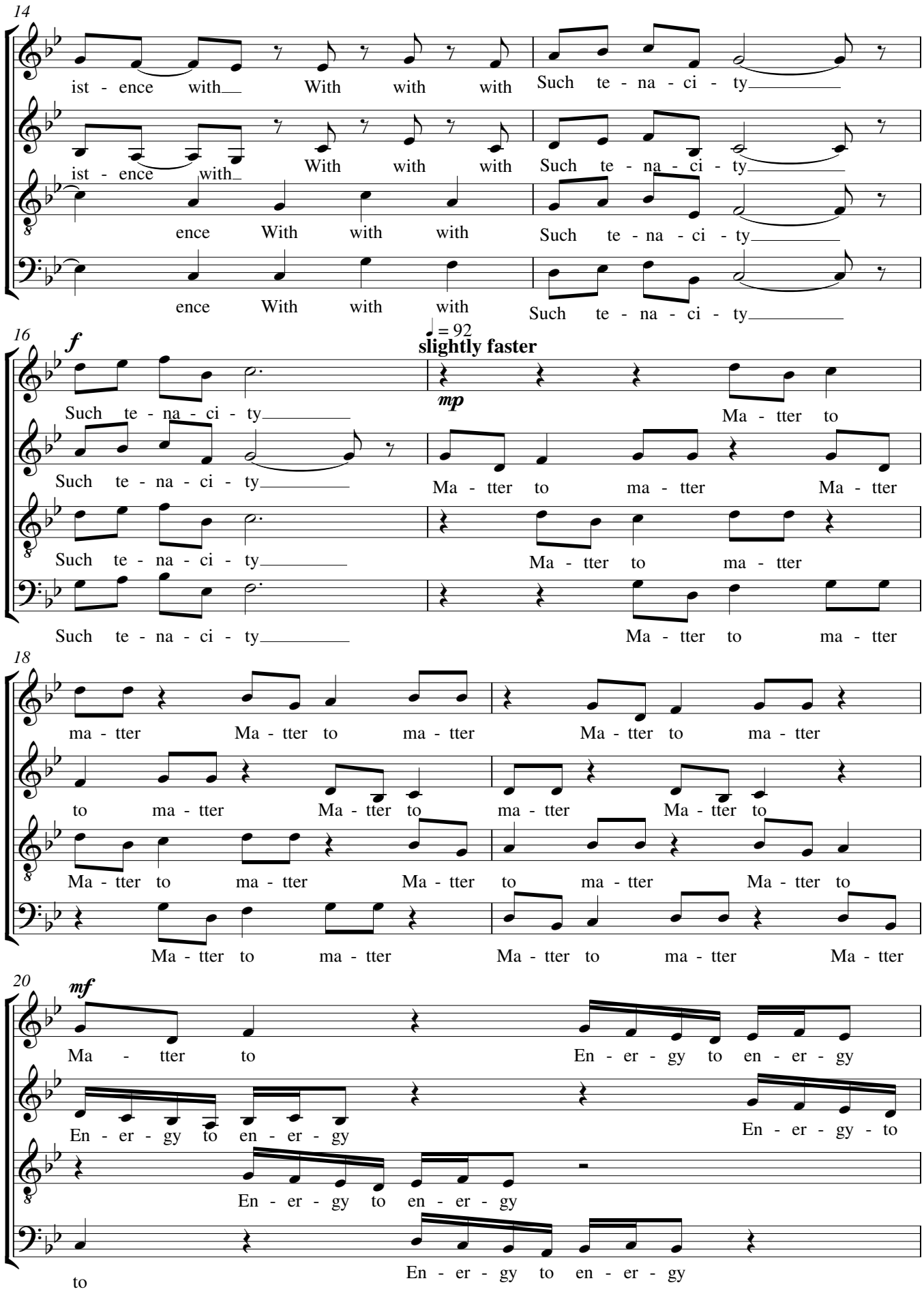
Shake the dice
but do not throw

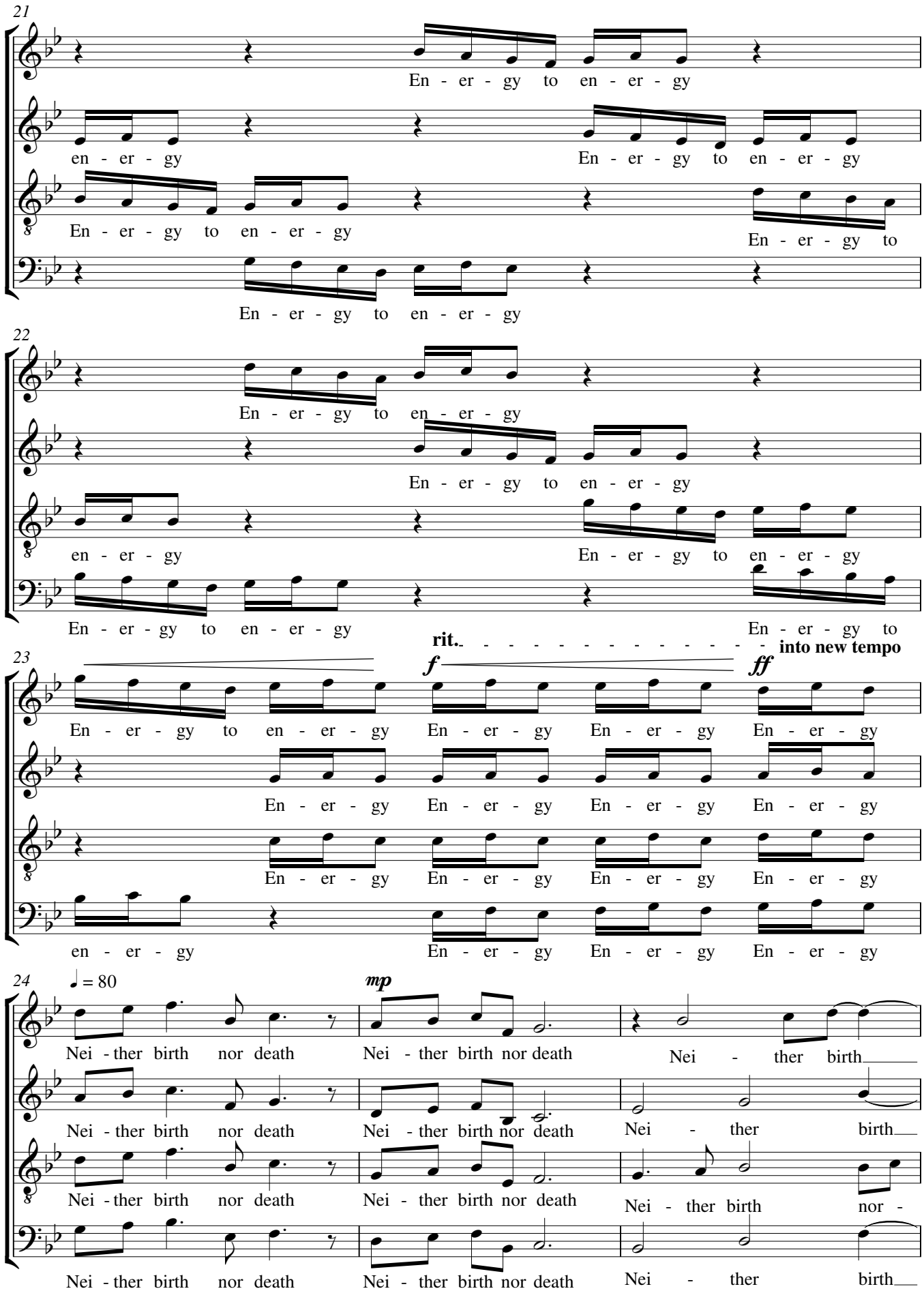
Metaphor

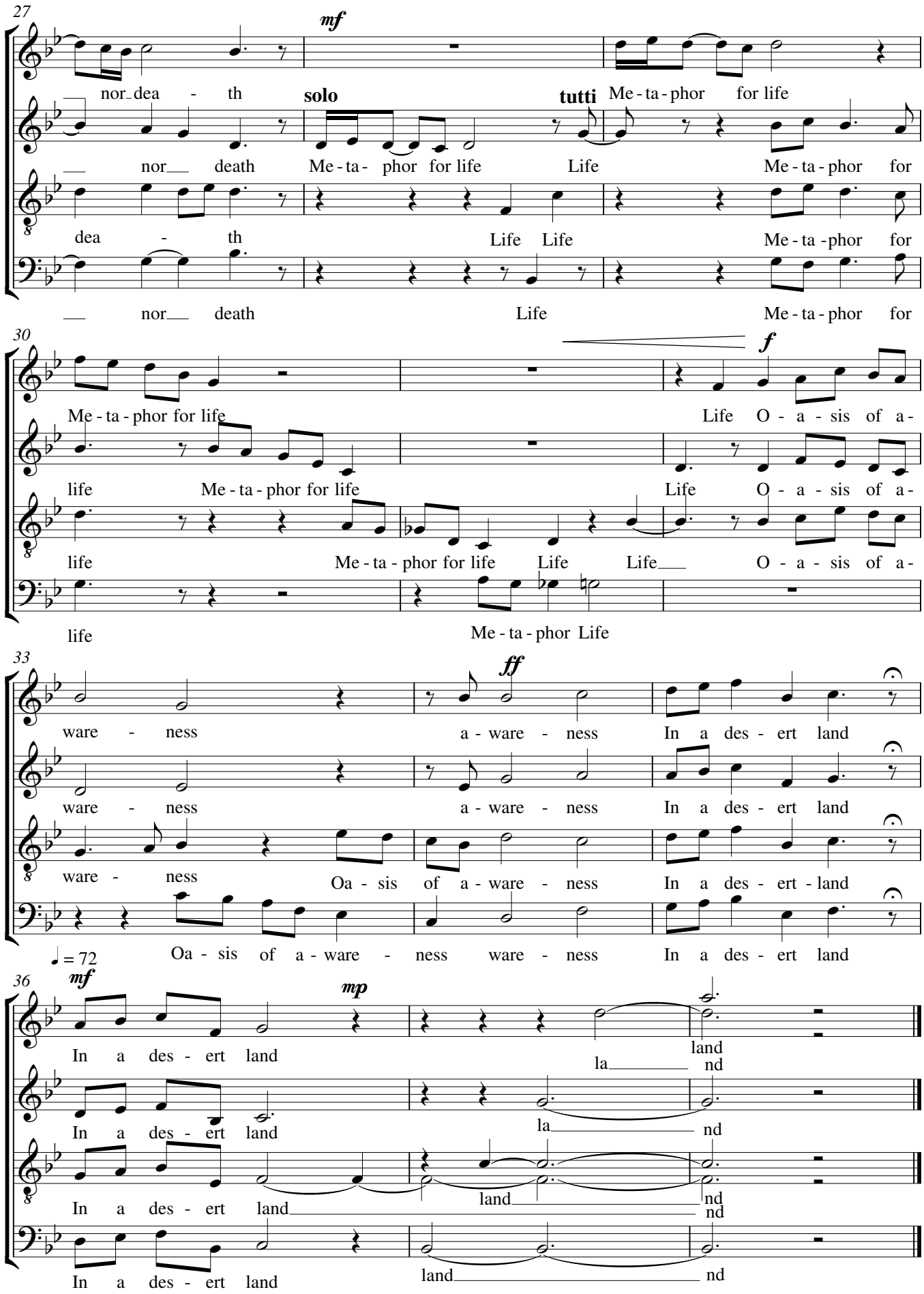
Part IV : Life Recycled

Music and Lyrics
Fiona Tozer




14
ist - ence with With with with Such te - na - ci - ty
ist - ence with With with with Such te - na - ci - ty
ence With with with Such te - na - ci - ty
ence With with with Such te - na - ci - ty
16
f
Such te - na - ci - ty
Such te - na - ci - ty
Such te - na - ci - ty
Such te - na - ci - ty
♩ = 92
slightly faster
mp
Ma - tter to
Ma - tter to ma - tter Ma - tter
Ma - tter to ma - tter
Ma - tter to ma - tter
18
ma - tter Ma - tter to ma - tter Ma - tter to ma - tter
to ma - tter Ma - tter to ma - tter Ma - tter to
Ma - tter to ma - tter Ma - tter to ma - tter Ma - tter to
Ma - tter to ma - tter Ma - tter to ma - tter Ma - tter
20
mf
Ma - tter to En - er - gy to en - er - gy
En - er - gy to en - er - gy En - er - gy - to
En - er - gy to en - er - gy
to En - er - gy to en - er - gy


21
En - er - gy to en - er - gy
en - er - gy
En - er - gy to en - er - gy
En - er - gy to en - er - gy
En - er - gy to
En - er - gy to en - er - gy
22
En - er - gy to en - er - gy
En - er - gy to en - er - gy
en - er - gy
En - er - gy to en - er - gy
En - er - gy to en - er - gy
En - er - gy to
23
rit.
into new tempo
f
ff
En - er - gy to en - er - gy
En - er - gy
En - er - gy
En - er - gy
En - er - gy
En - er - gy
En - er - gy
En - er - gy
En - er - gy
En - er - gy
En - er - gy
En - er - gy
En - er - gy
24
♩ = 80
mp
Nei - ther birth nor death
Nei - ther birth nor death
Nei - ther birth
Nei - ther birth nor death
Nei - ther birth nor death
Nei - ther birth
Nei - ther birth nor death
Nei - ther birth nor death
Nei - ther birth nor -
Nei - ther birth nor death
Nei - ther birth nor death
Nei - ther birth


27
mf
nor dea - th
solo
tutti
Me - ta - phor for life
nor death
Me - ta - phor for life
Life
Me - ta - phor for
dea - th
Life Life
Me - ta - phor for
nor death
Life
Me - ta - phor for
30
f
Me - ta - phor for life
Life O - a - sis of a -
life
Me - ta - phor for life
Life O - a - sis of a -
life
Me - ta - phor for life
Life Life
O - a - sis of a -
life
Me - ta - phor Life
33
ff
ware - ness
a - ware - ness
In a des - ert land
ware - ness
a - ware - ness
In a des - ert land
ware - ness
Oa - sis of a - ware - ness
In a des - ert - land
Oa - sis of a - ware - ness ware - ness
In a des - ert land
♩ = 72
36
mf
mp
In a des - ert land
land
la nd
In a des - ert land
la nd
In a des - ert land
land nd
In a des - ert land
land nd

Elim Dune

for saxophone quartet

Fiona Tozer
(2007)

“Elim Dune” for Saxophone Quartet.

Notes.

Visual graphic scores are typically read in two dimensions, like a map. Although the use of density in the graphic creates a sense of a third dimension, the use of a photograph as a score enables the multi-dimensional aspect to be easily perceived, and allows for increased depth of interpretation. The human cognitive process automatically adds the third dimension, reconstructing the scene that the photograph had reduced to a flat image, and making composite sense of the picture. The fourth dimension can be superimposed, telling the story of how the landscape was created over time by wind and grains of sand. Human imagination can perhaps be considered as constituting a fifth dimension which projects unseen but associated ideas into the picture, like the desert life beneath the surface of the dune, vehicles on the road, or the presence of the photographer.

The landscape photograph *Naukluft Mountains from Elim Dune* by Merryl Riley constitutes the score for *Elim Dune*. The work is designed to function in one of two possible ways, each of which assigns a different level of control to performers and composer. The photograph is divided into a grid of 4 vertical sections, each allocated to one instrument, and 4 horizontal sections, each of which represents a duration of one quarter of the total time. The score is to be read from the bottom upwards. In the case of performance option 1, the duration of the piece should be agreed on beforehand by the players, and the proportion of the horizontal sections to the total time should be maintained.

Instrumentation.

Soprano, alto, tenor and baritone saxophone.

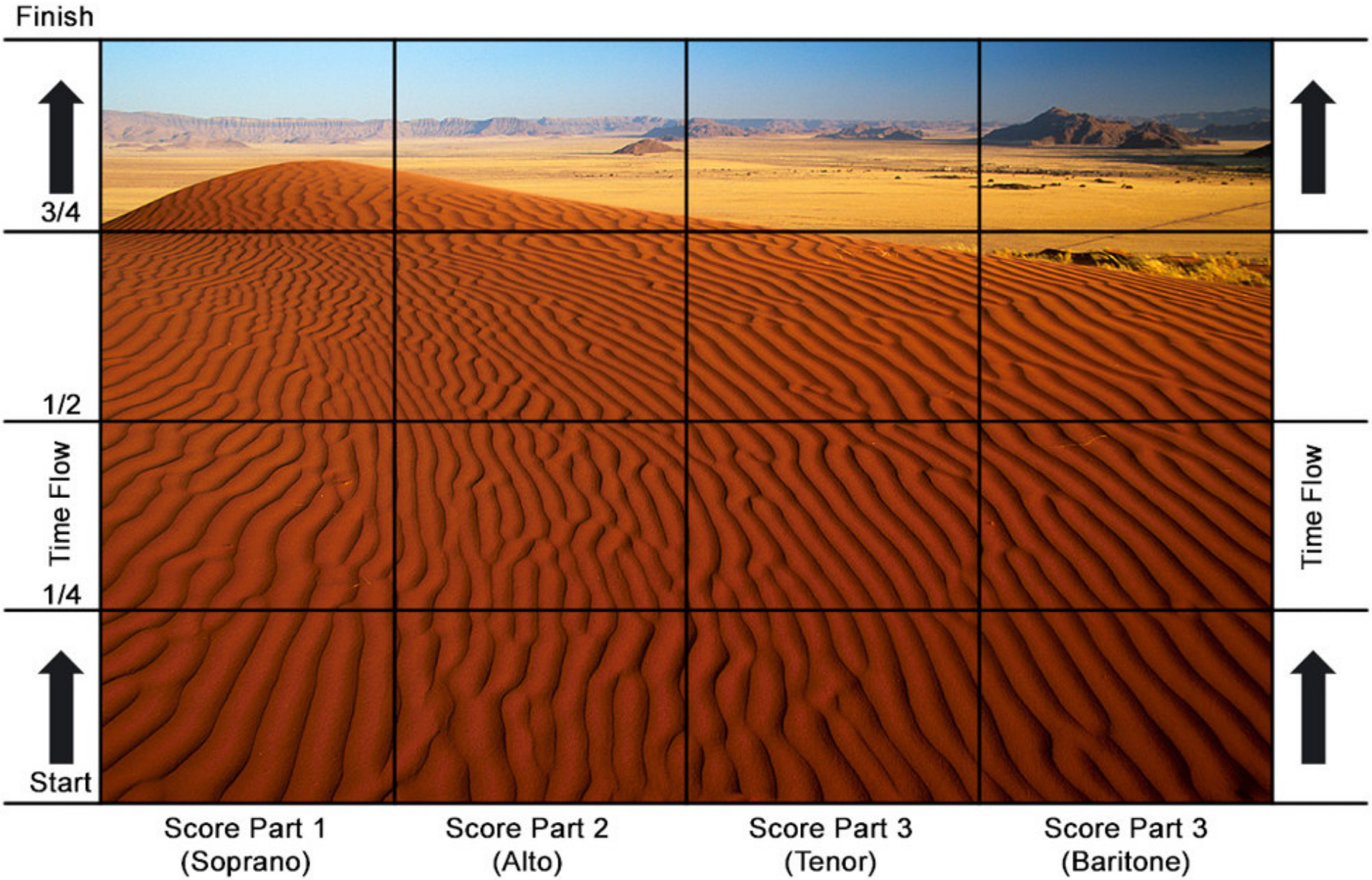
Performance Option 1.

The players use the photograph as the complete score, and perform the piece by applying their own musical interpretations of the images. The vertical sections may be allocated at random. Each player interprets only his/her own allocated part, but the individual improvisations should interact and work together to create a composite whole.

Performance Option 2

This consists of a performance using the composer’s detailed score, where each vertical section has been pre-assigned to a specific instrument.

Naukluft Mountains from Elim Dune



Merryl Riley
Riley Photographic

Notation conventions

slp

 = slap-tongue with pitch

slp

 = slap-tongue minimal pitch

 = multiphonics (freely - on notated pitch where possible)

 = breath sound, no pitch

 = from nothing

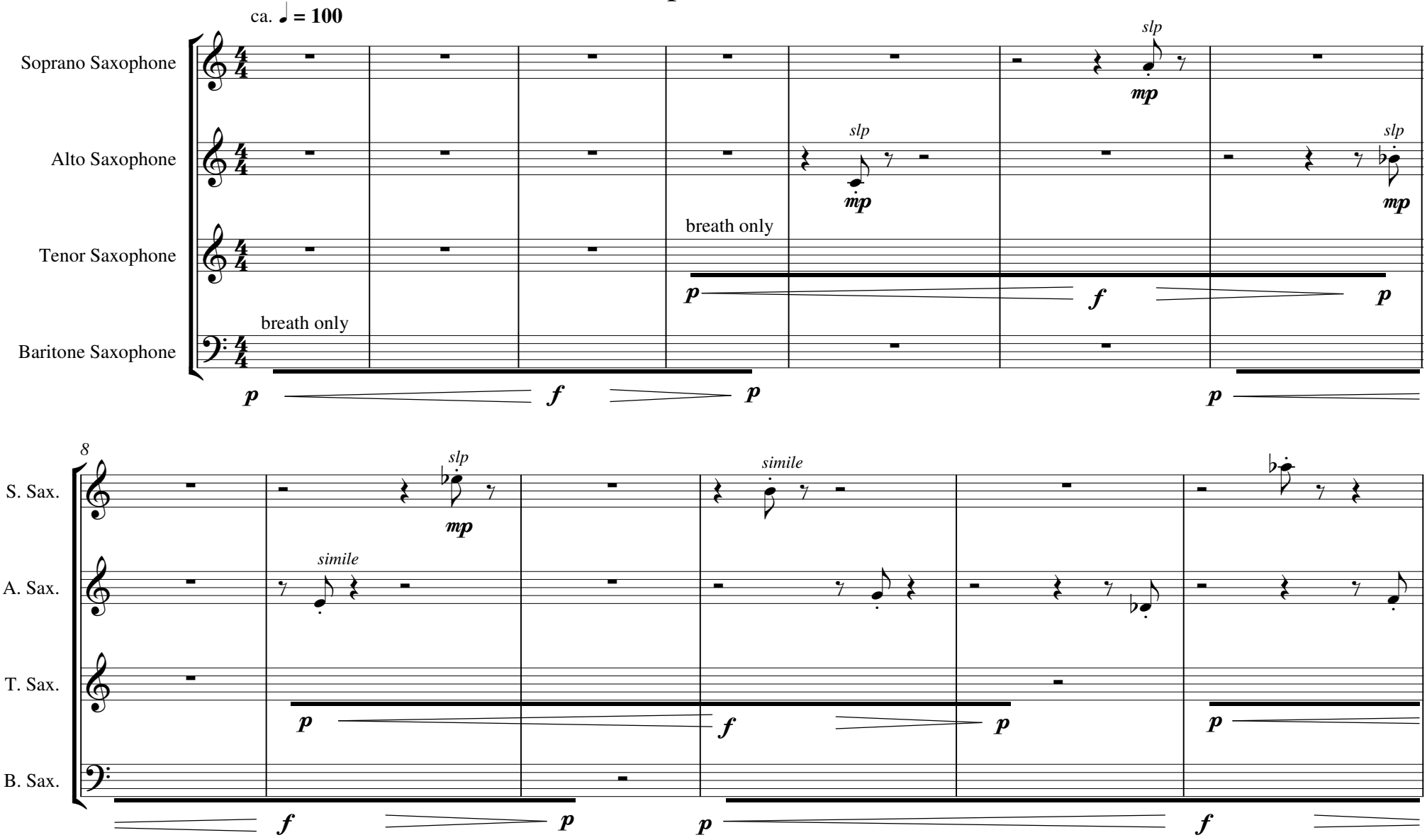
Accidentals apply to entire measure.

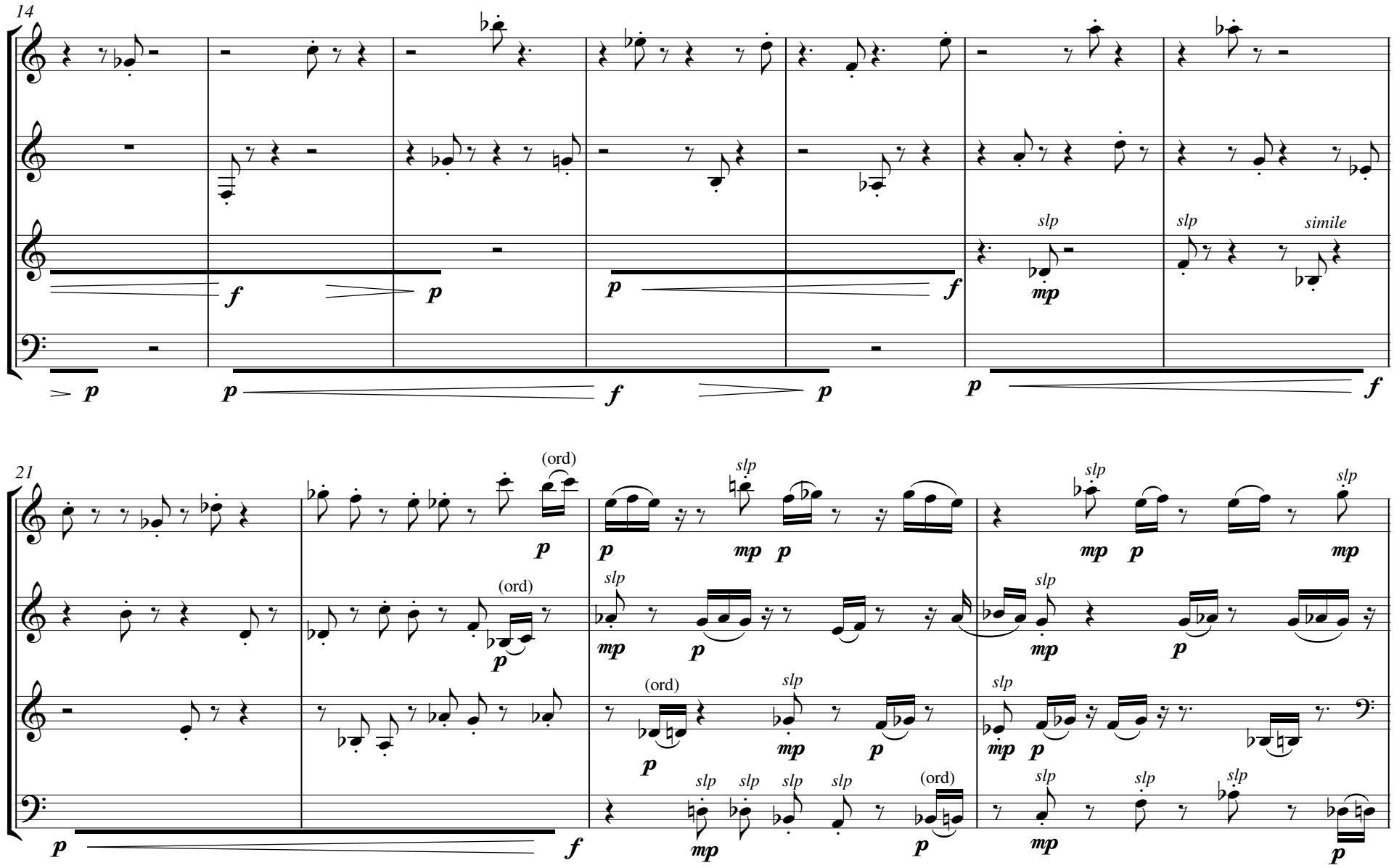
Notes are tongued if no slur or expression text is present.

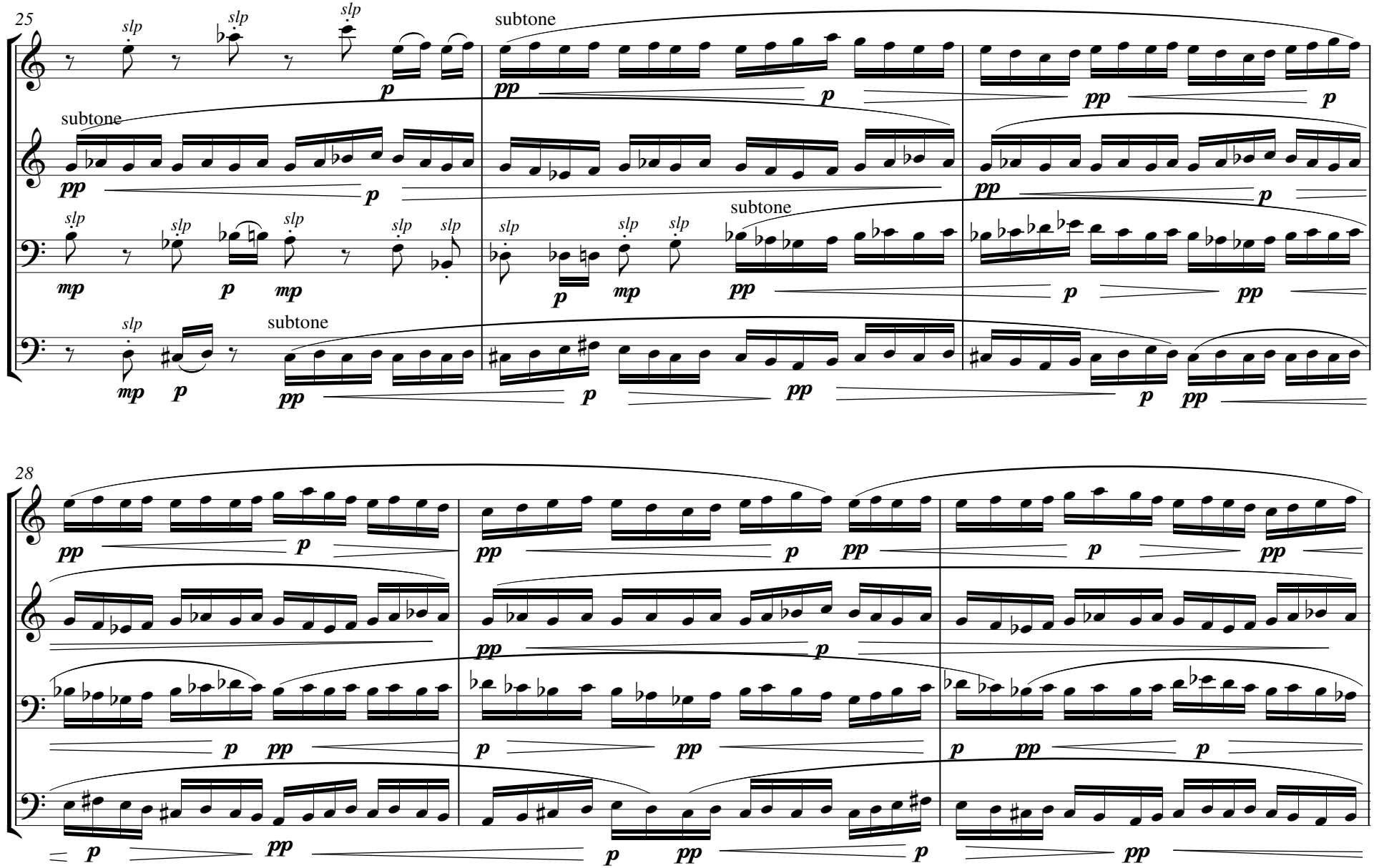
Score in "C"

