A critical and reflective commentary on a portfolio of compositions

Angela Elizabeth Slater

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Contents

Portfolio compositions

1. ***Stormscape II. Firestorm*** for wind orchestra
   c.7 mins performed by The University of Nottingham Wind orchestra (2012–13, revised summer 2014)

2. ***Momentations*** for wind quintet
   c.7 mins recorded by Lux Quintet (September 2013)

3. ***Night Airs*** for mixed ensemble
   c.5 mins, workshopped by Bristol and Kokoro ensemble (August–October 2014)

4. ***Shadows Create the Night*** for piano quintet
   c.8 mins, workshopped by Ensemble 360 (November 2014–January 2015)

5. ***Roil in Stillness*** for orchestra
   c.11 mins (February–May 2015)

6. ***Apparitions*** for choir
   c.7 mins, workshopped by BBC Singers (June 2015)

7. ***Rainbow Fires*** for piano trio
   c.9 mins, workshopped and performed by Fournier Trio, also workshopped by Berkeley Ensemble (August 2015)

8. ***Nacreous Contours*** for solo clarinet
   c.10 mins, to be performed by Dov Goldberg (December 2015–February 2016)

9. ***Veiling of the Sun*** for string quartet

   c. 4 mins, workshopped by the Bozzini Quartet as part of the Soundfestival (October 2016)

Total time: c. 69 minutes

Table of Contents

Abstract v

Acknowledgements vi

Chapter One: A personal compositional language 12

- **Extra-musical stimuli and their effects on compositional parameters** 14
- **Structure and form** 19
- **Gestural language: melodic and rhythmic devices** 31
- **Harmonic and pitch language** 56
- **Timbral language** 77

Chapter Two: Textural composition; composing for the voice. Case study: *Apparitions* 91

Chapter Three: Exploring how extra-musical stimuli from the natural world affect compositional parameters. Case study: *Roil in Stillness: Ripples and Waves* 106

- **Extra-musical stimuli; approaches and influences** 106
- **Case Study: *Roil in Stillness*** 109

Chapter Four: Exploring how extra-musical stimuli from the natural world effects compositional parameters. Case study: *Rainbow Fires* 130

- **Structure: Overall form** 131
- **Building a musical language to represent colour: a response to Olivier Messiaen and Kaija Saariaho** 140
- **Creating a language of meaning and considering aspects of information theory** 172

Summary/Conclusions 175

Bibliography 176

Accompanying CD

1. ***Stormscape II. Firestorm*** for wind orchestra
2. ***Momentations*** for wind quintet
3. ***Night Airs*** for mixed ensemble
4. ***Shadows Create the Night*** for piano quintet
5. ***Roil in Stillness*** for orchestra
6. ***Apparitions*** for choir
7. ***Rainbow Fires*** for piano trio (Note the recording omits bb.41-95)
8. ***Nacreous Contours*** for solo clarinet
9. ***Veiling of the Sun*** for string quartet

Abstract

This thesis consists of a portfolio of nine compositions accompanied by a written commentary and (where possible) audio recordings of these pieces. The compositions span a variety of instrumentations from large orchestral works to solo and chamber works.

In the accompanying commentary I discuss the technical foundations of my compositional language, examining selected aspects of my gestural, harmonic, and timbral language to shed light on my creative process. The development and prominence of each of these aspects is discussed, with particular emphasis on the evolution of my timbral language.

I demonstrate how I use extra-musical stimuli to determine compositional parameters for various musical elements affecting large-scale structures, gestural, harmonic and timbral language and more broadly the aesthetic impulses of a piece. As part of this, I discuss the importance of a concept that feeds into a work's title to help determine various structural elements. I also explain how the views and thoughts of composers such as Kaija Saariaho, Arlene Sierra, Thomas Adès and Dai Fujikura have helped shape my approach to extra-musical stimuli.

Chapter One focuses on a number of aspects of my compositional language, including extra-musical stimuli, gesture, harmony and timbre and covers a discussion of *Stormscape*, *Momentations*, *Night Airs*, *Shadows Create the Night* and *Nacreous Contours.* It also considers historical precedents for the techniques that I used in my works, tracking something of a trajectory through these to my music. In Chapter Two I discuss my choral work *Apparitions* in more detail, exploring how textural elements help to define the structure and enhance word-painting. Chapter Three centres on a detailed discussion of how extra-musical stimulus has been mapped musically affecting parameters such as structure, gesture and harmony in *Roil in Stillness: Ripples and Waves.* In Chapter Four a detailed discussion of a personal creative process sheds analytical light on *Rainbow Fires.* Here a number of different aspects are discussed with a focus on extra-musical stimuli, gesture, harmony, timbre and the application of 'information theory'.

Acknowledgements

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List of Figures

Figure 1.1. Image of a nacreous cloud. 18

Figure 1.2.. Ascending pitch cycle from Bartók's *Music for Strings, Percussion and Celesta*. 20

Figure 1.3. Descending pitch cycle from Bartók's *Music for Strings, Percussion and Celesta*..... 21

Figure 1.4. Central point in Berg's *Lulu*, showing the palindromic arpeggiated figure that is crucial to the larger structural palindrome across the work. 22

Figure 1.5. Symmetrical relationships in Anton Webern's Op. 27 *Variations*, bb.1–7. 24

Figure 1.6. 'Firestorm', bb.30–6. Gesture 1. 33

Figure 1.7. 'Firestorm', bb.36–44 Gesture 2**.** 34

Figure 1.8. 'Firestorm', bb.51–5 Gesture 3**.** 35

Figure 1.9. **'**Firestorm', bb.20–6. Initial thematic statement 35

Figure 1.10. Development of Gesture 1 in 'Firestorm' 36

Figure 1.11. Further development of gesture 1 in 'Firestorm'**.**. 37

Figure 1.12. Gesture 2 developments in 'Firestorm'. 38

Figure 1.13. **'**Firestorm', bb.68–73. Gesture 3 development and layering 40

Figure 1.14. 'Firestorm', bb.167–72. Gesture 3 extension and synthesis of gesture 2 and 3 forming a new gesture.. 42

Figure 1.15. Main gestures of *Momentations*.. 42

Figure 1.16. *Momentations*, bb.60–1 and bb.118–20. Textures resulting from gestural interactions.. 44

Figure 1.17. Repeated-note gesture in *Momentations, Night Airs, Rainbow Fires* and *Nacreous Contours***.** 45

Figure 1.18. *Night Airs* bb.9–12. Gesture 1 from 'Stillness' sections.. 46

Figure 1.19. *Night Airs*, bb.9–12. Developments of gesture 1. 47

Figure 1.20. *Night Airs*, bb.52–5. Gesture 2 and its relationship to gesture 1.. 48

Figure 1.21. Developments of gesture 2 in *Night Airs* 49

Figure 1.22. *Shadows Create the Night*, bb.1–3. Opening gesture**.** 50

Figure 1.23. *Shadows Create the Night*. Early developments of the opening gesture (subsection 1). 51

Figure 1.24. *Shadows Create the Night.* Development of the opening gesture in subsection 2 (bb.39–41) 52

Figure 1.25 *Shadows Create the Night.* Further developments of opening gesture in subsections 3 and 5 (bb.52–5 and bb.135–7, respectively).. 53

Figure 1.26. *Shadows Create the Night*, bb.49–51. Dramatic disjunct gestures 54

Figure 1.27. Example of minor tetrachords forming octatonic collection and Dorian mode. 58

Figure 1.28. *Momentations*, bb.1–6. Octatonicism in the opening passage**.** 61

Figure 1.29. *Night Airs,* bb.24–5 (transposed). Pre-echo material to b.53.. 62

Figure 1.30.**.** *Night Airs* bb.113–220 showing octatonic area established in duetting winds. 64

Figure 1.31. Passage from 'Ritual of Rival Tribes' showing the combination of two minor tetrachords to create an octatonic harmonic area 65

Figure 1.32. Octatonic material from duetting winds passed to piano, violin and cello parts in final bars of *Night Airs*, bb.119–24. 66

Figure 1.33. Showing passage in an F Lydian modality 67

Figure 1.34. Octatonic passage with only small chromatic inflections (highlighted in blue). *Nacreous Contours*, bb.3–4. 67

Figure 1.35. Octatonic passage bb.7–10 with prominent appearance of 0167 tetrachord highlighted in red. *Nacreous Contours*, bb.7–10. 69

Figure 1.36. Summary of tetrachords/pitch content in Bartók's 'From The Island of Bali' from *Mikrokosmos*. 70

Figure 1.37. Examples of tetrachords working at different levels between bb.1–11 72

Figure 1.38. Pitch-tension structures across the trajectory of *Shadows Create the Night.* 73

Figure 1.39. *Shadows Create the Night,* bb.21–4. Superimposition of B/Bb-centred modalities. 74

Figure 1.40. *Shadows Create the Night,* bb.84–5. A sample of interval pattern in chord progression. 75

Figure 1.41. *Night Airs*, bb.1–12. Note transference across the ensemble. 79

Figure 1.42. Example of rhythmically shifting timbres in Schoenberg's 'Farben', bb.1–6. 81

Figure 1.43. Example of action notation from *Pression*. 83

Figure 1.44. *Shadows Create the Night*, bb.175–177(end). Timbral transformation of final cello note. 85

Figure 1.45. Saariaho, *Papillon IV*, b.1–11 showing timbral transformations with bow pressure and bow position. 86

Figure 1.46. *Nacreous Contours*, (transposed) b.2. Timbral modulation. 87

Figure 1.47. *Nacreous Contours*, b.3 (transposed). Slow vibrato technique on A.. 87

Figure 1.48. *Nacreous Contours*, b.1 and bb.11–12, use of harmonics and harmonic tremolos. 88

Figure 1.49. *Nacreous Contours*, bb.39–40. Soft dyads with various timbral techniques. 89

Figure 2.1. *Apparitions*, bb.5–9. Word-painting of 'ripple' 94

Figure 2.2. bb.7–8. Sighing gesture on word 'aches'. 94

Figure 2.3. bb.19–23. Timbral modulation across 'still' and 'aches'. 96

Figure 2.4. bb.32–6. Timbral effect across 'swept'. 97

Figure 2.5. bb.32–4. Unusual word-splitting on 'heart' in soprano 1 b.33–4. 97

Figure 2.6. bb.42–4. Sequential entries of 'pt'. 98

Figure 2.7. bb.58–61. Homophonic setting of ‘hands cling’ with different spatial explorations. 100
Figure 2.8. Textural transformation of episode 5 (bb.56–78). 101
Figure 2.9. Start of episode 6, bb.79–81 setting of ‘that cannot grasp’ with lines slipping past each other. 102
Figure 2.10. Duetting soloistic passages. 103
Figure 2.11.Increase in density towards final chord of episode 6 (b.103). 104
Figure 2.12. Setting of ‘All asleep’ descending line forming cluster chord in b.106. 105
Figure 3.1. Mia Pearlman's artwork, *ROIL* (2012). 110
Figure 3.2. Overall structure of *Roil in Stillness* 112
Figure 3.3. Knussen's *Flourish with Fireworks* showing LSO MTT cipher. 115
Figure 3.4. Knussen's generated melodic material on five notes 116
Figure 3.5 Vertical alignments of melodic rotations. 116
Figure 3.6. Showing Knussen’s transposed inversion technique. 117
Figure 3.7. Melodic rotation formed from opening violin melody and examples of its melodic/harmonic use in bb.35–7 and bb.40–2. 118
Figure 3.8. Melodic/harmonic material on F and transposed version on F#. 119
Figure 3.9. bb.54–9. Simultaneous functioning harmonic lines and rotatory harmonies. 121
Figure 3.10. Opening solo violin passage, bb.1–6. Establishing pitch-magnetisms for section A, and signposting the overall pitch-couple centres. 122
Figure 3.11. Shifting pitch-magnetisms, bb.7–16. 123
Figure 3.12. Additive rhythms mapping ripple structure, bb.7–14. 124
Figure 3.13. Section C (‘ripple’ section) - overall structure. 126
Figure 3.14. Construction of first half of ripple bb.174–207 128
Figure 3.15. Interval pattern of final ripplet before central seventh interval chords 128
Figure 3.16. Second half of ripple, bb.222–41. 129
Figure 4.1. Image of rainbow fire. 131
Figure 4.2. Overall harmonic structure. 134
Figure 4.3. Harmony and pitch structure. 134
Figure 4.4. Red interjections in white-section, bb.1–7. 135
Figure 4.5. Pre-echoes to colour sections, bb.10–13 in white-section. 136
Figure 4.6. Pre-echoes to other colours, bb.16–17. 137
Figure 4.7. Pre-echoes with red motivic preparations - bb.24–6 and bb.32–4 in white-section. 138
Figure 4.8. Distinctive gestures from the red-section. 139

Figure 4.9. Motivic developments of b.41 from red-section. 140
Figure 4.10. Development of gestural figure from b.41 in b.43 142
Figure 4.11. The construction of bb.64–6 from other gestural figures. 143
Figure 4.12. Construction of material in bb75–6 from b.41 and b.43. 144
Figure 4.13. Gestural development from b.41, bb.67–8 and bb.73–4 in bb.180–2. 145
Figure 4.14. Cyclic material bb.107–10 in the yellow-section. 146
Figure 4.15. Hocketed material bb.163–170. 147
Figure 4.16. High-pitched undulating figures in yellow and blue sections. 148
Figure 4.17. Contrasting characters of blue-section in bb.122–8. 148
Figure 4.18. My initial harmonic sketches for red, yellow and blue 151
Figure 4.19. Messiaen's colour chords from *Couleurs*; red bb.16–7; yellow bb.11/13; and blue (based on) b.27. 152
Figure 4.20. Scalic sets from initial sketches. 153
Figure 4.21. Red harmonic collections. 154
Figure 4.22. Messiaen's red/orange chords 155
Figure 4.23. Initial vertical harmonic moments in red-section. 155
Figure 4.24. Initial complete realisation of red harmonies, bb.59–61 156
Figure 4.25. Yellow harmonic materials from sketches. 157
Figure 4.26. Yellow harmonies: Y12 and Y2. 158
Figure 4.27. Horizontal realisation of Y5 and Y8 bb.107–11. 159
Figure 4.28. Blue harmonic collection 160
Figure 4.29. Building of BC and MBC, creating a dense chordal texture 161
Figure 4.30. Cello double-harmonic tremolo, bb.129–31. 164
Figure 4.31. Timbral modulations in the white-section, bb.1–4. 165
Figure 4.32. Timbral modulation from white to red-section at Figure C. 166
Figure 4.33. Timbral modulation, bb.117–22. 167
Figure 4.34. Conclusion of the white-section, bb.203–8. 169
Figure 4.35. Combination of colours in last white-section, bb.209–15. 170
Figure 4.36. Transformation of blue gesture (bb.122–3) in concluding white-section, bb.216–21 ..171
Figure 4.37. Build up to b.223, with false-ending in b.223. 172
Figure 4.38. The application of information theory in the compositional process, as seen in cello bb.125–8. 175

List of Tables

Table 1.1. Structure of *Night Airs*. 25

Table 1.2. Structure of *Shadows Create the Night* 26

Table 1.3. Structure of *Momentations* 28

Table 1.4. Structure of 'Firestorm'. 29

Table 1.5. Structure of *Nacreous Contours*. 30

Table 3.1. Ripplet timeframes. 127

Table 4.1. Pitch-couple centres. 133

Chapter One: A personal compositional language

Try breaking the rules on a need to break the rules basis.[1]

In this commentary I explore aspects of my compositional approach as part of an examination of my musical language. I show how the balance of poetic and technical elements helped me to develop a personal language. Throughout this commentary I use the term 'poetic' to mean I seek to capture the essence of a phenomena through my own creative expression, musically capturing a mood or feeling that this might create rather than trying to recreate sounds accurately with musical instruments. These reflections are intended to shed personal analytical light on my portfolio and not to provide an exhaustive examination of my output. A range of expressive and technical features are discussed, establishing commonalities across this portfolio.

Through my PhD, I have refined my compositional language and method. In this chapter I explore my compositional language and process, alongside relevant influences. As a composer, arriving at a personal compositional aesthetic has been the most significant challenge I have faced. In our postmodern age, the notion of a single, linear tradition has been deconstructed, with a collage of voices that cannot be characterised under a single stylistic banner. Leonard B. Meyer expresses this succinctly:

> a period not characterized by the linear cumulative development of a single fundamental style, but by the coexistence of a multiplicity of quite different styles in a fluctuating and dynamic steady-state.[2]

[1] Jonathan Burrows, *A Choreographer's Handbook* (London: Routledge, 2010), p.41.
[2] Leonard B. Meyer, *Music, the Arts, and Ideas: Patterns and Predictions in Twentieth-Century Culture* (University of Chicago Press, 1994), p.98.

I had no desire to narrow my focus to one compositional approach, instead drawing upon the techniques and traits of several composers, in combination with my own intuitive creative impulses, creating a personalised eclectic compositional language. Similarly, Kaija Saariaho (1952) expressed her rejection of post-serial processes:

> I realised – well, I knew already – that this was not what I wanted. These guys were drawing these unbelievable diagrams on the blackboard, systems and interactions… All of that complexity, for what aural result?[3]

It was my aim to craft and develop a compositional language that balances my creative intuition with more formal reflective processes. I have avoided composition via system-based generative processes, such as serial music, mathematical or chance-based procedures; in my experience these approaches have stifled my creativity. Instead I have sought a personal technique and process that would offer an effective creative framework that still allowed for intuitive freedom. Through developing my approach I have engaged with extra-musical materials, particularly from the natural world. This overarching focus enabled me to develop my engagement with extra-musical stimuli to inform compositional structures and expressive elements.

Another central aim of my compositional practice has been to hold the listeners' attention by presenting music that aims to provide both a satisfying aural result and offer the potential for musical preferences and preconceptions to be challenged. I became acutely aware of this in later works, with the concept of 'information theory' being at the forefront of my mind within the compositional process.[4] Information theory is best understood in musical terms as explaining the flow of information, and the changes of this flow, from composer/performer to the listener to retain the listeners' interest.

[3] Quoted in Tim Howell, *Kaija Saariaho: Visions, Narratives, Dialogues* (Farnham: Ashgate, 2011), p.9.
[4] Meyer's work on musical meaning and information theory has been influential: see Meyer, 'Meaning in Music and Information Theory', *Music, the Arts, and Ideas*, pp.5–21. Information theory is discussed in Chapter Four.

Extra-musical stimuli and their effects on compositional parameters

To streamline, formalise, and structure my intuitive compositional material I have developed multiple ways of using extra-musical stimuli to inform compositional parameters. This has been an evolutionary process, something of which I have become increasingly aware through observation of my own and others' works. The natural[5] world has been a main theme for extra-musical content, including an exploration of rare natural phenomena as conceptual content for musical structures. Indeed, there is a rich cultural heritage throughout music history of composers using the natural world as an inspiration for musical composition in a range of ways. It would be impossible to provide a detailed survey of all composers engaging with the natural world in the present discussion, and thus a brief excursion will be sufficient.

The musical tradition that reached its peak in the nineteenth and early twentieth century, commonly and problematically referred to as 'programme music', offers one rich pantheon of musical compositions engaging with the natural world, usually in a poetic sense. Examples include Ludwig van Beethoven's Symphony No. 6 'Pastoral' (1808), Tchaikovsky's *The Tempest* (1873), Claude Debussy's *La Mer* (1905), and Richard Strauss's *Alpine Symphony* (1915). In almost all cases, works of this style engage with the natural world in a poetic sense and do not map natural elements into the musical structure in a technically specific manner. This type of approach was further explored by the early twentieth-century English pastoral school, of which Vaughan Williams was one of the most prolific and prominent figures.

The influence of the natural world can also be seen in Anton Webern's works, especially those that explore the ideas of memory, death and landscapes. In a number of his sketches, Webern refers to specific landscapes and mountains as a way to create a general soundworld and character for a particular section within a piece. However, Webern did not seek to encode these specific landscapes in the way that I do in my music. Instead, he used these as points of departure, and thus

[5] For the purposes of this commentary, I have taken 'natural' to refer to the phenomena of the physical world considered collectively, including weather systems, landscapes, plants, animals, and other non-man made features of the earth, as opposed to humans or human creations.

the resemblance between the sketch and the final result in this regard is not always as clear as one might expect in other circumstances; these personal programmes are not promoted in the same way that they are in my works. Such an approach is seen in Webern's Ops. 21–31, and is discussed at length by Julian Johnson.[6]

Alongside this poetic approach to the natural world in music, a number of twentieth-century composers set about incorporating elements from the natural world in a more specific manner in their music, mapping these mathematically or attempting to recreate the sounds of nature. This included techniques such as quotations of birdsong in the works of Olivier Messiaen, most notably *La Merle Noir* (1952) and *Catalogue d'oiseaux* (1958), and the mapping of natural phenomena onto musical structures, as seen with magnetic polarities and orbital motion in Thomas Adés's *Polaris* (2010) and his *Violin Concerto: Concentric Paths* (2005).

Various extra-musical aspects were also encoded into Alban Berg's works. He was particularly interested in numbers of meaningful significance in nature, and was influenced in this regard by the writings of Wilhelm Fliess (1858–1928), especially in respect to the connection between nature and the numbers 23 and 28, and their relevance to male and female genders. He sought to use these numerical sources to structure his music and encode secret programmes. The number 23 is particularly evident in his works *Lyric Suite* (1926), and his *Violin Concerto* (1935).[7]

The music of Iannis Xenakis demonstrates a more direct approach to the inclusion and mapping of extra-musical material from the natural world, often using mathematical methods and processes to direct, and sometimes generate, musical content and structures. This is particularly apparent in his large orchestral work *Pithoprakta* (1956) [action through probability], which is based on the notion of a cloud of points. These points are distributed according to probability calculations and move at various speeds. The piece is structured around different formulae for the component sections, including Poisson's Law of Rare Events, Bernoulli's Law of Large Numbers,

[6] Julian Johnson, *Webern and the Transformation of Nature* (Cambridge: Cambridge Universty Press, 1999), pp.167–211.
[7] Douglas Jarman, 'Alban Berg, Wilhelm Fliess and the Secret Programme of the Violin Concerto', *The Musical Times*, Vol. 124, No. 1682 (Apr., 1983), pp.218–23.

and Maxwell–Boltzmann Kinetic Theory, with these influencing and guiding the musical decisions made directly. Although this demonstrates a high degree of mathematical complexity, Carey Lovelace observes that 'this seemingly hyper-cerebral approach was, for Xenakis, in fact deeply grounded in nature–which he loved–as well as in human experience.'[8]

Aspects of these approaches have informed my own compositional philosophy relating to the engagement with extra-musical stimuli from the natural world. My approach in this regard evolved over the course of a series of works, moving, in a general sense, from being highly poetic towards a greater degree of direct mapping of extra-musical content. This evolutionary process culminated in *Roil in Stillness*, where the structure of the piece is determined by the structure of a ripple, establishing the presence of extra-musical material from the natural world in a manner that holds significant similarities to Xenakis's approach in *Pithoprakta*, albeit at a lower level of mathematical complexity.

It is this engagement with the natural world that has aided me in connecting my compositional voice with a deeper artistic truth, feeding my desire as a composer to communicate something of the human experience and the world we inhabit. The natural world is a place I explored a lot as a child and therefore gives me a strong sense of home and connection to something deeper and beyond myself. It is these feelings that led me to try and capture in my works something of the beauty, intricacy and profundity of nature.[9]

Such feelings have drawn me towards nature as an inspirational point of departure, with this having only loose implications on the structures of some of my early works. As my portfolio progressed, however, I sought a deeper engagement with the concepts behind the natural object or event I wanted to express through my music, establishing rich dialogues between natural phenomena and my own artistic responses to these. Thus, the compositional parameters of these

[8] Carey Lovelace, 'How Do You Draw A Sound?', *Iannis Xenakis: Composer, Architect, Visionary*, ed. Sharon Kurach and Carey Lovelace (New York: The Drawing Center, 2010), p.48.
[9] Kant explores aspects of similar themes from a slightly different perspective in his *Critique of Judgment* (1790). Although this text had no direct bearing on the formation of my compositional philosophy, my view of nature may be considered somewhat analogous with Kant's outline of the 'dynamically sublime'.

later works became increasingly influenced and affected by the natural concept that the piece represents or explores. By engaging with natural phenomena I feel I'm trying to express something that transcends cultural and linguistic barriers and captures the essence of what it is to be human. Connecting and engaging with nature through my music helps me to understand the world and feel connected to something greater than myself.

I have found establishing an appropriate title is important in order to allow the manifestation of the concept to inform the compositional process, something noted by Saariaho: 'When I have the right title, I can focus my material. The title is very important for feeding my imagination'.[10]

One of the first pieces to use this method was *Stormscape*: I. Skyscape; II. Firestorm, in which the two connected scenes map the evolution of a storm. The tension built up across the work is never allowed to dissipate, leaving the listener suspended in the middle of the storm. The extra-musical stimuli impacts greatly on the gestural language and exerts a partial influence on formal structures, though much less explicitly than in my later pieces.

I further developed this method in other works, namely *Three Streams in Time* for solo clarinet (2013), *The Dawn* for clarinet and flute (2013), *Cloud* for string ensemble (2013), *Night Airs* for mixed ensemble (2014) and *Shadows Create the Night* for piano quintet (2014). Although I did not use extra-musical content to dictate these musical structures, such material did exert an influence on the formation of the structures of these pieces, particularly through their increasing importance to other compositional parameters. The clear narratives of both *Night Airs* and *Shadows Create the Night* are informed by poetic explorations of the night, which contributed to shaping their structure and gestural language.

The first piece to bear the explicit structural influence of extra-musical stimuli was *Roil in Stillness* for orchestra (2015). Within this orchestral piece, several compositional planes are affected by the concept of ripples and waves. For example, waveforms are mapped temporally onto the

[10] Anders Beyer, *The Voice of Music: Conversations with composers of our time* (Farnham: Ashgate, 2000), p.134.

musical content, articulating the structure in different ways to other works. I discuss this further in Chapter Three.

Rainbow Fires for piano trio (2015) is the second significant piece to have explicit structural relations to its extra-musical stimulus, a point that is discussed further in Chapter Four. Building upon ideas established in *Rainbow Fires* which responded musically to the colours in the rare natural phenomenon of rainbow fires, *Nacreous Contours* for solo clarinet (2016) explores the imagery of nacreous clouds, taking the listener on a journey through an image (Figure 1.1). Nacreous clouds, or 'mother-of-pearl clouds', are rare and are mostly visible after sunset or before dawn when they blaze brightly with vivid and slowly shifting iridescent colours.

Figure 1.1. Image of a nacreous cloud.[11]

The journey (from the dark grey to lighter cloud) is translated compositionally through tessitura, timbre and tempo, establishing sectional characters. The first section has a slow tempo and an overall lower tessitura punctuated by harmonics. The second section with a moderate tempo gradually incorporates a wider pitch-range. The final fast-tempo section explores a high tessitura, capturing the imagery of pearly white clouds. Thus, the concept is encoded in the structure contributing to the motivic, gestural, timbral aspects to convey layers 'curling and uncurling' at different rates.

[11] Image from http://www.atoptics.co.uk/highsky/nacim17.htm (accessed 18 December 2015).

Structure and form

Form is something against which to push your imagination free.[12]

As I have developed my control of musical structures, their importance in my compositional process has increased. I feel structure should contribute to the meaning or concept of a piece, acting as a solid framework within which compositional material unfolds. Although formal structures can be perceived to place limitations upon a creative process, form aids the creation of an environment conducive to directed creativity, as expressed by many artists:

> 'Setting one's boundaries and being free within them.'[13] (Sierra)

> 'Form can be both a limit and liberation.'[14] (Burrows)

For many composers, structural frameworks with diversion points are important, as discussed below. The balance between structural support and creative freedom is arguably one of the most fundamental aspects of the musical architecture.

I have gradually developed personal creative strategies to conceptualise form. These strategies often involve extra-musical stimuli from the natural world or an imagined journey through a space to form the structure, whilst still allowing an inner logic to determine musical direction outside of its initial framework. Although each piece has its own unique architecture, there are common structural traits across several of my works.

I have found palindromic structures to be particularly effective as the inherent symmetry allows for connections to be created across a work's architecture. Indeed, symmetry, in both its perfect and altered forms, has been used by many composers in the past, and is especially prevalent in the works of a number of early twentieth-century composers, most notably Béla Bartók and Anton Webern.

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[12] Burrows, *The Choreographer's Handbook,* p.28. (accessed 18 December 2015).
[13] 'Spotlight on: Arlene Sierra (2006/7)', http://www.arlenesierra.com/biography/interviews.html (accessed 18 December 2015).
[14] Burrows, *A Choreographer's Handbook,* p.28.

Arguably Bartók's best-known work that engages with symmetry on multiple levels is *Music for Strings, Percussion and Celesta* (1936).[15] The piece is structured on a pitch cycle from A to E-flat and back to A. The first half emanates outwards from the pitch A via a simultaneous ascending and descending cycle of 5ths, reaching the most harmonically distant pitch of E-flat (a tritone away from A) at b.44. The piece then builds to a dramatic climax, centred on E-flat, in b.56, reinforced by the loudest dynamic in the work, *fff*. The result of Bartók's approach is that A becomes a central axis with the other pitches forming symmetrically (on a vertical plane) around this point.

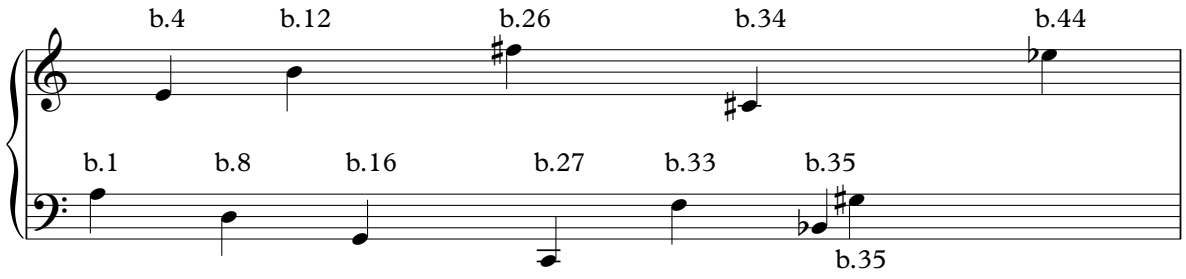

Figure 1.2. Ascending pitch cycle from Bartók's *Music for Strings, Percussion and Celesta*.

After the climax at b.56, Bartók works back towards A by retracing his steps through the cycle, though at this point mostly through 4ths rather than 5ths. The cycle returns to A at b.77, reaching this point in a shorter timeframe than the initial ascent to E-flat, effectively creating a skewed palindrome around the climactic point at b.56 (on a horizontal level).

[15] This work has been the subject of numerous analyses. See, for example, Christopher Mark, 'Symmetry and Dynamism in Bartók', *Tempo: New Series*, No. 183 (1992), pp.2–5; Jonathan W. Bernard, 'Space and Symmetry in Bartók', *Journal of Music Theory*, 30/2 (1986), pp.185–201; Stephen Johnson, 'Bartók's Music for Strings Percussion and Celeste', BBC Radio 3 broadcast from 7 October 2007, http://www.bbc.co.uk/programmes/b0080zwl (accessed 8 September 2016).

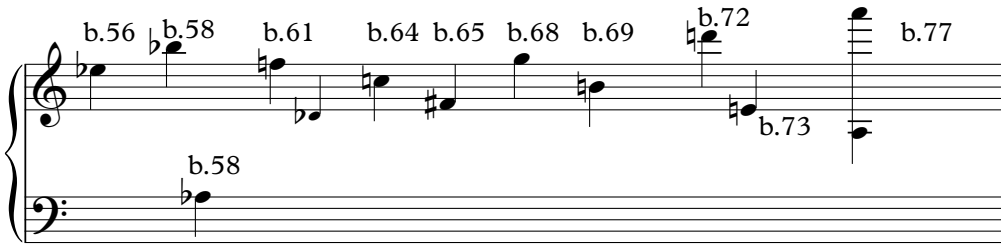

Figure 1.3. Descending pitch cycle from Bartók's *Music for Strings, Percussion and Celesta*.

The movement then concludes with a coda in bb.78–88, which demonstrates another form of symmetry being used in this work. Bartók superimposes the original melody with its inverted form, allowing the two to sound simultaneously and creating the effect of a horizontal mirror between the two melodies. This is accompanied by the celesta figure which is itself symmetrical around the axis point of A, demonstrating the multi-layered symmetrical forms in this work.

Following the coda, there is a short three-bar figure, which acts as a microcosm of the larger symmetrical structure; this ascends from A up to an E-flat before returning to A to conclude the movement. In addition to the summarising nature of the pitch content, Bartók also reverses the durational characteristics of the ascent and descent from A to E-flat. In this instance, the ascent to E-flat is quicker than the descent back to A, reversing the larger-scale structure, rendering this as a miniature reflection of the whole movement.

A similar instance of a kind of microcosmic reflection of a larger musical structure can also be found in the film interlude from the second act of Alban Berg's *Lulu* (1937).[16] In this interlude symmetry can be seen working on multiple levels, as this passage of music is constructed as a palindrome, and is itself at the centre of the work. The central point of this palindrome is indicated by a piano rising and falling arpeggiated figure, and thus symmetrical forms are encoded across multiple levels in this work, see figure 1.4 below.

[16] This fascinating passage of Berg's *Lulu* has been much discussed. See, for example, Douglas Jarman, *Alban Berg: Lulu* (Cambridge: Cambridge University Press, 1991), pp.56–66; David John Headlam, *The Music of Alban Berg* (New Haven: Yale University Press, 1996); Douglas Jarman, 'Berg, Alban', *Grove Music Online. Oxford Music Online.* (Oxford University Press), http://www.oxfordmusiconline.com/subscriber/article/grove/music/02767 (accessed 2 November 2016).

Figure 1.4. Central point in Berg's *Lulu*, showing the palindromic arpeggiated figure that is crucial to the larger structural palindrome across the work.

The concepts laid out here in Bartók's piece, and echoed in Berg's work, have had a great influence on my own work and particularly have bearing on my pieces *Roil in Stillness* and *Rainbow Fires,*

that engage more consciously with symmetry within their structures. In both of these pieces symmetry occurs in the pitch structure, across the architecture of the work, as well as the musical material. In both instances the second half of the piece is truncated creating a 'skewed' palindrome in a similar manner to *Music for Strings, Percussion and Celesta*. This is particularly evident in *Roil in Stillness,* which maps the structure of a ripple, when representing the second half of the ripple the musical material retraces its step through the same pitch centricities, but now in half the time as the first half of the ripple. This structure is discussed further in Chapter Three.

Another composer who also employs symmetry in his work is Anton Webern, albeit in a characteristically more miniaturist form than that seen in Bartók's music. There is a great deal of scholarship on Webern's use of symmetry, with some of the earliest seeds of his symmetrical approach being seen in his *Three Little Pieces* for violoncello and piano (Op. 11).[17] This is particularly true of the first piece, where symmetry governs the melodic and gestural language, though not necessarily with the same precision as one finds in the well-known Op. 27 *Variations*. Such a prototypical form of Webern's more refined symmetrical style evidenced in the later works is to be expected in an early work, such as Op. 11. However, for the present discussion it is the Op. 27 *Variations* for piano that provides the most fruitful line of inquiry.

Indeed, symmetry is to be found in abundance throughout Op. 27; it is embedded in the very musical materials and the architecture within which Webern deploys them. On a structural level, symmetry is clearly discernible, especially in the first movement. This movement, which consists of 54 bars, is divided into three sections of 18 bars each. The first and last of these are related through retrograde, and are characterised by the use of groups of semiquavers. The middle section, which begins in b.19, makes regular use of demisemiquavers, giving this central section of the symmetrical structure an aurally distinct metrical character.

[17] On the symmetrical tendencies of this work, see Robert Clifford, 'Multi-Level Symmetries in Webern's Op. 11 No. 1', *Perspectives of New Music*, 40/1 (2002), pp.198–215. See also, Peter Johnson, 'Symmetrical Sets in Webern's Op. 10, No. 4', *Perspectives of New Music*, 17/1 (1978), pp.219–29; Donna Lynn, '12-Tone Symmetry: Webern's Thematic Sketches for the *Sinfonie*, Op. 21, Second Movement', *The Musical Times*, 131 (1990), pp.644–6.

At a micro-level however, a multi-layered symmetry is embedded in, and underpins, the gestural framework of the whole movement. Indeed, the opening bars of the first movement demonstrate the multiple layers of symmetry to be found in this work. For example, the first four bars consist of entirely symmetrical gestures, as demonstrated in the figure below.

Figure 1.5. Symmetrical relationships in Anton Webern's Op. 27 *Variations*, bb.1–7.

From the perspective of gesture, it is clear that in bb.1–2, the right hand bookends the two semiquavers, with this being mirrored by the placement of the outermost notes in the left hand in b.3 and b.4. Symmetry is also to be found in the intervallic structure of these gestures, with the opening interval in b.3, being the same as that of the second left hand notes in b.2.

This micro-level of analysis reveals a complex, but immediately discernible, symmetrical structure. Webern goes on to use this whole symmetrical unit as part of a larger symmetrical phrase structure, with bb.5–8 being a mirror image of bb.1–4 (see Figure 1.5 above).[18] The similarity

[18] This passage has been covered extensively in analytical literature. See, for example, Kathryn Bailey, *Music in the Twentieth Century: The twelve-note music of Anton Webern* (Cambridge: Cambridge University Press, 1991), p.109; Robert W. Wason, 'Webern's "Variations for Piano", Op. 27: Musical Structure and the Performance Score', *Intégral*, 1 (1987), pp.57–103; Timothy Harenda, 'Symmetrical relationships in Webern's op.27, no.1 for piano', unpublished

between the opening gesture of bb.1–2 and conclusion of the phrase in bb.7–8 confirms this beyond all doubt; this is a carefully conceived symmetrical structure consisting of smaller units of symmetrically-related material.

Elements of palindromic structures can be found in my compositions to varying degrees. Structures of this type are used in *Night Airs, Shadows Create the Night* and *Rainbow Fires*, with 'skewed' palindromes being applied at both macro and micro-structural levels in *Roil in Stillness*, demonstrating some aspects of the techniques seen in the examples discussed above.[19] The structures of *Night Airs* and *Shadows Create the Night* are also informed by similar narrative trajectories that determine the compositional parameters of musical and narrative elements. Both pieces are loosely ternary in form, though there are elements of symmetry within the structure that begin to be explored.

Table 1.1: Structure of *Night Airs.*

***Night Airs* for mixed ensemble**		
Section	**Subsection**	**Bars**
A	1) Stillness ♩= 68	1–24
	1a) Piu Mosso ♩ = 88	25–52
B	2) Con moto ♩ = 108	53–108
A	3) Stillness ♩= 72	109–124 (end)

Night Airs adheres more closely to a traditional ternary form (Table 1.1) with the two outer sections being related sonically. However, the structure does not create the full palindromic effect, where the two outer sections would appear as though reflected in a mirror.

doctoral essay dated 6 November 2013, University of North Texas, supervised by Dr David Schwarz, available online at http://www.davidbardschwarz.com/pdf/harenda.pdf (accessed 19 October 2016).

[19] The term 'skewed palindrome' refers to an imperfect symmetrical structure, where one side is longer or shorter than the other.

Although based loosely on ternary form, *Shadows Create the Night* is better understood as six subsections.

Table 1.2: Structure of *Shadows Create the Night.*

***Shadows Create the Night* for piano quintet**		
Section	**Subsection**	**Bars**
A	1) Mysteriously ♩= 80	1–32
	2) Grave ♩= 56	33–45
B	3) Moderato ♩=88	46–73
	4) Allegro ♩ = 120	74–99
A (order reversed)	5) Presto ♩ = 138	100 –162
	6) Moderato ♩ = 80	163–178 (end)

This looser ternary form has an overarching palindromic structure due to the second iteration of the 'A' section, presenting the two subsections in reverse order. The colour-coding in Table 1.2 shows how sections are related according to their musical material. As the piece progresses, elements of tessitura, and temporal relations help to articulate the structure and its narrative.

In section A, the tempo is slow and the overall tessitura is low; as the piece progresses the tempo increases and overall tessitura rises. In the final subsection the tempo relaxes while the tessitura keeps rising. These musical features were defined by, and help to convey, the formation of darkness from shadows. As the night passes these elements become increasingly agitated as they are gradually pulled back towards the soundworld of dawn.

In both *Roil in Stillness* and *Rainbow Fires*, palindromic structural devices are employed more explicitly. Both pieces have a skewed mirror effect: in *Roil in Stillness* the 'centre' is the peak of a ripple, with the second half being truncated to create a skewed symmetrical effect. Although this is not a true palindrome, a palindromic effect is aurally recognisable and helps create aural cohesion. Both pieces are discussed further in Chapters Three and Four.

The use of palindromic devices allows for repetition and reiteration of materials whilst affording considerable scope for musical transformation. Repetition and restatement are important structural devices aiding the formation of layers of musical meaning. The restatement of material

facilitates an evolutionary process whereby the original gesture becomes a new musical entity through the gradual transformation of the original. Indeed, as Burrows notes, 'Repetition is a device to emphasise or erode something by showing it more than once.'[20]

I generally avoid exact repetition, instead preferring to transform gestures to make each restatement significant. This effectively creates something new while stating something familiar, an idea summarised by Morton Feldman:

> [Samuel Beckett] would write something in English, translate it into French, and then translate it back into the English that conveys that thought... I see that every line is really the same thought said in another way. And yet the continuity acts as if something else is happening. Nothing else is happening.[21]

Repetition and varied repetition are important techniques that allow for meaning to be constructed across the structure. This is especially true in more fluid pieces as repetition becomes even more pronounced in its importance, as expressed by Burrows: 'It is a moment of recognition for the audience in a sea of change.'[22]

Although my other works are not based explicitly on ternary or palindromic structures, the idea of varied repetition continues across structural levels to forge broader formal connections. Despite the structures of *Momentations*, *Stormscape*, *Nacreous Contours*, and *Apparitions* having fewer similarities, an engagement with extra-musical stimuli determines aspects of their structure showing the expressive potential of such an approach.

Momentations provides numerous instances of varied repetition being used as a structural device. This piece is based on momentum, leading to a gradual tempo increase. Each section

[20] Burrows, *The Choreographer's Handbook,* p.8.
[21] Morton Feldman, '1984 Darmstadt Lecture', ed. Chris Villars, available at http://www.cnvill.net/mfdarmstadt1984.pdf (accessed 15 February 2016), p.4.
[22] Burrows, *The Choreographer's Handbook*, p.8.

develops a previously established gesture, foregrounding different gestures in various sections, whose divisions are blurred to evoke a sense of being one continuous movement. *Momentations* was conceived in three broad sections, subdivided into seven subsections. Table 1.3 outlines each section, highlighting motivically-linked material through colour-coding.

Table 1.3. Structure of *Momentations.*

Momentations for wind quintet		
Section	Subsection	Bars
A	1) Moderato ♩=69 and Piu mosso ♩ = 80	1–39
	2) Allegro ♩=100	40–62
	3) Allegro (piu mosso) ♩=120	63–78
	4) Moderato ♩=100	79–91
B	5) Moderato (meno mosso) ♩=90	92–115
C (A1)	6) Allegretto ♩=108	116 –165
	7) Allegretto (continued)	b.166–(end)

Despite these sectional divisions, the overarching structure of *Momentations* can be interpreted as one continuous section where gestures keep evolving, with different subsections focusing on particular gestures more than others. The pitch-range gradually increases, reaching its peak in the final passages and drawing the piece to an emphatic conclusion.

Both *Momentations* and 'Firestorm' generate increasing tension throughout, marking the peak of this tension with a sudden and abrupt ending. *Stormscape* is based on the trajectory of a storm; the second movement, 'Firestorm', is more explicitly based on the natural phenomenon of firestorms. These occur when a large and destructive fire becomes so intense that it creates its own wind system. The gestures of 'Firestorm' are based on this concept, with this influence being most apparent through increasing intensity, which articulates the structure.

The structure of 'Firestorm' is defined principally by its motivic treatment and textural intensity, constructed broadly of four sections that bring certain gestures into focus. The details of these gestural materials, which are subject to transformative processes, will be discussed later in this chapter. Such transformations allow for the development and simultaneous exploration of the

main gestures in the final section, leading to exponentially increasing intensity to the end. Table 1.4 summarises the overall structure of 'Firestorm' and indicates broad motivic relationships through colour-coding.

Table 1.4. Structure of 'Firestorm'

'Firestorm' – structure		
Section	**Subsection**	**Bars**
A - Introduction	1) Con moto ♩=112	1-26
	2) Con moto ♩=112	27–49
B	3) Presto ♩=36	50–68
	4) Presto ♩=136	69–98
	5) Presto ♩=136	99–120
C	6) Presto ♩=136	121–152
	7) to Maestoso ♩=90	153–163
D	8) A tempo, presto ♩=136	164–179
	9) A tempo, presto ♩=136	180–210

The final section ('D'), functions, in part, as a transformative recapitulation of the main gestures (and their developed forms) into a new musical synthesis. It builds through an intensity that is not allowed to dissipate, leaving the image of the firestorm hanging in the air unresolved.

Nacreous Contours is also based on the idea of increasing intensity, manifested through increasing tempo, tessitura-structure and gestural language. The structure follows an imagined journey through a nacreous cloud from the low grey to the higher lighter clouds, which can be interpreted as going from low to high energy levels. Temporal, tessitura, pitch-centricity, gestural, and timbral changes all contribute to punctuate the structure, which is divided into three main sections, the last two of which are subdivided into three (Table 1.5). Across the work the overall tessitura rises and the tempo increases, reflecting the narrative of travelling through the cloud.

Table 1.5. Structure of *Nacreous Contours.*

***Nacreous Contours* for solo clarinet**		
Section	**Subsection**	**Bars**
A	1) Freely, charcoal grey with glimpses of light ♩= 76	1–13
B	2) Iridescent blues ♩= 90	14–20
	3) Meno mosso, freely ♩ = 60	22–23
	4) A tempo ♩= 90	24–33
C	5) Pearly white, sparkling and blinding ♩ = 100	34–39
	6) Meno mosso, freely ♩ = 60	40–41
	7) A tempo ♩= 100	42–48

Apparitions, for 12-voice SATB choir, has a markedly different structure from my other works. The piece consists of seven episodes that explore the text through different textural methods.

At both macro and micro structural levels, the avoidance of overly predictable patterns and the willingness to strive for musical development that extends beyond the expectations of the listener, is of paramount importance. The prominence of this idea increases through my works as I began considering the possible relationships of 'information theory' to music more deeply. The difficulties in balancing this approach, which can end up subverting the intended outcome if taken to extremes, have become apparent through my compositional experience. Similar problems are raised for artistic outputs more generally by Burrows, who notes: 'Sometimes it's useful to observe the obvious, and sometimes it's useful to subvert it. If you subvert the obvious, are you doing it out of habit, or by choice?'[23] Indeed, Burrows expands this idea further to say that the rate of change must also change, offering a different plane of variation.[24]

Thus, it is clear that pacing and structural considerations are important in my compositions. The challenge for composers is to affect change in a meaningful manner, balancing repetition as a form of development without inducing repetitious stagnation.

[23] Burrows, *The Choreographer's Handbook,* p.64.
[24] Ibid, p.87.

Gestural language: melodic and rhythmic devices

Motivic gestures have an especially prominent place in my music. Whereas the role(s) of other compositional elements in my music have gradually changed, gesture has remained of great importance, as it is intrinsically linked to all other elements. I have felt a strong musical affinity with visual elements and other performance arts, such as dance, a context in which my gestural language can be best understood. Gesture in musical terms has been understood as having a wide array of definitions. Thus, it is useful to refer to Hatten's broad definition of gesture here.

> Musical gesture is movement (implied, virtual, actualised) interpretable as a sign whether intentional or not, and as such it communicates information about the gesturer…Another way specifying gesture is a movement that is marked as meaningful (Lidov 1993). The particular dimension of relevant meaning may be marked biologically and/or culturally.[25]

The type of gestures and gestural development discussed below should be understood as what Hatten refers to as 'thematised gestures'. Thematised gestures play an important structural and expressive role within the unfolding of a musical form. They are not necessarily tied to specific pitch structures or one metric identity, but it is the overall intentionality of shape and character that helps to create meaningful links between separate musical material. Through this, they can be understood as being part of the same gesture or part of that a process of gestural development.[26]

I feel visual shapes and movements can be captured within a gesture, affecting pitch-structure and harmonic language and encoding a certain aural shape or movement, often characterised through interval choice. My gestural language often stems from extra-musical material: the shapes and movements from these materials influence the way gestural formations are created and interact with each other.

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[25] Robert S. Hatten, *Interpreting Musical Gesture* (Bloomington, Indiana University Press, 2004) p.125.
[26] Robert S. Hatten, 'A Theory of Musical Gesture and its Application to Beethoven and Schubert', *Music and Gesture*, ed. Anthony Gritten & Elaine King (Aldershot: Ashgate Publishing, 2006), p.8.

My gestural language is characterised by economy, allowing musical material to be transformed and explored fully through the development of gesture across the trajectory of the piece, leading to the creation of motivic gestures that evolve within such a framework. The use of this device establishes aural connections across the architecture of the piece. Often the initial gesture is relatively short and this is often developed through extension and fragmentation.

In this section I aim to show how gestural devices are used creatively in my works. My discussion begins with 'Firestorm' which is characterised by a strong gestural language, drawing upon the imagery and shapes of firestorms, creating evocative gestures: in effect, the gestural language is an ekphrastic expression of a firestorm.

The piece is constructed from three main motivic gestures and one returning theme: the first motivic gesture is characterised by a long crescendo note followed by a short accented note (Figure 1.6); the second, a rising and falling chromatic figure (Figure 1.7); the third, an undulating triplet figure (Figure 1.8).

Gesture 1 – bb.30–36, long crescendo note followed by short accented note

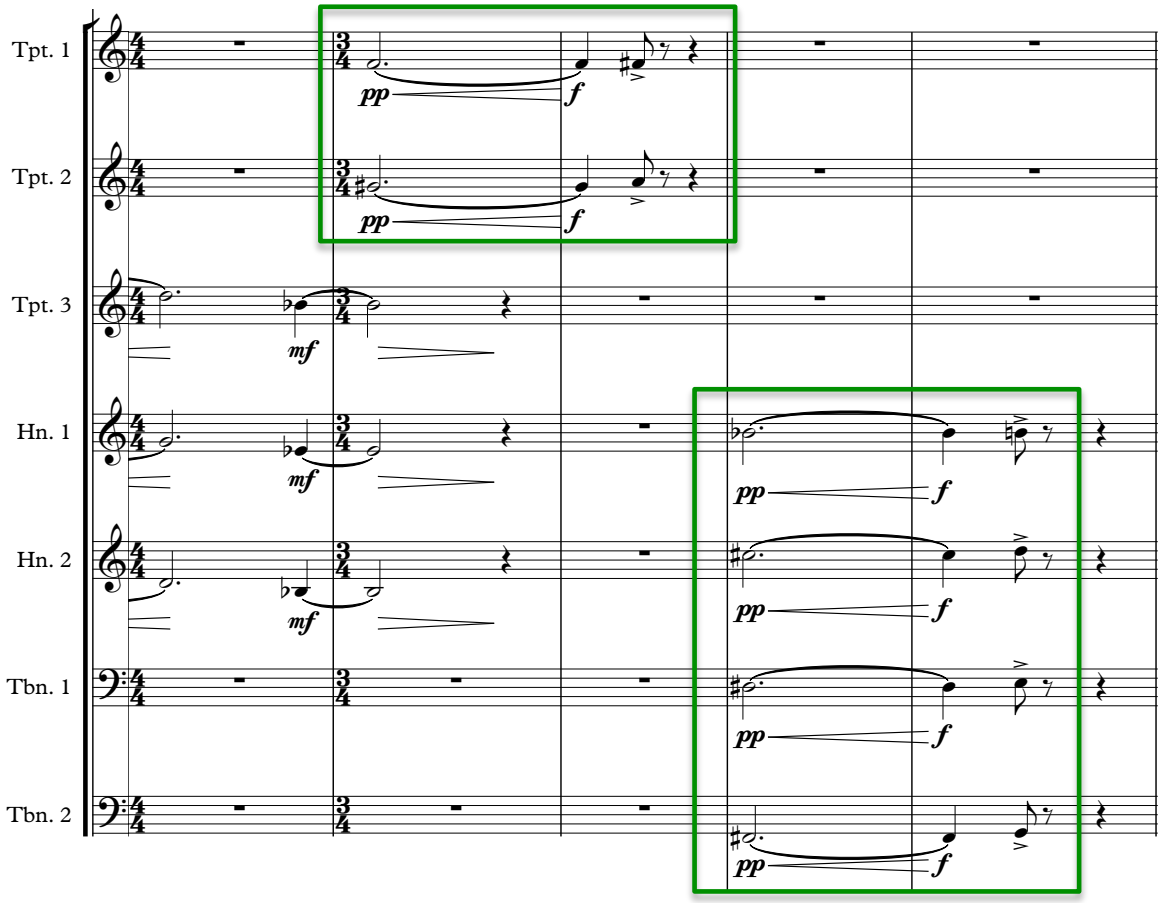


Figure 1.6. 'Firestorm', bb.30–6. Gesture 1.

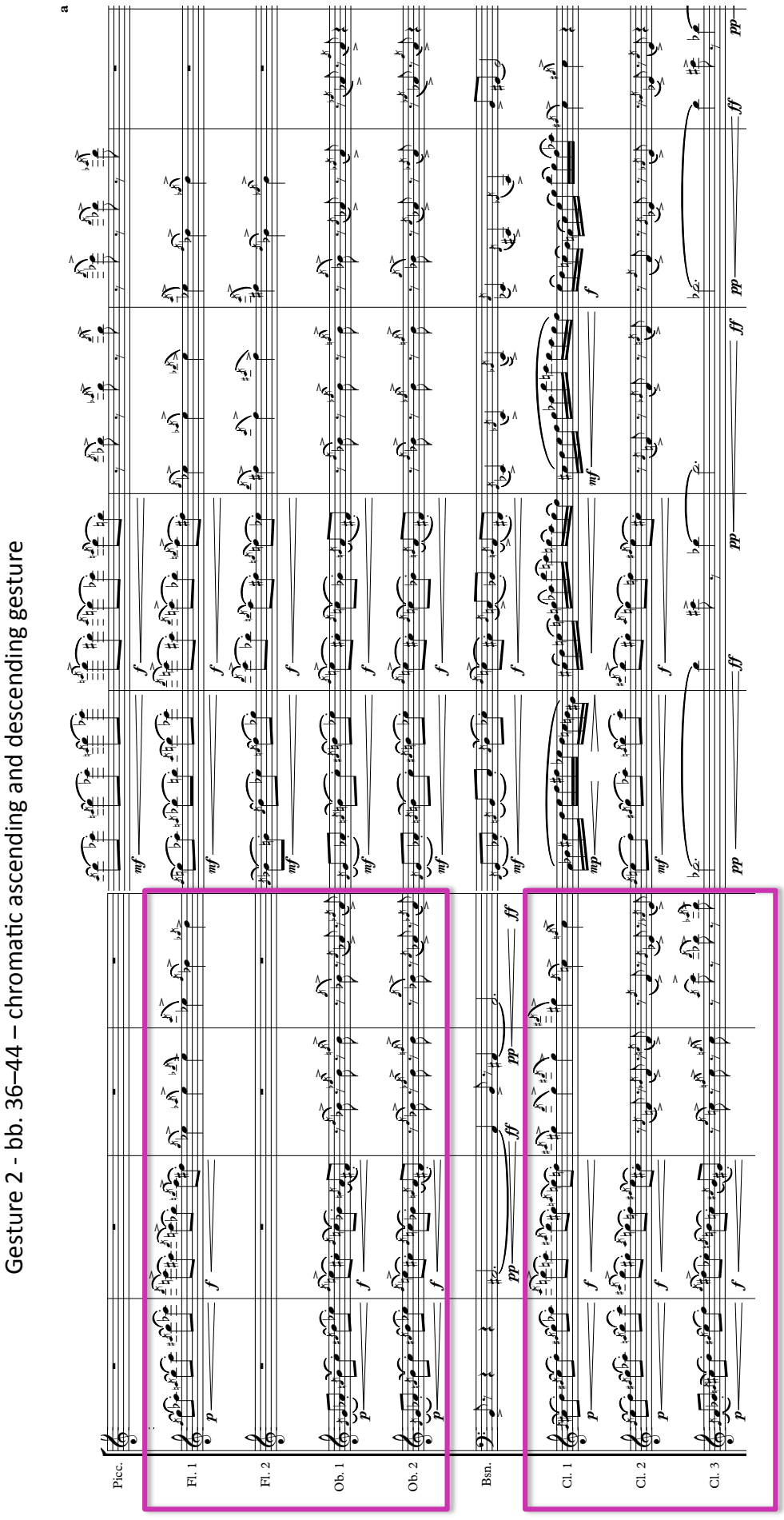


Figure 1.7. 'Firestorm', bb.36–44 Gesture 2.

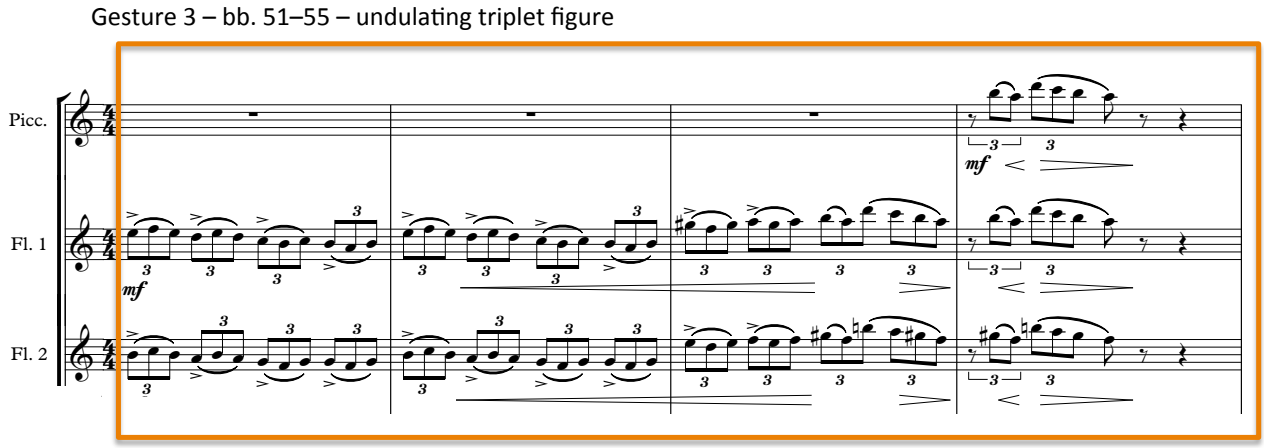


Figure 1.8. 'Firestorm', bb.51–5 Gesture 3.

An expansive theme also has a strong structural and motivic role, working alongside the three main gestures. The theme is first heard in bb.20–6 (Figure 1.9). Before its second main statement in bb.153–63, the theme is woven through the texture in counterpoint to the other motivic gestures. The second statement of the theme concludes section C, forming a loosely palindromic structure across sections A–C (Table 1.4) before the final section, which serves a recapitulatory function, synthesises the themes and gestures forming new material.

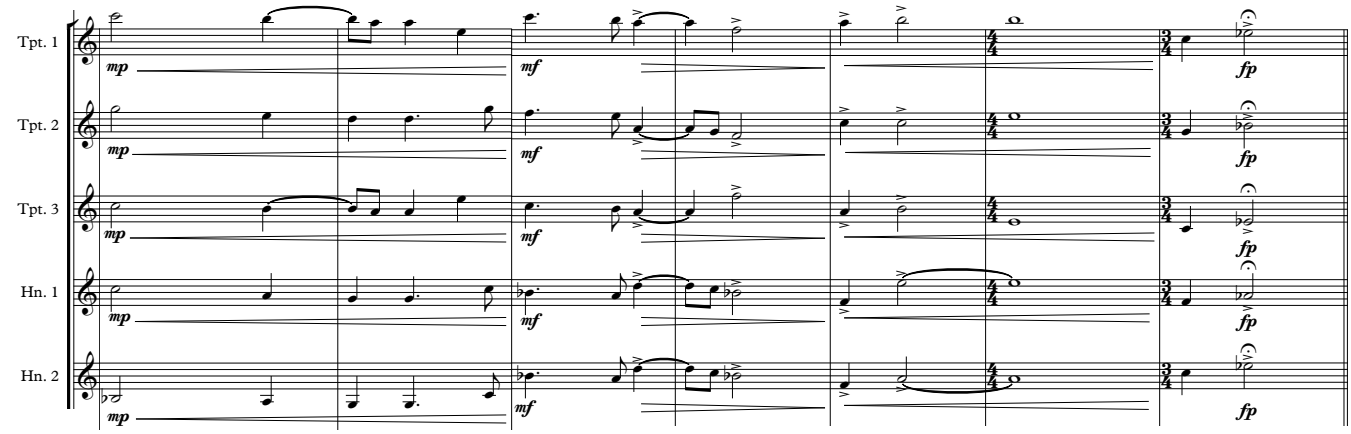


Figure 1.9. 'Firestorm', bb.20–6. Initial thematic statement.

Throughout the piece each gesture undergoes several transformations and interactions. In bb.33–9, gesture 1 is presented in shifting layers, creating a constant swelling motion with fluctuating sonorities as it is passed between the trombones, horns, and saxophones. The first significant developments of gesture 1 are found at b.51.

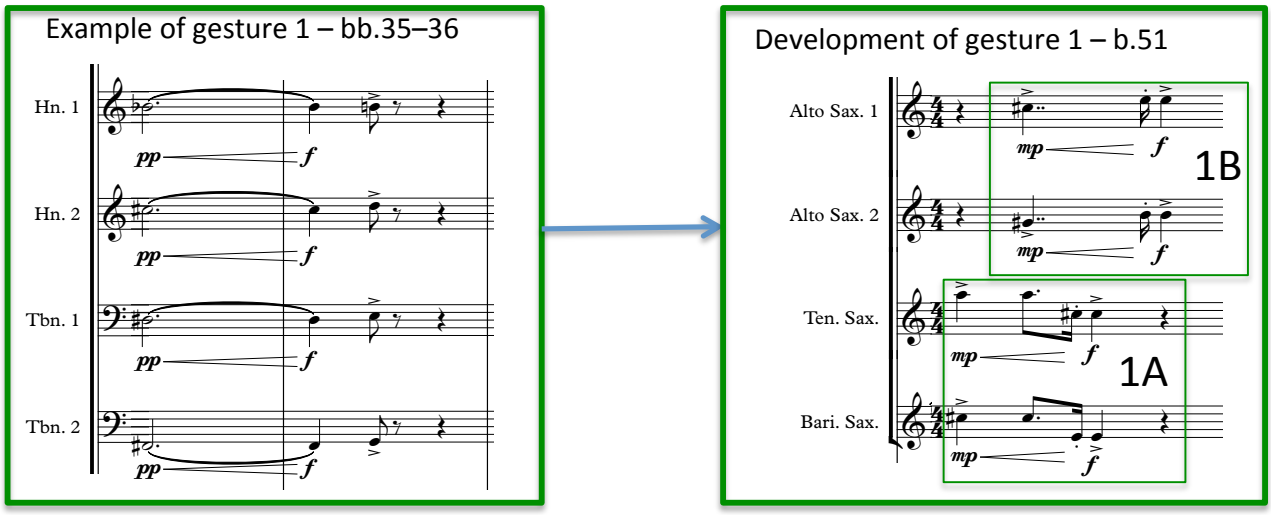


Figure 1.10. Development of Gesture 1 in 'Firestorm'.

For example, b.51 sees two developments of gesture 1: both of these retain the long note followed by a short accented note pattern (Figure 1.10). In the tenor and baritone saxophone, the long note is split and followed by two short notes, with the second of these being accented. The long note division is not present in the second development in the alto saxophones, though this is also followed by two short notes rather than one. In both cases the whole gesture has been truncated. The superimposition of these developments creates a driving rhythmic counterpoint. Each of these developments, labelled gesture 1a and 1b, is further developed through extension in 1c, and by the removal of the long note in 1d (Figure 1.11).

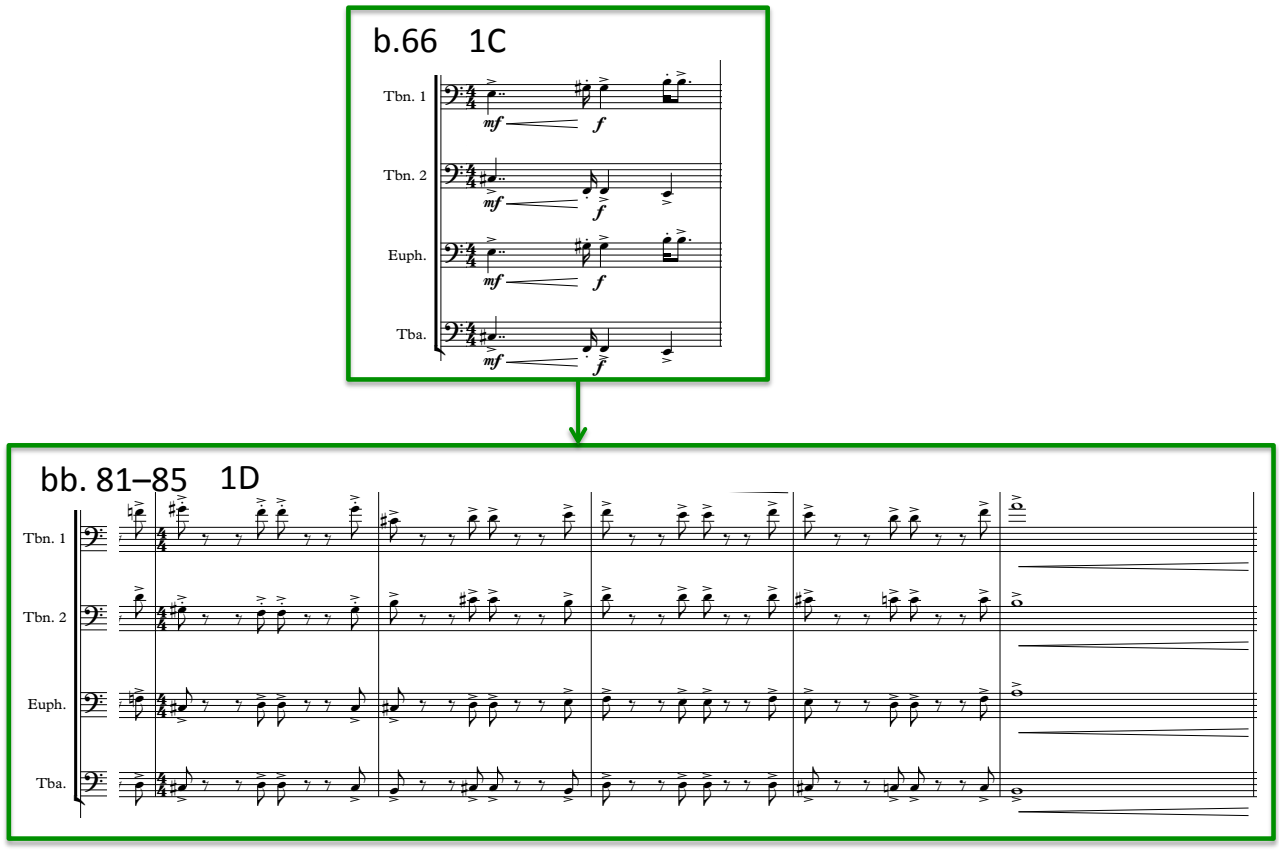


Figure 1.11. Further development of gesture 1 in 'Firestorm'.

The fundamental shape underpinning gesture 2 is an ascending and descending chromatic line. This defining feature creates gestures that retain both a distinct individuality and a sense of aural connection, helping to evoke swirling wind and build the textural and harmonic density through chromaticism. The first presentation of gesture 2 happens in bb.36–9 where rising quavers with chromatic grace notes create rhythmic unevenness (Figure 1.12). This rhythmic characteristic of gesture 2 is soon transformed into straight semiquavers (bb.45–6 (2b)). This gesture is further extended through misaligned layering, creating flurries and swirling motions; see bb.60–3 (2a(i)). Gesture 2a is transformed rhythmically to form version 2b; these two gestural developments appear in close proximity. Together, they create a sense of slowing through rhythmic augmentation from semiquavers to triplet quavers. Gesture 2 is further developed through its interaction and synthesis with gesture 3.

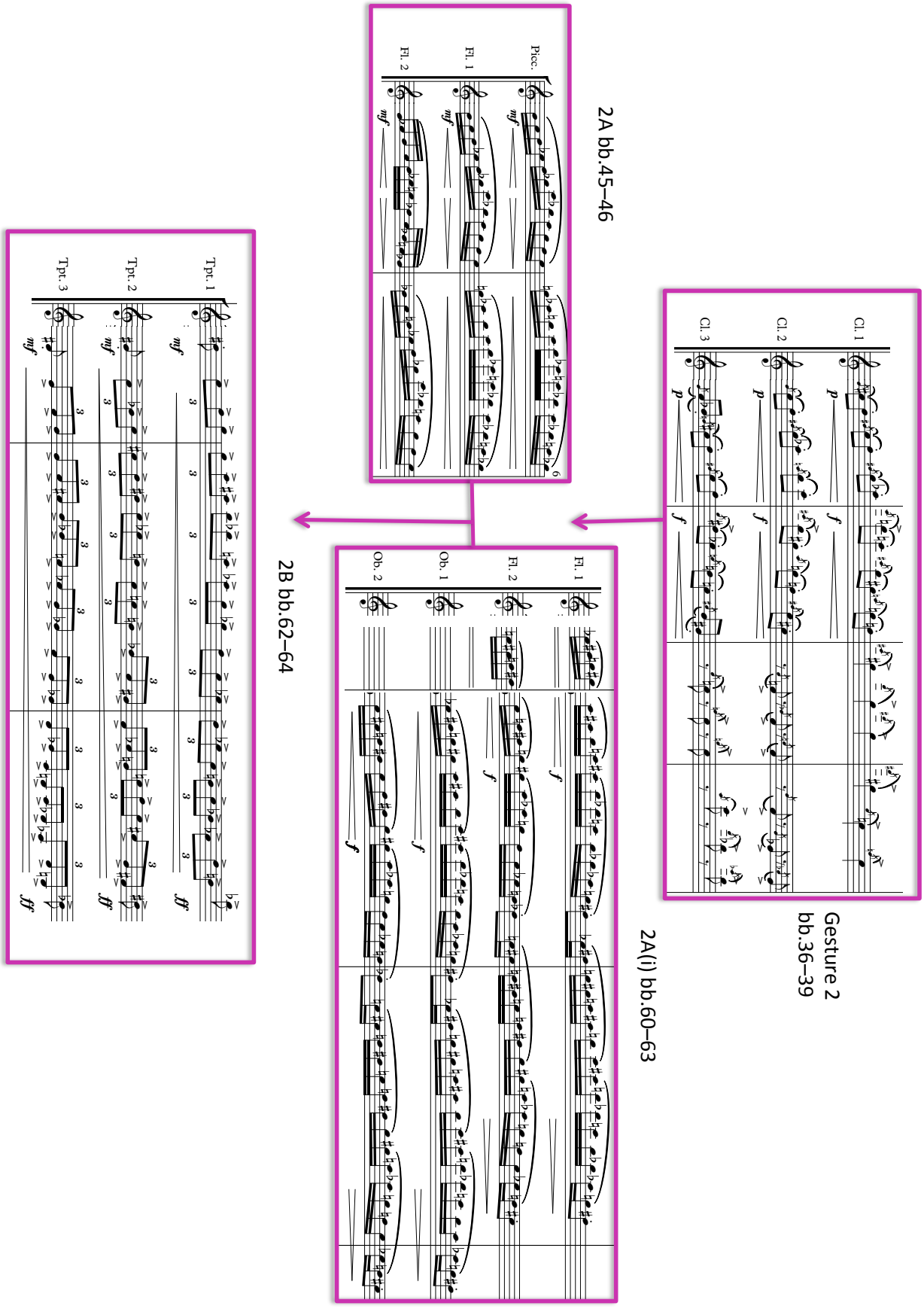


Figure 1.12. Gesture 2 developments in 'Firestorm'.

Gesture 3 (undulating triplets) is also developed through various devices, particularly frequent fragmentation and extension. Figure 1.13, bb.68–73 shows an example of such gestural development. In addition to the larger scale developments, there is an internal sense of development in the original gesture itself. This is evidenced by the rhythmic displacement of the final figure forwards by one triplet quaver, disrupting the sense of metric regularity: an example of this occurs at bb.70–1 in the clarinets, where the last two beats are repeated but displaced by one triplet quaver rest. In b.71 this figure is fragmented and rhythmically displaced in both the alto saxophones and trumpets. The gesture is also fragmented from the last two beats of b.70 into b.71, where it is further displaced by four beats and presented in flute and oboe 1, being extended with an additional quaver and crotchet.

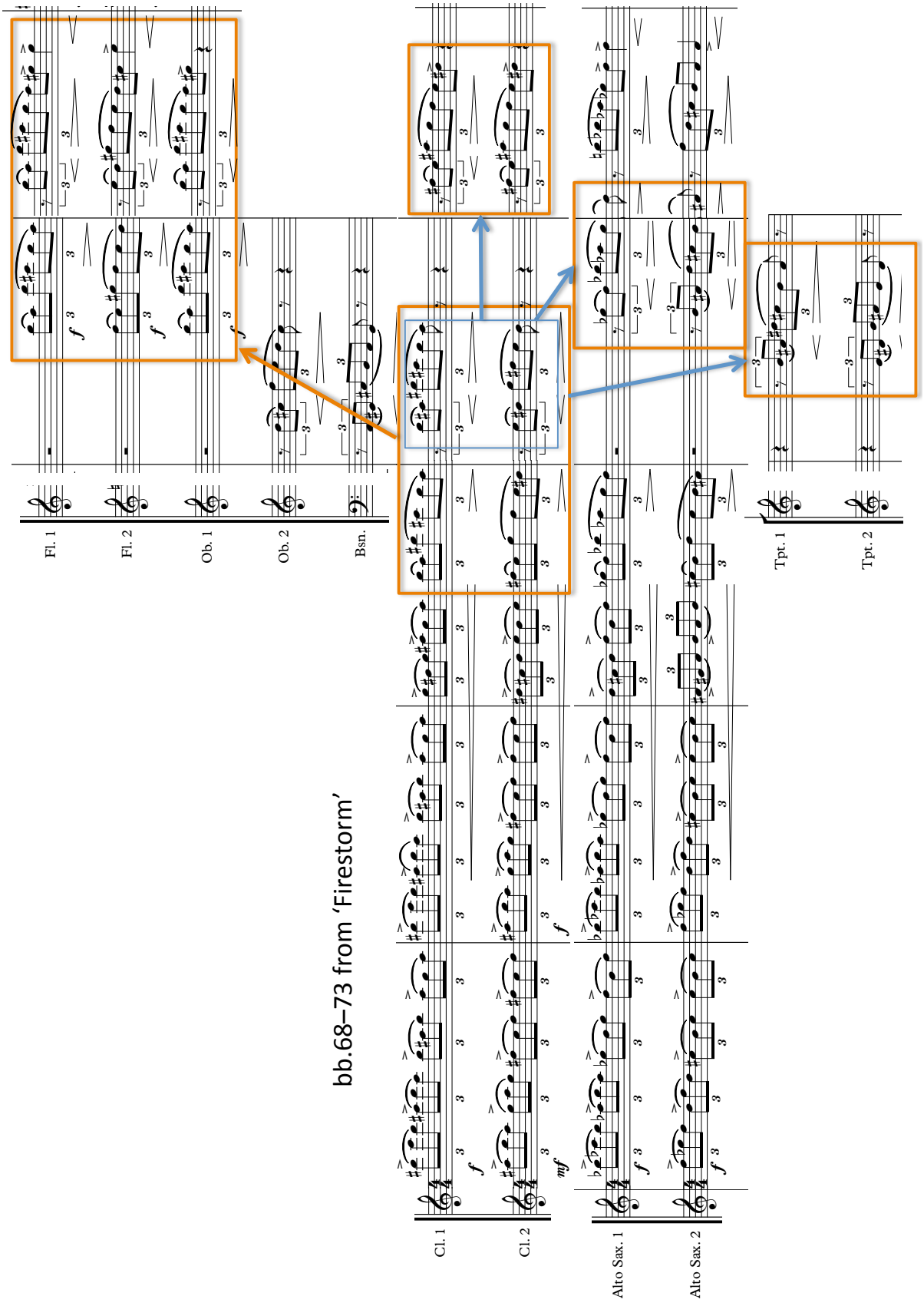


Figure 1.13. ‘Firestorm’, bb.68–73. Gesture 3 development and layering.

Another significant development of gesture 3 occurs through layering, leading to the creation of large sound complexes that shift across the orchestra: the main instance of this happens in bb. 99–112. The gestural entries are staggered across the ensemble, creating highly complex counterpoint and establishing great textural and harmonic density, evocative of the sensory intensity of a firestorm. The greatest density occurs between bb.106–8 with almost the whole ensemble employed, something further intensified by the inclusion of the main theme as an additional counterpoint.

A significant synthesis of gestures 2 and 3 occurs in the final section. In this section, each of the principal gestures returns, presented in different configurations, leading to the grand statement of the main theme in bb.198–208. Thus, the final section functions as a transformative recapitulation, drawing the movement to a close. In b.170 the end of gesture 3 is extended in a new way with the addition of a rising chromatic figure, which itself stems from gesture 2 (Figure 1.14). The rising chromatic figure, in conjunction with the triplet figure from the gesture preceding this, acts to simultaneously develop and synthesise gestures 2 and 3, forming a new gesture first seen in b.171. This newly synthesised gesture underpins the final section with textural layering and increasing harmonic density, in combination with the main theme, which creates a fury of sound mass. The piece ends with a final flurry of material related to gesture 2, leaving the piece hanging as though still in the middle of the firestorm, denying the listener the satisfaction of the dissipation of the storm's energy.



Figure 1.14. 'Firestorm', bb.167–72. Gesture 3 extension and synthesis of gesture 2 and 3 forming a new gesture.

Much like 'Firestorm', the gestural language of *Momentations* is directed by a desire to create a sense of forward momentum. The piece has strong gestural motivic content and is largely driven by the development and interplay of these main gestures: see Figure 1.15.

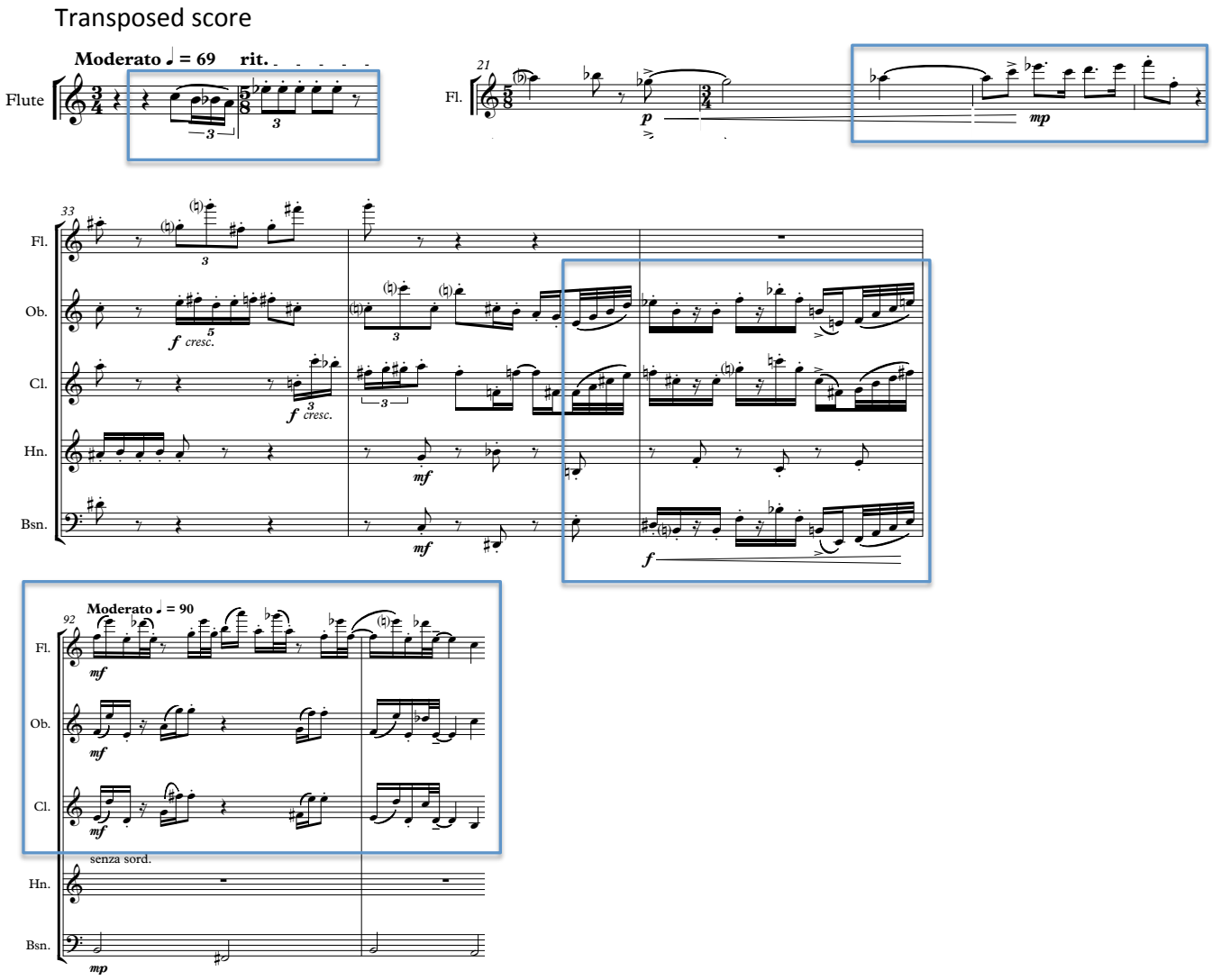


Figure 1.15. Main gestures of *Momentations*.

Momentations is influenced by elements of the gestural languages of Harrison Birtwistle's *Five Distances* (1992)3, Igor Stravinsky's *Octet* (1923), Elliot Carter's *Eight Etudes for Wind* (1950) and György Ligeti's *Bagatelles* (1953) and *Ten pieces for wind quintet* (1968). Birtwistle's control of instrumental interactions, use of register, and exploitation of melodic flexibility of wind instruments

to create a fluid gestural language was something that I found to be creatively stimulating. This especially influenced *Momentations*, in which there are moments where either one instrument is exposed or the ensemble plays rhythmically together, or other points where high-levels of counterpoint leads to a busy texture (Figure 1.16).

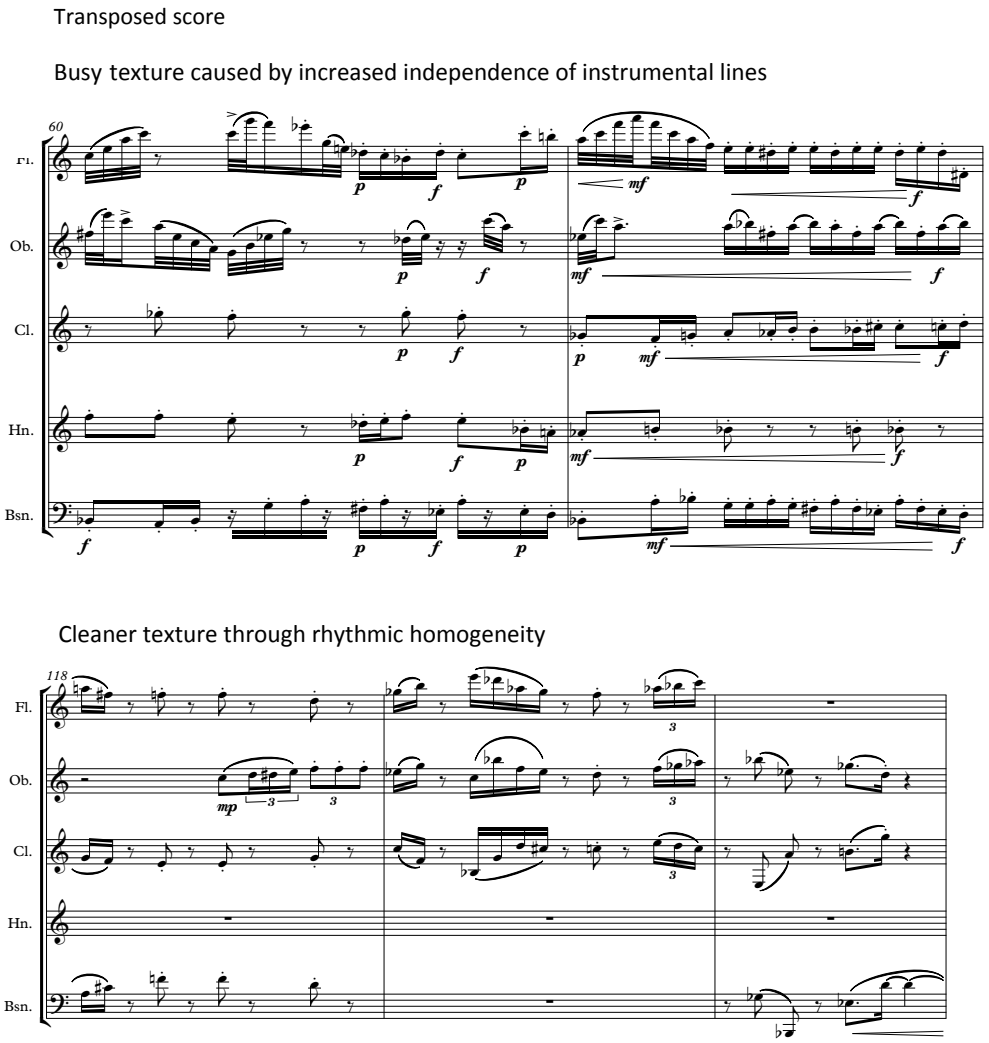


Figure 1.16. *Momentations*, bb.60–1 and bb.118–20. Textures resulting from gestural interactions.

Momentations includes one of the first instances of the 'repeated note' gesture that becomes a stylistic trait in my music. This gesture allows scope for temporal exploration through the use of fluctuating tuplet groups. Such a gesture also permits the exploration of a single sonority and makes timbral modulation a focal point: see Figure 1.17 for examples of this gesture across my portfolio.

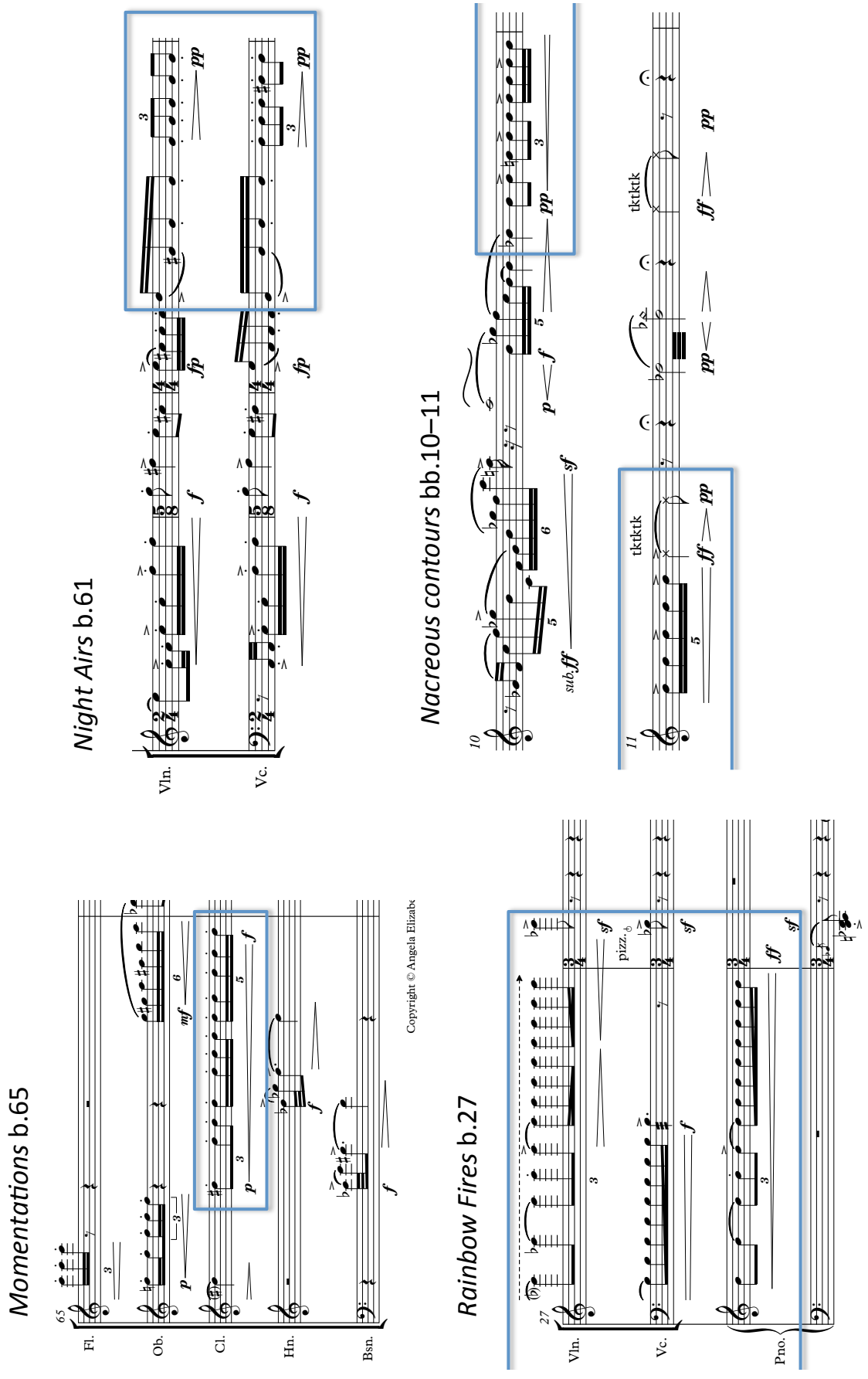


Figure 1.17. Repeated-note gesture in *Momentations, Night Airs, Rainbow Fires* and *Nacreous Contours.*

In contrast to *Momentations*, the gestural language of *Night Airs* is characterised by a less virtuosic approach resulting from a deeper interest in Judith Weir's instrumental works, particularly her chamber music featuring a piano, such as *Piano Trio Two* (2004)*, Piano Quartet* (2000) and *Day Break Shadows Flee* (2014) for piano. Her simple yet fluid gestural language, characterised by distinctively clear modal harmony, was highly appealing. Thus, in *Night Airs* I began to explore a simpler gestural and harmonic language.

The two main gestures underpinning the gestural language of *Night Airs* show this influence. The first gesture in bb.9–12 (gesture 1) pervades the outer 'Stillness' sections, articulated across the ensemble to create timbral shifts within the lyrical line (Figure 1.18).

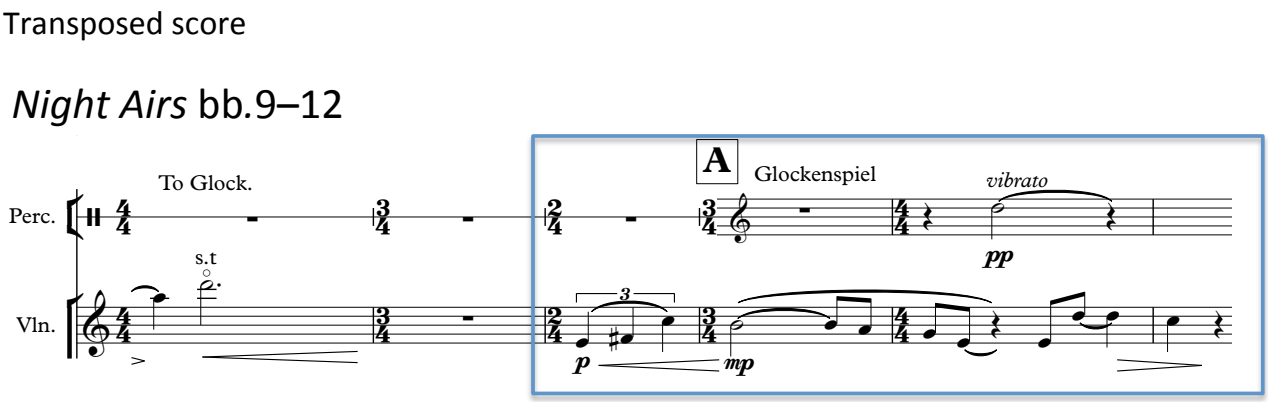


Figure 1.18. *Night Airs*, bb.9–12. Gesture 1 from 'Stillness' sections.

Although gesture 1 (bb.9–12) appears in an unaltered form across the piece, it is also subject to many transformations, including fragmentations, rhythmic alteration, augmentation, extension, truncation, and transposition (Figure 1.19).

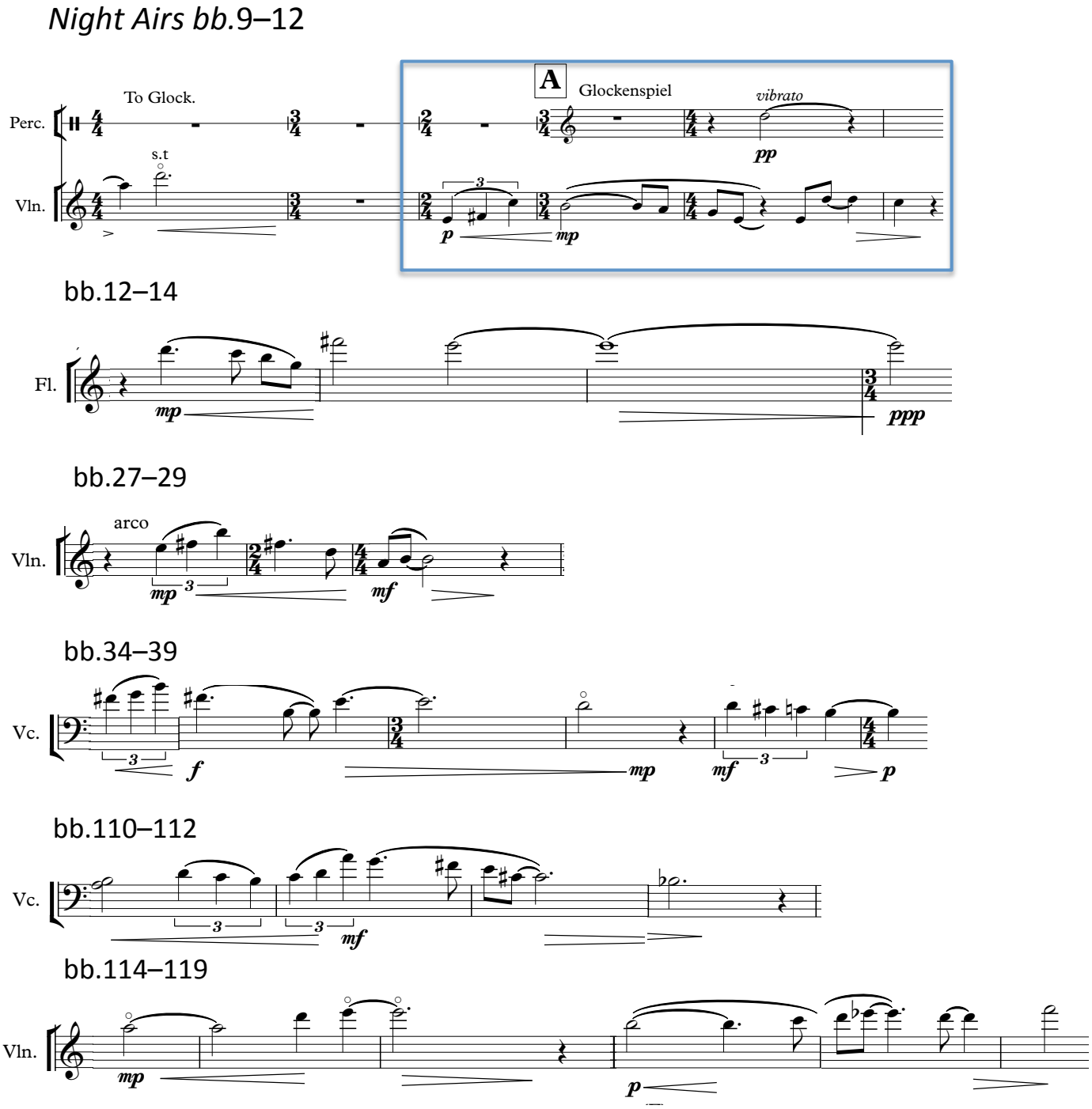


Figure 1.19. ***Night Airs*****, bb.9–12. Developments of gesture 1.**

The second principal gesture is introduced at bb.52–5 (Figure 1.20). This gesture forms the initial cell for the 'Con moto' section (bb.53–108), and undergoes several transformations, synthesising aspects of gesture 1. Such synthesis occurs in Figure 1.21 where the material highlighted in blue indicates a strong relationship to gesture 1.

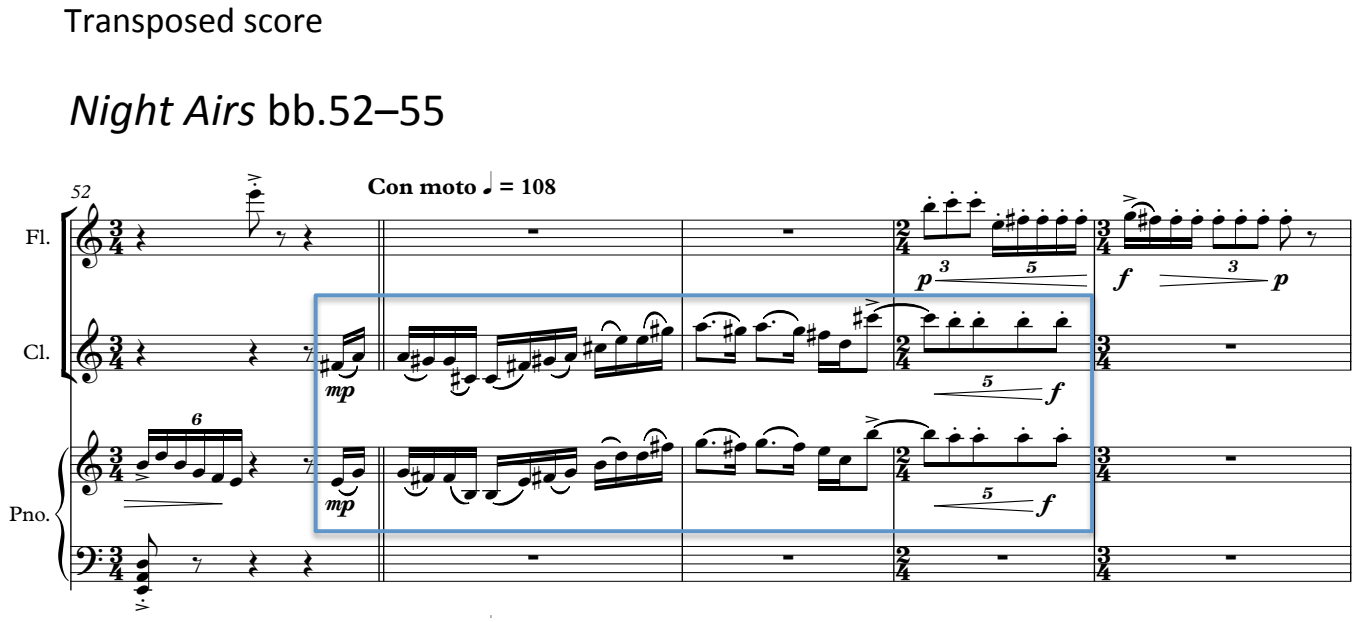


Figure 1.20. ***Night Airs*****, bb.52–5. Gesture 2 and its relationship to gesture 1.**

As the *Con moto* section progresses, the gestural complexity increases in line with greater instrumental independence, leading to busier textures. This creates a gestural and harmonic soundworld that is closely related to *Momentations.* Figure 1.21 shows examples of gestural transformations, both subtle and substantive.

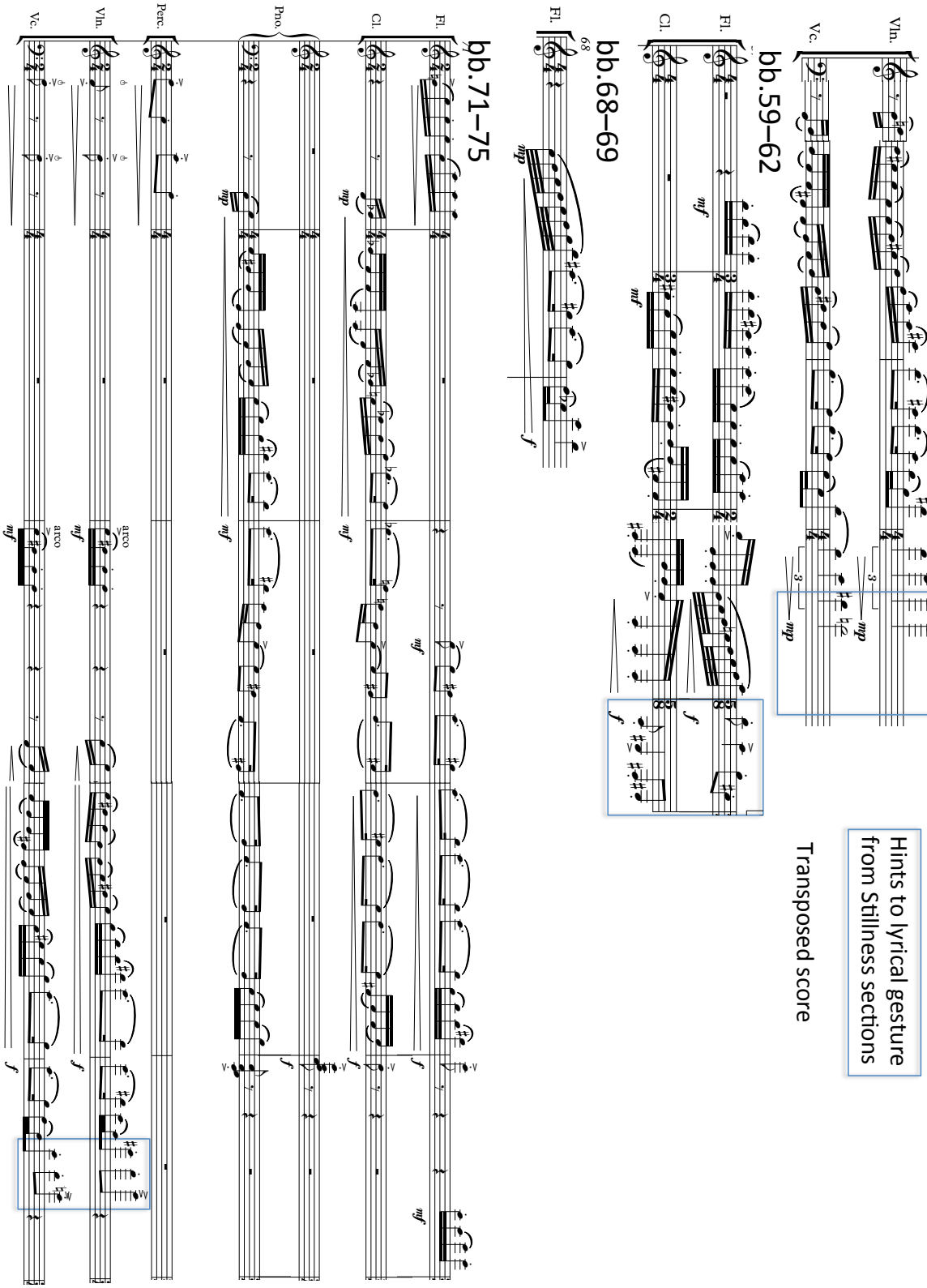


Figure 1.21. Developments of gesture 2 in *Night Airs*.

In *Night Airs* the gestural language is expressive and lyrical. These aspects permeate the language of *Shadows Create the Night*, creating a strong relationship between both pieces. The gestural language of *Shadows Create the Night* is particularly influenced by the exquisite fluidity of Judith Weir and Sally Beamish's expressive folk-like language, as seen in her *Seafarer Trio* (2012). *Shadows Create the Night* is almost entirely built upon the first gesture (Figure 1.22). This gesture is manipulated and transformed leading to new aurally linked material that brings cohesion to the piece.

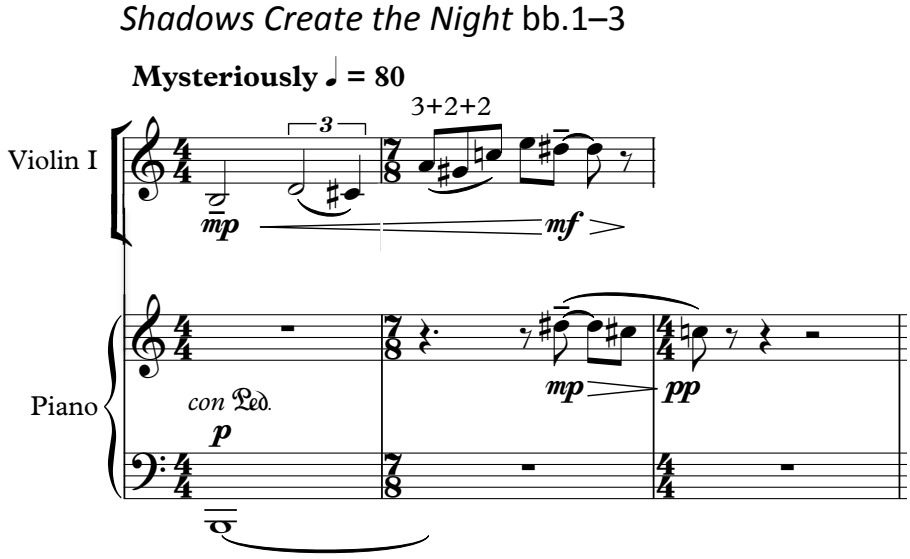


Figure 1.22. *Shadows Create the Night*, bb.1–3. Opening gesture.

This opening gesture has several defining features that are fragmented, extended, or otherwise transformed to generate new material. Its rhythmic form, particularly its 7/8 bar, is a defining feature that is explored. The metrical asymmetry creates a sense of being pushed towards the next gesture, allowing for a seamless transition between phrases, developing into the layering of phrases at different points of alignment.

The colour-coding of Figure 1.23 shows how the initial gesture is typically fragmented and how such fragmentations are further developed. The manner in which this extended material becomes prominent is also demonstrated.

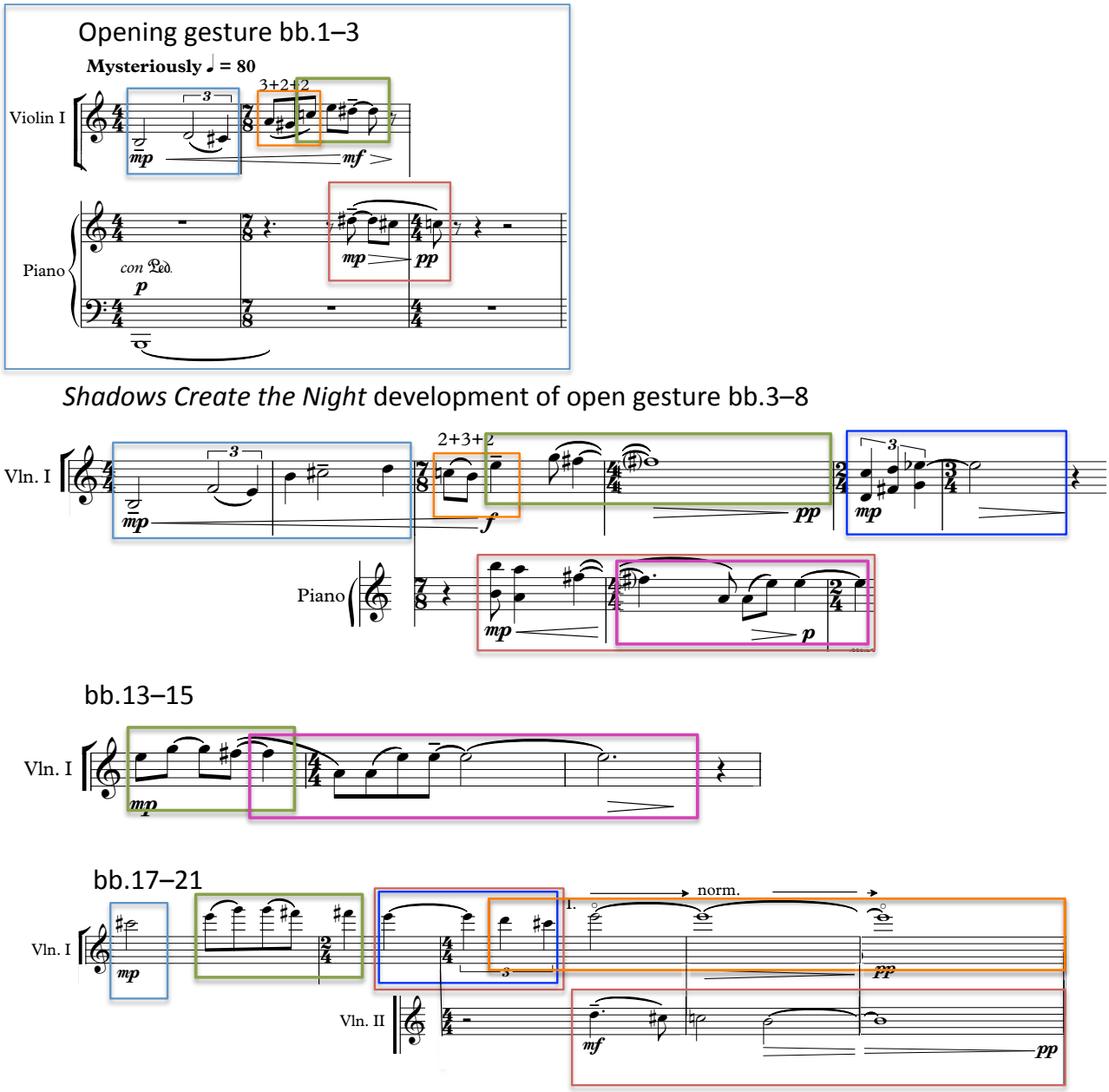


Figure 1.23. *Shadows Create the Night*. Early developments of the opening gesture (subsection 1).

The extended piano figure from b.6 is further developed in the violin bb.14–15. Indeed, this piano figure is transformed several times through further extensions and interactions with the original gesture and other developmental figures: Figure 1.25 shows an example of this from b.53. The treatment of this opening gesture shifts across the musical trajectory, with a simpler fluid gestural

language defining the outer subsections. A gradual increase in complexity and voice independence creates further developments, leading to increased textural and harmonic density.

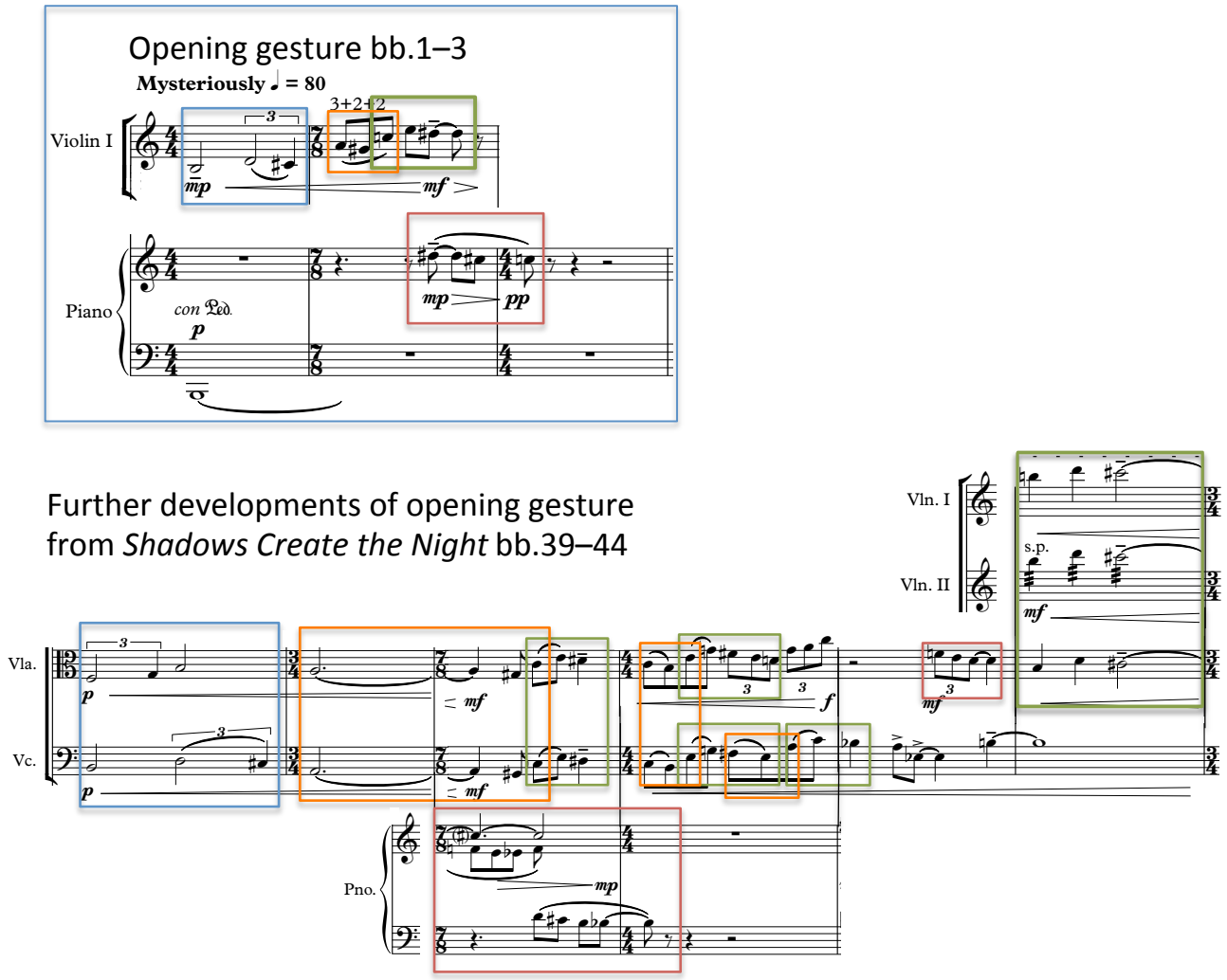


Figure 1.24. *Shadows Create the Night.* Development of the opening gesture in subsection 2 (bb.39–41).

Figure 1.24 demonstrates how each component of the original gesture has been developed. For the most part, the opening bar retains its original character in b.39 with the cello using the original pitches. However this now appears as a duet with the viola, which plays a rhythmically and melodically inverted version. The extension of the b.2 gesture in bb.40–1 is shown with the first note being elongated and the start of the quaver movement being rhythmically shifted forward by one quaver beat. This is accompanied by an extended chromatic descending piano figure, relating to the original material from bb.2–3. The strings' material from b.41 is restated in a more developed form

in b.42, occupying a 4/4 bar instead of a 7/8 bar. The viola in b.43 hints at the piano's descending chromatic figure from bb.2–3, before a fragmented version of the violin material from b.2 (shown in green) is transposed and augmented in b.44, carrying the music into the next section.

As the piece progresses the fragments are developed and extended further with increasing contrapuntal complexity. Deeper interactions between new and original material take place, creating musical synthesis. These newly synthesised materials interact with other musical content, facilitating the evolution of gestural materials that are aurally related to the original gesture (Figure 1.25).

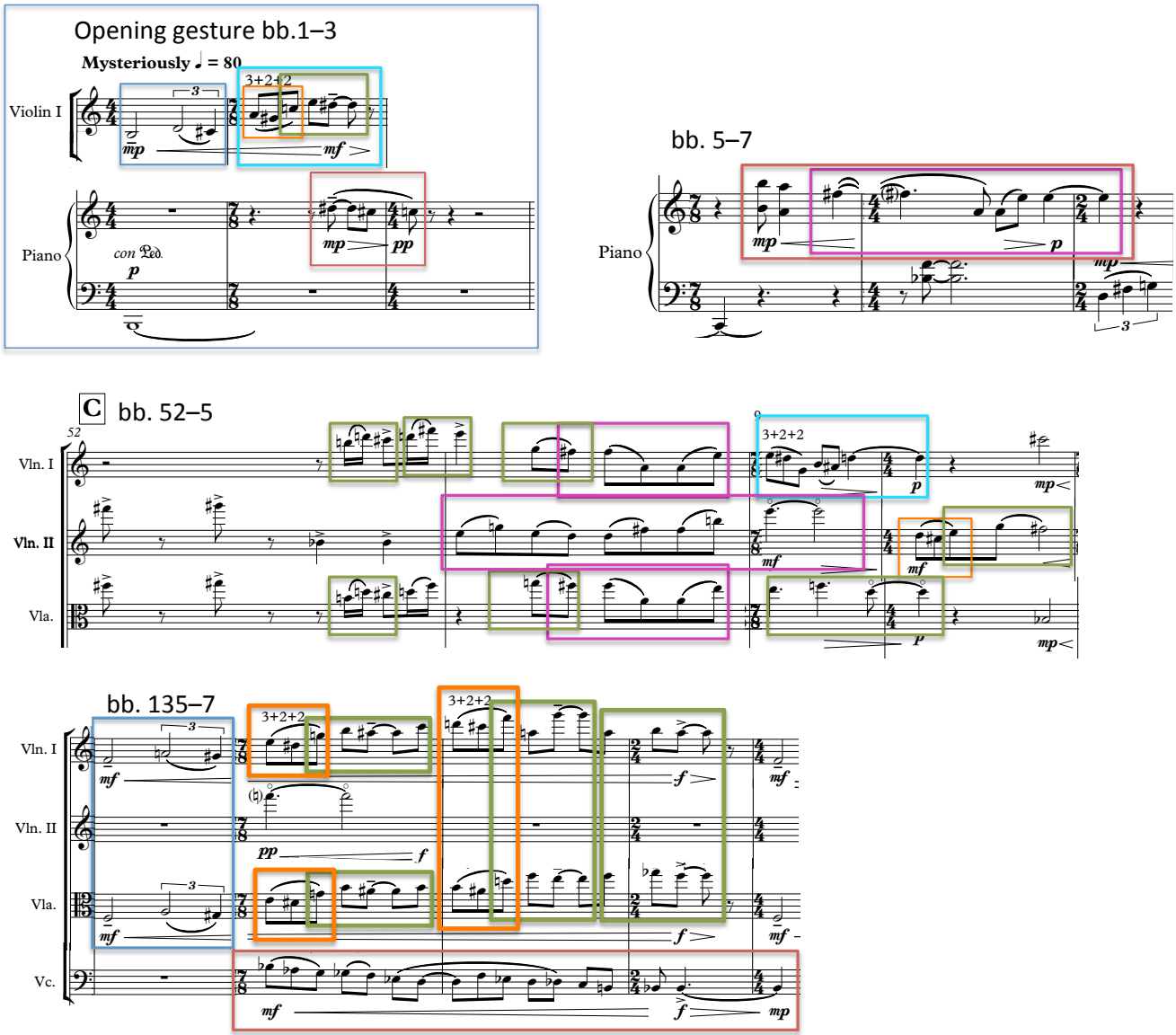


Figure 1.25. ***Shadows Create the Night.*** **Further developments of opening gesture in subsections 3 and 5 (bb.52–5 and bb.135–7, respectively).**

As the piece progresses, the gestural language gradually becomes more dramatic and disjunct, showing the influence of Birtwistle's *Tree of Strings* for string quartet (2008). This influence becomes more evident with pronounced double-stops and increasing levels of polyphony (Figure 1.26). The intensity of the gestural language of *Shadows Create the Night* builds through frequent use of large interval leaps, strong rhythmic gestures, accents, and *forte* dynamics: see Figure 1.26.

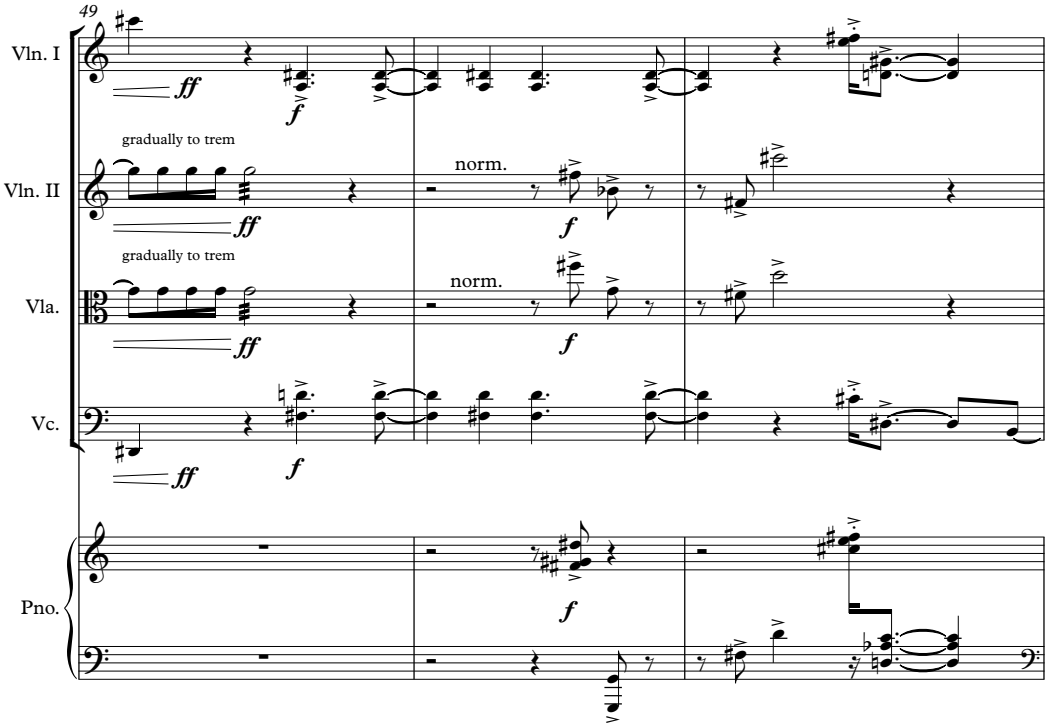


Figure 1.26. *Shadows Create the Night*, bb.49–51. Dramatic disjunct gestures.

I often approach the compositional process with shapes and movements in mind, emphasising the importance of gesture to my musical language. I have strived to use simpler and dramatic virtuosic gestures, allowing for full expressive possibilities. Without a range of gestural types, true contrast cannot be achieved, reducing the meaningful significance attached to points of contrast. As Burrows notes: 'if everything is virtuosic then there's nothing against which to read the virtuosity: it has to be a balance between other modes of engagement.'[1]

[1] Burrows, *The Choreographer's Handbook*, p.76.

I have found it fascinating to explore gestural devices in varying combinations that permit the transformation of a gesture almost beyond recognition, whilst still retaining the essence of its original identity. These transformations allow for a fluid harmonic language to occur where the pitch language of the gesture comes into dialogue with the harmonic direction.

Harmonic and pitch language

Harmony and form are intrinsically linked in a cycle of mutual reliance. Developments in my musical architectural control are analogous with those in my harmonic thinking, both in the pre-composition phase and after. Through my works I have sought ways to overcome the challenges of achieving harmonic control in a realm not defined by traditional tonal hierarchies. It has made me consider the importance of harmony in certain contexts, the elements that constitute harmony, and the placement of the harmonically functional voice (conventionally assigned to the bass). My music has characteristic intervallic traits, particularly those that challenge our conventional perception of 'strong' intervals: my frequent use of fourths, tritones, seconds and sevenths exemplifies this. It is perhaps the dissonant nature of these intervals that means I use them as a statement of strength in creating tonal and harmonic ambiguity, leading to a fluid and fluctuating harmonic language unshackled from keys.

My harmonic language is characterised by varying levels of chromaticism, quartal harmonies, elements of octatonicism, and modality. Such harmonic thinking stems predominantly from considering intervallic relationships both horizontally and vertically, unmarried from traditional chord construction or tonal keys (though elements of these still occur). As my works progressed, I developed an approach to incorporate pitch-centricity as a way to establish cohesive harmonic trajectories.

Given that many of my compositions draw on harmonic components constructed from modality, diatonicism, and chromaticism, which, when placed in combination, can have strong octatonic implications, it is necessary to discuss the broader context for octatonicism briefly. Octatonicism is a prominent feature of the harmonic languages of Igor Stravinsky and Béla Bartók, with these two composers being among its early proponents, though some earlier examples can be

found in Chopin's Op. 23 and, more generally, in the works of Nikolai Rimsky-Korsakov.[28] Both Stravinsky and Bartók approach modality and octatonicism in quite distinctive ways, leading to highly personalised languages that have exerted an influence on composers ever since.

The development of this harmonic language itself emerges from developments of tonality by composers such as Claude Debussy and Richard Strauss. With an increased usage of chromaticism and more fluid modulations, a harmonic language that stretched the bounds of tonality was created, laying the foundations for explorations beyond traditional diatonicism.

However, it was in the works of Igor Stravinsky and Béla Bartók that octatoncism can be first seen to be employed prominently. Octatonic collections consist of a set of notes, made up of two tetrachords that divide at the interval of a tritone, to create a symmetrical interval pattern. This structure affords a great deal of compositional potential as its pitch centre is inherently ambiguous. Such ambiguity, along with the associated interval pattern, leads to naturally dissonant chords forming from a collection, such as diminished sevenths. The three possible octatonic collections offer a rich plethora of harmonic possibilities, facilitating smooth transitions into different modal collections and diatonic scales.

Use of octatonic collections, along with other symmetrical scales, permeates Stravinsky's early works. His use of these was clearly influenced by his teacher, Rimsky-Korsakov. Perhaps one of the clearest examples of this influence can be seen in the use of octatonicism in Stravinsky's *Scherzo fantastique* Op. 3 (1908) and in his famous ballet *The Firebird* (1910). Indeed, in *The Firebird*, octatonicism serves to represent the evil supernatural forces of Kaschei's kingdom, contrasting with the more traditional diatonic material being used to represent the good characters.[29] The octatonic references in these earlier works are fairly obvious and evidence the significant influence from Rimsky-Korsakov. However, as Stravinsky's compositional voice developed, his harmonic language becomes harder to define, with a more organic approach to octatonicism and

[28] Octatonicism can also be found in abundance in the works of Olivier Messiaen, though he referred to this as the second of his modes of limited transposition.
[29] Charles M. Josephs, *Stravinsky's Ballets* (New Haven: Yale University Press, 2011), p.41.

other harmonic elements being apparent in his works such as *Petrushka*. This change in harmonic approach has been the subject of some scholarly debate, with numerous interpretations being offered for specific passages in his works, though this issue extends beyond the scope of the discussion here.[30]

The famous 'Petrushka' chord from the ballet of the same name is a particularly interesting case. The chord sounds distinctly bitonal due to the joining of two major triads built a tritone apart on the pitches C and F#. However this apparent bitonality can be explained theoretically through octatonicism as all the pitches belong to the same octatonic collection.[31] Later in the work, sections are built on the triads of E-flat and A completing the octatonic collection to give the following pitches: C, C#, E-flat, E, F#, G, A and A#.

However, the most notable of Stravinsky's works to use octatonic collections frequently is *The Rite of Spring* (1913). This piece has been subject to endless harmonic analyses and has sparked scholarly debate on a number of points. This is due to the harmonic language not being fully octatonic, modal, or bitonal, instead being made up of a combination of these elements, selected through Stravinsky's instinctive use of tetrachords and diminished sevenths to allow seamless transitions between octatonic and modal areas. The tetrachord most commonly seen in Stravinsky's works is the minor tetrachord (0235) which, due to its presence in modes as well as octatonic collections, allows the harmonic realm to seamlessly go between modality, octatonicism and diatonicism.

Figure 1.27. Example of minor tetrachords forming octatonic collection and Dorian mode.[32]

[30] Pieter C. van den Toorn's analysis of Petroushka is perhaps the best-known discussion of this piece: Pieter C. van den Toorn, *The Music of Igor Stravinsky* (New Haven & London: Yale University Press, 1983), pp.31–98. See also, Richard Taruskin, 'Chez Petrouchka: Harmony and Tonality "chez" Stravinsky', *19th Century Music*, 10/3 (1987), p.269.
[31] On perceptions of this chord, see Carol L. Krumhansl & Mark Schmuckler, 'The Petroushka Chord: A Perceptual Investigation', *Music Perception: An Interdisciplinary Journal*, 4/2 (1986), pp.153–184.
[32] Diagram reproduced from Peter Hill, *Stravinsky: The Rite of Spring* (Cambridge: Cambridge University Press, 2000), p.48.

Bartók's approach has been described as more systematic and prescriptive than Stravinsky's more organic approach to the use of octatonicism. Unlike Stravinsky's use of octatonicism where all or most of the collection is shown clearly, Bartók's music does this less often, using the tetrachords that can be created from octatonic collections to form aggregate collections. This comes from Bartók's preoccupation with interval relationships and the reuse and transformation of motivic materials. It is often the use of dyad subsets transposed and combined that form the tetrachords that often express part of a symmetrical harmonic device, such as wholetone, hexatonic and octatonic collections. Bartók often combines transpositionally-related entities either simultaneously, sequentially or in canon in his music. One of the most common tetrachords that appears in his music is 0167, which is distinctive due to its dissonant nature created through its tritone pairs.[33]

Bartók also makes frequent use of the minor tetrachord (0235) in his works, with an explicit example of this being seen in his work 'Diminished Fifths' from *Mikrokosmos.* Somewhat unusually this is an instance in Bartók's music where octatonicism is fully expressed and takes a strong structural role in the piece itself. The piece is constructed from pairs of minor tetrachords that are a tritone apart, creating different octatonic collections. The main octatonic collection that is expressed through this method in this piece is – A B C D Eb F Gb and Ab. This aspect of using minor tetrachords and other tetrachords unique to the octatonic collection, such as 0167, allows for a fluid harmonic language that creates a dialogue between material that implies modality and material that implies octonicism. This is a point I return to later in this section.

My harmonic language has gradually transformed from realms closer to atonality due to their less distinct pitch hierarchies, as seen in *Momentations* and *Stormscape*, through to non-tonal areas, particular elements of modality and octatonicism, where pitch-tensions and elements of pitch-centricity appear, as seen in *Night Airs* and *Shadows Create the Night*, and on to more stable dual-pitch centricity found in *Roil in Stillness, Rainbow Fires*, and *Nacreous Contours.* I establish pitch-centres through the prominent placement and relative frequency of specific pitches within melodic,

[33] See, Richard Cohn, 'Bartók's Octatonic Strategies: A Motivic Approach', *Journal of the American Musicological Society*, 44/2 (Summer, 1991), pp.262–300.

rhythmic and harmonic contexts. Diatonic collections and other scalic materials, either pre-existent or newly created, are also used to establish distinct harmonic realms. My diverse harmonic approaches draw upon the works of many composers, such as Harrison Birtwistle, Judith Weir, Oliver Knussen and Thomas Adès, incorporating aspects of their technique into my own language.[34]

Momentations and *Stormscape* are the earliest works in this portfolio, and show a more atonal approach to harmony with high levels of dissonance. *Momentations* is characterised by the fluid use of octatonicism, modality and chromatic harmonic devices. High levels of contrapuntal and gestural interactions establish much of the harmony. The aforementioned influence of Birtwistle's *Five Distances* on my gestural language extended to my harmonic content, leading to gesture being foregrounded prominently in *Momentations*. For the most part, horizontal instrumental interactions take precedent over vertical ones, though there are occasions where such status is reversed, as shown in the opening bars (Figure 1.28).

The opening passage (bb.1–6) combines elements of octatonicism, modality and chromaticism. Two chromatically linked harmonic areas are established. In bb.1–2 and bb.5–6, octatonic scales with A and E♭ as double pitch-centres are used (OCT 1: see Figure 1.28). This has modal implications too, leading to the emergence of A-Locrian and C-Dorian modalities, as well as diatonic references to both A and E minor, causing further harmonic ambiguity. The octatonic scale is used again in bb.3–4, now with C♯ and G as a double pitch-centre (OCT 2). Elements of C♯ minor and major qualities can be heard in the chordal movement underneath. The use of octatonicism leads to the frequent appearance of tritones, both melodically and harmonically.

[34] The harmonic influences of Knussen and Adès on my compositional language are discussed further in Chapter Three.

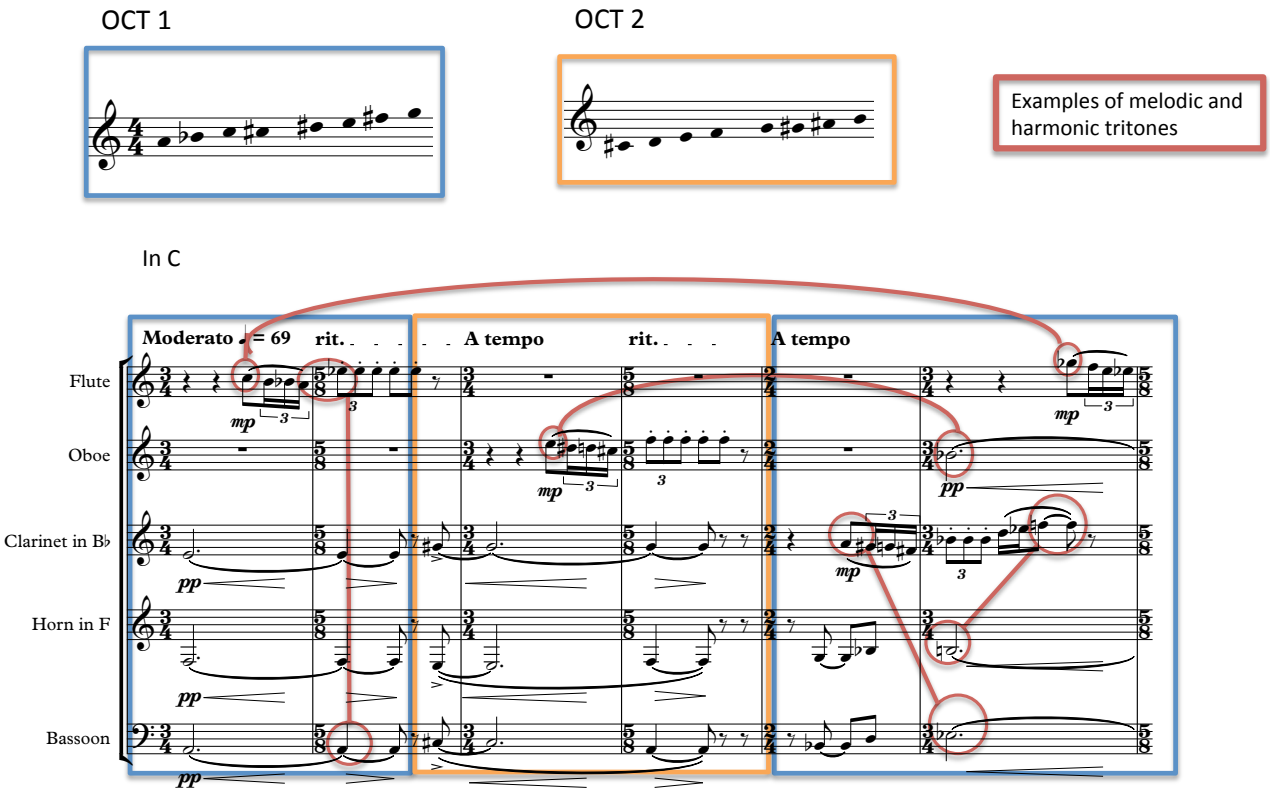


Figure 1.28. *Momentations*, bb.1–6. Octatonicism in the opening passage.

Later in the piece, there are moments where consonances are revealed, standing out against the otherwise fluctuating harmonic texture (see bb.79–91). These consonant moments function in reverse to their traditional roles: within this context they serve to create tension within a dissonant soundworld and signal a musical change. In response to these striking consonances, the harmonic language of *Momentations* becomes increasingly dissonant, something further reflected in the increasingly agitated gestural language.

Although elements of pitch-centricity do occur within *Momentations*, it features much more prominently in my later works, including *Night Airs.* Indeed, pitch-centricity plays an important role in *Night Airs*, occurring in conjunction with a shift in harmonic language leading to more prevalent use of modal and consonant harmonies. This newfound interest in consonance emerged from the study and exploration of the instrumental works of Weir and Beamish. Both composers make frequent use of modal elements, deploying many ‘open’ sounding harmonies within a more

consonant harmonic language, leading Margaret Lucy Wilkins to describe Weir's music as 'new tonality'.[35] This approach has been further confirmed through the study of Adès's works, especially those using superimposed fourth and fifth intervals. Adès's music is characterised by high levels of chromaticism, offering a successful model of the coexistence of diatonicism and chromaticism. A model for the use of consonance within a new musical realm that allows for a contemporary gestural language and consonant sonic space was appealing, and thus I incorporated elements of it into my approach.

Night Airs is largely based on E-centred modal sets, with bb.1–6 showing aspects of E-Phrygian and Locrian, before moving through E-Aeolian and Dorian, and A-Dorian in bb.7–23. The establishment of A as a second pitch-centre creates a harmonic tension. The harmonic and gestural language is suddenly disrupted with a chromatic burst at b.24, which acts as a pre-echo to b.53 (Figure 1.29).

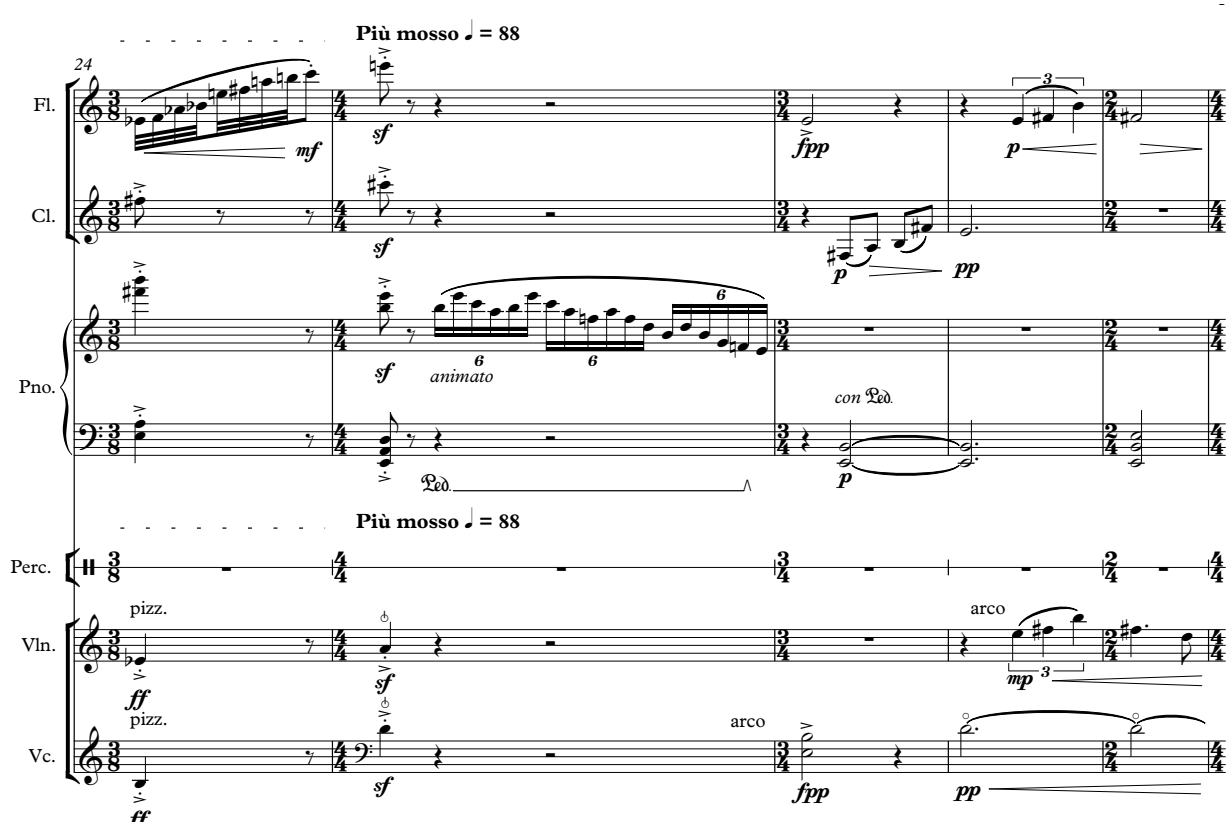


Figure 1.29. ***Night Airs,*** **bb.24–5 (transposed). Pre-echo material to b.53.**

[35] Margaret Lucy Wilkins, *Creative Music Composition, The Young Composer's Voice* (New York: Routledge, 2006), p.44.

The established E modalities become increasingly disturbed by chromatic inflections. As the *con moto* section progresses, the gradual disintegration of a clear pitch centre and, by implication, modal harmonies, occurs with an increased importance on gestural and rhythmic considerations. Twinned with this, a fluid harmonic soundworld is established through increased chromaticism and dissonance (bb.52–100). In bb.101–5 there is a brief return to a modal harmonic area, though it should be noted that the pitch centre is deliberately ambiguous, with simultaneous tendencies towards the centres of F#-Locrian, B-Phrygian and E-Aeolian. In bb.106–8 the highly chromatic harmonic language returns in earnest, presented with more explicit usage of quartal chord formations, re-establishing something of the original soundworld.

In the final section (bb.109–124), 'Stillness', the melodic and timbral materials evoke the same soundworld as the beginning. However, the opening harmonic material has been transformed from a modal sphere to a highly chromatic and octatonic soundworld that builds across the piece. The pitch centre remains obscured until the last three bars where harmonic pedals pull it back to E.

The octatonic implications present in the harmony of the final section derive from an increased use of tetrachords in varying combinations. In this section the flute and clarinet melodies combine to express a clear octatonic collection – Eb F F# G# A B C and D – running from beat 3 of b.113 through to b.120. Although the pitch of E-natural is also present, it functions outside of the harmonic realm, as though it is being denied its true harmonic function, preventing it from becoming the pitch centre of the piece at this point. It is the only pitch to feature in this passage that does not fall within the octatonic collection set out above, thus marking its importance.

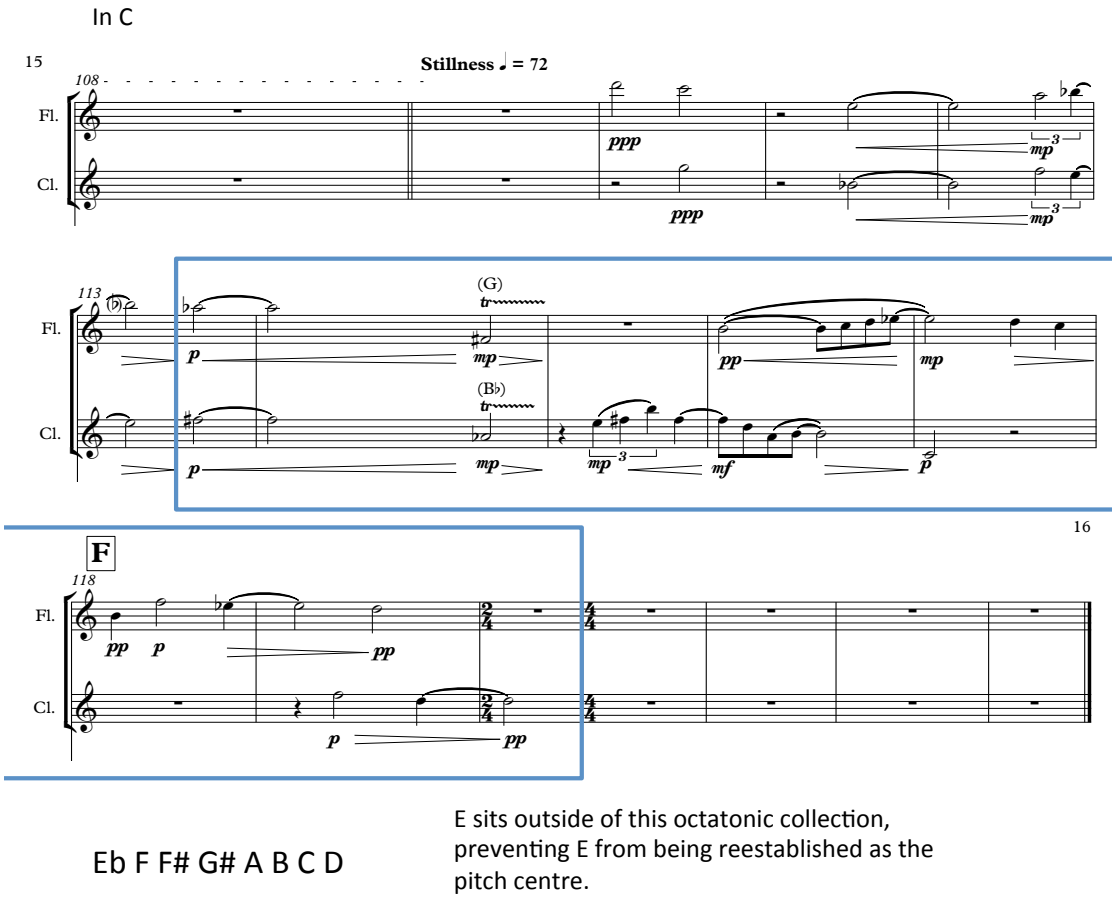


Figure 1.30. ***Night Airs*** **bb.113–220 showing octatonic area established in duetting winds.**

The duetting strings express areas of modality that have an unclear centre; a case could be made that either B or E is the pitch centre in bb.109–14. Where the octatonic realm is established firmly in the duetting winds, the strings establish a clearer E Aeolian mode in bb.114–17 before it transforms to help further establish the octatonic realm of the duetting winds. In this section the piano functions both with the winds and strings at different points, as well as adding its own harmonic layer with elements of chromaticism. Tetrachords unique to octatonicism occur briefly within the piano part at various moments that aren't always from the same collection as the duetting winds. Nevertheless, these brief moments of octatonic aggregations serve to aid the establishment of an octatonic soundworld within this section.

This use of tetrachords from the octatonic collection is a technique seen frequently in the works of Béla Bartók. These aggregations of the octatonic collection help to create the characteristics of octatonicism without fully stating or establishing one collection. However, in this case the piano

part functions more as a 'go between' for the octatonic winds and modal strings with moments where the piano part supports different harmonies.

The treatment of octatonicism in the wind parts holds some similarities to Stravinsky's approach to octatonicism, where all or almost all of the octatonic collection is expressed, resulting in a clear octatonic statement. There are many instances of this in Stravinsky's works, especially in *The Rite of Spring* where significant portions of the melody are structured from minor tetrachords presented in combination to create octatonic collections and, sometimes, dorian modes. Many examples of octatonic moments can be seen in the 'Ritual of Rival Tribes', where two minor tetrachords are combined to express the octatonic collection – G# A# B C# D E F G.

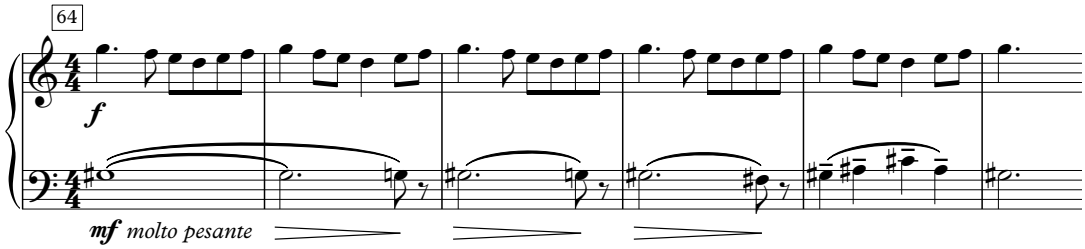


Figure 1.31. Passage from 'Ritual of Rival Tribes' showing the combination of two minor tetrachords to create an octatonic harmonic area.[36]

In *Night Airs*, the octatonic material established in the wind duet running from bb.113–20 is then passed onto the piano, violin and cello harmonies. Again, E is prevented from asserting its dominance until the final bars where its reassertion attempts to pull the harmony back towards that established at the opening of the piece. The persistence of the E acts as an aural echo of the initial harmonies, further enhancing the links with the opening section. It is as though the pitch E is defiant and resists relinquishing its harmonic primacy, deliberately destabilising the established octatonic realm here as the piece draws to a close.

[36] Note that the F# found in the left-hand staff is to be considered as ornamental, as it sits outside of the octatonic collection.