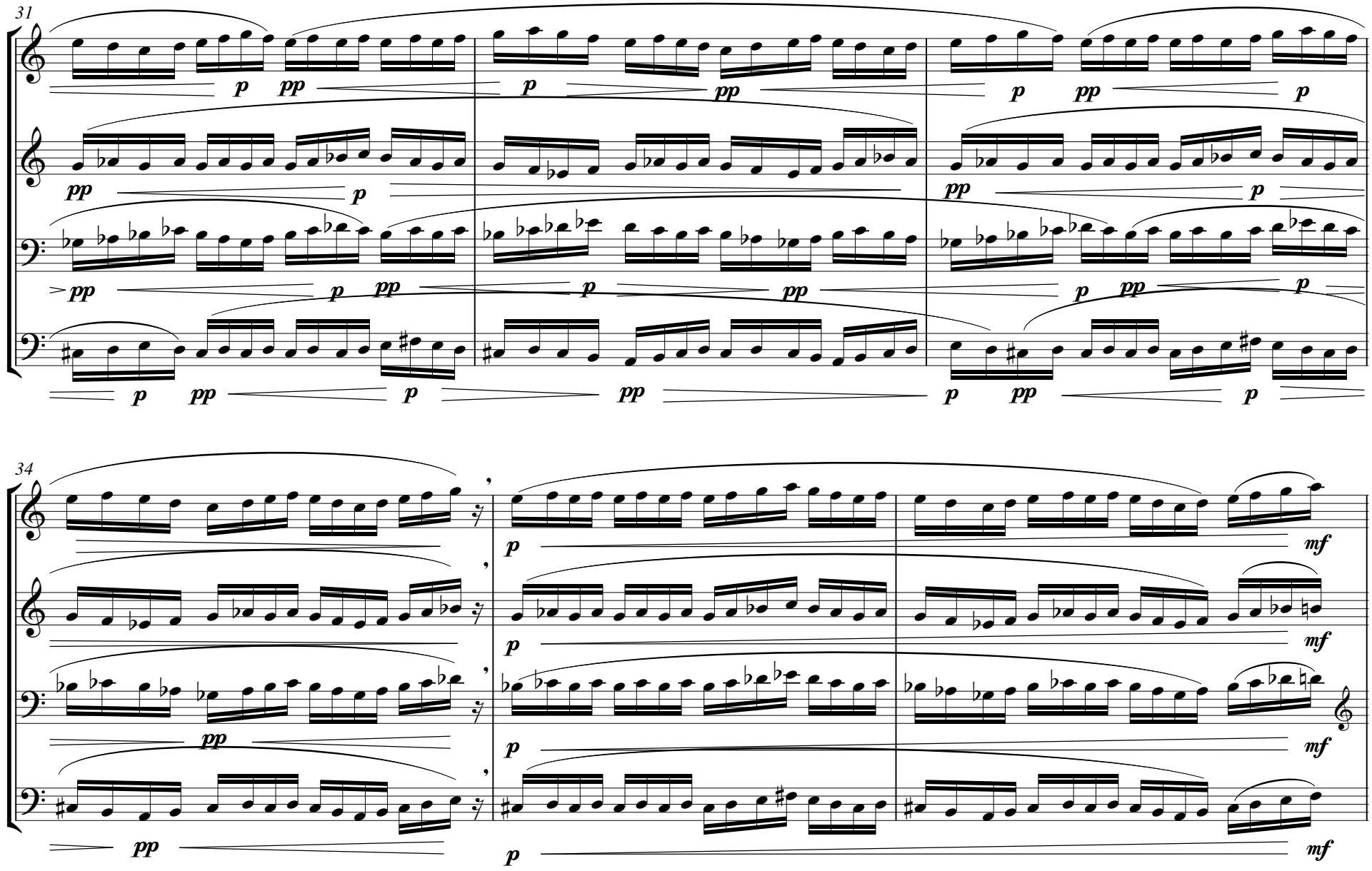
Elim Dune
for Saxophone Quartet

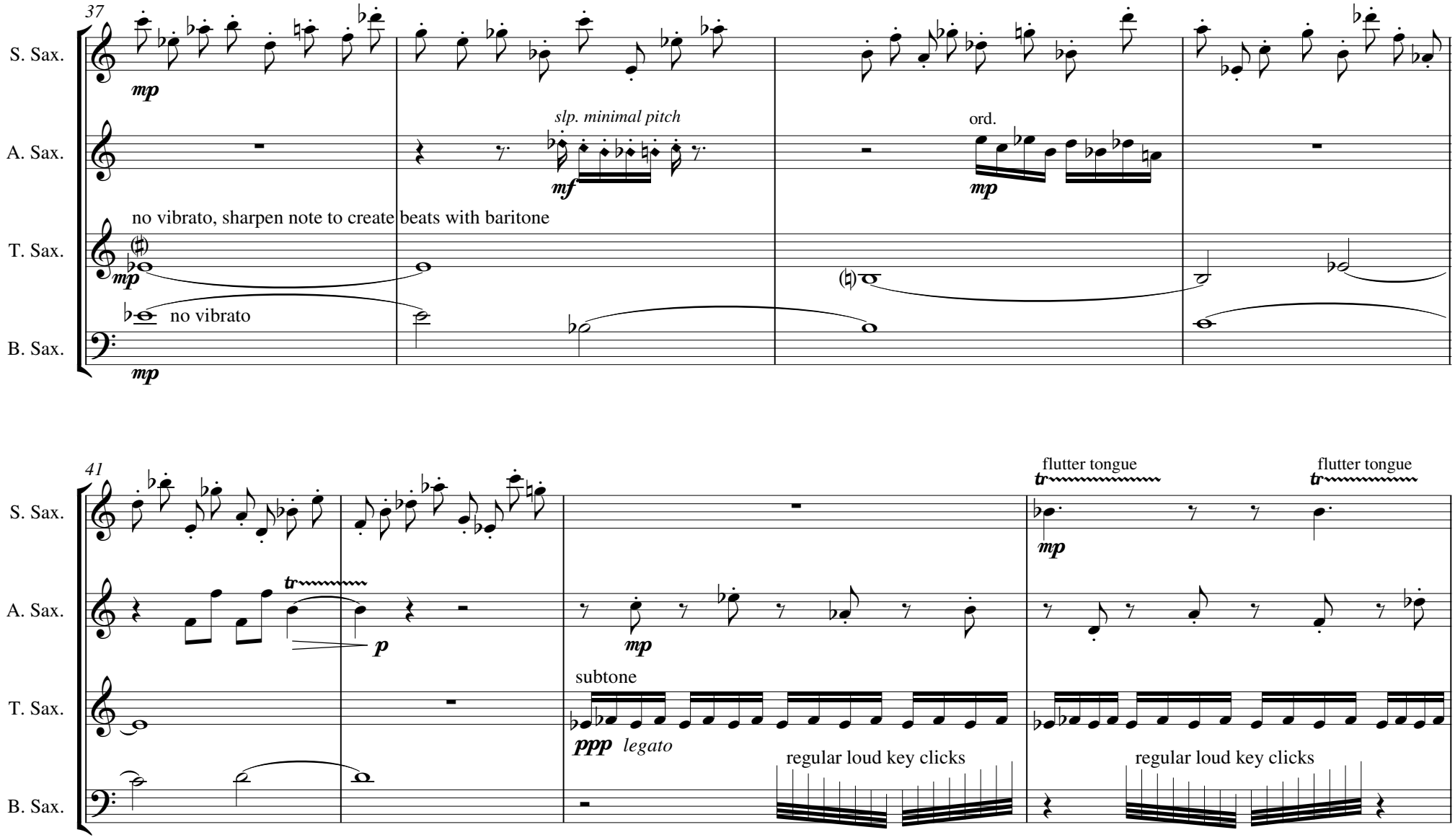
FIONA TOZER
2006



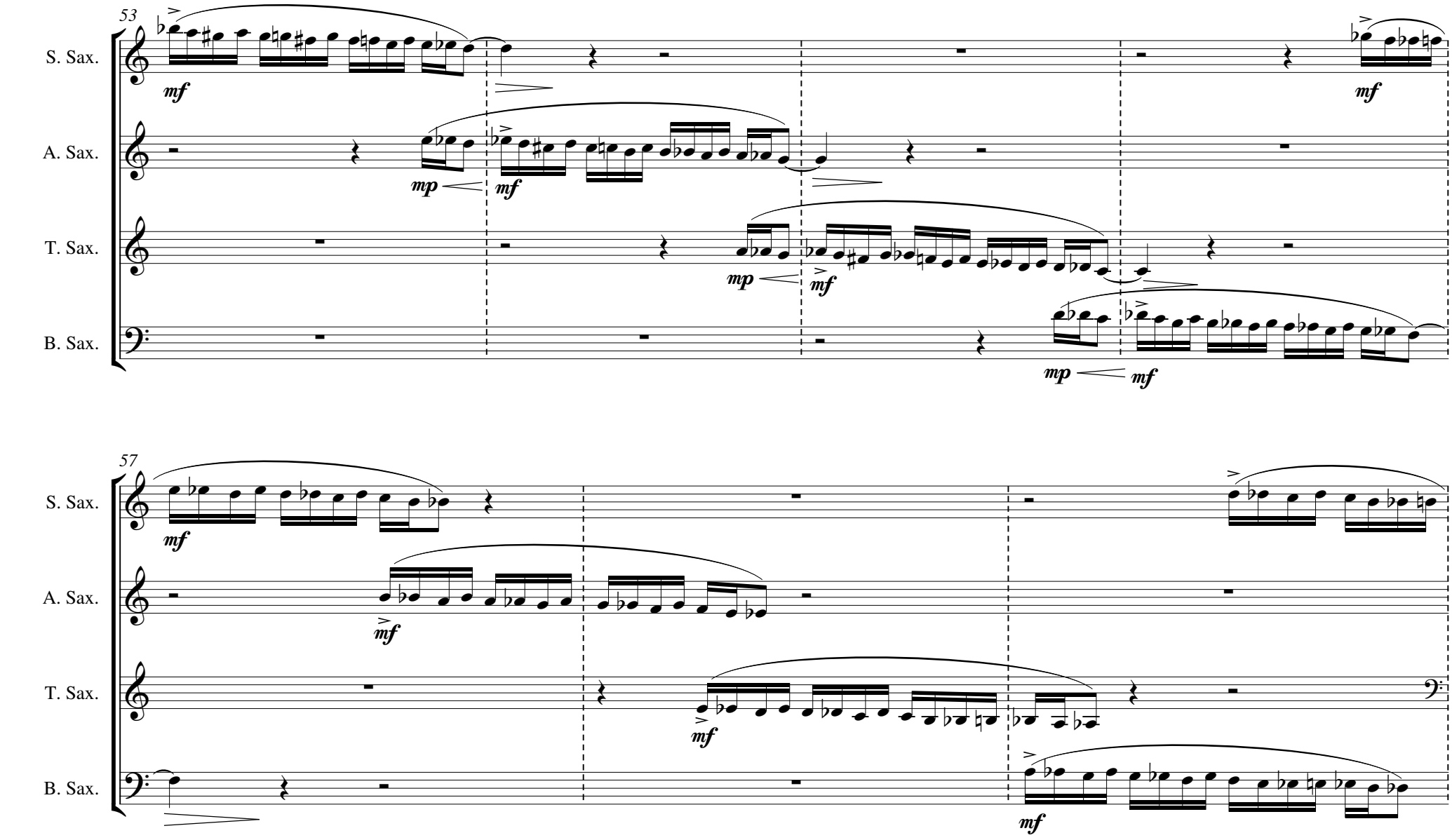

14
S. Sax.
A. Sax.
T. Sax.
B. Sax.
slp
simile
21
(ord)

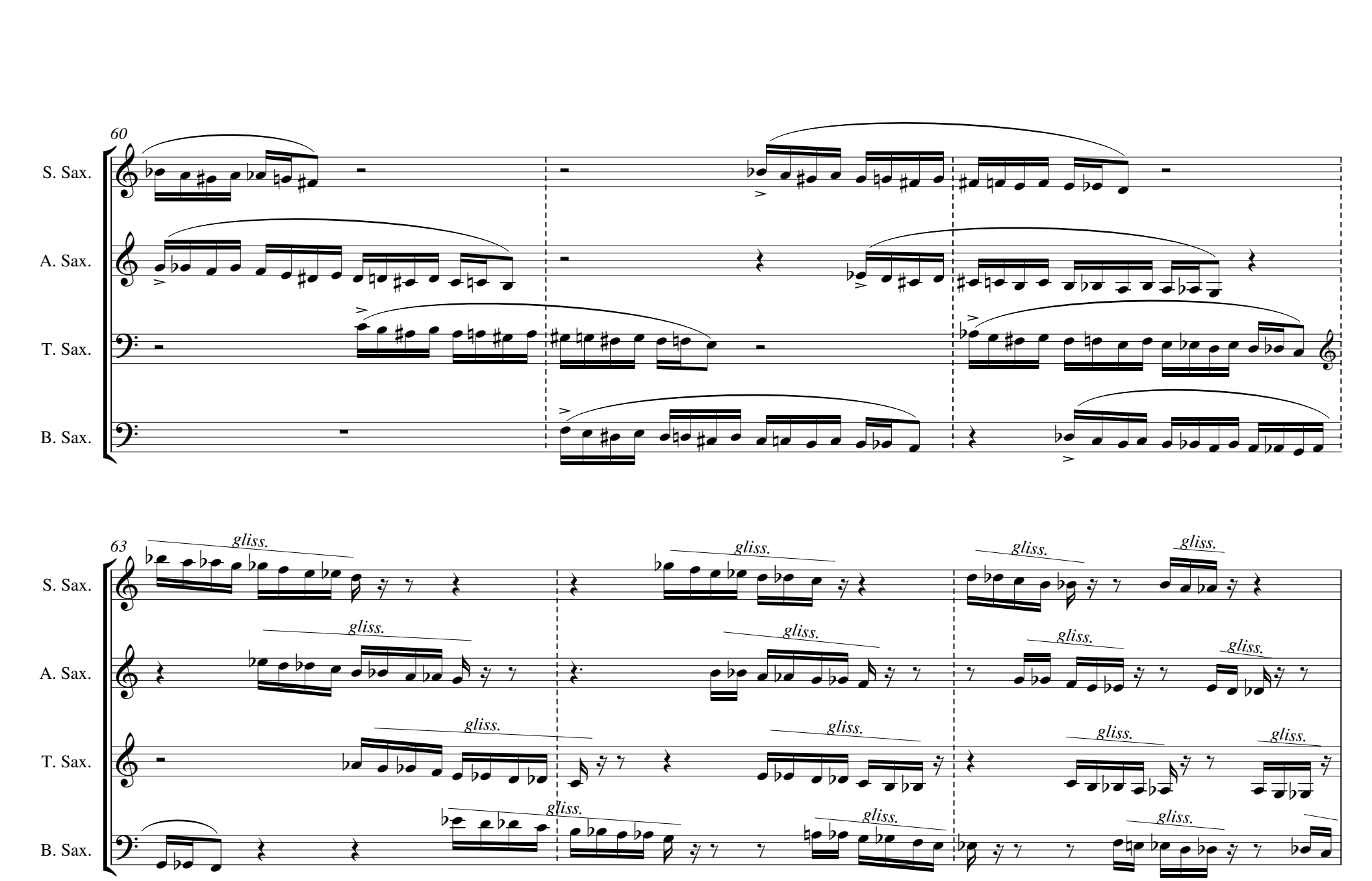

25
S. Sax.
A. Sax.
T. Sax.
B. Sax.
slp
subtone
28

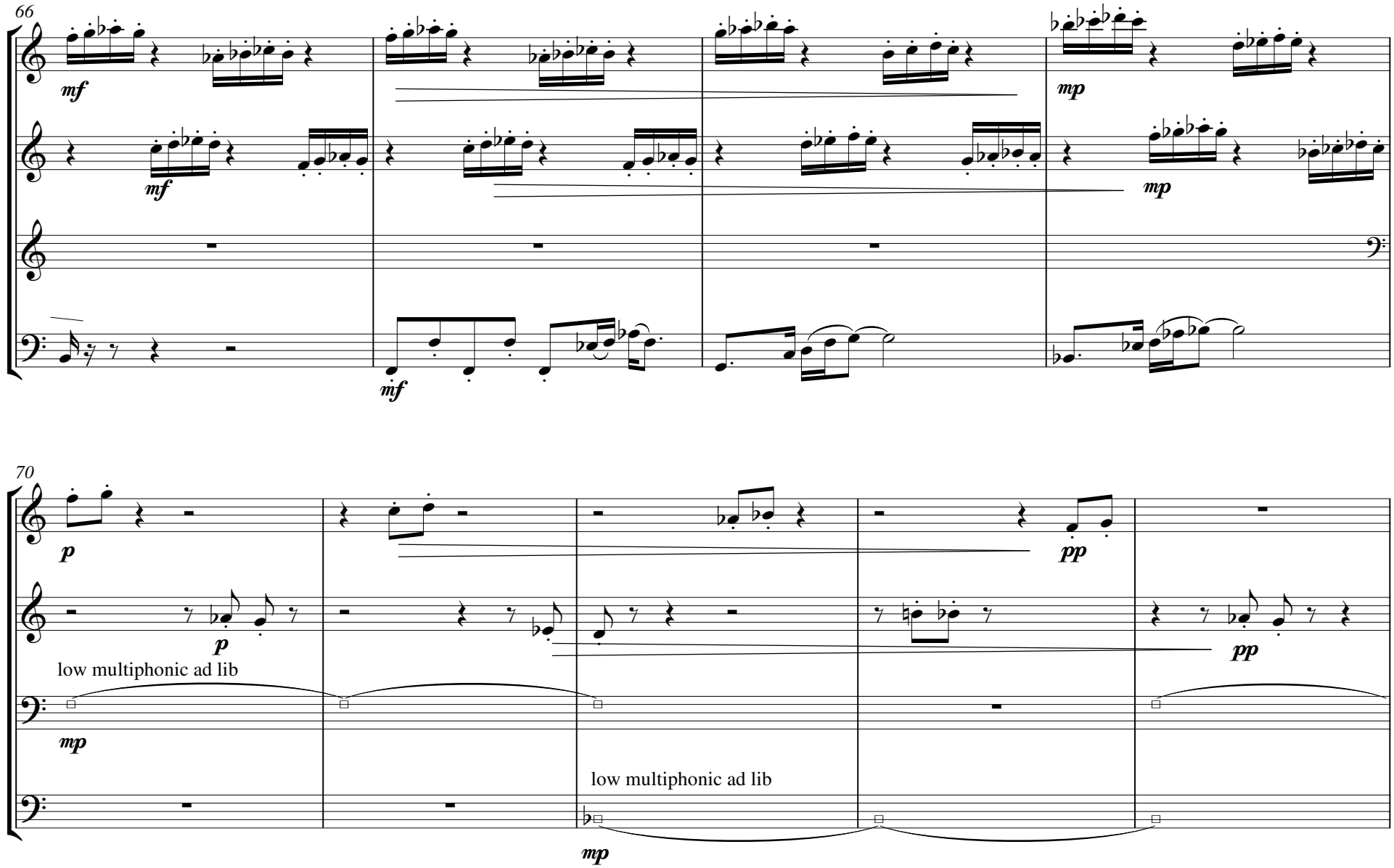

31
S. Sax.
A. Sax.
T. Sax.
B. Sax.
34
S. Sax.
A. Sax.
T. Sax.
B. Sax.

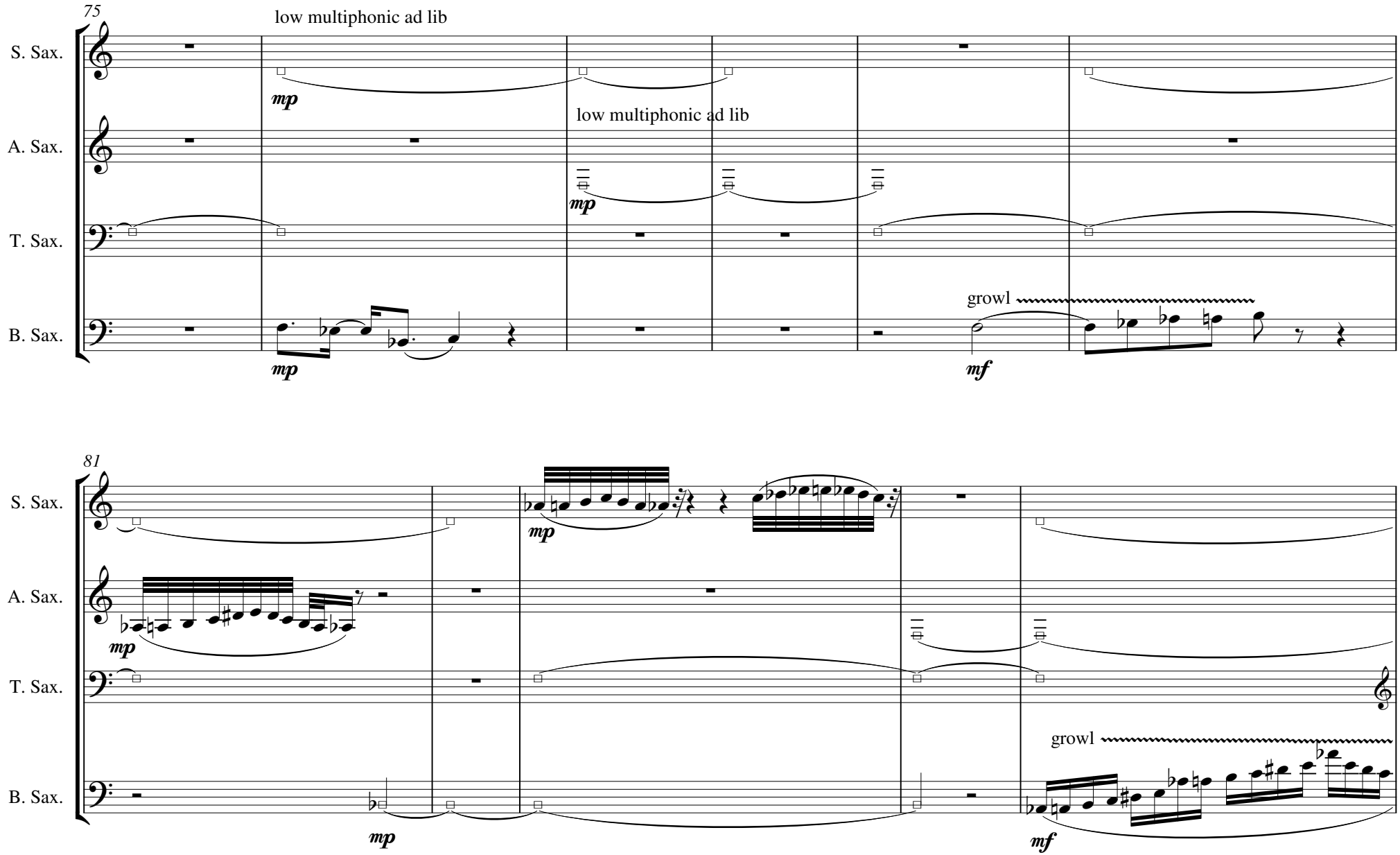

37
S. Sax.
A. Sax.
T. Sax.
B. Sax.
mp
slp. minimal pitch
mf
ord.
mp
no vibrato, sharpen note to create beats with baritone
mp
no vibrato
mp
41
S. Sax.
A. Sax.
T. Sax.
B. Sax.
tr
p
mp
flutter tongue
tr
mp
flutter tongue
tr
subtone
ppp
legato
regular loud key clicks
regular loud key clicks

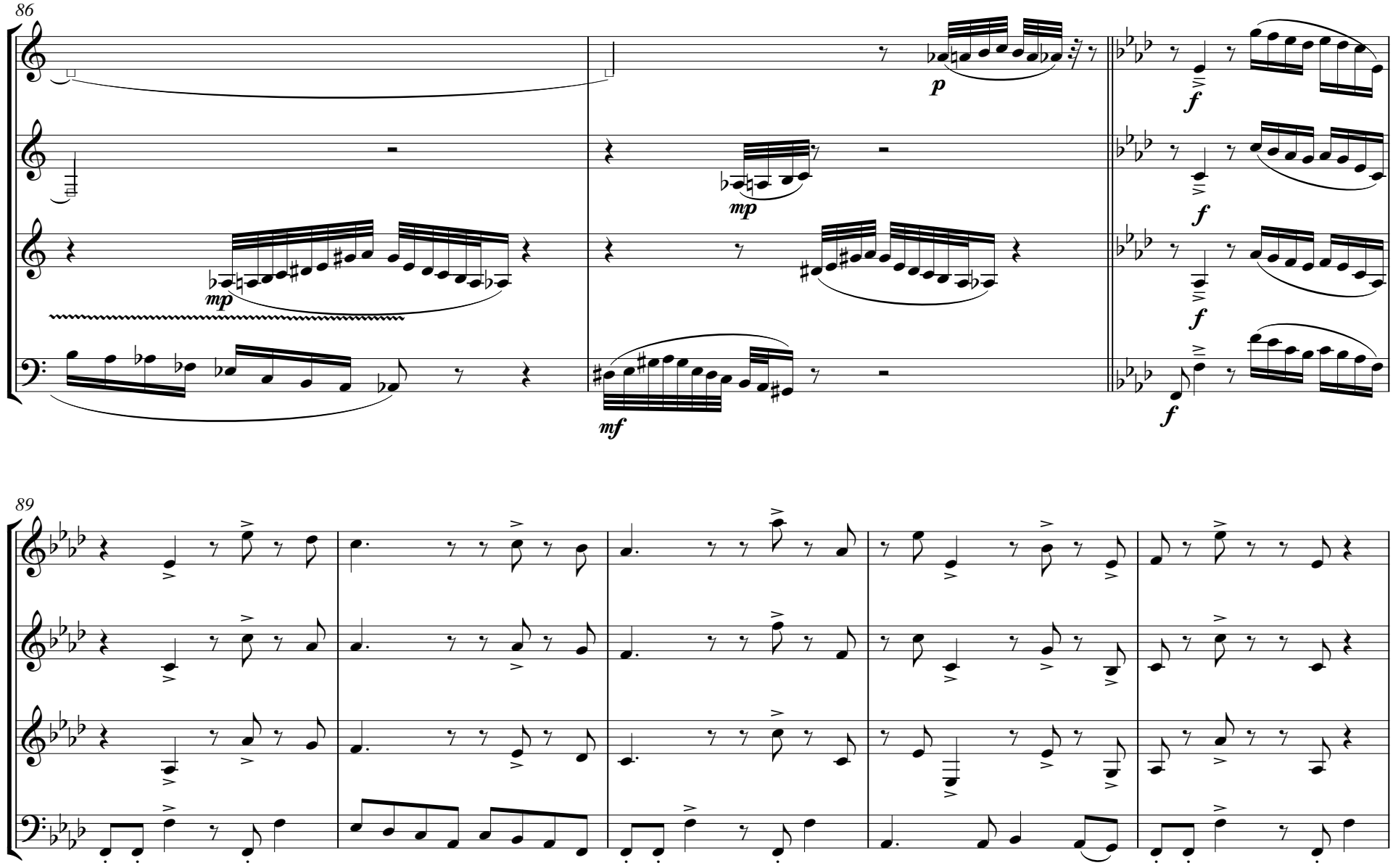

45
flutter tongue
flutter tongue
simile.....
S. Sax.
A. Sax.
T. Sax.
B. Sax.
subtone
mp
ppp legato
48
(tr)
hiss
sfz
fade to breath and key clicks

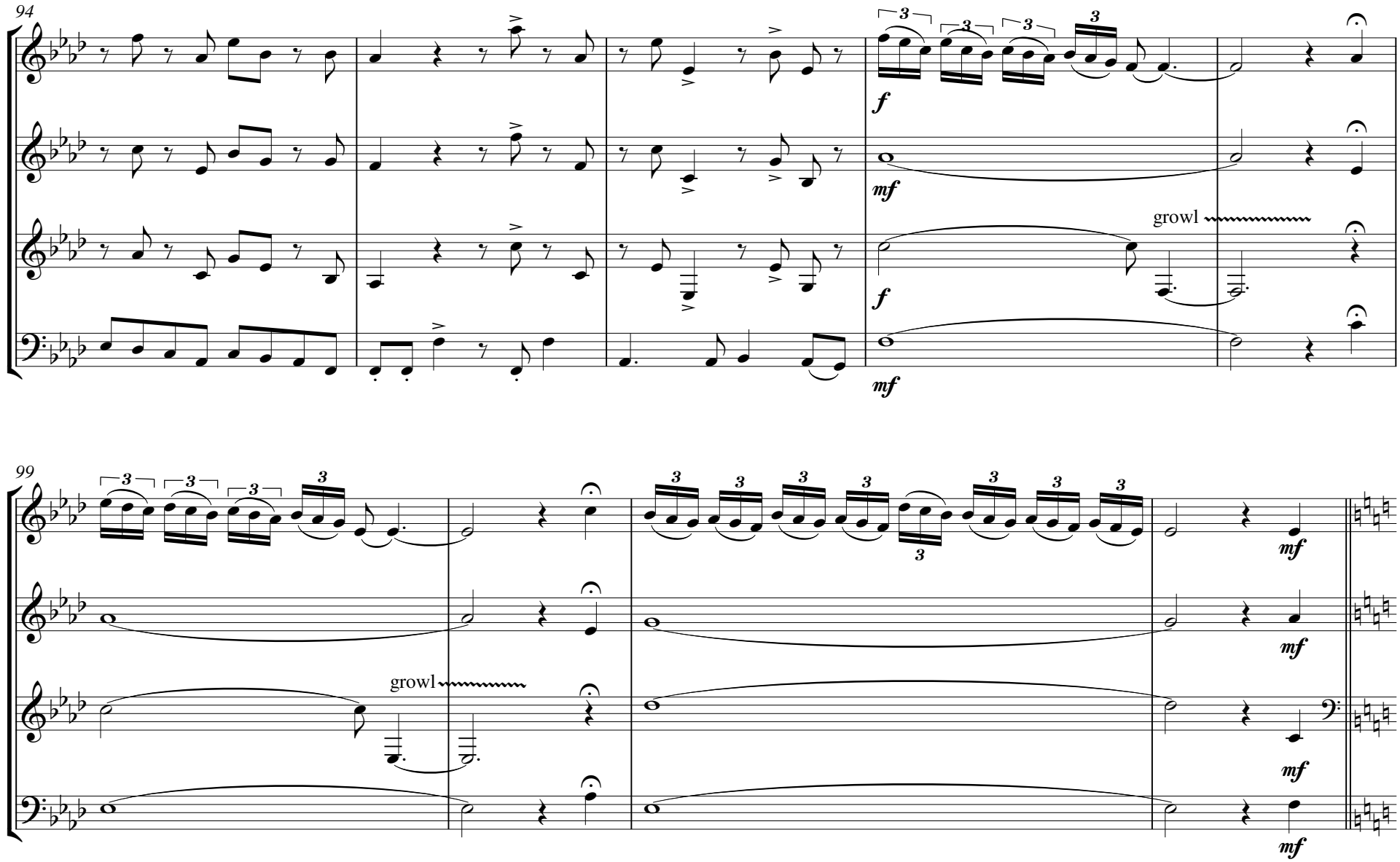

53
S. Sax.
A. Sax.
T. Sax.
B. Sax.
mf
mp
mf
mp
mf
mp
mf
57
S. Sax.
A. Sax.
T. Sax.
B. Sax.
mf
mf
mf
mf

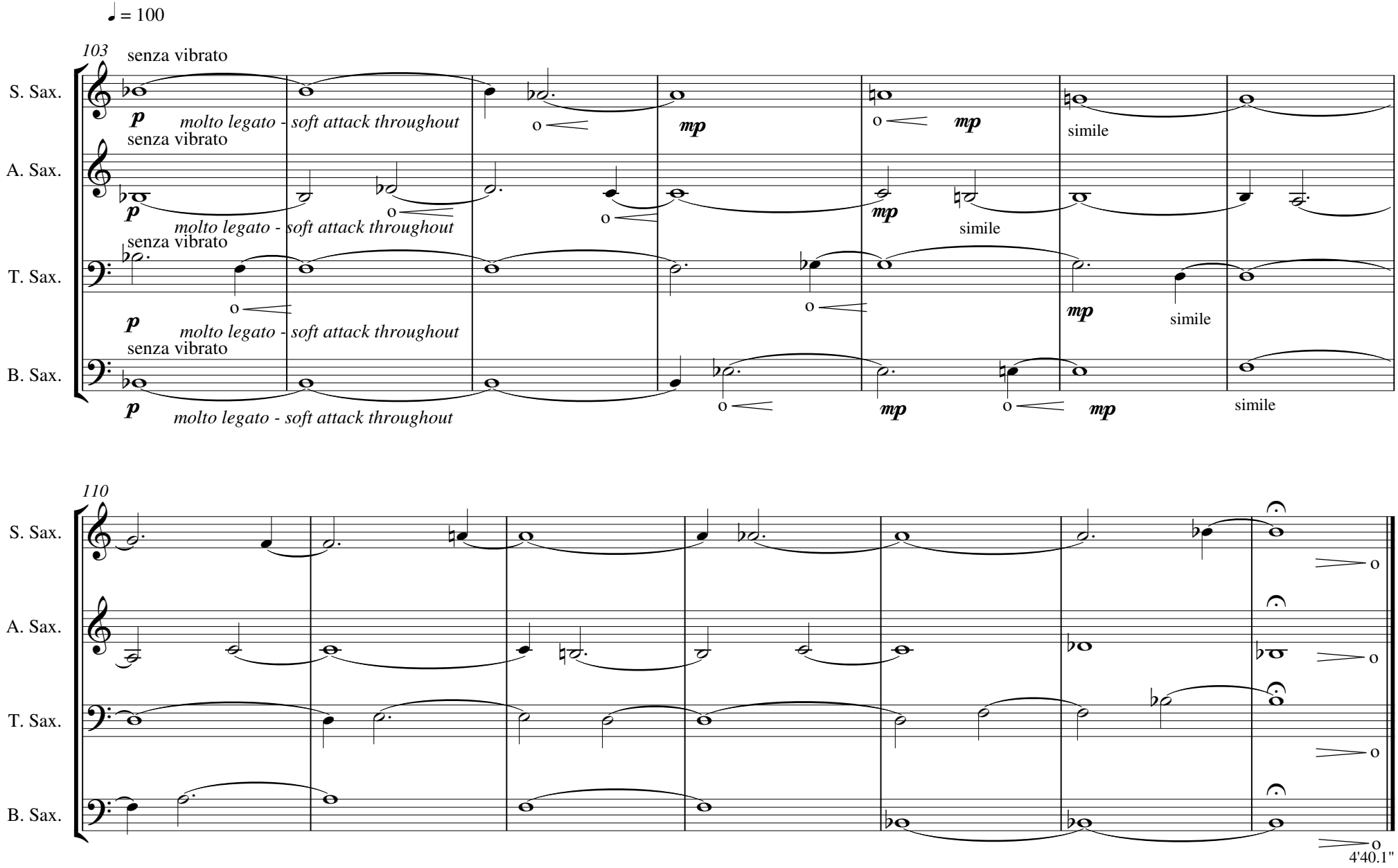

60
S. Sax.
A. Sax.
T. Sax.
B. Sax.
63
gliss.


66
S. Sax.
A. Sax.
T. Sax.
B. Sax.
mf
mf
mf
mp
mp
70
p
p
pp
pp
low multiphonic ad lib
mp
low multiphonic ad lib
mp


75
low multiphonic ad lib
S. Sax.
A. Sax.
T. Sax.
B. Sax.
mp
low multiphonic ad lib
mp
mp
growl
mf
81
S. Sax.
A. Sax.
T. Sax.
B. Sax.
mp
mp
mp
growl
mf