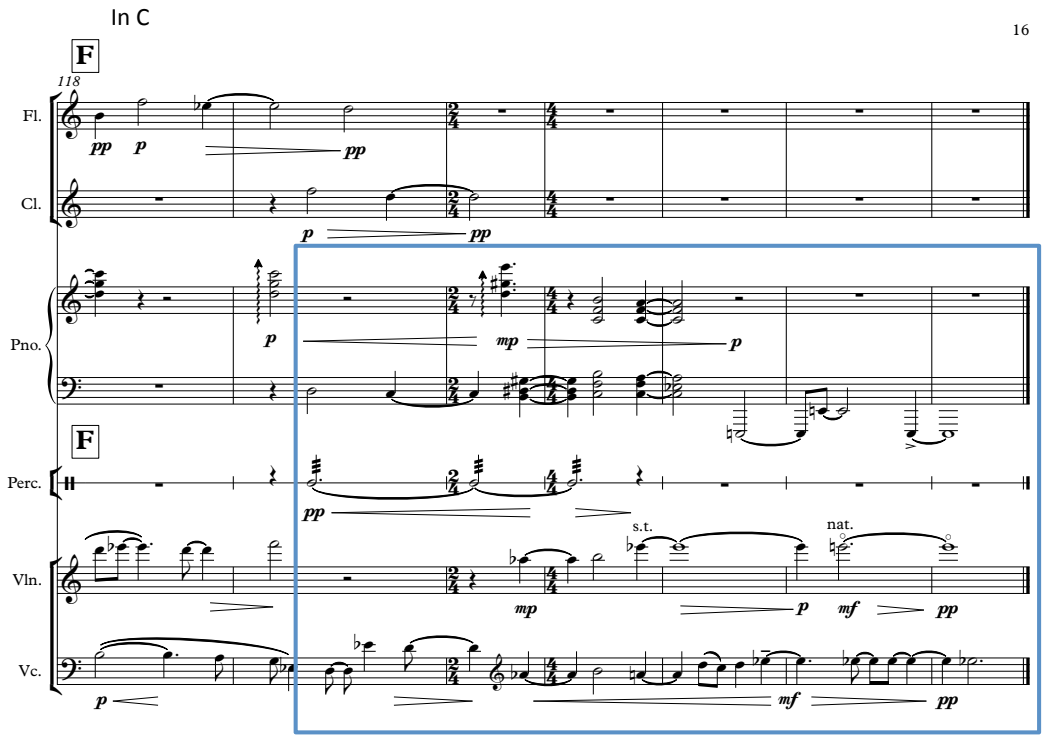


Figure 1.32. Octatonic material from duetting winds passed to piano, violin and cello parts in final bars of *Night Airs*, bb.119–24.

Thus, the overarching harmonic plan of *Night Airs* shows a progression from clearer pitch-centric modal harmonies to increased chromaticism, dissonance and elements of octatonicism. This leads to an increased subversion of established pitch centres, increasing harmonic ambiguity within a carefully controlled area.

Nacreous contours is another piece which fluctuates between modal, chromatic and octatonic harmonies. Instead of this occurring gradually across the trajectory of this piece, the transfer from modal to chromatic, and then to octatonic harmonic spaces, often occurs in line with the phrase structure. At start of the piece until the pause in b.3, a F-Lydian modality is expressed and becomes increasingly coloured by chromaticism.

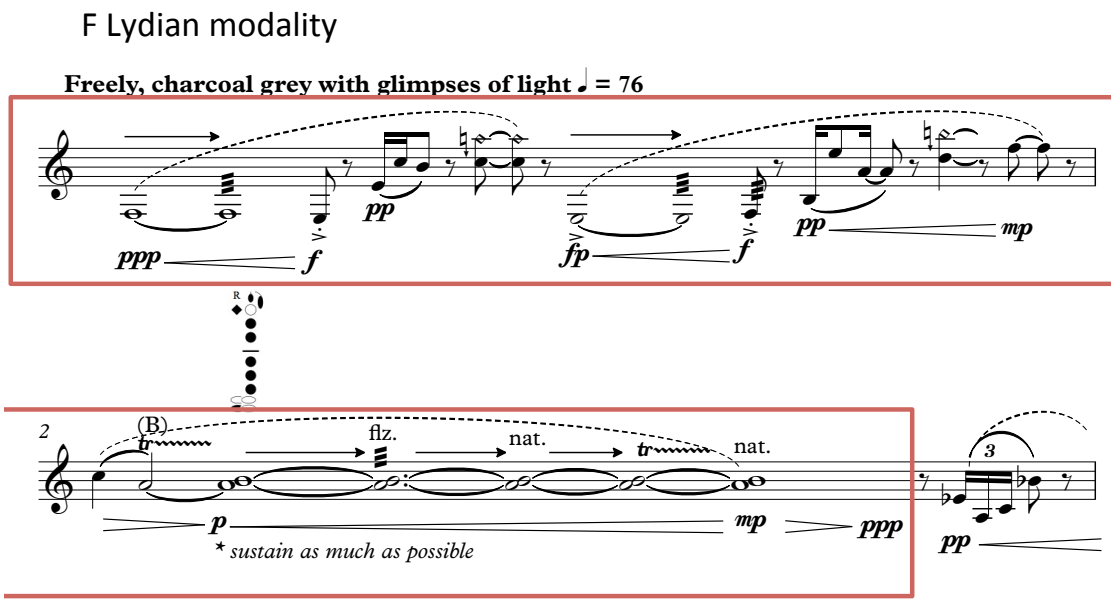
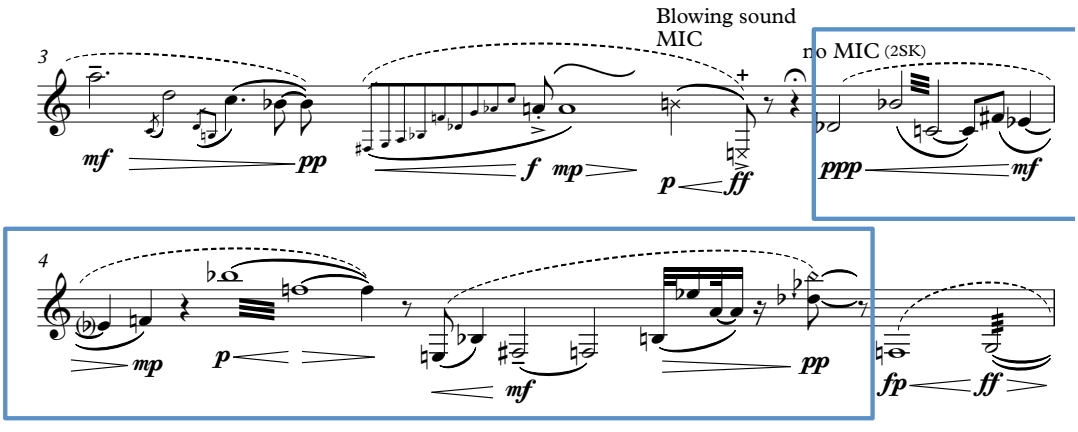


Figure 1.33.Showing passage in an F Lydian modality.

In the next passage, an octatonic collection is revealed with only small chromatic additions that do not disturb the overall octatonic effect. The figure below shows the construction of a melodic phrase from the octatonic collection – Db Eb (E) F# G A Bb C.



Db Eb (E) F# G A Bb C

Figure 1.34. Octatonic passage with only small chromatic inflections (highlighted in blue). *Nacreous Contours*, bb.3–4.

Immediately following this, in bb.5–6 octatonic relationships are still present, though these are progressively obscured by an increased and fluctuating chromaticism. Once this undulating pattern ends, a new octatonic collection – B C D E♭ F F# G# A – is revealed between bb.7–9, again with the addition of small chromatic inflections (E and B♭) that serve to slightly disturb the octatonic realm. Though E and B♭ do not fit within this octatonic collection, an examination of the pitches here (A, B♭, E, F#) reveals that the tetrachord 0178 is created, expressing an aggregation of the octatonic collection **A B♭** C D♭ E♭ **E F#** G. As this passage progresses (bb.8–9), the tetrachord 0167 (B, C, F, G♭), commonly found in Bartók's music, is used extensively. My approach here is akin to a combination of Stravinsky and Bartók's octatonic strategies. Overall, the fact that this passage expresses almost the whole octatonic collection holds the strongest similarities to octatonic passages seen in Stravinsky's music. However, the use of pitches expressing an aggregation of the octatonic collection through the tetrachord 0167, as seen in bb.8–9, demonstrates an approach similar to Bartók's use of motivic subsets created from octatonic collections and other scales.

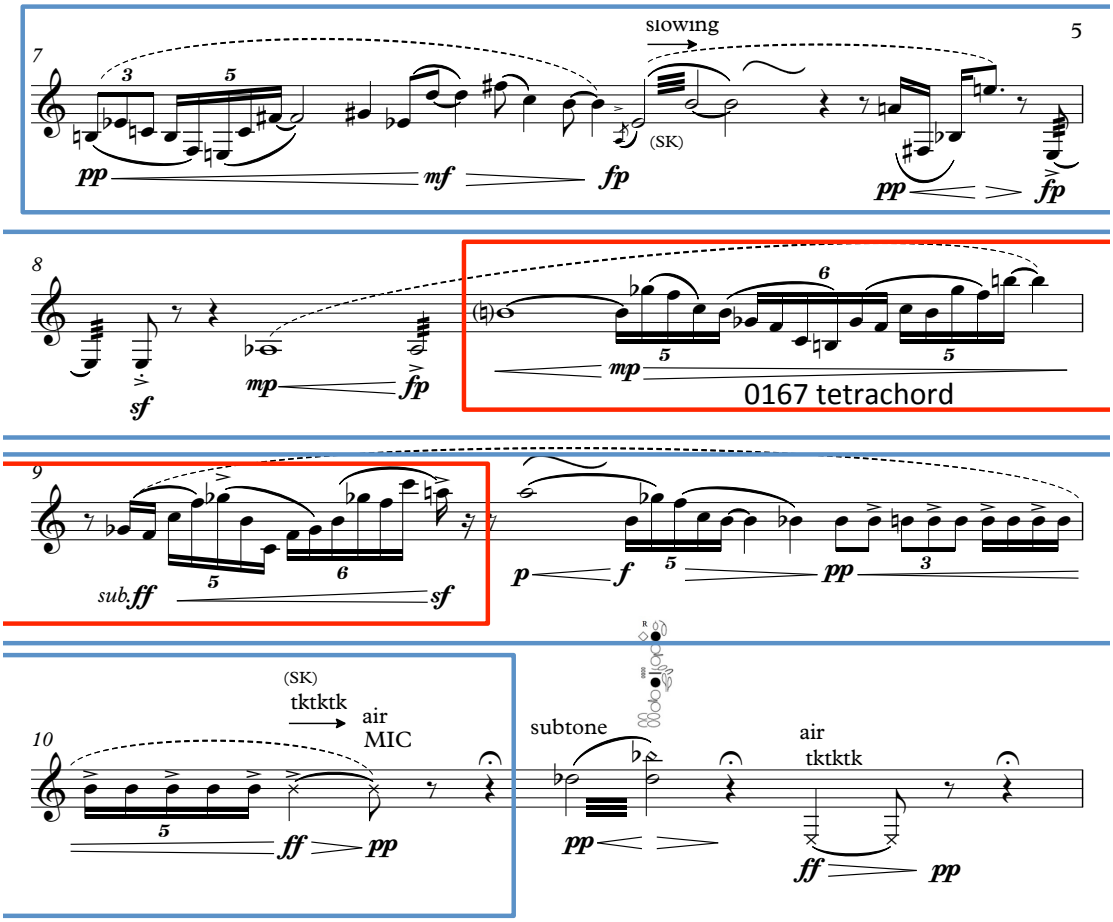


Figure 1.35. Octatonic passage bb.7–10 with prominent appearance of 0167 tetrachord highlighted in red. *Nacreous Contours*, bb.7–10.

Indeed, a clear example of Bartók using this 0167 tetrachord in an almost obsessive way is found in 'From the Island of Bali' from *Mikrokosmos*. Almost the entirety of this piece is based on the tetrachord 0167, as demonstrated in Wakeman's diagram (reproduced below).

Figure 1.36. Summary of tetrachords/pitch content in Bartók's 'From The Island of Bali' from *Mikrokosmos*.[37]

At the end of this work Bartók reveals another tetrachord, 0358. Instances of such changes at the end of works that obsess over one tetrachord or harmonic area before revealing another can also be found on a larger scale in some of his more extended works, such as in *Sonata for Two Pianos and Percussion* (1937). In this piece Bartók keeps hinting towards an octatonic collection before letting it dissipate each time. Finally, however, the whole octatonic collection is eventually revealed in a climactic canon.[38] Occupying one harmonic space with 'pre-echoes' to material from another section, and then slowly revealing the other area is similar to an approach found in some of my works. I often allow harmonic areas to be established slowly and revealed gradually, before affecting a clear shift to a different harmonic realm.

The harmony in *Nacreous contours* functions in a similar way to my other works using chromaticism to obscure and reveal different tetrachords that either expresses a modal or octatonic implication depending on the context. This allows the modal or octatonic language to occur in a very organic way. Tetrachords also feature prominently in *Shadows Create the Night*, as I will outline below.

[37] Reproduced from Forrest Wakeman, 'Stravinsky, Bartók and the Octatonic Collection: A Study in Contrast', DMa Thesis (Michigan State University, 2013), p.18.
[38] Wakeman, 'Stravinsky, Bartók and the Octatonic Collection, p.20.

In *Shadows Create the Night* the presence of tetrachords, such as 0235 – common to both Stravinsky's and Bartok's music – and 0167 – more common to Bartók's works – demonstrates that aggregations of octatonic collections are embedded fluidly at different levels within the music. This allows the highly chromatic language to have octatonic and modal inflections, articulated through the presence of these tetrachords. The 'minor tetrachord' (0235) is particularly prominent as it allows for fluid exchange between octatonic and modal implications in a manner similar to that seen in Stravinsky's music, as outlined earlier in this chapter.

In bb.1–11 there are multiple examples of the occurrence of tetrachords working at different levels. The first instance of the 0235 tetrachord occurs in the first two bars in the 1st violin. Here the main structure of the melody clearly spells out the pitches B C# D E, with these being further established through the structure of the melody as it moves through bb.3–5.[39] Another 0235 tetrachord, consisting of E F# G A, occurs melodically in bb.5–6 in both the violin and piano part, as marked in the figure below. When combined these two minor tetrachords also have the implication of a B-Aeolian mode. Simultaneously the bass line in the piano part slowly spells out a 0235 tetrachord (B C# D E) between bb.1–11 (highlighted in orange in Figure 1.35). In bb.7–9 another minor tetrachord is spelt out in the 1st violin and 2nd violin parts, with the pitches C D Eb F. Finally, this section also presents two 0167 tetrachords both vertically and horizontally within the same musical event in bb.9–10.

[39] The melody passes briefly through a 0147 tetrachord in b.2: see purple highlight in diagram.

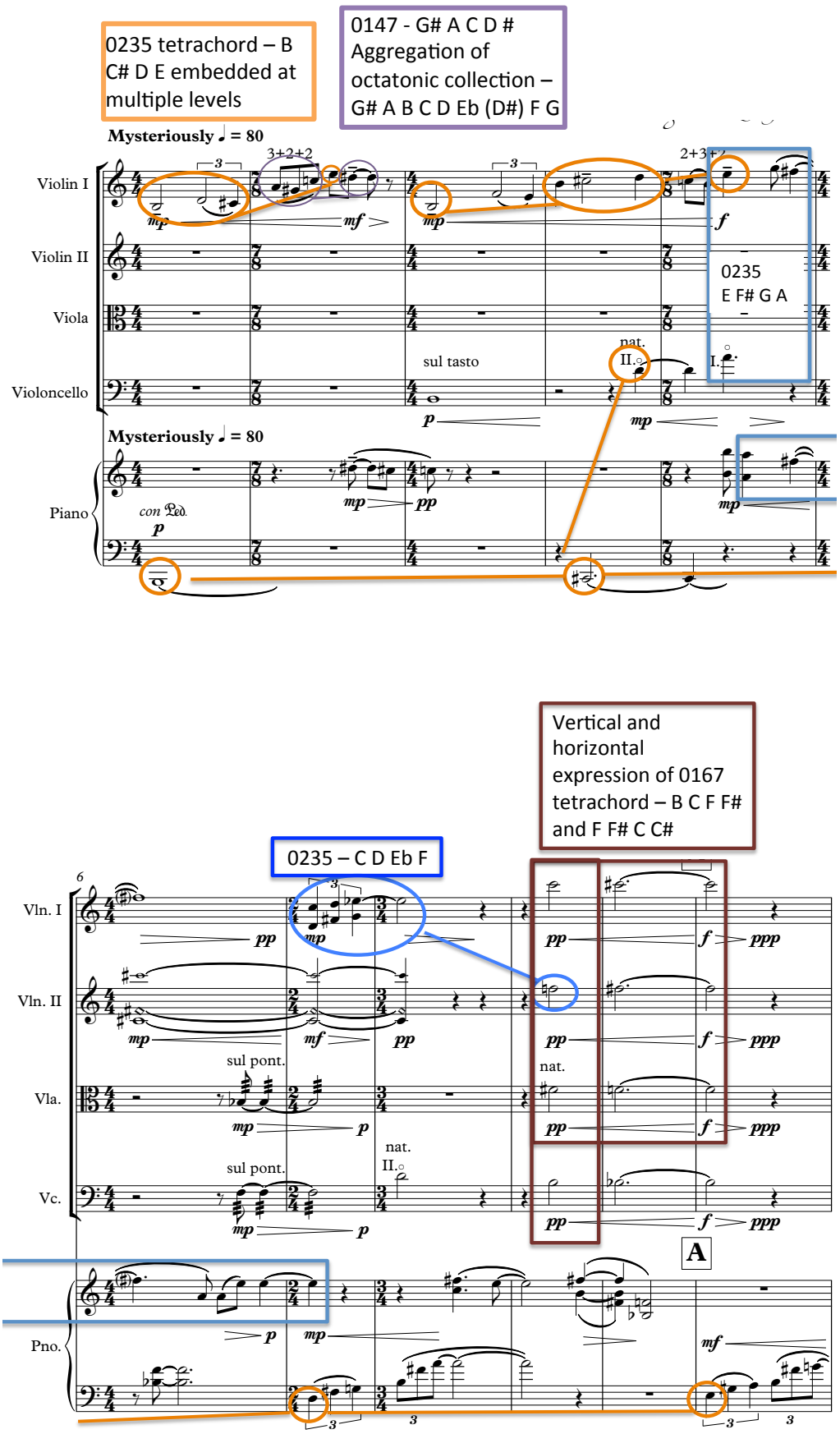


Figure 1.37. Examples of tetrachords working at different levels between bb.1–11

In *Shadows Create the Night* I explored pitch-centricity on a different level, where several pitch centres function either simultaneously or in rapid fluctuation. My interest was piqued by Adès's discussion of pitch-magnetism in *Polaris*, the structure of which is directed by a musical mapping of magnetic polarities and gravitational pulls, allowing pitch-centricity to fluctuate. This concept affected my harmonic thinking profoundly, leading to the exploration of multiple pitch-tension relationships and, later, pitch-couple centres.[40] These, in turn, have come to function as harmonic centres in my music, offering a different kind of harmonic grounding from the hierarchical tonal system.

The overarching pitch-tension setup in *Shadows Create the Night* is the dynamic between B♮ and B♭: it is as though these pitches fight for prominence, leading to the gradual shift in prevalence from B♮ to B♭ (Figure 1.38). As in *Night Airs*, the general harmonic progression moves from consonance to increased dissonance.

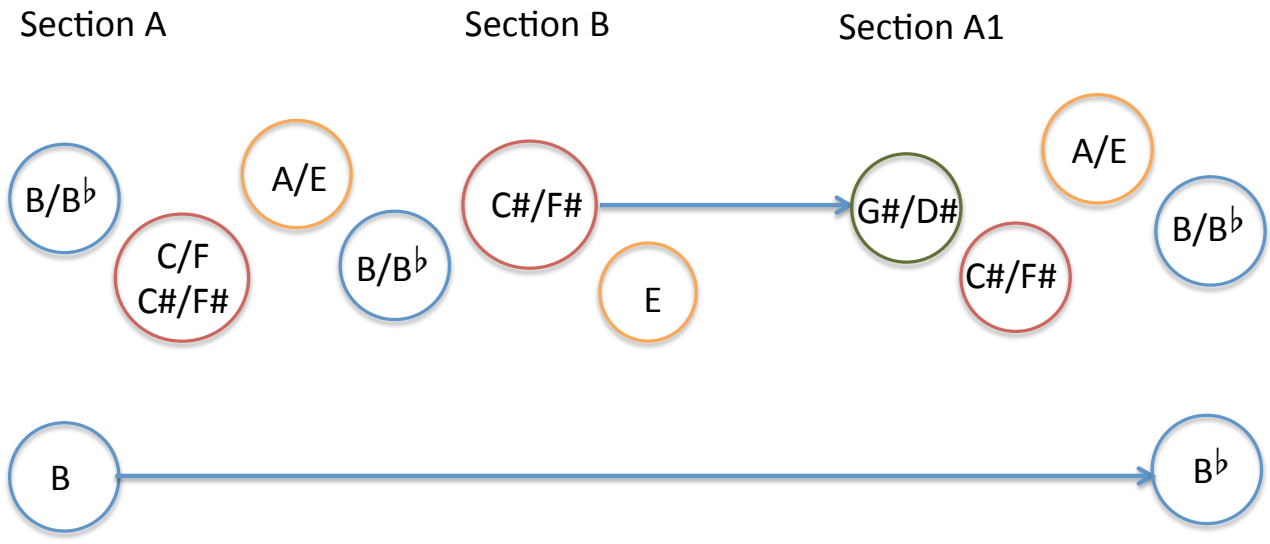


Figure 1.38. Pitch-tension structures across the trajectory of *Shadows Create the Night.*

[40] Thomas Adès and his approaches to 'pitch-magnetisms' are discussed in greater depth in Chapter Three.

The opening passages overall establish a B♮-centric modality with aspects of Dorian, Mixolydian and Aeolian with the presense of tetrachord (as discussed above), with additional tensions between C/C♯ and F/F♯ helping to create quintal and quartal harmonies. The pitch-centricity shifts to E in bb.11–21, with an A major/minor and E major/minor tension explored here, particularly through the use of harmonics. The pitch-centricity soon returns to B♮, with the B♮/B♭ tension being explored more fully in bb.22–32 where a B♭-centred modality is superimposed over B♮-centred modality: see Figure 1.39.

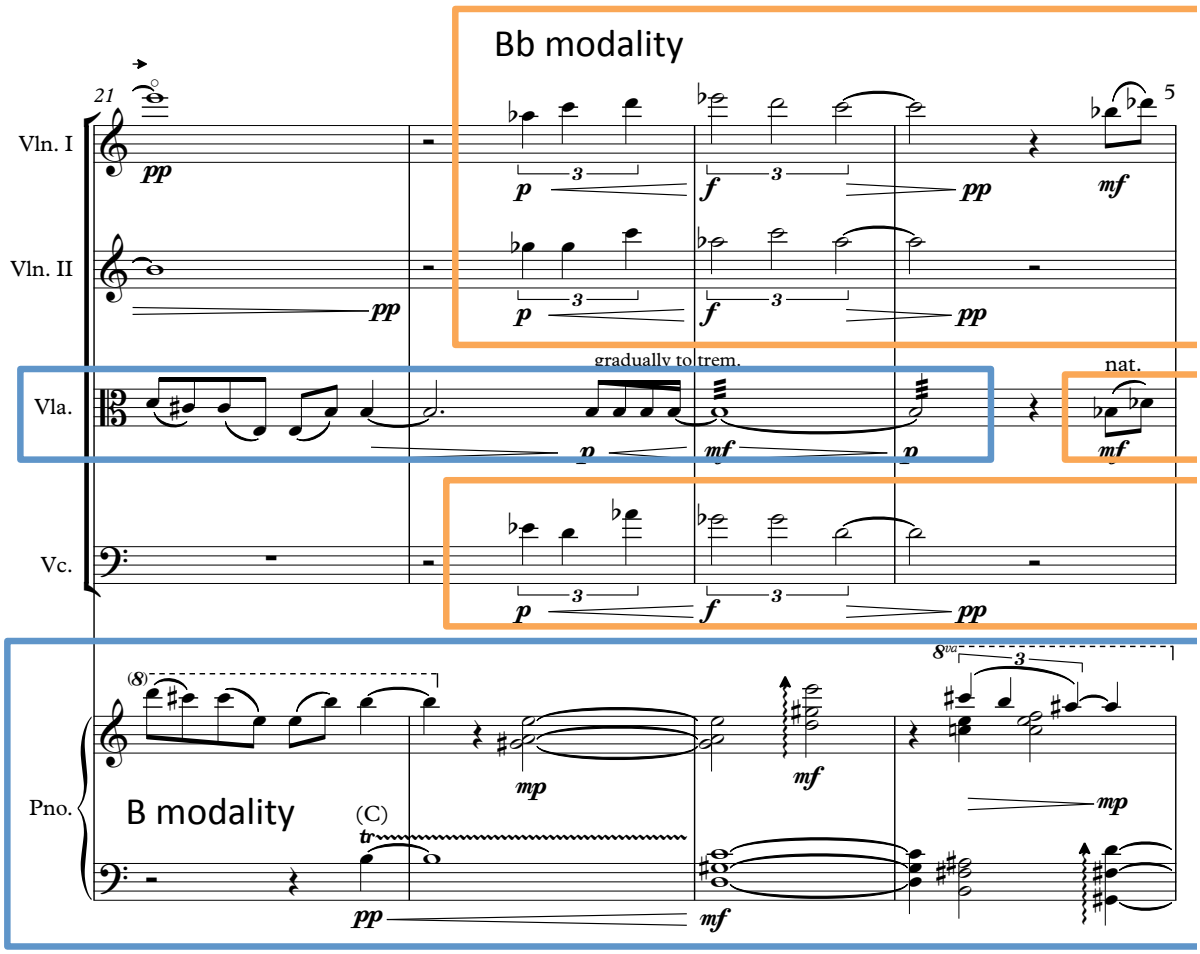


Figure 1.39. *Shadows Create the Night,* bb.21–4. Superimposition of B/B♭-centred modalities.

As the piece progresses the levels of chromaticism and dissonance increase. Shifting pitch-tensions between B/B♭, A/E, and C♯/F♯ are explored, along with the gradual introduction of G♯/D♯ tensions.

The harmonic progression becomes increasingly governed by counterpoint as the gestural interactions between instruments take compositional prominence (bb.46–73).

In bb.84–99, the melodic voices express an E-centred modality. Reversing its previous passage (bb.74–9), the highly chromatic piano accompaniment now has a rising figure accompanied by an ascending chromatic bass line, contrasting the E-centric modality. The chordal formation is 'directed' by the intervallic pattern of sixth–octave–sixth–fifth–octave–fifth: these patterns sometimes breakdown or are disrupted to increase harmonic motion. Although the octaves in this sequence are actually false octaves, they function analytically as octaves.

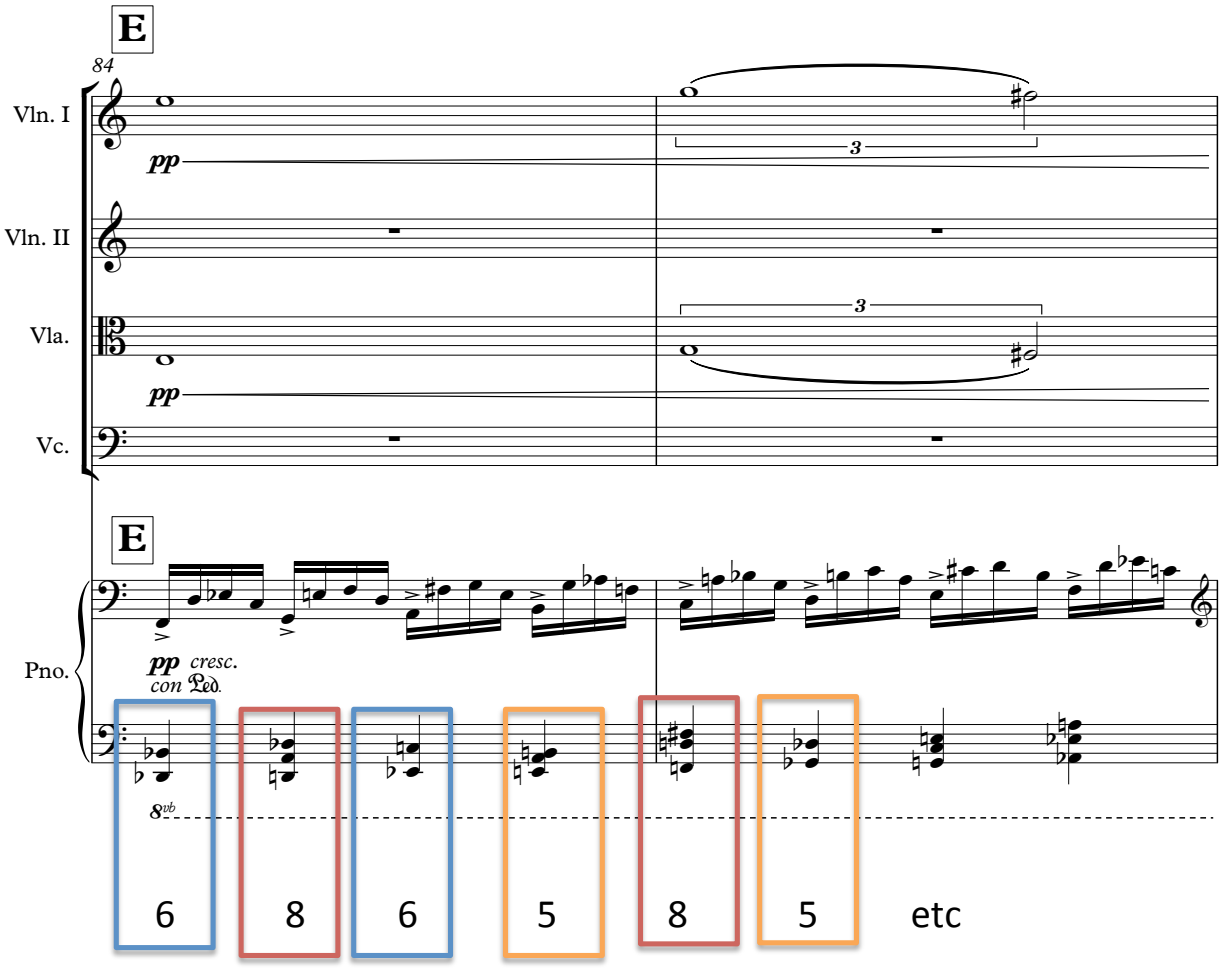


Figure 1.40. ***Shadows Create the Night,*** **bb.84–5. A sample of interval pattern in chord progression.**

Pitch-tension relationships return in the final sections, completing the shift from B♮ to B♭ as the opening material is revisited. Indeed, similar harmonic relationships are developed in *Roil in Stillness* and *Rainbow Fires.* In these pieces pitch-couple centres are established, allowing two pitches to function as pitch-centres simultaneously. The close chromatic placement of many of these pitch-couple centres facilitates the creation of a fluid chromatic language. This is achieved through the superimposition of different scale collections, associated with the two different pitches, to occur within the same musical event. I return to this point in Chapters Three and Four.

Timbral language

timbre itself follows an evolution[41]

Timbre has become increasingly important and prominent in my compositions. Through studying various composers and aspects associated with the spectralist movement, I have extended the timbral possibilities of my compositional language. Despite the problematic nature of the term 'spectralism', Gérard Grisey's definition is sufficient for this discussion:

> Spectralism is not a system … like serial music or even tonal music. It's an attitude. It considers sounds, not as dead objects that you can easily and arbitrarily permutate in all directions, but as being like living objects with a birth, lifetime and death.[42]

The notion of exploring the whole evolution of a 'sound event', along with greater awareness of composers influenced by the spectralist movement, has led me to gradually explore timbre as a parameter that can induce modulation. Key composers in this exploration have included Kaija Saariaho, Unsuk Chin, and Rebecca Saunders. The conceptual influence of their work on my own is reflected in Saunders' approach to spectralism, which has been described as 'focusing the ear on minute gradations of timbre and intonation, and turning her performers into Zen masters of attention and focus.'[43] Saunders' approach to timbre is something I have foregrounded in my recent works. Her music demonstrates ways that less conventional timbres can be used to create clear and coherent musical structures.

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[41] Kaija Saariaho, 'Timbre and Harmony: Interpolations of Timbral Structures', *Contemporary Music Review*, 2/1 (1987), p.126.
[42] David Bündler, 'Gérard Grisey' interview with David Bündler, 18 January 1996, available at http://www.angelfire.com/music2/davidbundler/grisey.html (accessed 20 February 2016).
[43] Tom Service, 'A Guide to Rebecca Saunders' Music', http://www.theguardian.com/music/tomserviceblog/2012/nov/05/rebecca-saunders-contemporary-music-guide (accessed 24 December 2015).

Timbral exploration and mixed sonorities are also important features of Chin's music, which often explores extended techniques and extreme virtuosic possibilities. Chin's discussion of colour and timbre demonstrates their importance to her compositional language:

> I often ask the soloist to disguise the nature of the instrument so the perception can be blurred. I try to explore the boundaries of the cello's expressivity and to broaden the definition of 'expression'.[44]

I found the idea of 'disguising' instrumental sounds interesting, leading me to explore this in *Night Airs* and *Shadows Create the Night*. Later, I experimented with extended techniques that explore the noise-axis of the timbral spectrum, with these affording additional creative possibilities. It is this spectralist concern with subtle gradations of timbre that has exerted the greatest influence on my timbral language, though it should be noted I do not consider myself as a 'spectral' composer.

One of my earliest forays into timbral exploration comes from the blending of the sound of one instrument as it emerges from another in the 'Stillness' sections of *Night Airs*: the transference of instrumental voices feeds into the gestural language, presenting the melodic line across the ensemble. This is exemplified in bb.1–12 (Figure 1.41) where notes are effectively 'captured' by other instruments.

[44] http://www.boosey.com/cr/news/Unsuk-Chin-interview-about-Cello-and-Sheng-Concertos/11843 (accessed 12 January 2016).

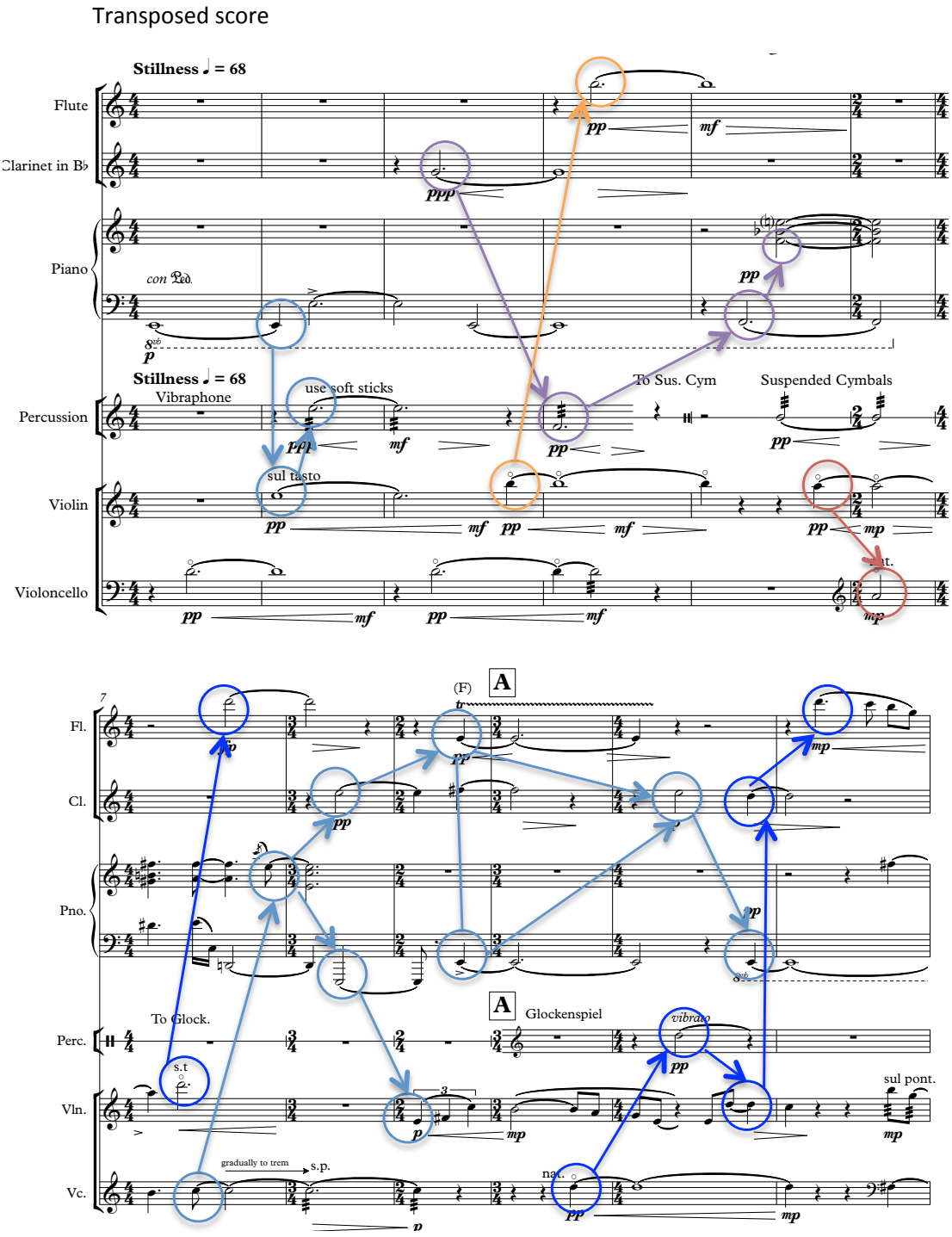

Figure 1.41. *Night Airs*, bb.1–12. Note transference across the ensemble.

In b.7 and b.14, the violin *sul tasto* note combines with the flute, resulting in similar timbres being created by different instruments, thus playing a timbral 'trick' on the ear. I found this to be a useful device in transferring sound from strings to winds. The aim of such timbral exploration here was to exploit the subtlety of sonic gradations to help express the darkness of the night.

This type of technique can be identified clearly in the music of Arnold Schoenberg and Anton Webern, most notably in Schoenberg's 'Farben' from his *Five Pieces for Orchestra* Op. 16, and Webern's Op. 10. Both of these use Klangfarbenmelodie (tone-colour-melody), a technique that splits the musical line between several instruments and therefore creates shifts in both timbre and texture across the melodic line.[45] This technique is also sometimes referred to as 'pointillism' in reference to the neo-impressionist painting technique.

Schoenberg explored this idea in his text on music theory, *Harmonielehre*, where he explained musical sound as a three-dimensional musical structure, consisting of pitch, colour [timbre], and volume. The fact that Schoenberg dedicated an extended passage to the second of these elements, timbre, suggests that it played a significant role in his conception of an overall musical identity; timbre had expressive power within his musical structures. Indeed, Schoenberg outlines his belief that patterns of timbre might be considered as analogous to more conventional melodies, having a progressional element, as demonstrated below.

> In a musical sound (*Klang*) three characteristics are recognized: its pitch, color [timbre], and volume…Now, if it is possible to create patterns out of tone colors that are differentiated according to pitch, patterns we call 'melodies', progressions, whose coherence (*Zusammenhang*) evokes an effect analogous to thought processes, then it must also be possible to make such progressions out of the tone colors of the other dimension, out of that which we call simply 'tone color', progressions whose relations with one another work with a kind of logic entirely equivalent to that logic which satisfies us in the melody of pitches.[46]

One of the clearest examples of this technique can be seen in the third movement of Schoenberg's *Five Pieces for Orchestra*, Op. 16 (1922). This movement is even titled 'Farben' [colours] and

[45] On this technique, see Julian Rushton, 'Klangfarbenmelodie', *Grove Music Online. Oxford Music Online* (Oxford University Press), http://www.oxfordmusiconline.com/subscriber/article/grove/music/15094 (accessed 28 September 2016).
[46] Arnold Schoenberg, *Harmonielehre* (1922), trans. Roy Carter, *Theory of Harmony/Arnold Schoenberg* (London: Faber, 1978), p.421.

consists of gently morphing chords that change tone colour as different instruments enter the texture. For example, the opening 6 bars present a five-voiced timbrally-shifting chord. The top four voices – which are initially presented in flutes I and II, clarinet and bassoon II – shift every minim to the cor anglais, bassoon I, horn and trumpet. This continual pattern of shifting timbre every minim on this same chord, with only subtle changes, continues until bar 6 where the chord pitches change. In addition to the four-voice shifting texture, a fifth voice undergoes a pattern of timbral shifts at a rate of every crotchet beat between the violas and double basses. With each of these timbral shifts, a slight overlap in the pattern occurs to create a smooth timbral shift. Figure 1.42 (below) demonstrates how voices 1–4 shift timbre on each minim, and voice 5 on each crotchet.[47]

Figure 1.42. Example of rhythmically shifting timbres in Schoenberg's 'Farben', bb.1–6.

[47] This movement is explored in much greater detail in Charles Burkhart, 'Schoenberg's Farben: An Analysis of Op. 16, No. 3', *Perspectives of New Music*, Vol. 12, No. 1/2 (1973–1974), pp.141–172.

This principle of passing a note from one instrument to another underpins the start of my own piece *Night Airs.* I also take this a step further in some instances where I deliberately obscure the natural timbre of an instrument to make it sound more alike another, allowing that instrument to effectively 'capture' the note more seamlessly. My approach in this regard means that the timbral shift itself often becomes more graduated and less rhythmically distinctive than in Schoenberg's 'Farben'.

Webern also explores the technique of Klangfarbenmelodie in his works, most notably in Op.10, and Op.24. However, a more relevant example for the present discussion of how he applies this technique can be seen in his orchestration of the six-part ricercare from Bach's *Musical Offering.* In Webern's orchestration the melody is passed between the instruments allowing the melodic line to transform its tone colour every few notes. Each of the fifteen instruments plays melodic segments throughout the piece, rendering Bach's counterpoint distinctly Webernesque, and demonstrating Webern's interest beyond this as a complement to atonality, particularly in its pointillism. Indeed, the spaced timbres create a transparent and crystalline texture that maintains Bach's motivic coherence.[48]

The notion of Klangfarbenmelodie has fed into the timbral language and development of many post-war European composers. One composer who is notable for his extensive explorations of timbre is Helmut Lachenmann. Lachenmann categorised his method of composition as *musique concrète instrumentale*, an aesthetic direction that particularly explores non-traditional sounds and the associated methods of producing such sounds on instruments. This approach opens up a whole new palette of timbral sounds and musical structures outside the normal realms of musical expression. Lachenmann is also perhaps one of the first composers to begin to prescribe every element of sound; he gives specific instructions to players to perform precisely defined actions to create resultant sounds. For example, in his work for solo cello *Pression* (1969), the player is called upon to perform a variety of unorthodox actions on the instrument including to squeeze, press, jerk,

[48] Susan Key, 'FUGA (RICERCATA) A 6 VOCI, FROM THE MUSICAL OFFERING, BWV 1079', http://www.laphil.com/philpedia/music/fuga-ricercata-6-voci-from-musical-offering-bwv-1079-bachwebern (accessed 27 September 2016).

slide, hit and stroke various parts of the instrument and the bow.[49] The inclusion of such unusual techniques renders traditional notation inadequate for this type of sonic construction. Thus, Lachenmann developed a type of notation that has come to be known as 'action notation' or 'prescriptive notation', where the intended action of a performer is described or represented graphically.[50] The action causes the resultant sound. An example of action notation from *Pression* can be seen in Figure 1.43 (below).

Figure 1.43. Example of action notation from *Pression*.

In *Pression*, as in many of Lachenmann's other works, conventional performance techniques are abandoned. Lachenmann uses this to explore a soundworld that had been regarded as outside the realm of music, which Orning likens to consisting of sounds created through mistakes.[51] Throughout *Pression* he explores endless subtle variations of noises created through different bow speeds, angles, pressure and even the number of bow hairs in contact with the string. Works such as this demonstrate how Lachenmann manipulates timbre with such detail, allowing it to function as a foundational part of the musical structure. Indeed, his timbral explorations have changed perceptions of sounds that can be created and structured to form music.

The rarity of Lachenmann's use of conventional sounds shows a markedly different approach from my own. Although my work engages explicitly with aspects of timbre, I approach my composition differently from Lachenmann. Where I differ from Lachenmann is my approach to non-traditional playing techniques; I do not use these new sounds exclusively to form the whole structure

[49] Tanja Orning, '*Pression* – A Performance Study', *Music Performance Research*, Vol. 5, pp.12–31.
[50] Orning, '*Pression* – A Performance Study', p.13.
[51] Orning, '*Pression* – A Performance Study', p.14.

of the music, instead seeing them as extensions to a pre-existent array of parameters that can be combined to create different musical expressive possibilities.

Whilst Lachenmann's music demonstrates the elevation of timbre as a defining structural element, other composers such as Saariaho and, later, Rebecca Saunders, have sought to employ timbre in differing structural levels in their works. Adopting aspects of their process has increased my desire to extend the timbral palette I use in my compositions by allowing non-traditional parameters to have increased prominence within the musical structure. I have been fascinated by how extended techniques on instruments can expand the timbral palette of an instrument and therefore extend the expressive possibilities on offer. My developing interest in timbral exploration has been a gradual process and is one that I will continue to explore beyond this portfolio.

The continued exploration of blended instrumental timbres occurs in *Shadows Create the Night*. In this piece, timbral techniques (including harmonics, *sul ponticello, tremolo* and double stops) are used to colour notes attaching significance to particular musical events.[52] Timbral exploration is most prominent in the closing passages, where timbral elements verge on becoming a modulating parameter. In bb.175–7 (end) the cello undergoes a series of gradual transformations, with the pitch getting incrementally higher. This raising of pitch is extended by transferring the pitches from normal notes to harmonics, an effect twinned with a gradual move away from the 'natural' playing position to *s.p., molto s.p.* and finally on and over the bridge itself. At this final stage the ascending pitches progressively shift along the noise-axis to create more dissonant timbres, deliberately creating a sense of fragility and ascent from the overall soundworld of the work. The cello material is punctuated by the final gesture of the piano lid being closed whilst the sustain pedal is held down, creating a resonant percussive effect that exploits the timbral characteristics of the piano.

[52] *Sul ponticello* will henceforth be shortened to *s.p.*

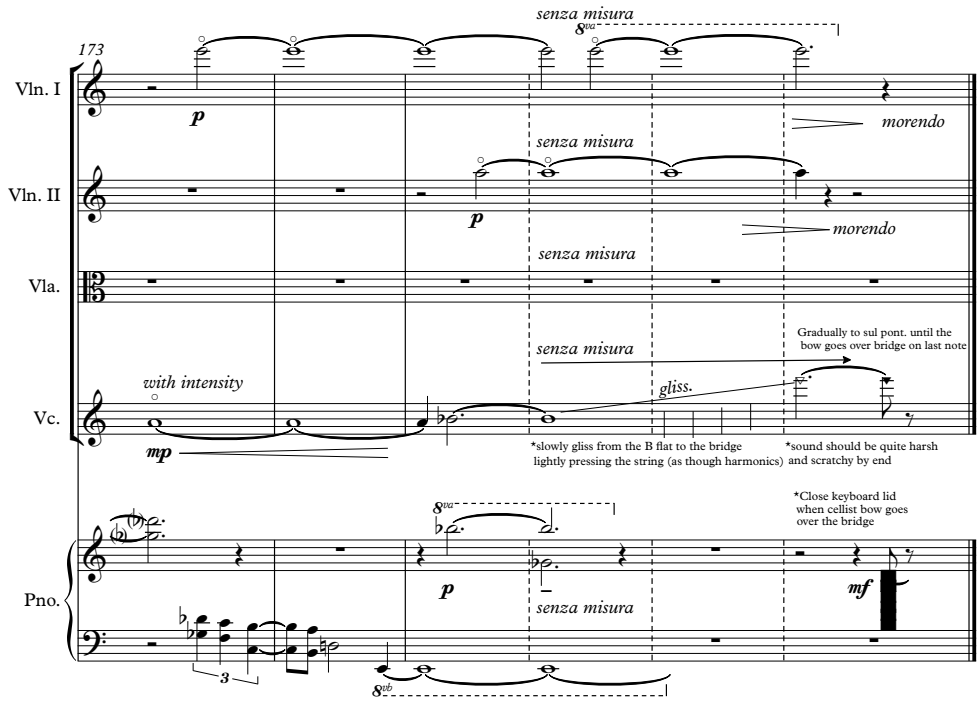

Figure 1.44. *Shadows Create the Night*, bb.175–7(end). Timbral transformation of final cello note.

My perception of timbral exploration has become increasingly influenced by the study of several contemporary composers, particularly Dai Fujikura and Kaija Saariaho. Saariaho's approach and writings on timbre, especially her 1987 article 'Timbre and Harmony: Interpolations of Timbral Structures', have been highly influential. In this article Saariaho discusses timbre as a modulating factor that is capable of affecting meaningful change to the same extent as harmony.

Elements of her views are found in *Apparitions* and *Rainbow Fires*; in these works I began to fully embrace an expanded timbral palette, extending the expressive scope of my musical language. Timbral expansion has been an intellectually stimulating way to aid the establishment of meaningful significance to specific musical events. Saariaho's works have helped me develop my approach to timbre as a modulating factor, with normal playing techniques being thought of as 'consonance' and gradated extended techniques that push the sound further into the noise-axis as 'dissonance'.

A particularly influential work in this regard has been her piece for solo cello *Sept Papillons* (2000) where the timbral palette of the cello is explored and timbre as a modulating factor is used. The piece uses timbre to create a fragility in the sound as well as using the full-bodied sound as brief moments of timbral consonance. One form of timbral modulation into dissonance is explored

through the gradual change to *sul ponticello* in combination with increased bow pressure, creating a distorted sound. An example of this can been seen in *Papillon IV* b.1-11 (Figure 1.45, below).

Figure 1.45. Saariaho, *Papillon IV*, b.1–11 showing timbral transformations with bow pressure and bow position.

In *Apparitions* I explore similar techniques to those found in Saariaho's *Nuits Adieux* (1991/6), including the transition between full-voiced, whispered, and percussive sounds. Alongside this, some vowel sounds are expressed in unusual ways through the splitting of words into unconventional syllabic units, exploring the expressive possibilities that this affords. *Rainbow Fires* also explores timbre as a modulating factor in its own right, with timbre being used to heighten the expressive meaning of musical events: see Chapter Four.

Following on from this, in *Nacreous Contours* for solo clarinet, I sought to push the timbral possibilities offered by the clarinet to expand the expressive possibilities at the limits of playability and conventional sound. However, I was mindful that an intelligent and creative balance between 'normal' and 'unconventional' timbres gives greater scope for musical meaning, and allows the listener to understand the impact of timbral events.

Numerous timbral techniques are used throughout *Nacreous Contours* to convey the imagery of nacreous clouds. However, the most important of these are harmonic tremolos and multiphonics.[53] An example of timbral modulation through various timbral devices occurs in b.2 (Figure 1.46). The

[53] Consultation of Phillip Rehfeldt, *New Directions for Clarinet* (Lanham, MD: Scarecrow Press 2003) and blogs by Heather Roche (found at http://heatherroche.net) informed the techniques used in *Nacreous Contours.*

rhythmic freedom given to the performer here allows them to expose these timbral shifts to the fullest potential at their own pace.

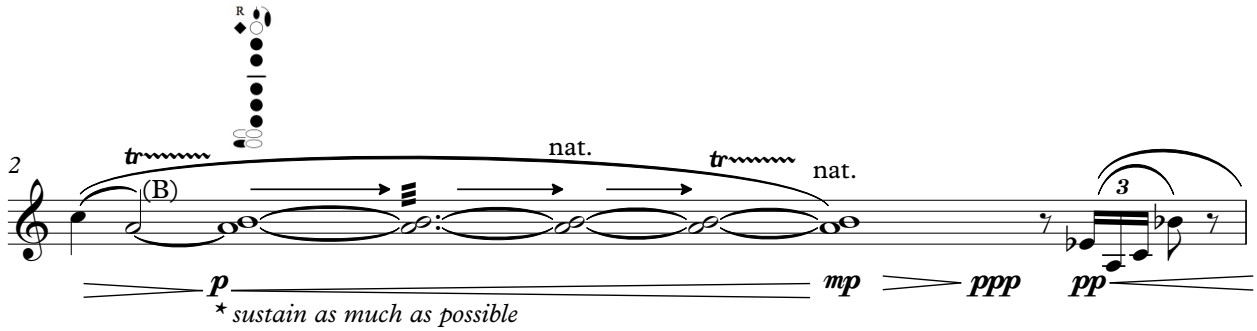

Figure 1.46. ***Nacreous Contours*****, (transposed) b.2. Timbral modulation.**

In Saariaho's *Duft* for solo clarinet (2011), slow vibrato, a technique that explores the subtle nuances of sonority within a single note, is used. I have found it effective in evoking colour and emphasising specific notes (Figure 1.47). This figure also shows an example of the additional effects that amplification has on blowing sounds combined with percussive key slaps.

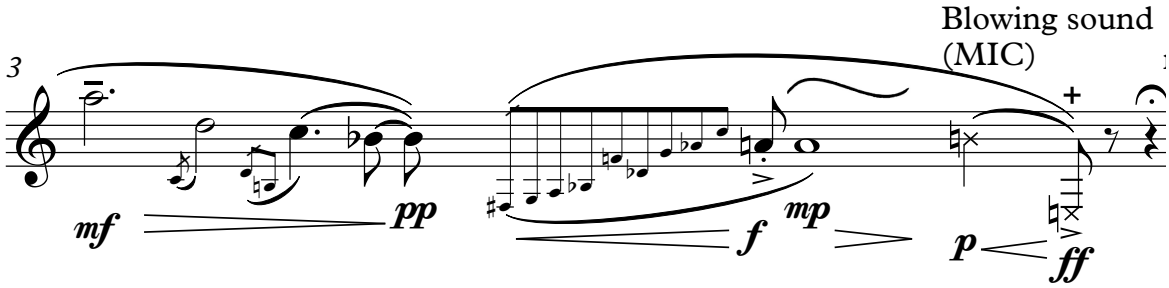

Figure 1.47. ***Nacreous Contours*****, b.3 (transposed). Slow vibrato technique on A.**

Whilst I felt it important to explore the clarinets' sonorous possibilities, I was mindful that clarinet harmonics can be unstable and some can have undesirable sound qualities. In consultation with Heather Roche's guide to extended clarinet techniques, I have carefully selected harmonics and harmonic/timbral tremolos that create a fragile but soft and beautiful sound.

Transposed score

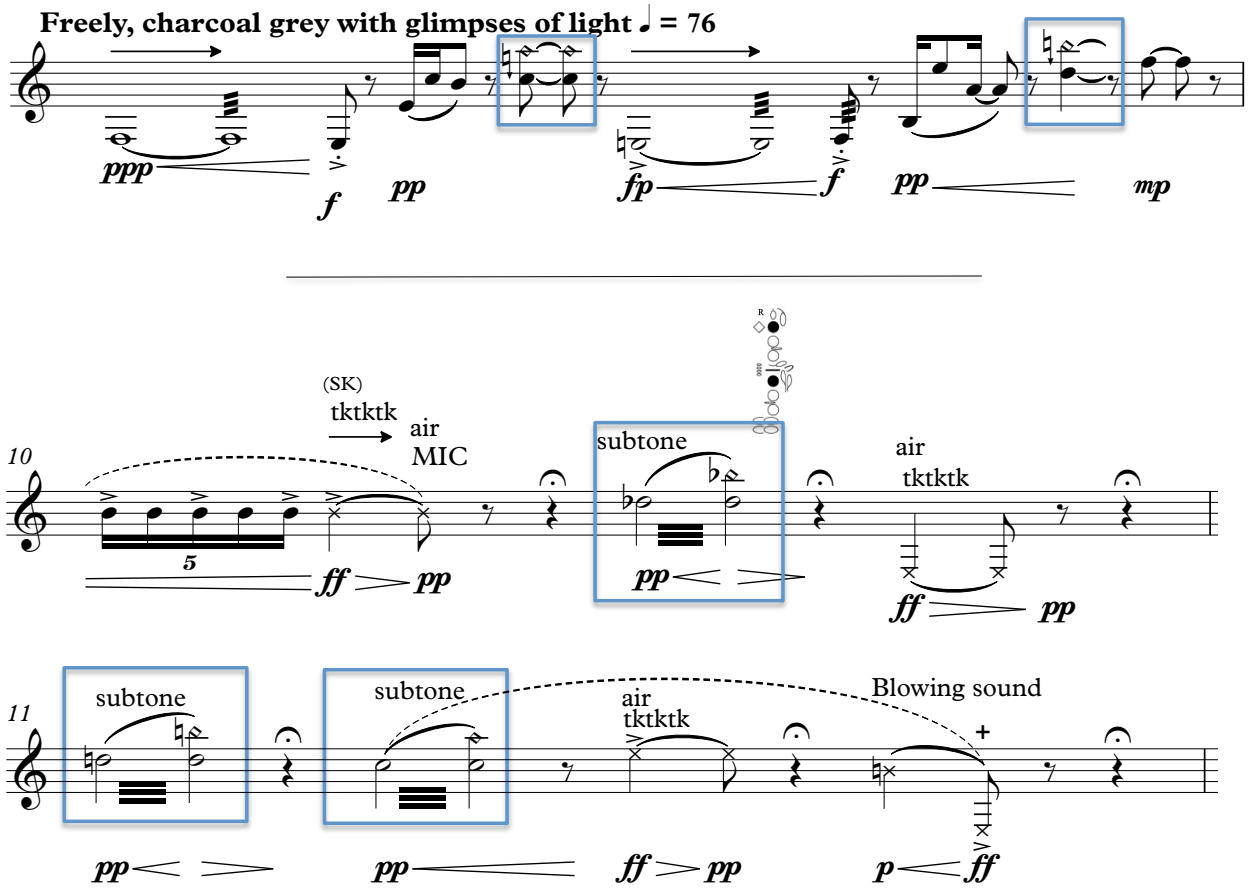

Figure 1.48. ***Nacreous Contours*****, b.1 and bb.11–12, use of harmonics and harmonic tremolos.**

As the first section represents the darker colours, I was keen to find ways to show glimpses of light cutting through this texture. The fragile timbre of carefully selected harmonics offered an approach to convey this imagery. I refined my selections in response to immeasurably valuable workshop sessions with Dov Goldberg of Psappha.

Multiphonics are used in *Nacreous Contours* to convey a softer, more fragile sonority. Two types of multiphonics are employed: those that are in the noise realm of sound and soft dyads. These allowed for the nuances of colour and sonority to be explored. I found the multiphonic chorale passages from Fujikura's *Sakana* (2007) and Chin's Clarinet Concerto (2014) to be particularly good examples of the effects of delicate multiphonics. Figure 1.49 shows soft dyads in combination with timbral devices building up to the final, largest multiphonic of this passage.

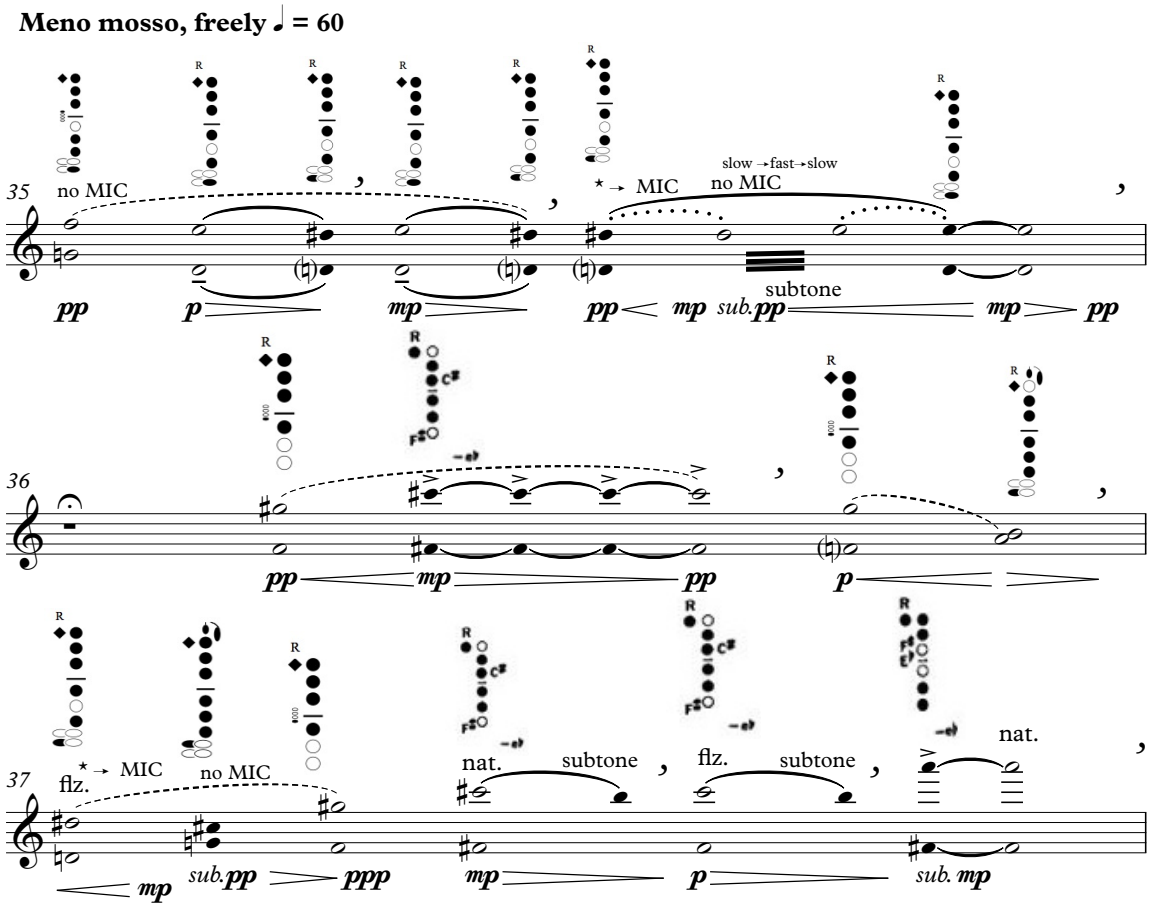

Figure 1.49. *Nacreous Contours*, bb.39–40. Soft dyads with various timbral techniques.

Fujikura's timbral language and engagement with concepts from the natural world have been particularly influential on my works. His *Sakana* for solo clarinet, *Okeanos Breeze* for the Okeanos ensemble (2001), and *Clari4nics* for two clarinets and two bass clarinets (2000), have been influential on my timbral approach. Whilst composing *Nacreous Contours*, Fujikura's *Sakana* was especially stimulating as the piece tries to evoke imagery of light shimmering off the bodies of fish: 'In this piece, I imagined light reflecting off of fishes [sic.] bodies as they move around in water – sometimes smoothly and sometimes with rapid movement'.[54]

Fujikura conveys this imagery by using many timbral techniques, most notably fragile multiphonics, rapid tremolos and microtones to achieve subtle sonorous nuances. Even without an explicit programme note, the reflective shimmering quality is clearly evoked. Building upon Fujikura's approach, I used various timbral devices, especially harmonic/timbral tremolos, to achieve

[54] http://www.daifujikura.com/un/lw_SAKANA.html (accessed 11 January 2016).

a sense of effervescence, evoking something akin to a 'mother-of-pearl' effect in *Nacreous Contours*.

Across the course of this portfolio my approach to timbre has evolved significantly. It has become a prominent parameter in my compositional voice and one that I believe offers effective modulation, working in conjunction or in competition with harmony. This new conception of timbre offers an exciting avenue that I will continue to explore in future works.

A personal compositional language: summary

Over the course of the PhD my compositional language has evolved as different techniques have captured my interest. I found the approach of using extra-musical stimuli to inform compositional parameters useful to conceive and structure my ideas. Being thoughtful and economical in my gestural language led me to have a unified organic language that establishes a coherent argument across the work. I have begun to explore more deeply the idea of timbre as a prominent modulating parameter and found it interesting to consider the potential dynamic, structure, tension, and meaning this can create, particularly when deployed in conjunction with harmonic materials. Due to the diverse range of influences my compositional language is hard to define. However, I feel my music now aligns most closely to that described as 'neo-Romantic chromatic post-tonality' in Miguel A. Roig-Francoli's *Understanding Post-Tonal Music.*[55] My music is an eclectic mix that encapsulates broadly the transitions between modal, non-tonal and atonal harmonic language, whilst retaining a gestural language that has romantic and expressionistic elements.

I have developed my own constantly evolving compositional language that strives to uncover new modes of engagement with extra-musical material, especially concepts from the natural world, to increase the efficacy of musical communication and establishment of deeper layers of meaning. In the following chapters, key themes from this exposition of my compositional language are explored through the case studies of *Apparitions, Roil in Stillness* and *Rainbow Fires.*

[55] Miguel A.Roig-Francoli, *Understanding Post-Tonal Music* (Maidenhead: McGraw-Hill Education, 2006), p.341.

Chapter Two: Textural composition; composing for the voice.

Case study: *Apparitions*

Apparitions for 12-voice chamber choir sets my own poem which I wrote specifically for this piece. The imagery of the poem reflects upon transitory moments in nature, life, and the emotions. Its meaning is deliberately ambiguous, offering different interpretations when lines of the text are combined. This ambiguity led to the title *Apparitions*; something half seen that cannot be fully comprehended. *Apparitions* was selected for a choral composition workshop led by Judith Weir and Matthew Hamilton with the BBC Singers at Maida Vale Studios. This experience offered invaluable insights, allowing me to explore some issues of unusual word-splitting and the effects (and challenges) of extreme harmonic density.

Given that I rarely write vocal music, *Apparitions* offered different creative avenues to explore my compositional voice further in the portfolio. However many compositional devices seen in my instrumental works are further explored here to understand their effectiveness, and appropriateness, within a choral context.

A synthesis of texture, density and word-painting

The form of *Apparitions* is governed by textural contrasts and transformations through episodes. I wanted to explore the impacts that compositionally foregrounding texture, density and timbre had on defining structure and enhancing word-painting.

During the compositional process, I was particularly drawn to Ligeti's works that incorporate sound masses or complexes, such as *Atmosphères* (1961), *Lontano* (1967), and *Lux Aeterna* (1966). Powerfully dramatic sound blocks akin to those heard in Ligeti's works can be created effectively through minutely detailed notation, or equally, through aleatoric methods. The exploration of vertical

and horizontal density caused by highly chromatic harmony and different textures, including a mixture of homophony, polyphony, and occasional micropolyphony, was highly stimulating.

Here, as with many of my other works, I was interested in the possibility of shifting timbres, affording greater control of sound events. This led me to consider Saariaho's choral work *Nuits Adieux* (1996).[1] In this piece the timbral possibilities of the voice are explored, often through control of vowel sounds and other techniques, some of which I use in *Apparitions*, including whispered half-voiced sounds. I have also incorporated manipulated vowel sounds through unusual word-splitting. In addition to Saariaho's work the composers Sally Beamish, Judith Bingham, Judith Weir, Per Nørgård and Karin Rehnqvist have been influential on my choral writing.

In terms of spatial designs, I found Cheryl Frances-Hoad's 2015 work *From the Beginning of the World* to be stimulating. She uses the extremes of the vocal range for sustained periods to great effect and explores different voicing and densities.

By using timbral and textural modulations and density/spatial changes, I was able to control these factors to bring about sound transformations, which, in turn, enhance word-painting. Indeed, the additional textual content offered further expressive possibilities, including enhanced control over some narrative parameters. *Apparitions* is broadly divided into seven episodes. The episodes increase in length, with episode 6 being the longest before shortening again in episode 7.

[1] This piece was originally written for vocal quartet and electronics in 1991.

In episode 1, bb.1–9 sopranos 1–3 and alto 1 have soloistic material, allowing the lines to interweave clearly. ‘Ripples’ is highlighted through prominent ascending and descending chromatic movement in these voices, musically mapping the meaning of the words (Figure 2.1).

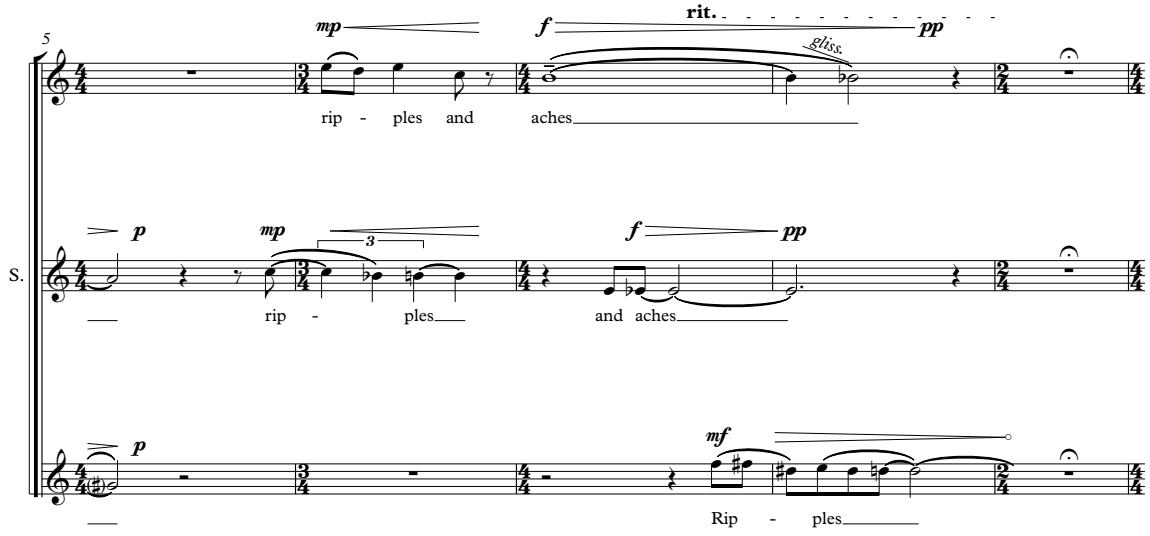

Figure 2.1. *Apparitions*, bb.5–9. Word-painting of ‘ripple’.

The setting of ‘aches’ at the end of episode 1 (b.8) is noteworthy. By withholding ‘aches’ its setting has greater impact, allowing the next episode to explore the nuances of its meaning more deeply. Alto 2 and tenor 1 emphasise the meaning of ‘aches’ with a glissando sighing motion, intensifying the emotive content (Figure 2).

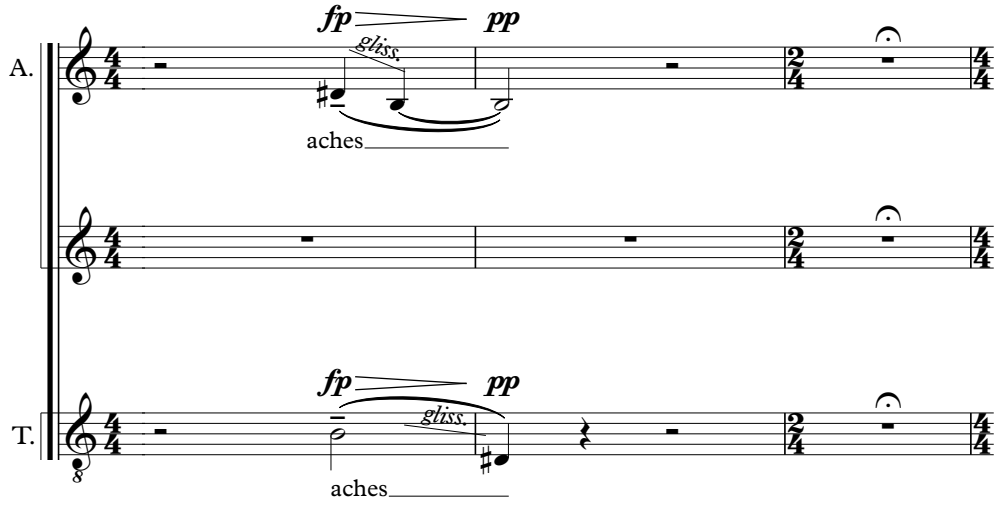

Figure 2.2 bb.7–8. Sighing gesture on word ‘aches’.

The second episode (bb.10–18) further explores ‘aches’, with the meaning shifting through its juxtaposition with ‘still’, resulting in the sounding of ‘aches still’ and ‘still aches’. The word-painting effect from ‘ripple’ now affects the word it is describing with trills on ‘sky’ in b.14–16. Throughout this passage the vertical density gradually increases, reaching the height of its chromatic density on the last chord in this episode (bb.17–18). Significantly, this episode reaches its climax on ‘aches’, much like the previous episode. The harmonic direction of these episodes sees an increase in chromatic density, creating a moment of vertical sound mass. Indeed, each episode is characterised by textural and harmonic intensification through density. Episode 2 clearly demonstrates this, with lesser peaks seen in episodes 3 and 4, leading to the climax of density being reached in episode 5.

Episode 3 (bb.19–31) explores timbral shifts on ‘still’ and ‘aches’, moving from normal tones to breathy and whispered sounds. This transformation in tone quality creates a fragility and ghostliness, setting ‘haunting’ appropriately (Figure 2.3). The presentation of these lines communicates multiple interpretations of the text, allowing this passage to be heard as two independent lines being sounded simultaneously: ‘Still aches’ and ‘My haunting stature still’ or ‘Still my haunting aches’. The textual ambiguity created by this polytextuality allows the listener to explore different meanings created through the word-setting.