86
S. Sax.
A. Sax.
T. Sax.
B. Sax.
p
mp
mf
f
89


94
S. Sax.
A. Sax.
T. Sax.
B. Sax.
f
mf
f
mf
growl
99
S. Sax.
A. Sax.
T. Sax.
B. Sax.
growl
mf
mf
mf
mf


♩ = 100
103
senza vibrato
S. Sax.
p
molto legato - soft attack throughout
senza vibrato
A. Sax.
p
molto legato - soft attack throughout
senza vibrato
T. Sax.
p
molto legato - soft attack throughout
senza vibrato
B. Sax.
p
molto legato - soft attack throughout
mp
simile
110
S. Sax.
A. Sax.
T. Sax.
B. Sax.
4'40.1"

Elim Dune

for saxophone quartet

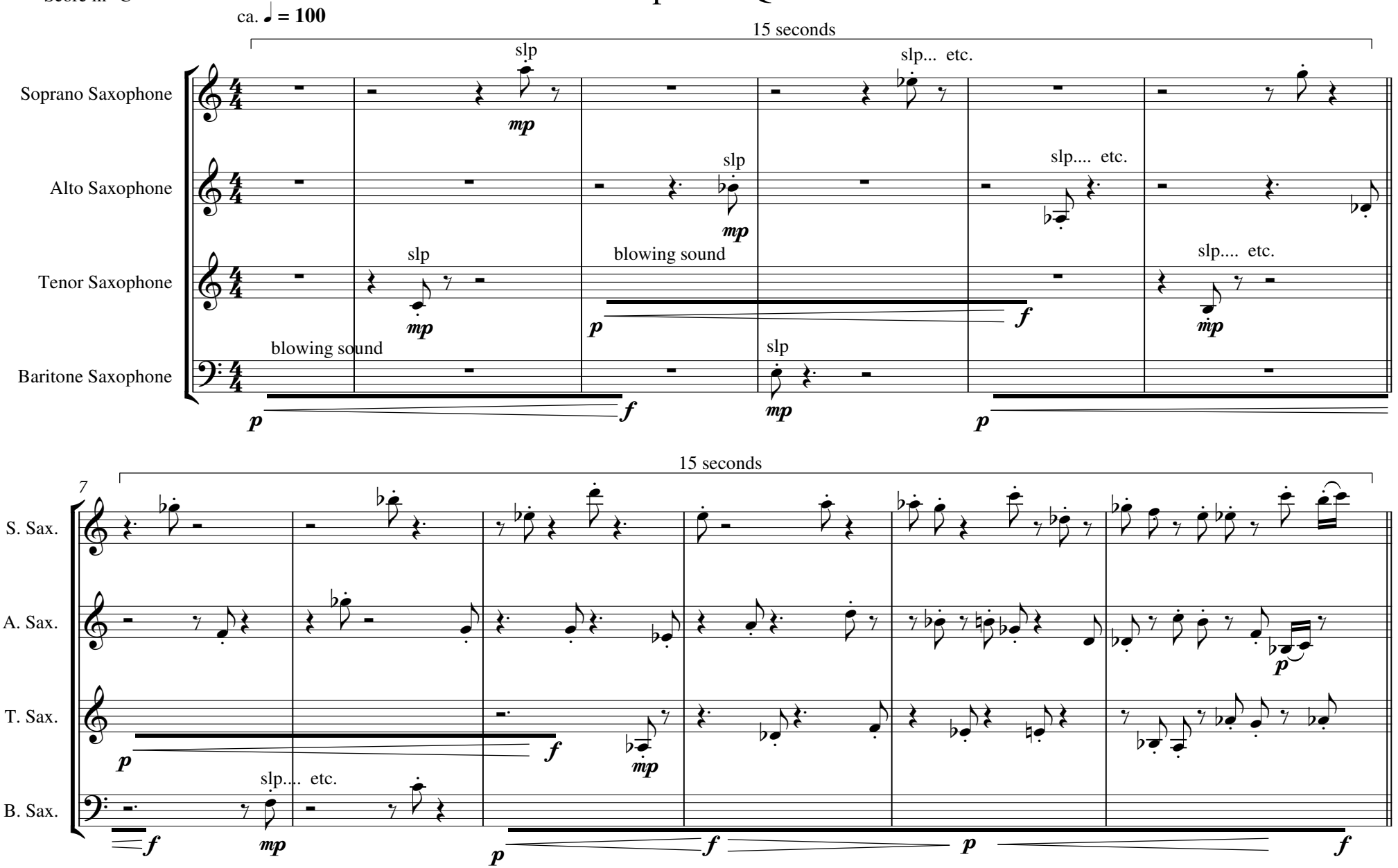
(original workshop score)

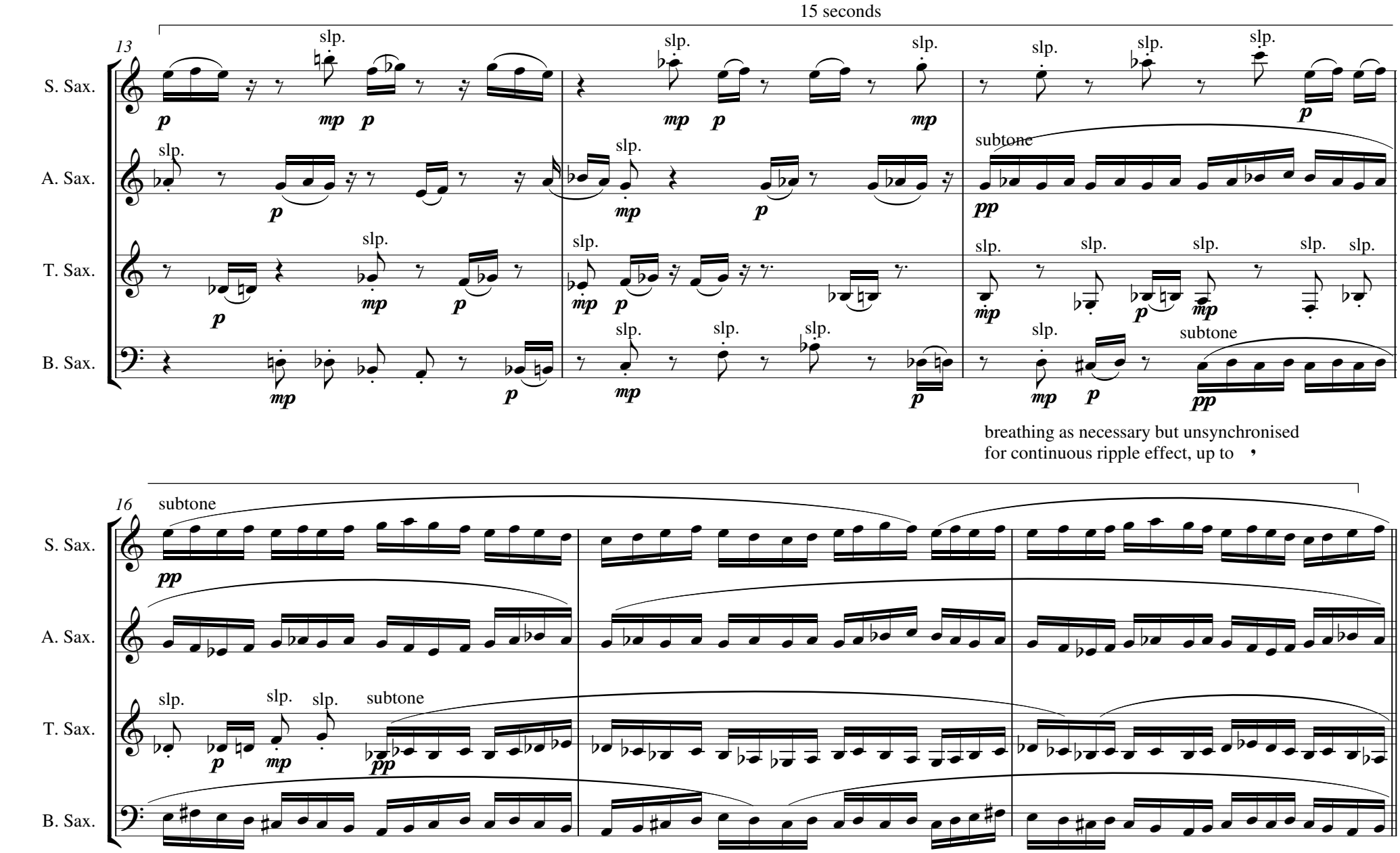
Fiona Tozer
(2007)

Elim Dune
for Saxophone Quartet

FIONA TOZER
2006

Score in "C"




15 seconds
13
S. Sax.
A. Sax.
T. Sax.
B. Sax.
slp.
subtone
breathing as necessary but unsynchronised
for continuous ripple effect, up to
16
subtone

15 seconds

19

S. Sax.

A. Sax.

T. Sax.

B. Sax.

22

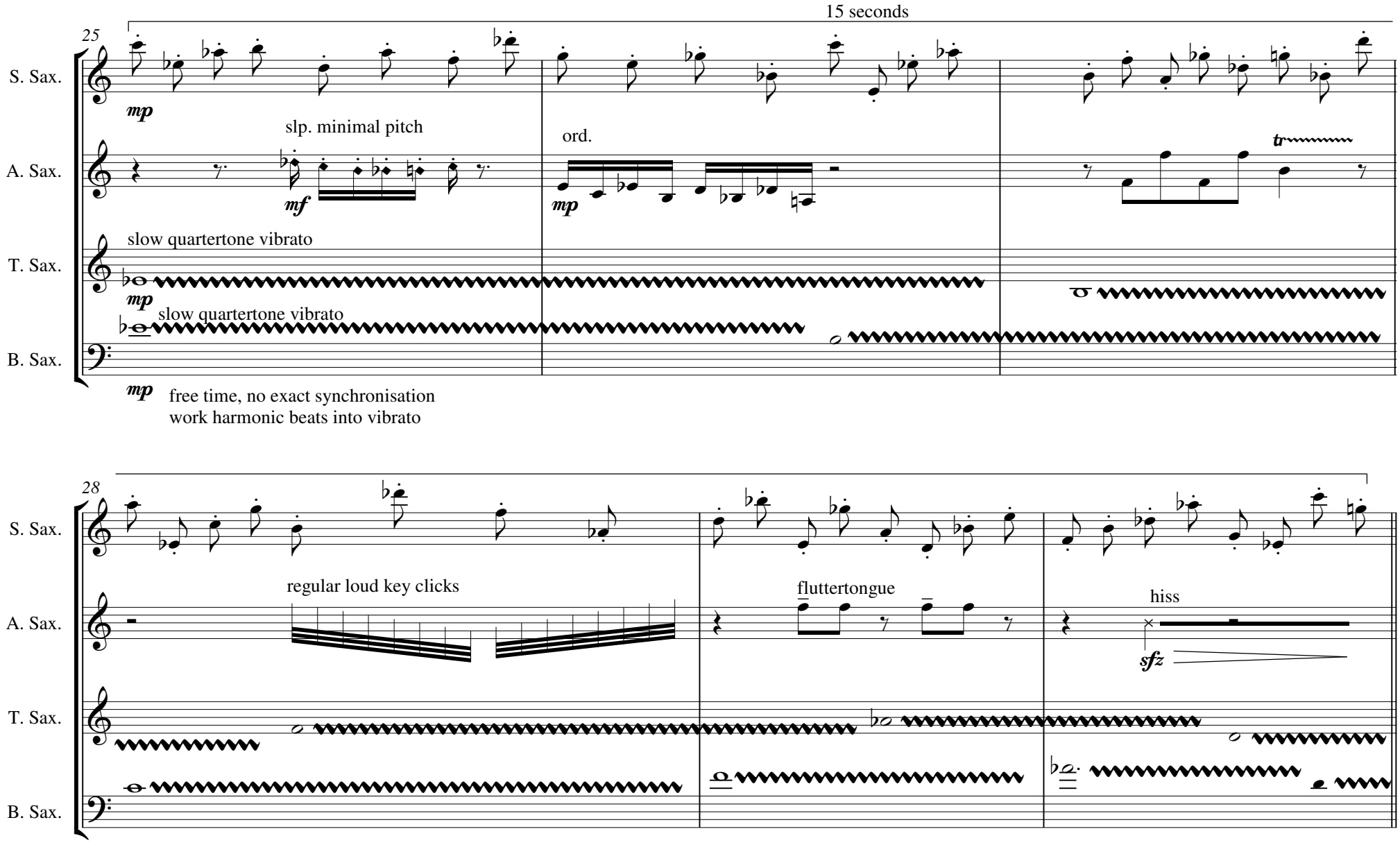
S. Sax.

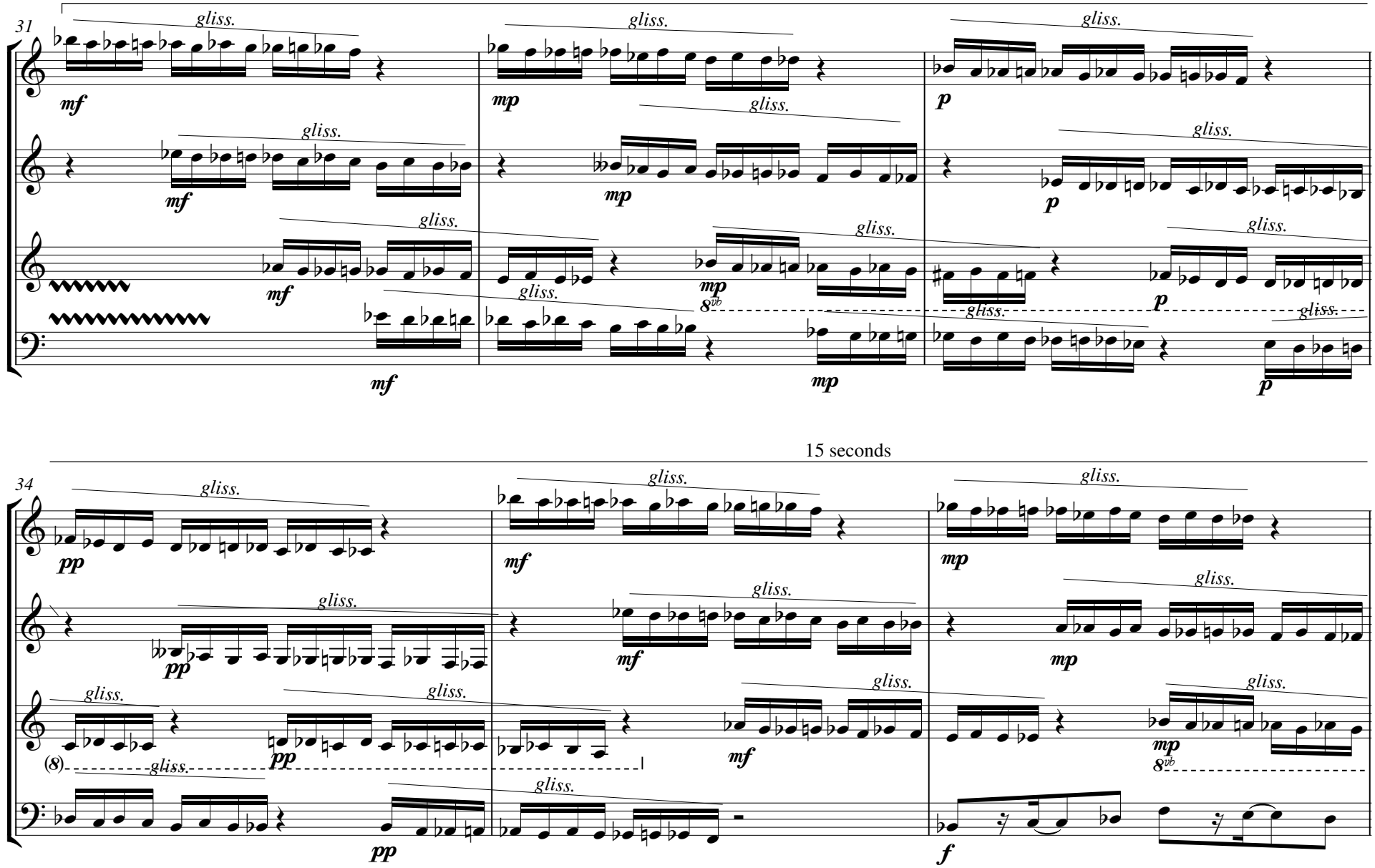
A. Sax.

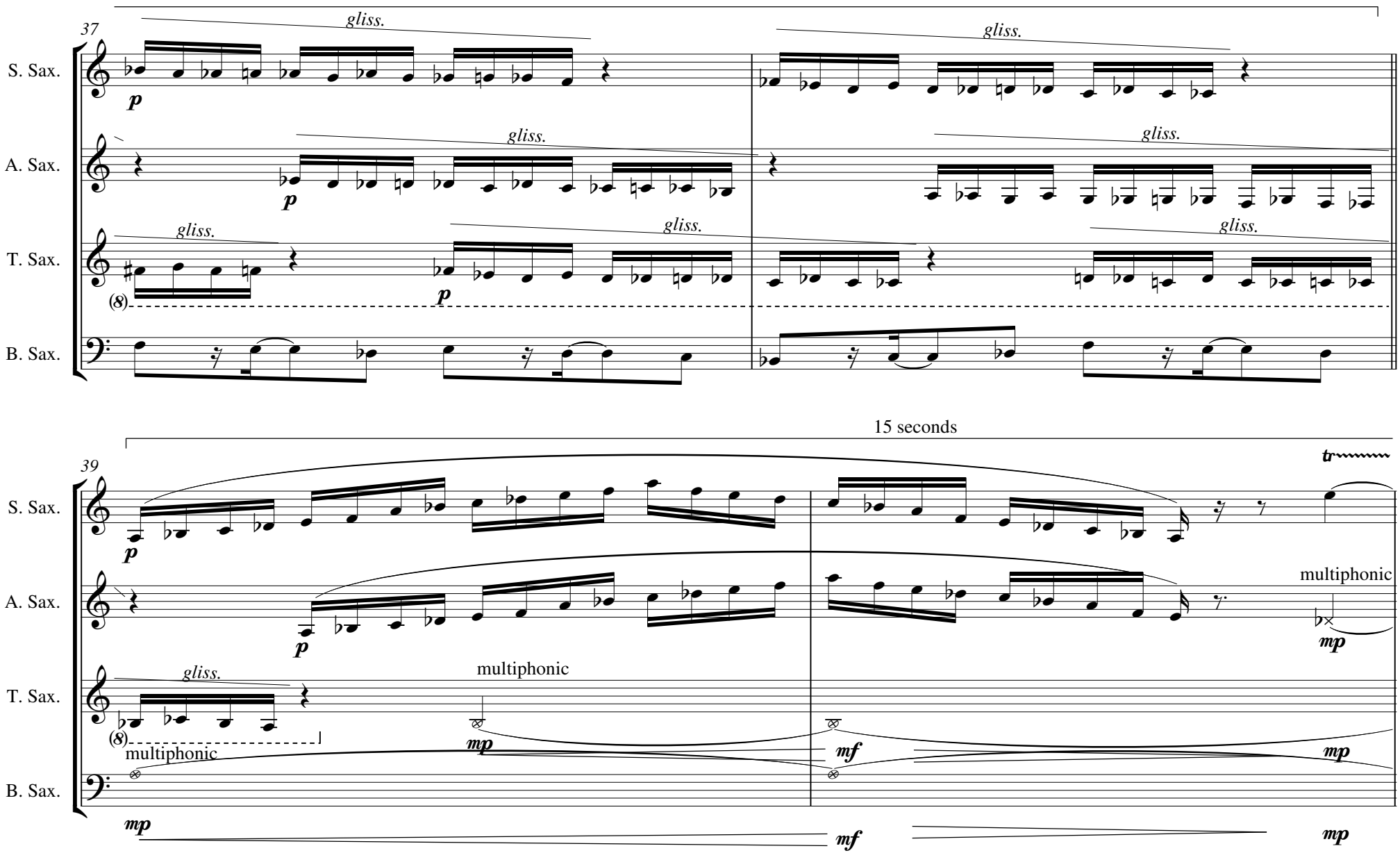
T. Sax.

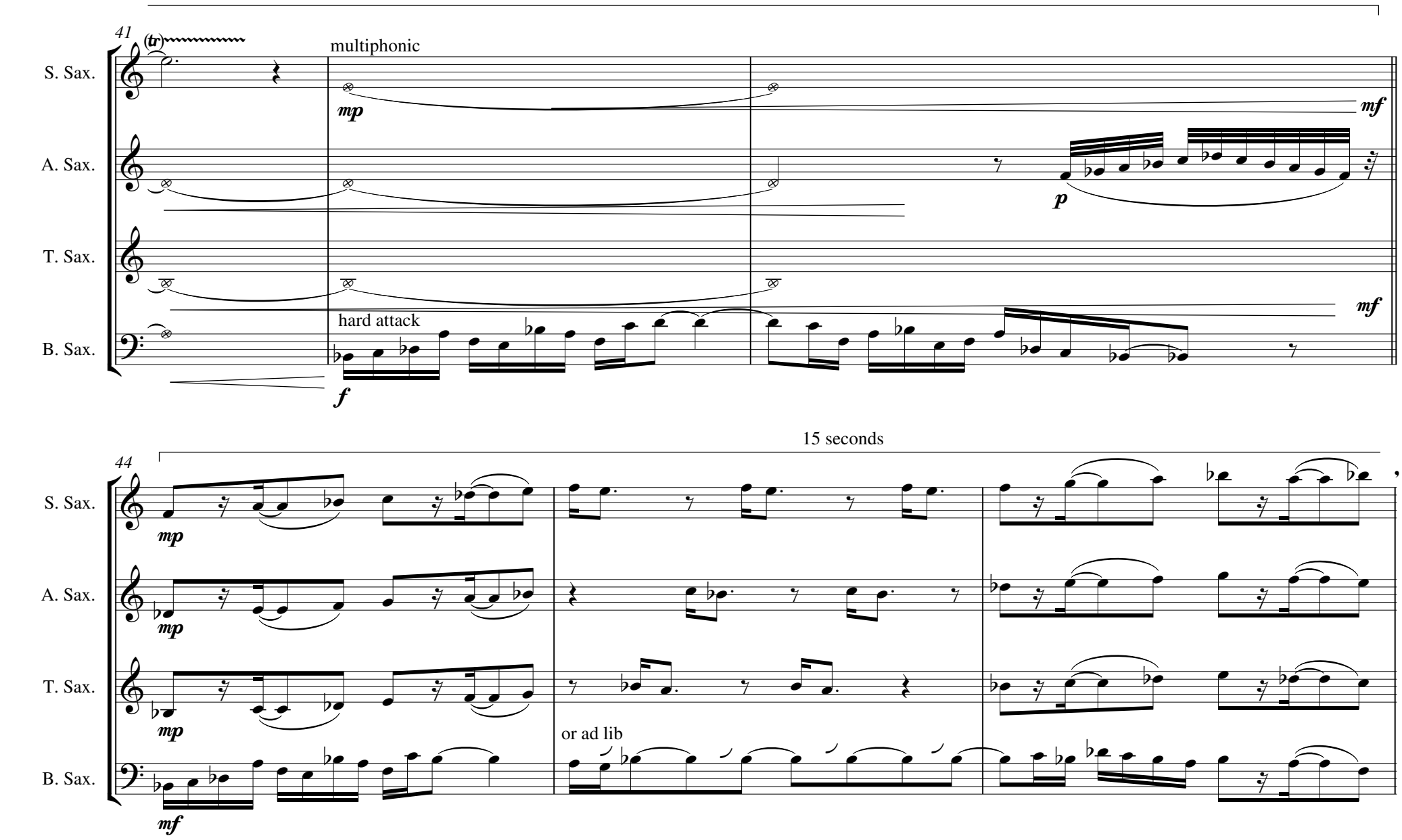
B. Sax.

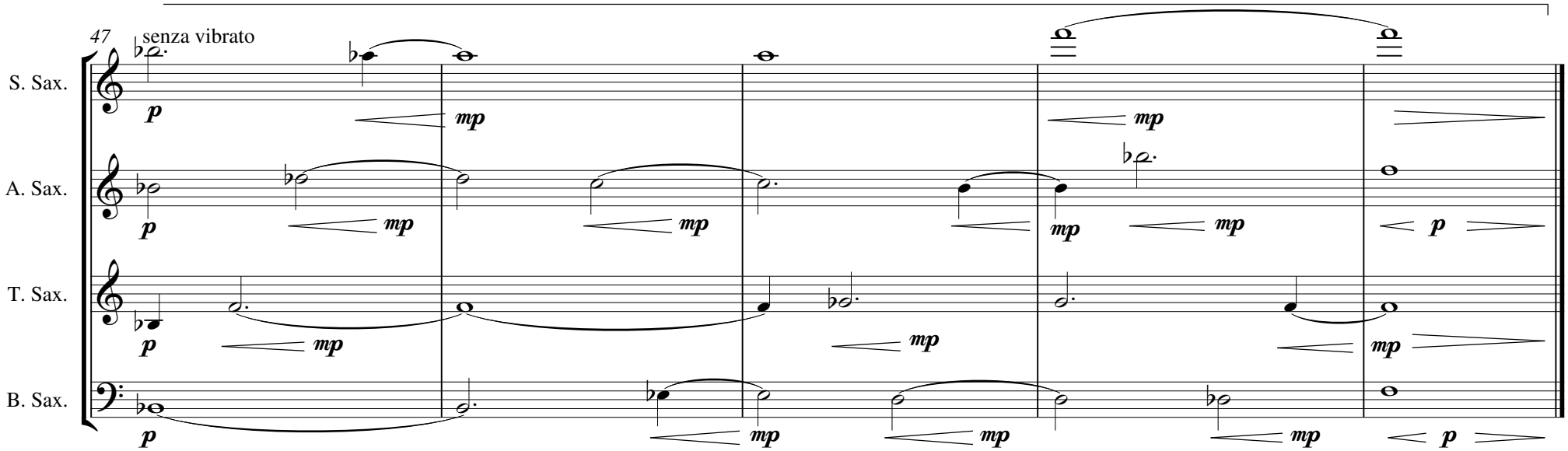
p *mf*


15 seconds
25
S. Sax.
A. Sax.
T. Sax.
B. Sax.
mp
slp. minimal pitch
mf
ord.
mp
tr
slow quartertone vibrato
mp
slow quartertone vibrato
mp
free time, no exact synchronisation
work harmonic beats into vibrato
28
S. Sax.
A. Sax.
T. Sax.
B. Sax.
regular loud key clicks
fluttertongue
hiss
sfz


31
S. Sax.
A. Sax.
T. Sax.
B. Sax.
gliss.
mf
mp
p
8vb
15 seconds
34
pp
f
(8)


37
S. Sax.
A. Sax.
T. Sax.
B. Sax.
gliss.
p
(8)
15 seconds
39
tr
multiphonic
mp
mf


41
(tr)
multiphonic
S. Sax.
A. Sax.
T. Sax.
B. Sax.
mp
mf
p
hard attack
f
15 seconds
44
or ad lib



Notation conventions

= (slp) slap-tongue with pitch

= (slp) slap-tongue minimal pitch

= approximate pitch multiphonics

= blowing sound, no pitch

= slow quartertone vibrato

Multiple Exposure

For 4 marimbas

Fiona Tozer
(2007)

Photograph by Merryl Riley

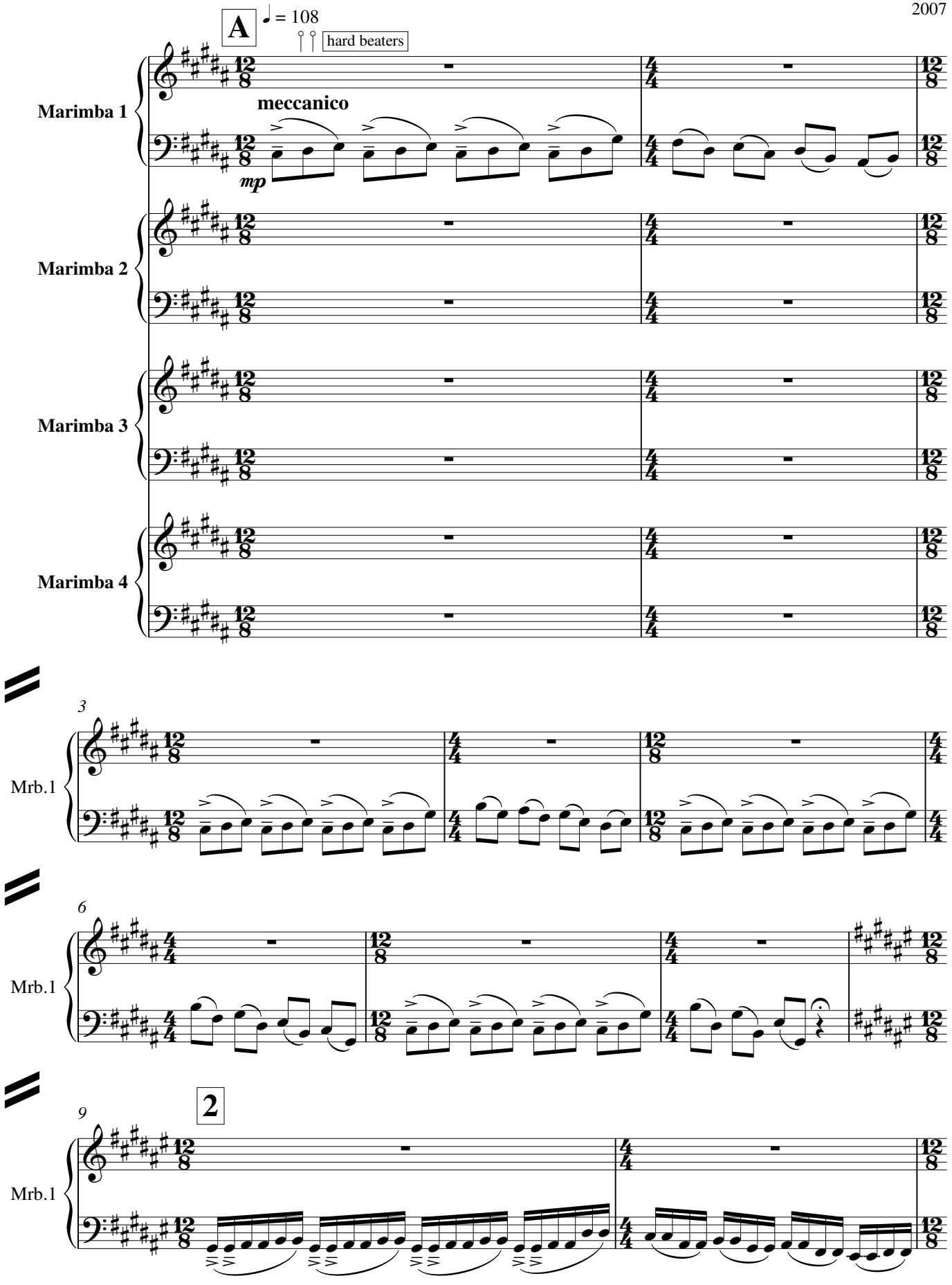
Program notes.
The photograph above was created by taking several exposures of the same subject, each shifted vertically through space. The musical work *Multiple Exposure* parallels the process of construction, shifting the musical phrase in time rather than space. After the subject has been presented, a melody is extracted from the resulting effect, representing the softer composite image generated by the combined exposures.

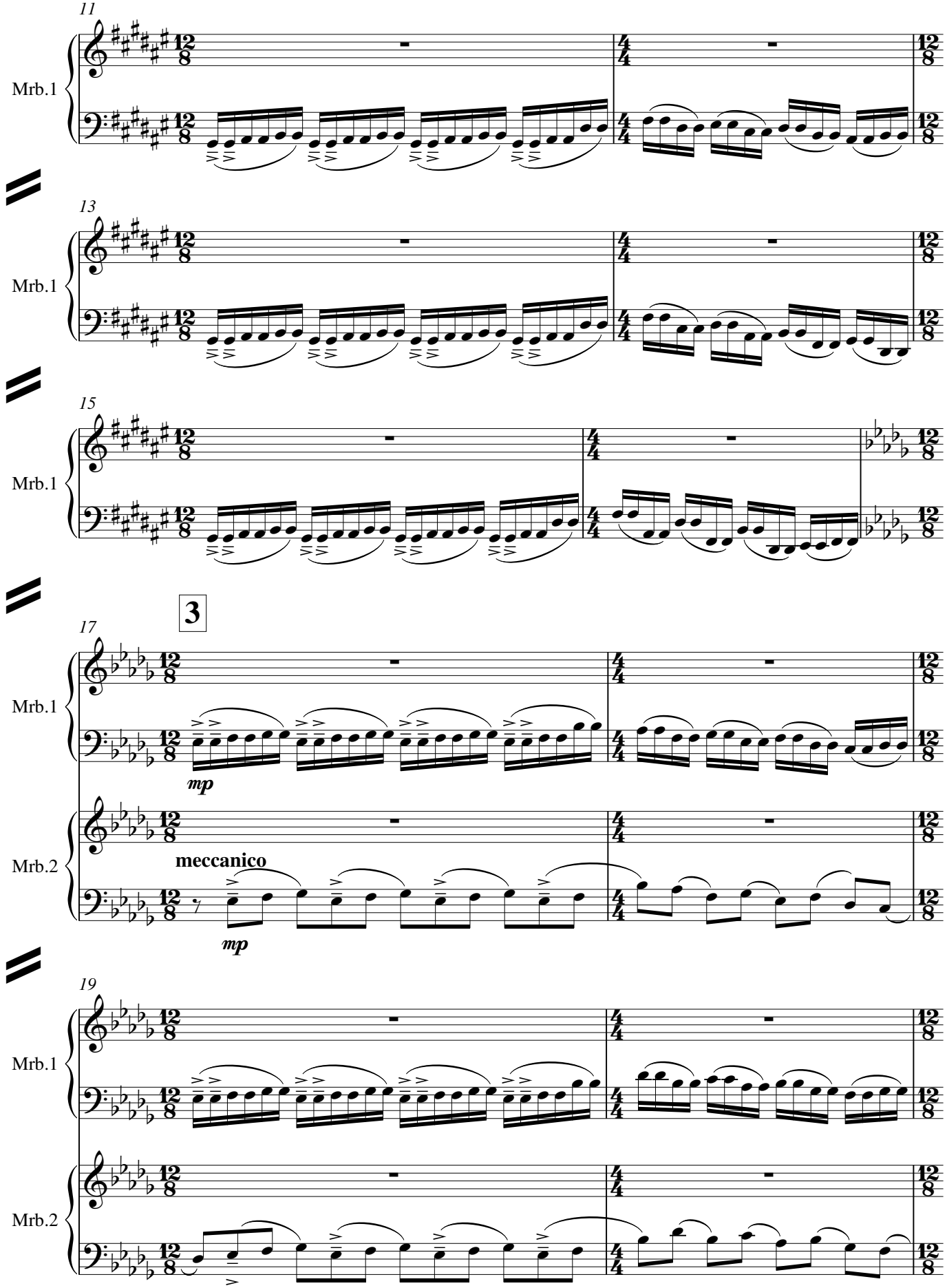
Instrumentation.
1 extended range marimba (5 octaves)
C[middle C - 2 octaves] - C[middle C + 3 octaves]
3 standard range marimbas (4 ½ octaves)
F[middle C – 1 ½ octaves] - C[middle C + 3 octaves]