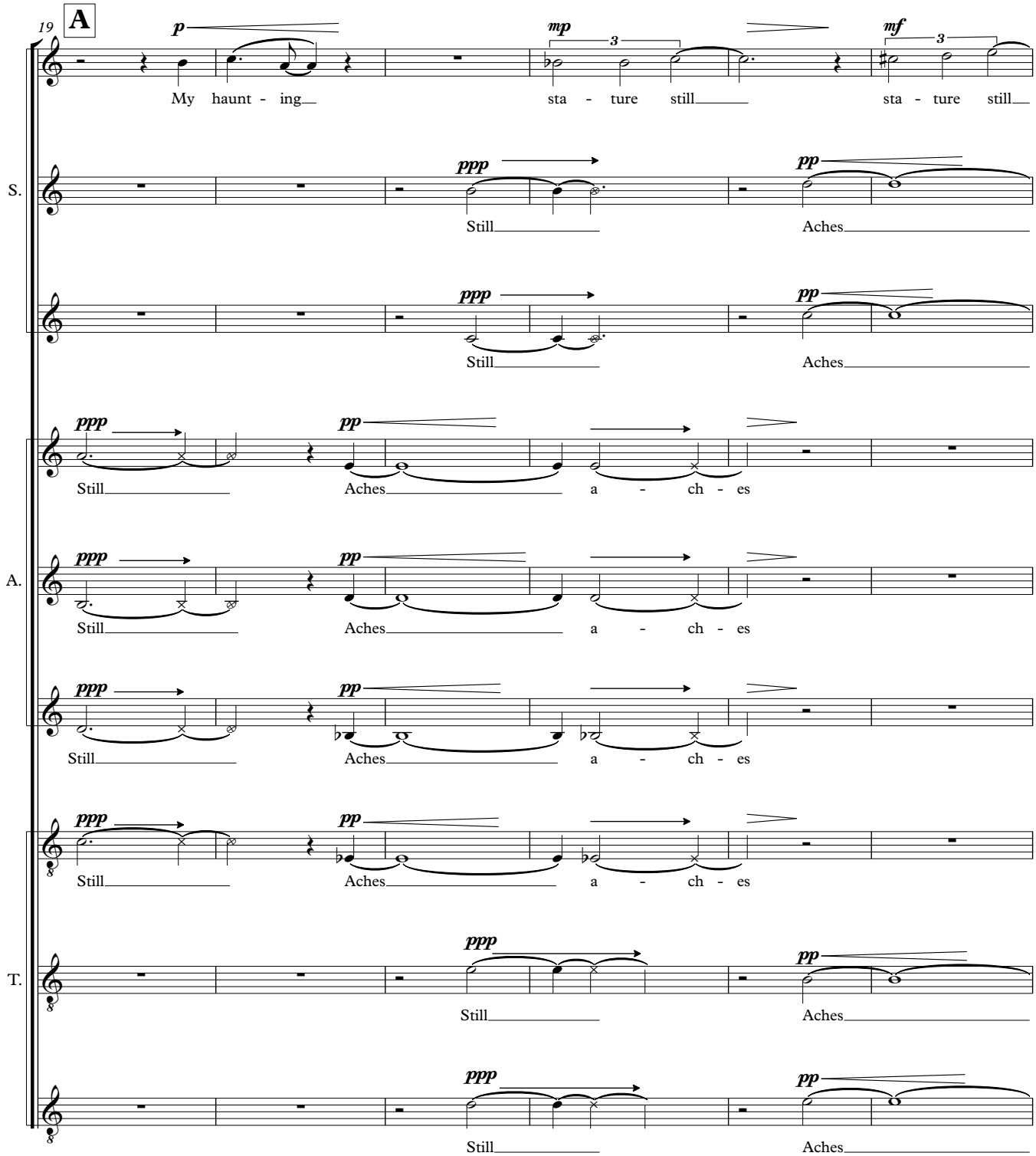

Figure 2.3. bb.19–23. Timbral modulation across 'still' and 'aches'.

Episode 4 (bb.32–55) sees the continuation of timbral modulation. The onomatopoeic effect on 'swept' is used to enhance its word-painting. The word opens with the 's' sound staggered across lower voice entries, with the 'w' and 'e' being separated to extend the word further and ending with percussive 'pt'. This staggering creates a 'smattering' effect (Figure 2.4).

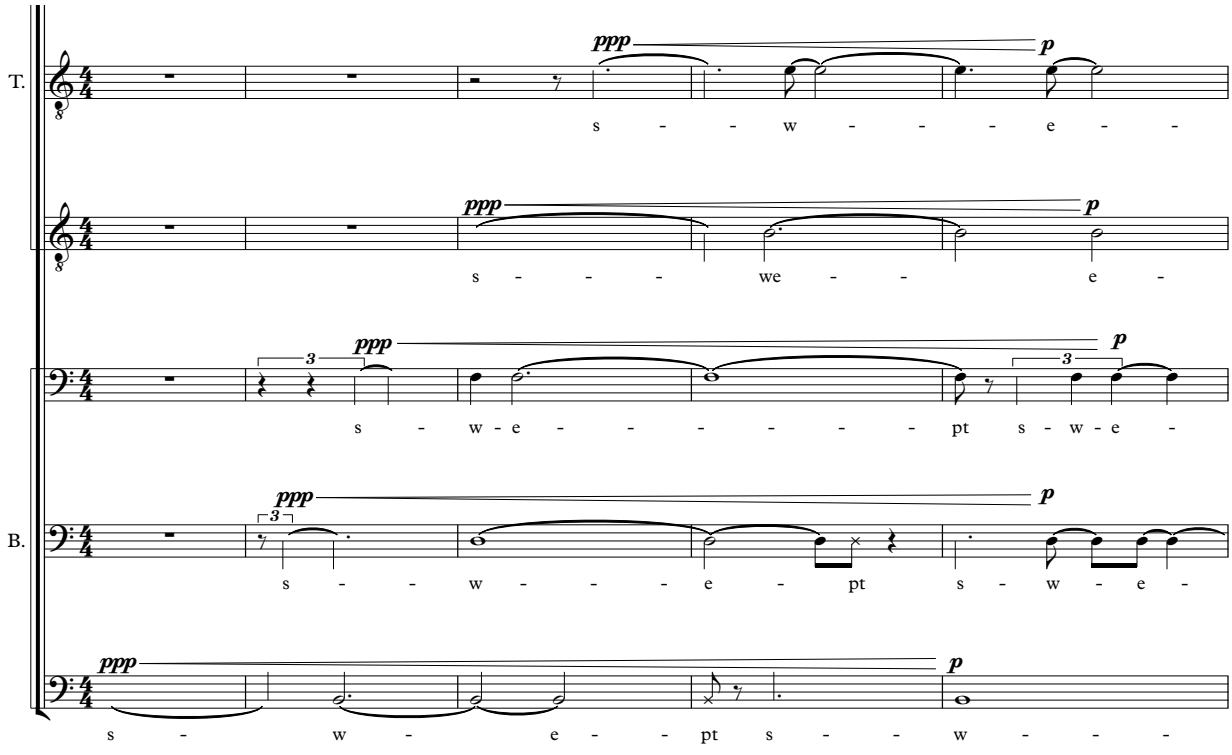

Figure 2.4. bb.32–6. Timbral effect across ‘swept’.

Across this passage other instances of unconventional word-splitting occur, i.e. changing ‘heart’ into ‘he’-‘ar’-‘t’, altering the emphasis of vowel sounds (Figure 2.5). The lengthening of the vowels in ‘heart’ also ties in with the meaning of ‘swept’, as though it has been stretched through being ‘swept away’.

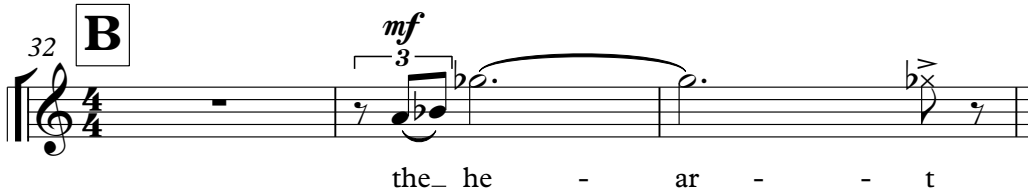

Figure 2.5. bb.32–4. Unusual word-splitting on ‘heart’ in soprano 1 b.33–4.

In bb.37–9 a build-up towards a harmonically dense peak occurs, emphasising ‘away’ and creating greater contrast to the following sequential polyphonic material. This sequential pattern unfolds in bb.40–5 with each entry presented a third lower. Each presentation is punctuated by percussive ‘pt’ in the lower voices coinciding with the end of ‘swept’.

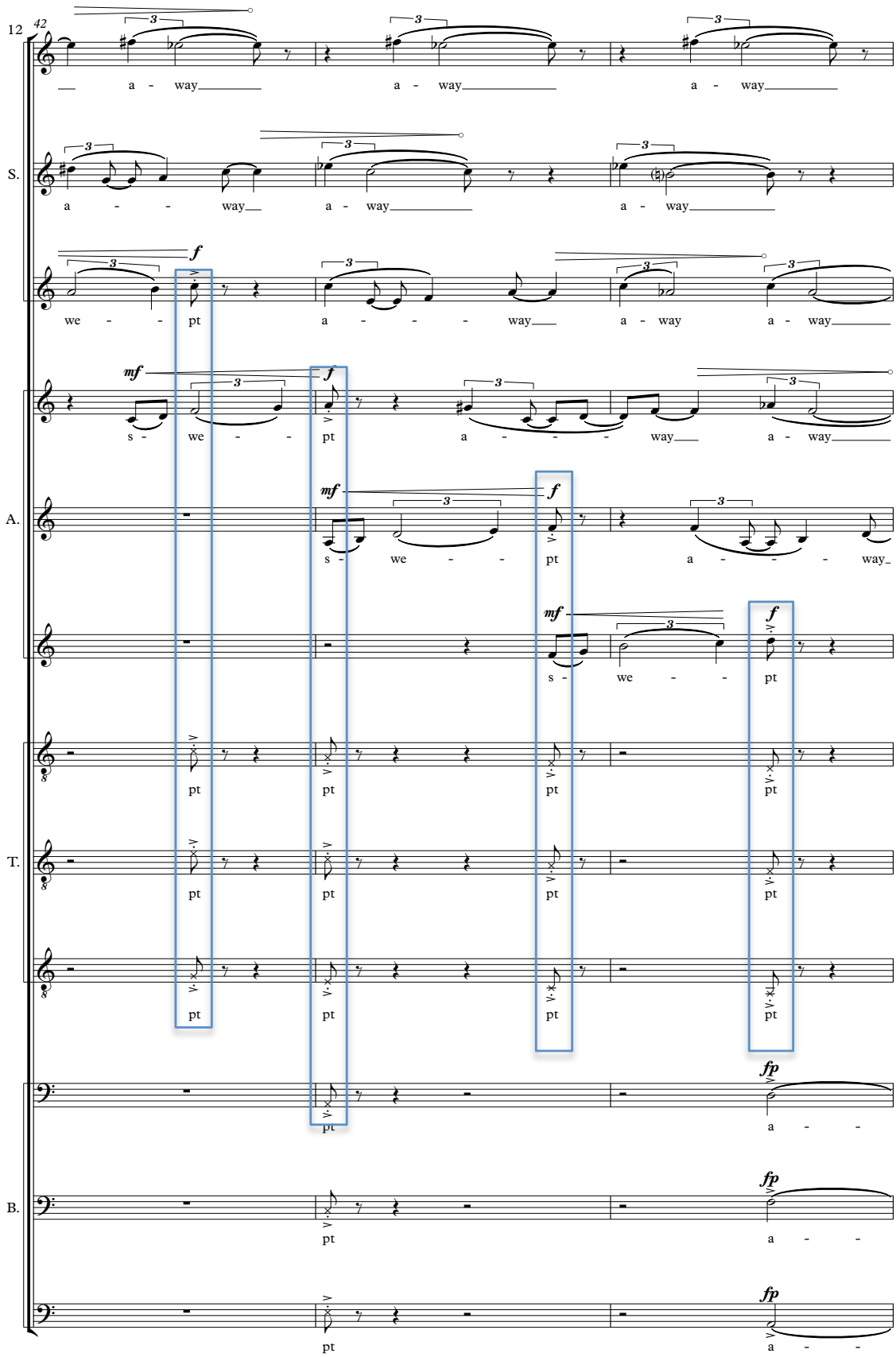

Figure 2.6. bb.42–4. Sequential entries of ‘pt’.

As the voices enter, the textural density of this polyphonic passage increases, clearly marking the sudden textural contrast that occurs in bb.46–55 through the homophonic setting of ‘away’ in a sighing motion.

Episode 5 (bb.56–78) is the central passage of *Apparitions* and contains the most intensive textural modulations. The section starts with vertically dense chromatic chords setting ‘Hands cling’. This is twinned with a continuously descending gesture evoking the imagery associated with ‘that cannot grasp’, almost as though the music is falling away. Spatial contrast is also explored here through varying levels of chromatic density within the chords and changes in voices, particularly when some ascending lines create closed chordal voicings (Figure 2.7).

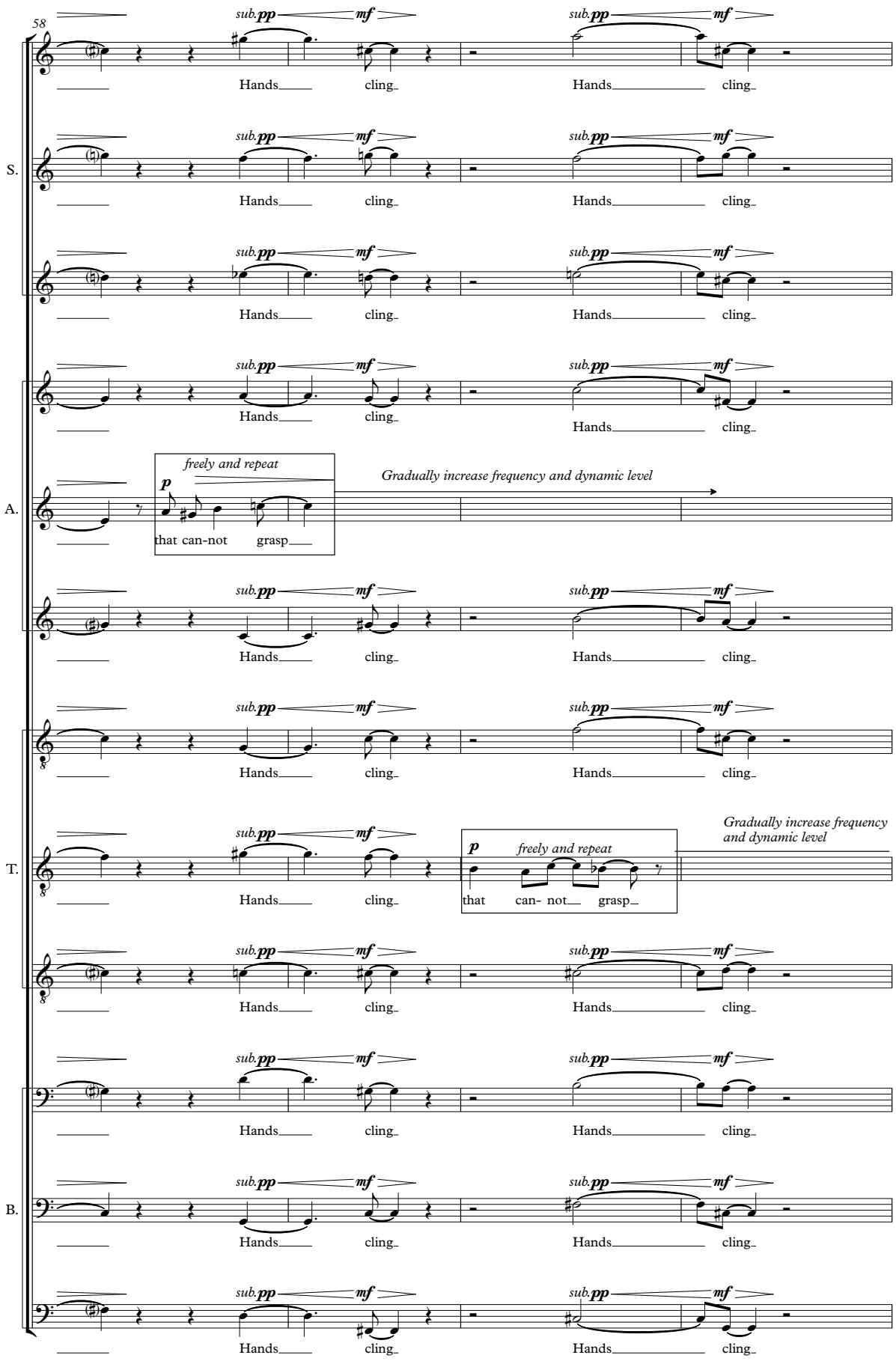

Figure 2.7. bb.58–61. Homophonic setting of 'Hands cling' with different spatial explorations.

This descending figure creates a slipping effect, as though the clinging hands ultimately fail, musically representing the words. In b.58 the first aleatoric material enters, commencing the gradual disintegration of a strong homophonic texture through aleatoric counterpoint. As other voices join the aleatoric material, the horizontal density of this polyphonic texture builds.

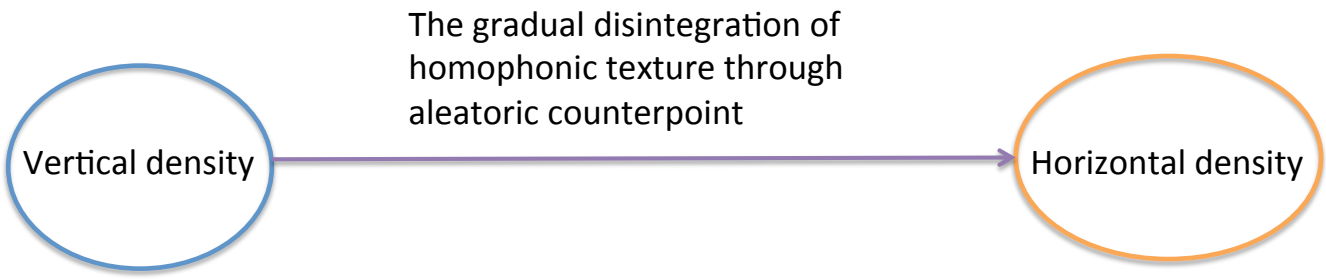

Figure 2.8. Textural transformation of episode 5 (bb.56–78).

This textural shift enhances the word-painting of 'Hands cling', as though this cannot sustain the homophonic texture, allowing it to slip away into the polyphonic setting. With all twelve individual lines sounding at this moment a micropolyphonic texture emerges, creating a shifting sound mass that responds to different aleatoric counterpoints.

This complex texture ends abruptly and is punctuated by silence before high levels of horizontal density returns, creating a jarring beginning to episode 6 (bb.79–102). This episode opens with a setting of 'that cannot grasp' as though still clinging onto this line that belongs to the previous section. The lines, which are somewhat homophonic in nature, are superimposed in a misalignment, resulting in a polyphonic texture that creates the effect of each line 'slipping' past those surrounding it, feeding into the imagery of the text.

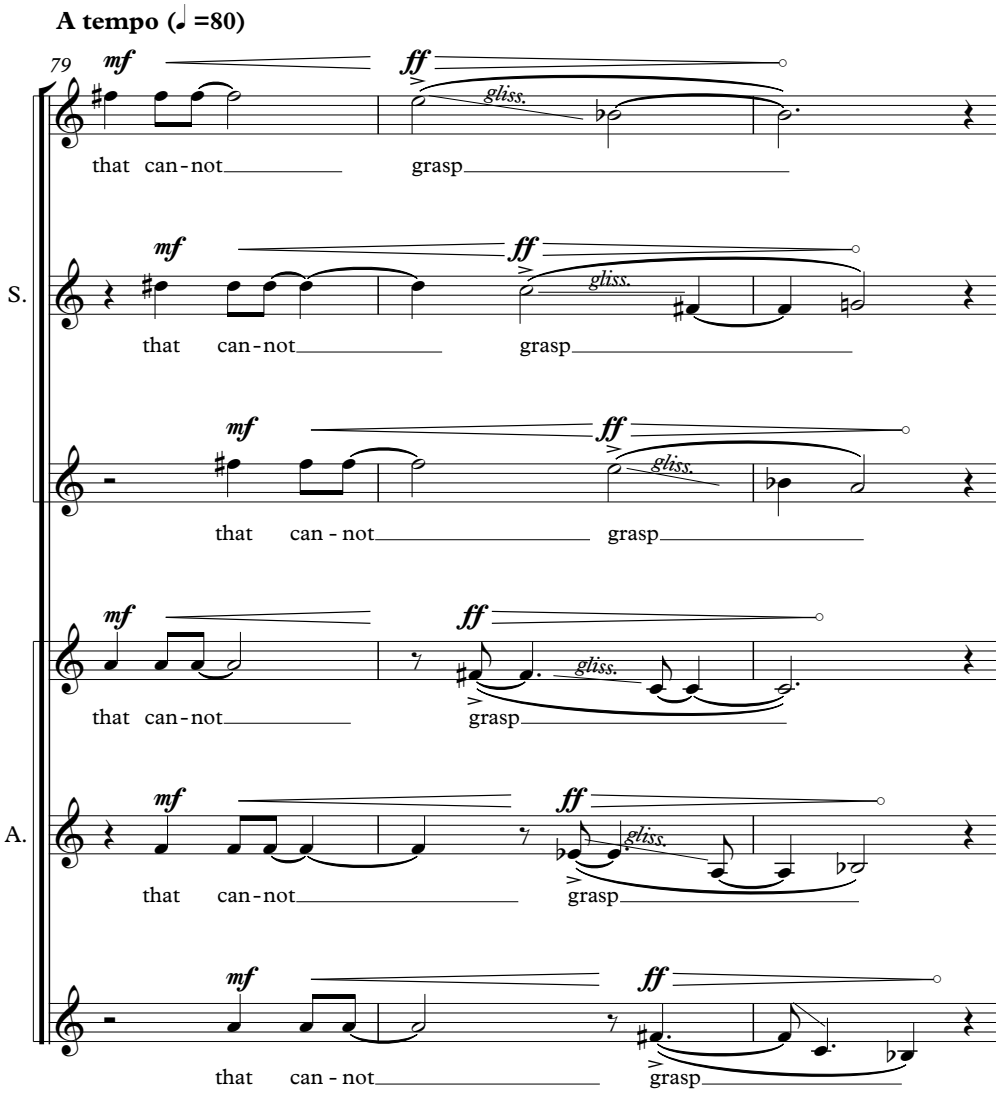

Figure 2.9. Start of episode 6, bb.79–81 setting of 'that cannot grasp' with lines slipping past each other.

A near identical musical event also happens in bb.87–9. In both of these cases, the texture is punctuated by soloistic duo passages that explore a more intimate counterpoint. These duos have close similarities to each other that have moments of alignment and then shift away from each other, creating a heterophonic texture.

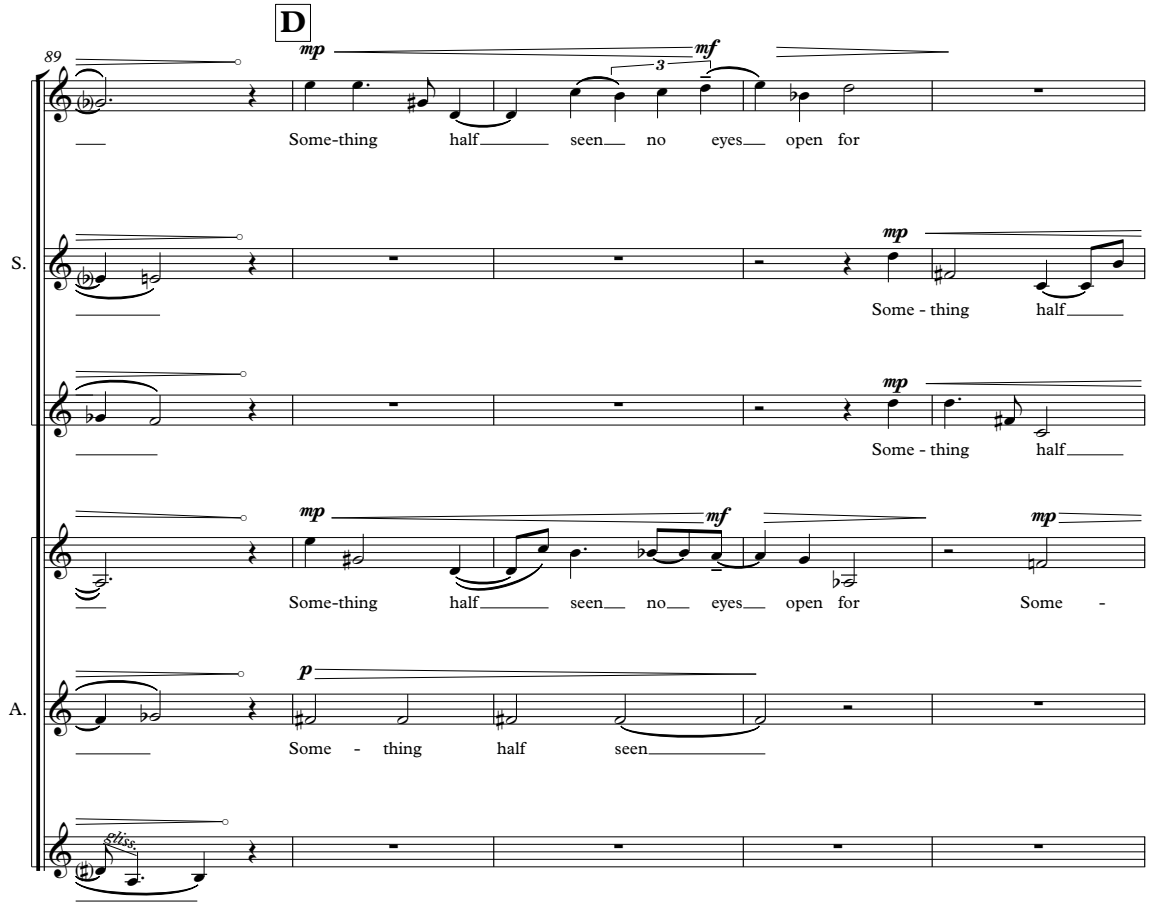

Figure 2.10. Duetting soloistic passages.

The setting of the text here creates the effect of reading 'Something half seen no eyes open for' (Figure 2.10). Later, between bb.97–102, the end of this line – 'no eyes open for' – is placed next to 'beautiful scars in the sky', establishing a different layer of meaning across the lines. Significantly, this is the only setting of this line and its prominent placement highlights its meaningful significance. The rhythmic treatment of 'beautiful', characterised by quintuplet quaver groupings, along with melodic shaping and fluctuating chromatic density, further contributes to its prominence.

The textural and harmonic density increases throughout this section, with the harmonic density peaking in b.100, shortly followed by the textural density at b.103. The final chord of this episode has the somewhat contradictory effect of simultaneously conveying density and openness. This is achieved through the chordal voicing which is formed by soprano and bass voices framing the alto with quintal/quartal harmony of F#-C#-F#. The alto voices provide the chromatic density of C-G#-C that crunches against the outer voices, leading to the simultaneous creation of open fifth and cluster harmonies.

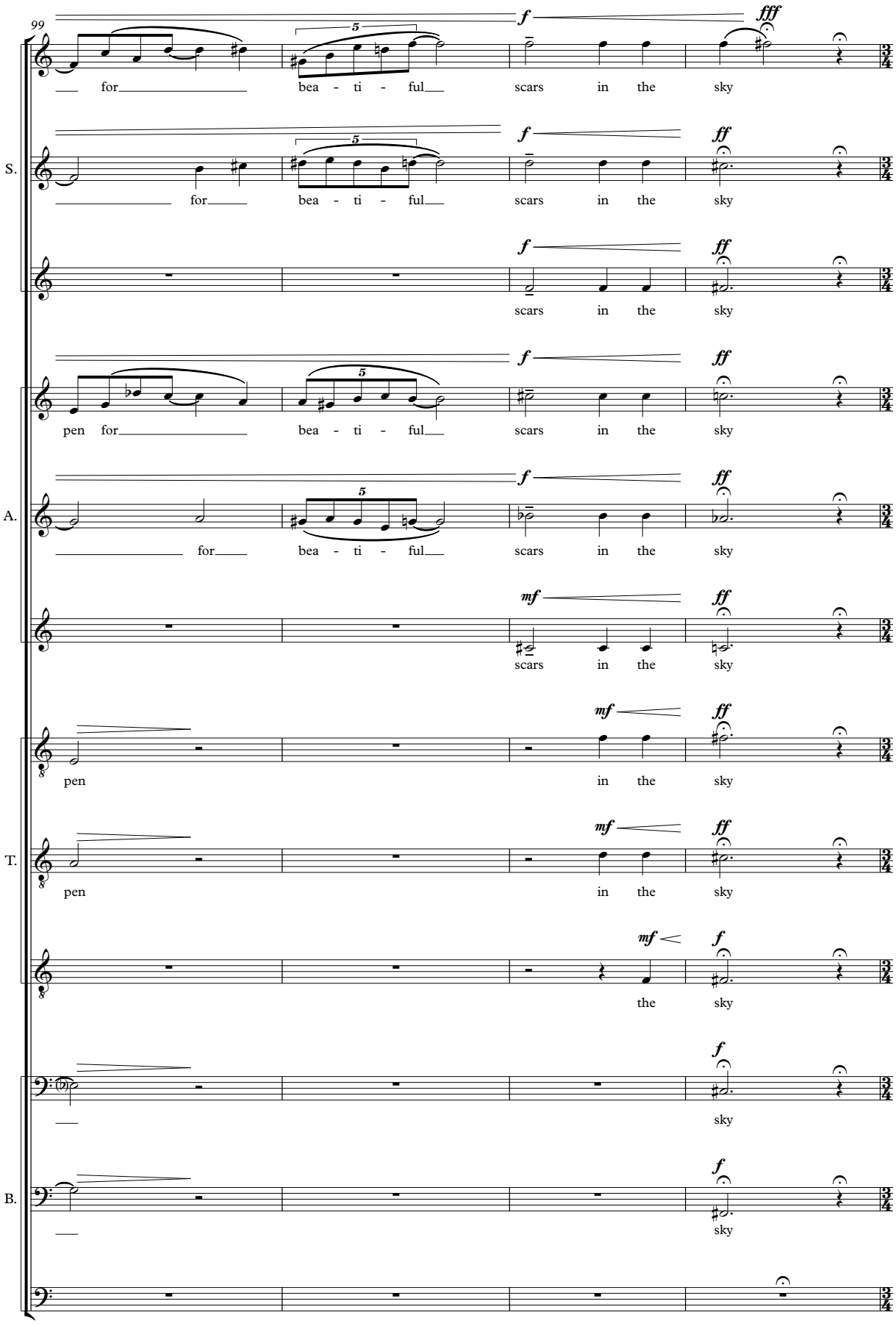

Figure 2.11. Increase in density towards final chord of episode 6 (b.103).

The final section, episode 7 (bb.103–116), continues to explore density, though at a softer dynamic than has been seen in the rest of the piece. The result is a soft yet full-bodied sound. The descending opening line, ‘All asleep’, feeds into the imagery of being lowered into a state of unconsciousness as we fall asleep. The entries are staggered here with each line being extended by one note to build two cluster groups of whole tone and secundal harmonies (Figure 2.12).

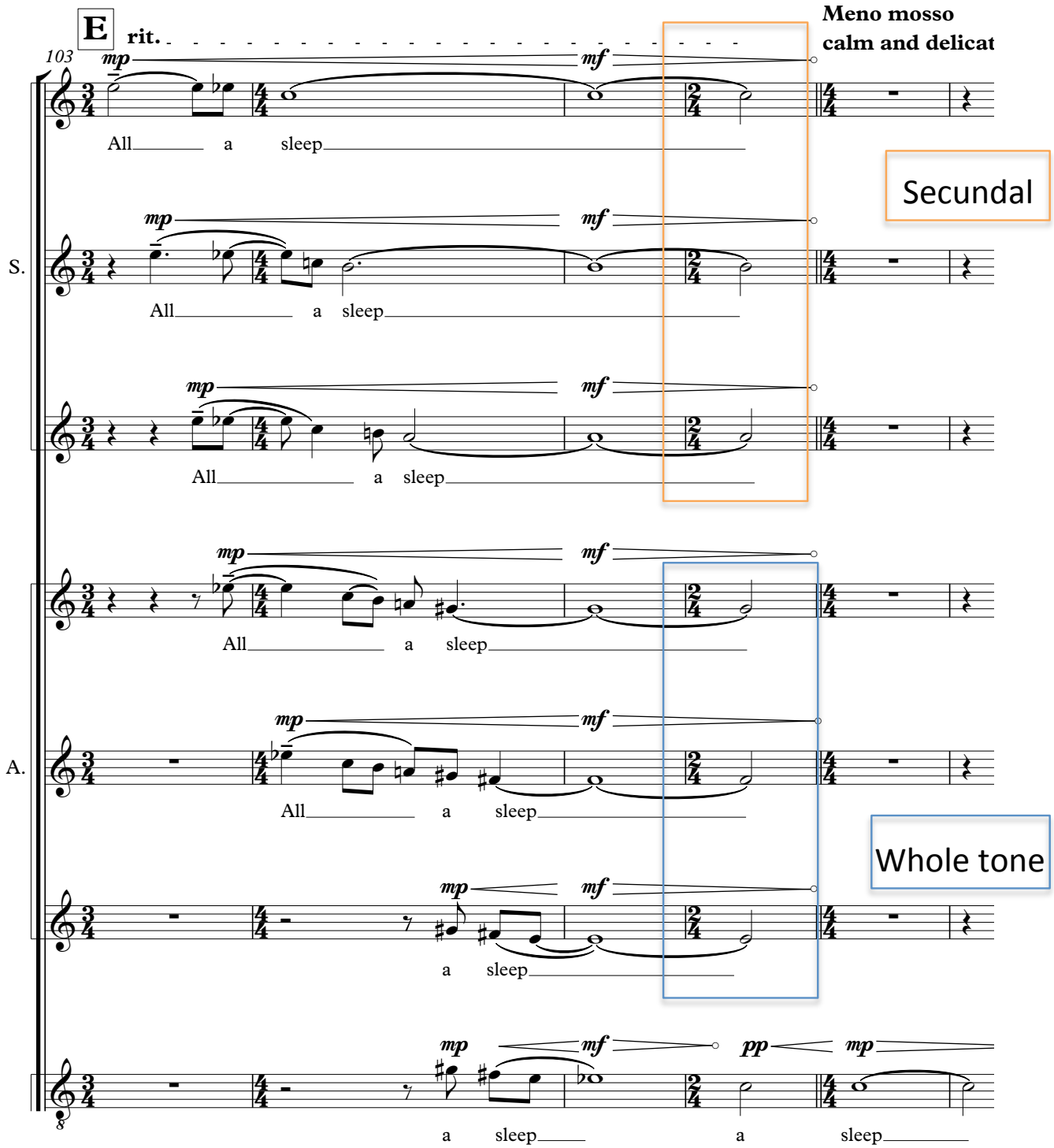

Figure 2.12. Setting of ‘All asleep’ descending line forming cluster chord in b.106.

In the context of the line that follows, ‘one day, die’, this passage can be thought of as a lowering into a different state. The intensely dissonant and dense final chord (b.116) is softened through the voicing that implies aspects of E major consonances.

Having reached the conclusion of the piece, to summarise, the exploration of different textural devices in *Apparitions* demonstrates the ways in which the textural content of the piece affects the formation of the musical structure. This piece is characterised by episodic sections, with the textural intensity of each increasing through different means. In making use of a 12-voice choir, I was able to establish a significant contrast between different fields of harmonic and textural density, allowing for a diverse and complex musical language to develop. The creative and expressive possibilities afforded by this ensemble heighten the poignancy of key parts of the text, evoking vivid imagery in the mind of an imagined listener, exploring other aspects of some of the techniques seen in my instrumental works.

Chapter Three: Exploring how extra-musical stimuli from the natural world affect compositional parameters. Case study: *Roil in Stillness: Ripples and Waves*

Extra-musical stimuli; approaches and influences

I have found literature, visual arts and dance to be useful sources of inspiration. I have developed an approach of using extra-musical material to inform compositional parameters, particularly focusing on the natural world as a creative wellspring. In exploring this, I have examined several works that engage with the natural world as a source of inspiration.

Of these, Arlene Sierra's works have been particularly influential in solidifying this idea as a useful creative direction. The vast majority of Sierra's works are based on extra-musical material from different categories, with some based on military strategies and others from the natural world. The latter has interested me the most, particularly where compositional parameters such as orchestration, gesture and structure are governed by the concept. Sierra has noted how she likes to use 'concepts that readily suggest compositional material and musical relationships'.[1]

A good example is her orchestral piece *Aquilo* (2001), in which instrumental roles are assigned based upon the underlying concept: 'I actually see the wind instruments as water and the strings as fire making them move'.[2] Another example I found interesting was her *Game of Attrition* (2009), where two concepts are used in conjunction: game theory and natural selection. She uses this Darwinian concept to influence her instrument choice and the material she attributes to them:

> map that onto instruments by thinking of tessitura, so if you had a viola versus a clarinet versus a horn versus a marimba, you know they all live in that same strata of what their strongest range is and that kind of 'alto-ness' of those instruments. So who would win,

[1] David Garland, 'Spotlight on Arlene Sierra' (2006/7), http://www.arlenesierra.com/biography/interviews.html (accessed 11 December 2015).
[2] Garland, 'Spotlight on Arlene Sierra'.

> what does winning mean – who's louder, who's more agile? …the piece is a succession of competitive duos, where instruments of the same tessitura are 'battling' each other out.[3]

Sierra acknowledges that the establishment of this system defines certain aspects of the piece: 'so setting up these conditions … got me the structure'.[4] This notion of allowing a concept to determine compositional aspects is something I have developed throughout my portfolio, culminating in *Roil in Stillness*.

Another aspect of Sierra's work that interested me, as with many other composers discussed here, is the relationship between music, movement, and dance. This relationship aligns with the way I perceive music and conceptualise it within the creative process. For me, music is intrinsically linked to movement, gesture, breath and space in the interactions and distances between notes and note-values. I often visualise how musical relationships can be mapped onto structures and spaces from our day-to-day lives. This is why I find it an exciting approach to recast these visual stimuli aurally, using extra-musical stimuli as a reliable source for this.

Charlotte Bray has also made use of extra-musical stimuli from the natural world to inform her compositional practice. A noteworthy instance is found in *At the Speed of Stillness* (2011/12), which has multiple layers of meaning and signification relating to the natural world: one layer is related to the power-lines traversing the Norfolk countryside, holding such great power in their stillness; another is about a hummingbird whose wings beat with such speed that they give it the appearance of stillness.[5] This approach shows the ways in which a single idea can be explored musically in poetic and pictorial terms.

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[3] New Music Box interview with Arlene Sierra (2013), available at http://www.arlenesierra.com/biography/interviews.html (accessed 30 December 2015).
[4] New Music Box interview (2013).
[5] Interview with Charlotte Bray, http://www.bbc.co.uk/programmes/p02lxh3v (accessed 11 December 2015).

Saariaho has also been influential on my music in this regard, particularly in her engagement with the natural world. She has spoken about how she finds patterns in nature intriguing and transforms them into musical realisations:

> I am very interested in the structures found in nature – especially the symmetry of leaves and flowers. I am working on transforming such patterns musically. There are patterns within nature and colors or musical timbres within which these patterns lie.[6]

Through the study of these composers and my own creative thinking, I have found it exciting to use extra-musical material to determine the particular compositional parameters and aurally map aspects of the outside world.

[6] Pirkko Moisala, *Kaija Saariaho* (Urbana & Chicago: University of Illinois Press, 2009), p.56.

Case Study: *Roil in Stillness*

Roil in Stillness: Ripples and Waves was composed in a concentrated period between early February–May 2015, though the ideas had been forming for a much longer period in sketch form. The original inspiration came from watching the sea and how the waves formed and interacted, as well as seeing how ripples on a still body of water behaved. I was struck by the huge effect each ripple had on the water. I decided to combine the drama of the sea with this micro-level drama of ripples. This reminded me of a paper artwork by Mia Pearlman called *Roil* representing a turbulent water scene and led me to my final title *Roil in Stillness*. The contradictory nature of the title offered scope to explore wave and ripple motions, and the ways they would appear in an otherwise still environment.

Figure 3.1. Mia Pearlman's artwork, *ROIL* (2012).[7]

[7] http://miapearlman.com/CUT_PAPER/ROIL.html (accessed 11 February 2016).

Roil in Stillness explores concepts and imagery associated with turbulent and roiled waters in a variety of ways. Waves and ripples are integral parts of the musical structure, melody, rhythm, gestural language, and harmonic framework.

The overall structure of *Roil in Stillness* is centred on the idea of ripples and waves. Ripples impact upon the harmony, helping to direct the music and articulate the structure. Broadly speaking the structure is A-B-C-B1-A1 plus coda. The pitch-tessitura structure creates an overarching wave, which is affected by the harmonic construction (Figure 3.2). This is how, on a broad scale, the concept of a wave is represented. I also use 'ripples' as a fundamental way to structure the whole piece, with a more explicit mapping of 'ripples' informing the central sections' structure (section C, bb.174–271).

The overall structure is akin to a ripple in its relative symmetry, creating a palindromic effect. After the central point, the pacing of the material is truncated, creating a skewed-mirror effect, though the clear structure allows for strong aural connections and musical interrelations to be established across the architecture of the piece. This is a variation on a structure I have developed in my own works, as outlined in Chapter One.

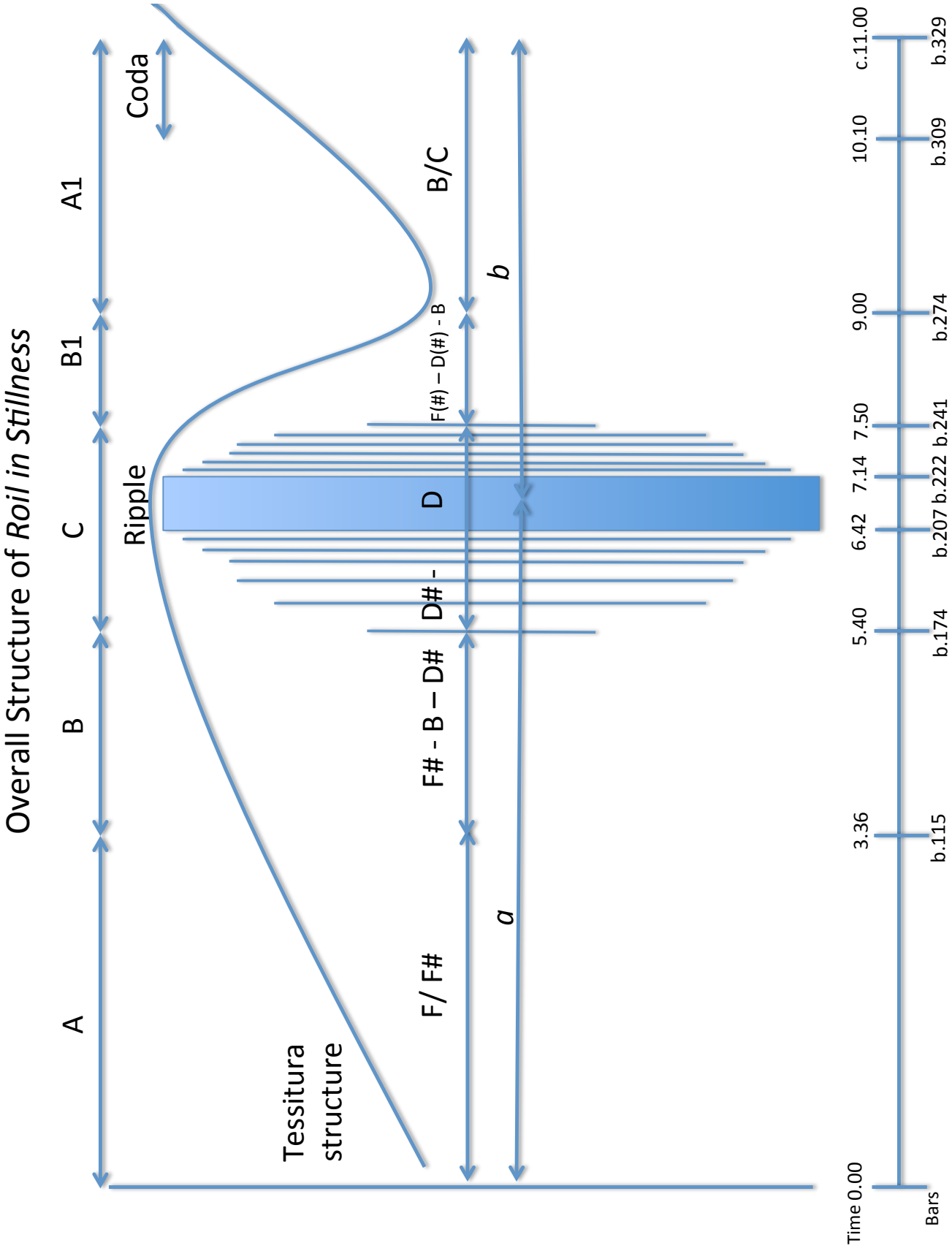

Figure 3.2. Overall structure of *Roil in Stillness.*

To control the harmonic pacing across *Roil in Stillness*, and maintain a sense of harmonic direction, shifting pitch 'obsessions' or 'magnetisms' have been used. The concept of shifting 'pitch magnetisms' captured my imagination when I first encountered it in the music of Thomas Adès. He explains this idea thus: 'It's the idea of a fetish note in a piece: that certain specific pitches become fetish objects, which are returned to and rubbed by the composer all the time'.[8]

The 'fetish' notes he describes here are referred to in terms of 'magnetism' and 'weight' elsewhere. For example, for *Polaris* he notes: 'That's really what one is dealing with all the time, magnetism: understanding the magnetic pull of the notes put in a given disposition, their shifting relative weights.'[9]

Here he discusses notes in terms of magnetic polarities and the need to shift the emphasis from one note to another, a technique he first explores in *Polaris* as acknowledged in his programme note:

> Their melody, like all the music in this work, is derived from a magnetic series, a musical device heard here for the first time, in which all twelve notes are gradually presented, but persistently return to an anchoring pitch, as if magnetized.[10]

Closer inspection of his scores, particularly his Violin Concerto (*Concentric Paths*) and *Polaris*, reveals how he uses cycles that shift 'polarity' or pitch 'magnetism'. I saw this as creative approach to establish a sense of harmonic direction operating outside tonal rules, and allowing for a highly chromatic pitch language whilst retaining a sense of 'home'. This contributed to the development of pitch-centricity and pitch-tensions in my music as a way to create fluid harmonic hierarchies

[8] Thomas Adès and Tom Service, *Thomas Adès: Full of Noises: Conversations with Tom Service* (London: Faber and Faber, 2012), p.47.
[9] Thomas Adès and Tom Service, *Full of Noises*, pp.2–3.
[10] Thomas Adès, *Polaris* programme note, quoted in James M. Keller, '*Polaris*: Voyage for Orchestra, Thomas Adès', programme note from New York Philharmonic 2011–2012 season, pp.8–9, available at http://nyphil.org/~/media/pdfs/watch-listen/commercial-recordings/1112/release4.pdf (accessed 20 February 2016).

unaffected by the tonal system, as shown in the discussion of *Shadows Create the Night* in Chapter One.

In *Roil in Stillness* these anchored points are grouped in chromatically close pitch-couples: F/F#, D/D# and B/C. The pitch-magnetism shifts through this series, creating its own system for 'modulation'. A highly chromatic harmonic language is established, though a twelve-note series is not employed systematically. The use of 'fetish' notes establishes overall pitch-couples and pitch-tensions within each section. These fetish notes generate a magnetic pull towards certain pitches as a way of anchoring the pitches to a point, despite the highly chromatic context. This shift in pitch-magnetism is my method of modulating to different pitch areas, without invoking traditional tonal hierarchies.

The piece begins with a magnetic pull towards an F/F# orientation, using rotatory chords based on F as the basis of this. This pitch-magnetism gradually transfers to D/D# around bb.174–241 (Section C): see Figure 3.2. From here, the pitch-centricity gradually shifts towards B/C as the piece reaches its conclusion. These shifting magnetic pitches form the harmonic basis and effectively function as pitch-couple centres. These magnetic anchors create clear harmonic and pitch goals at pivotal points across the work.

Within sections B and B1, these magnetic shifts happen at a faster rate, with section B shifting from pitch-magnetisms of F/F# to B/C, finally reaching D/D# at the beginning of section C, which I term the 'ripple' section. In B1 (after the ripple section) the magnetism shifts from F/F# to D/D#, and finally reaches B/C for the final section, bb.274–329 (Figure 3.2).

Twinned with this approach of shifting pitch-magnetisms, the harmonic and melodic material is generated from a single set of notes, creating structural cohesion and interrelating harmonies. These interrelationships are achieved, in part, through the application of aspects of Oliver Knussen's harmonic practices, perhaps best exemplified in his short orchestral work *Flourish with Fireworks* (1988). In an article from 2002, Julian Anderson examines Knussen's harmonic practice in detail,

paying particular attention to his 'rotation technique', which stems from some personal processes in the late works of Stravinsky.[11]

In this piece, Knussen uses a cipher of the dedicatee, Michael Tilson Thomas (LSO MTT), to generate the fundamental melodic and harmonic material.

Figure 3.3. Knussen's *Flourish with Fireworks* showing LSO MTT cipher.[12]

Knussen takes these five pitches and generates four further related melodic cells, starting the next melodic sequence with the second note of each cell and transposing the material to start on the same note each time (Figure 3.4). Once generated, each of the five melodies could be vertically aligned to create five harmonies.

[11] Julian Anderson, 'Harmonic Practices in Oliver Knussen's Music since 1988: Part I', *Tempo, New Series*, No. 221 (Jul., 2002), pp.2–13. On Stravinsky's use of a rotation technique, see Joseph N. Straus, *Introduction to Post-Tonal Theory* (New Jersey: Pearson, 2005), pp.193–208.
[12] Anderson, 'Harmonic Practices', p.3.

Figure 3.4. Knussen's generated melodic material on five notes.

Figure 3.5. Vertical alignments of melodic rotations [13]

Knussen also employs his transposed inversion technique where the original five-note melody is vertically aligned and then the chords are inverted, creating a vertical rotation. The resultant chords are then transposed so the bottom note is always A, establishing a harmonic centre alongside the rotatory technique.

[13] Anderson, 'Harmonic Practices', p.3.

Figure 3.6. Showing Knussen's transposed inversion technique. [14]

I employed some of these techniques to generate related melodic and harmonic materials for *Roil in Stillness*. I selected pitches from a simplified version of the opening solo violin melody, as these pitches form important structural points within this initial melody, and employed Knussen's technique. Thus, the opening melody is integral to the construction of connected melodic and harmonic materials. In Figure 3.7 (below) selected pitches, and their function as structural pivot points in the violin melody, are shown. Such points are further manifested in the melodic and harmonic content, two examples of which occur at bb.35–7 and bb.40–2. Octatonic and modal implications pervade this opening passage, which are all veiled by the chromatic language resulting from the F/F# pitch-couple centre.

[14] Examples reproduced from Anderson, 'Harmonic Practices', p.4.

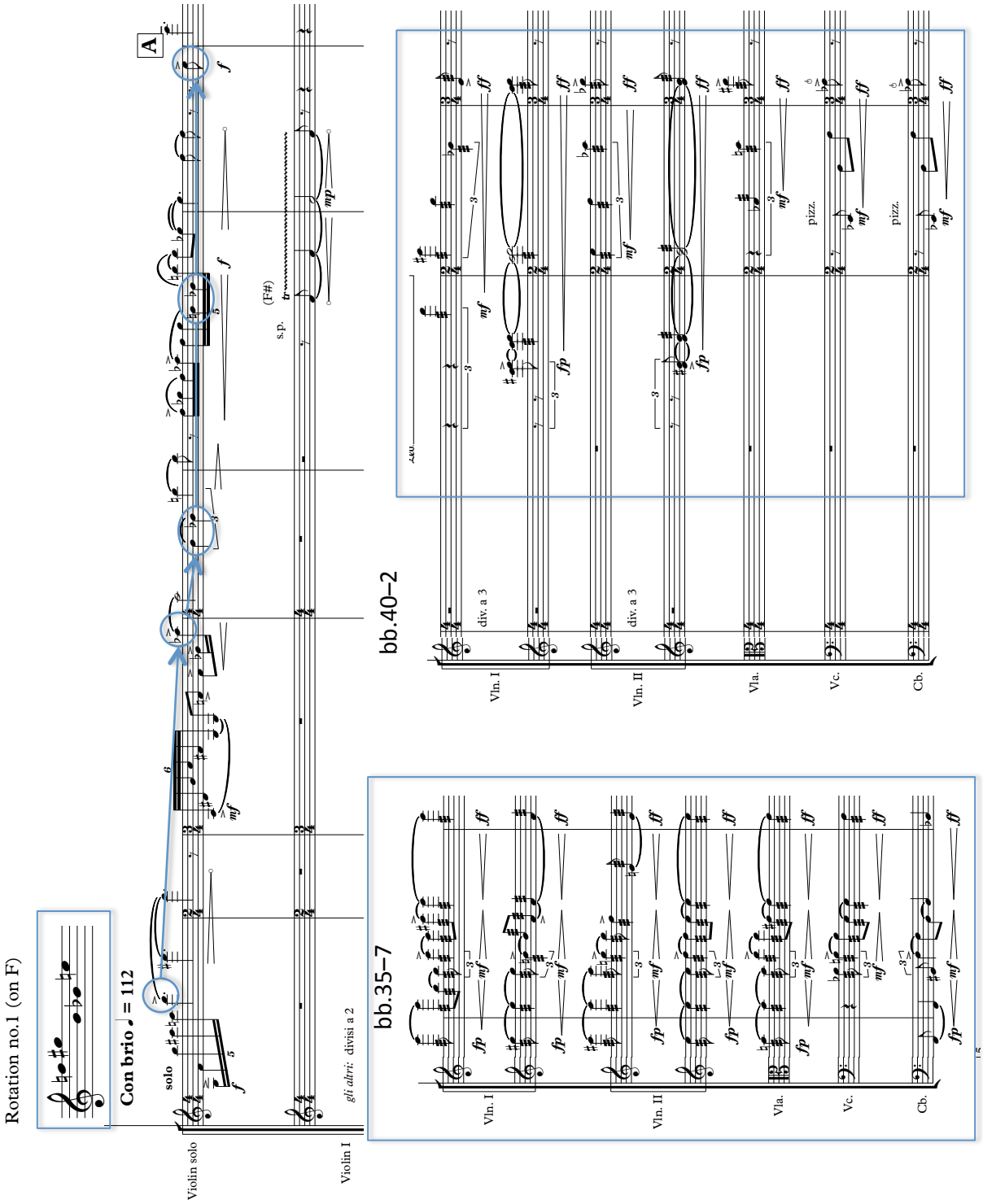

Figure 3.7. Melodic rotation formed from opening violin melody and examples of its melodic/harmonic use in bb.35–7 and bb.40–2.

After experimenting with different numbers of notes in rotation from groups of three to seven, I found five was an optimum number for creating change and melodic interest. I used a combination of Knussen's rotatory technique, alongside the vertical rotations and transposed inversions, to establish

a bank of interrelated harmonies. Figure 3.8 shows the original generated material on F and a secondary figure on F#, allowing for a dialogue between the two centres and their related harmonies.

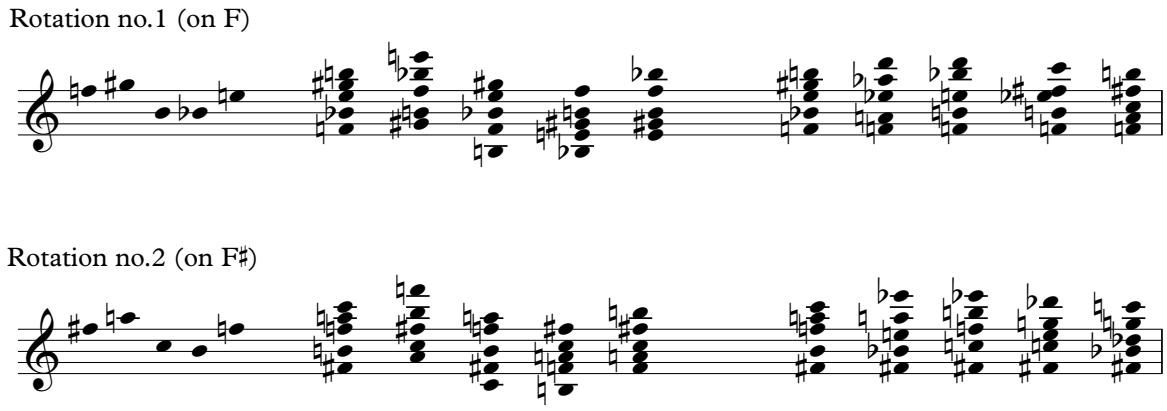

Figure 3.8. Melodic/harmonic material on F and transposed version on F#.

These harmonies were further manipulated through changing voicings and orderings, and by combining non-transposed and transposed inversions. Combinations of rotatory chords based on F and F# are also used, forming new harmonic progressions, all of which develop from a single melodic cell. These harmonies are later transposed onto D/D# and B/C as the pitch 'magnetisms' shift. I did not deploy these harmonies systematically, instead allowing an internal musical logic to guide their use. This allowed room for intuitive decisions about the harmony based on intervallic relationships around these generated materials.

Using both pitch-magnetism and the generated related materials establishes a fluid harmonic language characterised by shifting pitch-centricities and pitch-tensions. These magnetisms create simultaneous diatonic collections associated with the pitch-couple centres, functioning both as a chromatic harmonic language and the layering of diatonic harmonies.

In *Roil in Stillness* I began to explore the issue of bass-functionality in harmony, assigning this role to voices other than those at the lower end of the pitch-range. This essentially allowed the harmony to work from either the centre of the chord outwards in both directions, or in a top-down

configuration as though suspended from a cable. A similar idea is found in Ades's *Concentric Paths* where the functioning harmonic line is often the top line, leading Daniel Fox to note:

> The descending chromatic lines function like suspension cables: Rather than building harmonies upon a bass line, the harmonies hang from the cables like a bridge or an alpine cable car as they descend through chromatic space.[15]

In my harmonic language, the location of the functional voice is fluid, occasionally resulting in the soprano and bass lines functioning simultaneously as individual harmonic centres, implying multiple harmonies as established by the pitch-couple relationships. These pitch-couples frame the inner harmonic movement, an instance of which occurs in bb.54–9 (Figure 3.8). In b.55, the F/F# pitch-couple centre initially frames the harmony with F ♮ in the lower voices and F# as a high pedal. Throughout bb.56–8, F ♮ transfers to the top voice (orange highlight in Figure 3.9), allowing this to act as the sole functional harmonic voice. In bb.58–9 F# begins to take prominence over F ♮ , further demonstrating the harmony in a top–down relationship. Thus, the pitch-couple centres effectively function as pedal notes in this context, creating a certain amount of harmonic stillness that frames fluid harmonic material emerging from the middle of the texture. Violin 2 in bb.55–7 shows an example of the chordal progression generated through aspects of Knussen's rotatory technique, with transposed and altered versions in the violin 1 (bb.56–8) and viola/cello parts (bb.57–9). The rise and fall of these overlapping contrapuntal string lines mimics the swells of waves, something further intensified through contracting and expanding interval spacing, encoding the wave shape in intervallic terms.

[15] Daniel Fox, 'Multiple time-scales in Adès's *Rings*', *Perspectives on New Music*, 52/1 (2014), p.37.

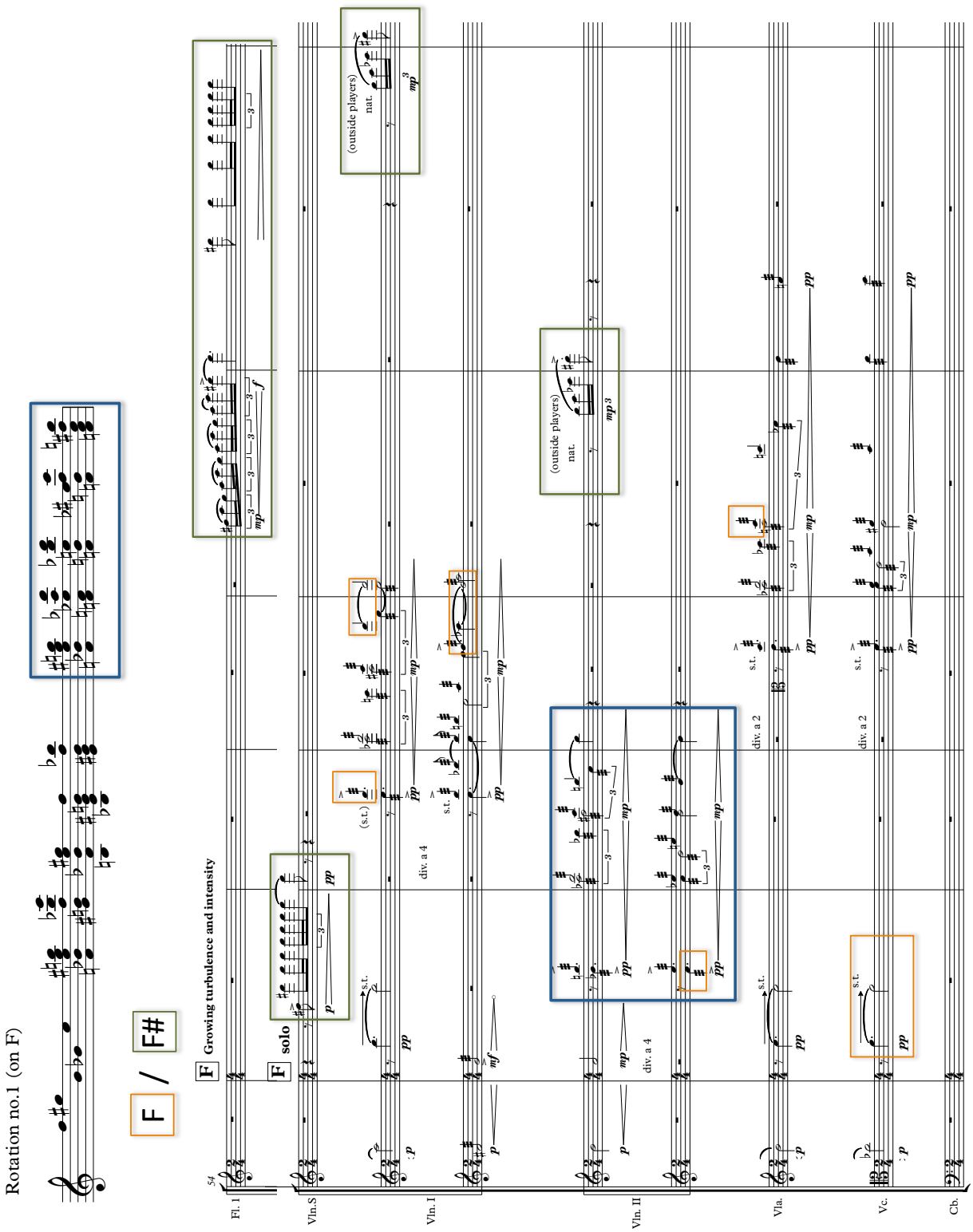

Figure 3.9. bb.54–9. Simultaneous functioning harmonic lines and rotatory harmonies.

With the construction of the opening violin melody discussed, I will now examine how its structure feeds into the gestural and harmonic language of section A in more detail, particularly in regards to the additional pitch-magnetisms set up alongside the principal pitch-couple centre of F/F#. The opening violin melody structure helps to direct pitch selection and establishes the pitch-couple of F/F# at the beginning through to section B. Within this first section, the secondary pitch-magnetisms established include G/G#, B/B♭, and (to a lesser extent) E/E♭. These pitches occur clearly in the opening violin melody: first it rises from G through to F and F#, the first introduction of the pitch-couple centre. The gravitational pull to G/G# is achieved through G being the first and lowest note within this passage (and the whole piece), and through a peak to A♭ (G#), showing this secondary gravitation pull. A magnetism towards B/B♭ is felt in b.4–5, articulated through two peaks to pitch B within close succession, before re-establishing F/F# as the 'true' centres in bb.5–6, further emphasised by the F–F# trill in violin 1 (Figure 3.10).

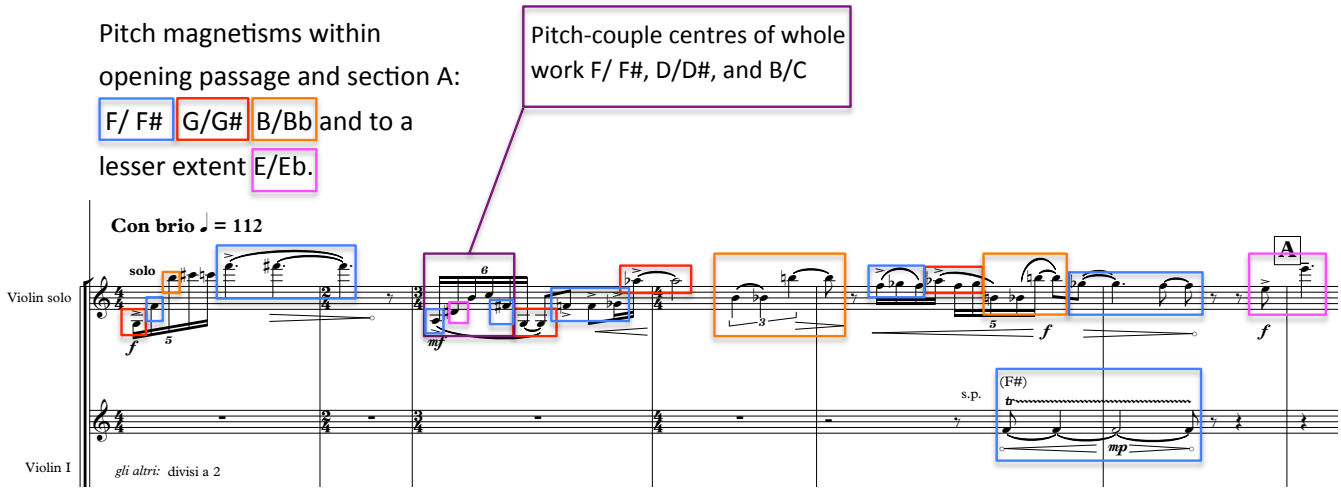

Figure 3.10. Opening solo violin passage, bb.1–6. Establishing pitch-magnetisms for section A, and signposting the overarching pitch-couple centres.

Thus, the pitch structure of this opening violin melody establishes both the pitch tensions and overarching harmonic language of section A. The present discussion will focus on elements of the harmonic and gestural language of bb.7–18, specifically the establishment of secondary pitch-magnetisms.

These secondary pitch-magnetisms are established through the ascending and descending figures of the strings in bb.7–15. Between bb.7–16 the pitch-magnetisms of E, F/F#, G/G# and B/B♭ are reinforced through the sequential rising and falling pattern. The pitch-magnetism within this section changes quickly in line with the sequential and cyclic nature of this gesture. These are drawn from the opening violin melody, and are related to the foundational melodic content. The placement of these pitches within this passage further reinforces their significance and creates aural cohesion through the pitch relationships. In Figure 3.11 the colour-coding shows the shifts in pitch emphasis across this passage, finally returning to the pitch-couple centre of F/F# in b.16.

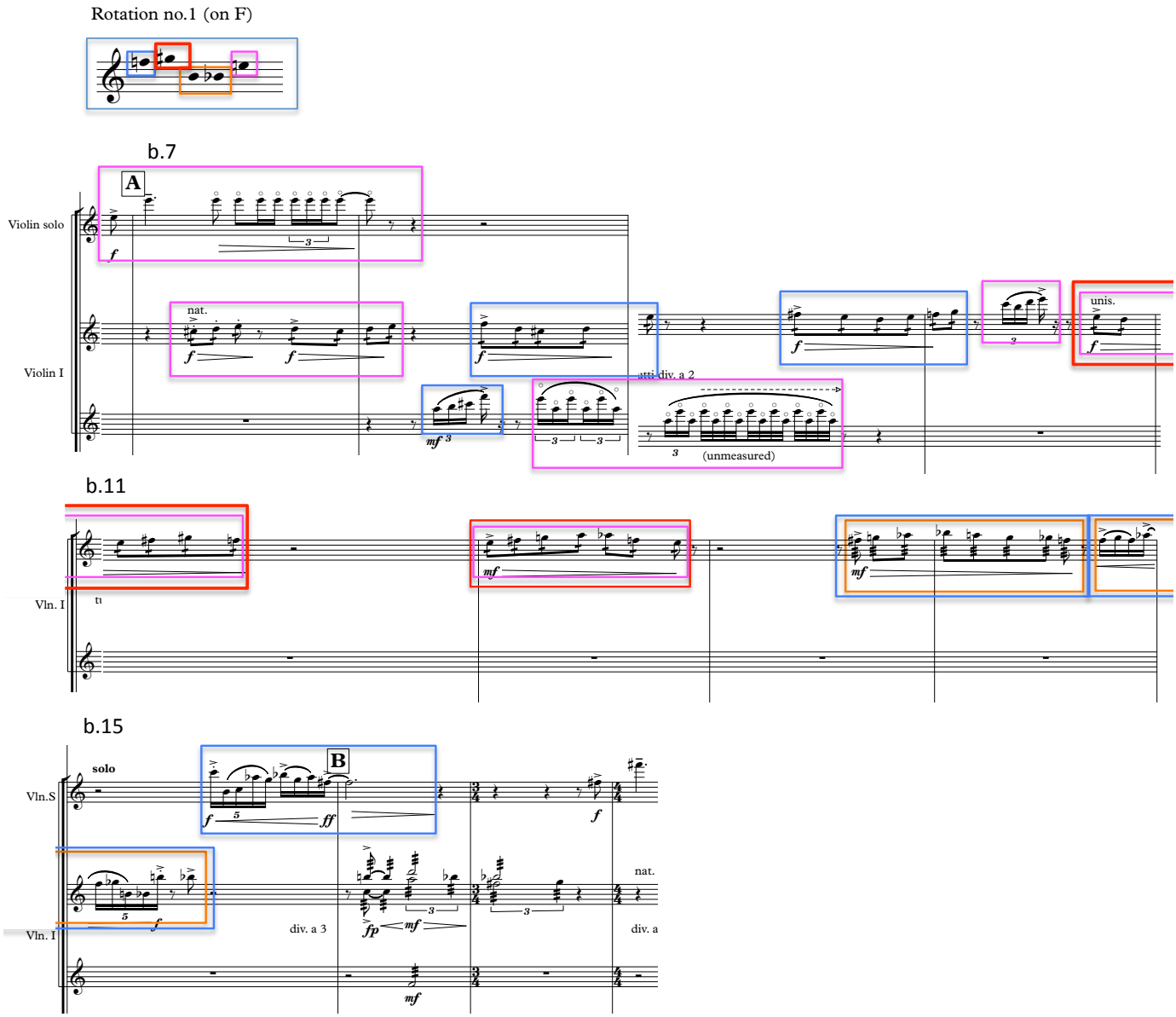

Figure 3.11. Shifting pitch-magnetisms, bb.7–16.

These pitches are emphasised by their placement within the pattern, and reinforced by accents. The apparent obsession with F/F# creates a strong harmonic grounding, allowing movement away from this centre to be heard as harmonic movement and variety. This, in turn, creates a sense of returning 'home' when they are re-established later.

The rhythmic and gestural language of this passage is also noteworthy as it engages with extra-musical stimuli of waves and ripples. The rhythmic structure temporally maps the essence of the ripple-structure onto the musical content, an example of which occurs in bb.7–18.

The centre of a ripple starts at b.7, and is represented by a percussive gesture. The ripple centre creates an outward reaction of ripplets, as represented through the rhythmic structure of this passage. As the music moves further away from the ripple centre, the circumference of each ripplet increases: this is mapped musically through additive rhythms. The first and smallest ripplet is represented by a three-note figure, with one note added for each gestural repetition (four-note, five-note etc.) until a group of eight quavers (bb.13–14) is reached (Figure 3.12).

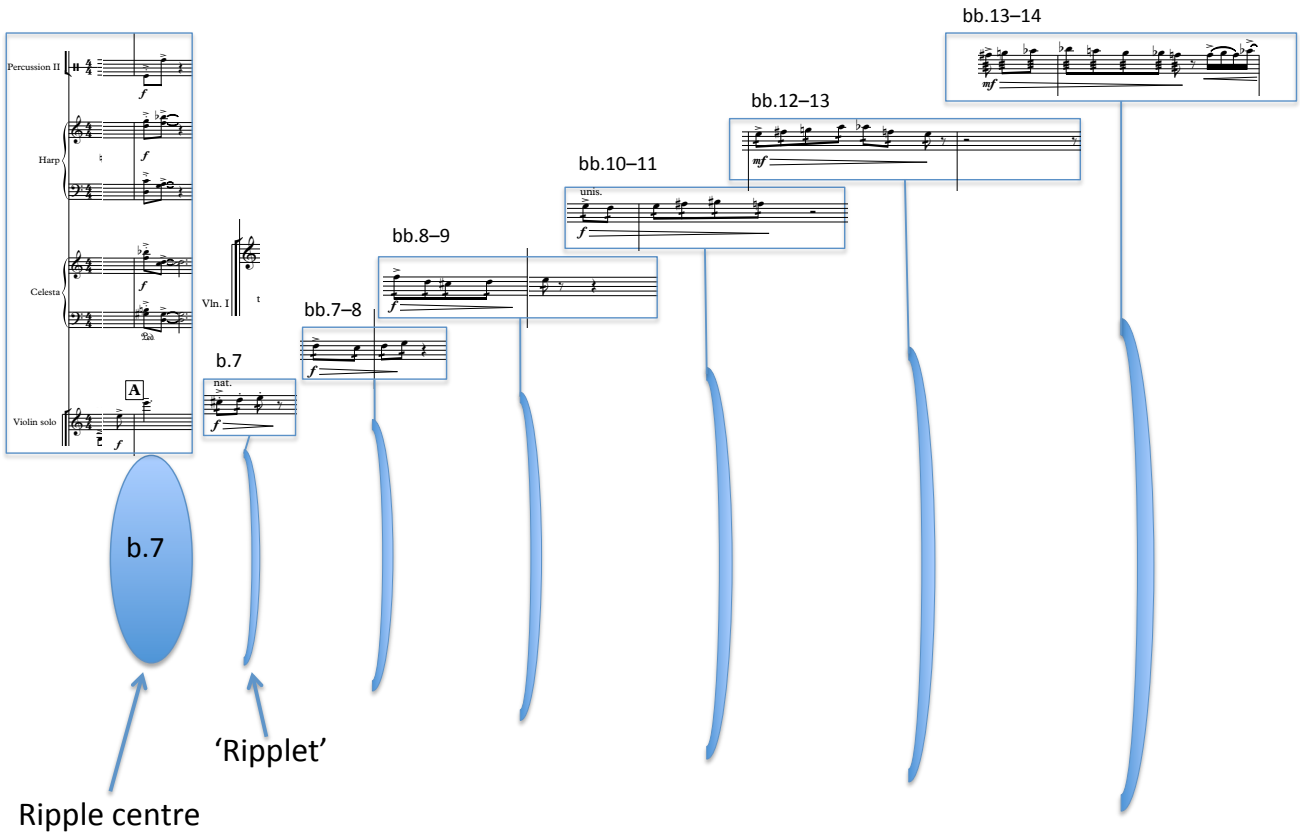

Figure 3.12. Additive rhythms mapping ripple structure, bb.7–14.

Section C sees the amplification of the temporal and rhythmic language of this micro-level structure onto a macro-level. In section C the ripple with the largest circumference is represented through the longest timeframe. The amplitude of each ripplet is expressed through the dynamic strength, with the shortest ripplet having the loudest dynamic before the centre of the ripple. These ideas of ripple circumference and amplitude from the centre of the ripple helped me structure my material, as demonstrated on a micro-level and a macro-level in sections A and C respectively.