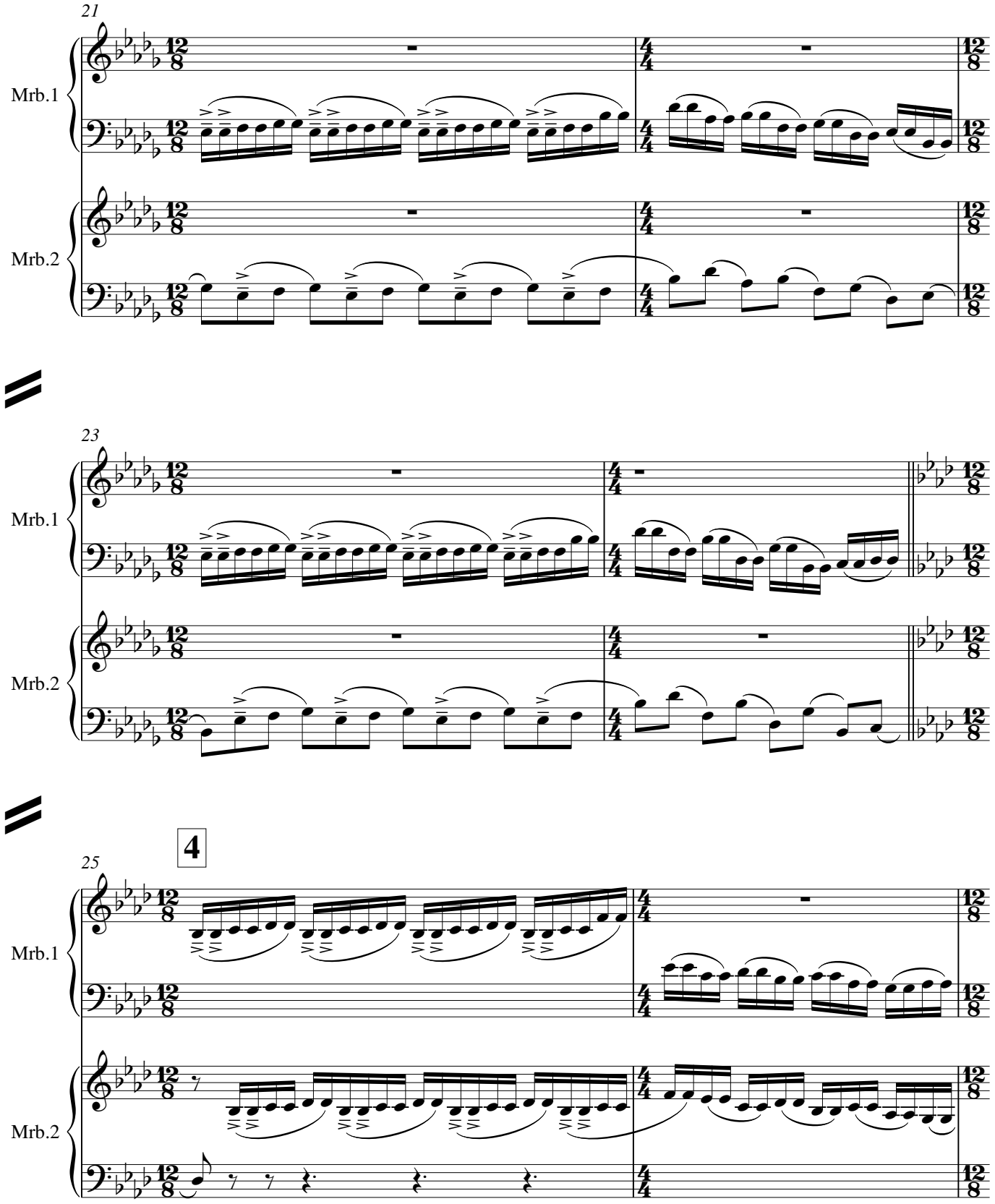
Multiple Exposure

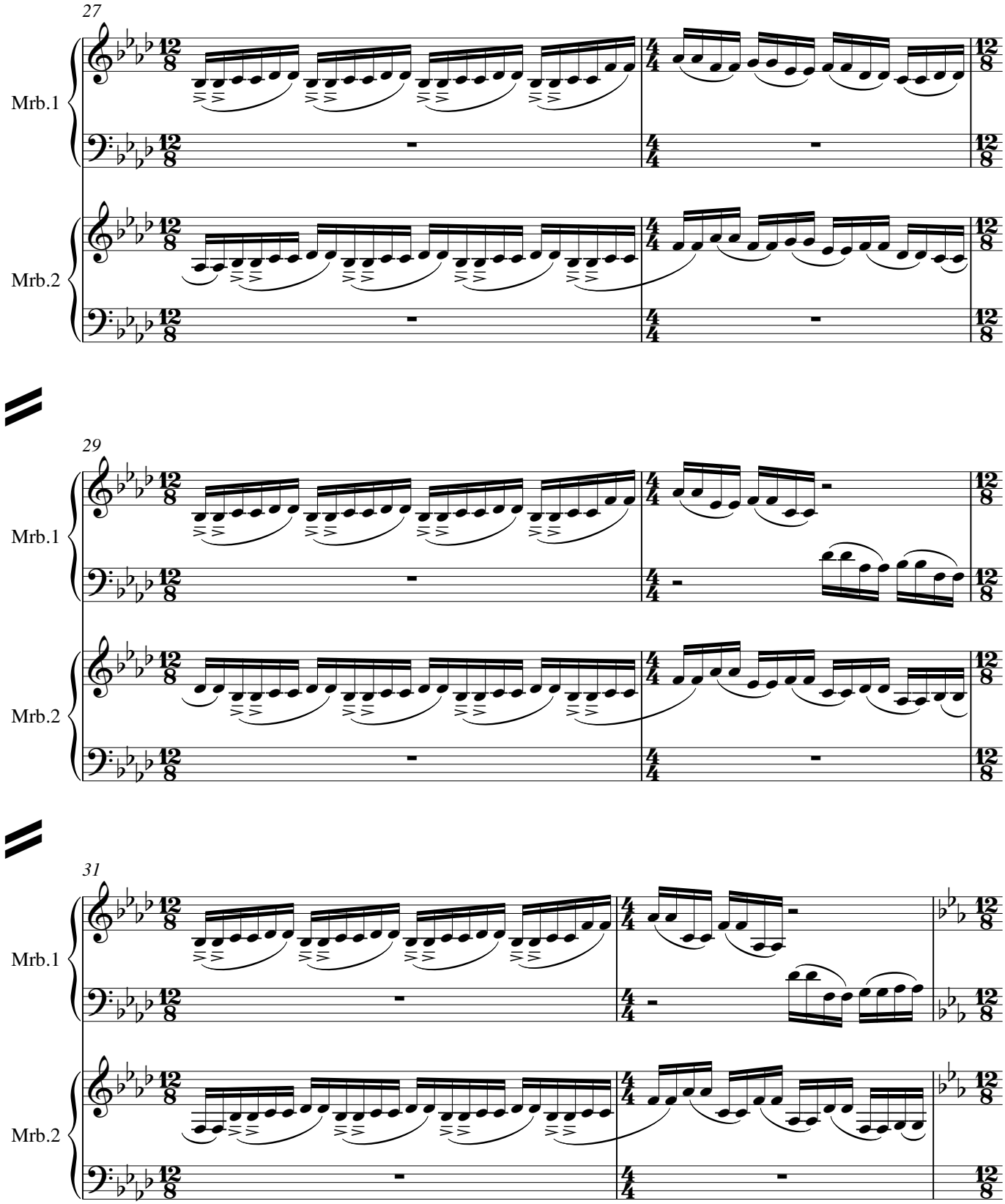
for four marimbas

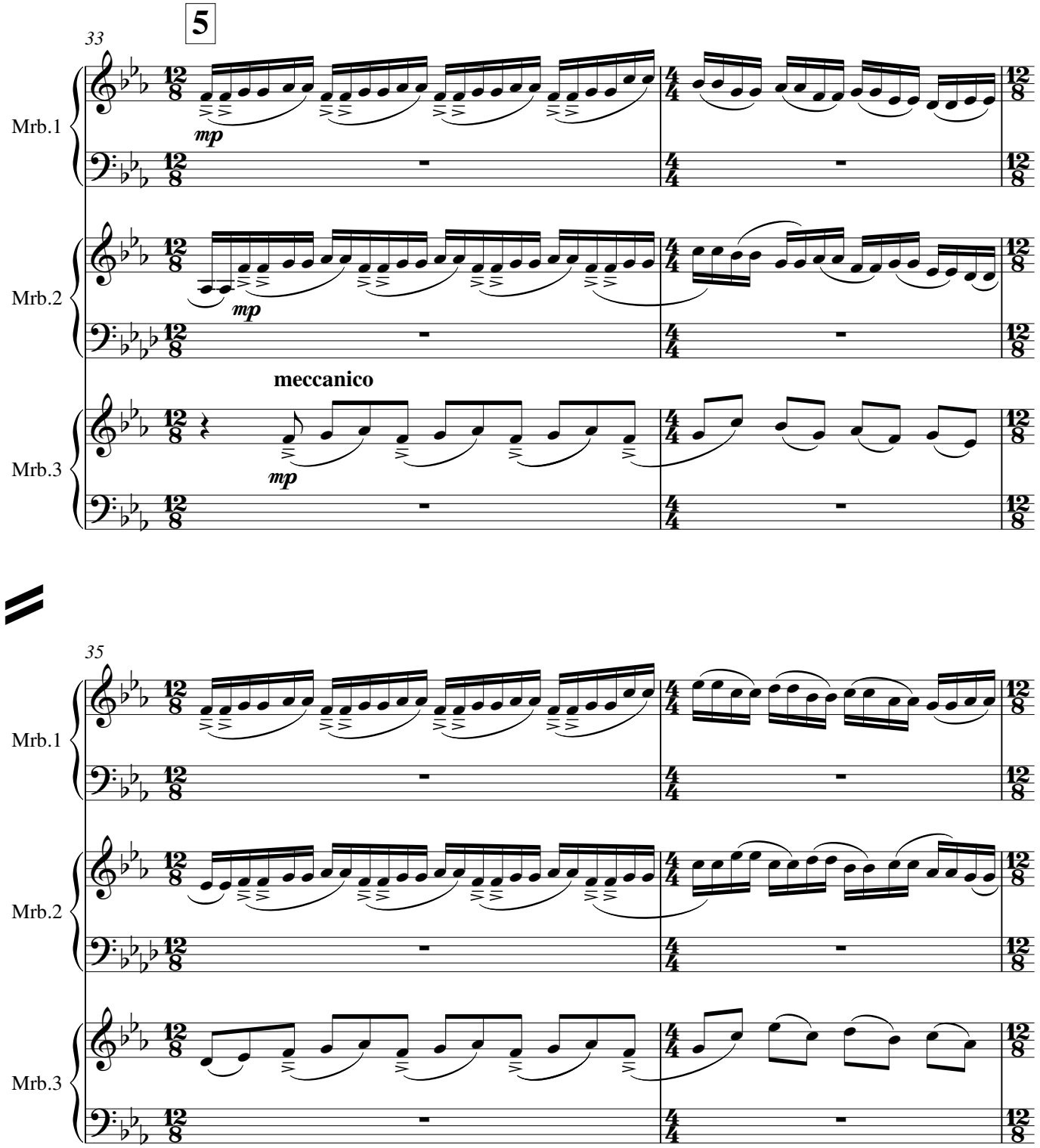
Fiona Tozer
2007

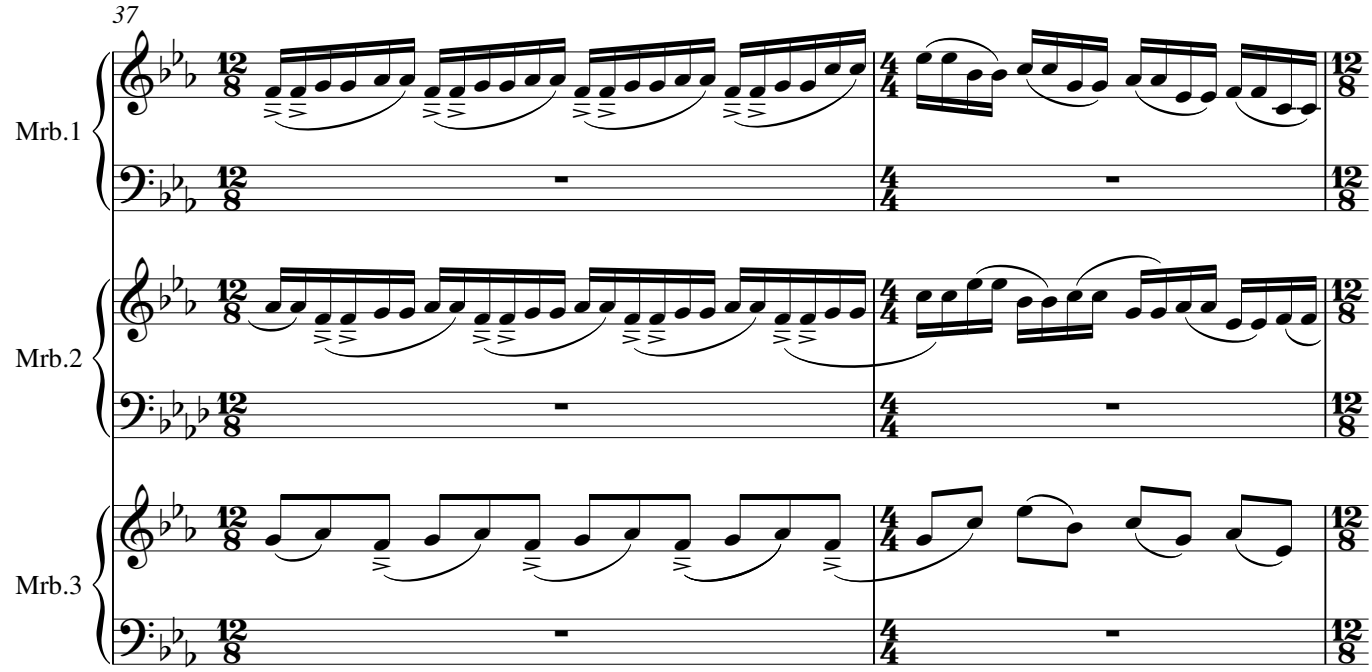


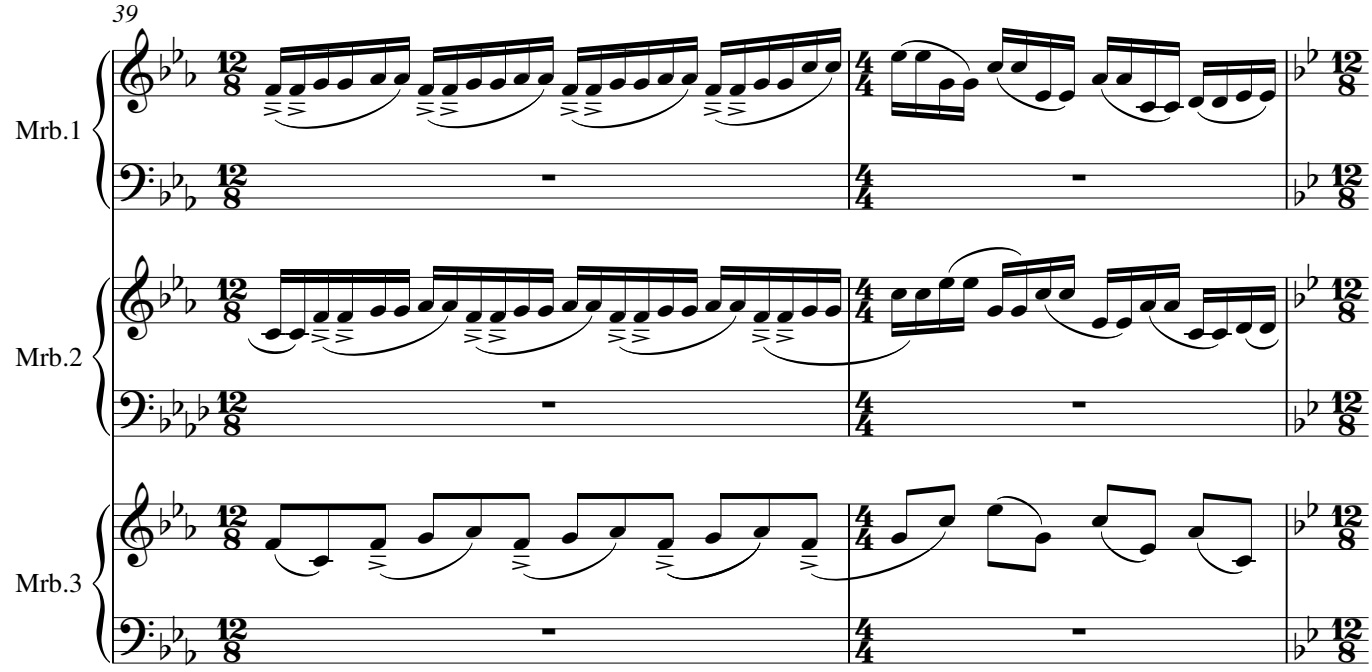

11
Mrb.1
13
Mrb.1
15
Mrb.1
3
17
Mrb.1
mp
Mrb.2
meccanico
mp
19
Mrb.1
Mrb.2

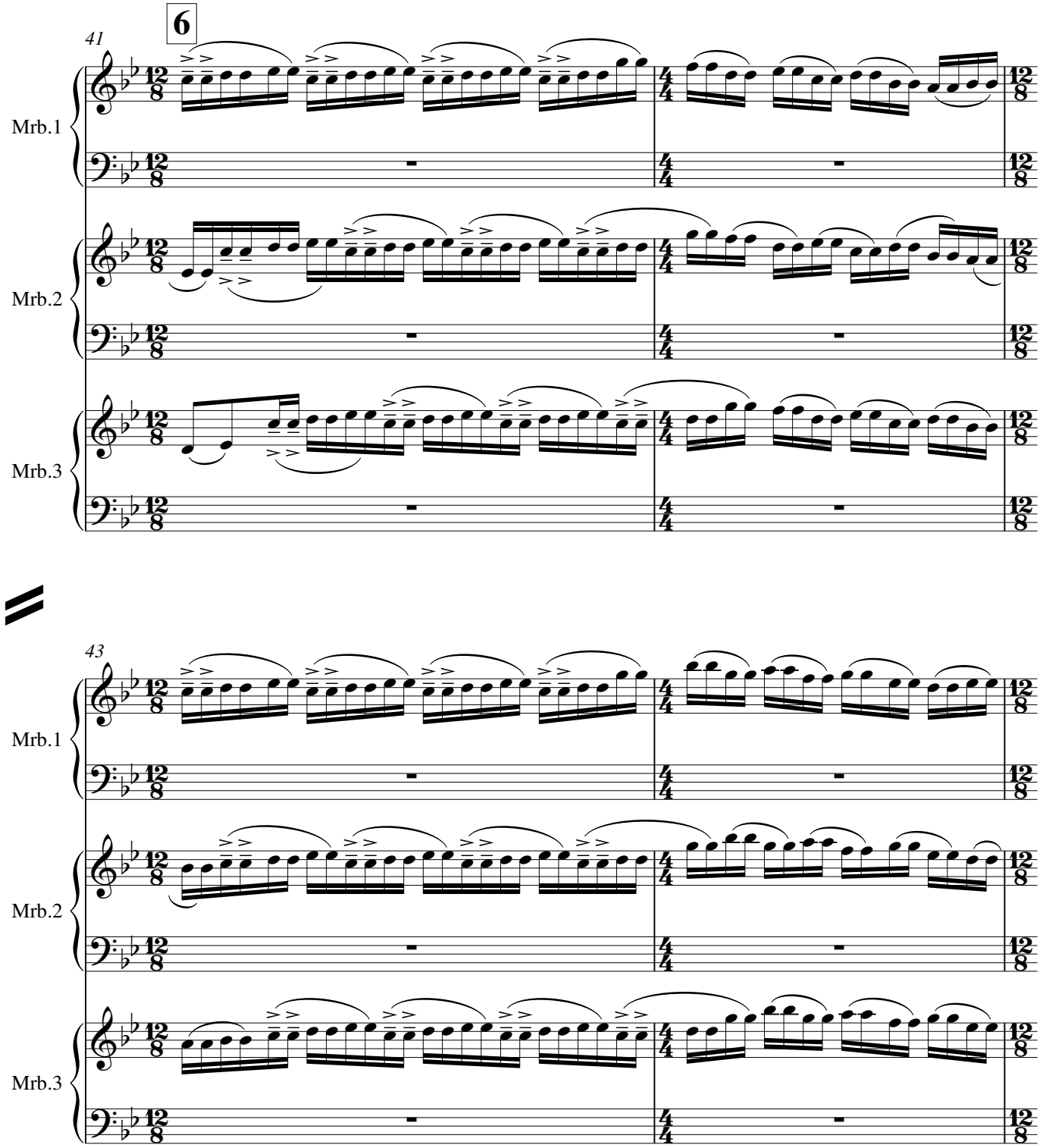

21
Mrb.1
Mrb.2
23
Mrb.1
Mrb.2
4
25
Mrb.1
Mrb.2

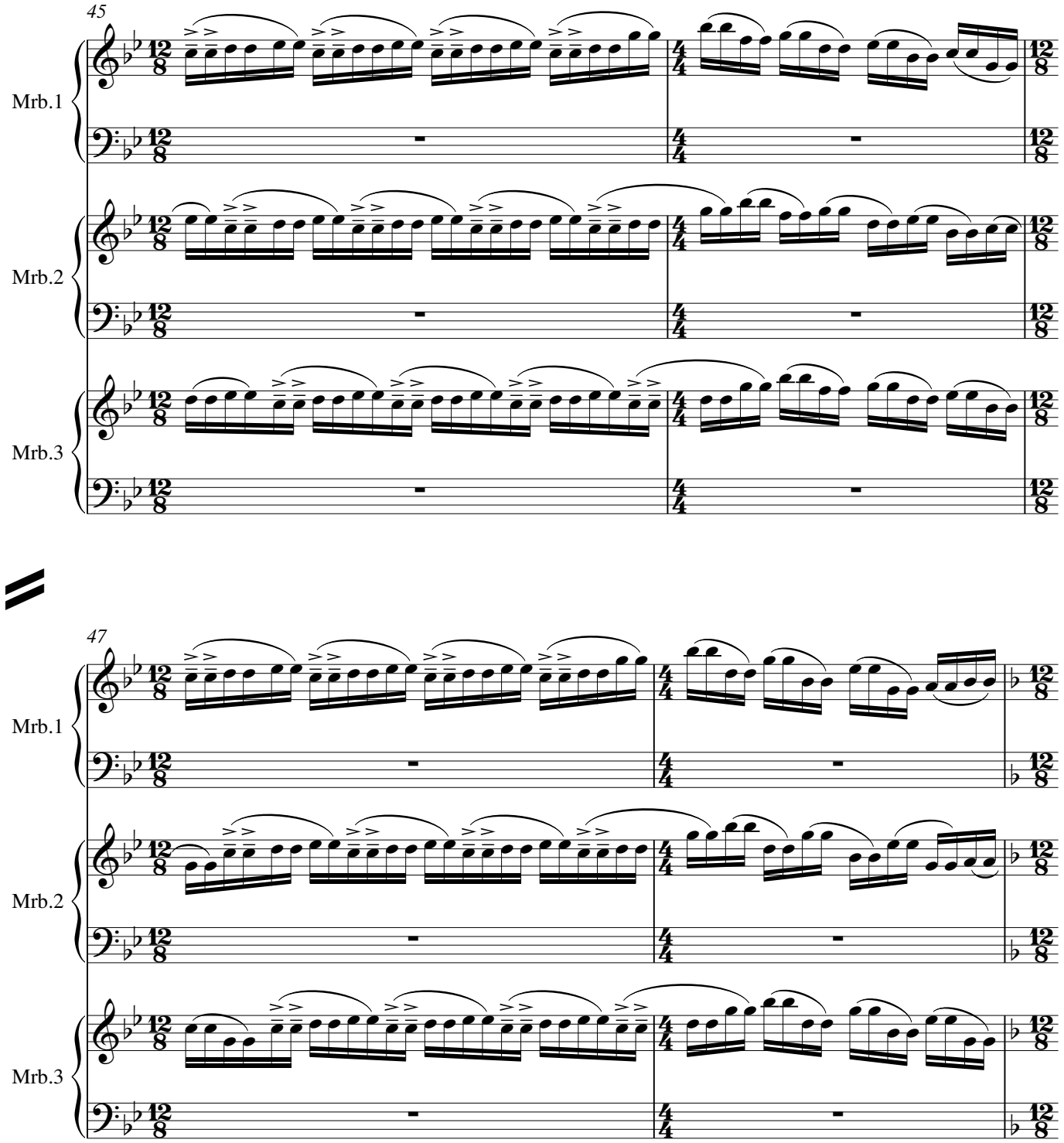

27
Mrb.1
Mrb.2
29
Mrb.1
Mrb.2
31
Mrb.1
Mrb.2

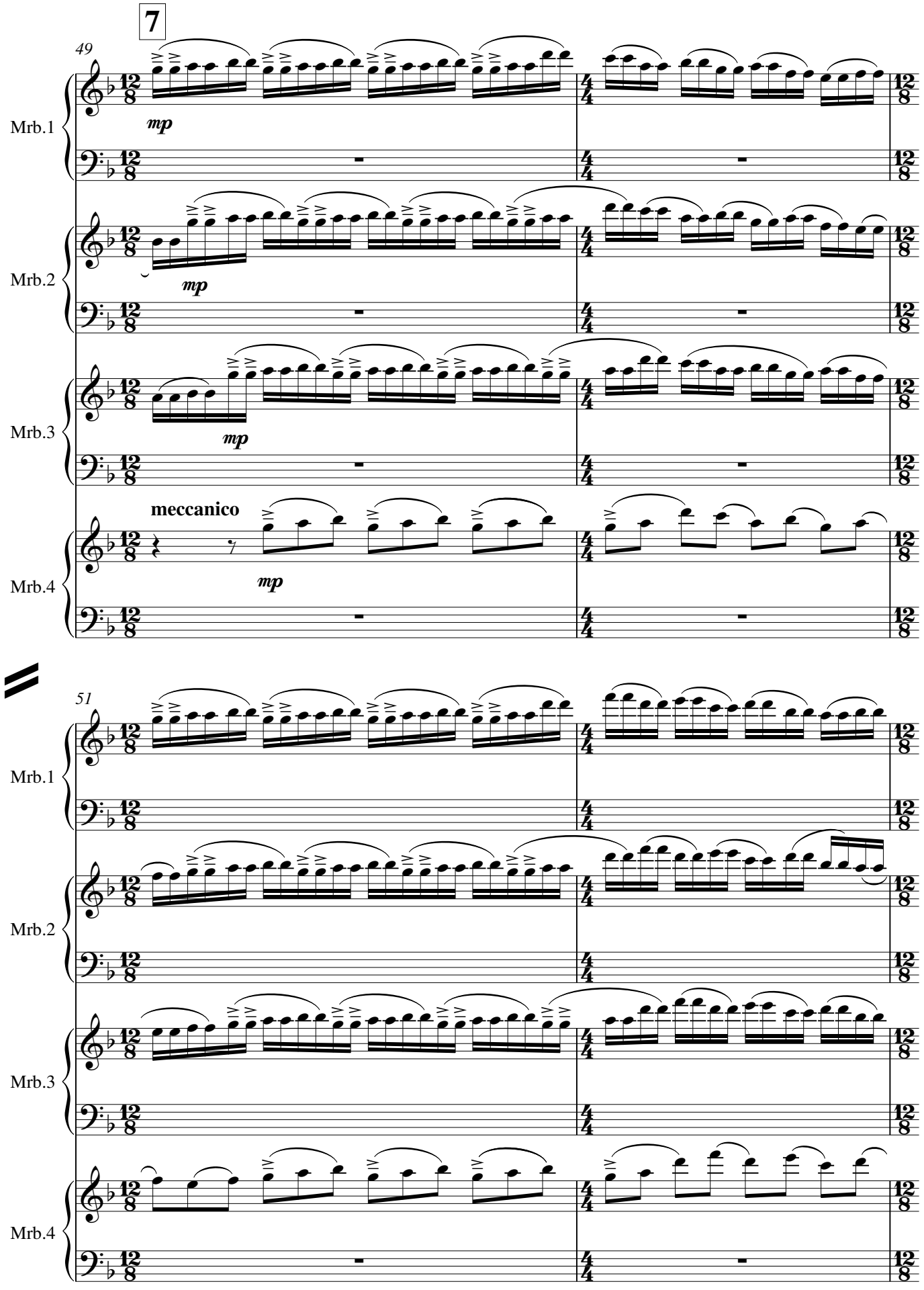

5
33
Mrb.1
Mrb.2
Mrb.3
mp
mp
meccanico
mp
35
Mrb.1
Mrb.2
Mrb.3

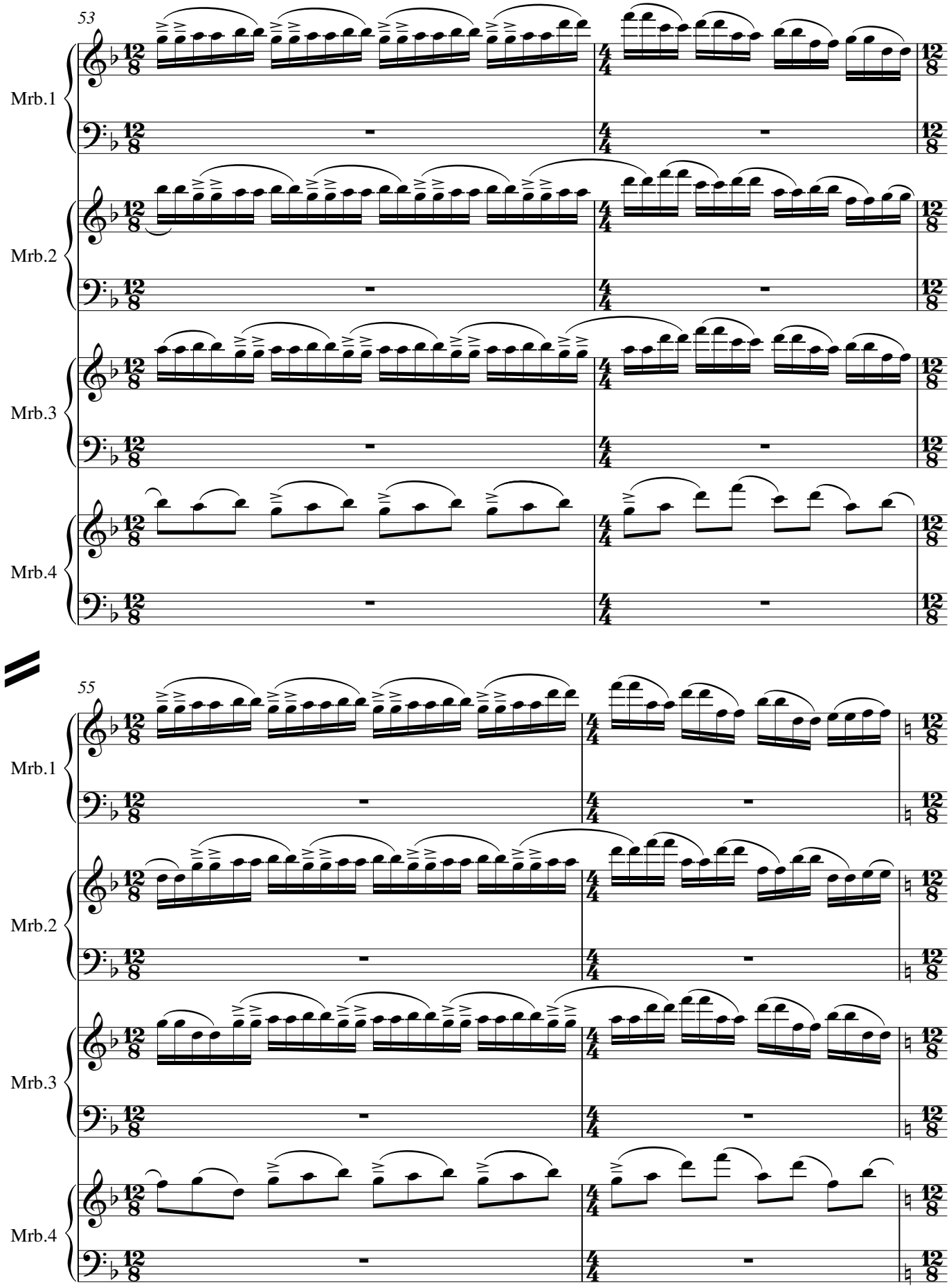

37
Mrb.1
Mrb.2
Mrb.3

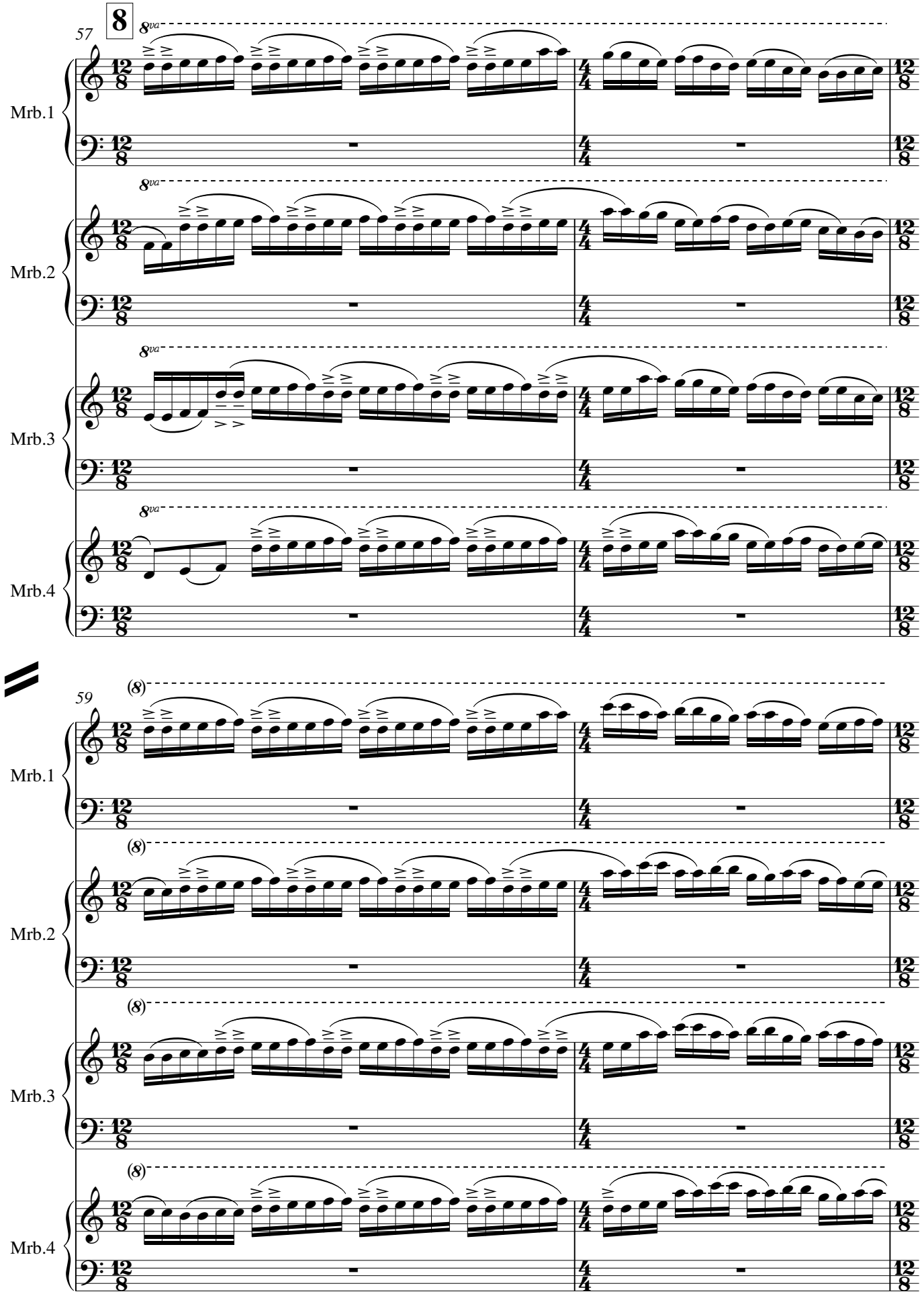

39
Mrb.1
Mrb.2
Mrb.3

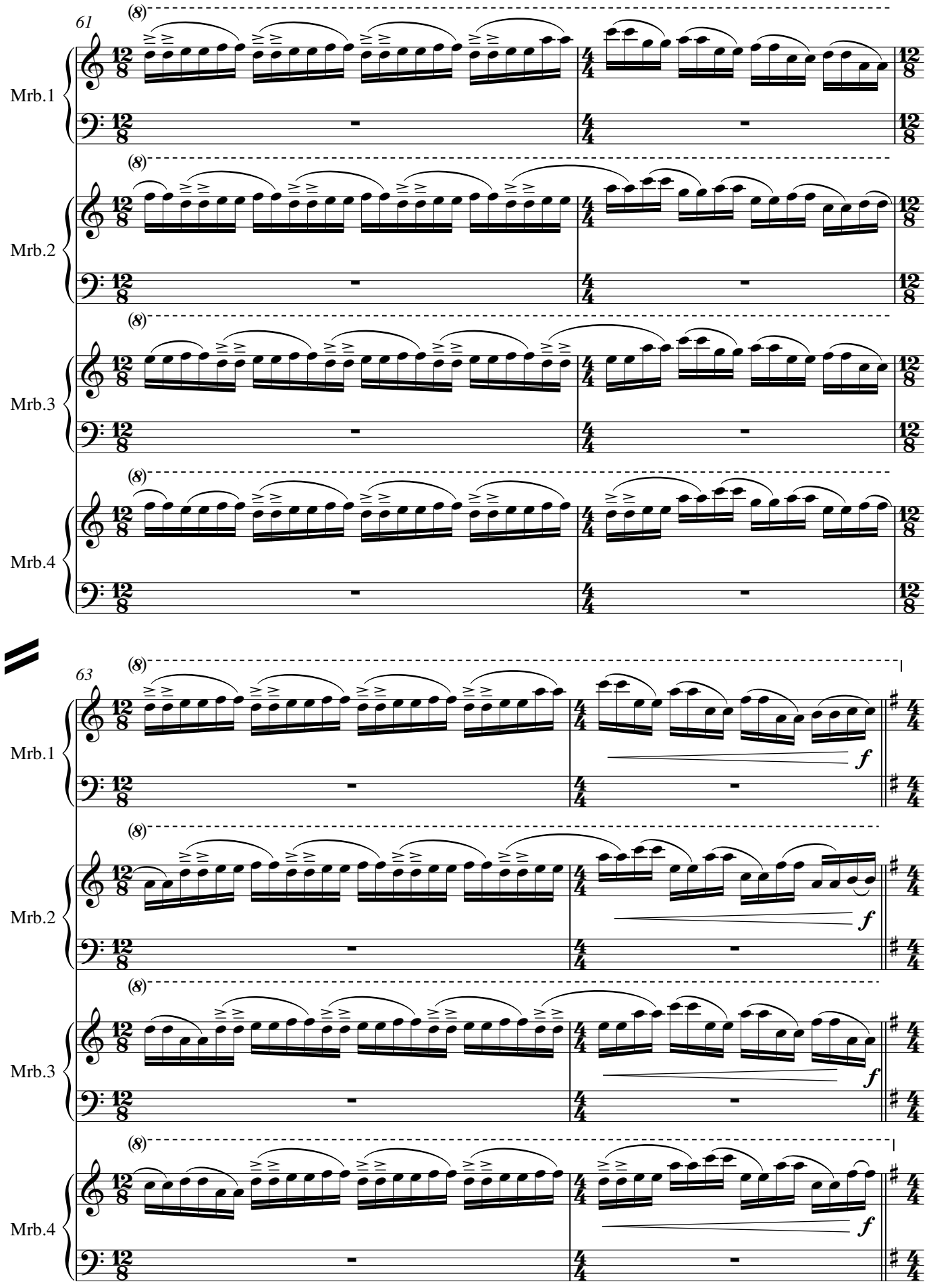

6
41
Mrb.1
Mrb.2
Mrb.3
43
Mrb.1
Mrb.2
Mrb.3

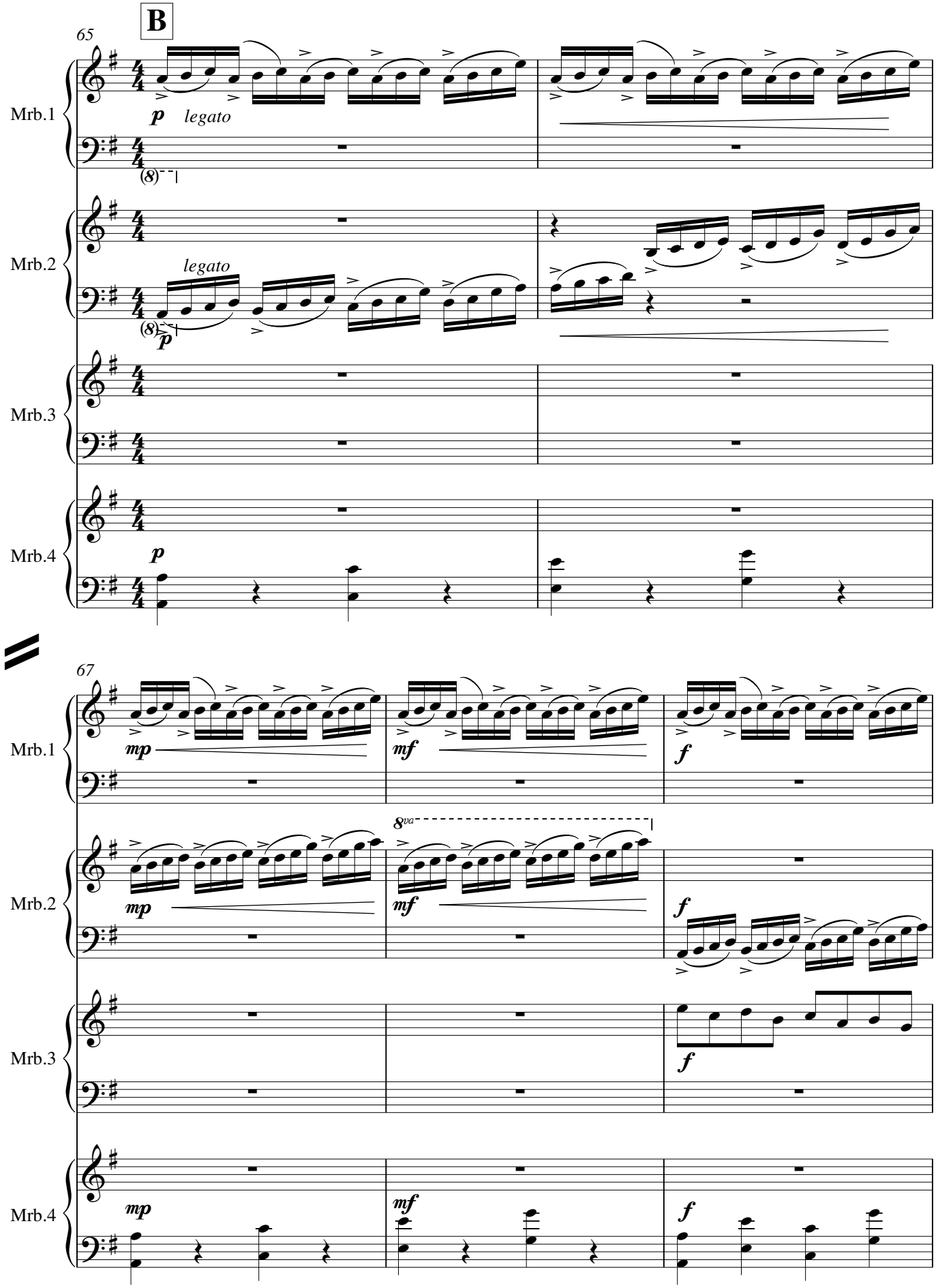

45
Mrb.1
Mrb.2
Mrb.3
47
Mrb.1
Mrb.2
Mrb.3

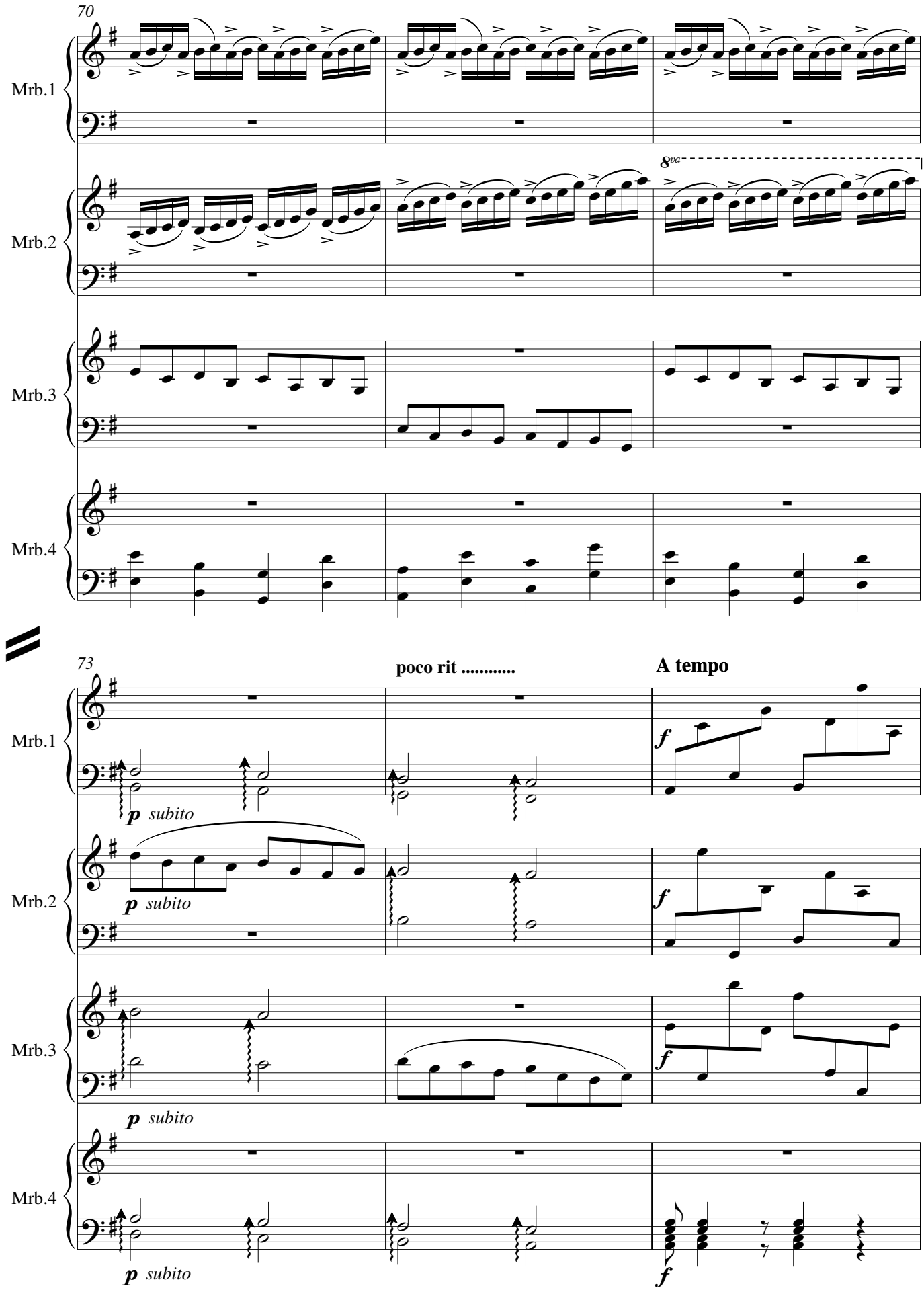

7
49
Mrb.1
Mrb.2
Mrb.3
Mrb.4
mp
meccanico
51

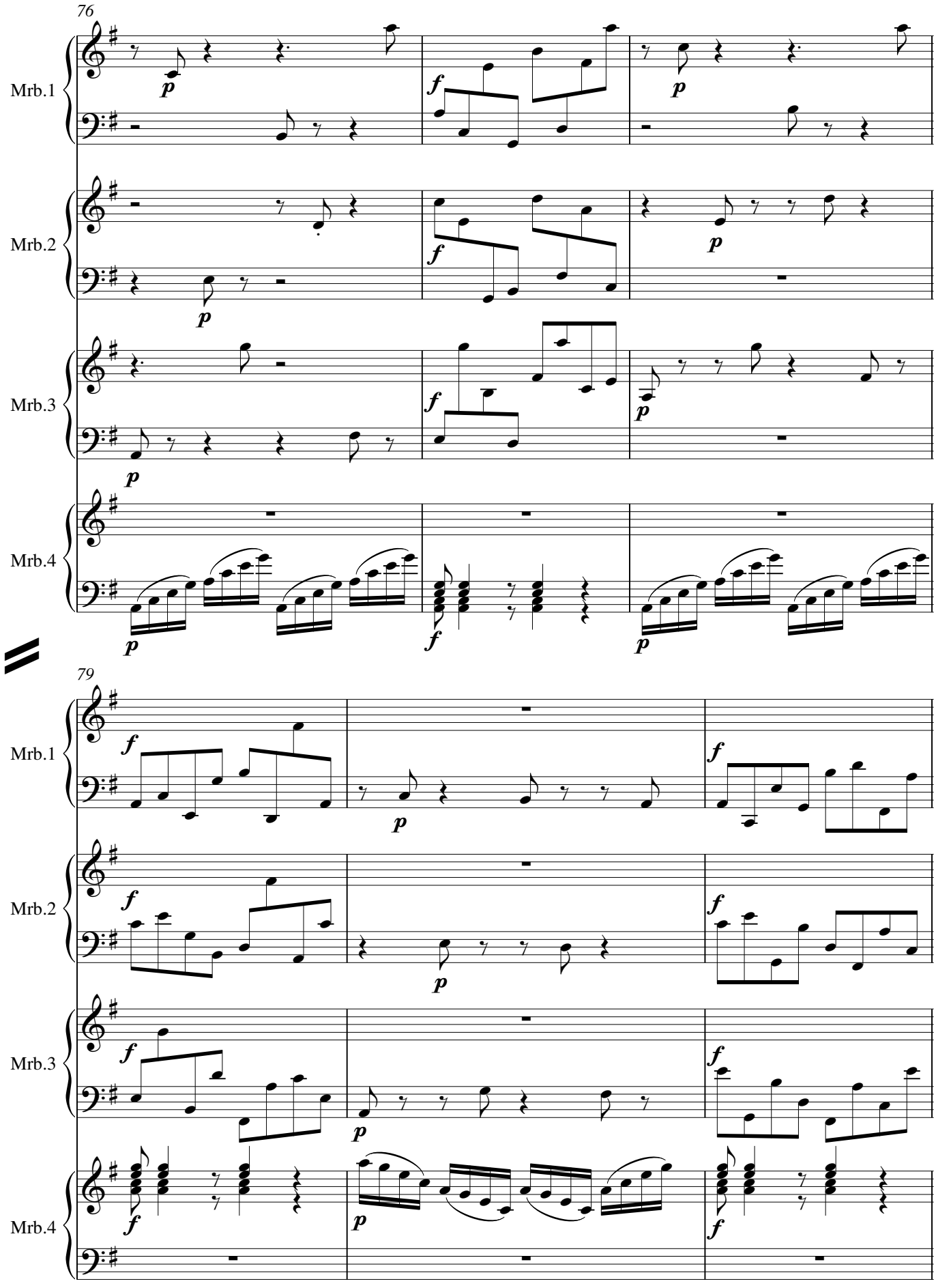

53
Mrb.1
Mrb.2
Mrb.3
Mrb.4
55
Mrb.1
Mrb.2
Mrb.3
Mrb.4

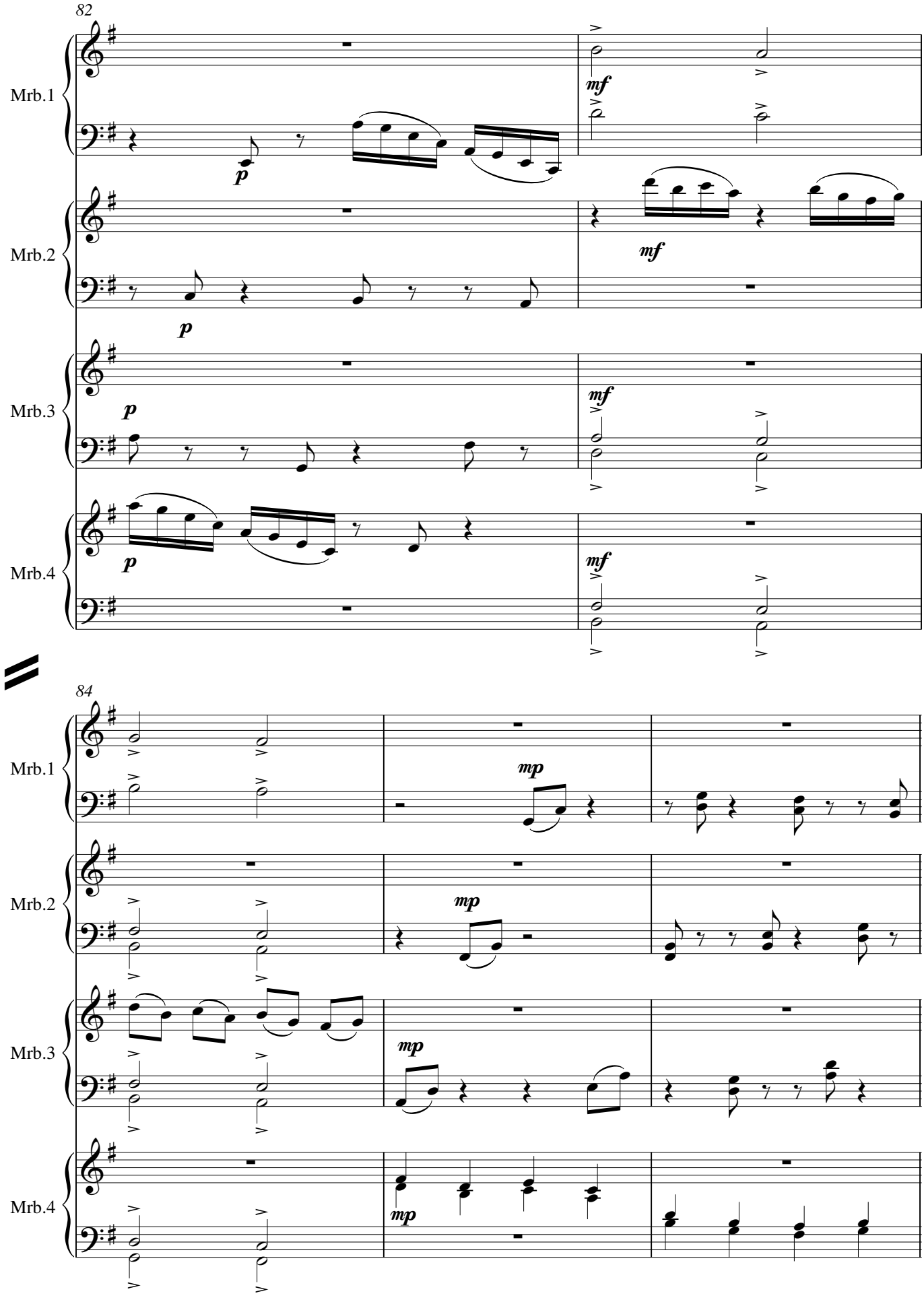

57
8
8va
Mrb.1
Mrb.2
Mrb.3
Mrb.4
59
(8)

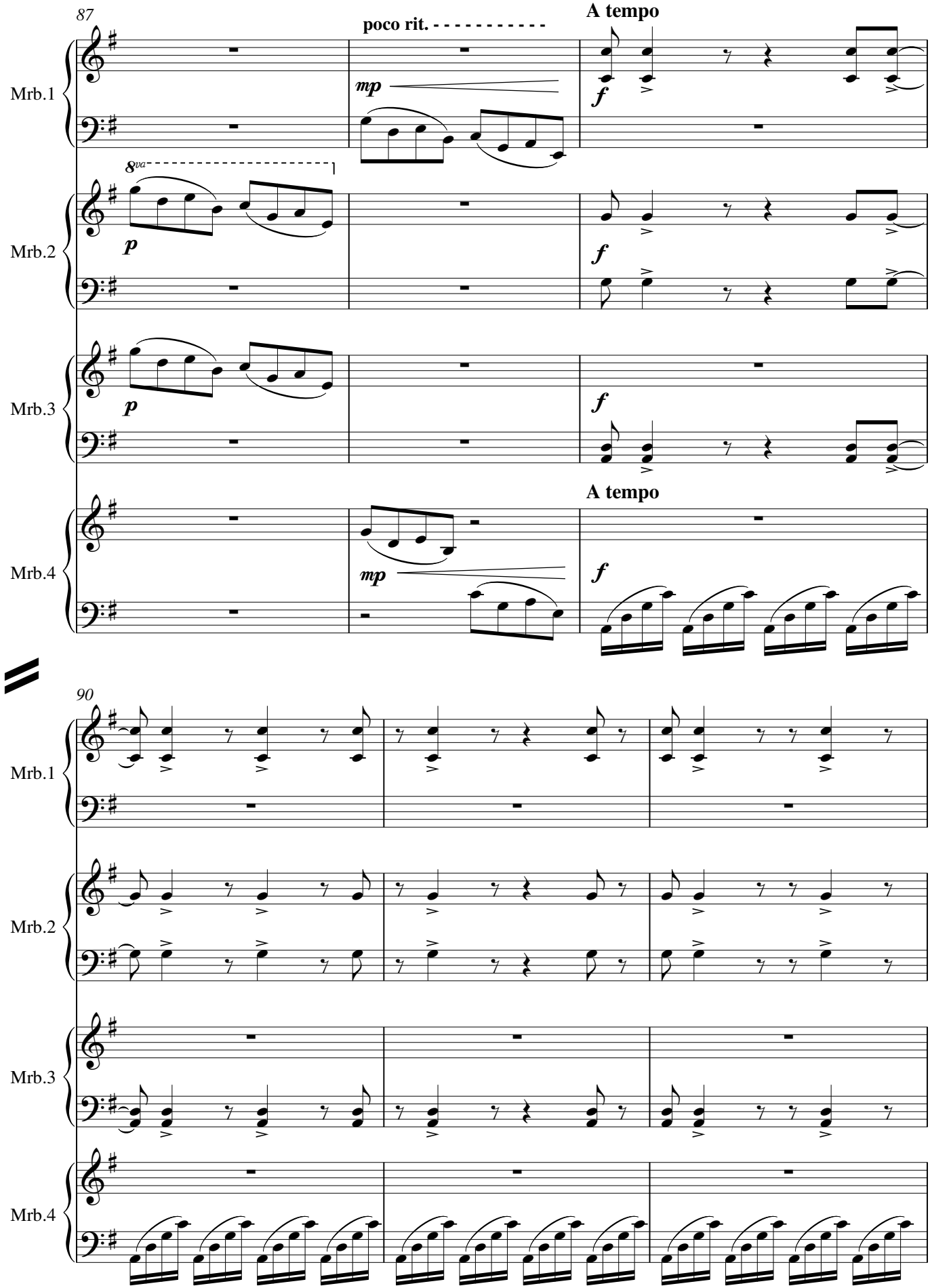

61
Mrb.1
Mrb.2
Mrb.3
Mrb.4
63
f

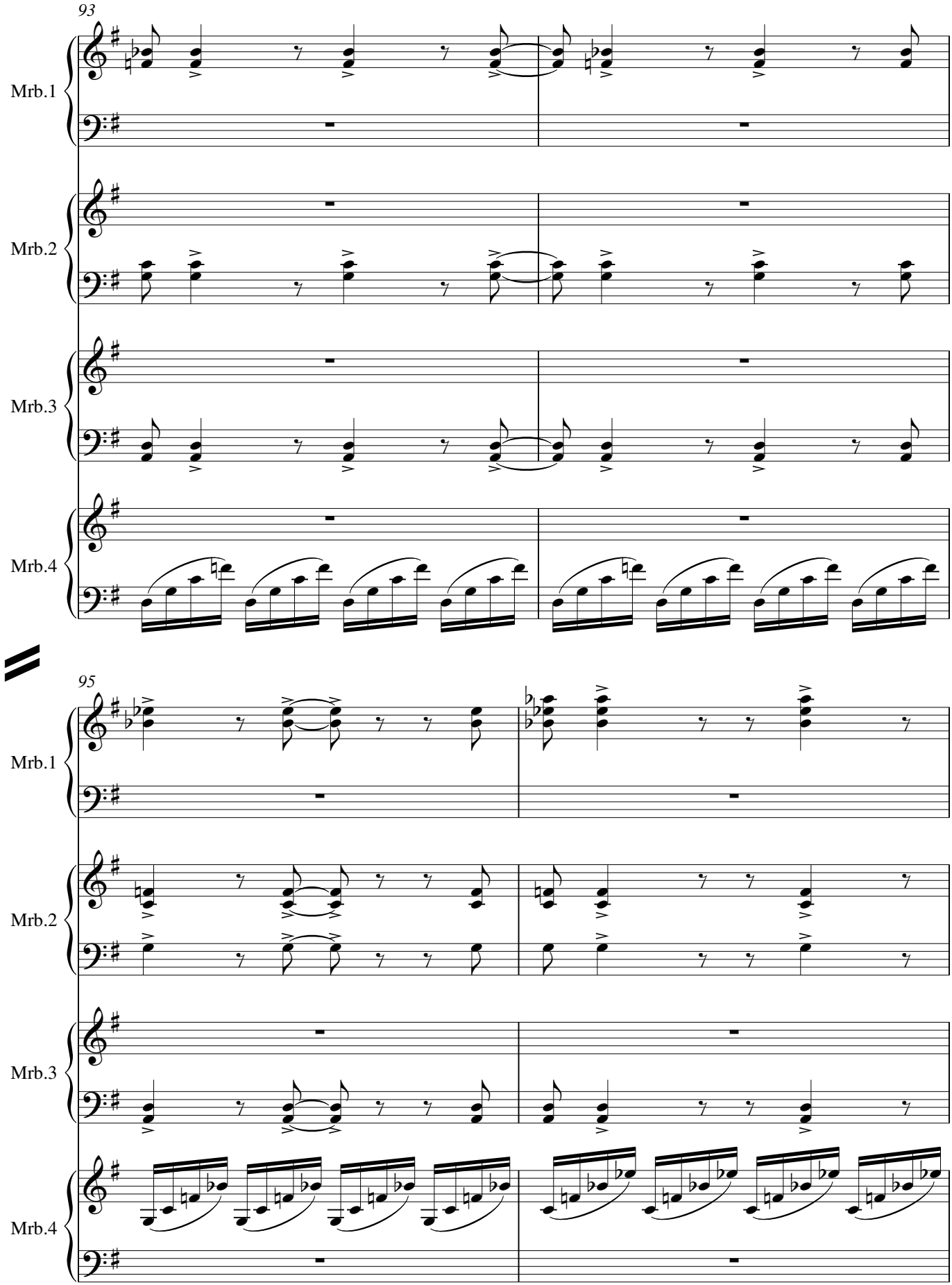

B
65
Mrb.1
Mrb.2
Mrb.3
Mrb.4
p
legato
(8)
67
mp
mf
f
8va

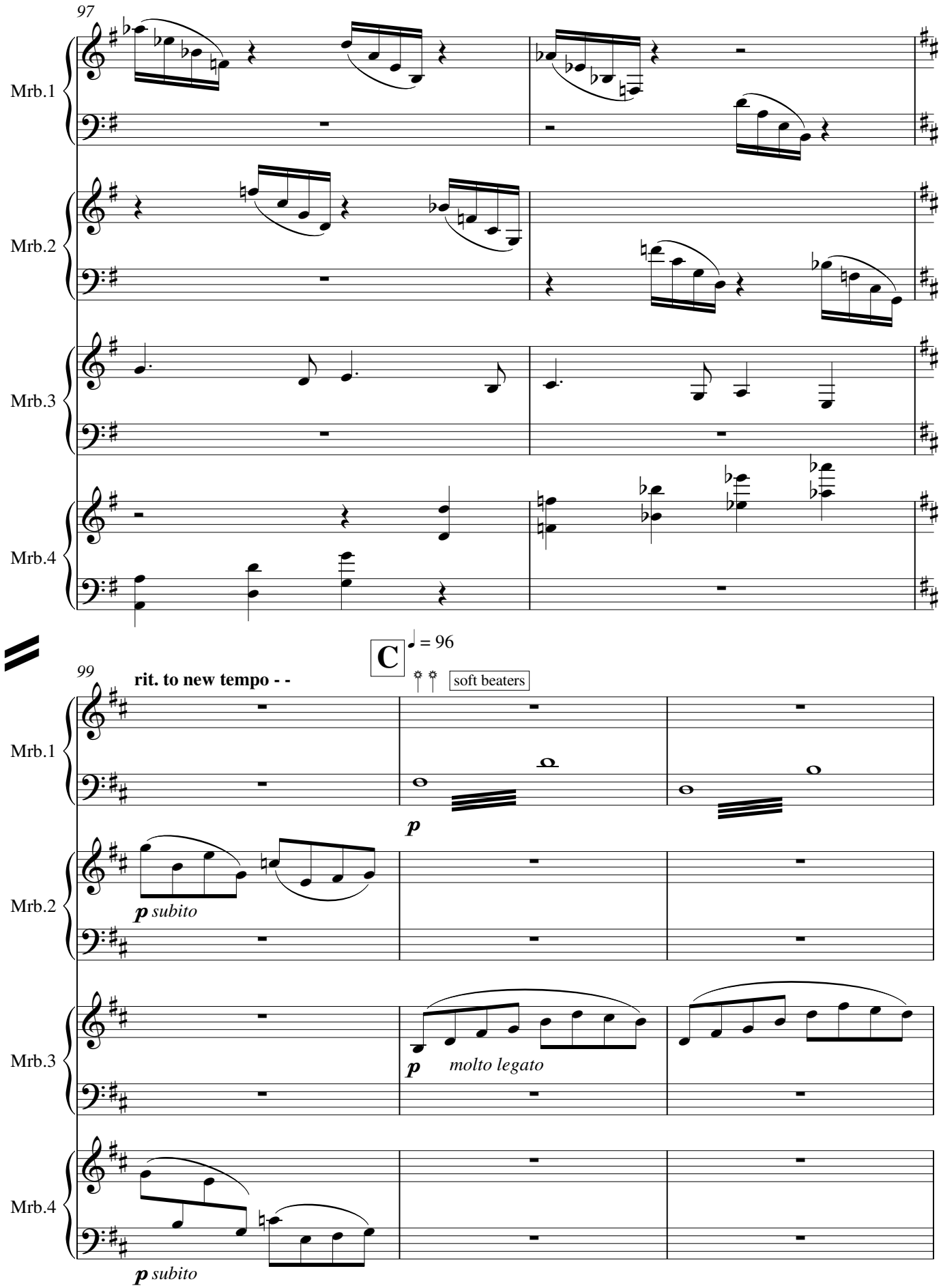

70
Mrb.1
Mrb.2
8va
Mrb.3
Mrb.4
73
poco rit .....
A tempo
p subito
f

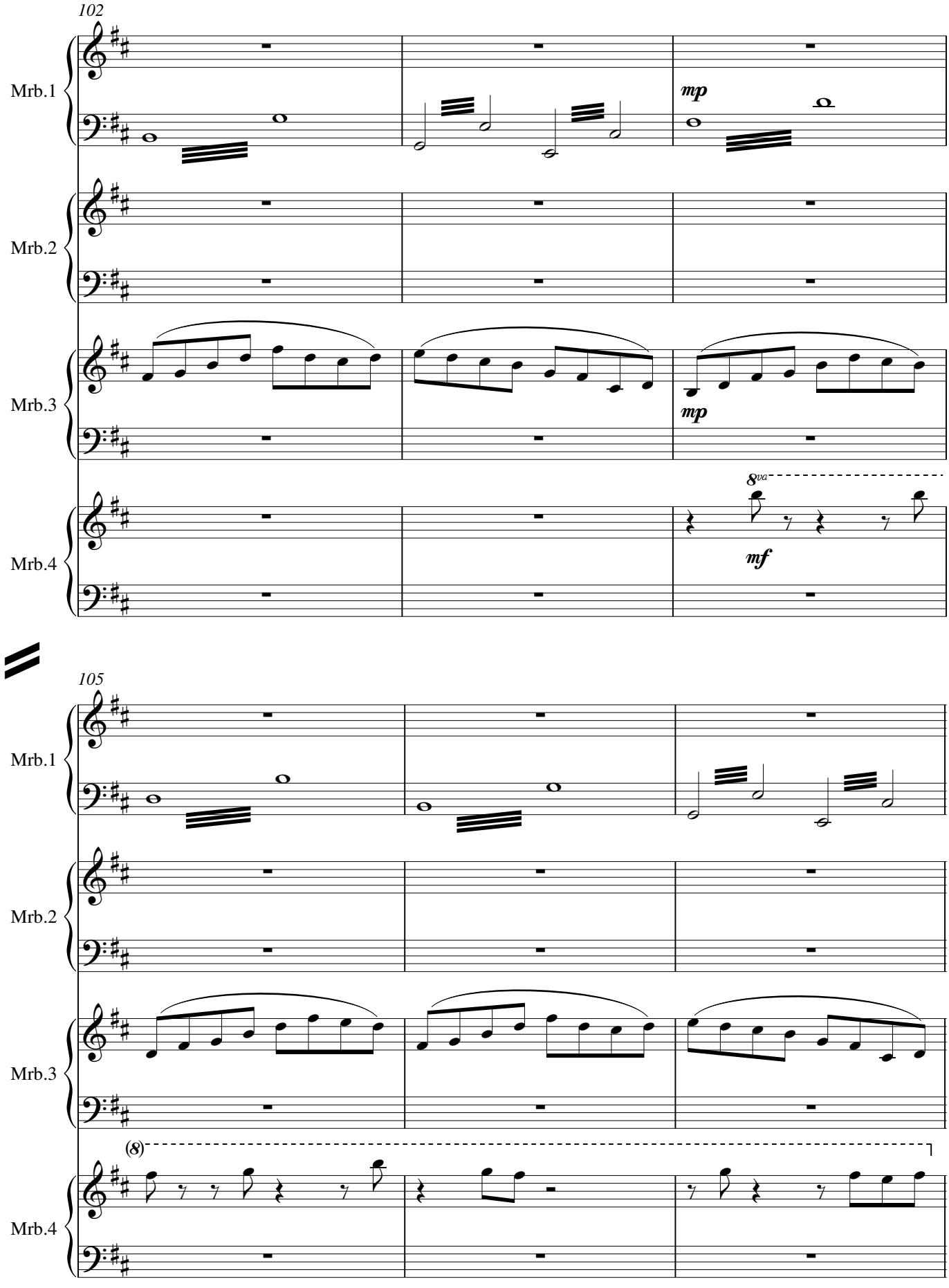

76
Mrb.1
Mrb.2
Mrb.3
Mrb.4
79
Mrb.1
Mrb.2
Mrb.3
Mrb.4

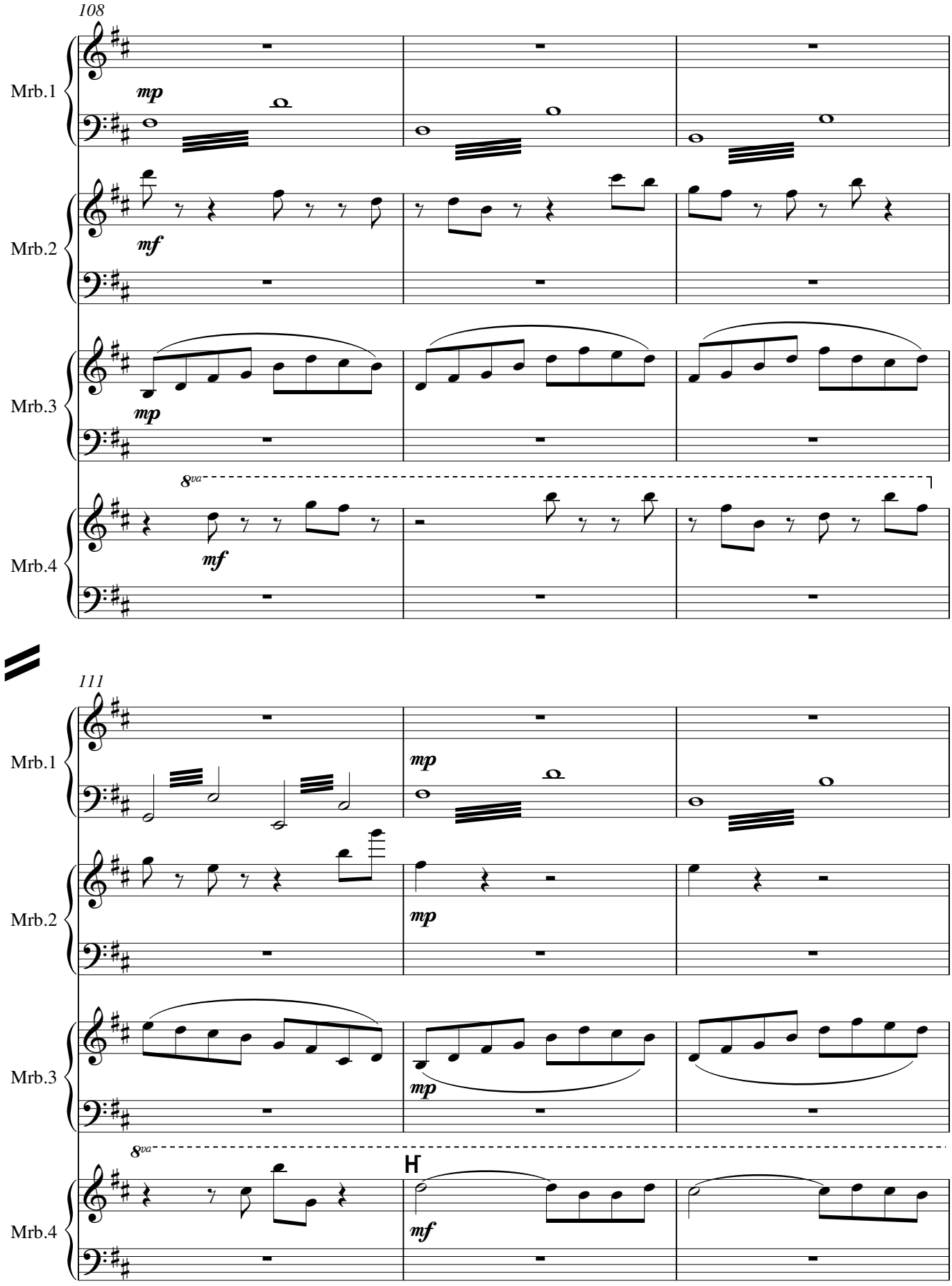

82
Mrb.1
Mrb.2
Mrb.3
Mrb.4
p
mf
84
mp

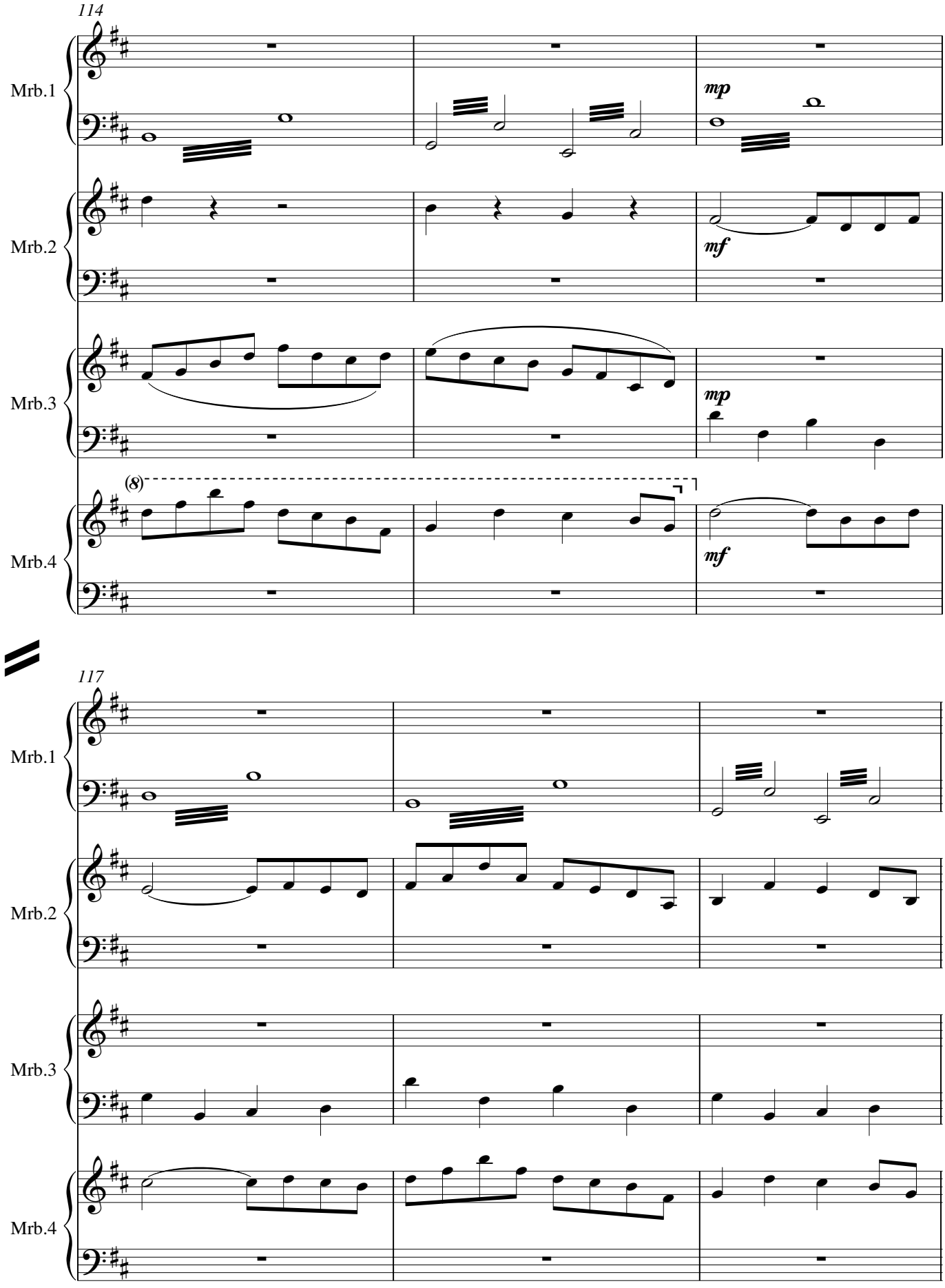

87
poco rit.
A tempo
Mrb.1
Mrb.2
Mrb.3
Mrb.4
8va
mp
p
f
A tempo
90

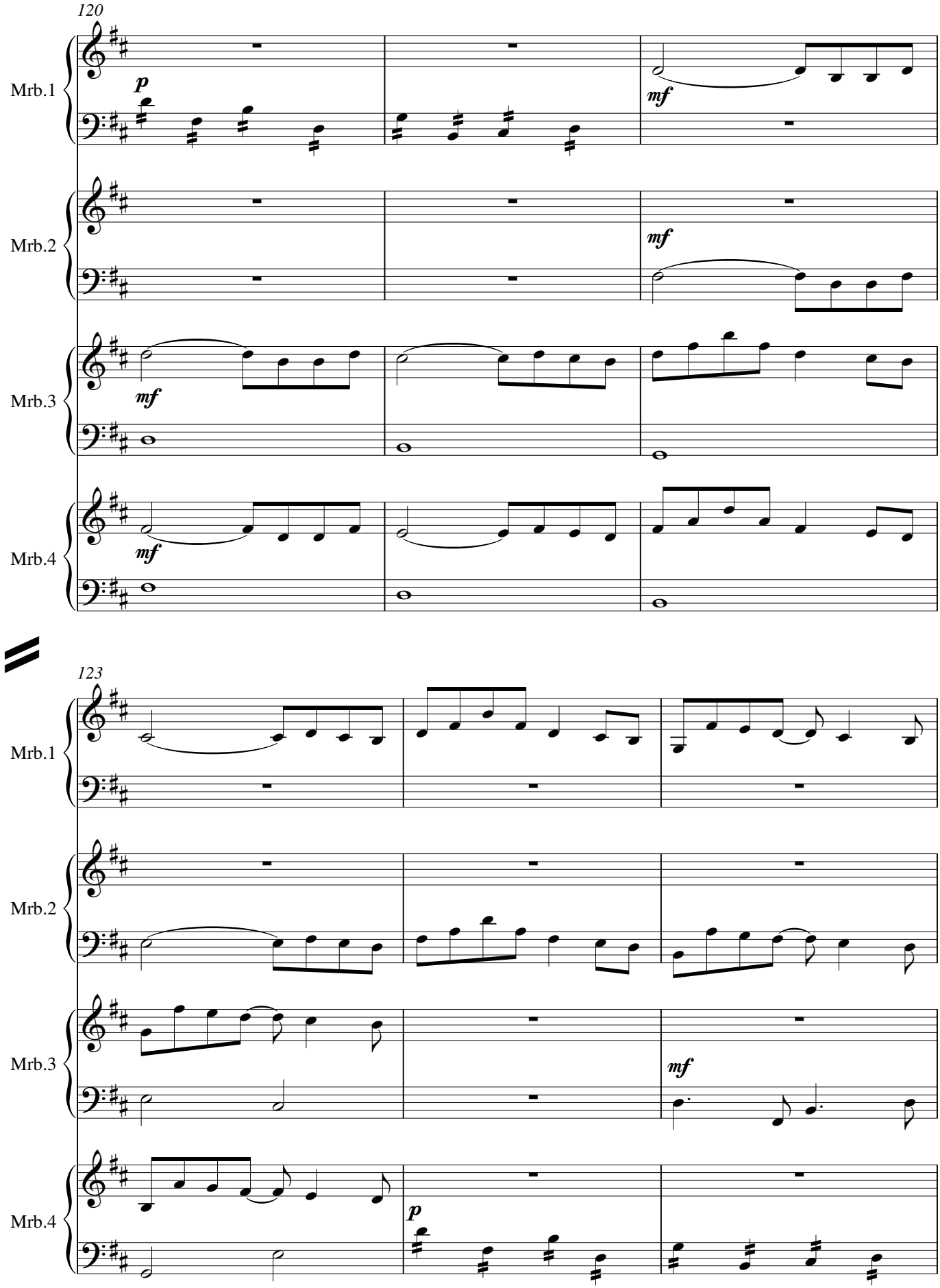

93
Mrb.1
Mrb.2
Mrb.3
Mrb.4
95
Mrb.1
Mrb.2
Mrb.3
Mrb.4

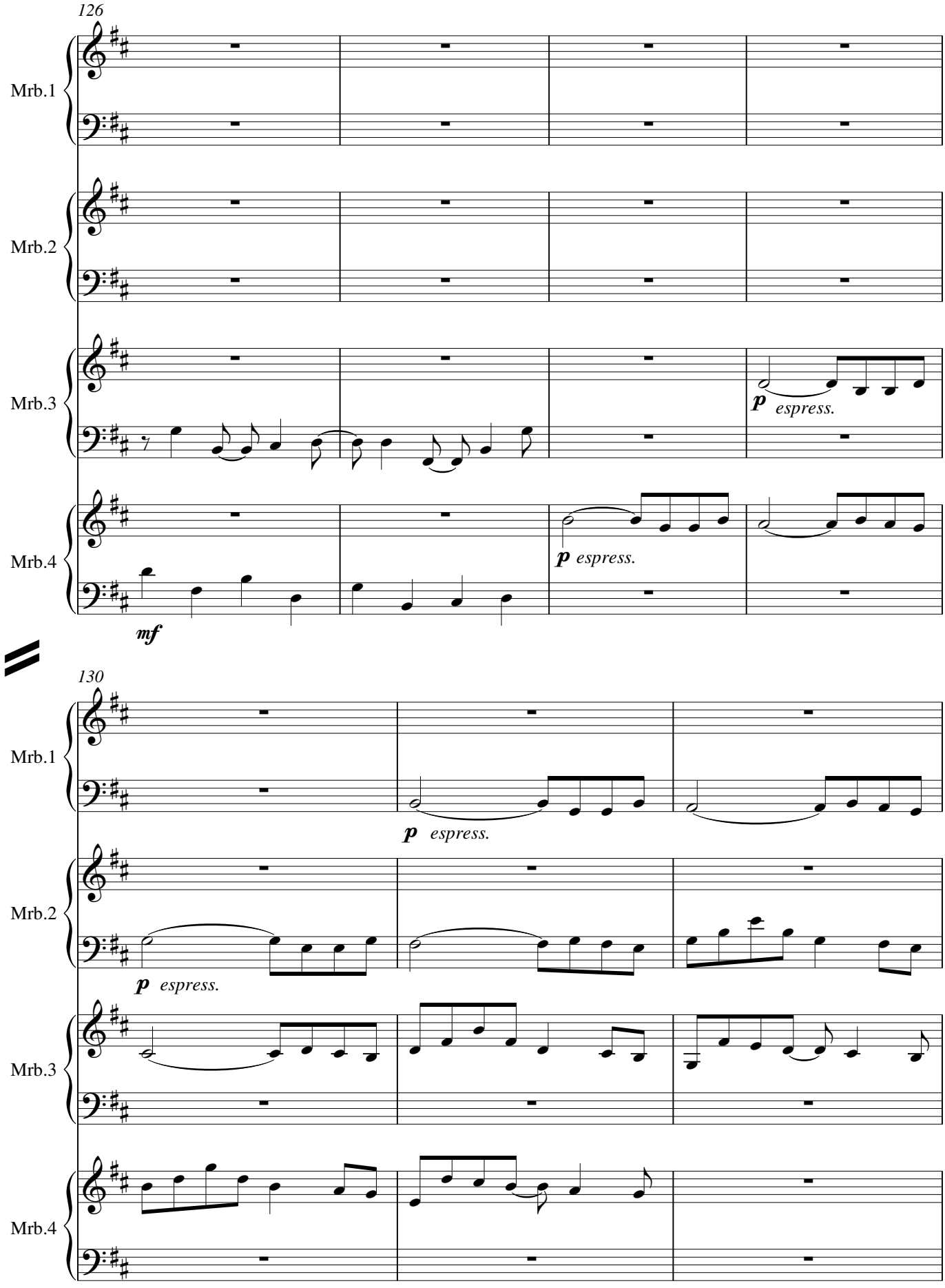

97
Mrb.1
Mrb.2
Mrb.3
Mrb.4
C
♩ = 96
soft beaters
99
rit. to new tempo - -
Mrb.1
p
Mrb.2
p subito
Mrb.3
p molto legato
Mrb.4
p subito