The harmonic centres of section B continue to be in flux, travelling from F/F# to B/C to D/D# at Section C – the 'ripple section'. In section B there are structural and gestural references to section A, allowing the music to develop but still maintain musical cohesion. However, for the present discussion, our attention must turn to section C.

Indeed, section C acts as the peak of the piece and is placed approximately two-thirds of the way through the structure, loosely following the law of the golden ratio. This section is based more explicitly on the structure of a ripple, with the large central dramatic chord (bb.174–241) aurally representing a large droplet entering a body of water, creating ripples on either side of it. Thus, the first part of section C is an aural representation of moving backwards through a ripple, with the outer most ripplet happening first and working its way through the centre of the ripple. The second part is travelling away from the centre of the ripple outwards again.

To mark the arrival of section C the pitch-magnetism shifts to D/D#. Throughout this section the harmony and pitch structure are constructed in a different way to the rest of the piece. Each ripplet contributing to the overall ripple has a distinct intervallic character, aurally marking the points at which the next ripplet occurs. The pacing of harmonies based on different intervallic construction allows for gradually increasing intensity towards the ripple. This intensity builds through the use of increasing interval sizes: the outside ripplet is constructed from unisons/octaves, the next from seconds, then thirds, fourths, fifths and sixth intervals, before finally arriving at the centre with a large and dramatic chord made from seventh intervals (Figure 3.13).

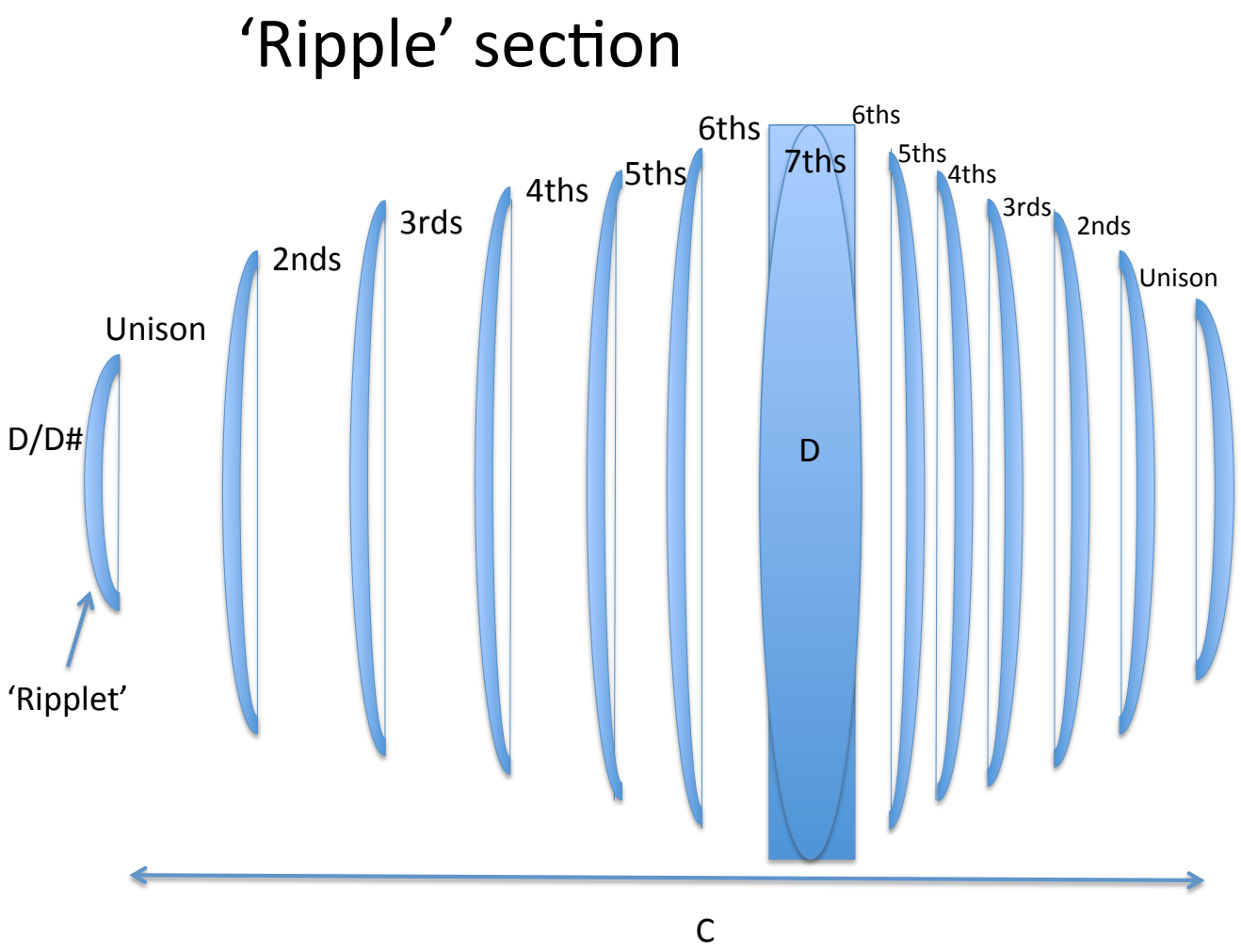

Figure 3.13. Section C ('ripple' section) - overall structure.

To summarise, the first ripplet (based on unison intervals), is the longest in time lasting a whole 13 seconds before the 2nd ripple (based on seconds) begins. As the timeframes shorten the ripples increasing become closer to each other with the sixth ripplet (based on sixth intervals) being the shortest, leading to the sectional peak being expressed by the ripplet formed from sevenths. To create a sense of acceleration towards the ripple centre, I decided that the first ripplet was going to be twice the length of the last. Proportional lengths were calculated for the ripplets between these outermost points (Table 3.1).

Table 3.1. Ripplet timeframes.

Interval	Calculation	Exact Answer (seconds)	Rounded answer (seconds)
Unison	13.33 x 1 =	13.33 s	13 s
Seconds	13.33 x 0.9 =	11.99 s	12 s
Thirds	13.33 x 0.8 =	10.66 s	11s
Fourths	13.33 x 0.7 =	9.33 s	9 s
Fifths	13.33 x 0.6 =	8.00 s	8 s
Sixths	13.33 x 0.5 =	6.66 s	7 s
	Total =	**60 s**	**60 s**

The musical expression of the 'ripple' centre lasts for approximately thirty seconds, exploring different chords constructed out of sevenths intervals through changing voicings and timbres. The ripplet structure is used again on the other side of the seventh chords, though now in reverse with the shortest section exploring sixth interval chords happening first, then fifth, fourth, third, second, and unison intervals as the longest section. However, the entirety of this descending ripple is half the length of the ascending passage, creating a distorted symmetry around the peak of the piece (Figure 3.13).

On the micro-structural level, each entry into a new ripplet section is marked by its own miniature ripple, which increases the intervals steps whilst being required to fit this material into ever-shrinking timeframes. The first ripplet is the longest but has the shortest ripple with only a unison note to accommodate, whilst the final ripplet accommodates all six intervals into a much smaller timeframe, further contributing to the acceleration towards the ripple centre. In this instance it goes through the ascending intervallic pattern before arriving at the ripple centre signalled by a dramatic chord constructed of seventh intervals (Figures 3.14 and 3.15).

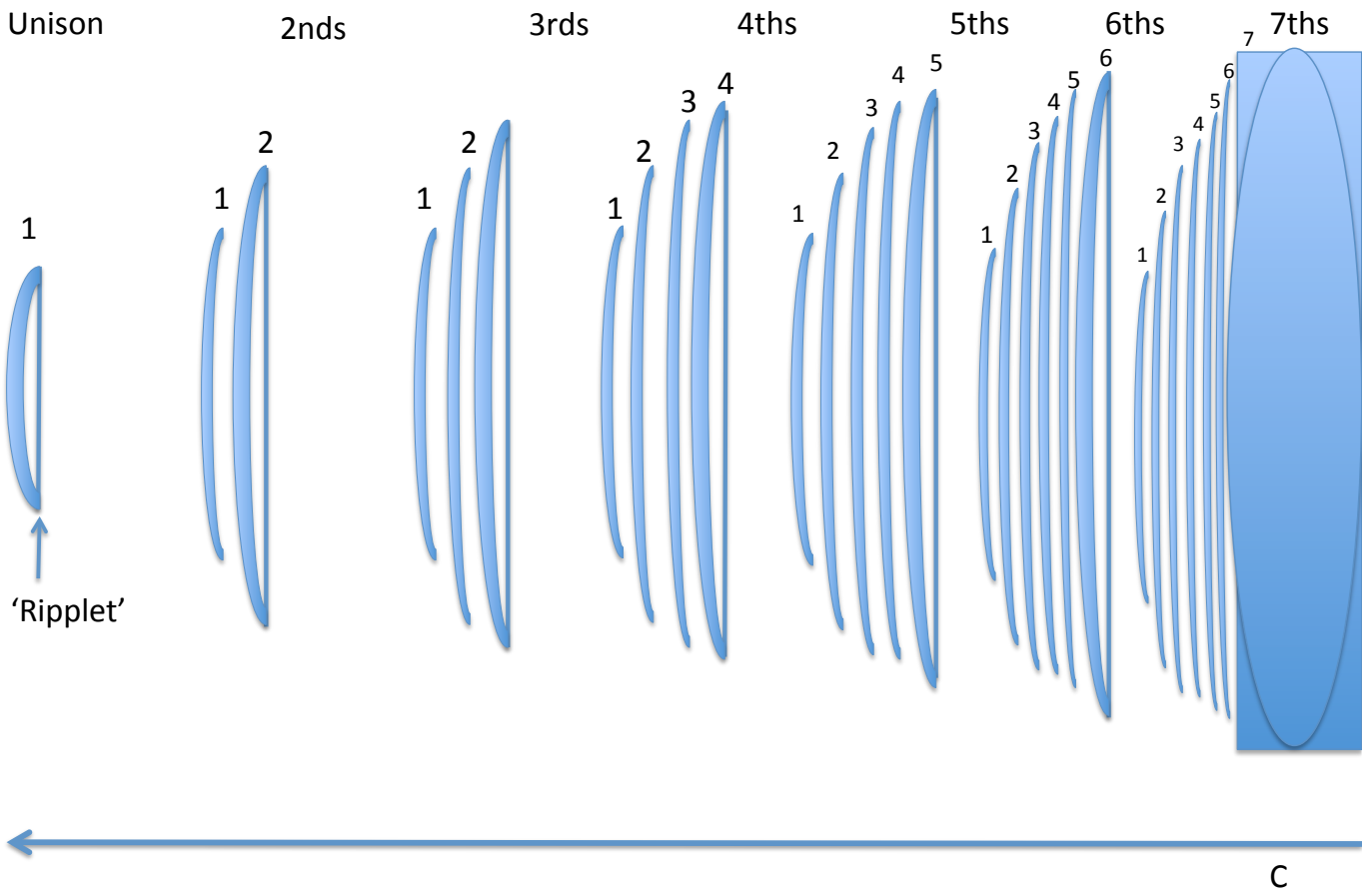

Figure 3.14. Construction of first half of ripple bb.174–207.

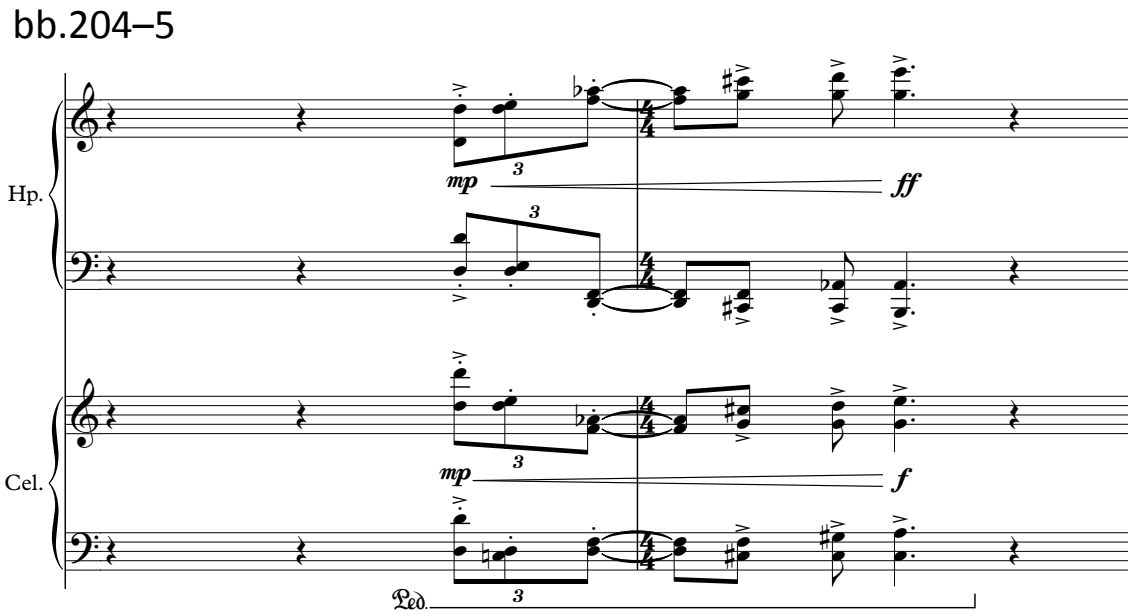

Figure 3.15. Interval pattern of final ripplet before central seventh interval chords.

The second half of the ripple functions in much the same way as the first but in reverse. Each section length is halved, increasing the perceived deceleration. The miniature ripples forming each ripplet are also reversed, leading to the descending intervallic pattern of sixth, fifth, fourth, third, second, unison. This pattern continues until the ripplet section containing intervals of a second is entered, where the ripple direction is now reversed. In effect, the outer ripplet containing unisons becomes a new 'ripple-centre'. Here the harmony transfers from unisons back to second intervals creating a second dissonant climax.

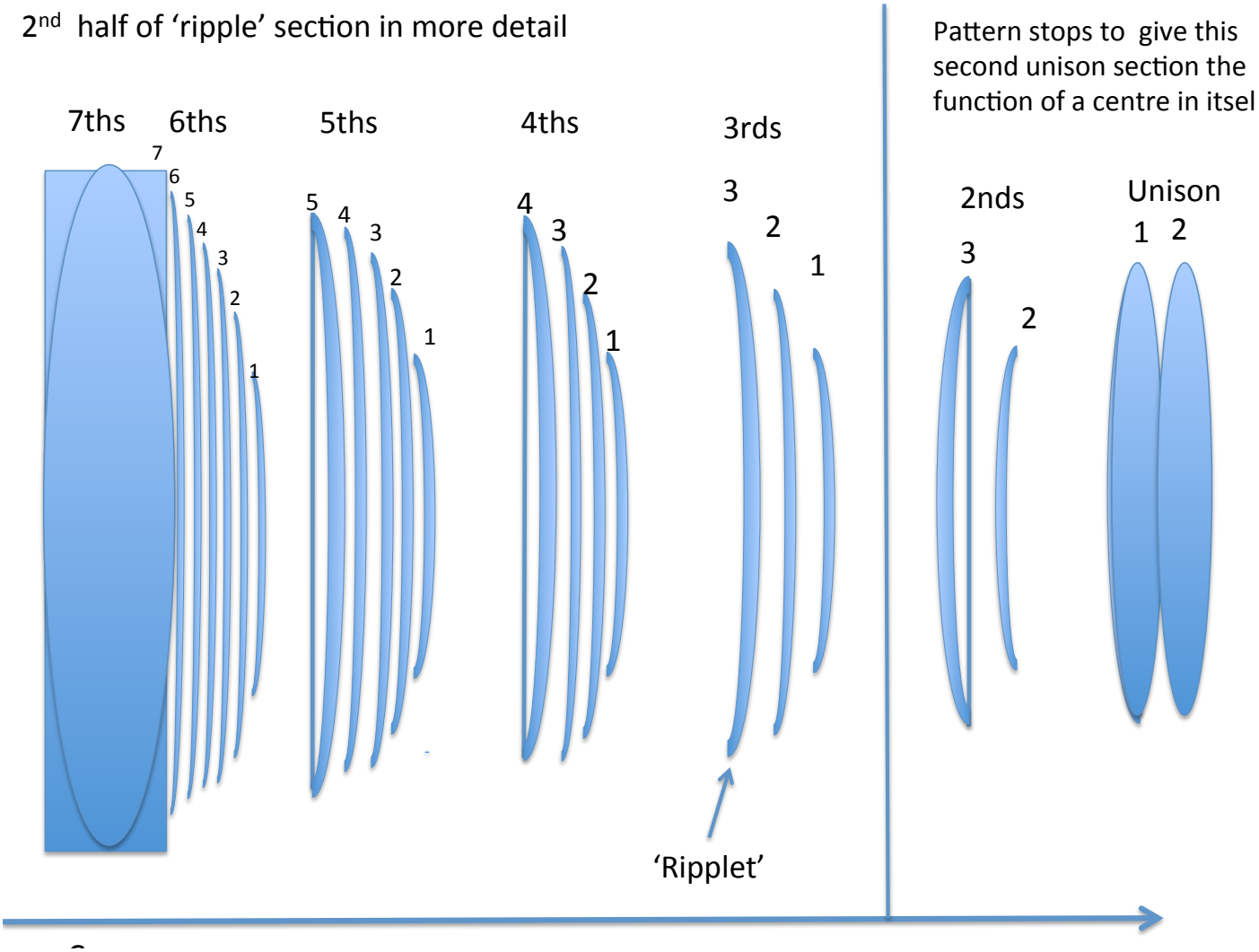

Figure 3.16. Second half of ripple, bb.222–41.

The effect and purpose of all these measured sections is to create a sense of acceleration and deceleration through the ripple, musically mapping the shape taken from the natural world. This section explores the harmonic implications of intervallic content and the shifting emphasis of different compositional factors across the ripple. The challenge with this approach, which effectively forces a thirteen second unison, was to prevent 'stagnation'. At this point, rhythm, gesture and timbre come to the compositional fore, with the compositional focus gradually shifting towards harmony and timbre as seventh formations are reached.

Summary

In this chapter I have demonstrated the ways in which extra-musical stimuli have guided my creative approach, using *Roil in Stillness* as a case study. I have sought to encode aspects of extra-musical stimuli in diverse ways to enhance my own musical expression, and evoke vivid imagery relating to ripples and waves. *Roil in Stillness* is particularly significant as it demonstrates how I have used extra-musical stimuli to inform the structural architecture of the work, elevating my use of extra-musical content beyond the spheres of narrative and imagery. This piece also shows the effectiveness of pitch-centricity in a highly chromatic harmonic language, bringing poignancy and emphasis to specific harmonic centres that may otherwise be diminished.

Chapter Four: Exploring how extra-musical stimuli from the natural world affect compositional parameters. Case study: *Rainbow Fires*

Rainbow Fires was written at the Dartington International Summer School. It is a further branch of my work, exploring concepts from the natural world, more specifically, rare natural phenomena to inform compositional parameters, falling into the same subcategory as *Nacreous Contours* and 'Firestorm'. Although this work was composed in a relatively short period, its structure and concept was planned carefully. Some harmonic and gestural content was drafted before the course, allowing more time with the Fournier Trio to explore timbral colours.

I decided to use rare natural phenomena as extra-musical stimuli to offer the greatest scope for original musical exploration, as there are fewer musical responses to these in existence. This avoided my approach being overly influenced by the creative responses of others. My aim, however, was not to provide a complete musical mapping of the phenomenon, instead evoking its vivid imagery. Thus, *Rainbow Fires* aims to capture the experience of travelling through a rainbow fire, extracting a poetic interpretation from its imagery.

Rainbow fires or 'circumhorizontal arcs', neither rainbow nor fire, are rare natural phenomena. They occur when sunlight refracts through hexagonal ice crystals revealing a rainbow of wispy colours.

Figure 4.1. Image of rainbow fire.[1]

[1] 'Fire Rainbow Facts' http://www.atoptics.co.uk/halo/cha2.htm accessed 14 January 2016.

I first saw rainbow fires on a television documentary and immediately started to consider the musical possibilities they offered, leading me to explore the ways in which the distinctive colours could be evoked musically. The following discussion reveals the private creative strategy behind *Rainbow Fires* and should not be considered as statements outlining my expectations of the hypothetical listener's ability to hear details explicitly. Without a detailed programmatic note, a listener would not be able to identify each colour, though this was never my intention. Instead, I aimed to create music that allowed a listener to sense a shift from one distinct soundworld to another, indicating a change in 'colour', even if the specific colour could not be identified.

Structure: Overall form

Using rainbow fires as a stimulus led to a clear structure, with the music representing the imagined journey through a rainbow fire. After examining photographs of rainbow fires, it became evident that the prominent colours are white (of the clouds), red, yellow and blue: these dictate the musical structure.

The piece starts on the rainbow fire periphery, in the wispy white cloud, and travels through red, yellow and blue, before returning in reverse order to white. This creates seven sections, defined by the colours they represent. Each colour is represented through control of harmony, timbre and gesture to create distinct material, which is occasionally imbued with elements of other colours.

Such an architecture creates a palindromic structure, with blue as the central point. However, the structure is not perfectly symmetrical forming a skewed mirror effect, as seen previously in *Roil in Stillness.* I found this structure to be conducive to developing gestures across a structure whilst maintaining aural links throughout, echoing the cyclic nature of many natural phenomena. The character of each section is defined by my own subjective response to the colour. In general terms, white is representative of air itself in its purity, red represents fire, yellow is associated with light, and blue with ice. This additional imagery layer helped me establish gestures, timbres and harmonies that convey these associations effectively.

Harmonic structure

The overall harmonic structure applies a similar harmonic approach to that seen in *Roil in Stillness*: 'pitch-magnetisms' are used to create pitch-centres for each colour, helping to establish distinctive harmonic identities.[2] In *Rainbow Fires* pitch-usage frequency helps to establish these as centres.

Pitch selection was predominantly an intuitive process based on the pitch and interval combinations I felt were representative, or had greatest affinity with, specific colours. My decisions were also informed by the intervallic spacing of pitch-couples.

Table 4.1. Pitch-couple centres.

Colour	**Pitch-couple centres**
White	B♮/B♭
Red	F♮/F#
Yellow	G♮/G#
Blue	C♮/C#

The use of these pitch-couple centres helps to create an interval relationship that is far apart, contracted, then stretched again. For example, the white and blue pitch-couple centres are far apart due to the tessituras at which they are stated most frequently, but are also close due to their pitch-classes being a tone apart (Figure 4.2). Such a contradictory relationship is used throughout *Rainbow Fires* to create harmonic tension and cohesion.

[2] These concepts are explored more in Chapter Three.

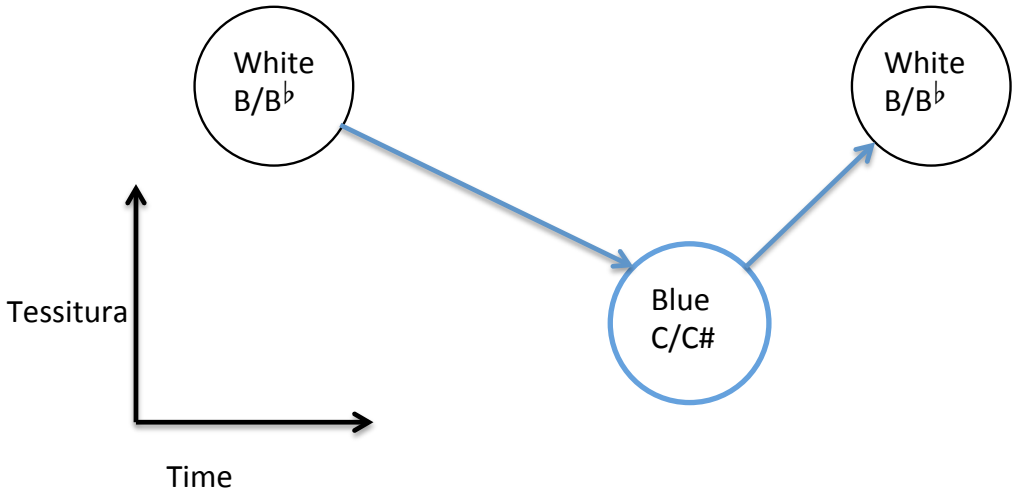

Figure 4.2. Overall harmonic structure.

Pitch structure

The pitch structure is linked to the colour, with white being associated with high tessituras and blue with low tessituras (Figure 4.3). However, the pitch range expands through to the blue-section. As the music moves back through yellow and red, the overall pitch range is reduced again. However, the final white-section, which encapsulates all of the colours, uses the largest range.

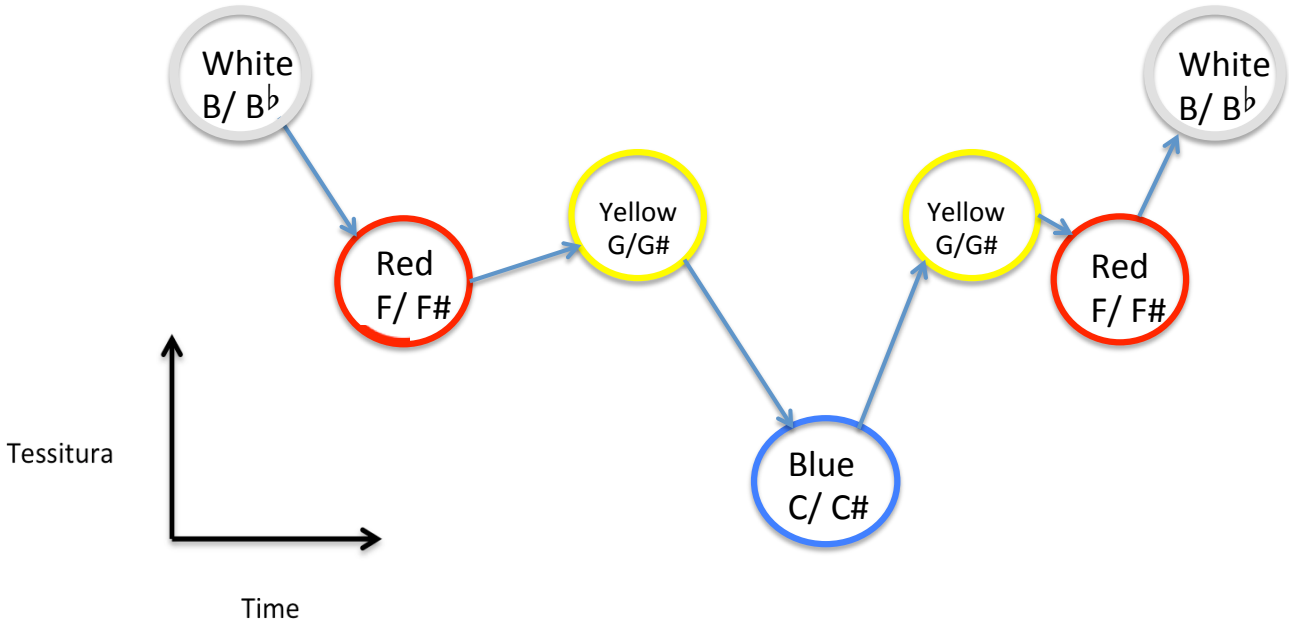

Figure 4.3. Harmony and pitch structure.

Rhythmic and melodic structure

Rhythmic and melodic materials are constructed and developed through engaging with the imagery of rainbow fires. By engaging with colour associations, and other extra-musical features, the compositional parameters are determined.

White-section

The opening white-section begins with almost total rhythmic and melodic suspension, consisting of only a sustained violin B (establishing B/B♭ as the white pitch-couple centre). This high-pitched airy quality is further enhanced by the cello harmonic tremolo, creating a wispy texture underneath. These moments of suspension are interpolated by dark-blue notes which are indicated through tessitura and the blue pitch-couple centre: C/C♯. Although these interjections have blue pitch-centre(s), they are more closely related in gestural terms to the red-section.

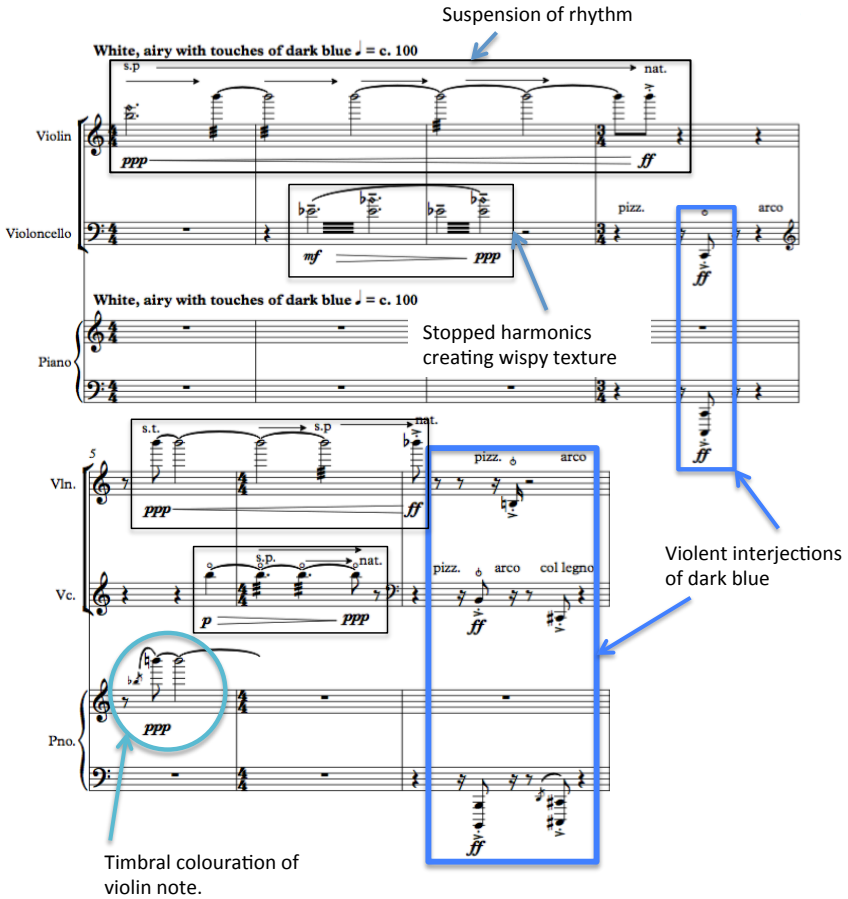

Figure 4.4. Red interjections in white-section, bb.1–7.

These suspended figures are punctuated by cascading figures referencing other colours through harmonic and gestural materials that become more fully established as the piece progresses, effectively acting as adumbrations of later musical events.

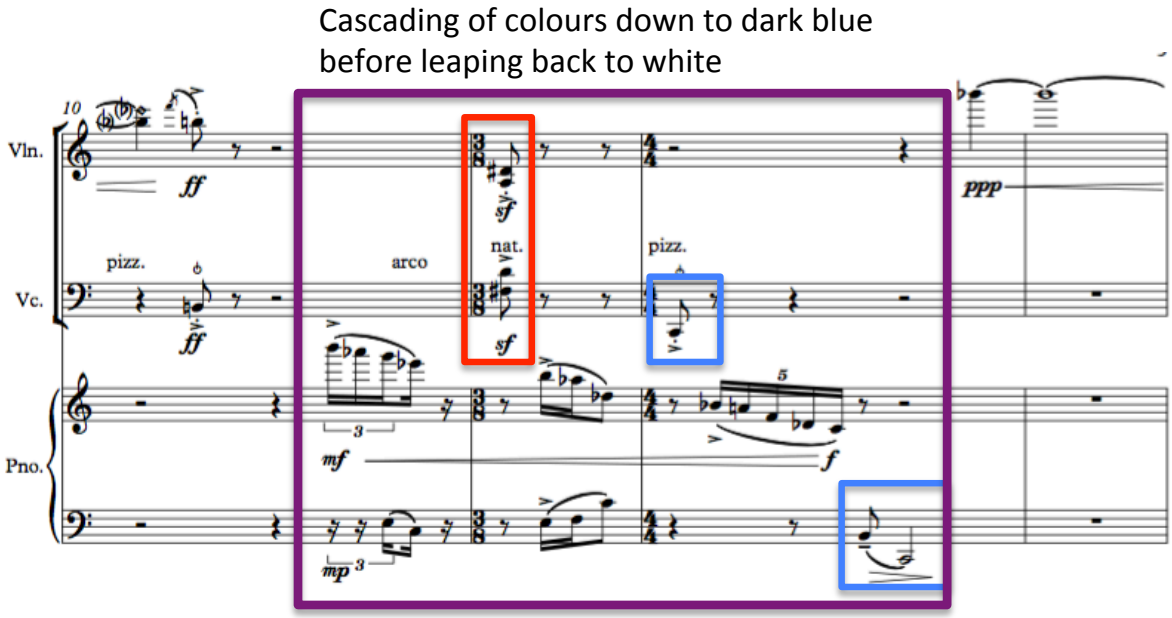

Figure 4.5. Pre-echoes to colour sections, bb.10–13 in white-section.

Figure 4.6 shows further examples from the first white-section demonstrating the establishment of pre-echoes of other colours. In the violin at bb.16–17, a rising melody on harmonics is stated, forming the basis of a motivic gesture that is further developed in the blue and yellow sections, first appearing in bb.133–4 (cello) and bb.152–3, later. The piano material in bb.16–17 acts as a 'yellow' pre-echo, with Figure 4.6 demonstrating the precise transformation from piano to cello melody. Here, the same melodic shape occurs with similar pitch content, with important references to G and A♭ (yellow pitch-couple centres) in both versions. The piano material at b.17 appears in an almost identical form in the cello in bb.152–3.

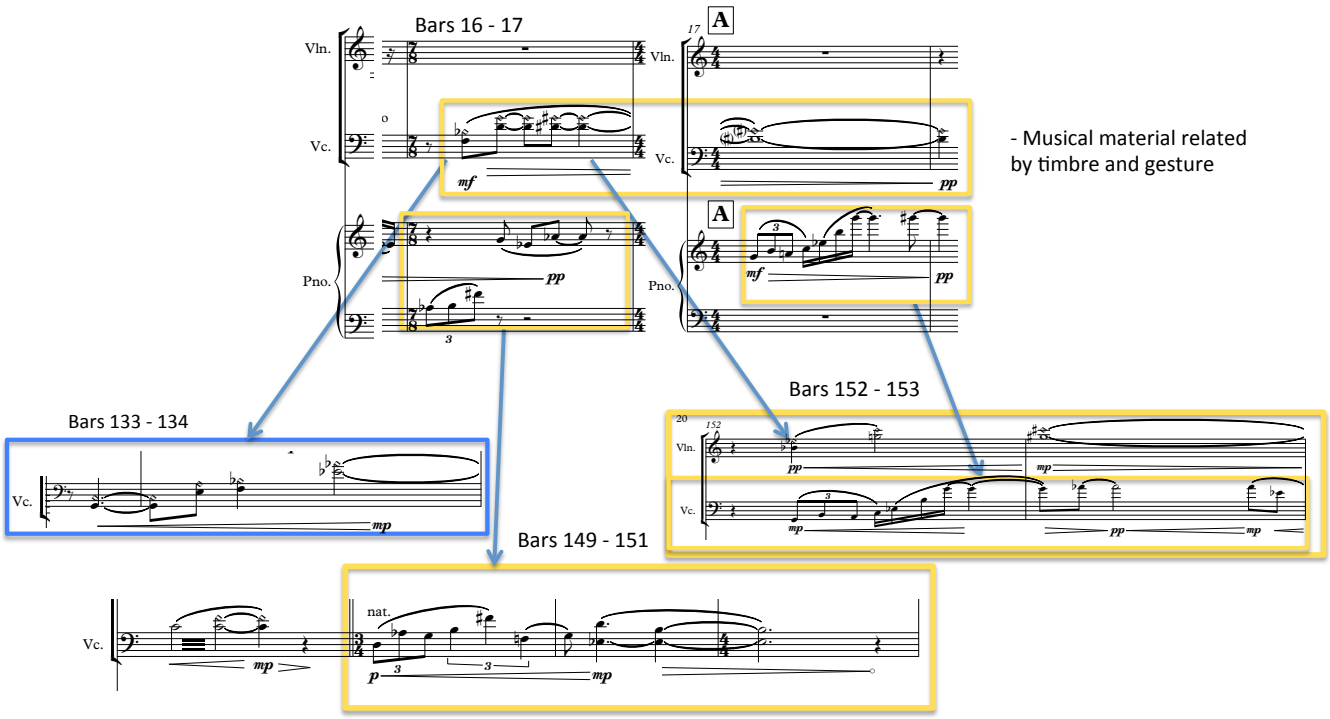

Figure 4.6. Pre-echoes to other colours, bb.16–17.

As the white-section progresses, its character begins to be infiltrated with red material. The gestural figure in b.24 (piano) acts as a pre-echo to later developments of red-section material (Figure 4.7). The first example shows this material reinstated in the piano (b.55). Here the material is transposed down a semitone and has a different rhythmic emphasis, being cast under 3/4 instead of 6/8. The second example from b.82 shows the material spread across the violin and cello, presented in a transposed form with a different rhythmic placement from the original.

The other highlighted gesture in Figure 4.7 demonstrates increasing disjunction, marking the shift towards the 'red' soundworld. This change takes effect despite the white pitch-couple centre being maintained, preventing full transformation into the red-section.

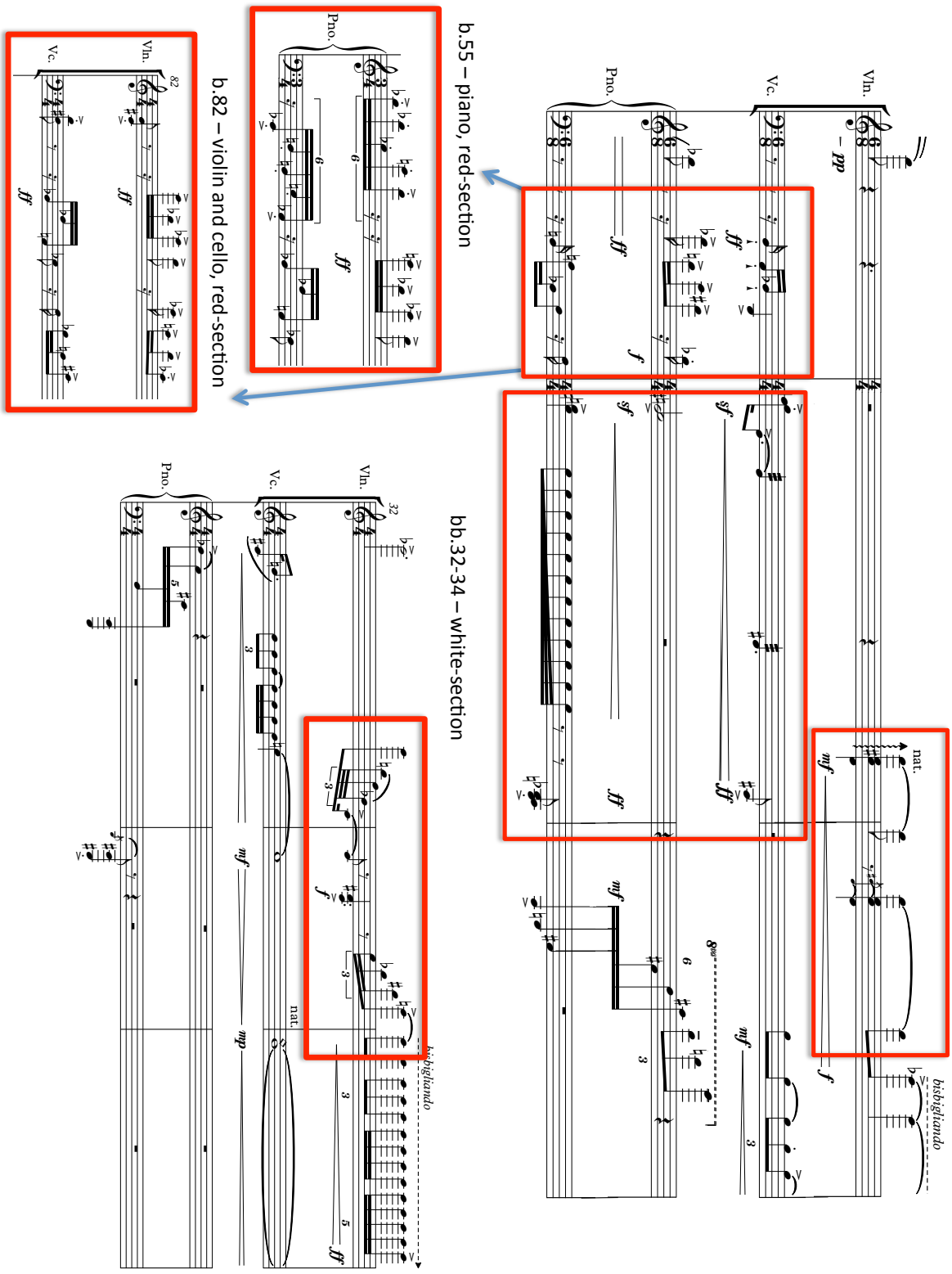

Figure 4.7. Pre-echoes with red motivic preparations in the white-section, bb.24–6 and bb.32–4.

Red-section

The red-section is defined by strong disjunct melodies that evolve across the piece. Arresting double-stopped chords and arpeggiated 'rough' timbres, created by the violin playing behind the bridge, characterise this section. Figure 4.8 highlights some of the most distinctive and evocative 'red' gestures. Gesture 'a' is a distinctive figure associated with red, serving to frame the section. Gesture 'b' is modified timbrally, enhancing its impact when deployed. It also offers aural references to section C within the white-section, though the timbral modifications create a timbral dissonance.

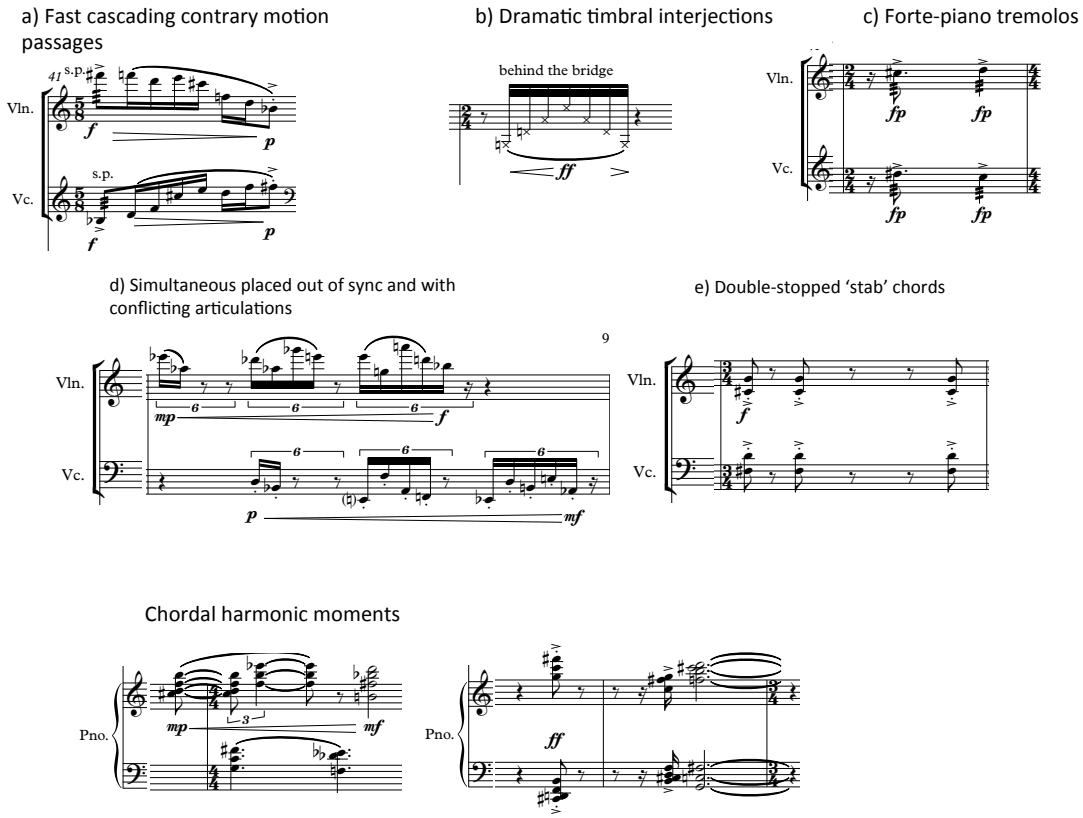

Figure 4.8. Distinctive gestures from the red-section.

The initial figure of the red-section undergoes several transformative compositional processes to generate related gestural material (Figure 4.9). The original figure occurs at b.41, where the pitch-couple centres of F ♮ /F♯ begin to be established, though prominent placement of B ♮ s/B♭s (white pitch-couple) prevents complete modulation. This occurs where the violin opens with a significantly placed *forte* F♯ and ends on a *piano* B♭ accompanied by a pitch-retrograde in the cello an octave lower: the pitches B♭ and F♯ frame the cello gesture.

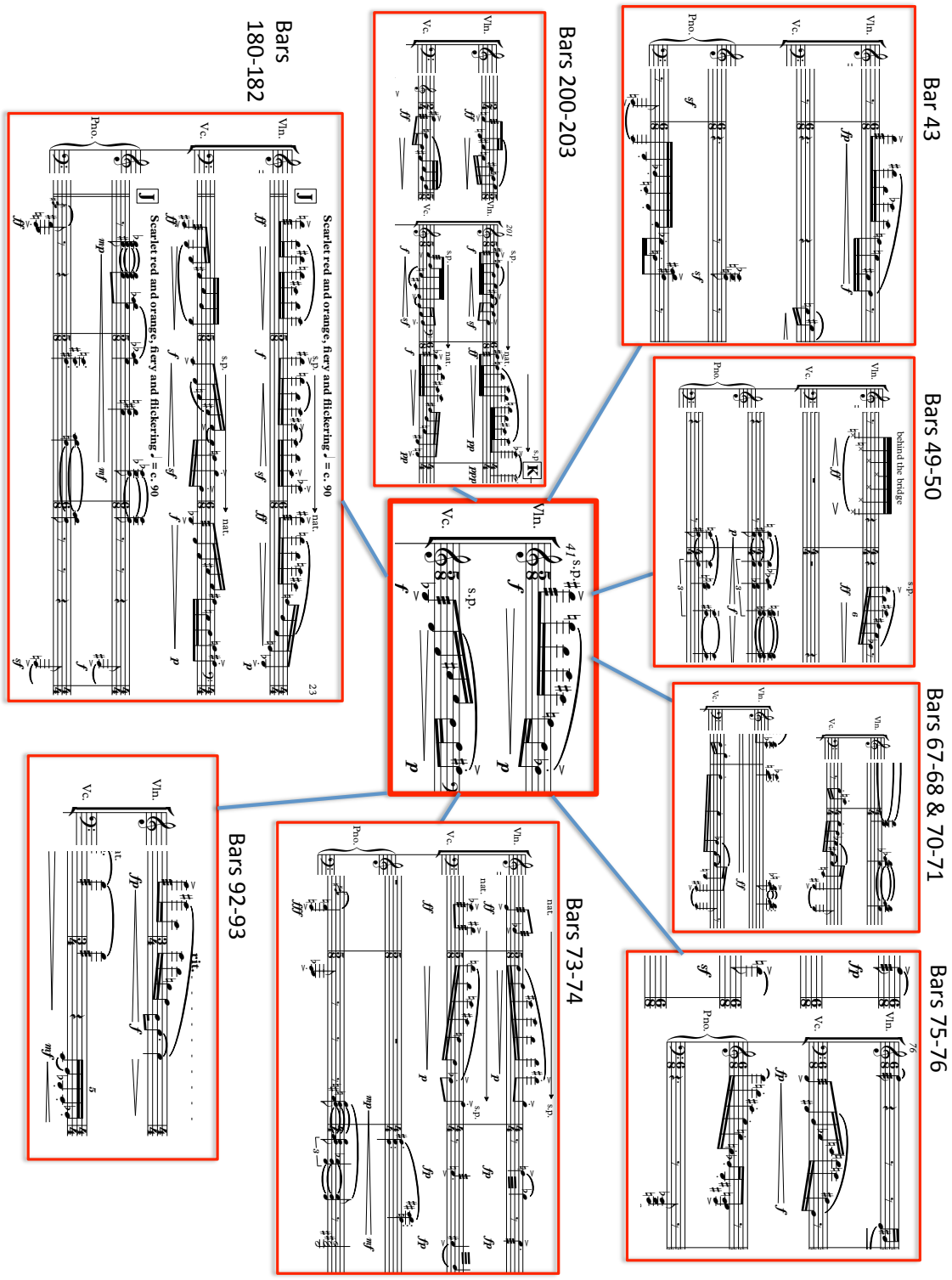

Figure 4.9. Motivic developments of b.41 from red-section.

The next statement follows closely in b.43, appearing in the violin only, and is accompanied by an ascending arpeggiated piano figure. The violin figure (b.43) is altered, presenting the pitch-couple centre in an inverted form, i.e. F ♮ –F♯. After the first two semiquavers, the intervallic relationships are largely retained, though changes do occur through intervallic diminution or augmentation. The following intervals occur: a minor third (E♭ to C) followed by a descending fifth (C ♮ to F ♮) instead of an augmented fourth (tritone) in the equivalent position. Though retaining the overall shape, the intervallic relationships are altered and notes added. The opening of the accompanying piano figure (b.43) is closely related to the violin figure, beginning with a *sf* quaver on F ♮ , though in this case the piano figure is extended by a semiquaver. Thus, the expectation is that the figures move as one. However, the piano figure actually starts one semiquaver before the violin. When the violin semiquavers begin, the pitches F♯ and B♭ coincide (violin and piano respectively), creating the same intervallic relationship as b.41. The piano notes in b.43 are a combination of retrogrades of the violin figure (b.43) and the cello figure from b.41: the retrograde from the cello forms the first three notes of the piano figure; the violin retrograde forms the second half of the piano figure. It is significant that B♭ and F# function as the pivot points for these combined retrogrades, because of their functions in the white and red sections as pitch centres.

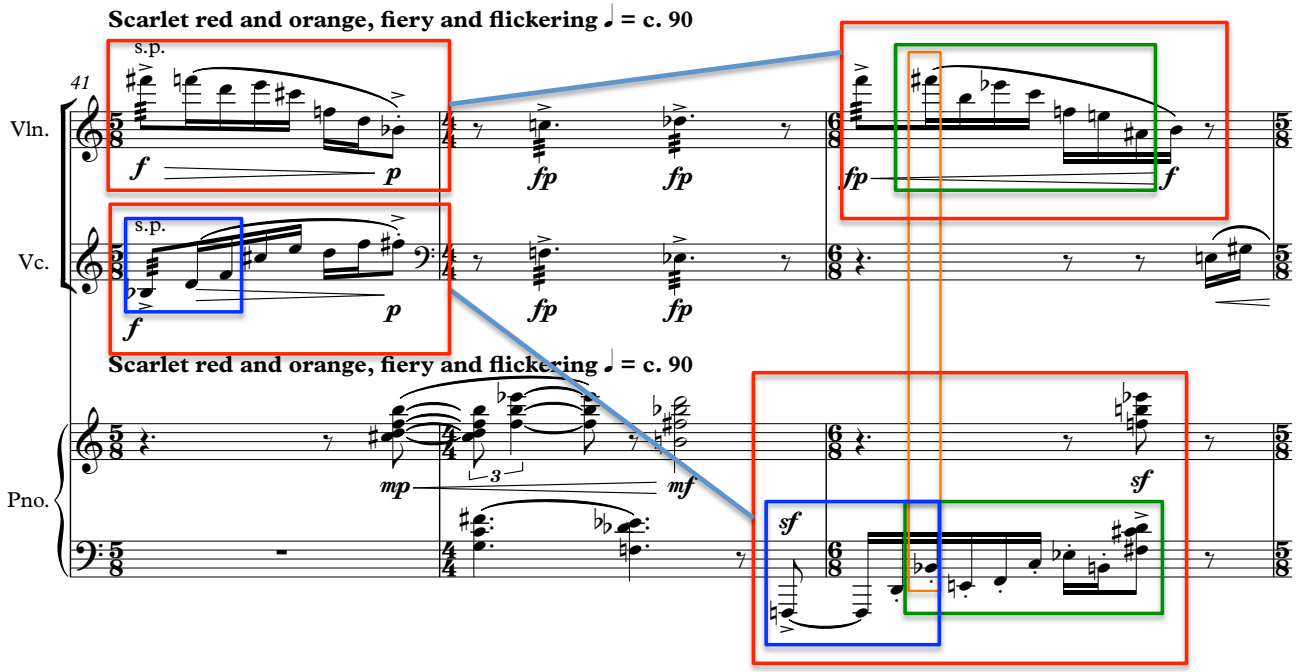

Figure 4.10. Development of gestural figure from b.41 in b.43

As the red-section progresses, figures fragment and combine to create musically dialogic textures, an instance of which is found at bb.64–6. The violin F♯ in b.64 forges an aural relationship to the timbrally modulating high B's of the opening white-section. This F♯ also acts as an aural reference to b.41, characterised by a longer note followed by a semiquaver figure, leading bb.64–5 to create similar gestural shapes. However, bb.65–6 are linked more explicitly to the figure originally stated in bb.45–6. Here the material has been altered through octave transposition, the addition of rests, fragmentation and imitation of the falling semiquaver G–D motion (perfect fourth) that is translated to C–F♯ (tritone). The repeated B♭s in the original gesture (bb.45-6) are omitted here and replaced by a shorter rest on the second beat, just before the B ♮ –E♭ double-stop. This is placed in counterpoint to a cello figure derived from the piano b.43, and is further related to material found in b.46. Both violin and cello figures in bb.64–6 have been altered to create a musical dialogue.

From b.64 the increasing infiltration of yellow pitch-couple centres occurs with the significant placement of G/G♯ (A♭s). An example of this occurs in Figure 4.11 where double-stopped cello chords frame the phrase with significant pitches. The first double-stop of G ♮ and F♯

shows the prominent placement of yellow pitch-centres in combination with the red pitch-centres. This second double-stop of B♭ and A♭ is presented with a red-centred F ♮ based piano chord, beginning to subtly shift prominence towards the yellow pitch-couple centre.

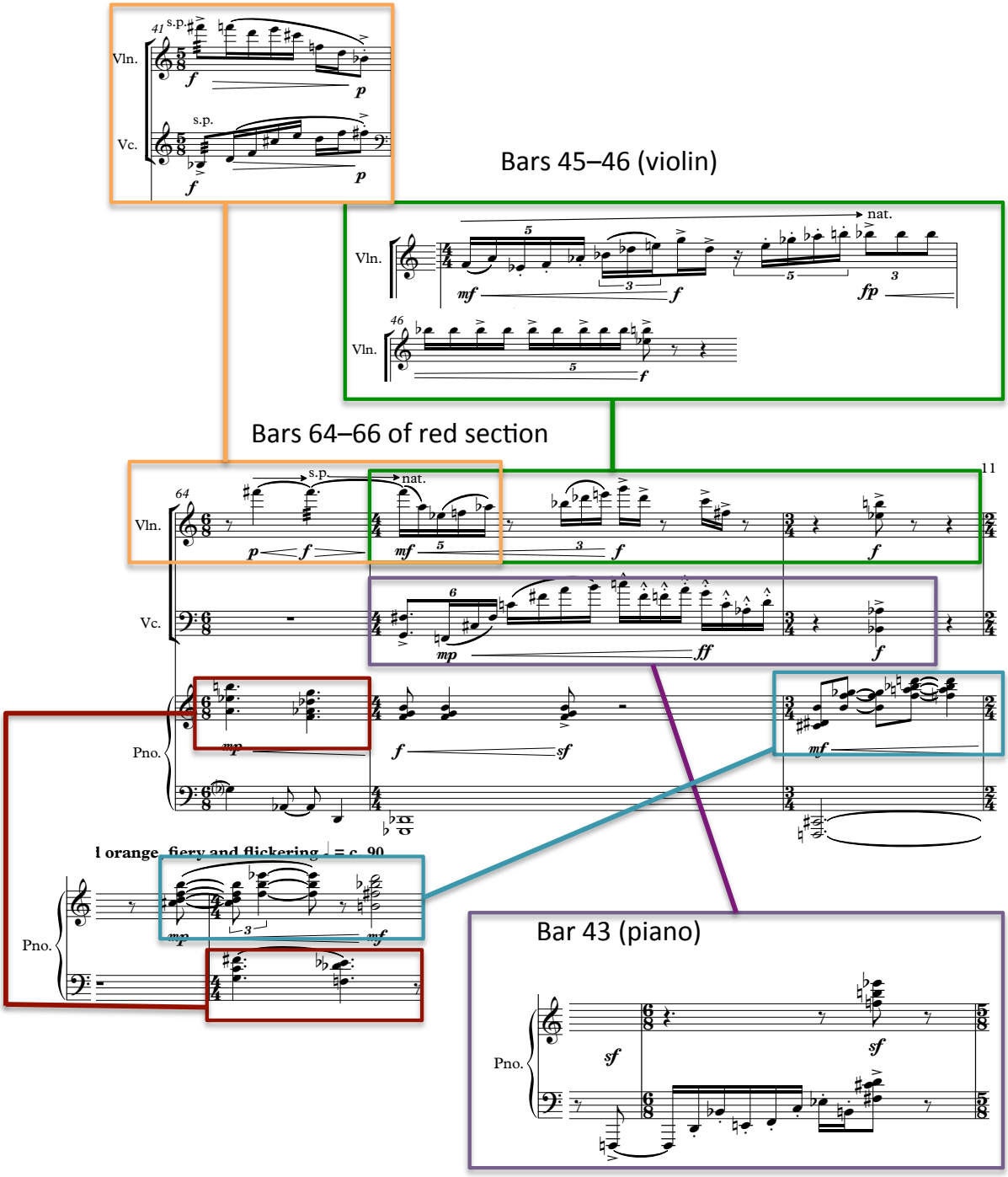

Figure 4.11. The construction of bb.64–6 from other gestural figures.

Figure 4.12 shows how bb.75–6 have developed from b.43, which itself is originally related to b.41. The arpeggiated figure, beginning in the violin, is transferred to the piano. This material is also inverted in the piano right-hand, with the violin material from b.43 now being presented by the cello in an arch-like shape. The same gestural effect is created with a linked, yet altered, aural experience, achieved through the balance between restatement and variation.

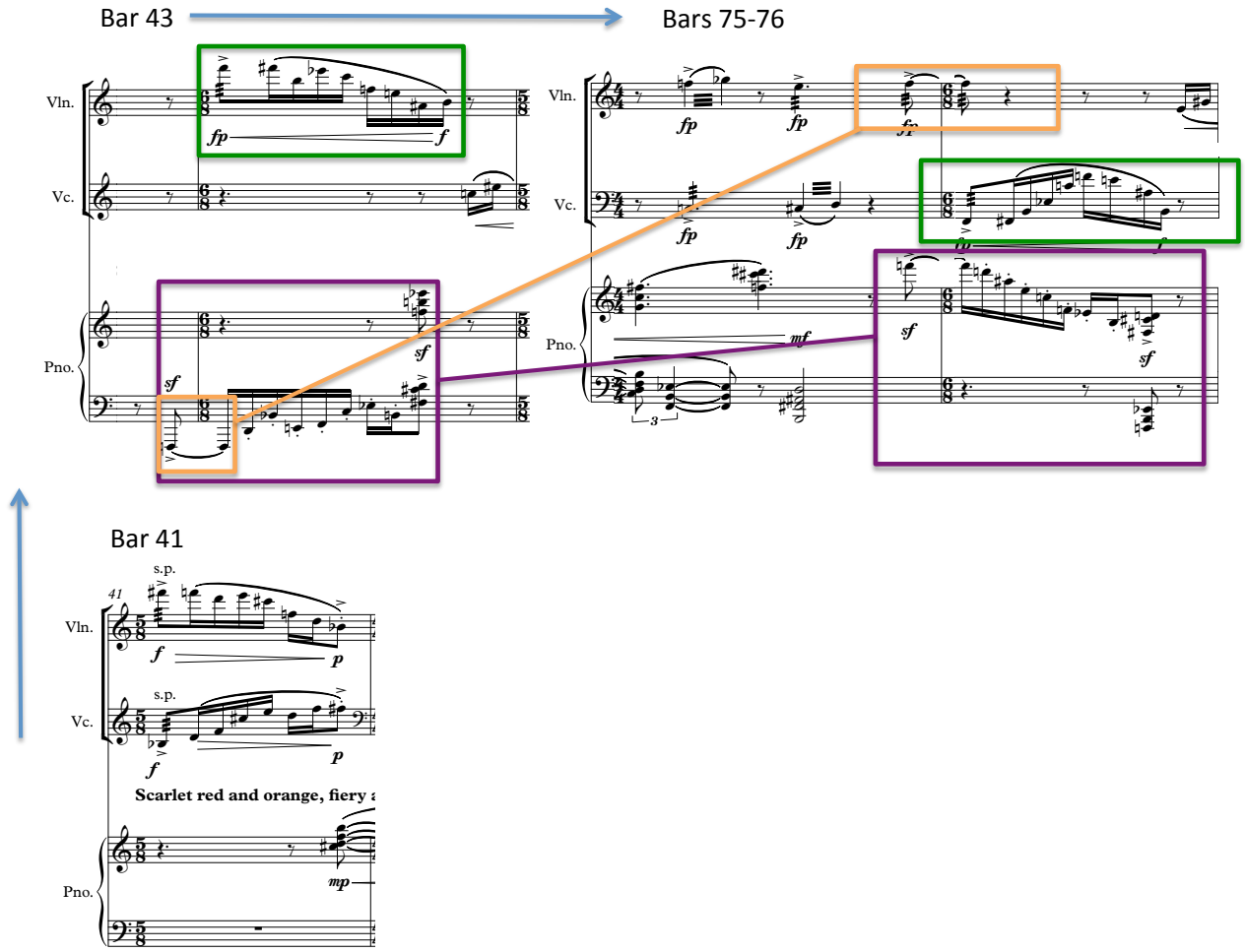

Figure 4.12. Construction of material in bb.75–6 from b.41 and b.43.

The final development of b.41 discussed here marks the start of the second iteration of the red-section (bb.180–2). This starts in a similar fashion to the first, providing a strong aural reference. However the figure is not simply restated, instead being extended by drawing on previous developments of this gesture (Figure 4.13).

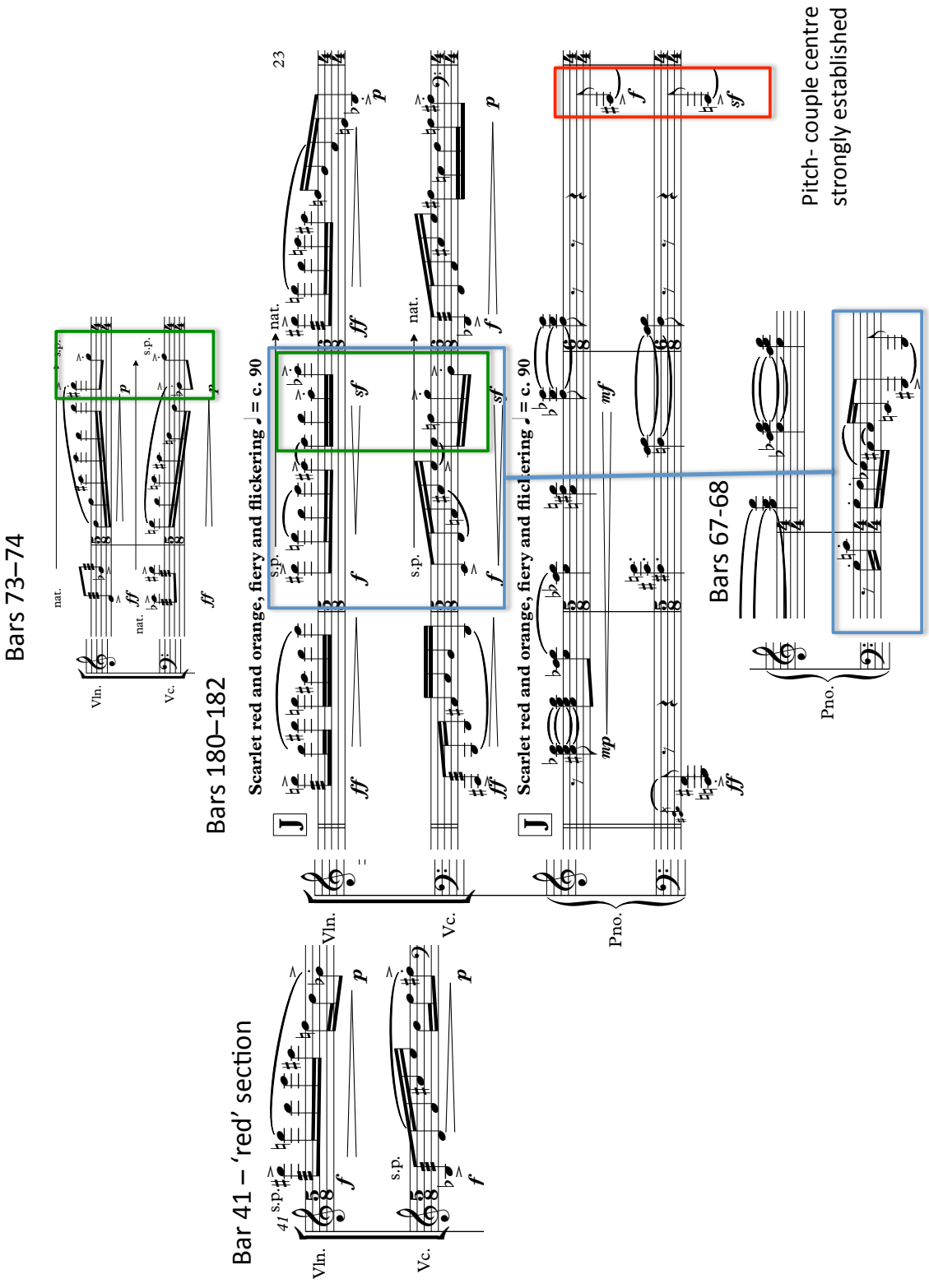

Figure 4.13. Gestural development from b.41, bb.67–8 and bb.73–4 in bb.180–2.

Yellow-section

Yellow gestural tropes function as pre-echoes in the red-section, where the increasing infiltration of G/G# helps to establish this as the new pitch-couple centre. A significant feature of 'yellow' gestures is the use of disrupted cyclic patterns (Figure 4.14). The simultaneous presentation of material at two temporal rates affects our perception of time linking colours with temporal energy levels, something that I was keen to explore. The yellow-section, characterised by high energy levels, is gradually 'pulled' towards the slower and lower-pitched 'blue' realm.

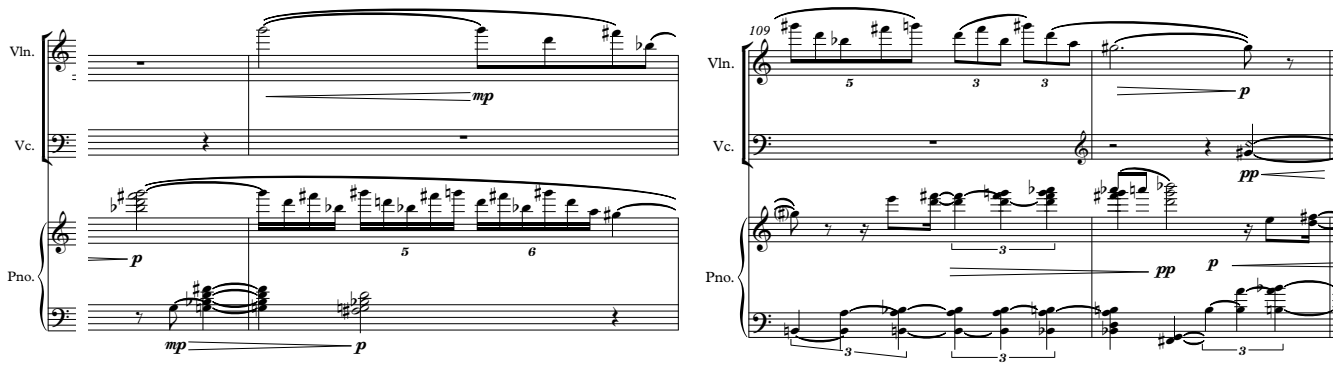

Figure 4.14. Cyclic material bb.107–10 in the yellow-section.

Although the yellow-section has many characteristic gestures, its most distinctive is melodic hocketing, as demonstrated in Figure 4.15. The yellow-section remains in a timbrally conventional soundworld and shifts in sonority as the melody transfers across the instruments through the hocket figures.

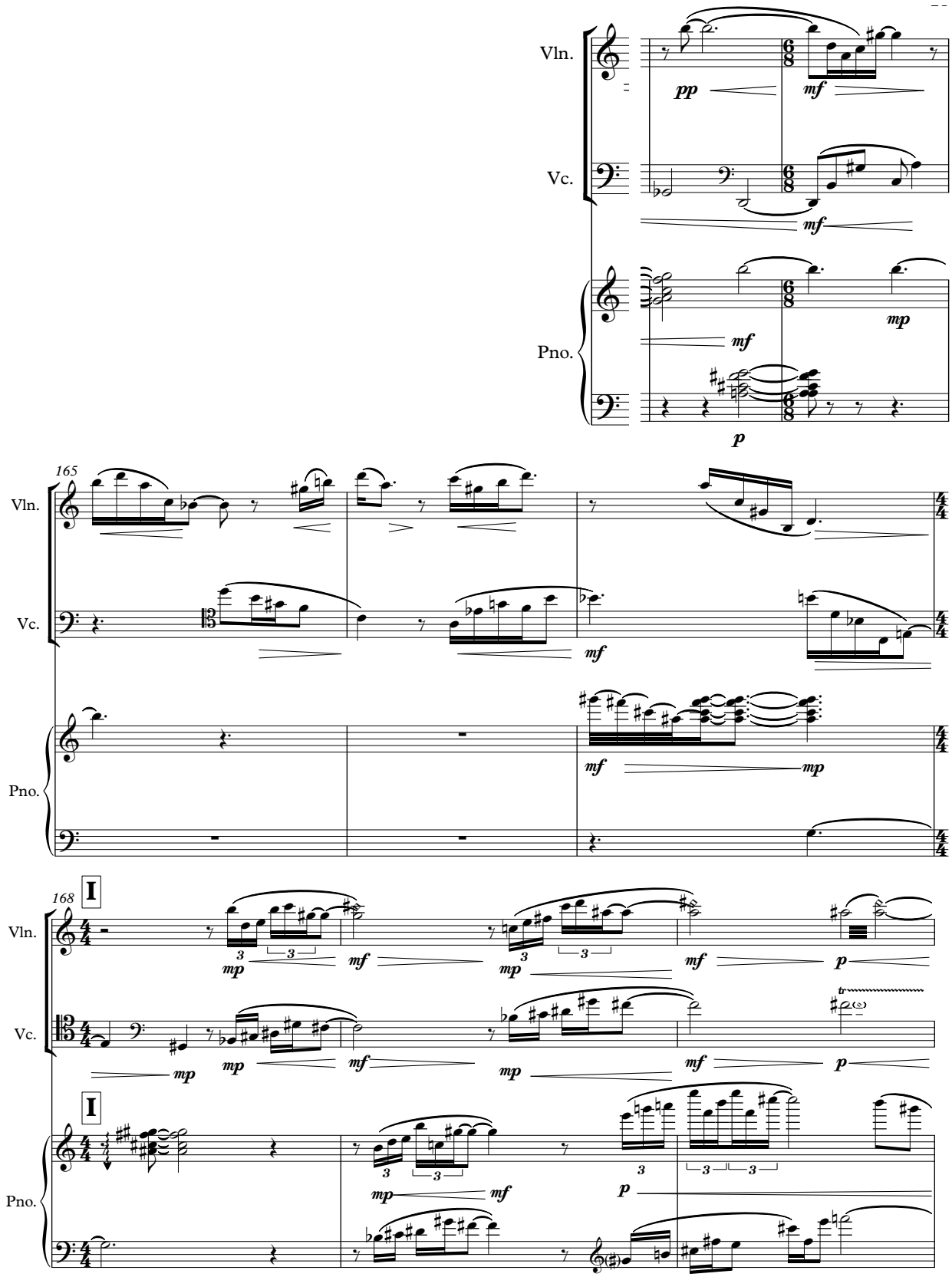

Figure 4.15. Hocketed material bb.163–70.

Blue-section

Unlike the yellow-section which emerges gradually by harmonic means from the red-section, the blue-section emerges from the yellow-section through its gestural language. A comparison of the high-pitched undulating piano figures demonstrates this gestural relationship.

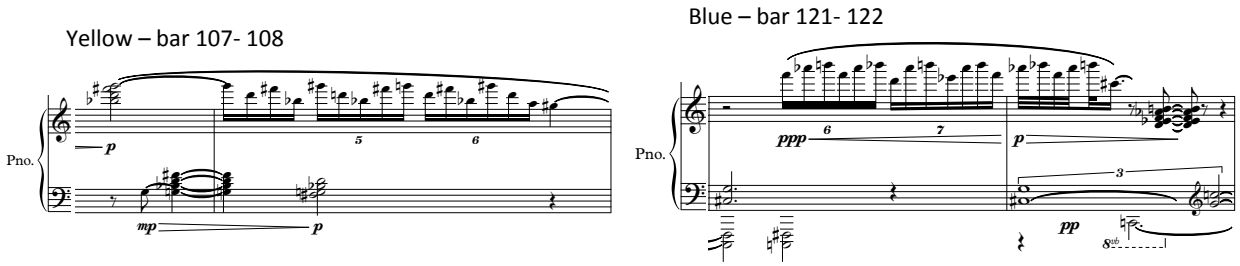

Figure 4.16. High-pitched undulating figures in yellow and blue sections.

The blue-section evokes cold and ice through high-pitched 'suspended' sounds, such as harmonics and the high-pitched undulating piano material. It represents (partially) the deep resonance of blue through the increased use of the lower range of the cello and piano (left-hand), lowering the overall tessitura. Blue gestural material is split into two types, reflecting the representation of density and fragility associated with this colour. Figure 4.17 shows the contrast between lyrical and aggressive lines (i.e. cello, bb.125–8) that highlight the two contrasting gestural characters.