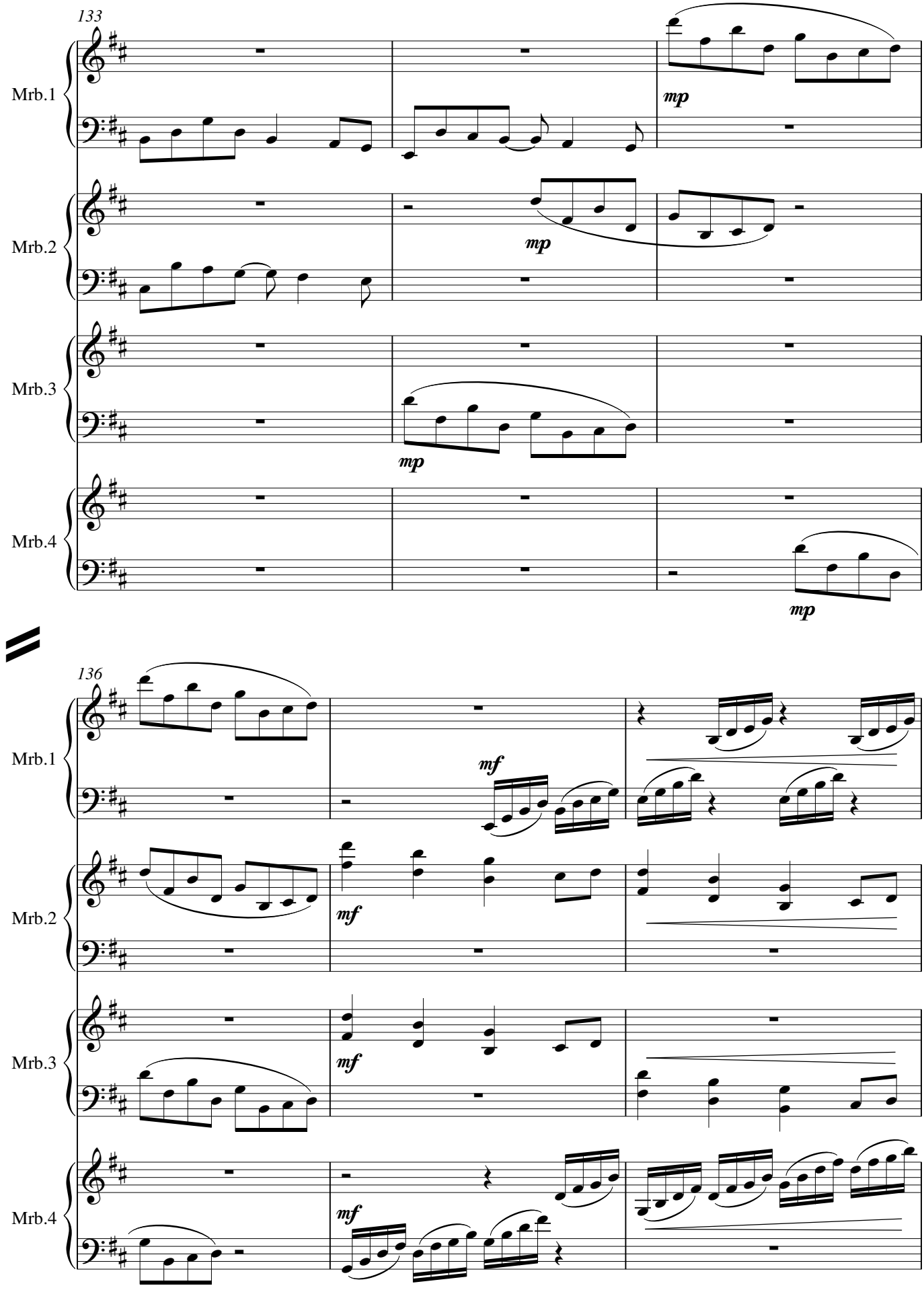

102
Mrb.1
Mrb.2
Mrb.3
Mrb.4
mp
mp
8va
mf
105
Mrb.1
Mrb.2
Mrb.3
Mrb.4
(8)

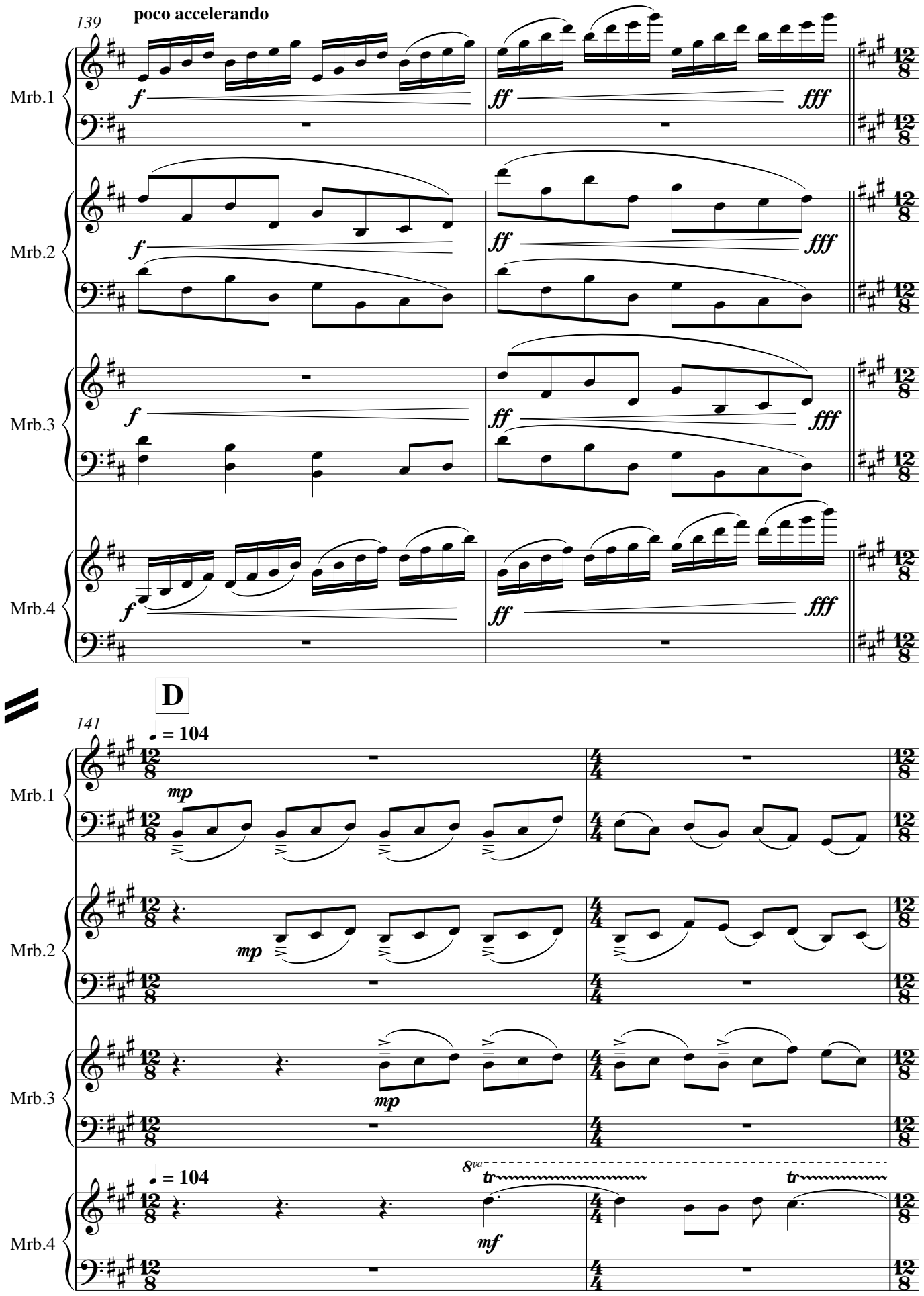

108
Mrb.1
mp
Mrb.2
mf
Mrb.3
mp
8va
Mrb.4
mf
111
Mrb.1
mp
Mrb.2
mp
Mrb.3
mp
8va
Mrb.4
mf

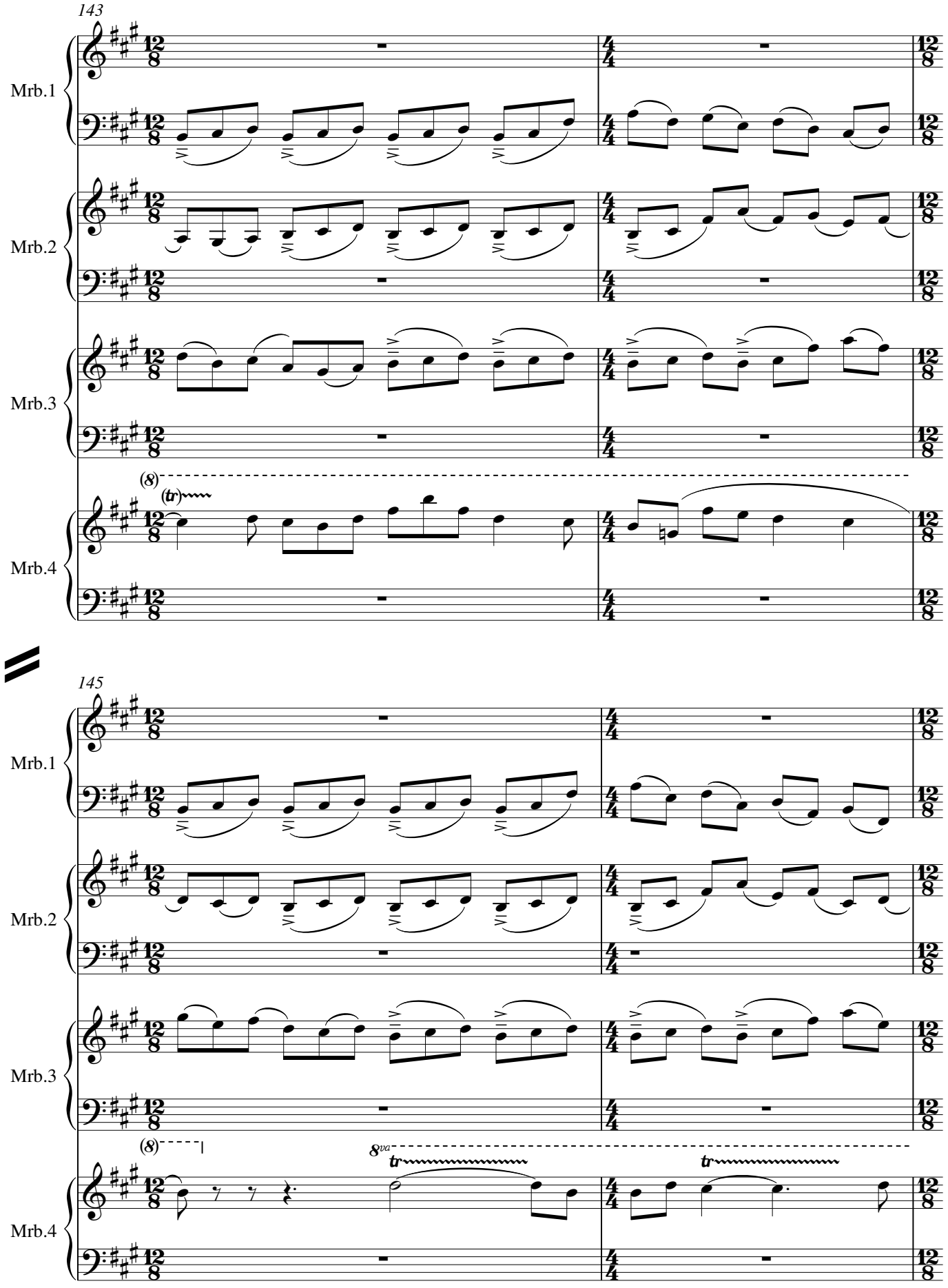

114
Mrb.1
Mrb.2
Mrb.3
Mrb.4
mp
mf
mp
(8)
mf
117
Mrb.1
Mrb.2
Mrb.3
Mrb.4

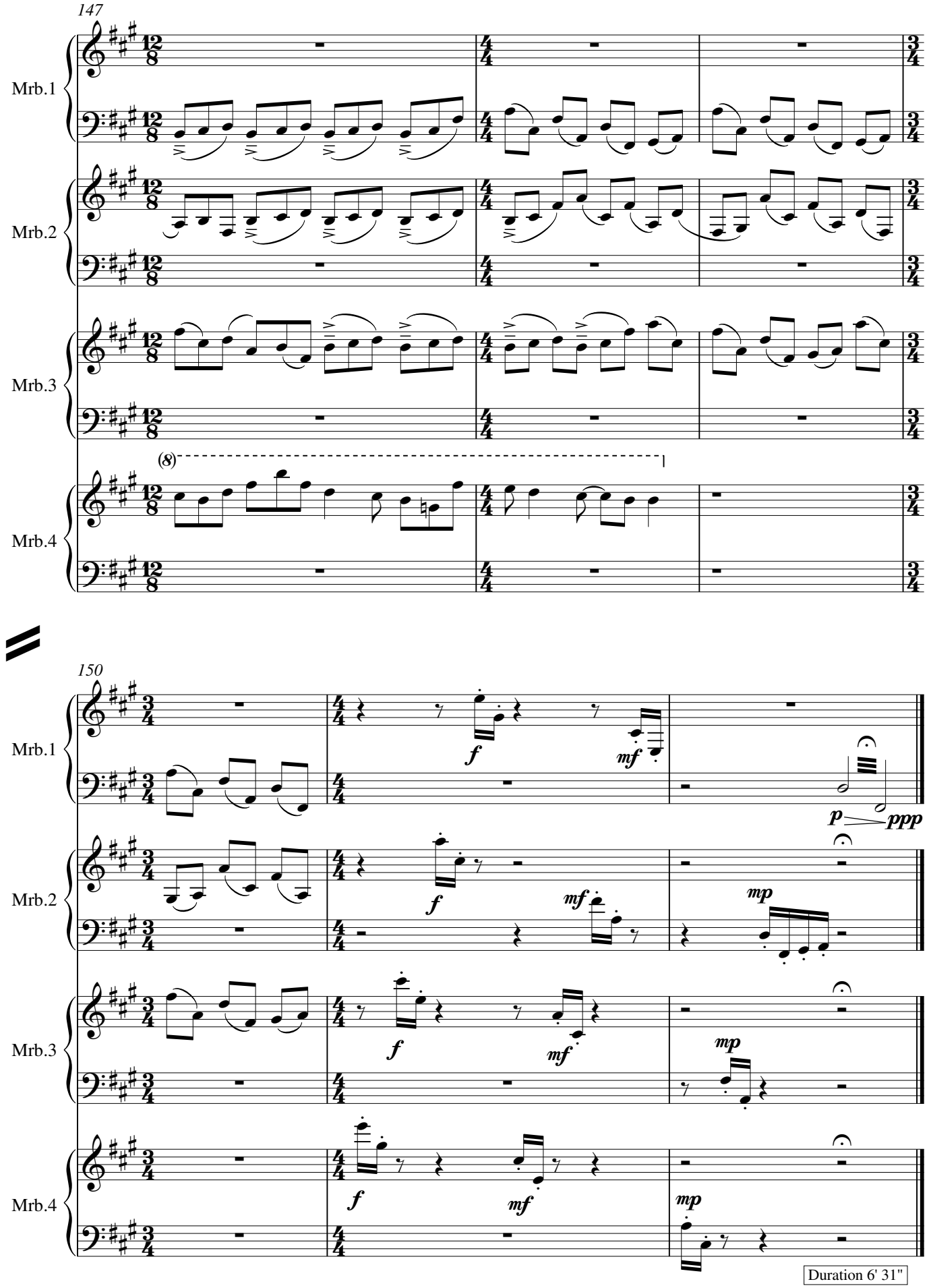

120
Mrb.1
Mrb.2
Mrb.3
Mrb.4
p
mf
123


126
Mrb.1
Mrb.2
Mrb.3
Mrb.4
p espress.
p espress.
mf
130
Mrb.1
Mrb.2
Mrb.3
Mrb.4
p espress.
p espress.


133
Mrb.1
Mrb.2
Mrb.3
Mrb.4
mp
mp
mp
mp
136
Mrb.1
Mrb.2
Mrb.3
Mrb.4
mf
mf
mf
mf


139
poco accelerando
Mrb.1
Mrb.2
Mrb.3
Mrb.4
f
ff
fff
D
141
♩ = 104
mp
8va
tr
mf


143
Mrb.1
Mrb.2
Mrb.3
(8)
(tr)
Mrb.4
145
Mrb.1
Mrb.2
Mrb.3
(8)
8va
tr
tr
Mrb.4


147
Mrb.1
Mrb.2
Mrb.3
(8)
Mrb.4
150
Mrb.1
f
mf
p
ppp
Mrb.2
f
mf
mp
Mrb.3
f
mf
mp
Mrb.4
f
mf
mp
Duration 6' 31"

Multiple Exposure

For Piano Quartet

Fiona Tozer
(2007)

Photograph by Merryl Riley

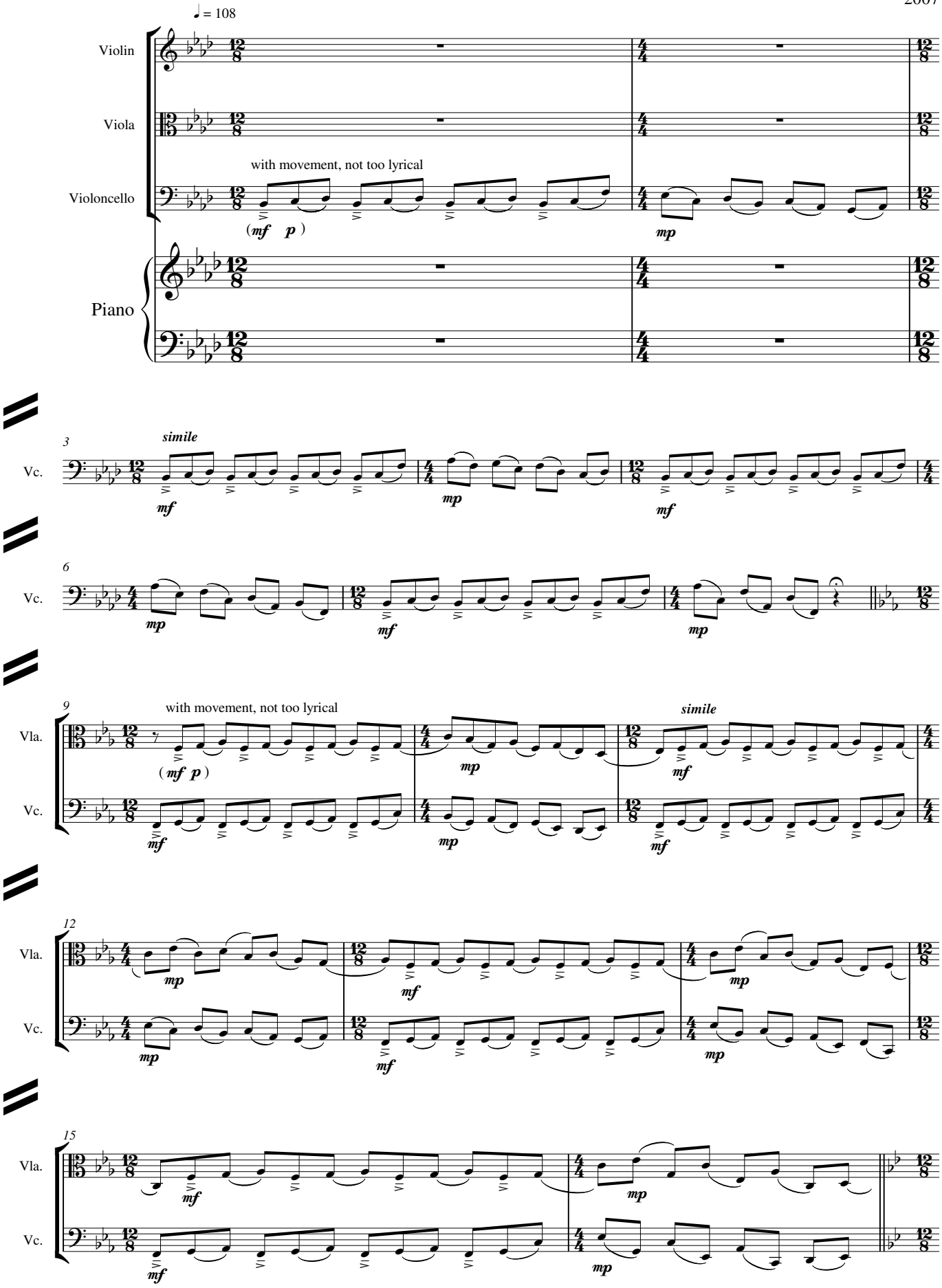
Program notes.
The photograph above was created by taking several exposures of the same subject, each shifted vertically through space. The musical work *Multiple Exposure* parallels the process of construction, shifting the musical phrase in time rather than space. After the subject has been presented, a melody is extracted from the resulting effect, representing the softer composite image generated by the combined exposures.

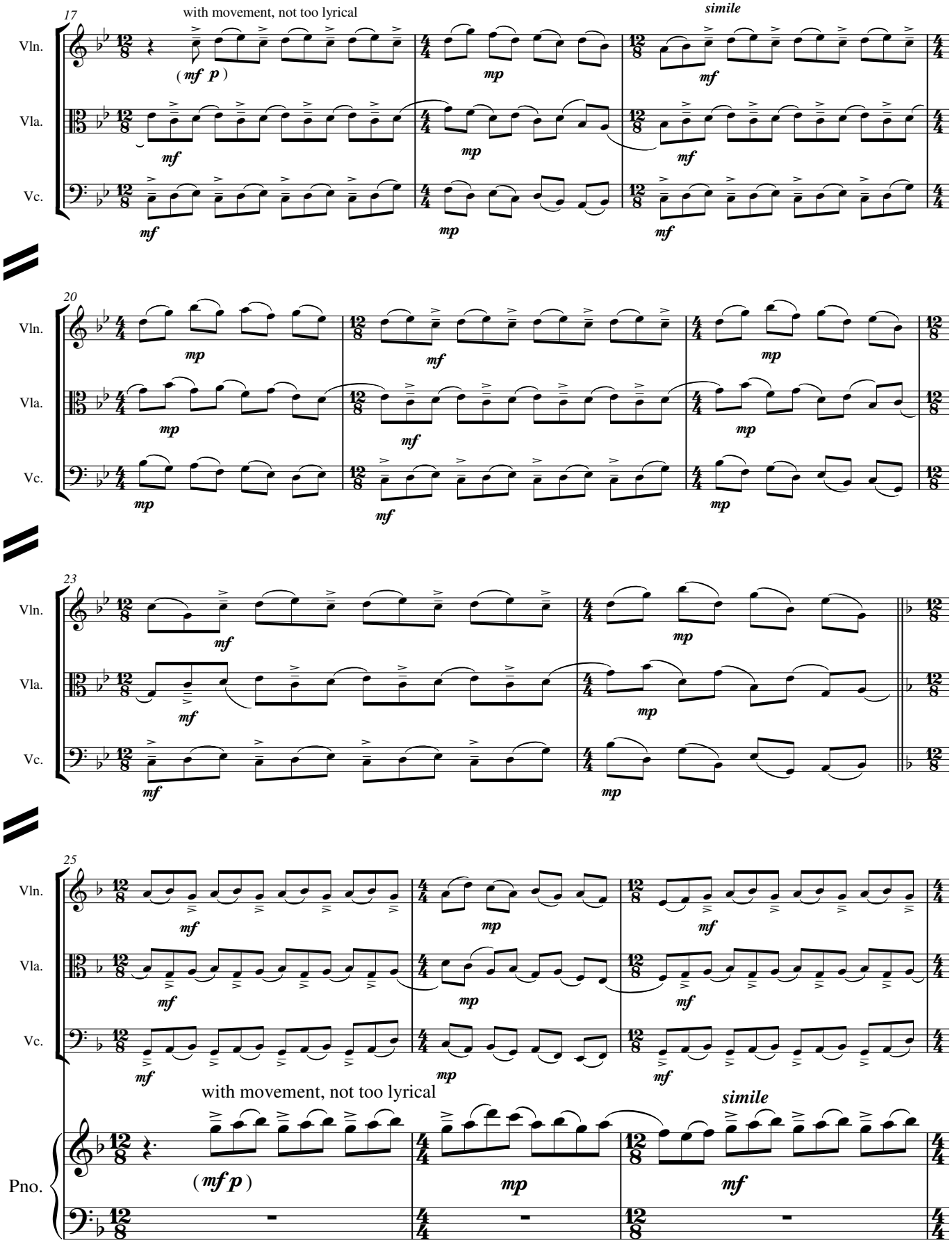
Instrumentation: Violin; Viola; Cello; Piano

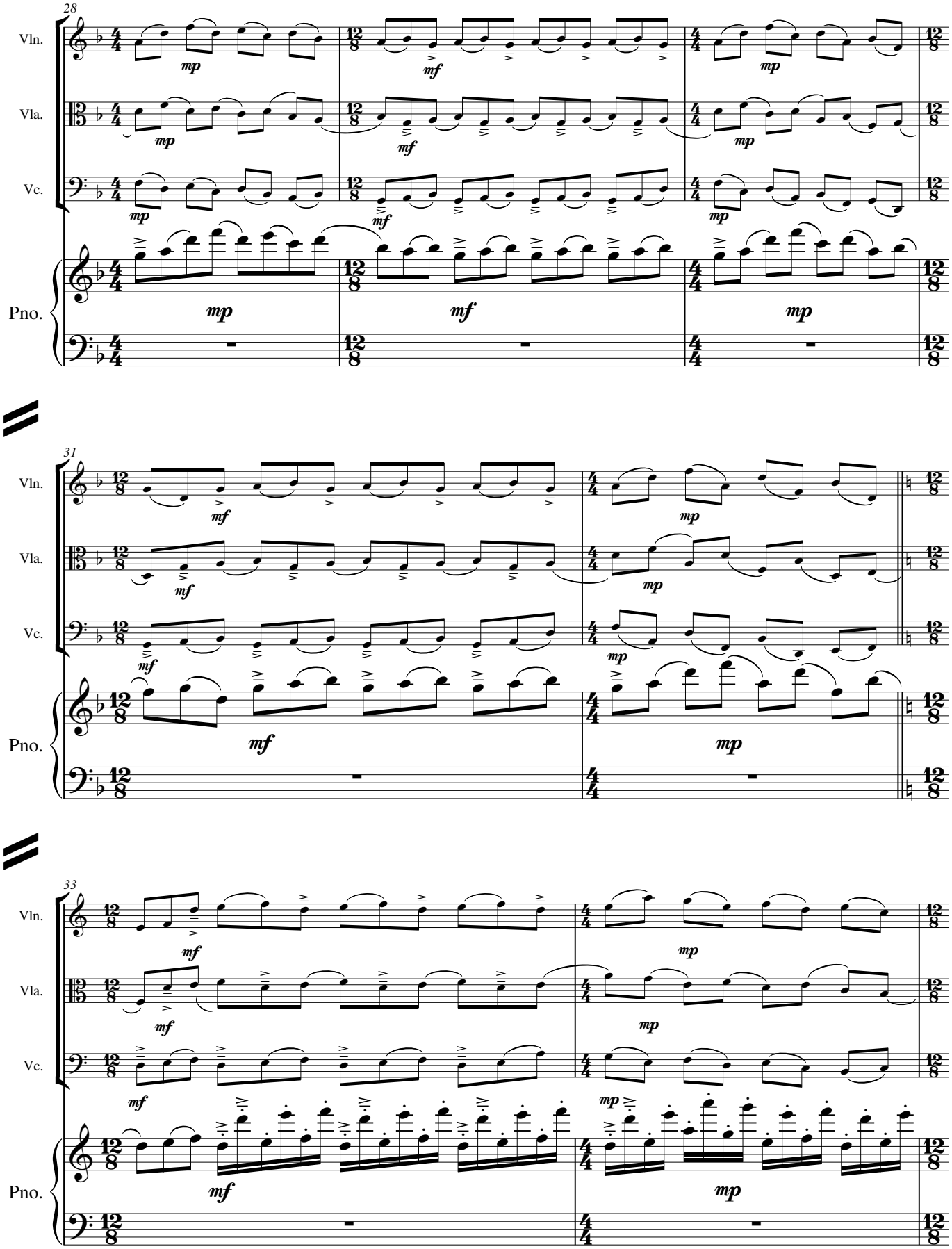
Multiple Exposure

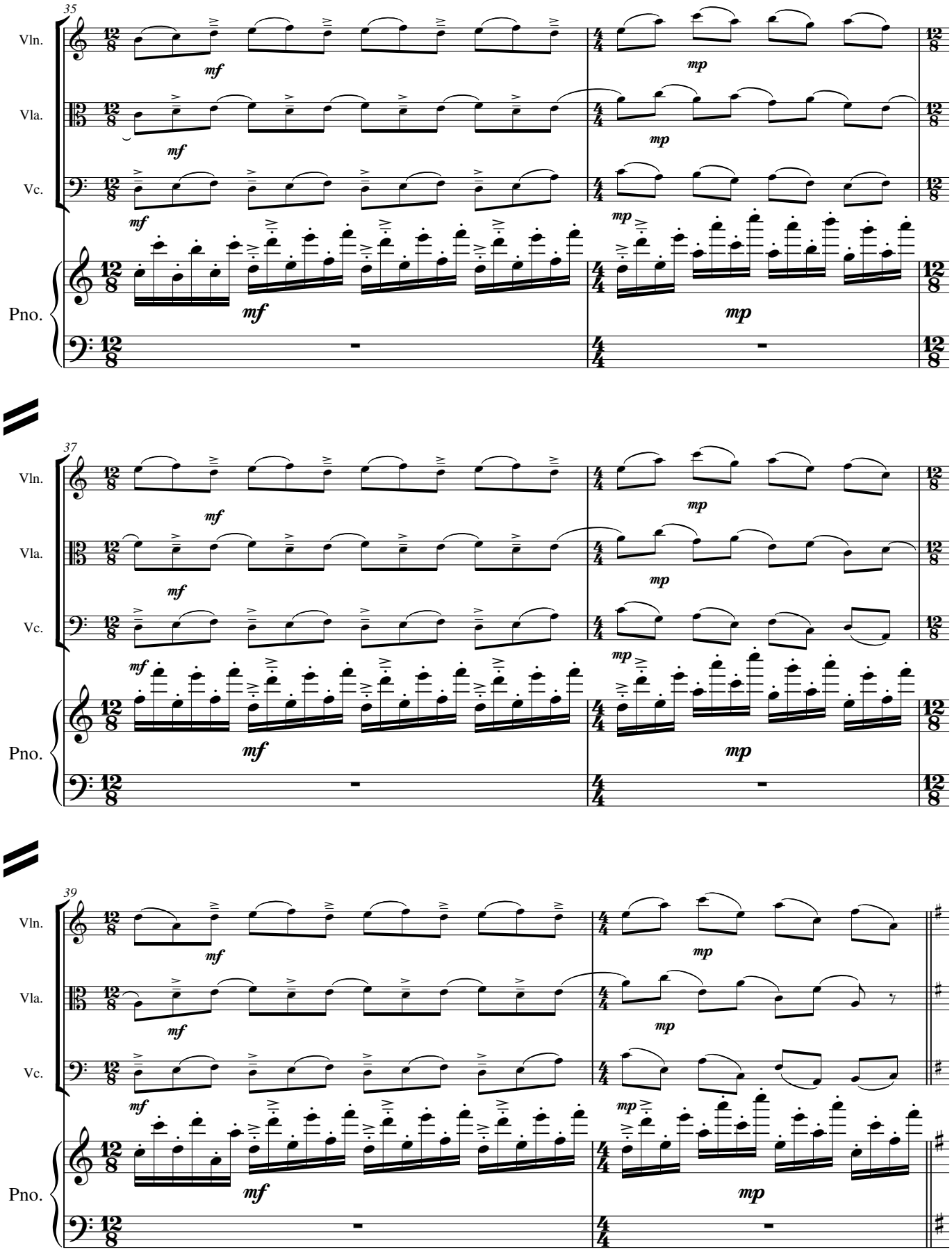
for Piano Quartet

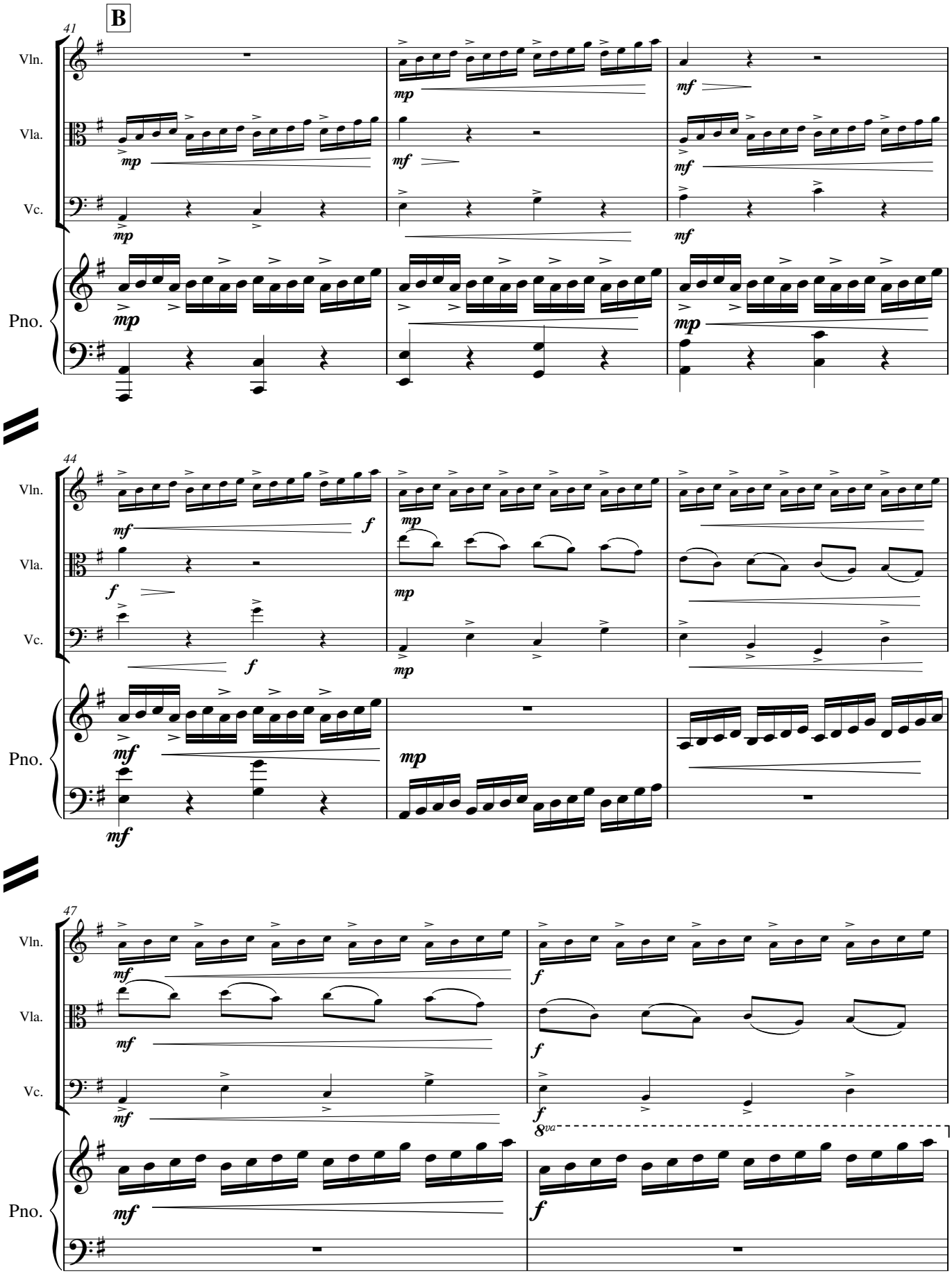
Fiona Tozer
2007

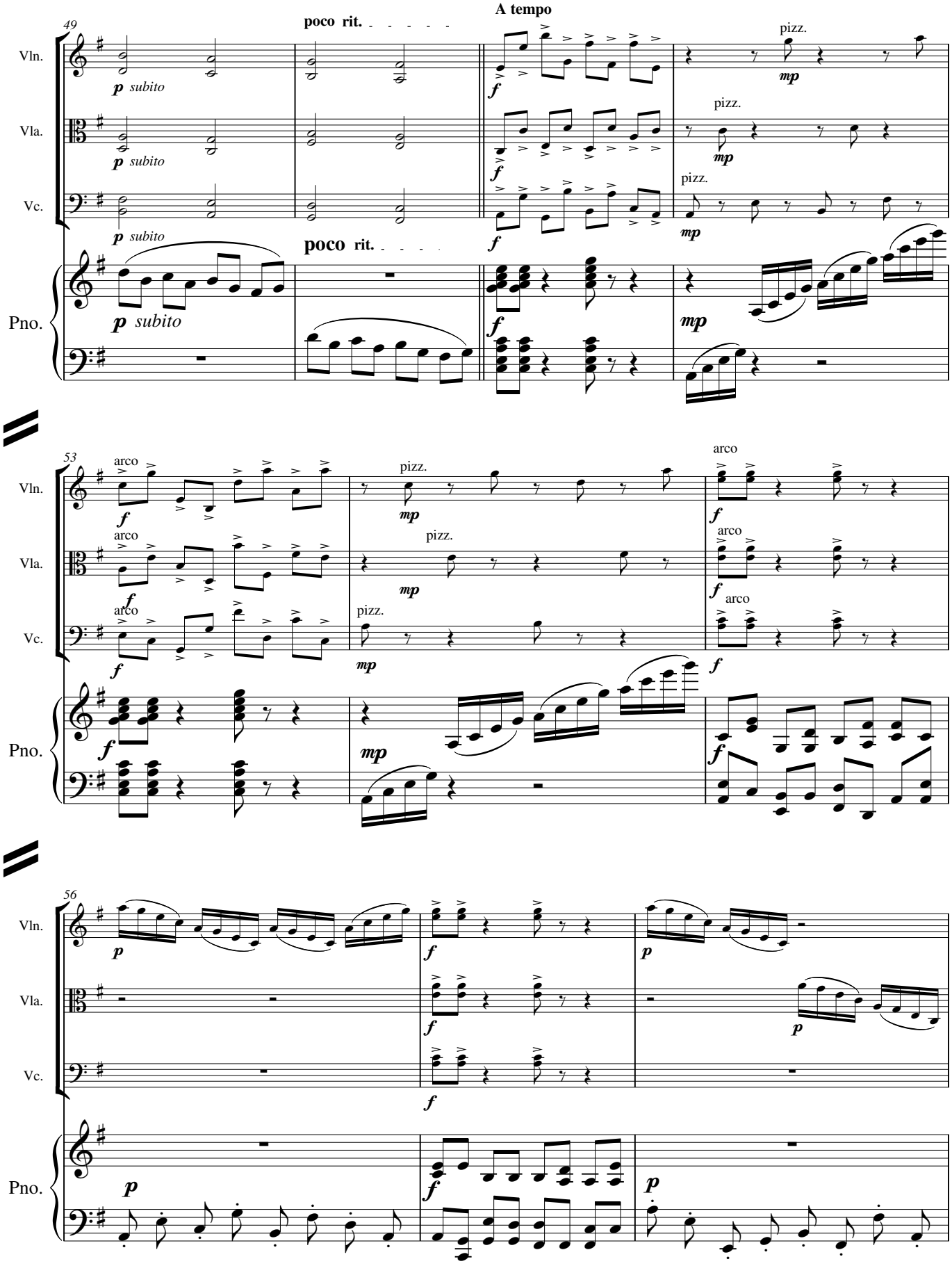


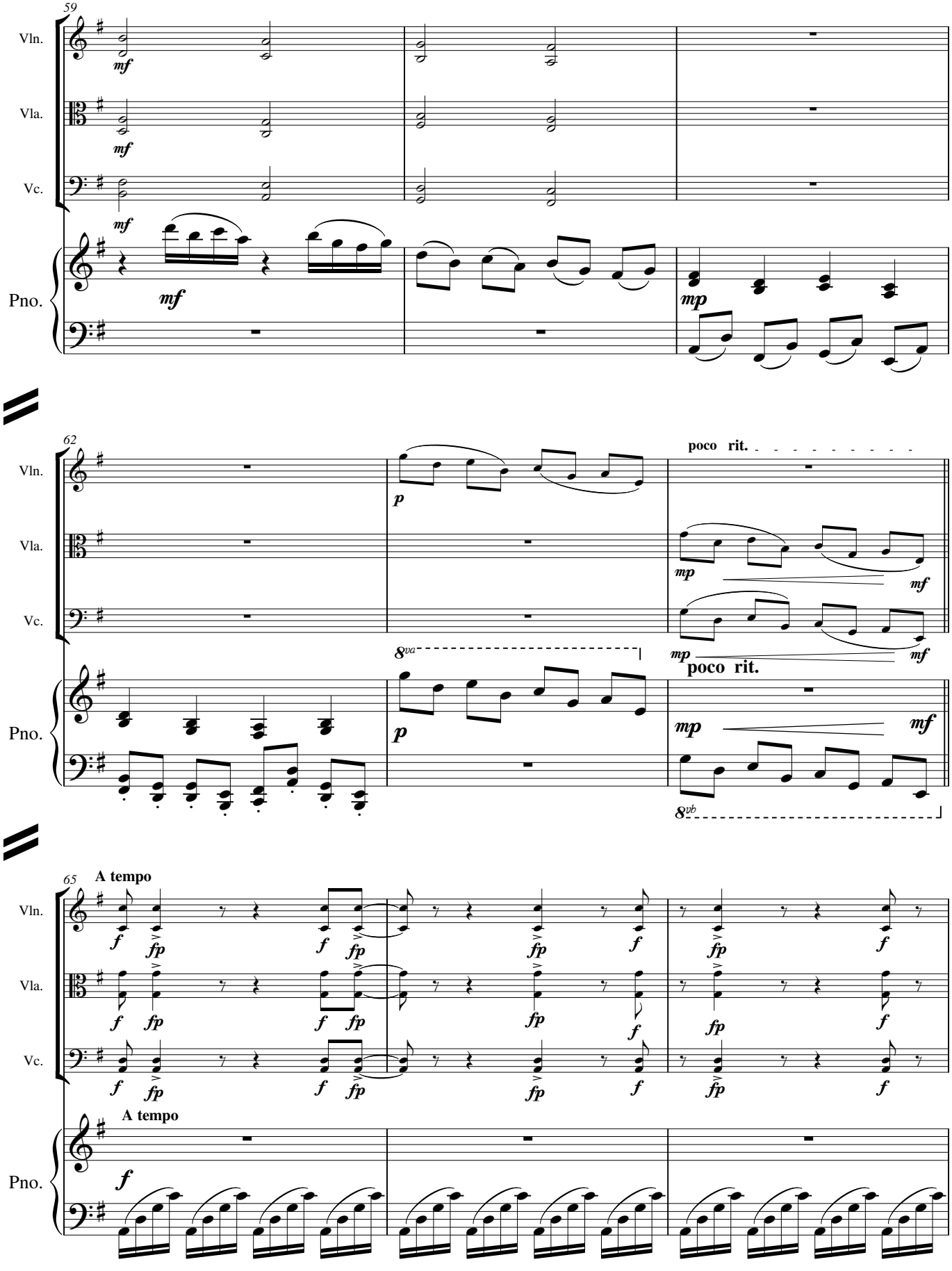

17
with movement, not too lyrical
simile
Vln.
Vla.
Vc.
(mf p)
mf
mp
mf
20
Vln.
Vla.
Vc.
mp
mf
mp
23
Vln.
Vla.
Vc.
mf
mp
25
Vln.
Vla.
Vc.
mf
mp
mf
with movement, not too lyrical
simile
Pno.
(mf p)
mp
mf

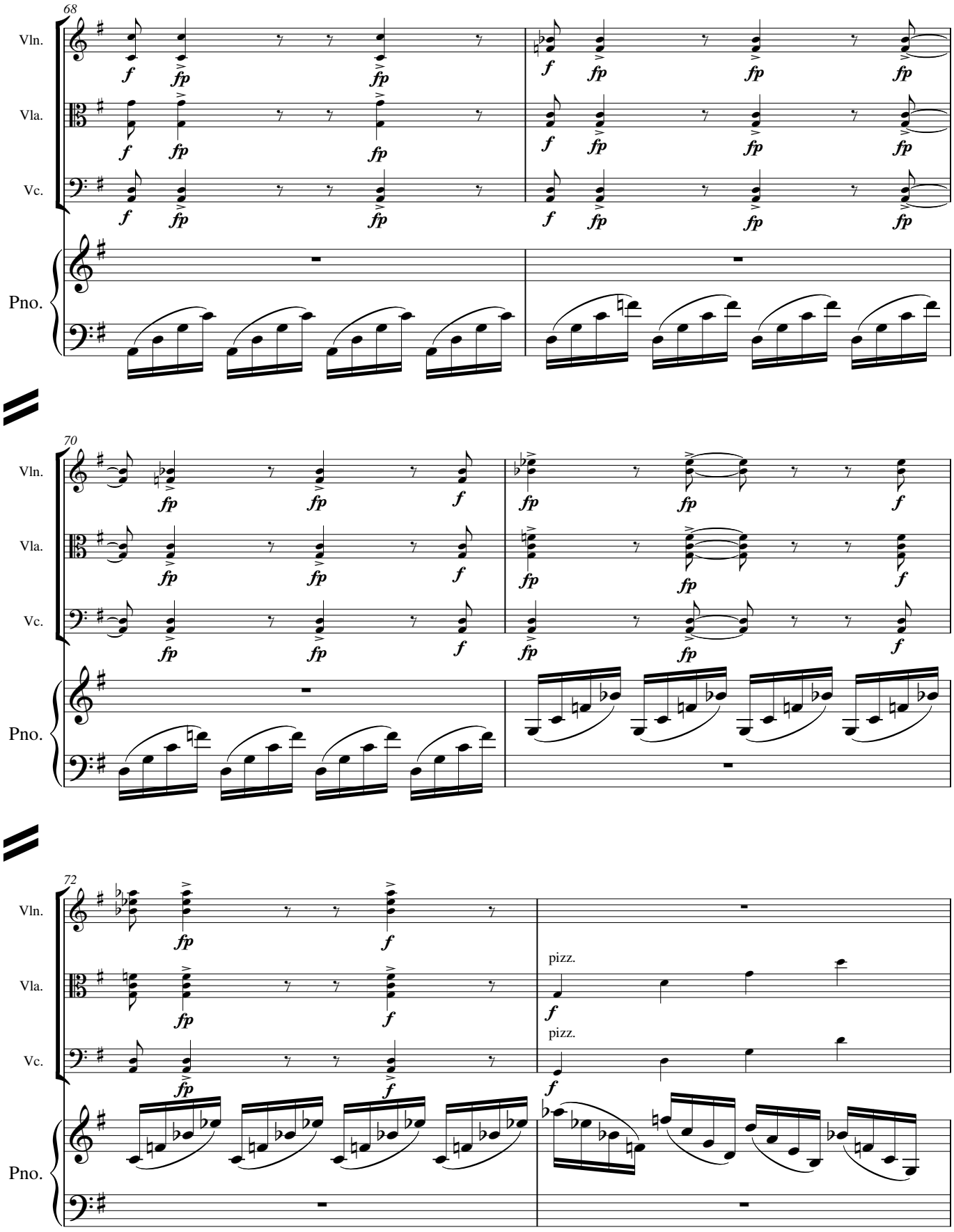

28
Vln.
Vla.
Vc.
Pno.
mp
mf
mp
31
Vln.
Vla.
Vc.
Pno.
mf
mp
33
Vln.
Vla.
Vc.
Pno.
mf
mp

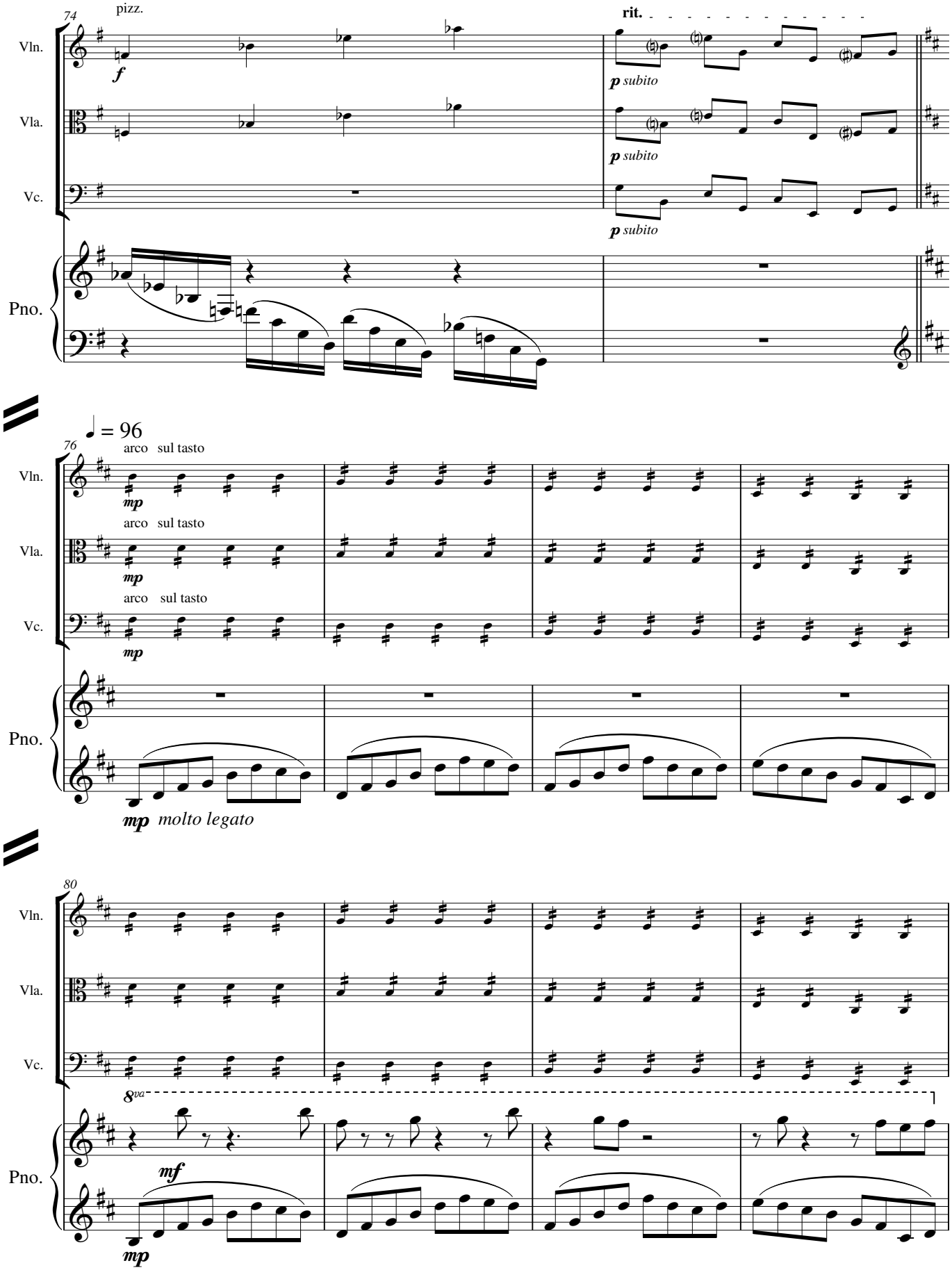

35
Vln.
Vla.
Vc.
Pno.
mf
mp
37
39

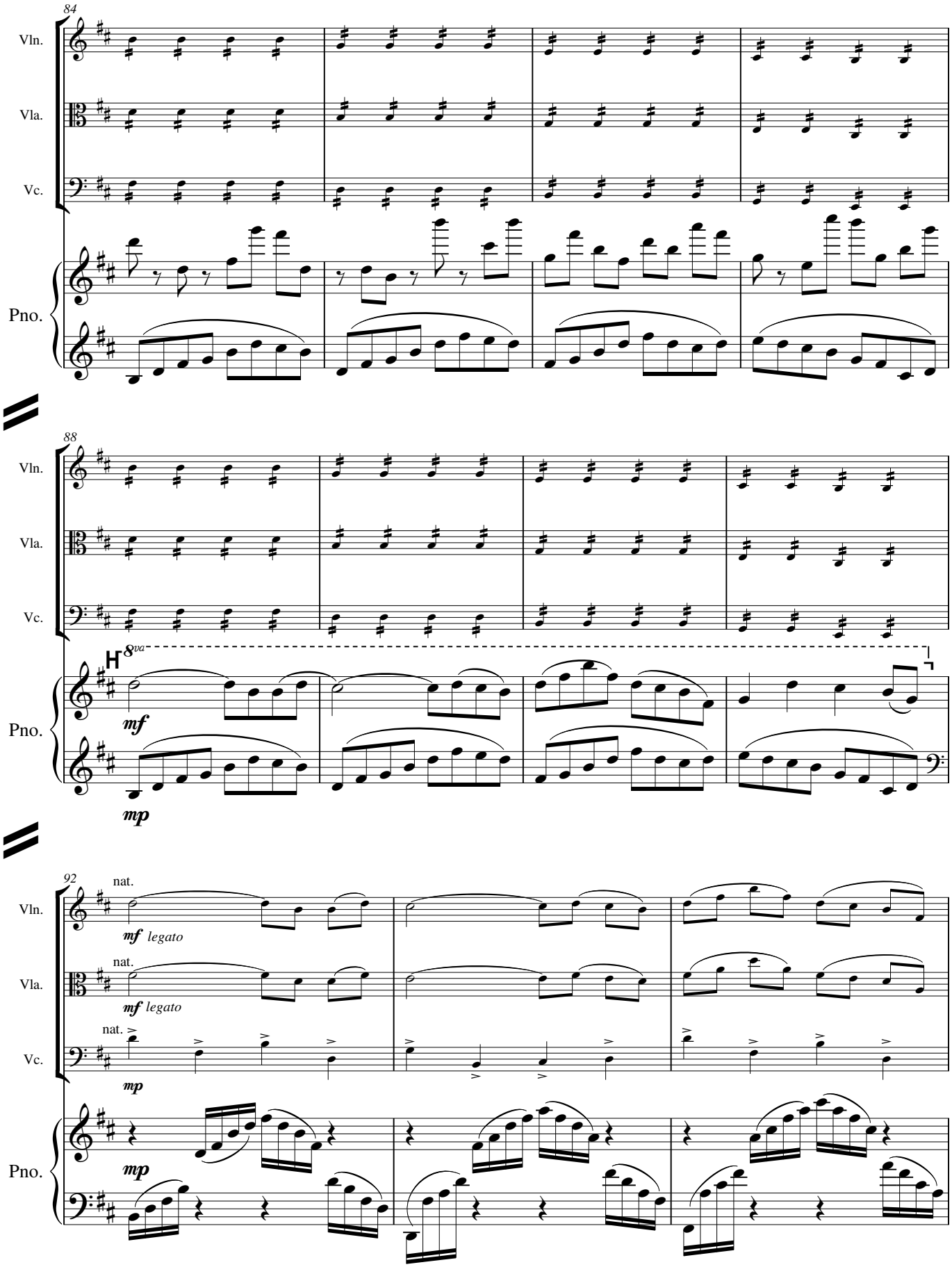

B
41
Vln.
Vla.
Vc.
Pno.
mp
mf
44
f
47
8va

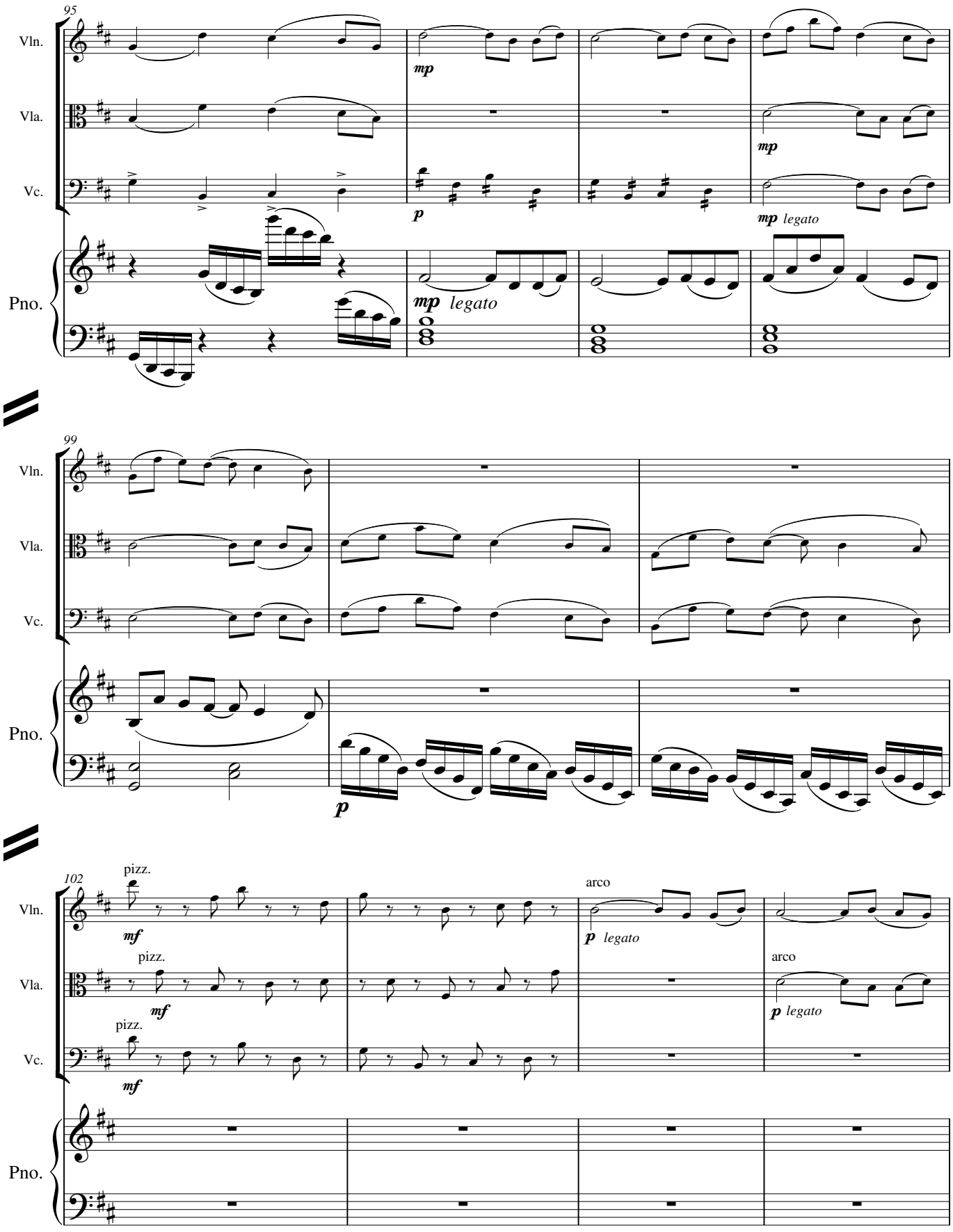

49
poco rit.
A tempo
Vln.
Vla.
Vc.
Pno.
p subito
f
mp
pizz.
poco rit.
53
arco
pizz.
56

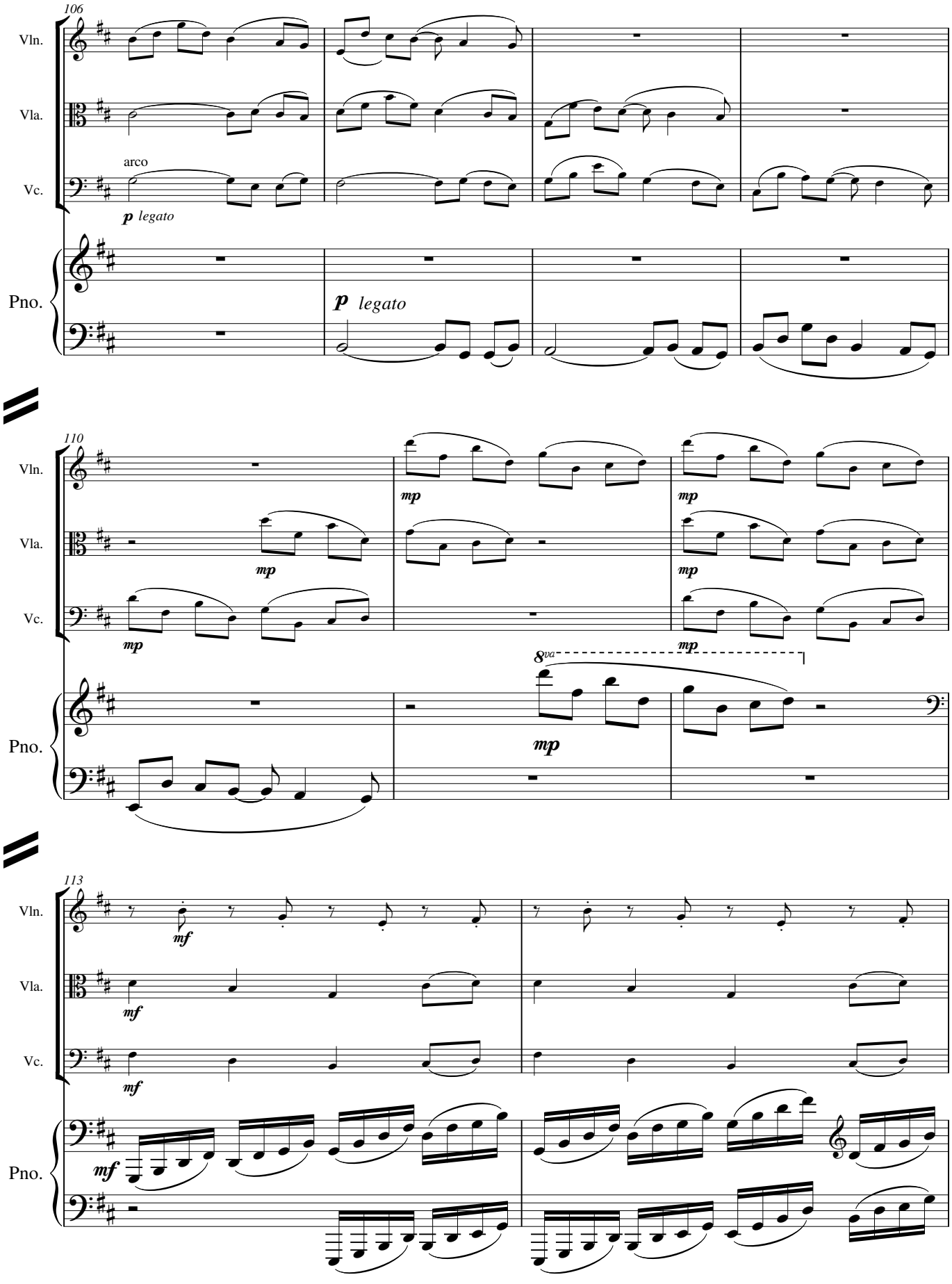

59
Vln.
Vla.
Vc.
Pno.
mf
mp
62
poco rit.
8va
8vb
65
A tempo
fp
f

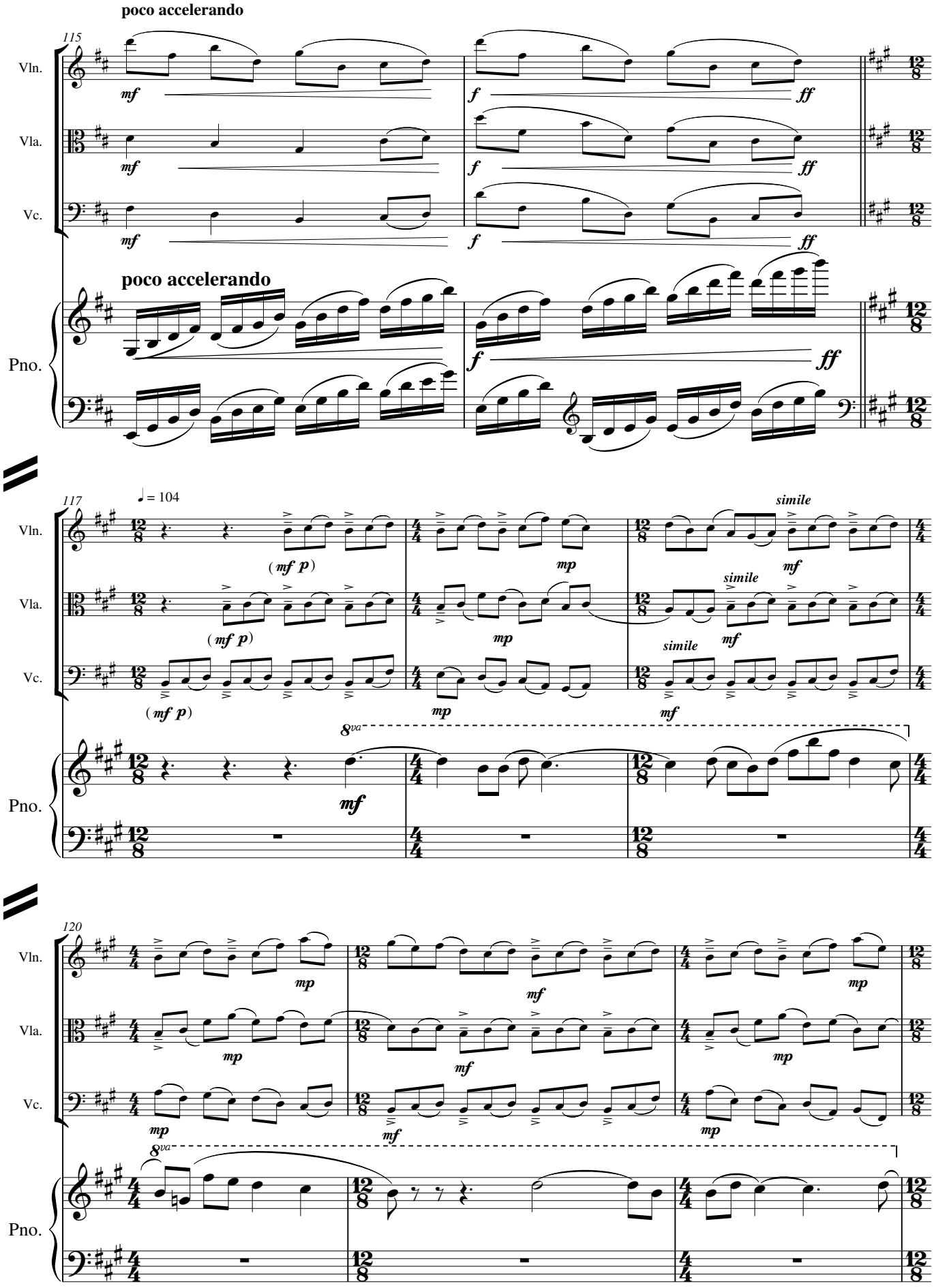

68
Vln.
Vla.
Vc.
Pno.
70
Vln.
Vla.
Vc.
Pno.
72
Vln.
Vla.
pizz.
Vc.
pizz.
Pno.

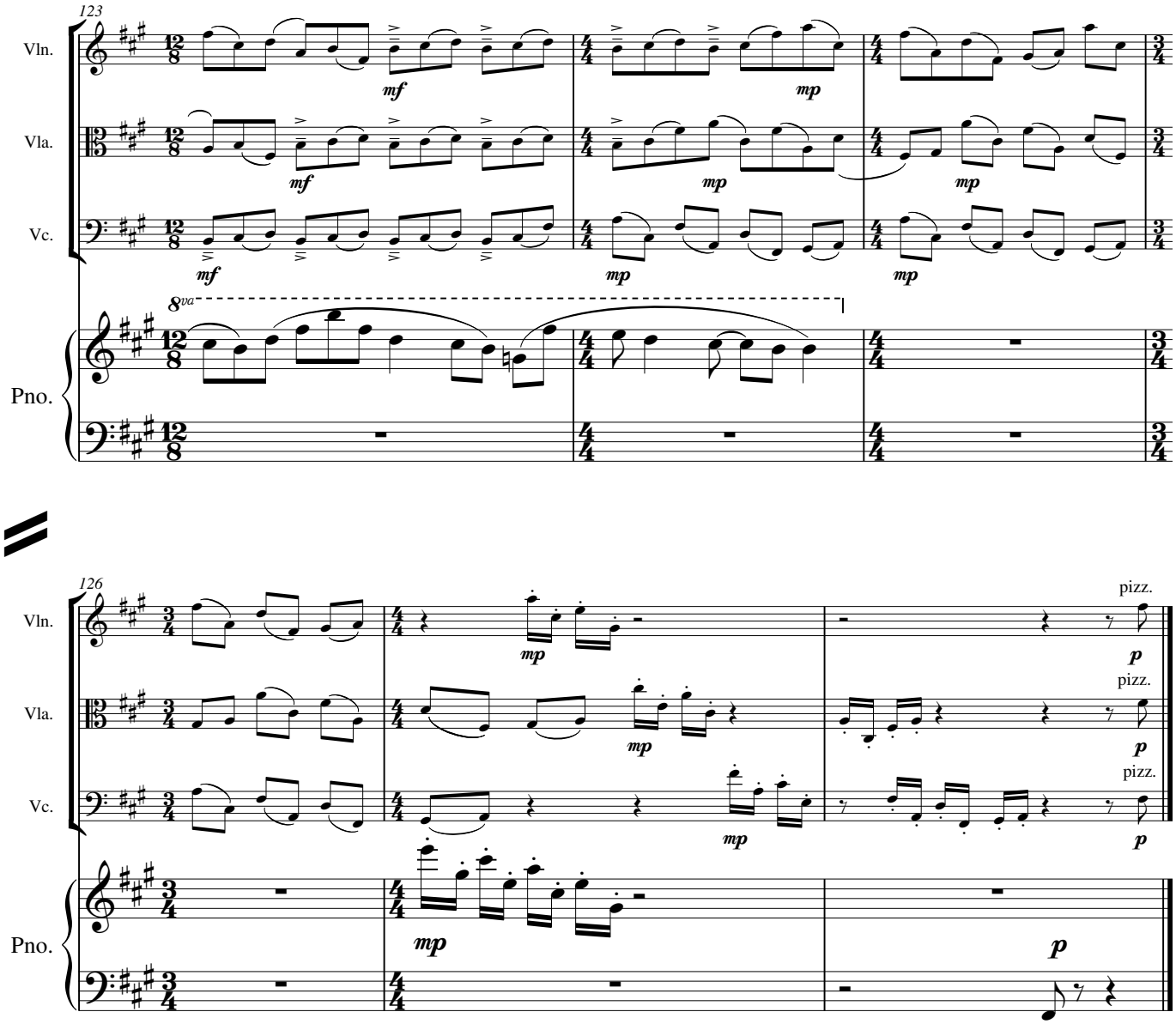

74
pizz.
rit.
Vln.
Vla.
Vc.
Pno.
f
p subito
p subito
p subito
♩ = 96
76
arco sul tasto
arco sul tasto
arco sul tasto
mp
mp
mp
mp molto legato
80
8va
mf
mp


84
Vln.
Vla.
Vc.
Pno.
88
8va
mf
mp
92
nat.
mf legato
mp


95
Vln.
Vla.
Vc.
Pno.
mp
p
mp
mp legato
mp legato
99
Vln.
Vla.
Vc.
Pno.
p
102
pizz.
mf
pizz.
mf
pizz.
mf
arco
p legato
arco
p legato
Vln.
Vla.
Vc.
Pno.


106
Vln.
Vla.
arco
Vc.
p legato
Pno.
p legato
110
Vln.
mp
Vla.
mp
Vc.
mp
8va
Pno.
mp
113
Vln.
mf
Vla.
mf
Vc.
mf
Pno.
mf


poco accelerando
115
Vln.
Vla.
Vc.
Pno.
mf
f
ff
poco accelerando
117
♩ = 104
(mf p)
mp
simile
mf
8va
120



duration 5'25"

Appendix

Saltpan

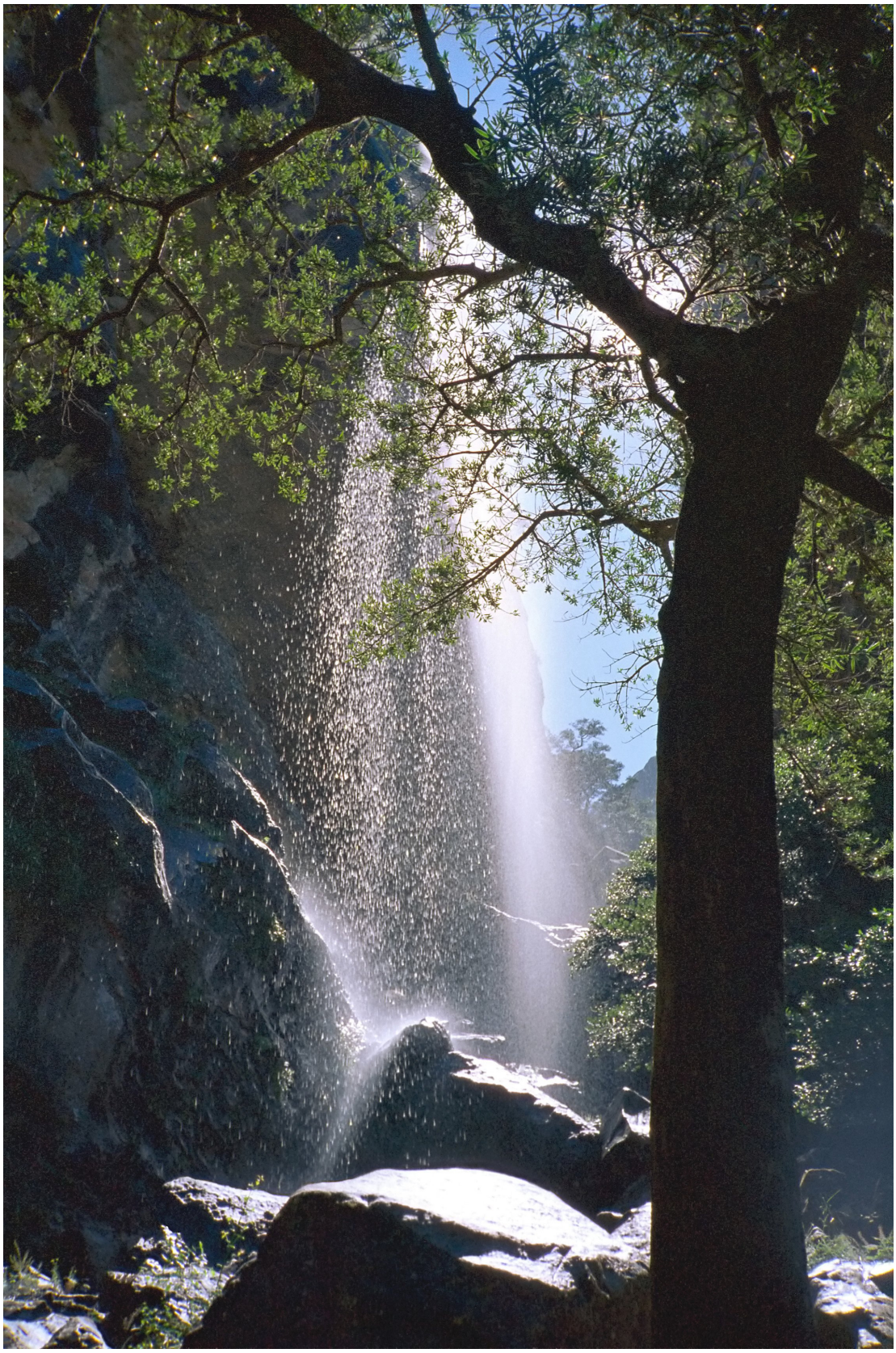
Baobabs

Metaphor

Elim Dune

Multiple Exposure

Kariba Sunset



Kolmanskop