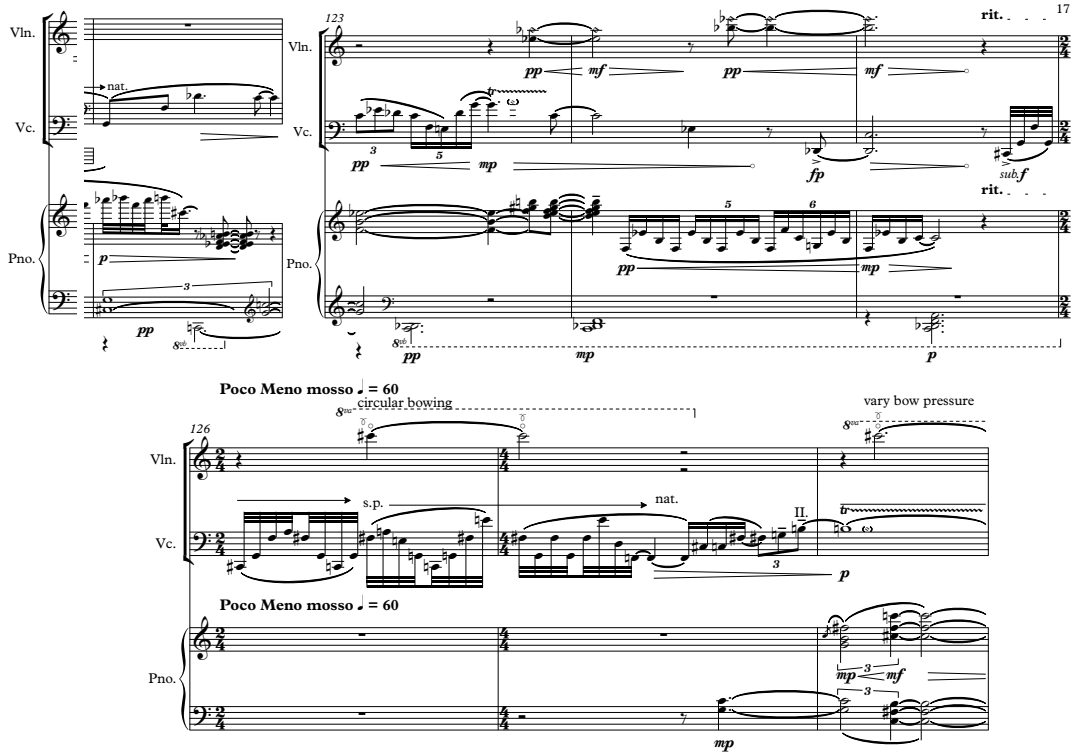

Figure 4.17. Contrasting characters of blue-section in bb.122–8.

Gesture characterisation helps to define the aural identity for each colour-section, offering opportunities for dialogue and allowing the colour boundaries to blur. Rhythmic and metric elements are used to create a feeling of slowly cascading to the bottom of the rainbow fire. In the yellow-section different temporal levels pull against each other as cyclic motifs are heard at different rates (see bb.108–16), gradually stretching out to slow the rhythmic and harmonic pacing as it approaches the blue-section. These manipulations and juxtapositions of different temporal relationships deliberately affect our perception of time, something that is further enhanced by the *ritardando* at b.117. The possibilities offered by temporal manipulation, through different rates of motion, was a primary consideration in *Rainbow Fires*. David Epstein discusses the relationship of motion and time:

> To speak of time is virtually to speak of motion, for motion is time's intrinsic correlate... Motion is basically understood by using time as its index. The reverse of that correlation is equally true: time is only experienced, and thus understood, through motion.[3]

To my mind, motion is intrinsically linked to time.[4] Therefore, the manipulation of motion can affect our perception of time. By using the same cyclic motif at different temporal rates, the pacing of motion affecting temporal perception can be manipulated in interesting ways.

[3] David Epstein, *Shaping Time*: *Music, the Brain and Performance* (New York: G. Schirmer, 1995), p.8.
[4] Robert Adlington examines different perspectives on the relationships between temporality, motion and music: see Adlington, 'Moving beyond Motion: Metaphors for Changing Sound', *Journal of the Royal Musical Association*, 128/2 (2003), pp.297–318.

Building a musical language to represent colour: a response to the music of Olivier Messiaen and Kaija Saariaho

The harmonic language of *Rainbow Fires*, which is predominantly chromatic, is intrinsically linked to the representation of colour. The musical footprints of scalic/intervallic patterns and harmonies created in drafting stages permeate the musical material establishing colour identities. My harmonic goal was to communicate aural colour identities through deep consideration of the pitch content, mode, voicing, and intervallic relationships. These harmonic materials became the initial musical building blocks created through my own critical judgment and compositional intuition.

Before creating a harmonic palette for *Rainbow Fires*, I was well aware of the rich history and multifarious ways that composers have engaged musically with colour. As part of the preparation for this piece, I researched approaches towards incorporating colour, including such notable composers as Rimsky-Korsakov, Scriabin, and, perhaps most relevantly, Olivier Messiaen, whose explicit musical conception of colour is well known through his specific labelling of colours within the score itself. The diversity of musical responses to colours was reassuring, as it highlighted the importance of personal interpretation in understanding perceived sonic–colour relationships. [5]

I do not have synaesthesia and therefore rely on my own instinct. To my mind, there is an aural connection between colours and specific harmonic and timbral characteristics. To create harmonies representative of each colour, I considered the relationship between the notes and their timbral qualities. This detailed consideration of every aspect of the foundational chords creates a distinct harmonic identity for each colour-section.

[5] For further reading on the relationship between colour and music see: Jeffrey N. Howard, 'Harmonic Content Influence on Colour-Choice Association with Unaccompanied Tones', *The Journal of Music and Meaning,* vol 10 (2011), pp.45–78.

My great admiration for Messiaen's harmonic language, often underpinned by colour associations, led me to compare my own decisions on harmonic colour to his. In *Couleurs de la cité céleste* (1963), he makes specific reference to the colours being expressed in the score.[6]

> I am affected by a sort of synaesthesia of the mind rather than of the body … I feel these colours extremely vividly, and sometimes in my scores I have even indicated precisely the correspondences.[7]

After first devising some of my own harmonies based on the predetermined pitch-couple centres, I compared my chords to those from Messiaen's *Couleurs*.

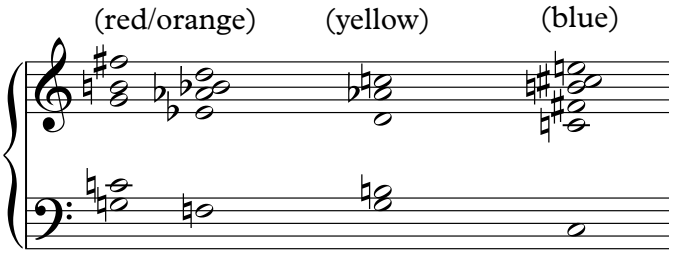

Figure 4.18. My initial harmonic sketches for red, yellow and blue.

Figure 4.18 shows the initial harmonies representative of red, yellow and blue. The white-section draws on other colours' harmonies, redefining them through its pitch-couple centre of B/B♭, offering something of a musical representation of white light with the incorporation of all colours. Figure 4.18 demonstrates that the functional voice moves freely within the texture and is not always consigned to the bass. The functional voice can be identified by the frequency with which the pitch-

[6] This piece also includes several labelled transcriptions of birdsong and plainchant melodies. These elements work together to establish Messiaen's vision of the colours of the celestial city.
[7] Claude Samuel, *Olivier Messiaen, Music and Colour; Conversations with Claude Samuel*, trans. E. Thomas Glasow (Portland, OR: Amadeus Press, 1994), p.40.

centre occurs and the surrounding context. Other compositional parameters are also affected, allowing that voice to have more significant impact within the texture.[8]

Figure 4.19 shows some of Messiaen's 'colour' chords from *Couleurs*. I found some of these to contain intervallic similarities to my own foundational harmonies, leading me to incorporate elements of these into my harmonic language. Though entirely coincidental, these similarities perhaps suggest subconscious harmonic associations with specific colours.[9]

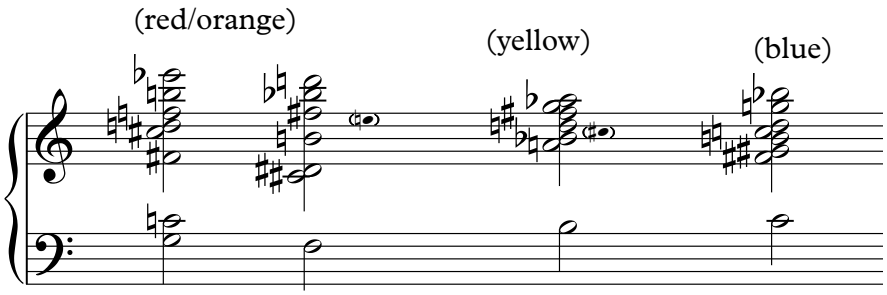

Figure 4.19. Messiaen's colour chords from *Couleurs*; red bb.16–7; yellow bb.11/13; and blue (based on) b.27.

In the discussion that follows, I examine the ways in which I incorporated Messiaen's harmonies into my own harmonic language, showing how the different characteristics of these collective harmonies are used best to represent each colour, and create harmonic modulation across the colour sections. This leads to the creation of distinct colour identities.

Harmony of the white-section

Although the white-section is dominated by a sense of suspension, it is not without directionality. This subtle directionality is driven by timbre rather than harmony. Indeed, much like the aforementioned rhythmic stasis, the harmony is frozen through high 'cable-like' B♮/B♭ violin notes.

[8] Other discussions about functional harmonic voices occur in Chapters Three.
[9] For further reading on Messiaen's musical relationship with colour see: Wai-Ling Cheong, 'Toward a Theory of Synaesthetic Composition: A Case Study of Messiaen's Sound-Colour and Bedazzlement', *Rivista di analisi e teoria musicale*, 19/1 (2013), pp.65–88.

The prevailing sense of suspension is deliberately disrupted by violent interjections of harmonic and gestural material from other colours, though these are presented in the context of the white pitch-couple centre. The interjecting material is largely based on scalic sets I created in the 'pre-compositional' process (Figure 4.20).

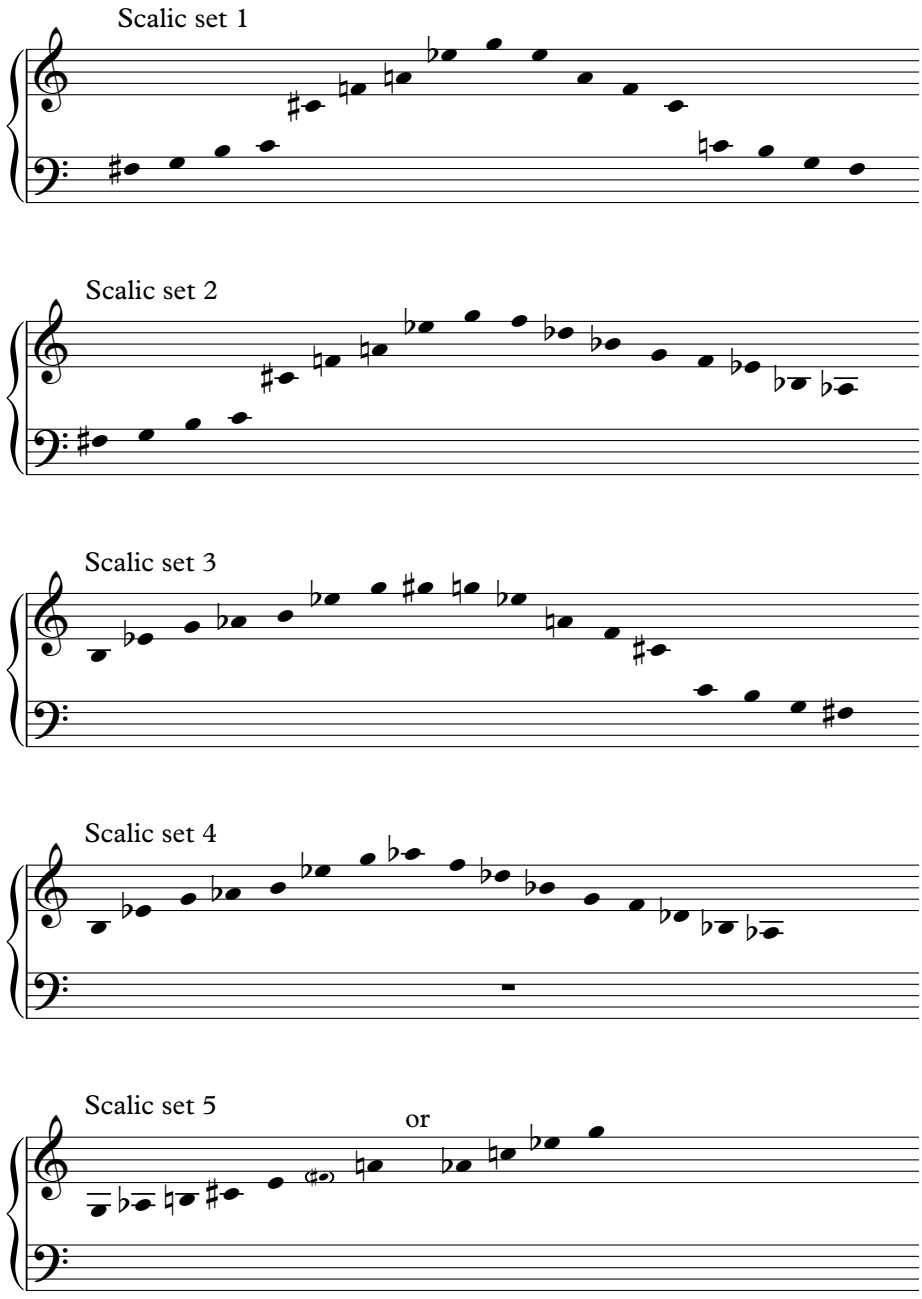

Figure 4.20. Scalic sets from initial sketches.

Red harmonies

The red-section is the first to contain regular vertical harmonic movement, which is characterised by large intervallic relationships, often formed from quintal harmony. The harmonic content is mostly based on the two harmonic collections established in the planning phase (Figure 4.21).

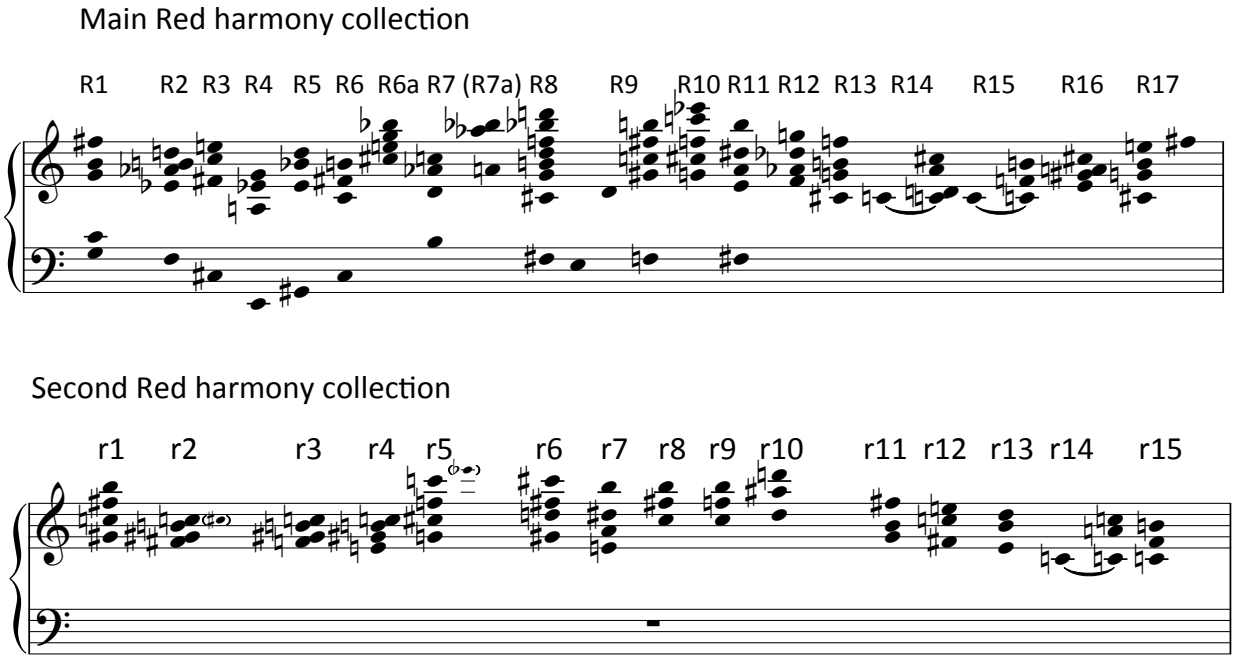

Figure 4.21. Red harmonic collections.[10]

In both red-sections, these chords are used in conjunction with Messiaen's red/orange chords (Figure 4.22). Close comparison of the red harmonic collection with Messiaen's chords reveals some intervallic similarities between them, aiding the seamless incorporation of elements of Messiaen's harmony into my own. Throughout, the red harmonies undergo several compositional transformations, leading to new harmonic material that is aurally linked to the original red harmonic collection.

[10] The main red harmonic collection will be labelled with a capital R and the second red collection with a lower-case 'r'. Both will be followed by a number that refers to the chord in the series. This does not indicate hierarchical relationships.

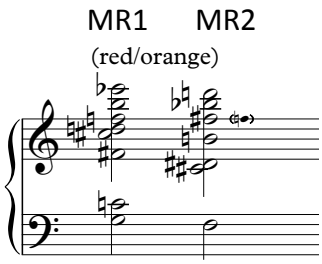

Figure 4.22 Messiaen's red/orange chords.[11]

In bb.41–3 Messiaen's red chords are used (Figure 4.22): the lowest three notes of MR1 and MR2 hold a close relationship with R1 and R8. The use of MR1 and MR2 helps to establish the harmonic quality for red, with its characteristic large intervallic spread and aspects of parallel motion. These two harmonic moments also help to firmly establish the pitch-couple centres of F ♮ /F♯: the first vertical harmonic moment (bb.41–2) ends with F ♮ in the bass and an F♯ as an inner voice; the second harmonic moment (b.43) reverses this relationship with F♯ in the bass and F ♮ acting as an inner voice here.

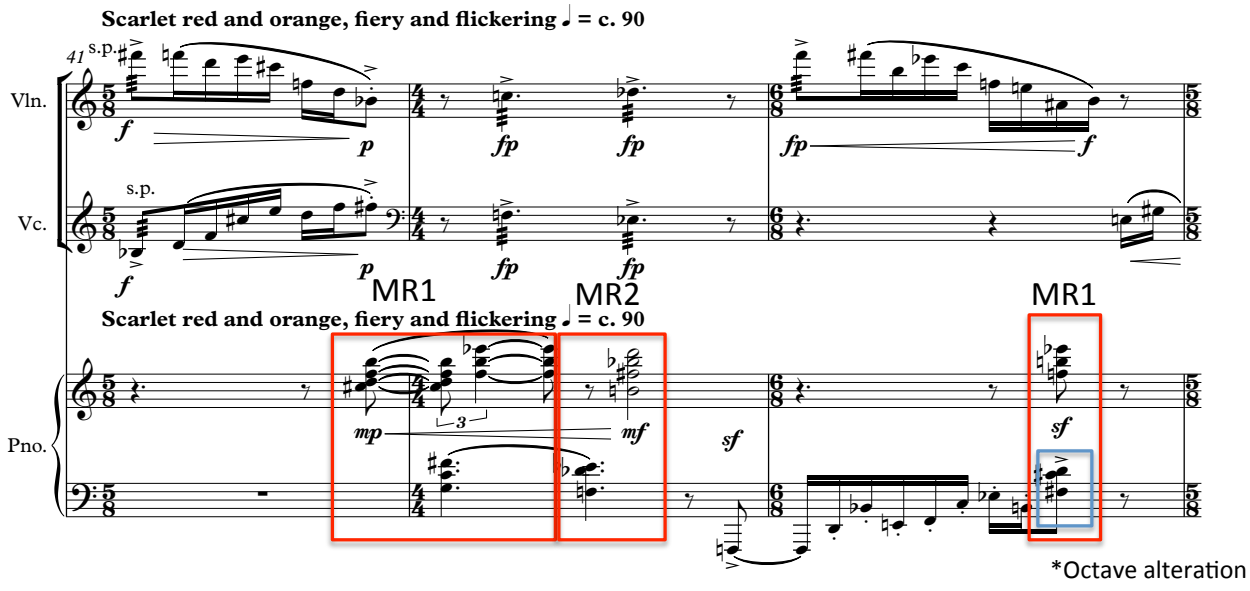

Figure 4.23. Initial vertical harmonic moments in red-section.

[11] Messiaen's chords will be labelled as 'Messiaen Red 1' (MR1) and 'Messiaen Red 2' (MR2).

The principal red harmonic collection is presented in its initial form in bb.59–64, reaching R12 at the end of b.64 (Figure 4.24). Clear, vertically-aligned chordal statements gradually disintegrate here, with bb.59–60 showing the point from which the harmonic progression and vertical alignment begins to slip. One instance of this creates a blending of R6 into R7 and R7 into R8 in bb.61–2, a technique that is deployed elsewhere within *Rainbow Fires.*

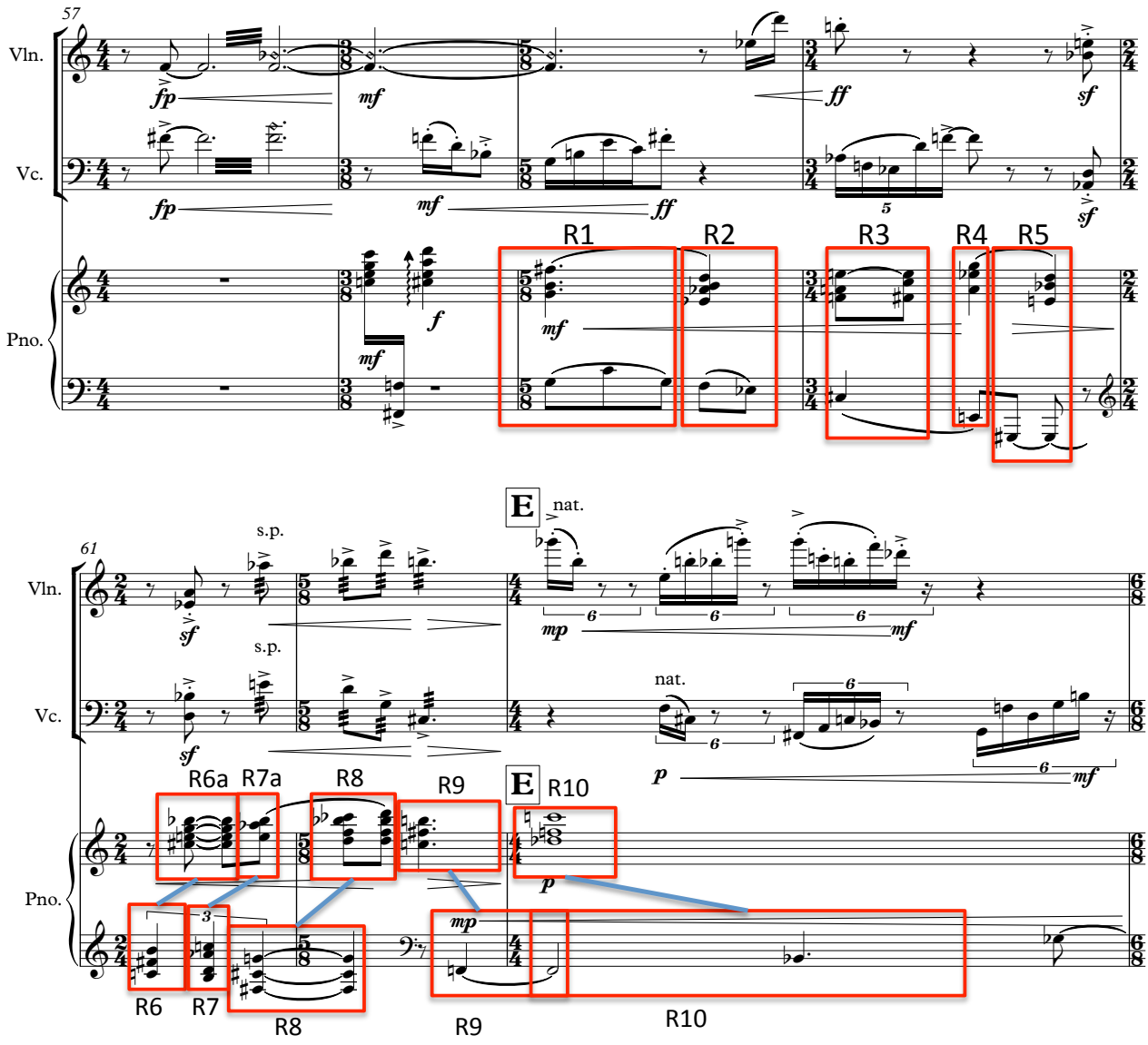

Figure 4.24. Initial complete realisation of red harmonies, bb.59–61.

A significant amount of the red-section harmonic movement is realised through melodic means as the pitch-centre is gradually shifted to the yellow centres of G ♮/G# by a transition in the prominence from F/F# to G/G#.

Yellow harmonies

The yellow harmonic realm (b.96 onwards) is expressed mostly through horizontal means, though there are still moments of clear vertical relationships. The intervallic span of the chords is reduced whilst chordal density increases through the introduction of cluster harmony. Figure 4.25 shows the initial sketches for the yellow harmonic collection, a significant melodic cell and a scalic/intervallic pattern fundamental to the yellow-section.

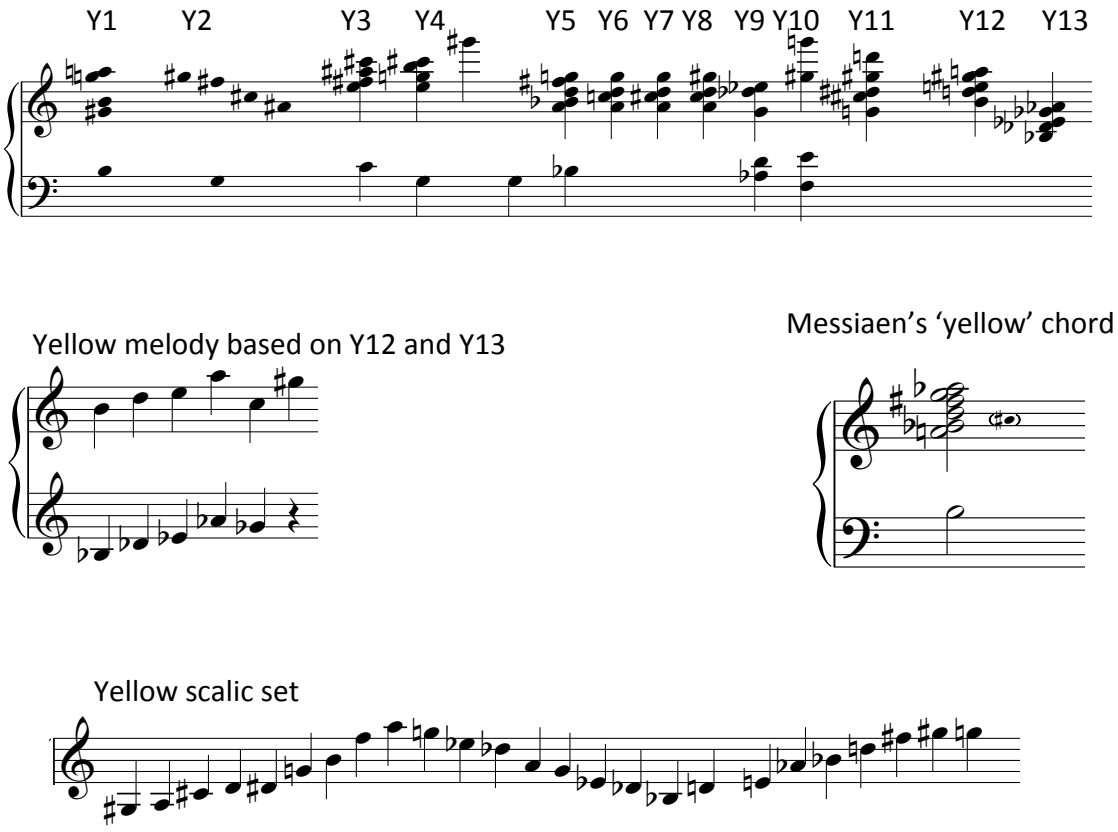

Figure 4.25. Yellow harmonic materials from sketches. [12]

[12] Each yellow chord will be labelled Y followed by the relevant number.

The yellow harmonies are drawn both from this harmonic collection and the yellow Messiaen chord (Figure 4.19).[13] From b.96 these are expressed horizontally, with the initial statement being related to Y12. At this point, the violin and cello materials are related through retrograde. These passages are interrupted by the superimposition of a wholetone descending cascade (Y2 in b.99).

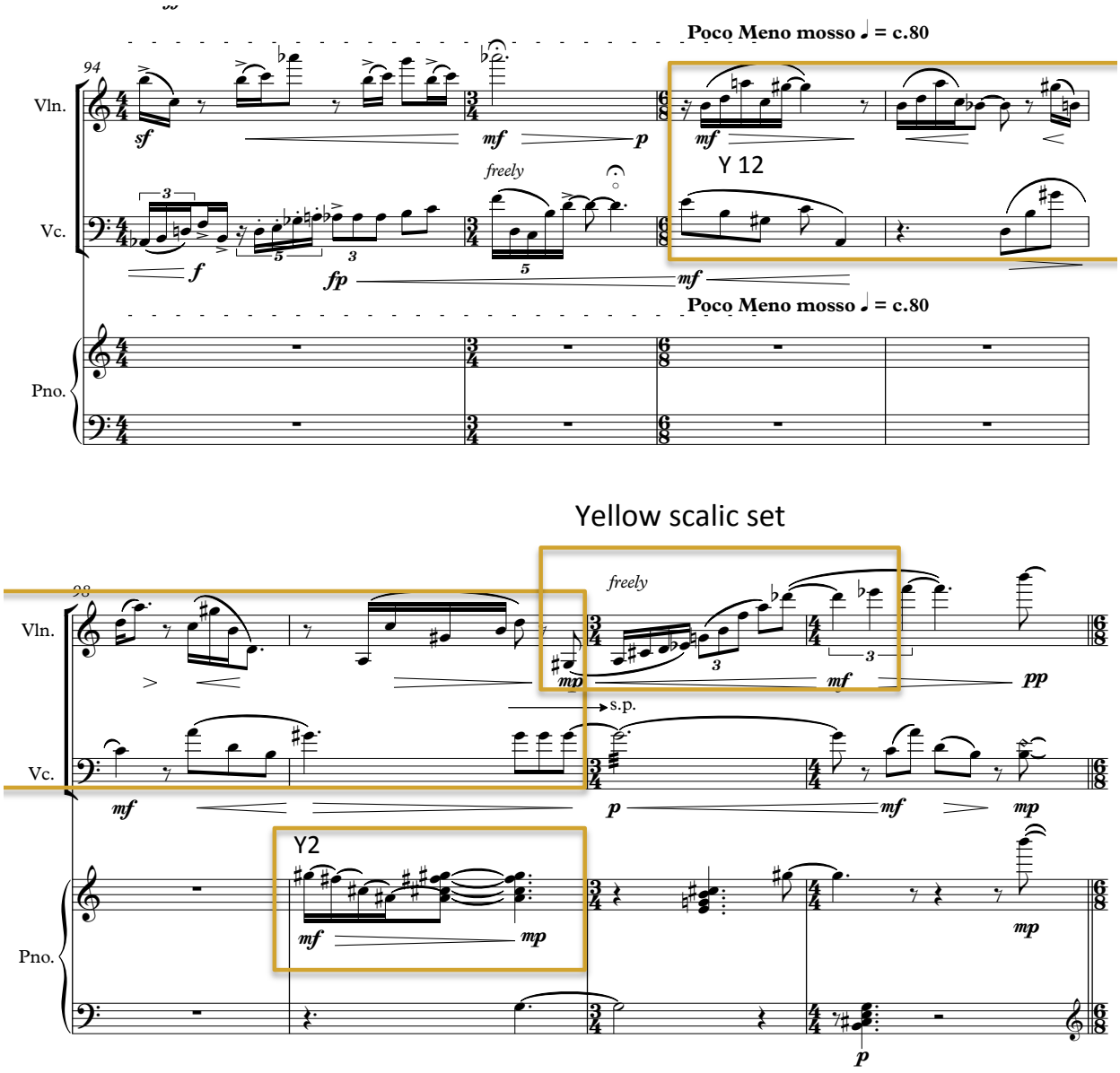

Figure 4.26. Yellow harmonies: Y12 and Y2.

[13] Messiaen's yellow chord will be labelled YM.

Although there are moments where the yellow harmonies are established vertically, these are soon stretched out horizontally through cyclic undulating figures. This occurs in bb.106–10 where Y5 and Y8 are first presented vertically and then horizontally in the piano right-hand and violin. The yellow-section transitions to the soundworld of the blue-section through these cyclic figures, characteristic of the blue-section.

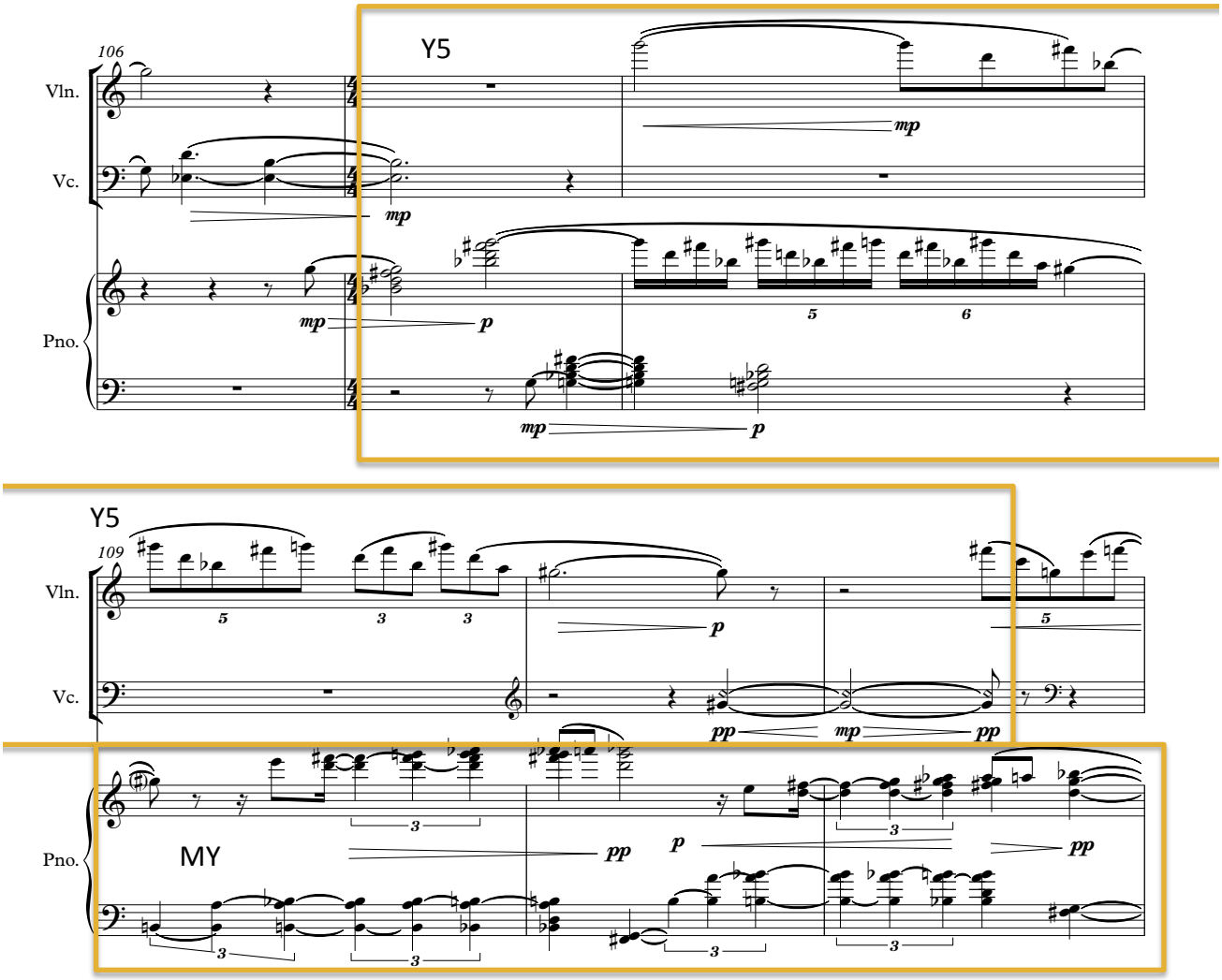

Figure 4.27. Horizontal realisation of Y5 and Y8, bb.107–11.

Blue harmonies

The blue-section harmony is characterised by a low tessitura and close chord voicings, though aspects of the 'yellow' harmonic space continue to persist with the horizontal presentation of chords through cyclic undulating figures.

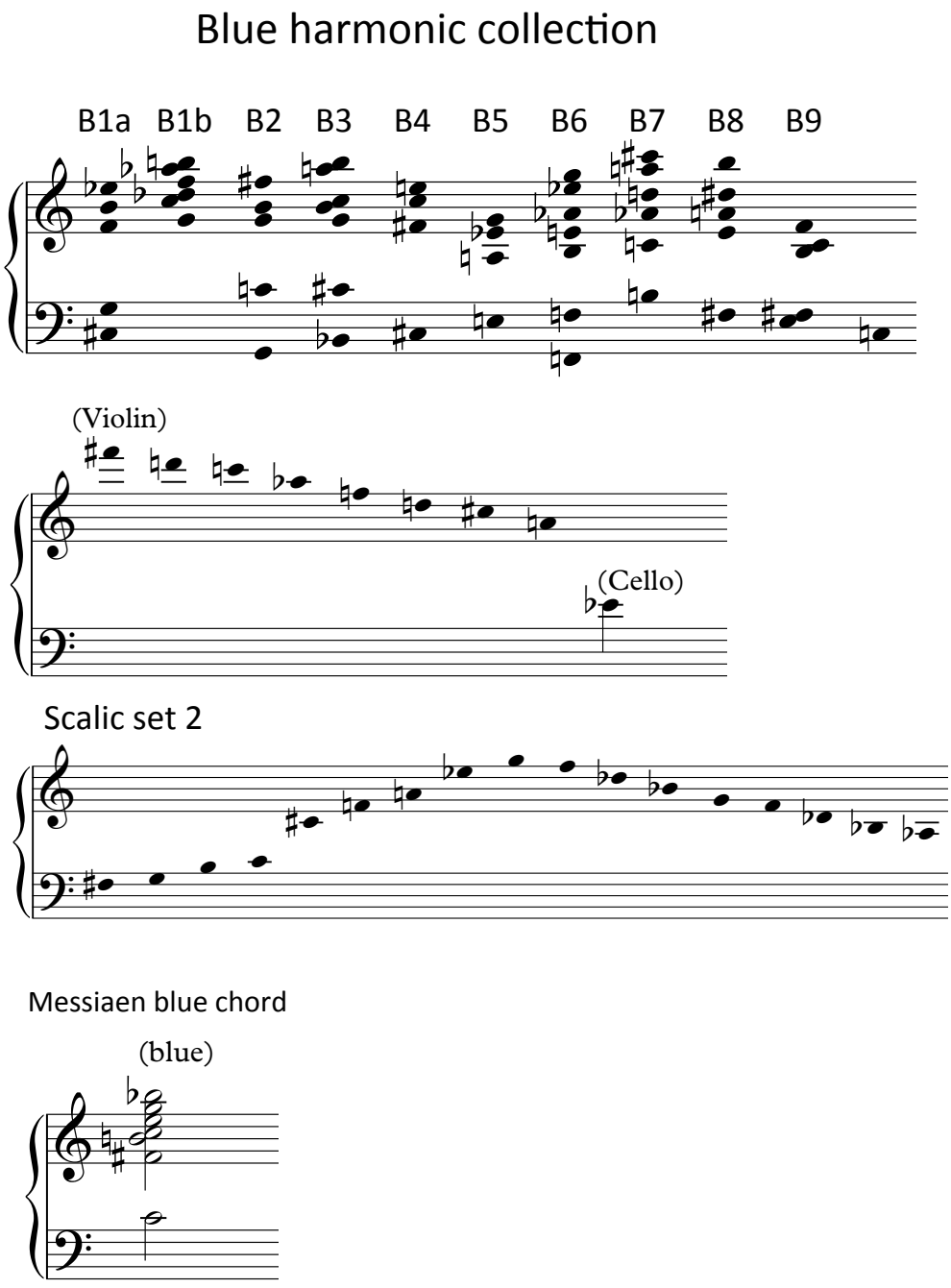

Figure 4.28. Blue harmonic collection.

The presentation of this blue harmonic collection occurs in bb.117–38, where the initial harmonic pacing is slow, only reaching B3 by b.130. In bb.125–8 a burst of energy from the cello breaks through the crystallised atmosphere, and the harmonic pace begins to increase through the fleeting appearance of red harmonies (R1, R8 and 9, in altered forms).

In bb.139–42 a different harmonic field emerges, with this change being affected through the gradual build-up of two superimposed chords: the upper chord is constructed from scalic set 2 (Figure 4.28) and will be referred to as the 'Blue Cluster Chord'[14]; the lower chord is constructed from an altered version of Messiaen's blue chord.[15]

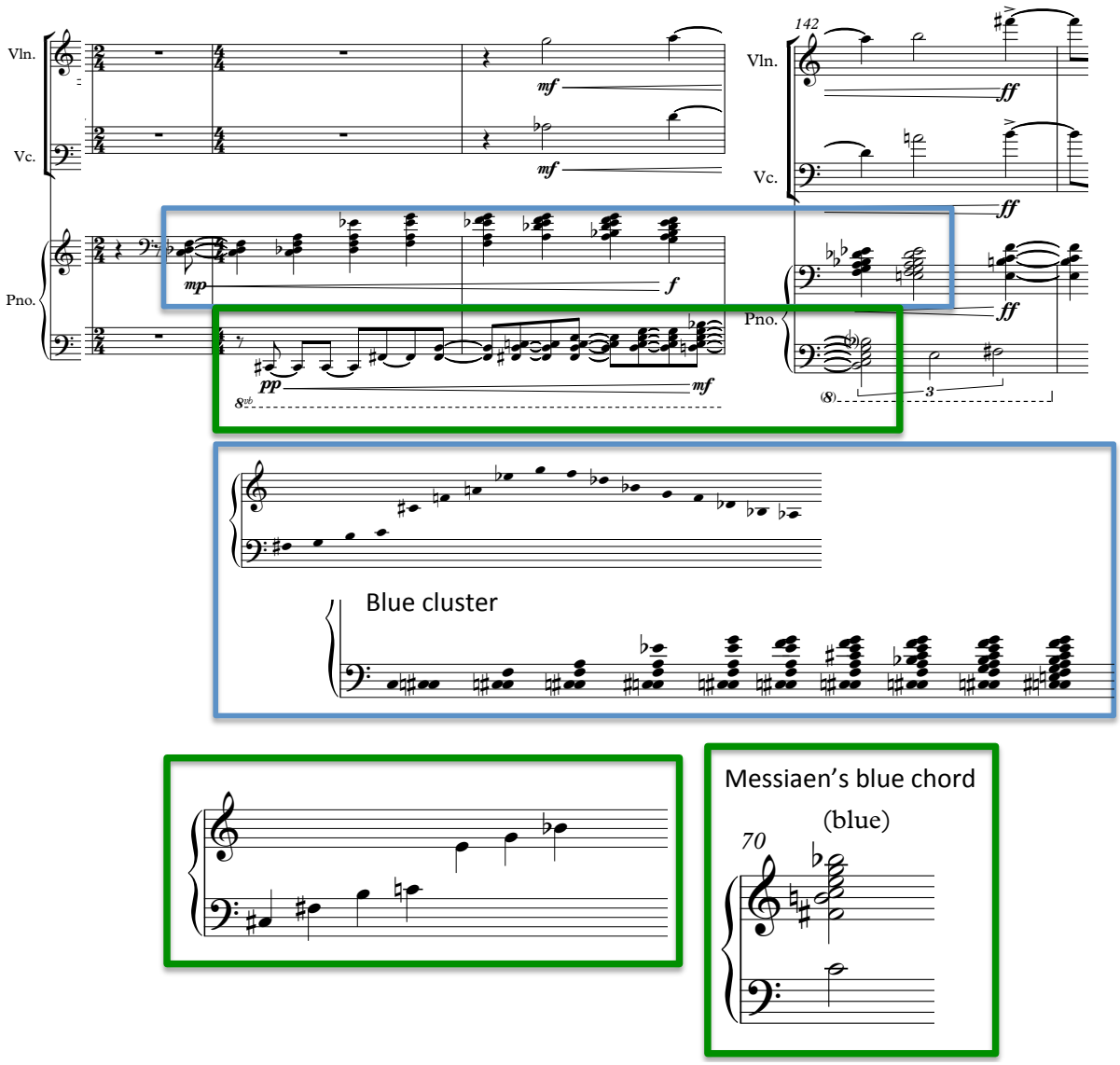

Figure 4.29. Building of BC and MBC, creating a dense chordal texture.

[14] Blue Cluster chord will be shortened to BC.
[15] This will be referred to as MBC.

BC is incorporated into the 'blue' harmonic fabric and it first appears in bb.123–5, where it underpins a B1a chord. Here, as in subsequent instances, it functions as an alternative harmonic field to the blue collection, with its most prominent appearance being found at bb.140–2 (Figure 4.29).

Summary of 'colour' harmonies

From the discussion above, it is clear that each colour has its own harmonic identity and framework: the white-section is held in a kind of 'suspension'; the red-section embraces great dissonance and large intervallic spans; the yellow-section has more horizontal compositional concerns; the blue-section is characterised by dense harmonic content. These harmonic 'characters' are further established through deep consideration of timbral aspects of each section.

Timbre and colour: extending the orchestral palette

I have become increasingly fascinated by the expressive possibilities afforded by timbral exploration, a development that can be seen through some of my earlier works. The expansion of instrumental timbral palettes through intelligent and creative exploration of extended techniques has interested me, as outlined in Chapter One. Saariaho's music and writings on timbre captured my imagination, leading me to further develop my timbral language to be closely connected to harmony and pitch-structure. She notes: 'when timbre is used to create musical form it is precisely the timbre which takes the place of harmony as the progressive element in music.'[16]

It was through this view that timbre, in its own right, can be a progressional element within a musical narrative that I became more aware of the expressive power of timbral modulation. Indeed, timbre as a modulating parameter is foregrounded and explored in *Rainbow Fires*. This view of timbre is expressed by Saariaho:

[16] Kaija Saariaho, 'Timbre and Harmony: Interpolations of Timbral Structures', *Contemporary Music Review*, 2/1 (1987), p.94.

> I have a tendency in my music to relate the control of timbre with the control of harmony… In an abstract and atonal sense the sound/noise-axis may be substituted for the notion of consonance/dissonance. A rough, noisy texture would thus be parallel to dissonance, whilst a smooth, clear texture would correspond to consonance…[17]

The notion of using timbre as another device of tension–release, consonance–dissonance is something that I began incorporating more explicitly. In contrast to Saariaho's approaches to timbre and harmony, which are founded on the idea of timbre replacing harmony as the principal modulating factor, I see the two as working together on a spectrum rather than as mutually exclusive categories. I believe that timbre can intensify the musical meaning conveyed through harmony. For example, if the music travels harmonically from consonance to dissonance, the timbre can also map this change, guiding the listener through the transition. In *Rainbow Fires* I found timbre a stimulating expressive parameter that intensifies the expression of colour.

Throughout *Rainbow Fires*, I use string timbral extensions to extend musical phrases and create consonance–dissonance relationships within musical structures. In this piece, the sonic palette of the instruments is extended through traditional and non-conventional timbres, helping to communicate the colours being conveyed. Saariaho's perception of traditional and unconventional timbres relationship have been described as:

> The dynamism between *stasis* and *tension* is, however, evident when we consider the contrasts of textural types. Textures in which the piano produces traditional sonorities

[17] Saariaho, 'Timbre and Harmony', p.94.

represent *stasis*; gestures created by timbral, dynamic and rhythmic means represent *tension.*[18]

In *Rainbow Fires* timbre is not set up as representing stasis and tension, instead being placed in a consonance–dissonance relationship. A balance is struck between both traditional and extended timbres, with neither representing stasis. However, it is clear that a timbral hierarchy exists within *Rainbow Fires*, leading to the formation of distinctive soundworlds for each colour.

Through the study of number of composers, in conjunction with Patricia Strange's *The Contemporary Violin*, I have discovered a large palette of timbral extensions.[19] I have also experimented on my own cello to find different timbral possibilities.[20] One of the most intriguing effects arising from such experimentation was a double-harmonic tremolo, an effect deployed in bb.130–1 (Figure 4.30).

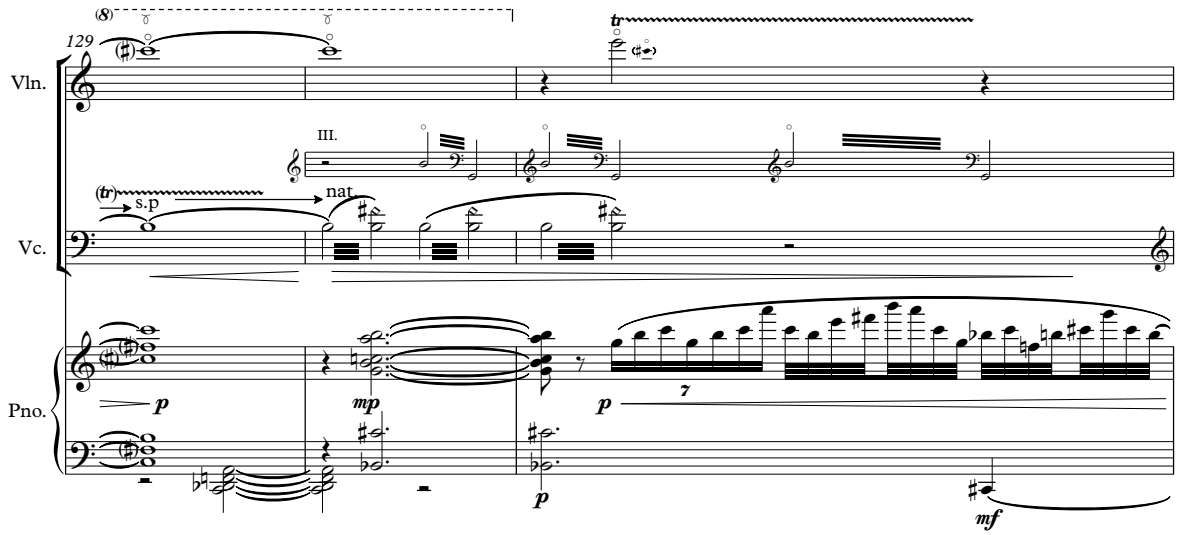

Figure 4.30. Cello double-harmonic tremolo, bb.129–31.

[18] Vesa Kankaapää, 'Dichotomies, Relationships: Timbre and Harmony in Revolution', *Saariaho: Vision, Narratives, Dialogues*, ed. Tim Howell, Jon Hargreaves & Michael Rofe (Farnham: Ashgate, 2011), p.161.
[19] Patricia Strange and Allen Strange, *The Contemporary Violin: Extended Performance Techniques* (Berkeley, Los Angeles, London: University of California Press, 2001).
[20] I started learning the cello in March 2014 for pleasure and to aid my compositional writing.

Throughout *Rainbow Fires*, timbre is balanced with harmony to varying extents and helps convey aspects of musical meaning. Sometimes timbre works alongside harmony to intensify the musical meaning and other times its relationship is disjunct or in counterpoint. Timbre helps to establish aural identities for each colour; for example, the timbre of the white-section modulates rapidly helping to create direction against the relative stasis of other elements. An example of this occurs in bb.1–4 in the violin where a long B is punctuated by timbral shifts, moving from *s.p.* to a normal playing position, as well as transitions between normal and tremolo playing (Figure 4.31).

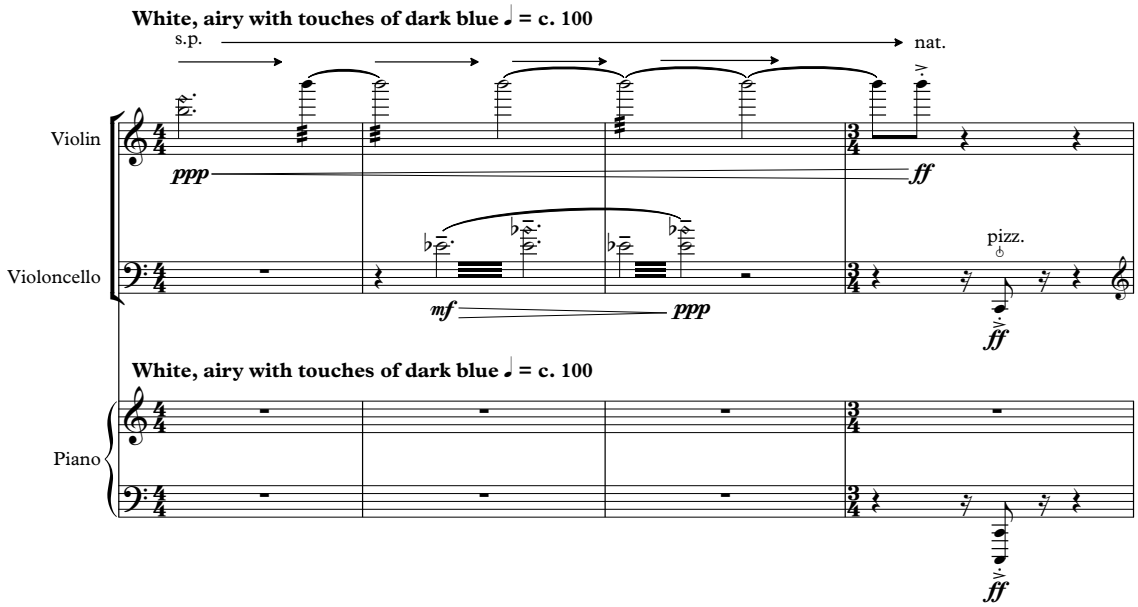

Figure 4.31. Timbral modulations in the white-section, bb.1–4.

The timbral modulations within the white-section are confined to high tessituras and do not affect the gestural bursts which act as pre-echoes. In bb.35–8 timbre is used as a modulating parameter to introduce aspects of red, ending the confinement of timbral extension to high tessituras. The timbre modulates gradually into dissonance as it extends into the noise-axis through a progressive shift to *molto s.p.* (Figure 4.32). The violin arpeggiated figure in b.35–8 timbrally modulates into dissonance and functions as a pre-echo to the arpeggiated gesture first seen in b.49.

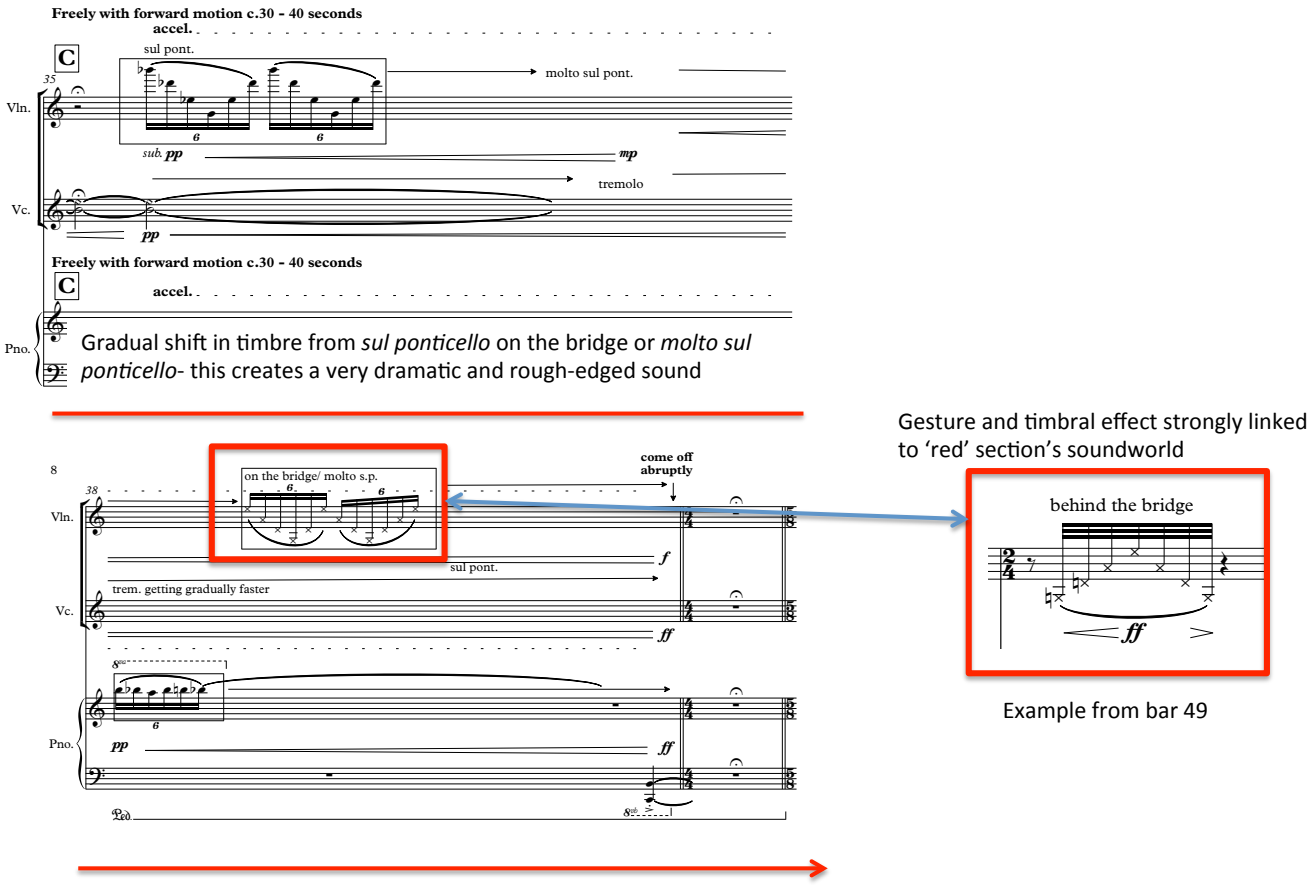

Figure 4.32. Timbral modulation from white to red-section at Figure C.

In the red section, timbre and harmony are placed on a more equivalent plane, creating a dialogue of different levels of harmonic and timbral dissonance. High levels of timbral dissonance (especially at loud dynamics) characterises the red-section, such as *s.p.*, *s.p.* combined with tremolo, aggressive tremolos, double-stops, and arpeggiated bursts played behind the bridge.

The yellow-section has the least timbral modulations, with the balance being skewed towards harmony and gesture as its driving forces. However, these conventional timbres help convey a more full-bodied sound punctuated with light harmonic notes, and contrast the other sections. A full-bodied sound conveys the richness of yellow, with the harmonics pinpointing its lightness.

Within the blue-section, harmony and timbre work together to convey two different aspects of blue simultaneously. The density of the harmony and low tessitura helps to convey the depth of blue, whilst the timbral exploration in the strings evokes a sense of icy fragility. The expansive cello

and violin melodies, in combination with timbral effects including harmonic *jeté* and tremolo/*s.p.* harmonics, all contribute to create a musical 'crystallisation'. A good instance of this coexistence of harmonic density and timbral fragility occurs in bb.117–121, where the timbre modulates quickly particularly in the cello (Figure 4.33).

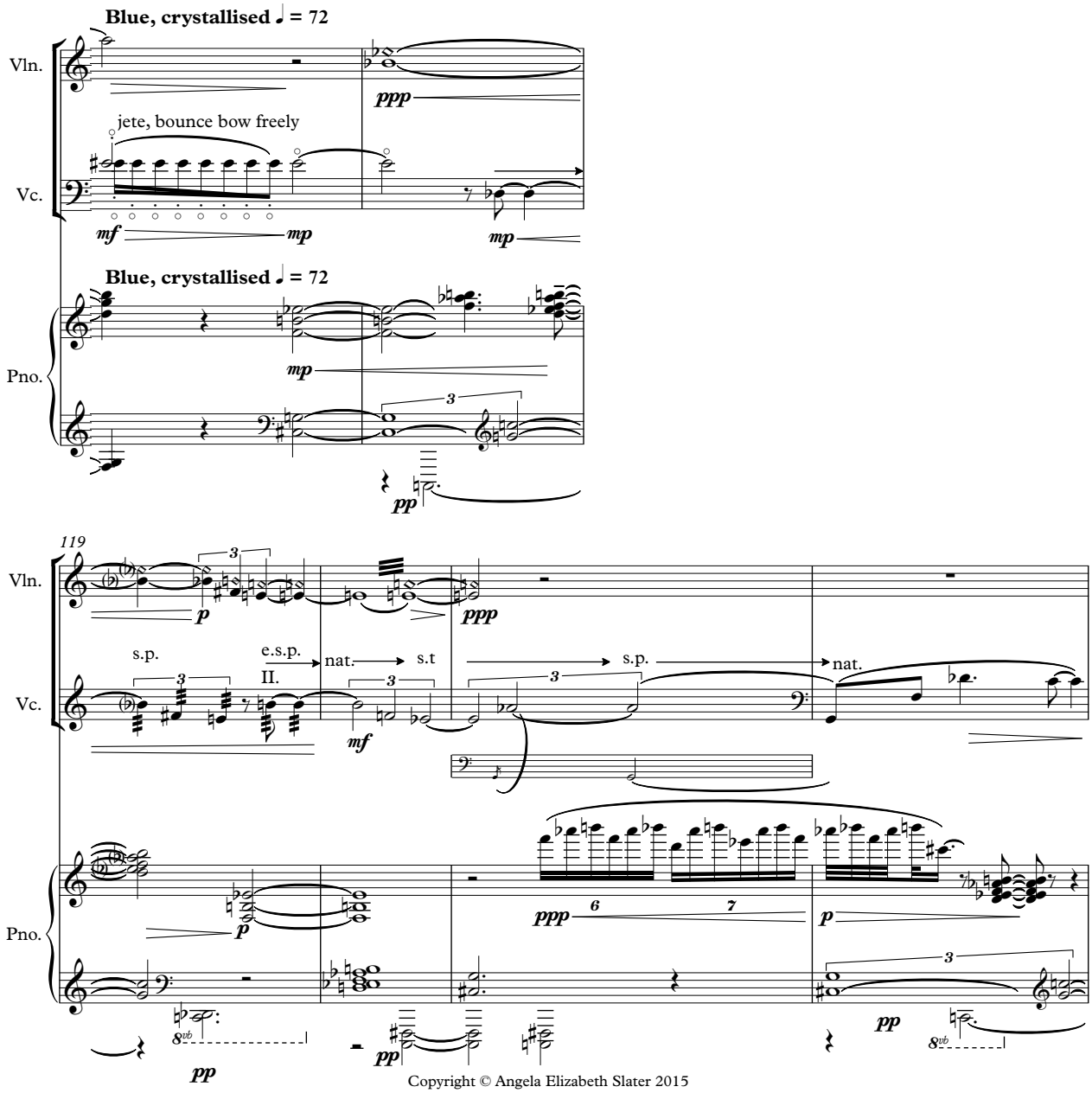

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Figure 4.33. Timbral modulation, bb.117–22.

Summary: a musical language of colour

The combination of the gesture, harmony, pitch-structure, and timbral extensions establishes clear musical colour identities. The balancing of these parameters has been explored, using the regulation of various aspects to create internal consonance–dissonance relationships that extend beyond our traditional understanding of these as purely harmonic elements. The fluctuation of these parameters helps form my compositional language for colour. Saariaho encapsulates the notion of controlling these parameters at different rates and in great contrast to each other: 'Each individual parameter is at times static, at times progressing from a point of extreme inertness to extreme variability.'[21]

By considering each parameter, both in isolation and as part of a compositional nexus, I made assured decisions on the meaningful placement of musical events. The structure of *Rainbow Fires* demands the music to be in a state of almost constant transition, leading it to express not only the colour identities, but also the transitions between them; the end of one colour is infiltrated with traits of the next.

The culmination of musical tropes established throughout the piece permeates this concluding section. Despite this section being white, different combinations of gesture, harmony and timbre are used to create smatterings of all the colours. This amalgamation of different elements allows an eclectic colour-language to emerge.

This last white-section begins with references to the opening passages, with violin high-pitched B ♮/B♭s interjected with sharp low-pitched stabs creating red gestures in a blue harmonic context. This is accompanied by an undulating figure (bb.203–5), which relates to the yellow material from bb.151–3; here it has been transposed to establish B ♮/B♭ as the pitch-couple centre. In b.205 this material seamlessly transfers to the original cascading gesture from b.12 (Figure 4.34).

[21] Saariaho, 'Timbre and harmony', p.97.

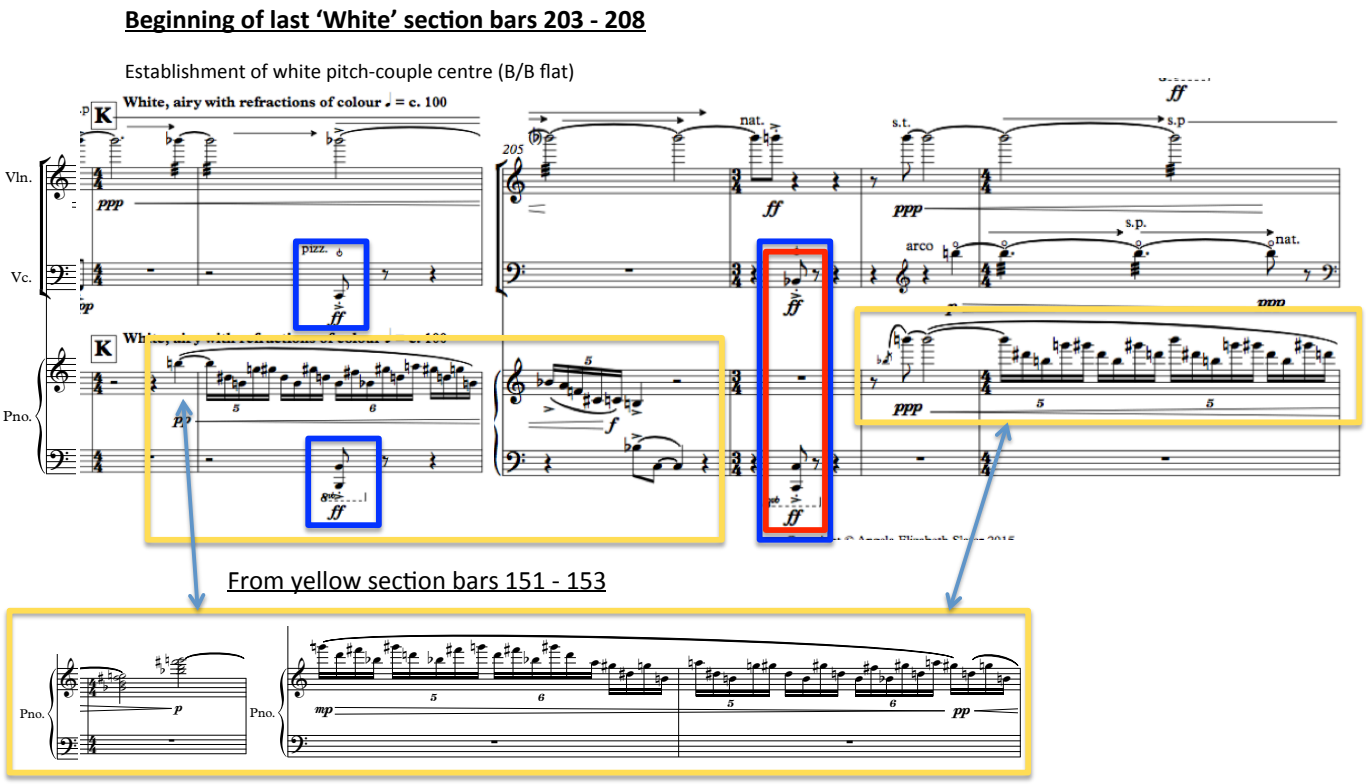

Figure 4.34. Conclusion of the white-section, bb.203–8.

The morphing and merging of colours, gestures, and harmonies intensifies as the section progresses, with numerous examples of this technique, a few instances of which are outlined below. In b.210 allusions to the yellow cascading figure (first seen as a pre-echo in bb.10–11 and later at bb.102–3), are transformed in preparation for blue pitch-couple centre (C ♮ /C#). This helps to aid the transition of piano bass-clef and violin figure relating to the blue material; the violin material at b.212 is first heard at bb.199–221. In the cello bb.213–5, the gesture that permeates the red-section is used to accompany the violin, which is related to both blue and yellow gestural material. The arpeggiated figure in bb.213–4 relates to material from the blue-section (bb.125–8) but has been transformed to accommodate the yellow pitch-couple centre of G ♮ /G#. In bb.214–5 the violin material seamlessly transfers into a figure found in the yellow-section, though in this instance it ends on the pitch-centre for blue (C ♮), and is accompanied by cello C ♮ /C#s. This related figure first occurs in bb.99–101 leading into the yellow-section (Figure 4.35).

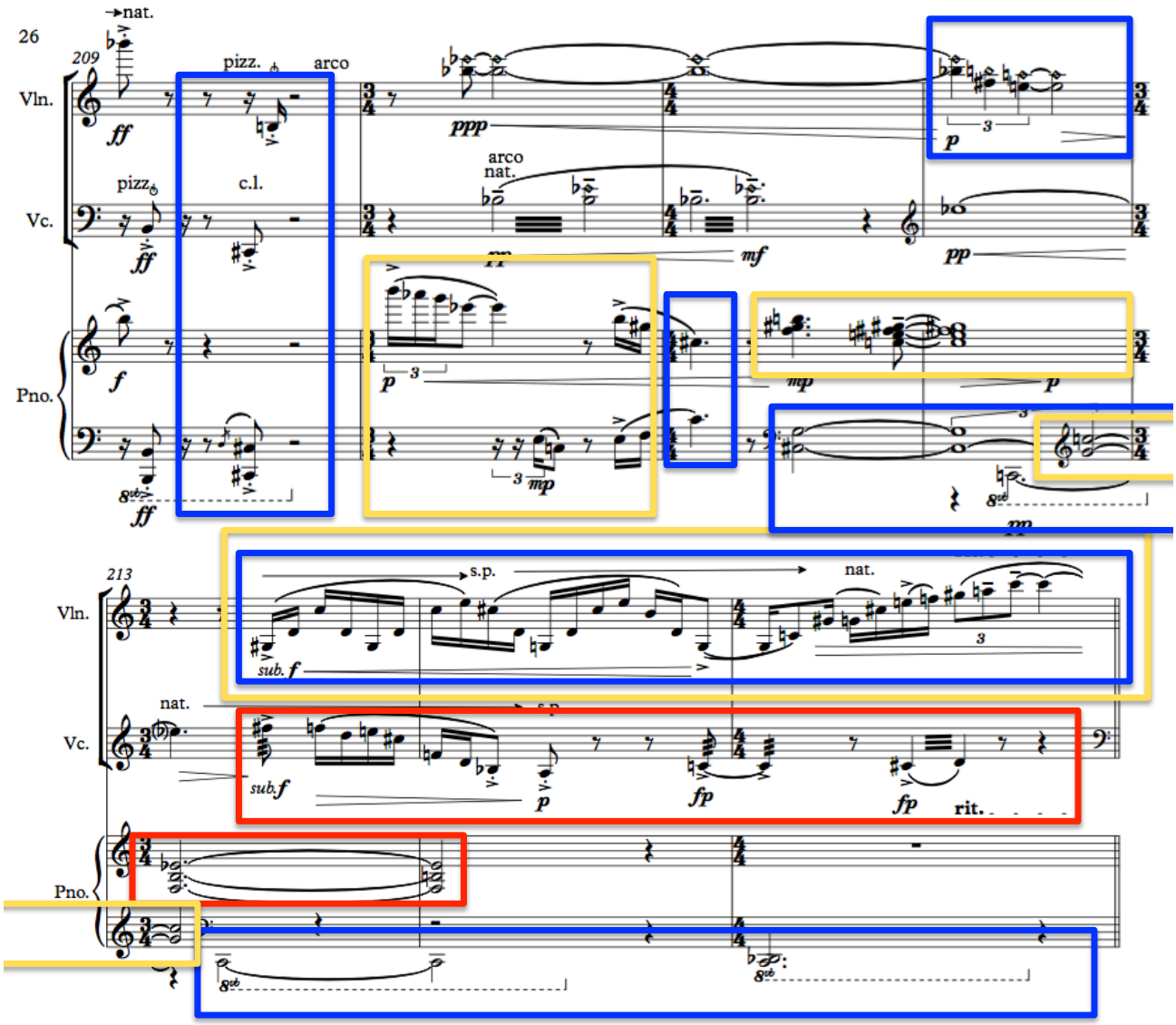

Figure 4.35. Combination of colours in last white-section, bb.209–15.

In bb.216–9 the melody, originally from the blue-section at bb.122–3, is transformed through sequencing and fragmentation. The character shifts as the gesture becomes more fragmented, adopting a red soundworld. Again, this is underpinned by undulating yellow piano material, building in intensity to b.221.

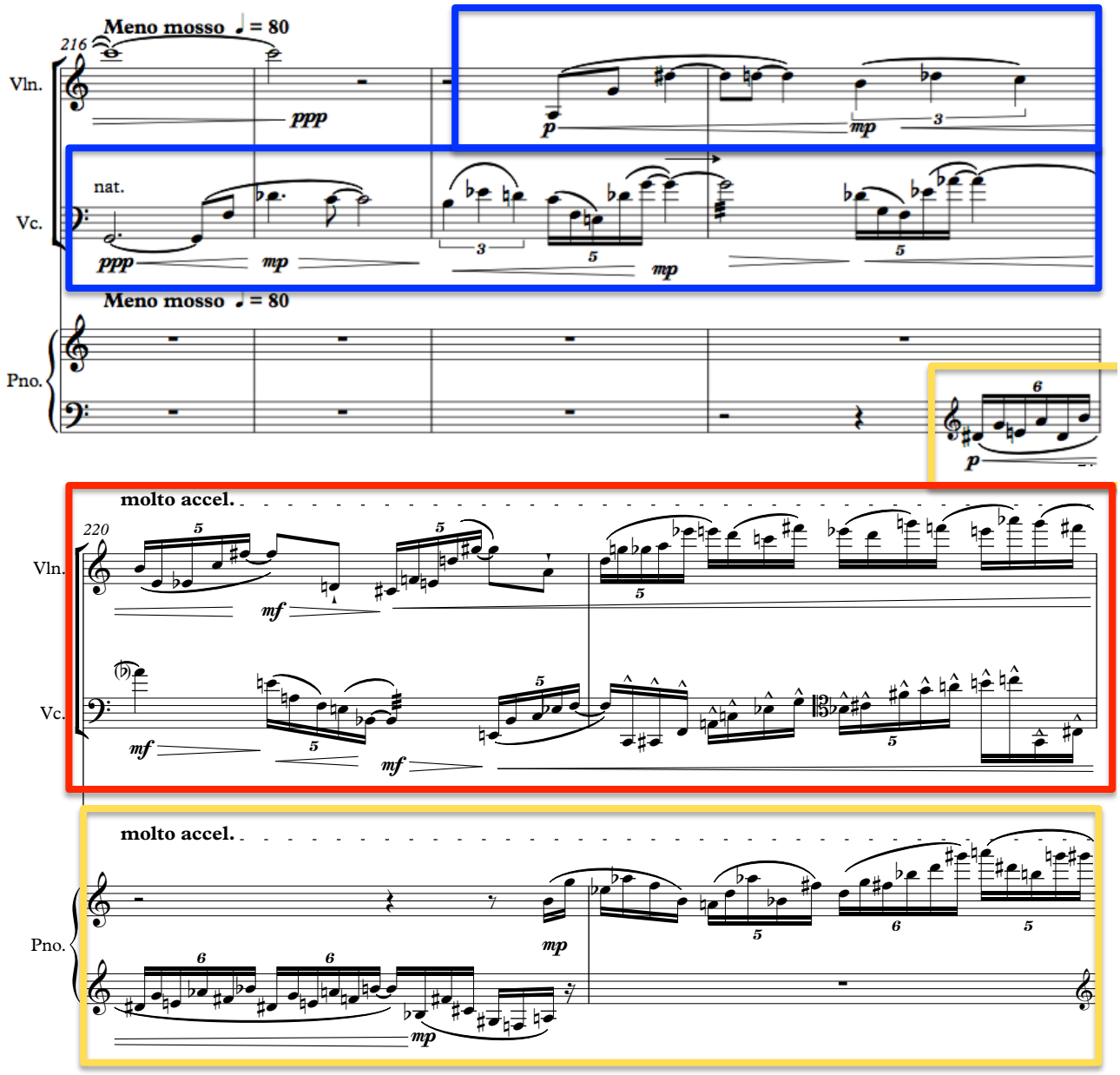

Figure 4.36. Transformation of blue gesture (bb.122–3) in concluding white-section, bb.216–21.

Although the gestural properties of bb.220–2 are red, the blue harmonic centres of C ♮/C♯ frame the cello scale (e.g. the lowest and highest points). The passage finally arrives on a B♭/B ♮ in bb.222–3 to re-establish the white pitch-couple centre. This dramatic sequence of accelerating tuplet groups, twinned with rapid oscillating piano figures and the cello tremolo in b.222, creates an aural

connection to bb.35–8. At b.223, this build-up dissipates creating the expectation of a soft ending in the upper ethers of the white musical language. This, in turn, creates the sensation of a false-ending, enhancing the impact of the arrestingly dramatic flurry of the final bar (Figure 4.37).

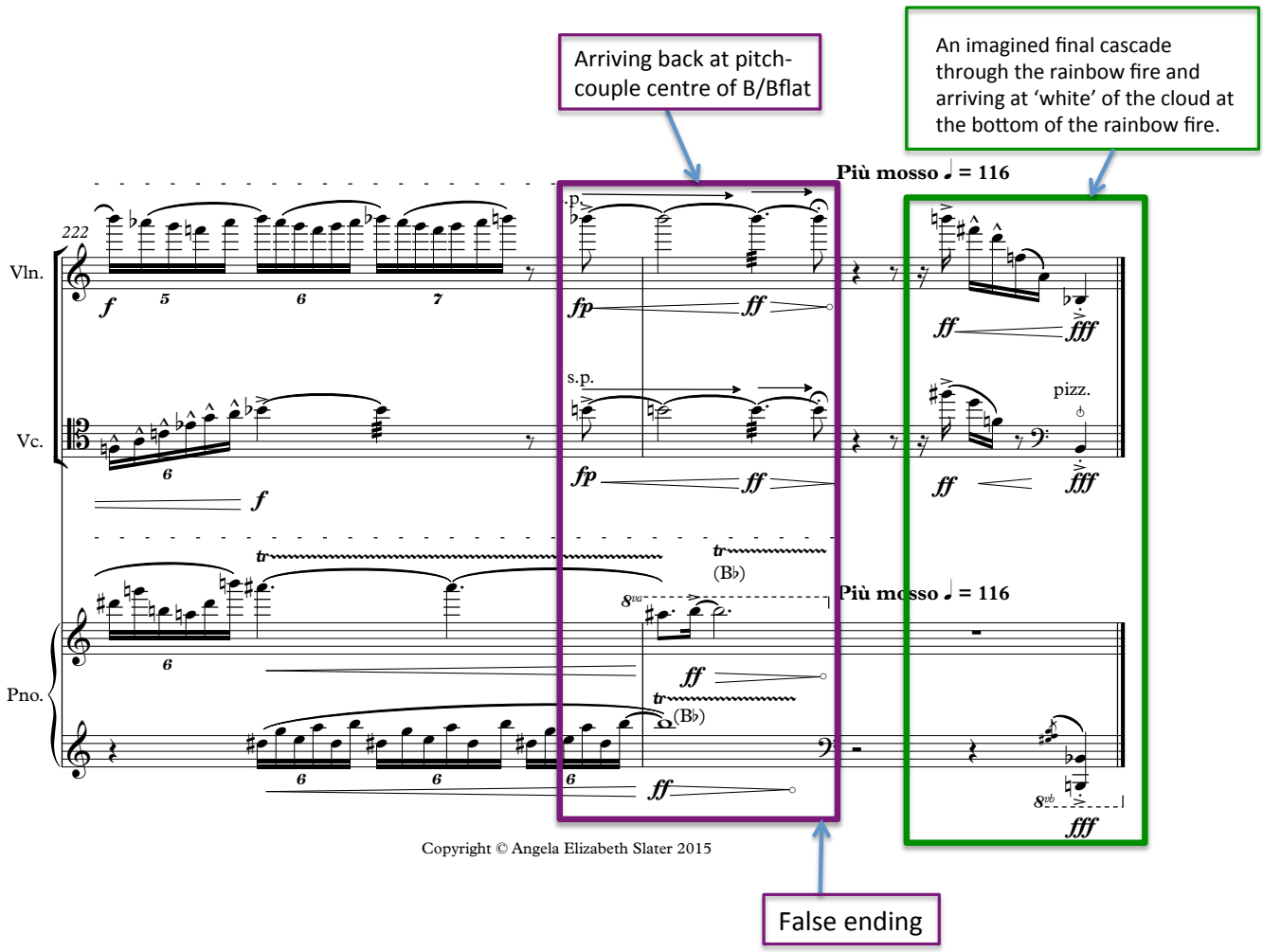

Figure 4.37. Build up to b.223, with false-ending in b.223.

Having reached the conclusion of *Rainbow Fires*, a few key points need to be summarised. The discussion examines, in some detail, the approach I took formulating the musical language for the piece. The compositional language goes beyond the traditional treatments of harmony and timbre found in the works of many other composers as ways to represent colour. In addition to colour, the influence of information theory is important to this work.

Creating a language of meaning and considering aspects of information theory

During the compositional process for *Rainbow Fires*, I became increasingly aware of information theory and its relevance to music. This led to the creative ambition to jolt the listener out of hearing the expectations set up in the musical language. It is important to me that the listener's attention is retained in a creative manner, through varied repetition and rates of change. Although it is difficult to objectively assess my success in this regard, it is important to discuss my process as an integral part of this composition.

It should be noted that I have not applied information theory systematically to my compositional process. Instead, it functions as a creative springboard to avoid predictability within my music, something most composers aim for. One noteworthy instance is Birtwistle's rationale for using randomly generated numbers to create initial pitch content for many of his compositions, such as *Five Distances*, 'to avoid the cliché of my intuition'.[22] The concept of information theory has been one route I have explored to avoid the predictability that intuitive compositional processes can generate.

My understanding of information theory is that it is based on the relative probability or improbability of certain events, and this has broad applicability across many fields. If the pattern follows the probable outcome, little or no information is perceived. However, if the pattern is broken information has been received, intensifying its impact and heightening its meaning. Of course, this new information can then become the norm, reducing its impact. The complex relationship between meaning and information is discussed at great length by Leonard B. Meyer:

> If a situation is highly organised and the possible consequents in the pattern process have a high degree of probability, then information (or entropy) is low. If, however, the

[22] Workshop day at Birmingham Conservatoire, Harrison Birtwistle in conversation with Howard Skempton, November 2014.

> situation is characterised by a high degree of shuffledness so that the consequents are more or less equi-probable, then information is said to be high.[23]

I was interested in the notion that breaking away from expectation could establish meaning, and the ways that this might be incorporated into my musical syntax to mark new events. One particularly good example demonstrating how I incorporated this concept into my musical language can be found within the calm but fragile 'blue' soundworld, where I was conscious to avoid the music 'settling in' to a predictable route. To create momentary, attention-grabbing diversions from this path, the texture is punctuated with a musical 'burst' temporarily disrupting the soundworld. One such instance occurs in bb.125–8 (Figure 4.38) with a series of strong cello arpeggiations that resist settling into a pattern. This is a deliberately sudden event, preventing the establishment of expectations within the musical event itself; its inherent unpredictability increases its impact. Such an approach makes a greater impact on the listeners' musical memory, though this event is seemingly outside the blue-sections' meaning; later it is subsumed and used to represent blue (see, for example, bb.213–5). Meyer discusses how an unexpected event has greater impact on the listener's memory and their perception of later material: 'It is important also to realise that such unexpected, improbable occurrences remain in the memory and influence the listener's later estimates of the probability for the balance of the piece.'[24]

[23] Leonard B. Meyer, *Music, the Arts, and Ideas: Patterns and Predictions in Twentieth-Century Culture* (Chicago and London, University of Chicago Press, 2010), p.11.
[24] Meyer, *Music, the Arts, and Ideas*, p.14.

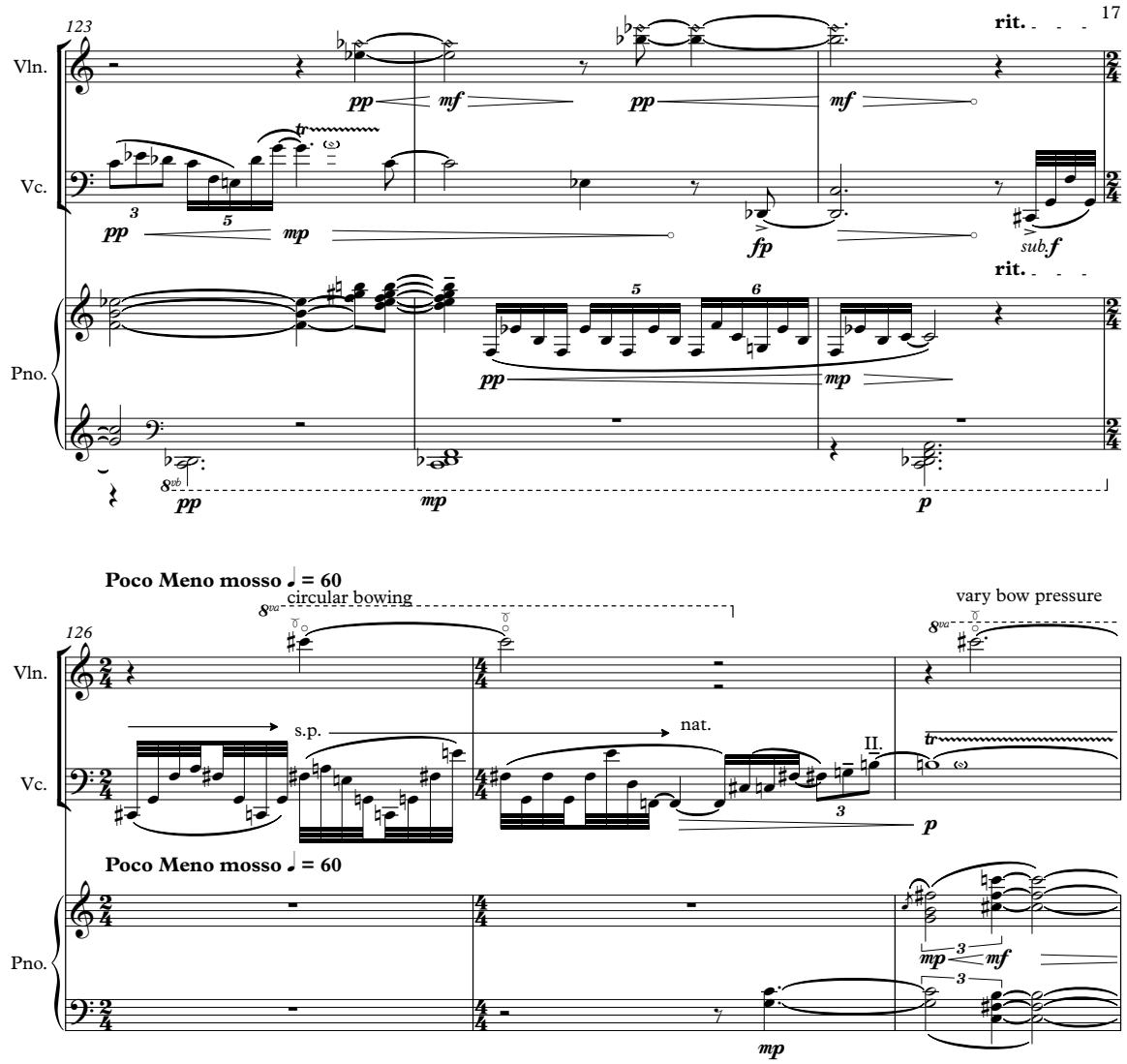

Figure 4.38. The application of information theory in the compositional process, as seen in cello bb.125–8.

However, I was mindful of the many instances in which highly complex music can seem so chaotic that sudden changes cease to have any impact on the listener. Thus, I aimed to strike a balance between subverting (and confronting) the expectations of the listener and presenting such changes in manner that allowed the changes to be perceived. Information theory has proved fruitful as it encourages deeper and more creative sculpting of the music.[25] Its fusion with the application of colour identities establishes deeper forms of musical connection, something I set out to pursue through *Rainbow Fires*.

* * *

[25] For more on information theory, see David Temperley, 'Information flow and repetition in music', *Journal of Music Theory*, 58/2 (2014), pp.155–78.

Summary and Conclusions

In my portfolio I have presented a number of works ranging from orchestral to solo. These have clearly demonstrated my compositional voice in a number of different contexts and my compositional development across the PhD process. Through this commentary I have demonstrated the evolution of my compositional language and creative practice. In Chapter One I discussed many issues relevant to a number of my works, including engagement with aspects of extra-musical stimuli, gestural language, harmonic language and timbral language. My discussion has shown how each of these aspects has developed as their prominence in my compositional practice has shifted.

The main theme emerging from this discussion has been the use of extra-musical stimuli and the increasing incorporation of it onto various composition elements. The musical mapping of external sources has led to an approach where each piece can have a strong yet unique structure within which my creative intuition is framed. This has also led to a strong intentionality for each piece feeding more prominently into the gestural language of my music. I have felt this practice has developed significantly over the course of the PhD and is an area I intend to continue to explore.

Another important aspect that I have explored is the development of my timbral language, considering it independently and in conjunction with other elements. It is a parameter that can form consonance–dissonance relationships and create tension and release. Therefore, timbre as a modulating factor has important formal implications for musical structure and expression.

I am confident with the compositional language that I have developed, and interested in how my engagement with extra-musical stimuli can be extended. I will further develop my timbral language, and continue to evolve and reflect upon my compositional aesthetic in my future work, building upon the groundwork set out here.

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Portfolio of Compositions

II. Firestorm

Angela Elizabeth Slater

***Stormscape:*. II.Firestorm (2014)**

Stormscape (2014) was written for the The University of Nottingham Wind Orchestra. Stormscape is based on the trajectory of a storm; the second movement of these linked, but separate, scenes is Firestorm, which is more explicitly based on the natural phenomenon of firestorms. A firestorm occurs when a large and destructive fire becomes so intense that it creates its own wind system. Firestorm is characterised by a very strong gestural and motivic language, which draws upon the imagery and shapes created by firestorms, creating highly evocative and energetic gestures: in effect, the gestural language is an ekphrastic expression of a firestorm.

This revised version was premiered in September 2014 by The University of Nottingham Wind Orchestra in The Great Hall on University Park.

Duration c.7 mins

Angela Elizabeth Slater

Instrumentation:

Piccolo
Flute 1
Flute 2
Oboe 1
Oboe 2
Bassoon
B♭ Clarinet 1
B♭ Clarinet 2
B♭ Clarinet 3
Bass Clarinet
Alto Saxophone 1
Alto Saxophone 2
Tenor Saxophone
Baritone Saxophone
Trumpet in B♭ 1
Trumpet in B♭ 2
Trumpet in B♭ 3
Horn in F 1
Horn in F 2
Trombone 1
Trombone 2
Euphonium
Tuba
Timpani
Percussion - four players
(Percussion 1: Snare Drum; Tenor drum; Cymbals; Tam-tam; Whip;
Percussion 2: Bass drum;
Percussion 3: Tom-toms; Glockenspiel;
Percussion 4: Tam-tam; Glockenspiel; Cymbals)

Transposed score

Transposing score

Stormscape: II.Firestorm

Written for The University of Nottingham Wind Orchestra

Angela Elizabeth Slater

Con moto ♩ = 112

Piccolo

Flute 1

Flute 2

Oboe 1

Oboe 2

Bassoon

Clarinet in B♭ 1

Clarinet in B♭ 2

Clarinet in B♭ 3

Bass Clarinet in B♭

Alto Saxophone 1

Alto Saxophone 2

Tenor Saxophone

Baritone Saxophone

Trumpet in B♭ 1

Trumpet in B♭ 2

Trumpet in B♭ 3

Horn in F 1

Horn in F 2

Trombone 1

Trombone 2

Euphonium

Tuba

Timpani

mf *ff*

Con moto ♩ = 112

Percussion 1 — Snare Drum

Percussion 2 — Bass drum

mp *f* *mp* *f* *mf* *ff*

Percussion 3 — Tom-toms

f *ff* *mf* *f* 3 *ff*

Percussion 4 — Tam-tam

mp *f*

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12

A Broadening, poco meno mosso

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
(Snare drum)
Perc 1
(Bass drum)
Perc 2
(Tom-toms)
Perc 3
(Tam-tam)
Perc 4

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Picc.

Fl. 1

Fl. 2

Ob. 1

Ob. 2

Bsn.

Cl. 1

Cl. 2

Cl. 3

B. Cl.

Alto Sax. 1

Alto Sax. 2

Ten. Sax.

Bari. Sax.

Tpt. 1

Tpt. 2

Tpt. 3

Hn. 1

Hn. 2

Tbn. 1

Tbn. 2

Euph.

Tba.

Timp.

(Snare Drum)

Perc 1

(Bass Drum)

Perc 2

(Tom-toms)

Perc 3

(Tam-tam)

Perc 4

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30

B

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1 (Snare Drum)
Perc 2 (Bass Drum)
Perc 3 (Tom-toms)
Perc 4 (Tam-tams)

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40

accel.

6

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
(Bass Drum)
Perc 2
(Tom-toms)
Perc 3
(Tam-tams)
Perc 4

accel.

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47

C Presto ♩ = 136

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
Perc 2
Perc 3
Perc 4

(G)
(E)
(Bass Drum)
(Tom-toms)
(Tam-tams)
To Glockenspiel
Tenor Drum
To S. D.
Snare Drum

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Picc.

Fl. 1

Fl. 2

Ob. 1

Ob. 2

Bsn.

Cl. 1

Cl. 2

Cl. 3

B. Cl.

Alto Sax. 1

Alto Sax. 2

Ten. Sax.

Bari. Sax.

Tpt. 1

Tpt. 2

Tpt. 3

Hn. 1

Hn. 2

Tbn. 1

Tbn. 2

Euph.

Tba.

Timp.

Perc 1

(Bass Drum)

Perc 2

(Tom-toms)

Perc 3

(Glock)

Perc 4

Glockenspiel

To T.-t.

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61

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
Perc 2
Perc 3
Perc 4

Cymbals
(Bass Drum)
Snare Drum
(Tom-toms)
(Glock)
To Tam-tam
To S. D.

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D

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.

D

Tenor Drum

To T. D.

To T.-t.

Perc 1
Perc 2
(Tom-toms)
Perc 3
Tam-tam
Whip
Perc 4

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73

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
Perc 2
Perc 3
Perc 4

(Bass Drum)

To Glockenspiel

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80

E

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
Perc 2
Perc 3
Perc 4

(Tam-tam)
(Tom-toms)
Glockenspiel
Tam-tam
To Cym.

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87

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
Perc 2
(Tom-toms)
Perc 3
(Glock)
Perc 4

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Picc.

Fl. 1

Fl. 2

Ob. 1

Ob. 2

Bsn.

Cl. 1

Cl. 2

Cl. 3

B. Cl.

Alto Sax. 1

Alto Sax. 2

Ten. Sax.

Bari. Sax.

Tpt. 1

Tpt. 2

Tpt. 3

Hn. 1

Hn. 2

Tbn. 1

Tbn. 2

Euph.

Tba.

Timp.

Perc 1

Perc 2

Perc 3

Perc 4

Cymbals

To S. D.

(Bass Drum)

(Tom-toms)

(Glock)

To T.-t.

Tam-tam

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97

F

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.

F

Perc 1 (Snare Drum)
Perc 2
Perc 3 (Tom-toms)
Perc 4 (Tam-tam)

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Picc.

Fl. 1

Fl. 2

Ob. 1

Ob. 2

Bsn.

Cl. 1

Cl. 2

Cl. 3

B. Cl.

Alto Sax. 1

Alto Sax. 2

Ten. Sax.

Bari. Sax.

Tpt. 1

Tpt. 2

Tpt. 3

Hn. 1

Hn. 2

Tbn. 1

Tbn. 2

Euph.

Tba.

Timp.

Perc 1 (Snare Drum)

Perc 2 (Bass Drum)

Perc 3 (Tom-toms)

Perc 4 Tam-tam

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111

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1 (Snare Drum)
Perc 2 (Bass Drum)
Perc 3
Perc 4 Tam-tam

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G

121

Picc.

Fl. 1

Fl. 2

Ob. 1

Ob. 2

Bsn.

Cl. 1

Cl. 2

Cl. 3

B. Cl.

Alto Sax. 1

Alto Sax. 2

Ten. Sax.

Bari. Sax.

Tpt. 1

Tpt. 2

Tpt. 3

Hn. 1

Hn. 2

Tbn. 1

Tbn. 2

Euph.

Tba.

Timp.

mf *ff* *mf* *ff*

G

Snare Drum

Perc 1

mp *f* *mp* *f* *mp* *f*

(Bass Drum)

Perc 2

f *mp* *f* *mp* *f* *mp* *f* *mp*

(Tom-toms)

Perc 3

mf *ff* *mf* *ff* *f*

(Tam-tam)

Perc 4

mp *f*

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130

H

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
Perc 2
Perc 3
Perc 4

(Snare Drum)
(Bass Drum)
(Tom-toms)
(Tam-tam)

H

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Picc.

Fl. 1

Fl. 2

Ob. 1

Ob. 2

Bsn.

Cl. 1

Cl. 2

Cl. 3

B. Cl.

Alto Sax. 1

Alto Sax. 2

Ten. Sax.

Bari. Sax.

Tpt. 1

Tpt. 2

Tpt. 3

Hn. 1

Hn. 2

Tbn. 1

Tbn. 2

Euph.

Tba.

Timp.

(Snare Drum)

Perc 1

(Bass Drum)

Perc 2

(Tom-toms)

Perc 3

(Tam-tam)

Perc 4

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148

rit.

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
Perc 2
Perc 3
Perc 4

(G) (G) (C)

(Snare Drum)
(Bass Drum)
(Tom-toms)
(Tam-tam)

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156

I **Maestoso ♩ = 90**

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.

I **Maestoso ♩ = 90**

Perc 1 — To Whip — Whip — To Cym. — Cymbals
Perc 2 — (Bass Drum) — (Bass Drum)
Perc 3 — To Glock. — Glockenspiel — To Tom-t.
Perc 4 — To Cym. — Cymbals — To Sus. Cym. — Sus. Cymbals

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A Tempo (Presto ♩ = 136)

164

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
Perc 2
Perc 3
Perc 4

con sord.
(con sord.)
Tom-toms

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Picc.

Fl. 1

Fl. 2

Ob. 1

Ob. 2

Bsn.

Cl. 1

Cl. 2

Cl. 3

B. Cl.

Alto Sax. 1

Alto Sax. 2

Ten. Sax.

Bari. Sax.

Tpt. 1

(con sord.)

Tpt. 2

(con sord.)

Tpt. 3

Hn. 1

Hn. 2

senza sord.

Tbn. 1

senza sord.

Tbn. 2

Euph.

(con sord.)

senza sord.

Tba.

Timp.

Perc 1

(Bass Drum)

Perc 2

Perc 3

Perc 4

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177

J

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
con sord.
Tpt. 1
(con sord.)
Tpt. 2
senza sord.
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
J
To Cym.
Cymbals
To Tam-tam
Tam-tam
Perc 1
Perc 2
Perc 3
Perc 4

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182

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
Perc 2
Perc 3
Perc 4

senza sord.

senza sord.

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188

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
Perc 2
Perc 3
Perc 4

(Tam-tam)
(Bass Drum)
(Tom-toms)

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K

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1
Perc 2
Perc 3
Perc 4

Tam-tam
(Bass Drum)
(Tom-toms)

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200

L

Picc.
Fl. 1
Fl. 2
Ob. 1
Ob. 2
Bsn.
Cl. 1
Cl. 2
Cl. 3
B. Cl.
Alto Sax. 1
Alto Sax. 2
Ten. Sax.
Bari. Sax.
Tpt. 1
Tpt. 2
Tpt. 3
Hn. 1
Hn. 2
Tbn. 1
Tbn. 2
Euph.
Tba.
Timp.
Perc 1 (Tam-tam)
Perc 2 (Bass Drum)
Perc 3 (Tom-toms)
Perc 4

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Picc.

Fl. 1

Fl. 2

Ob. 1

Ob. 2

Bsn.

Cl. 1

Cl. 2

Cl. 3

B. Cl.

Alto Sax. 1

Alto Sax. 2

Ten. Sax.

Bari. Sax.

Tpt. 1

Tpt. 2

Tpt. 3

Hn. 1

Hn. 2

Tbn. 1

Tbn. 2

Euph.

Tba.

Timp.

(Tam-tam)

Perc 1

(Bass Drum)

Perc 2

(Tom-toms)

Perc 3

Perc 4

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Momentations

for Wind Quintet

Angela Elizabeth Slater

***Momentations* for wind quintet (2013)**

Momentations is driven by a sense of movement and momentum that is created by distinctive musical gestures. The piece is in one continous movement which is loosely divided into with seven sections. The gestures grow organically throughout, being presented in different guises. The rhythmic and melodic gestures were inspired by the imagery of dance movements and the idea of tightening and slackening the pace of movement.

Duration c. 7 mins

Angela Elizabeth Slater

Performance notes:

1) + indicates hand mute for the horn

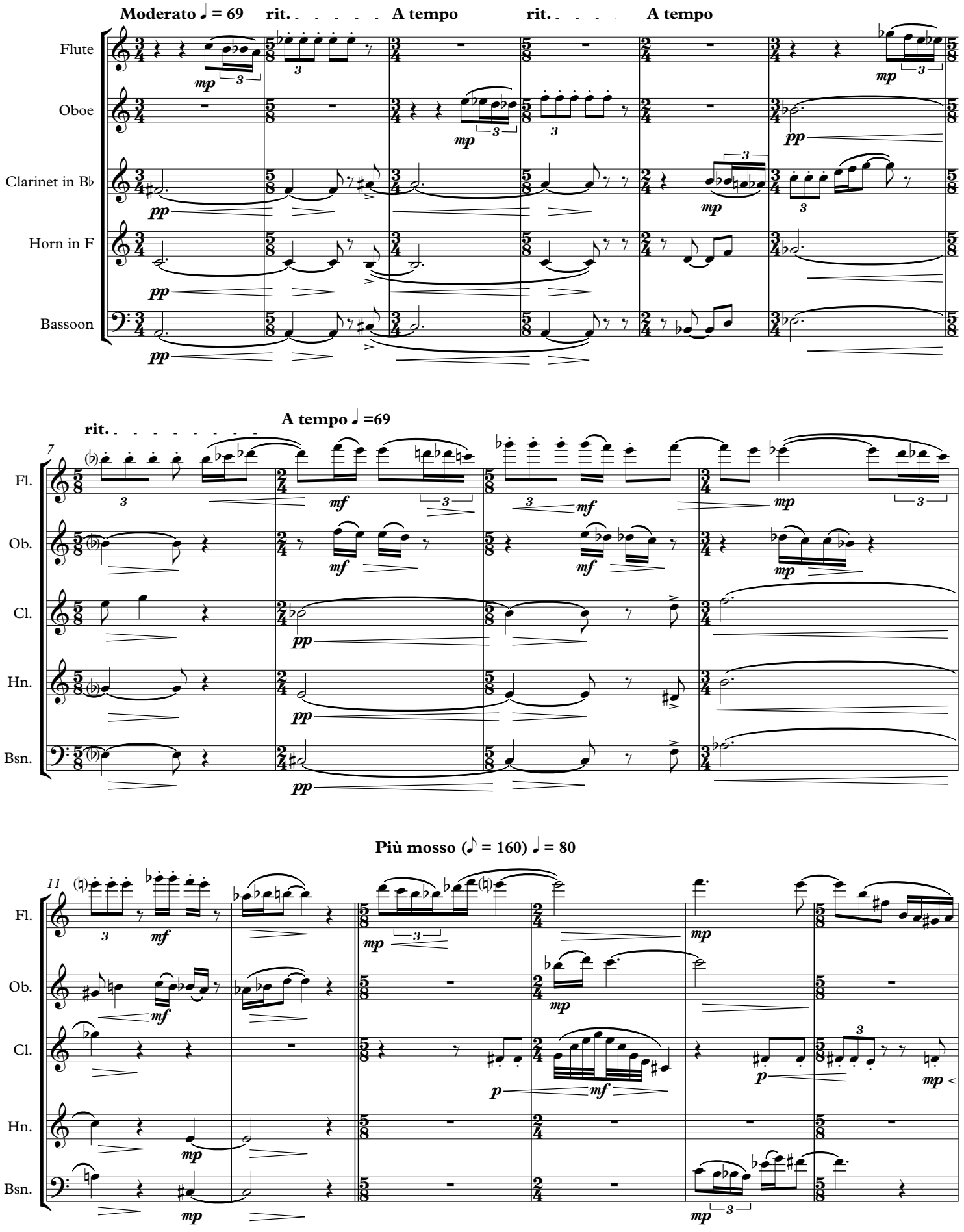
2) All hairpin marks without end dynamics are to be treated as swells within the context of the current dynamic

Momentations

for Wind Quintet

Transposed score

Angela Elizabeth Slater



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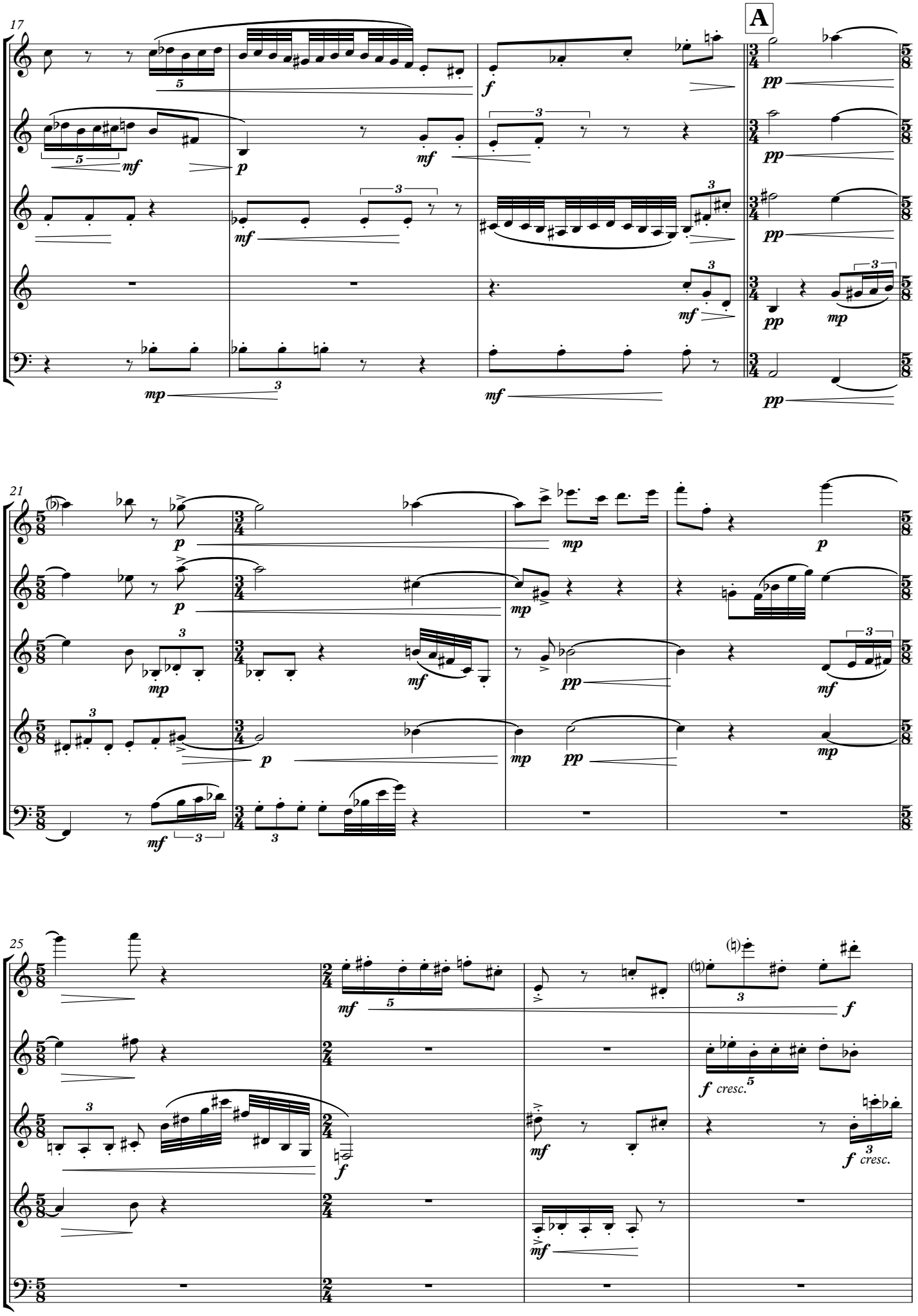

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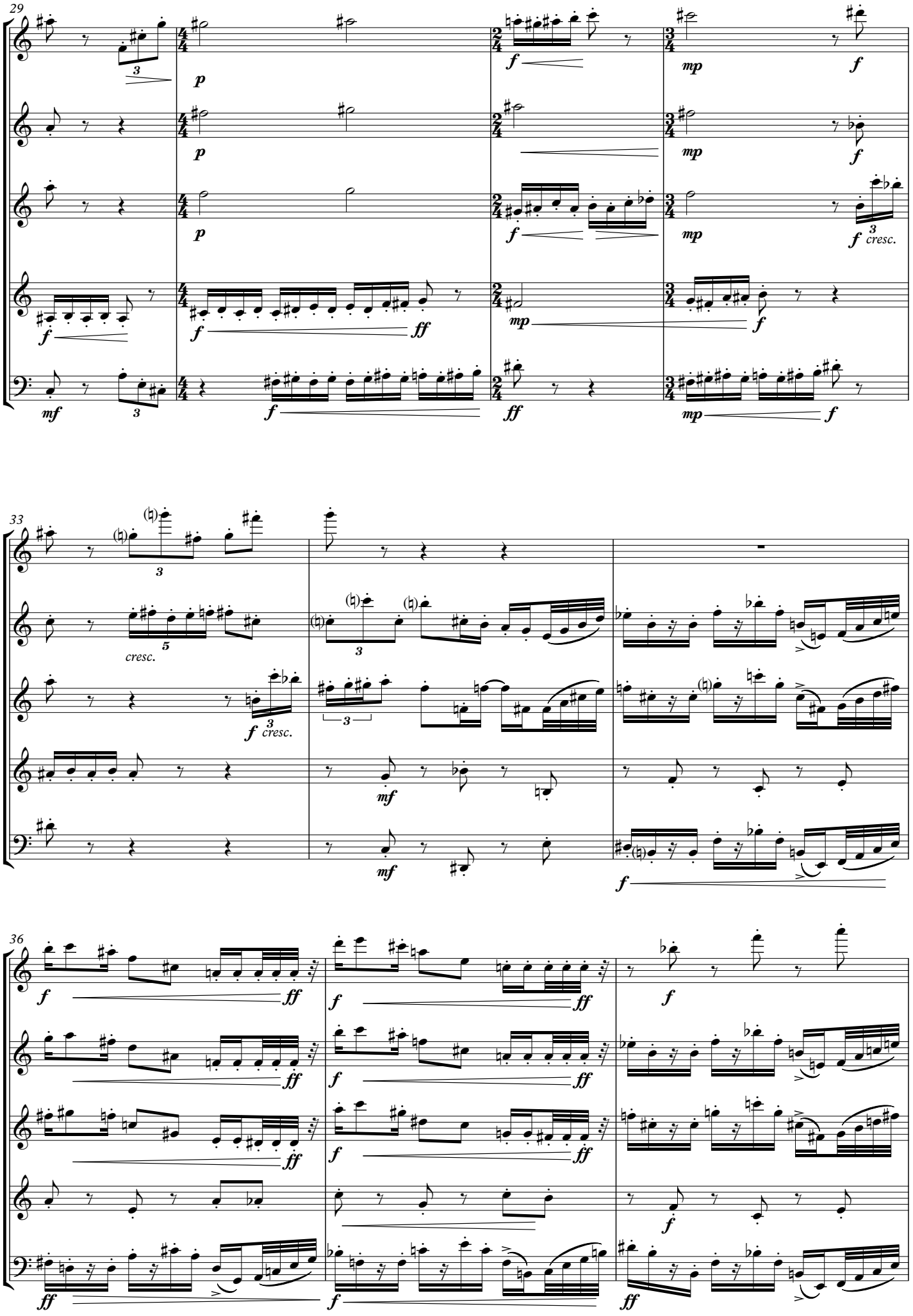

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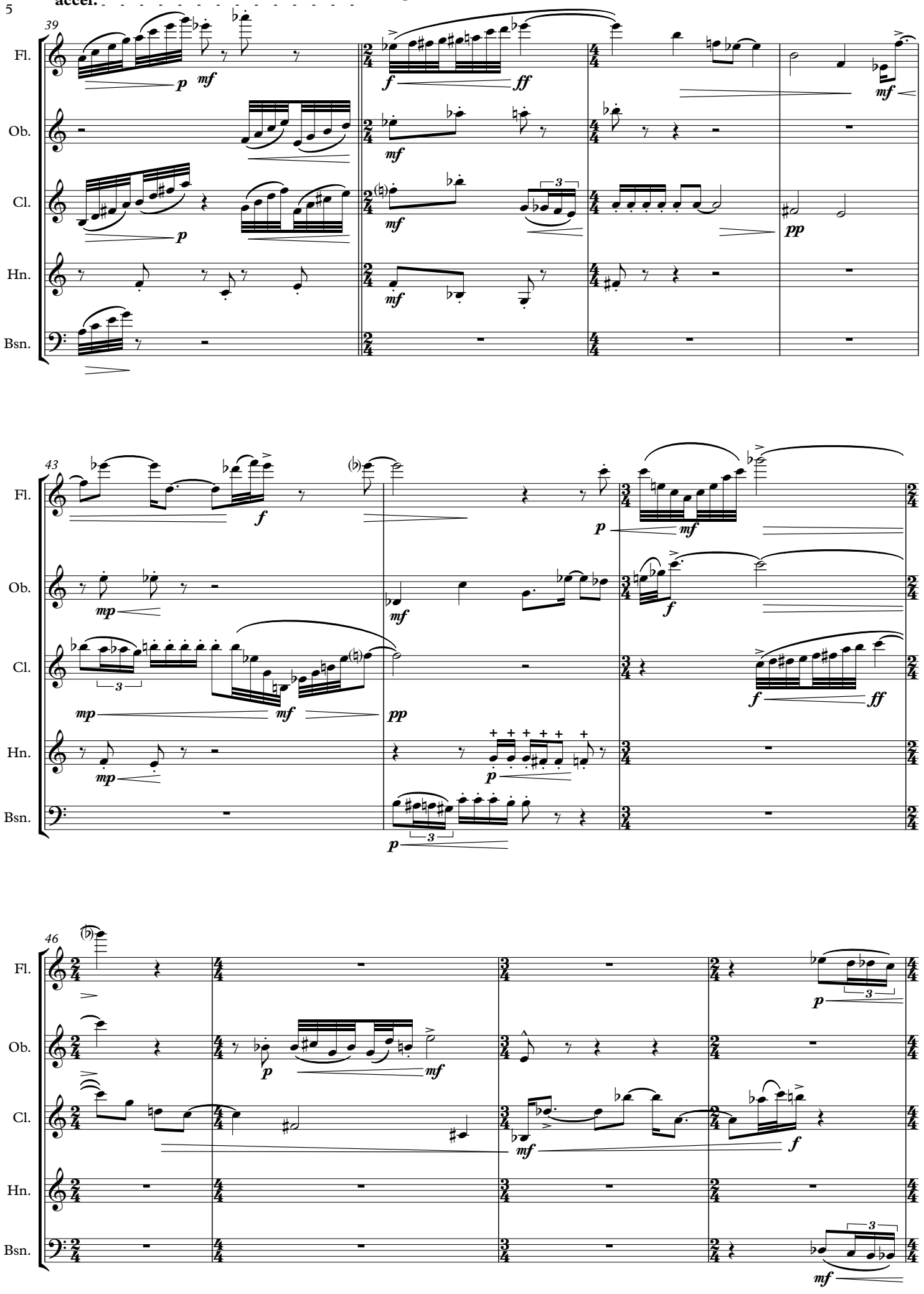
accel.

Allegro ♩ = 100



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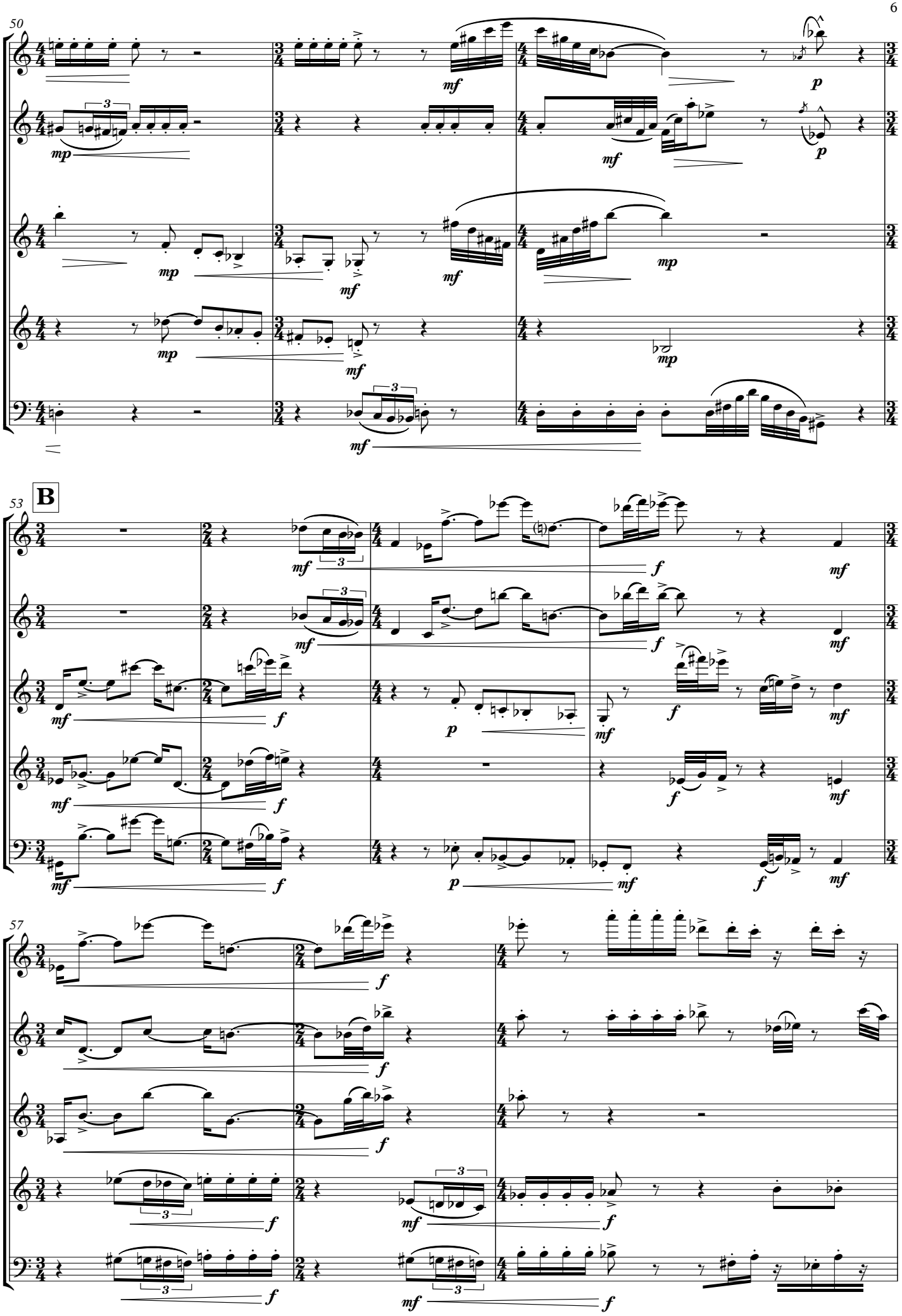

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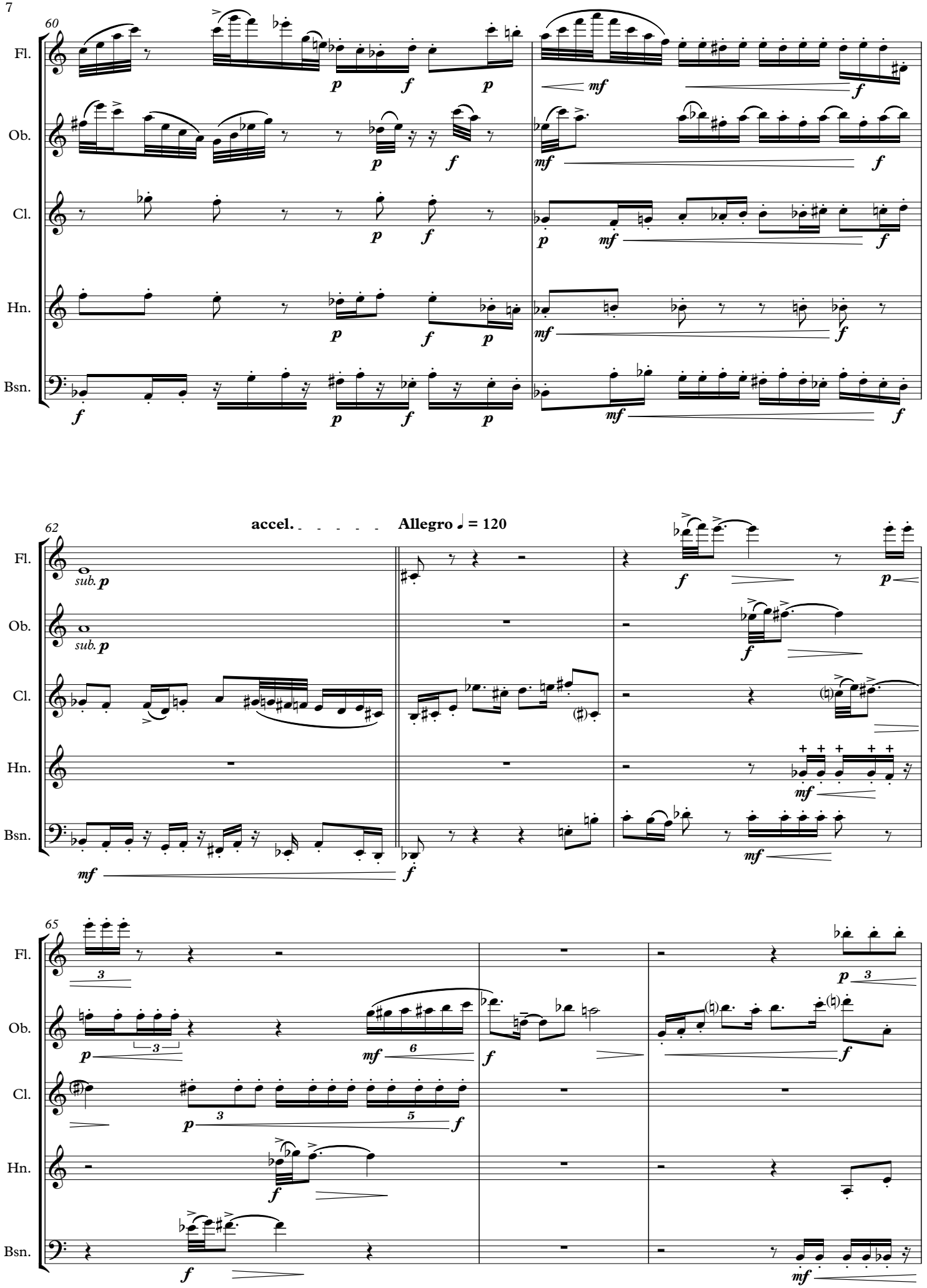

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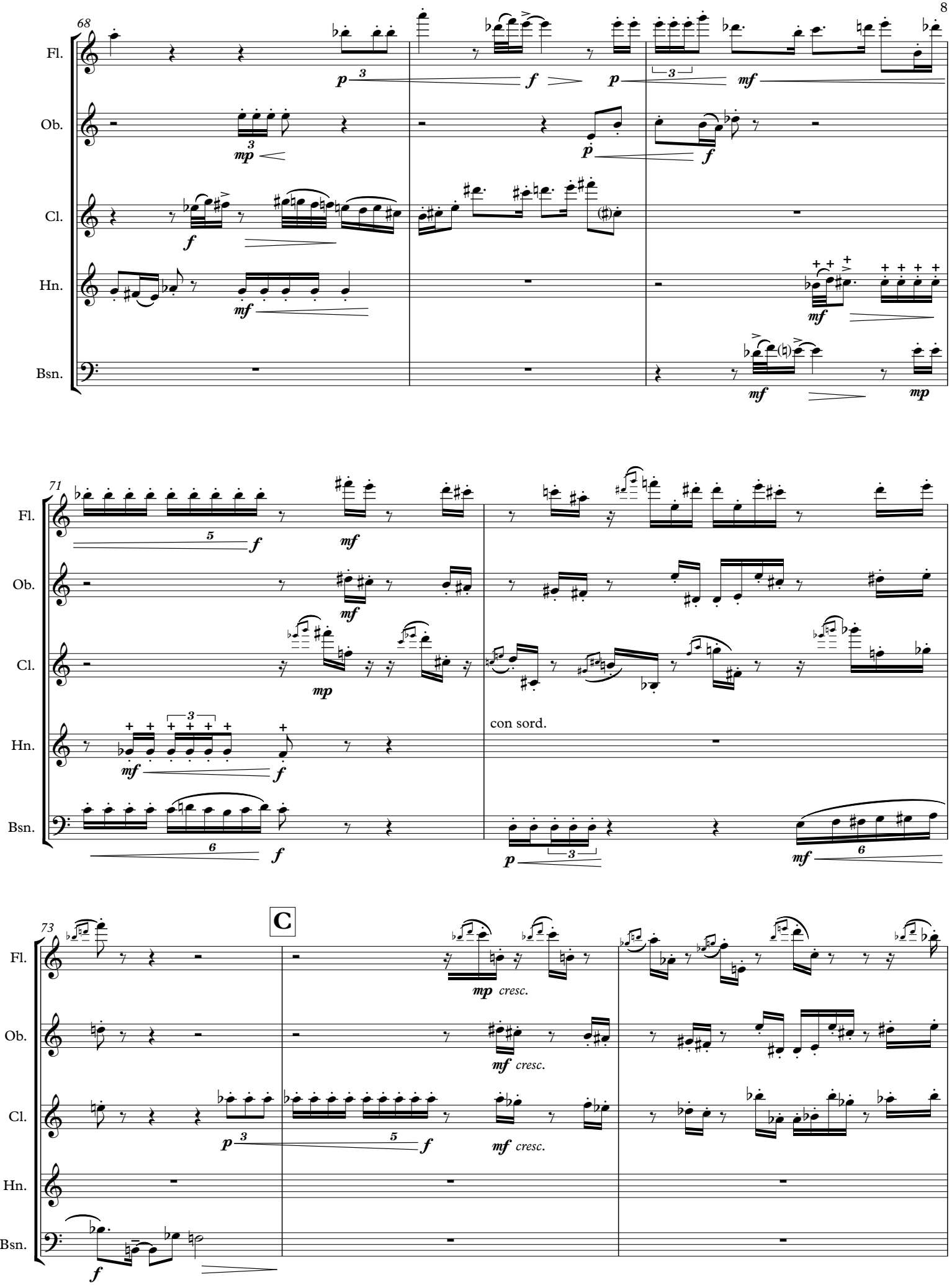

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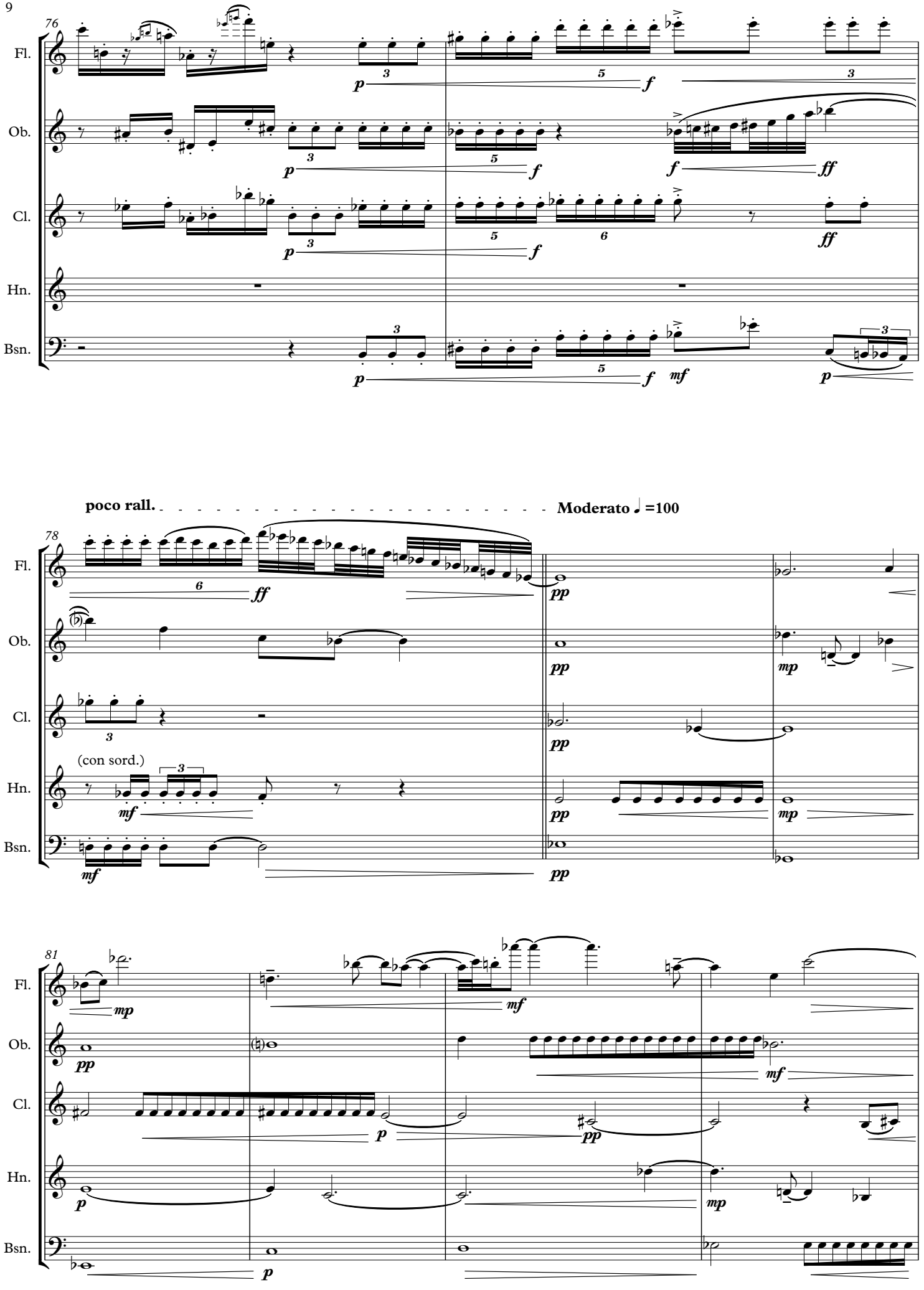

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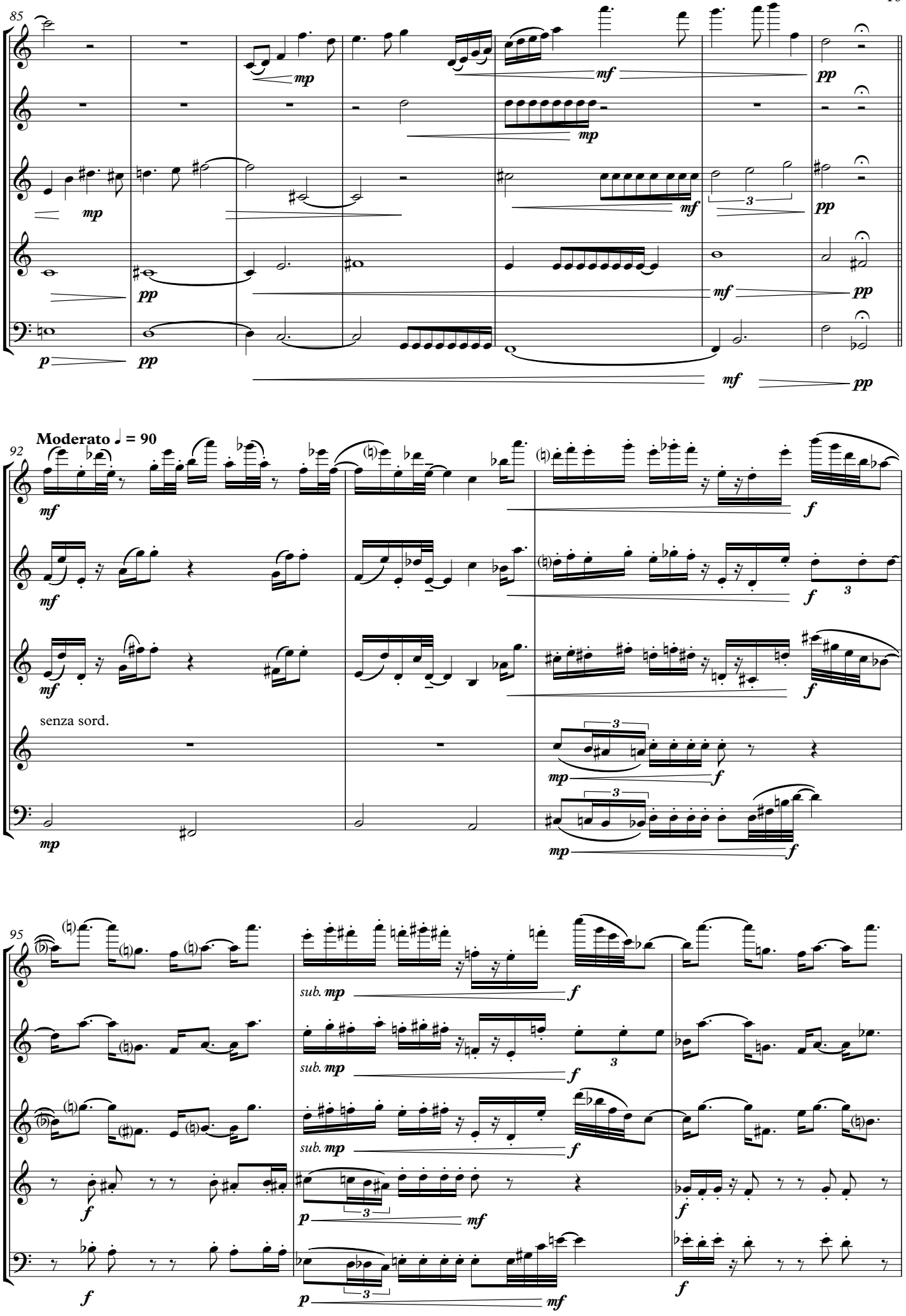

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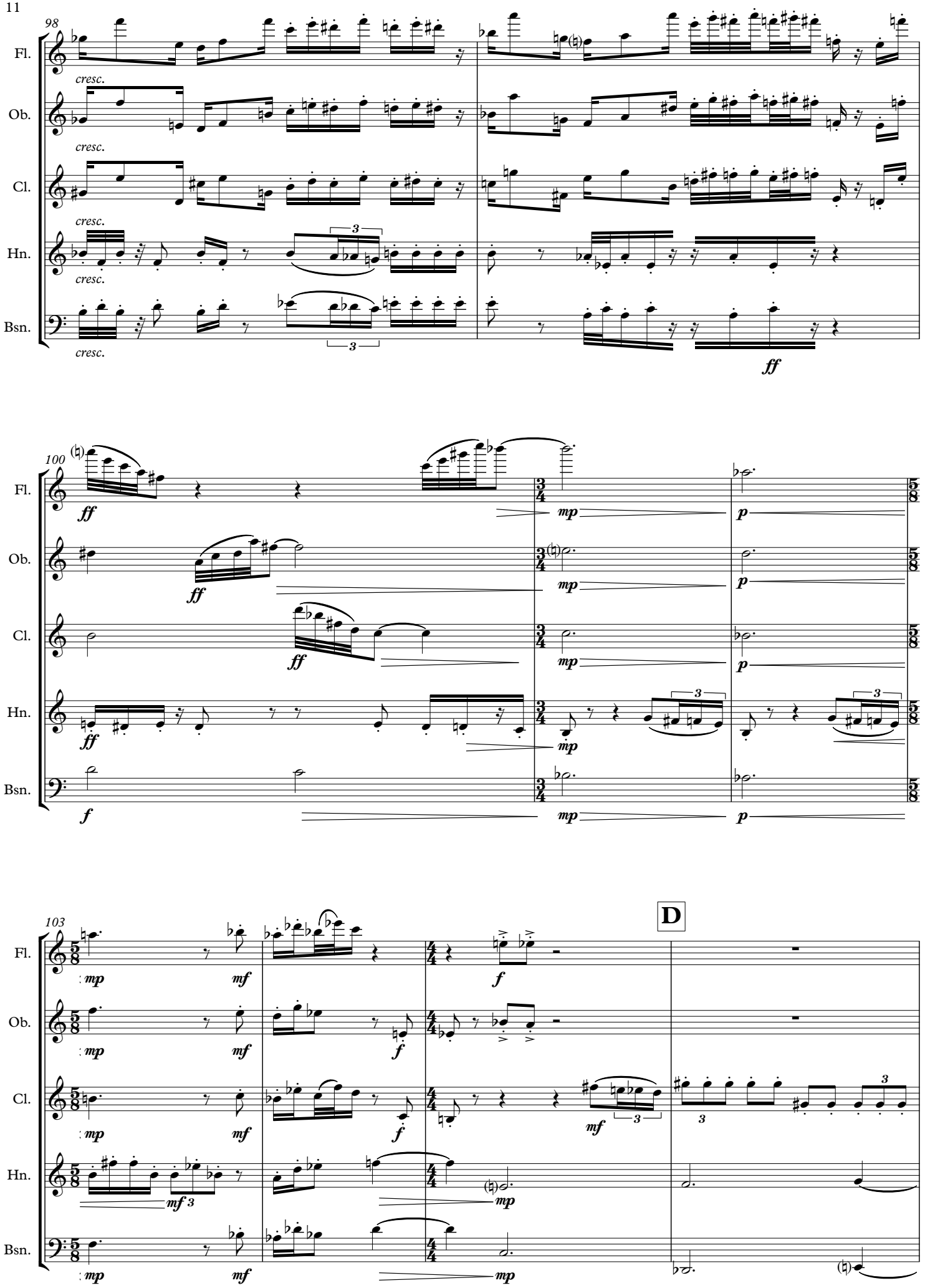

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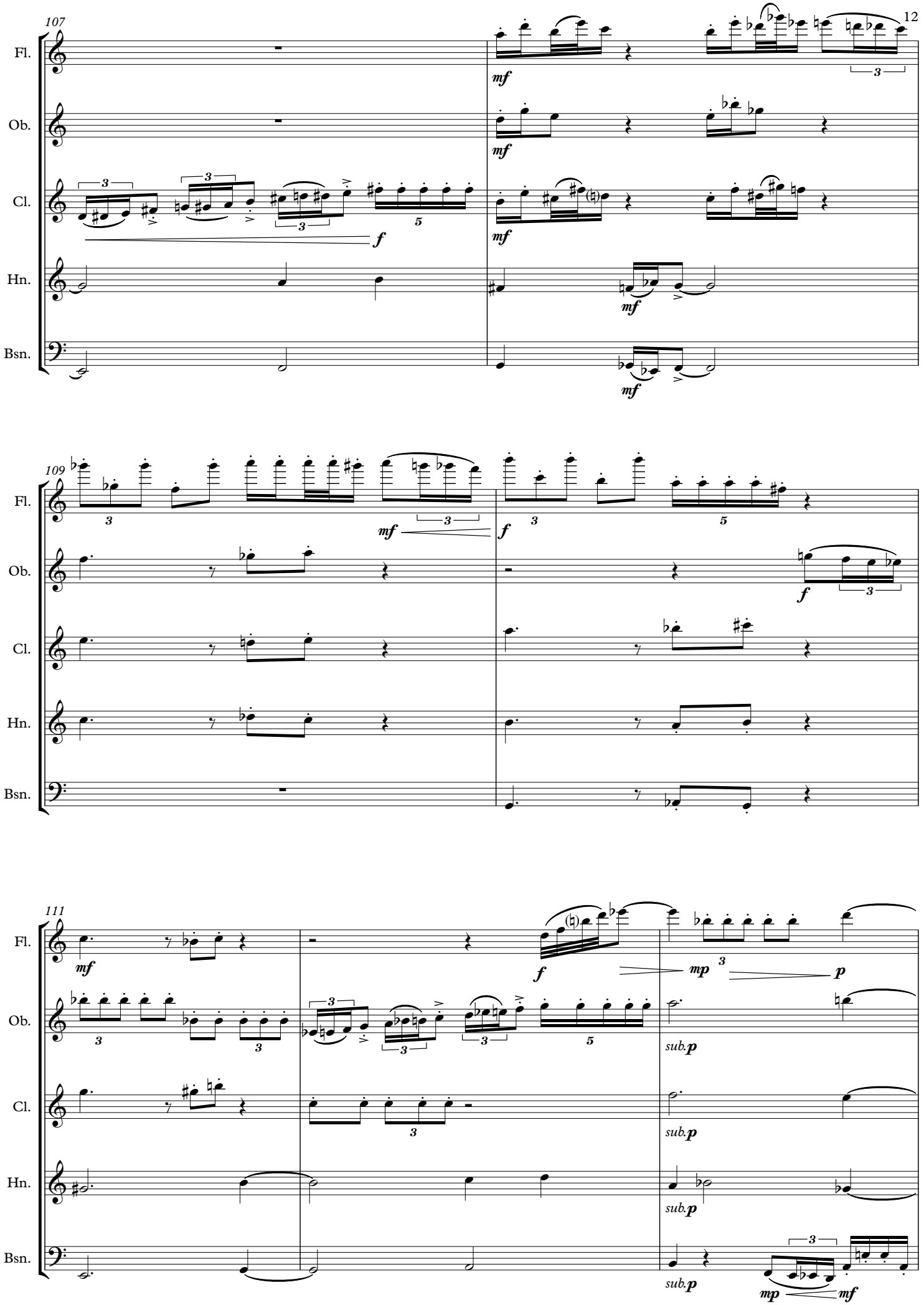

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poco accel.

Allegretto ♩ = 108

G.P

114

Fl.

Ob.

Cl.

Hn.

Bsn.

117

Fl.

Ob.

Cl.

Hn.

Bsn.

120

(F♮)

(E♭)

Fl.

Ob.

Cl.

Hn.

Bsn.

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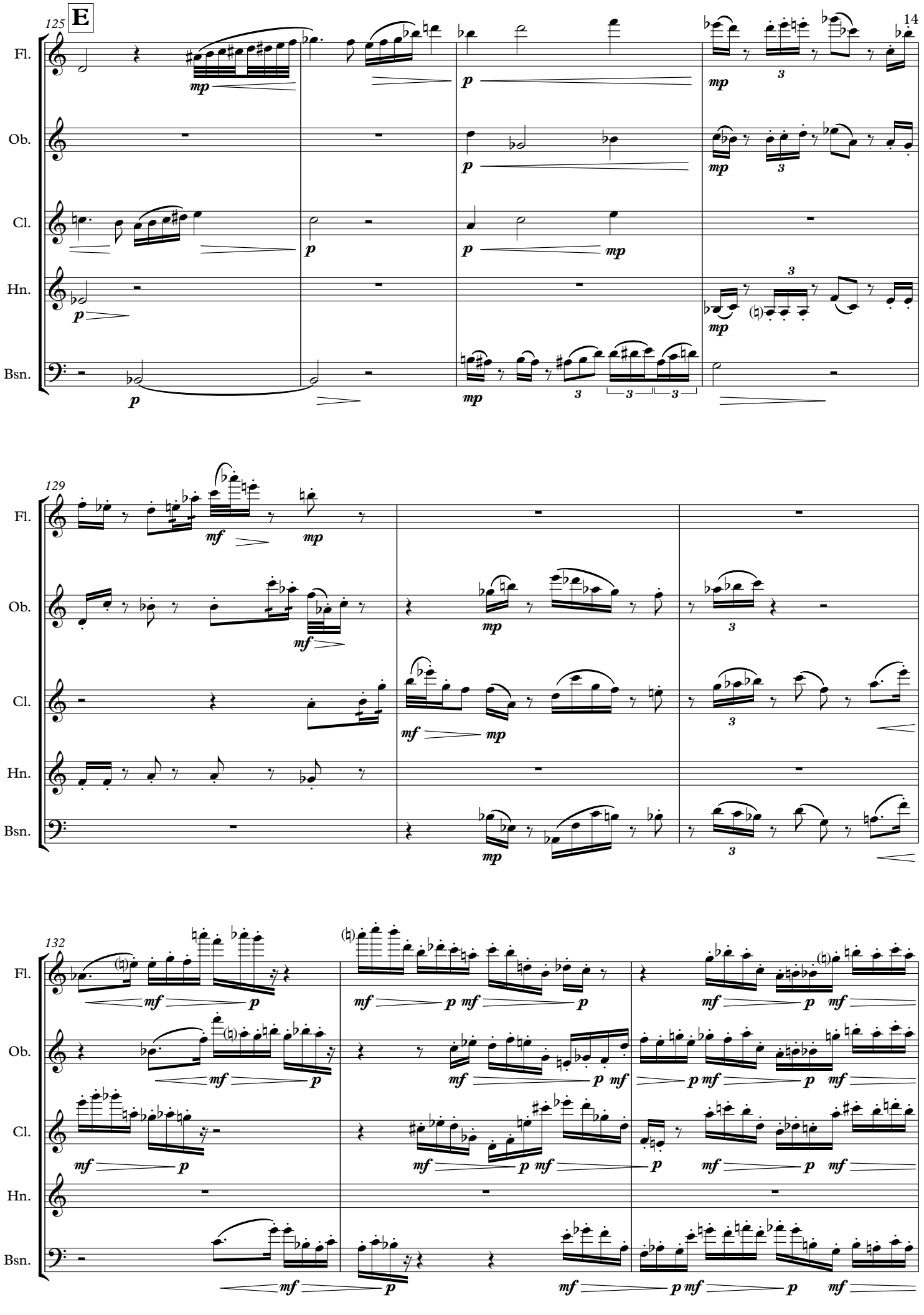

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F

135

Fl.
Ob.
Cl.
Hn.
Bsn.

140

Fl.
Ob.
Cl.
Hn.
Bsn.

143

Fl.
Ob.
Cl.
Hn.
Bsn.

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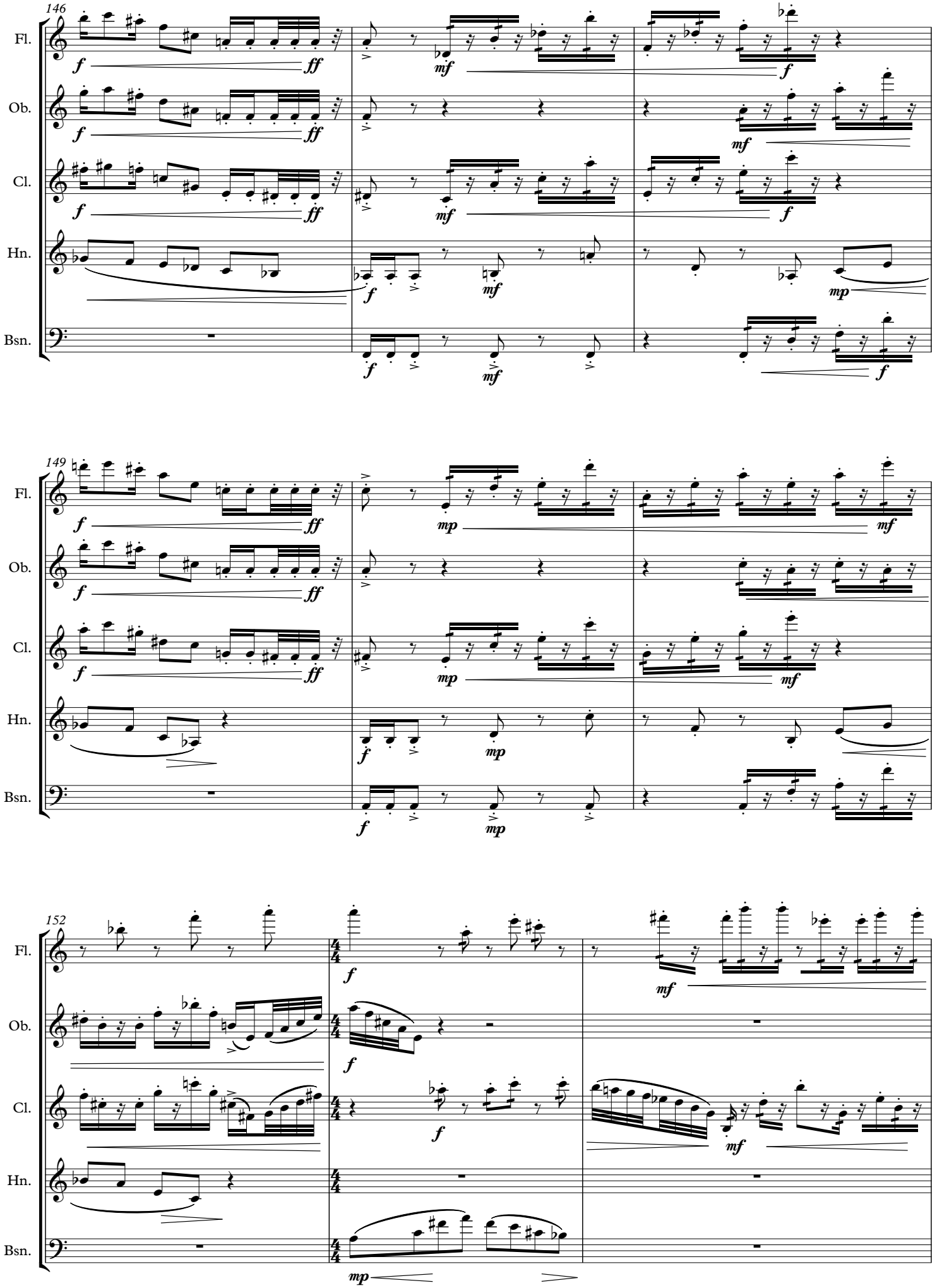
G



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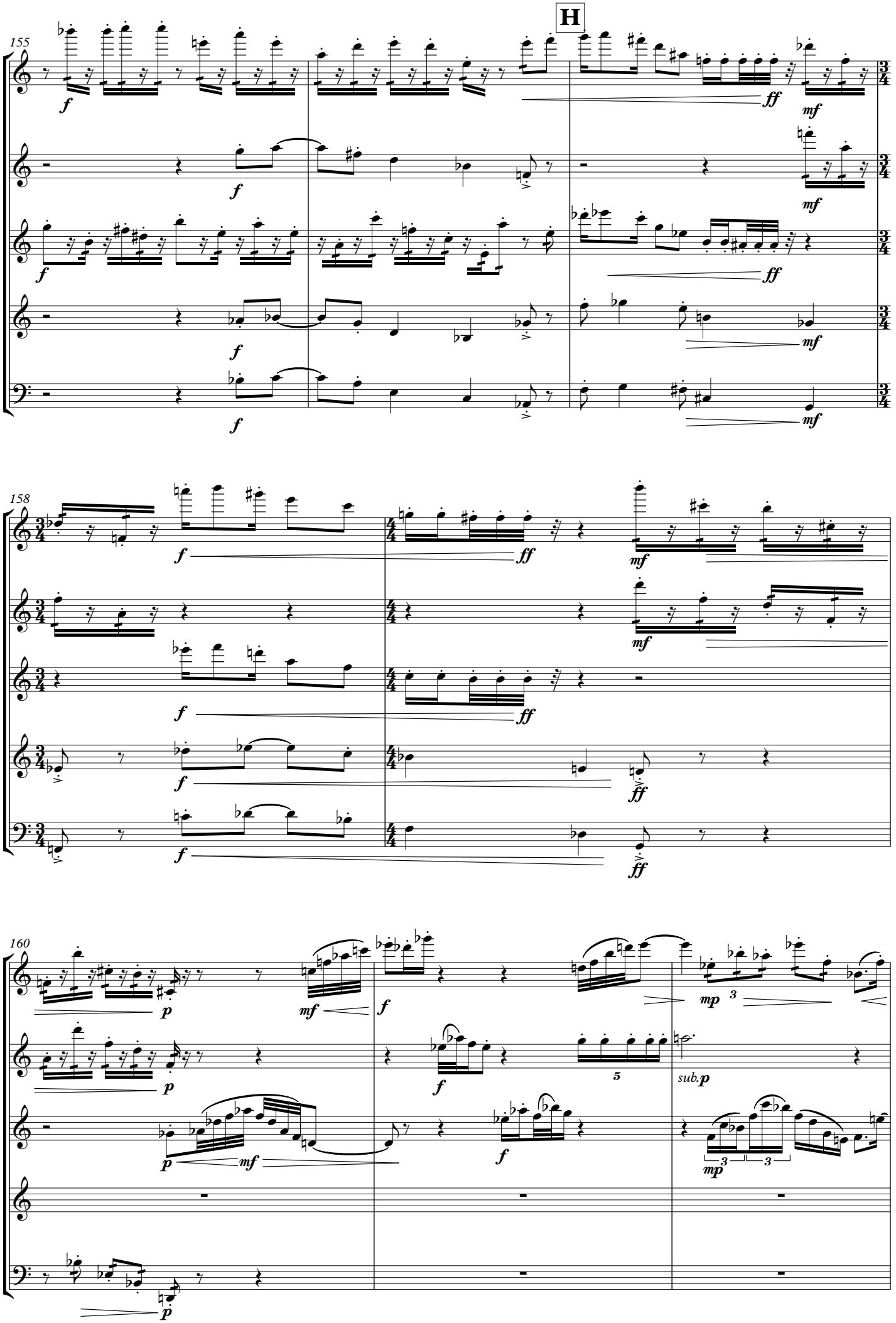

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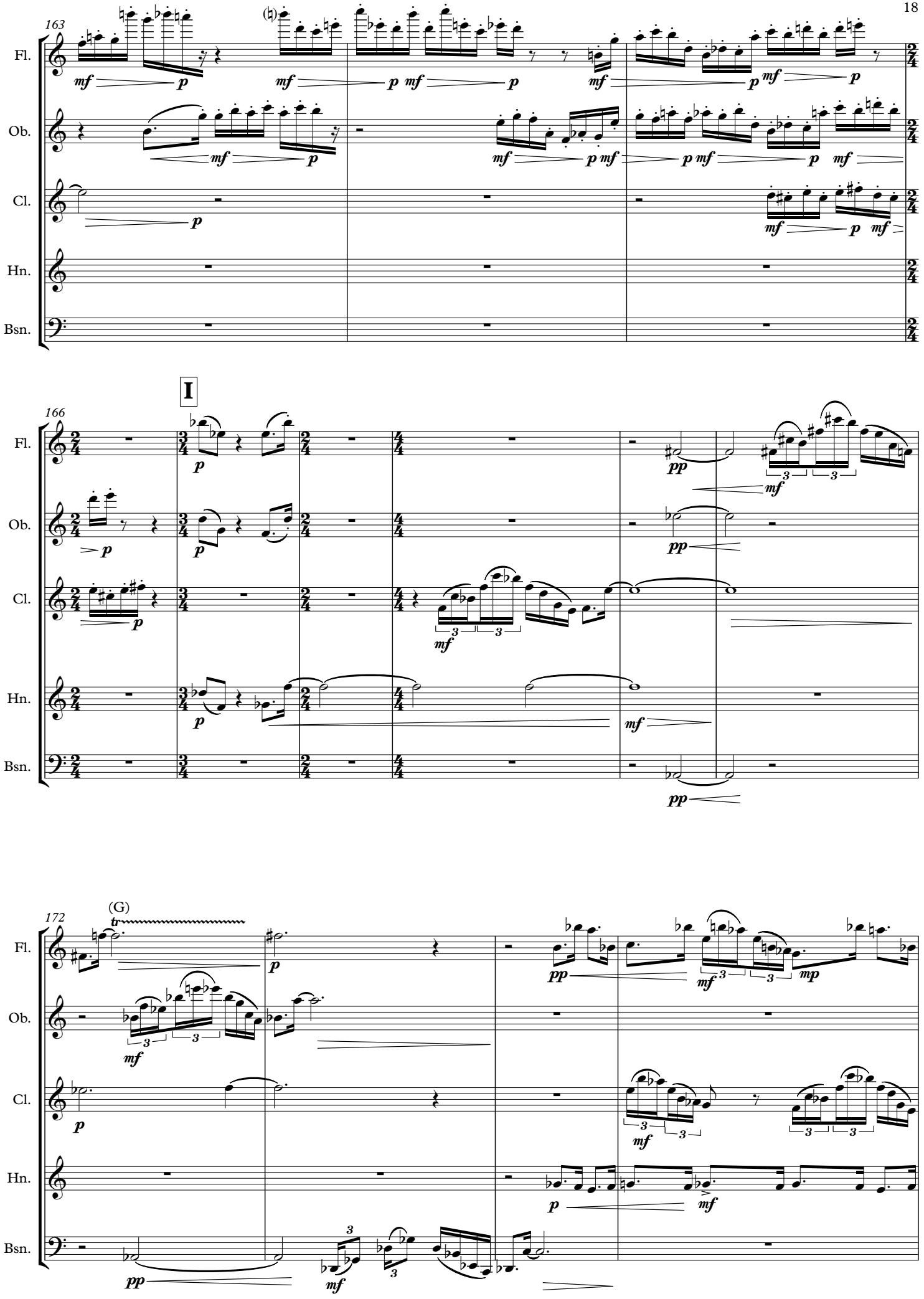

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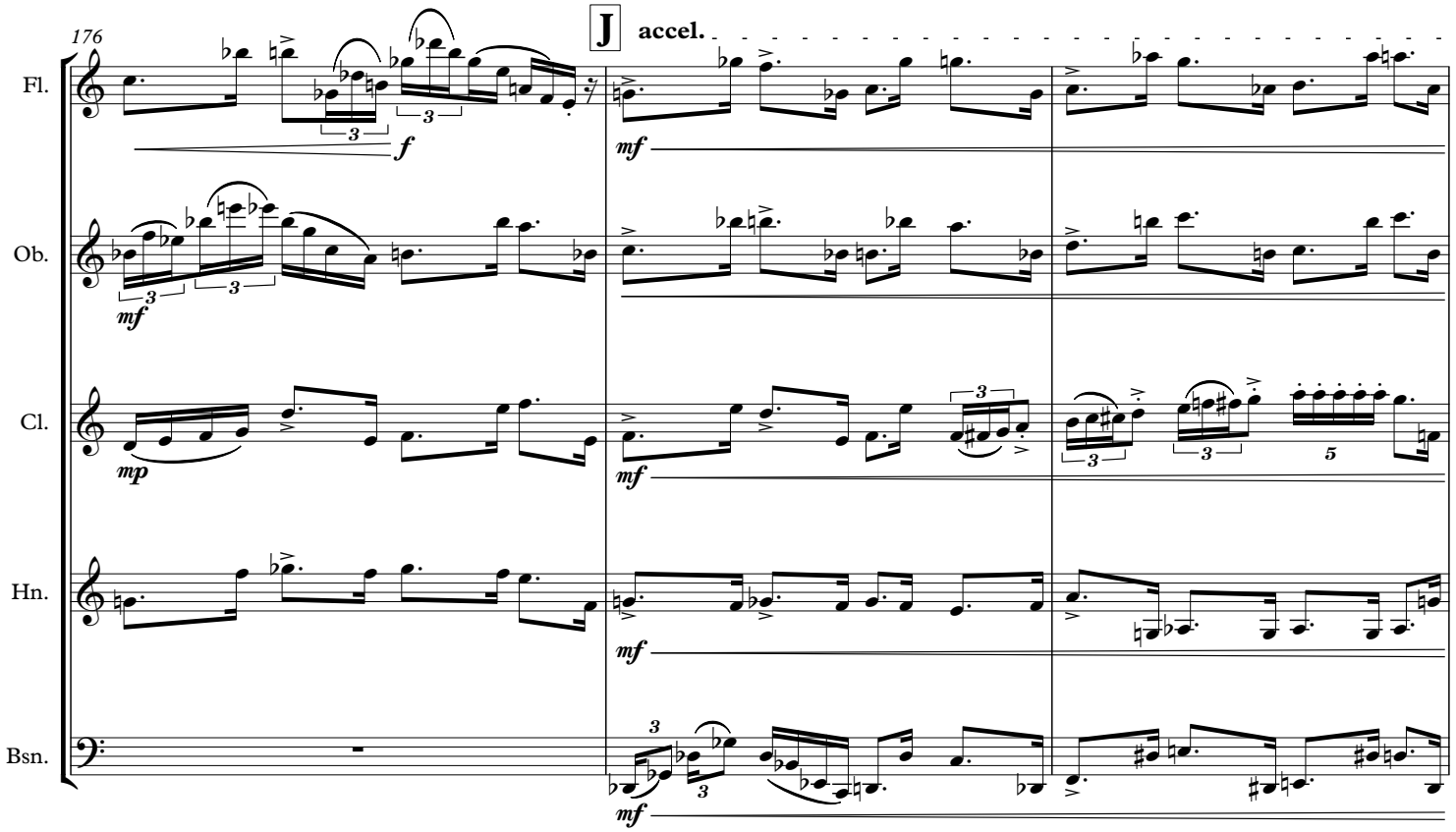

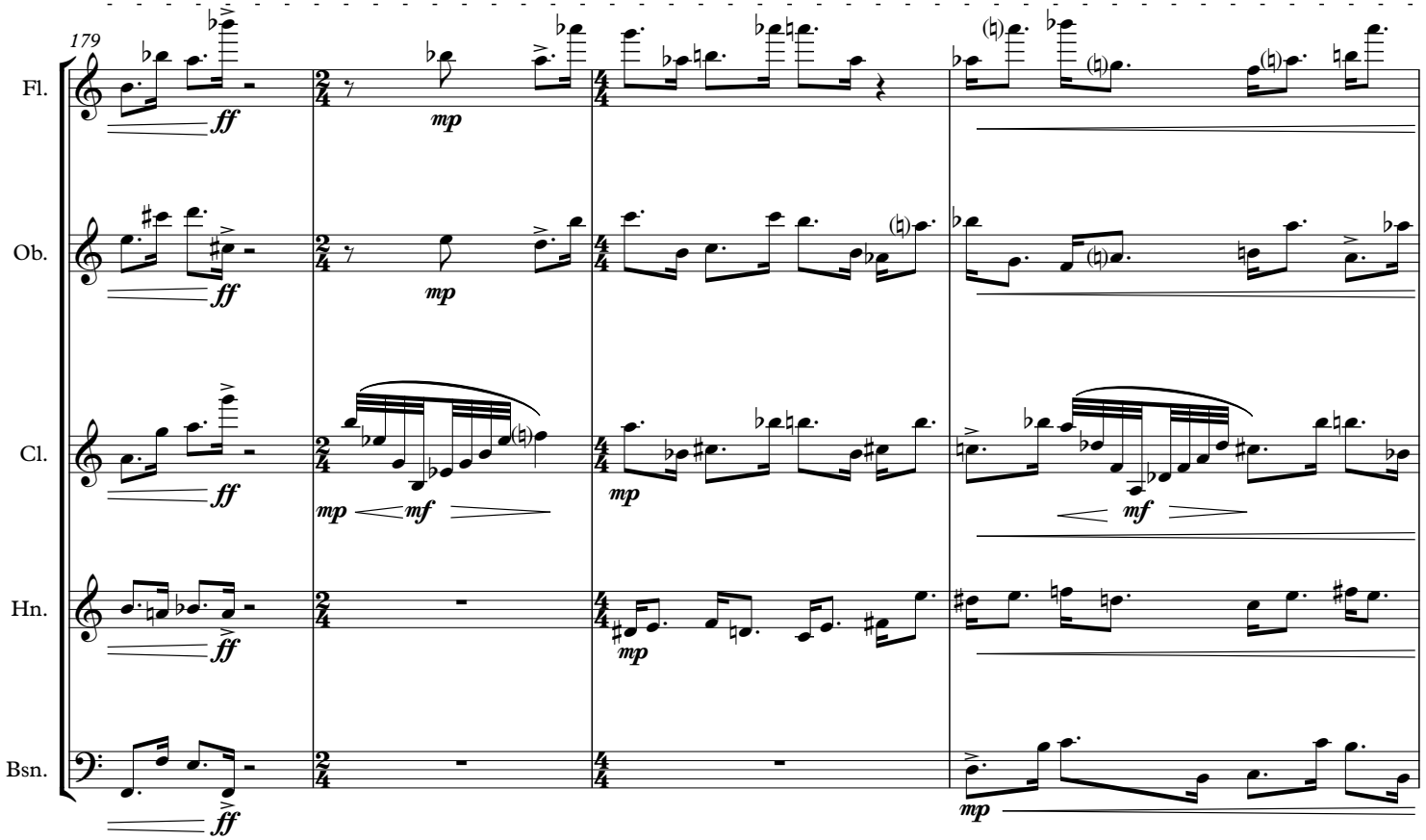

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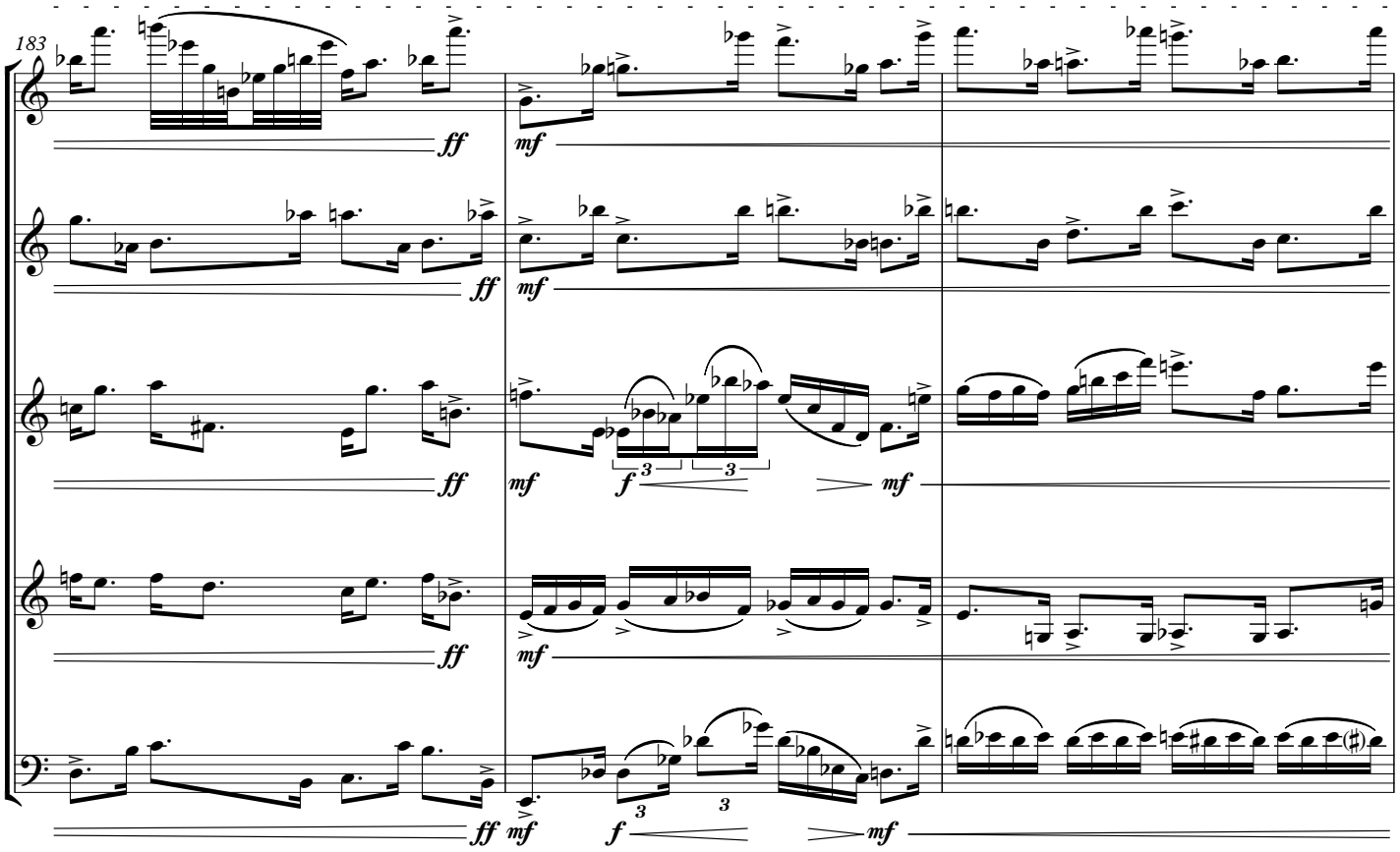

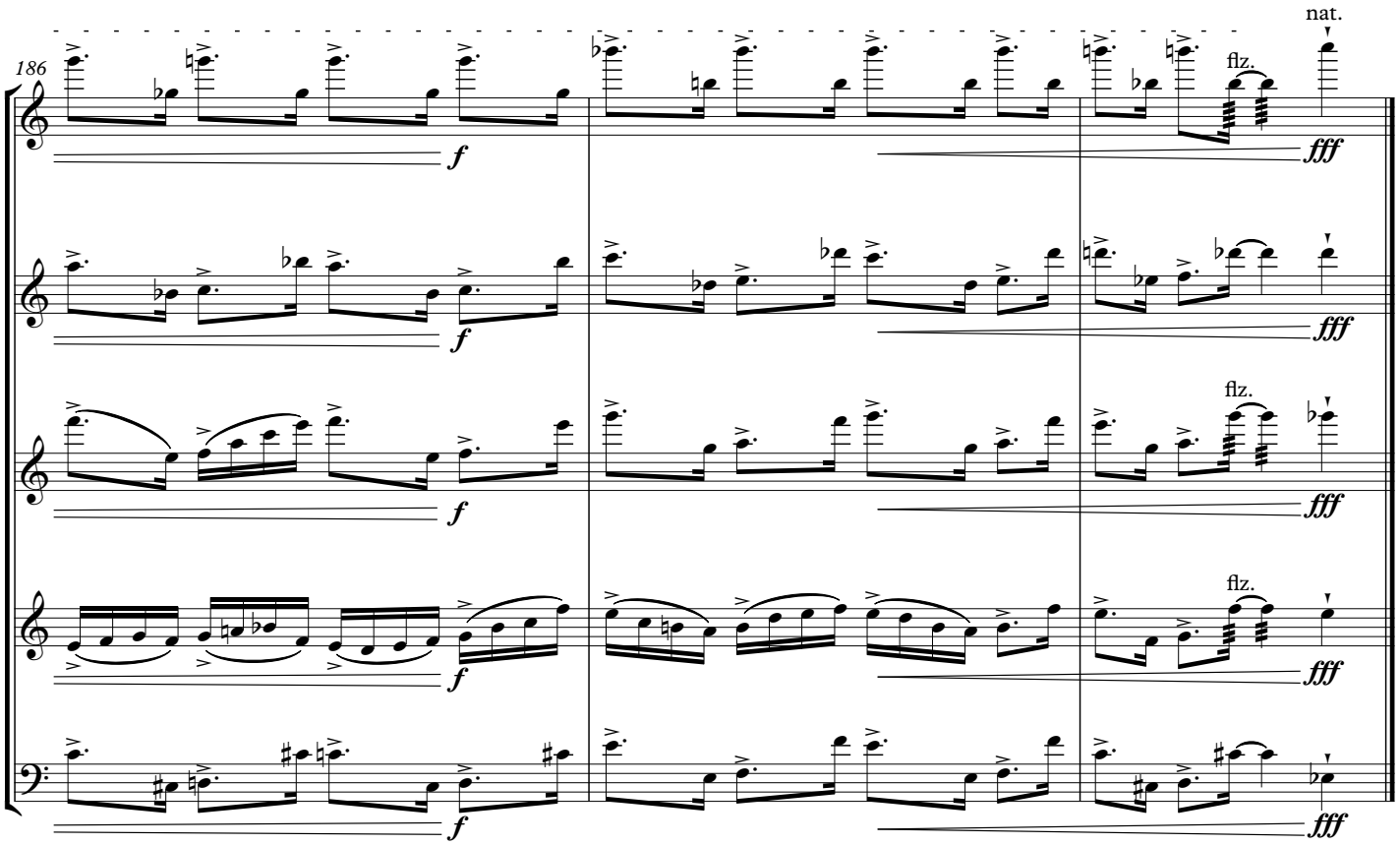

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Night Airs

for mixed chamber ensemble

Angela Elizabeth Slater

Night Airs (for flute, clarinet, piano, violin, cello and percussion) **(2014)**

Night Airs is from a series of pieces inspired by the natural world and explores imagery of the night. The piece opens with a stillness that explores different timbral combinations to create unusual tone colours. This stillness is disturbed by energetic bursts of colour that act as pre-echoes to the more melodically and rhythmically agile faster section. The faster section continues to combine the instrumental voices in interesting ways and particularly shows off the agility of the flute and clarinet in duet passages. Dovetailing cascades return the music to the stillness of the opening as the night draws to a close.

duration c.5 mins

Angela Elizabeth Slater

Performance notes:

1) Sul ponticello and sul tasto are abbreviated in most cases to s.p. and s.t. respectively.

2) Nat. → s.p.: gradually move from bowing near the bridge back to the normal position.

3) Glockenspiel vibrato: player is to move hand up and down rapidly above the note after striking.

4) The piano should use the pedal liberally throughout at the discretion of the performer.

Transposed

Night Airs

Angela Elizabeth Slater

Stillness ♩ = 68

Flute

Clarinet in B♭

Piano

con Ped.

Stillness ♩ = 68

Vibraphone

use soft sticks

To Sus. Cym

Suspended Cymbals

Percussion

Violin

sul tasto

Violoncello

nat.

7

(F)

A

Fl.

Cl.

Pno.

A

To Glock.

Glockenspiel

vibrato

Perc.

s.t

sul pont.

Vln.

gradually to trem

s.p.

nat.

Vc.

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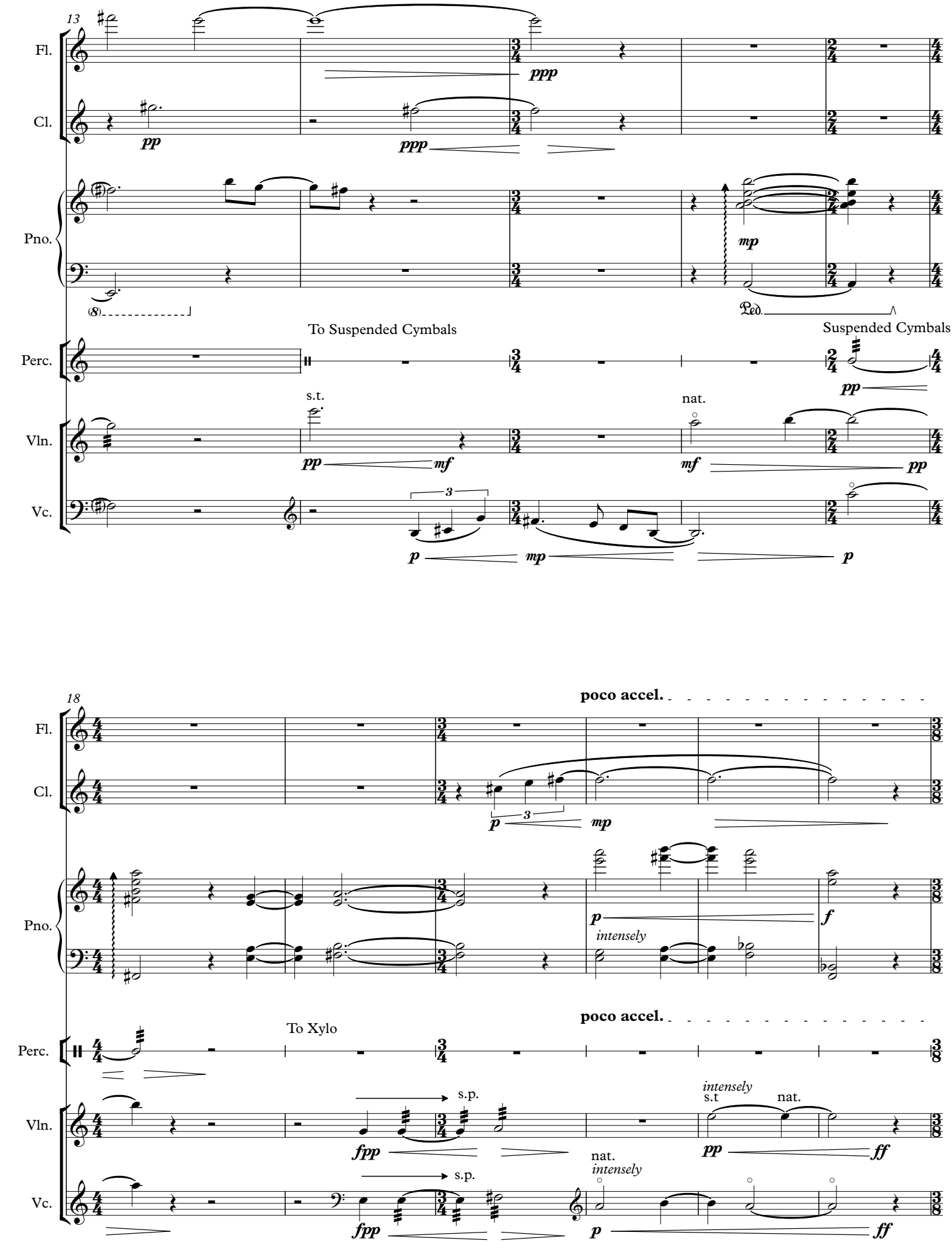

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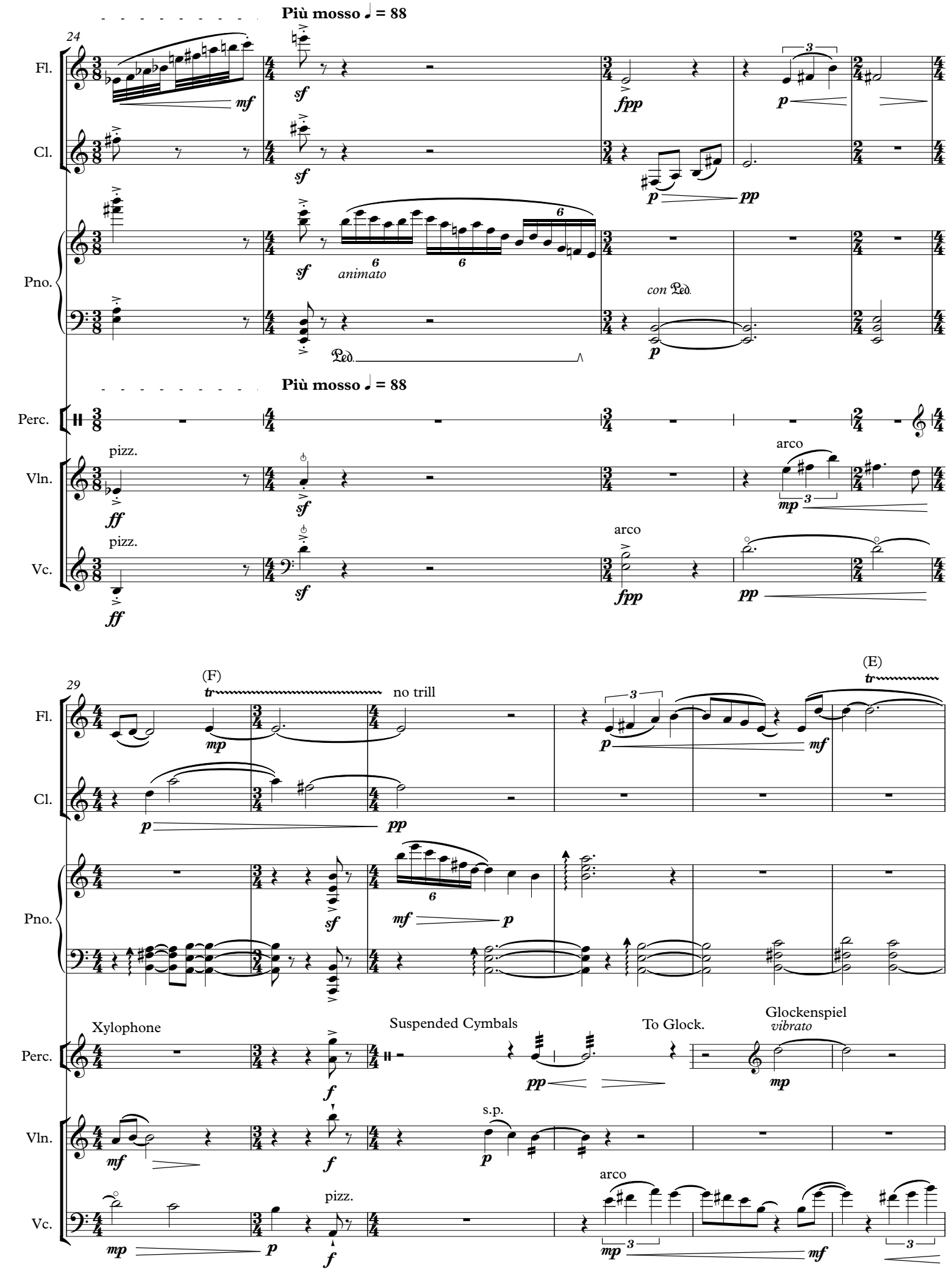

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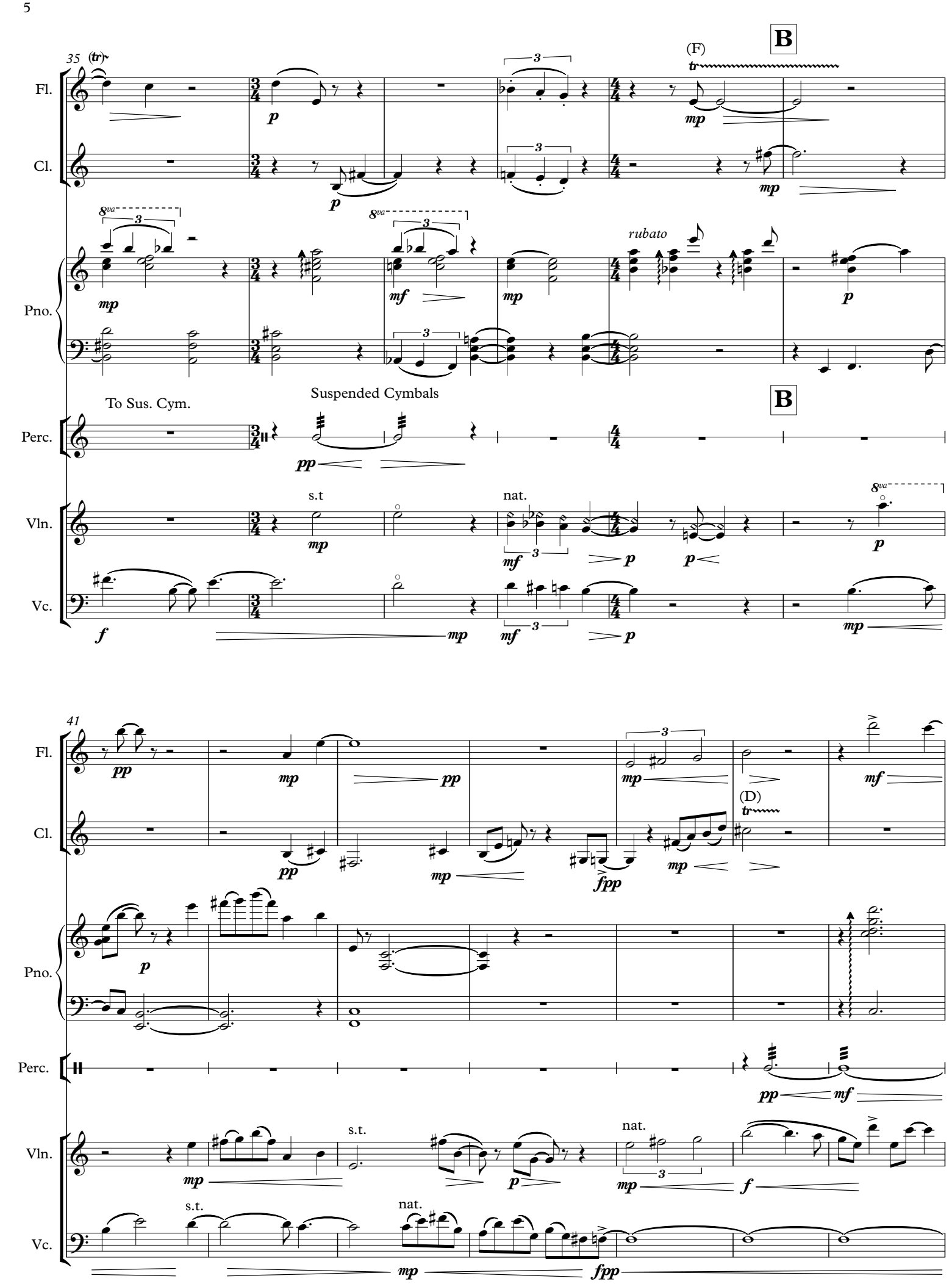

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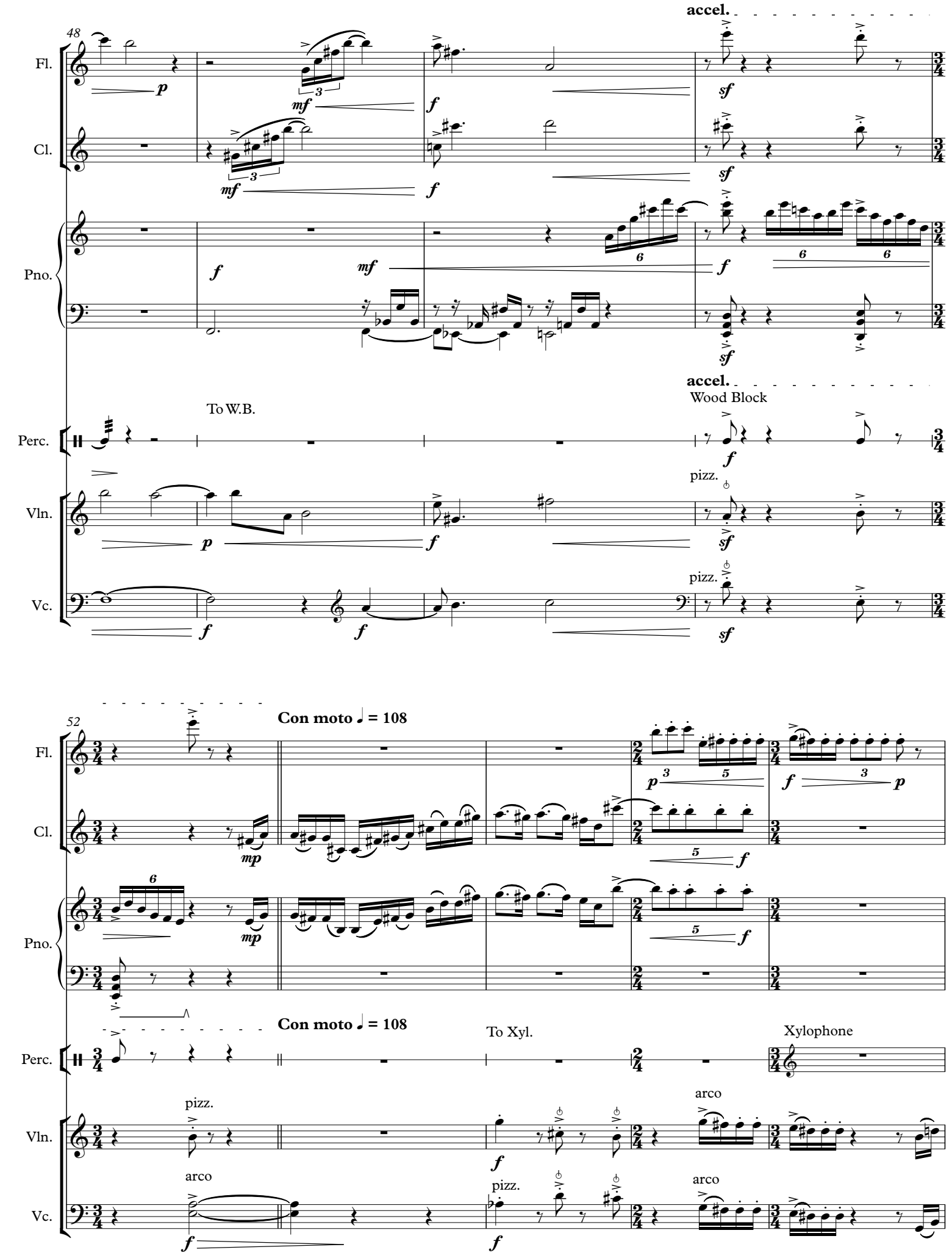

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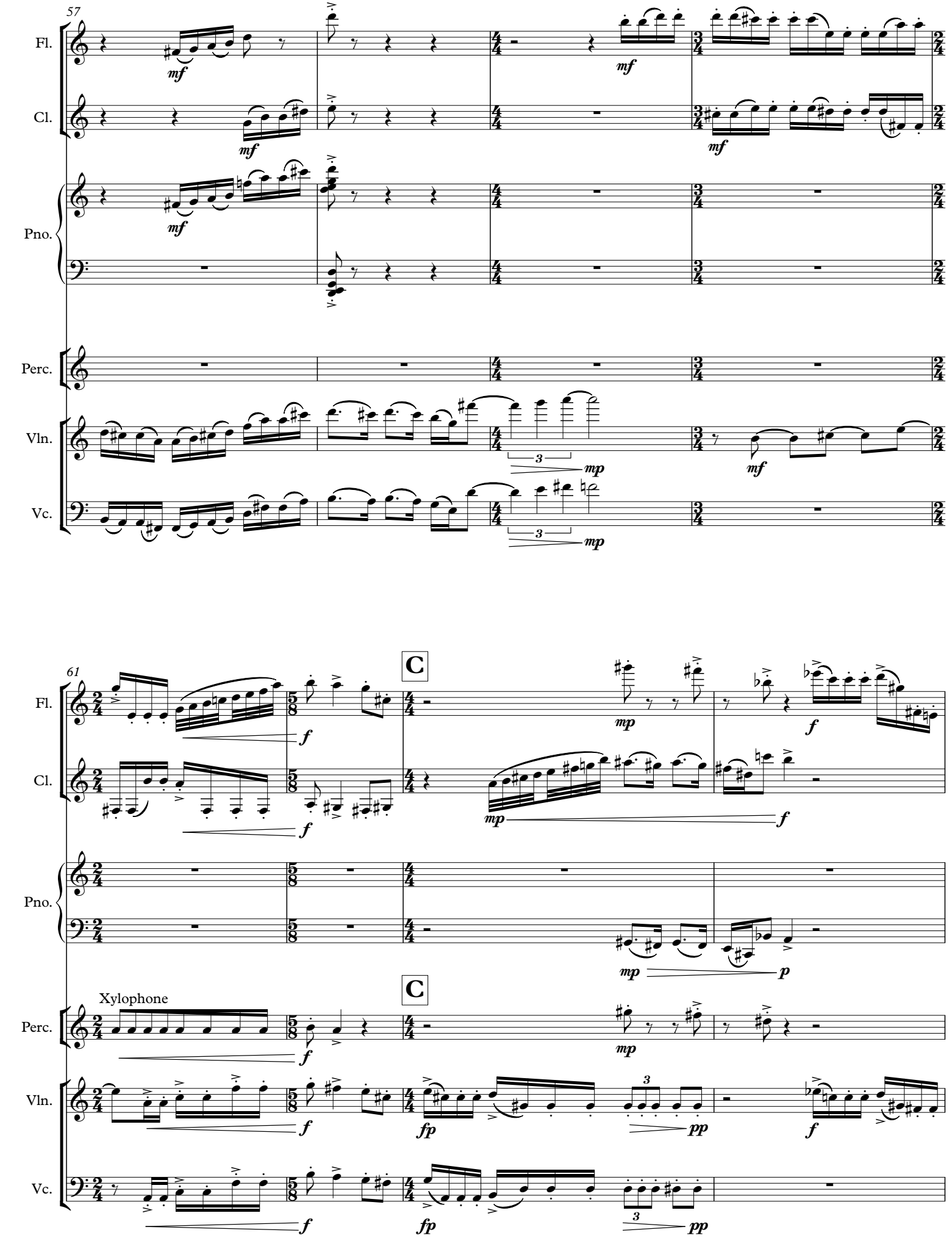

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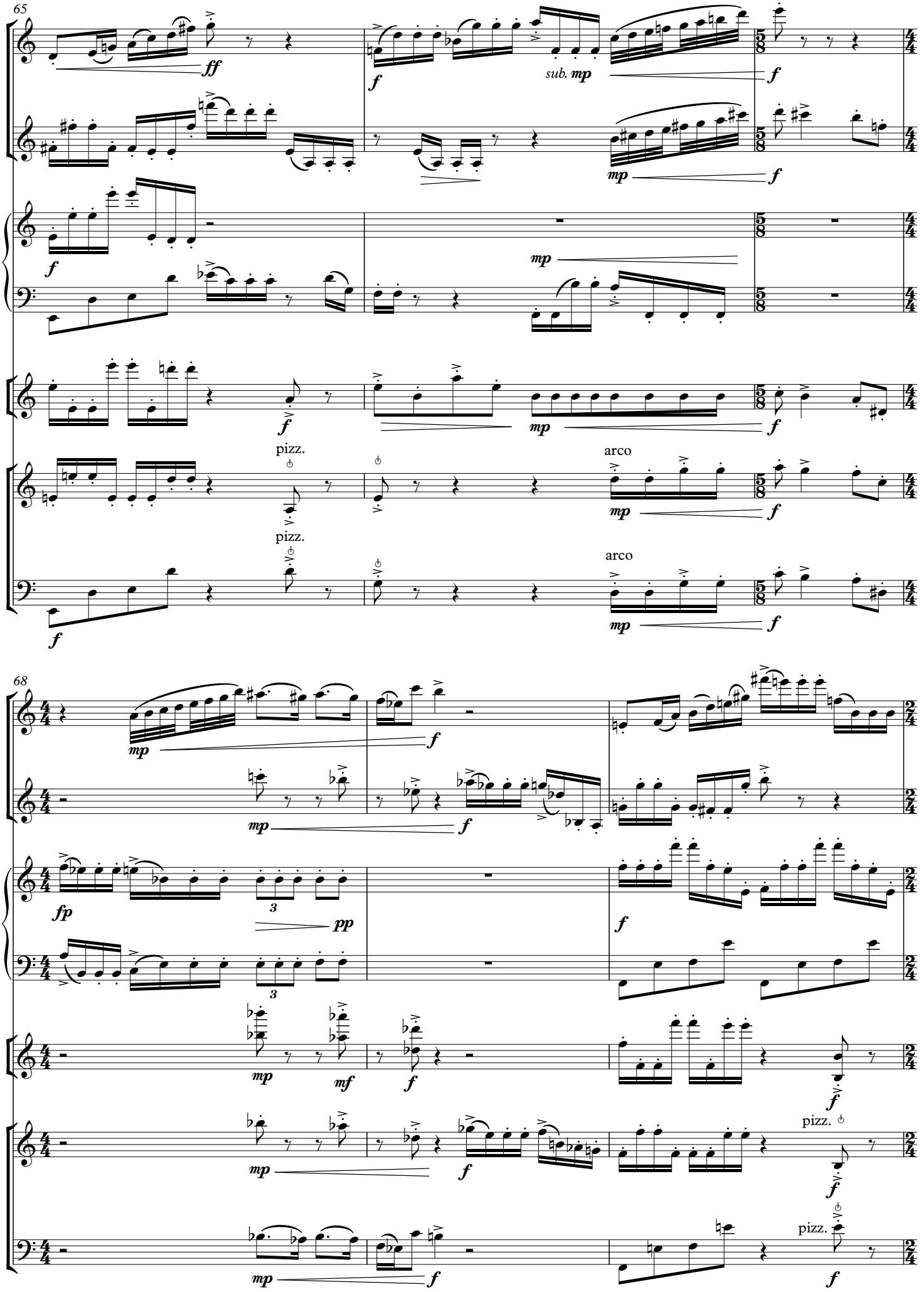

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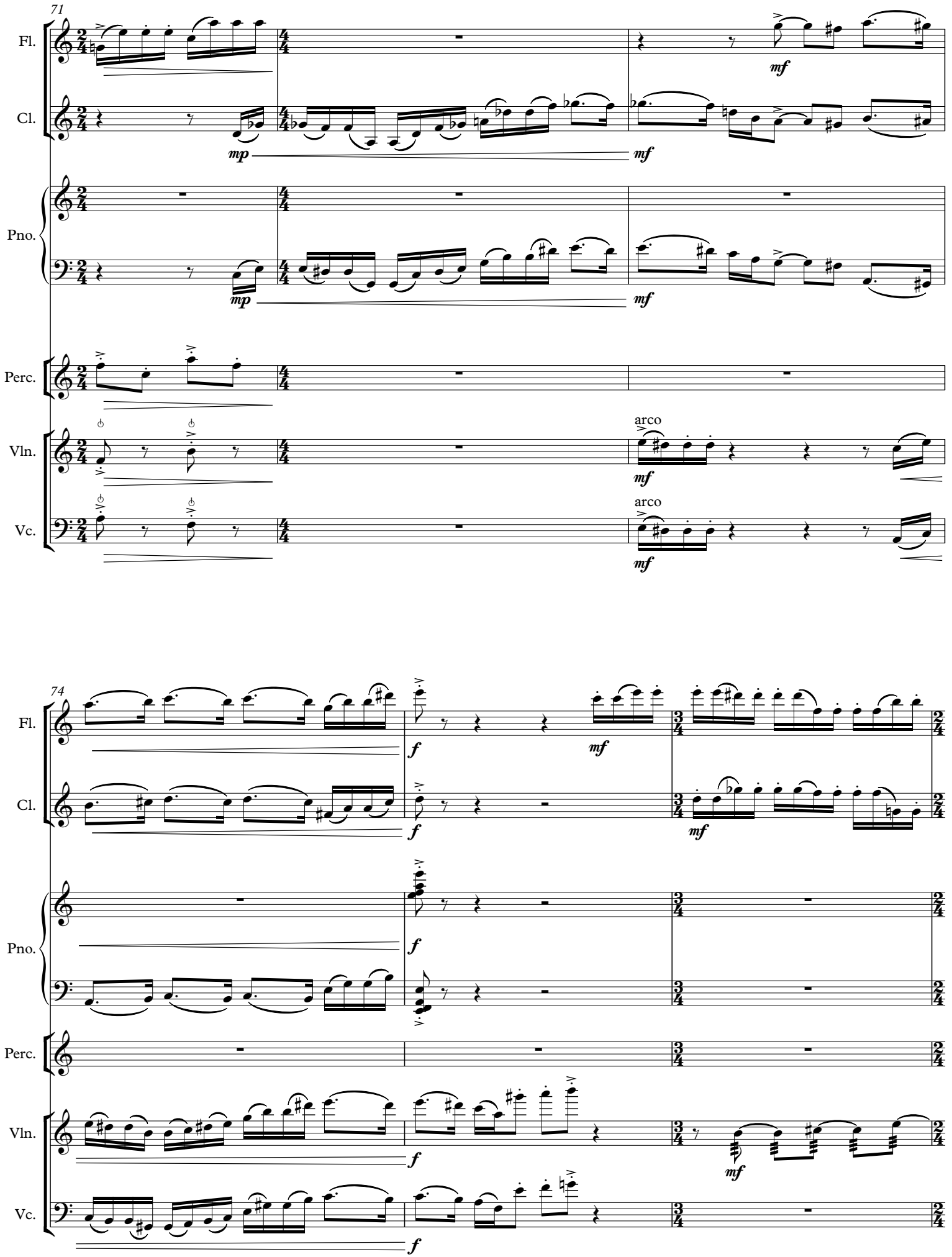

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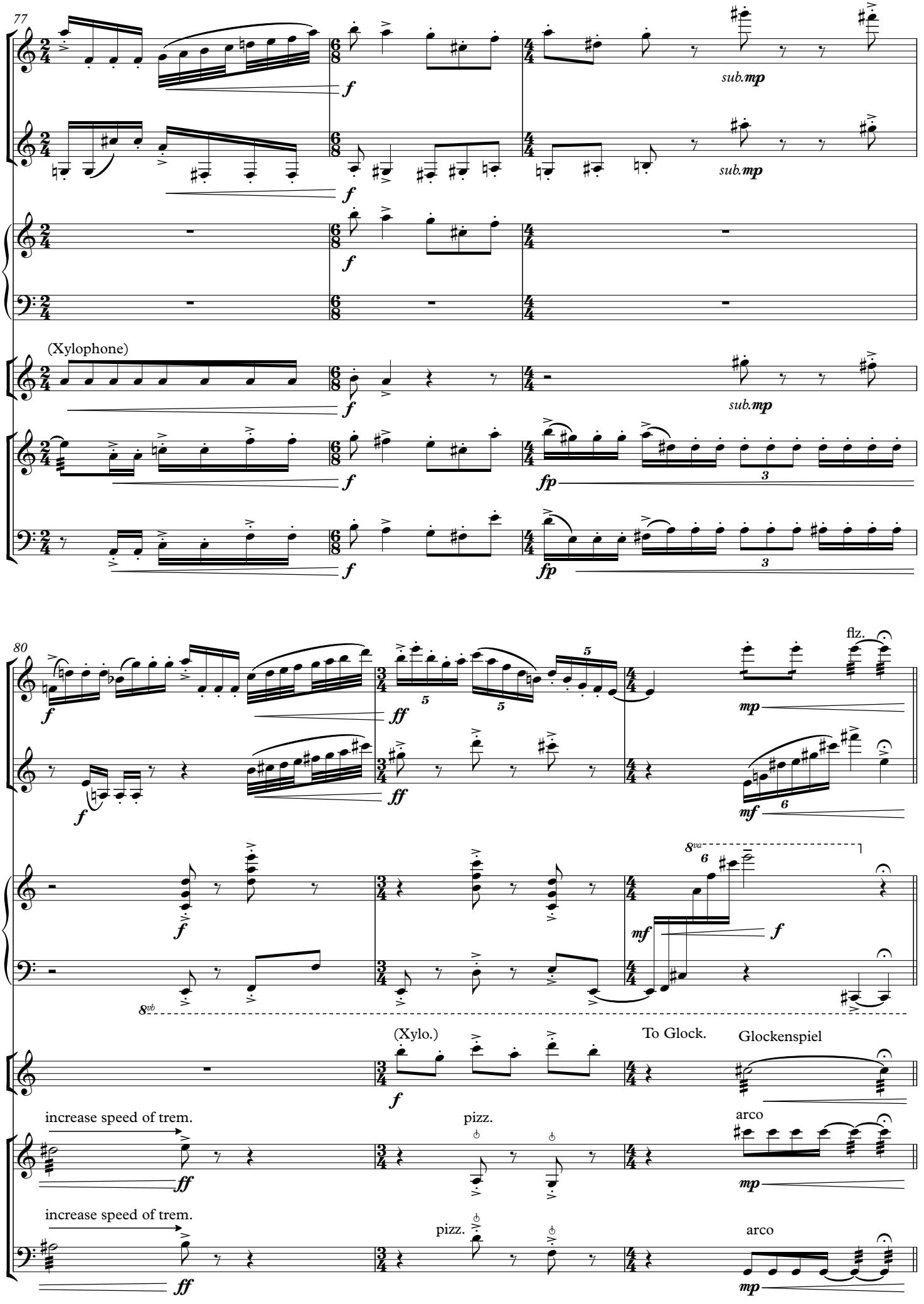

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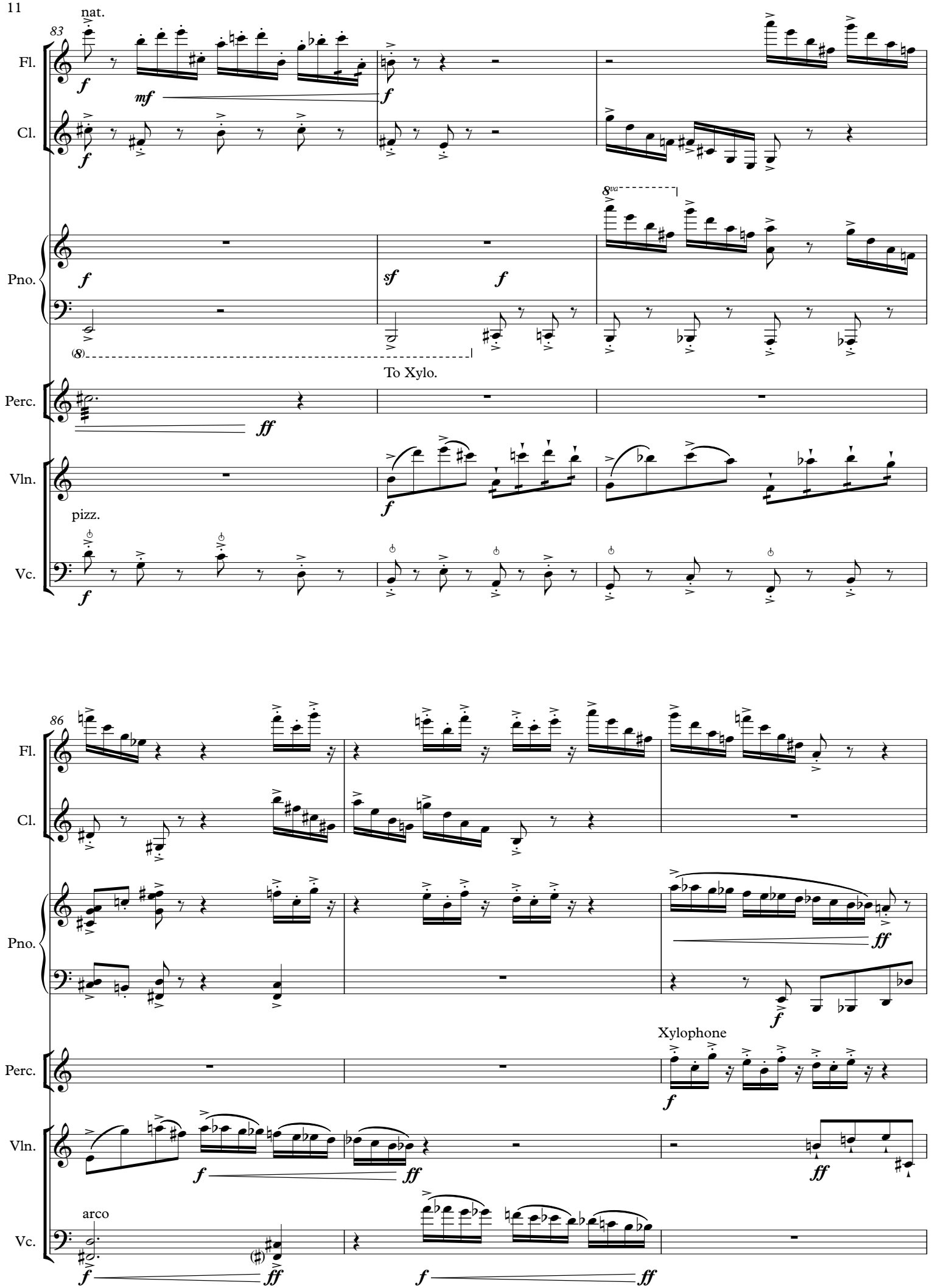

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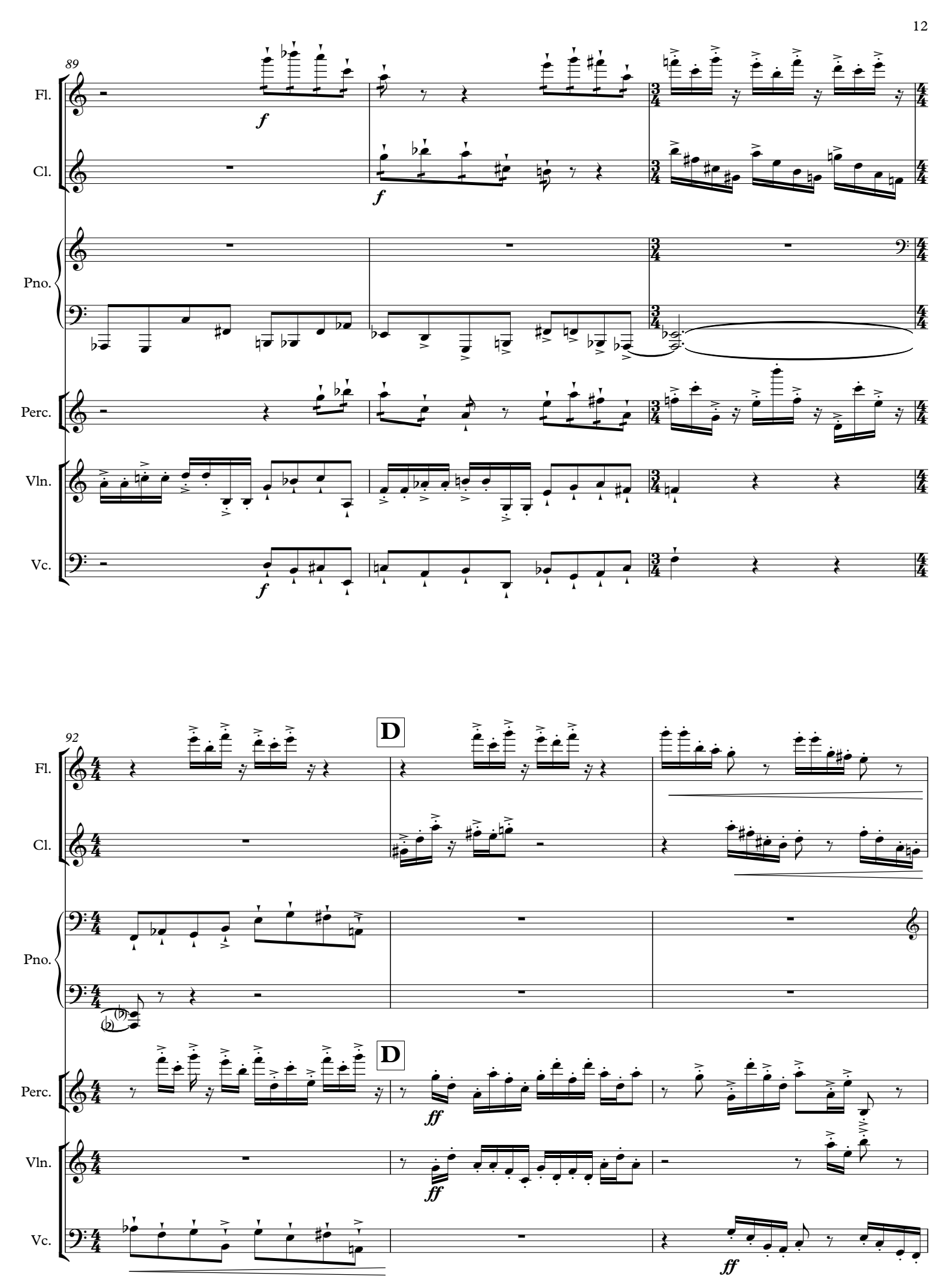

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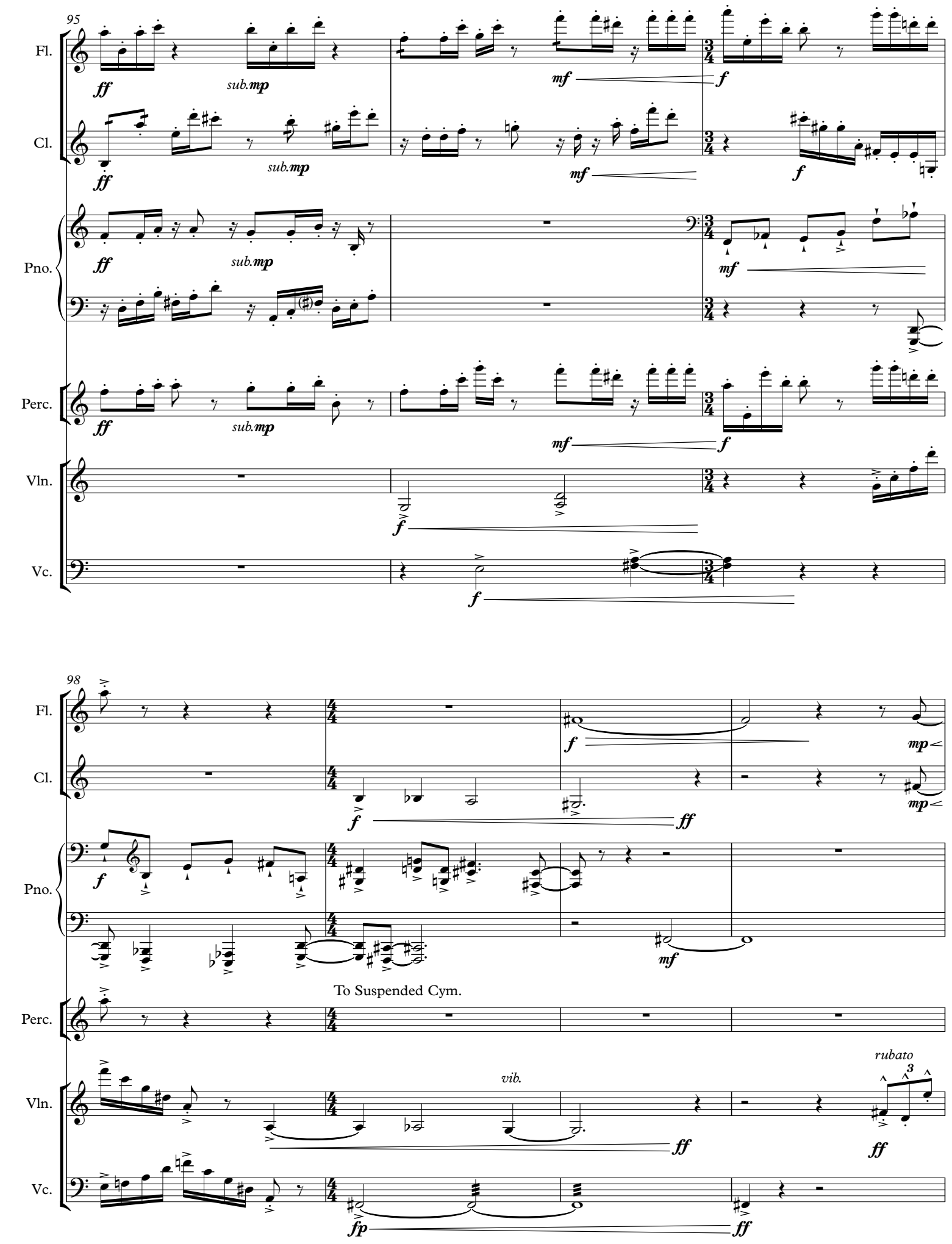

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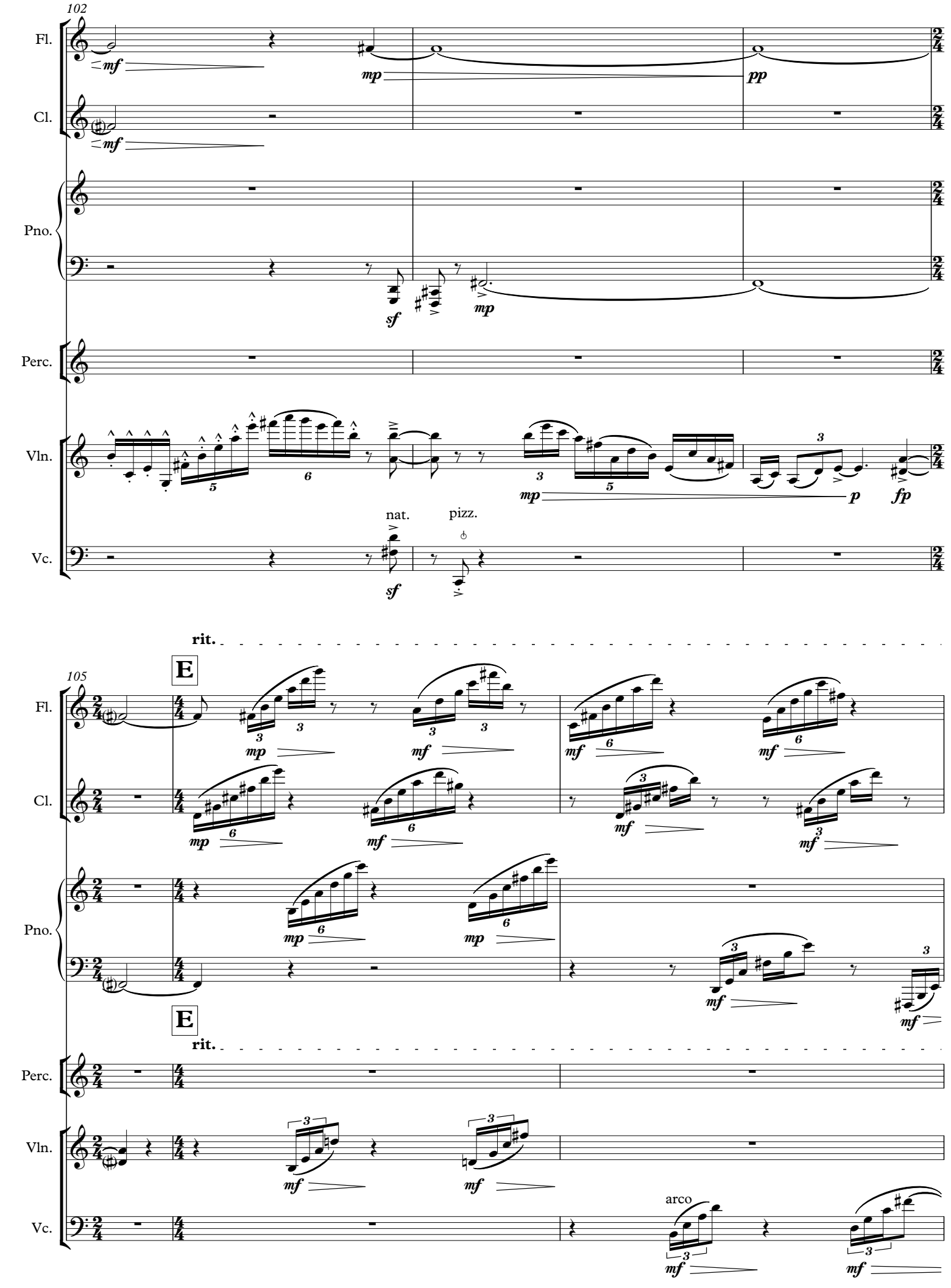

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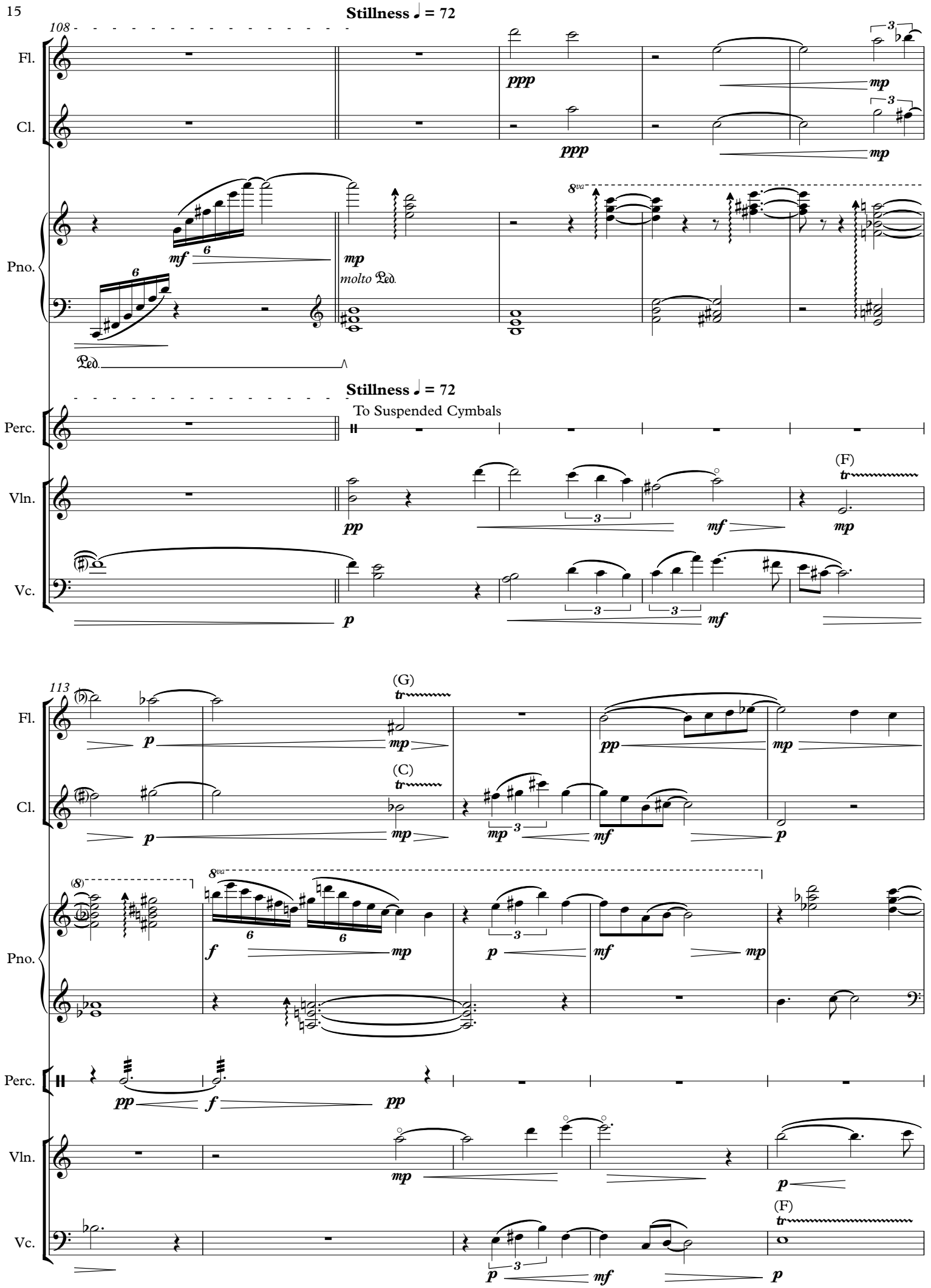

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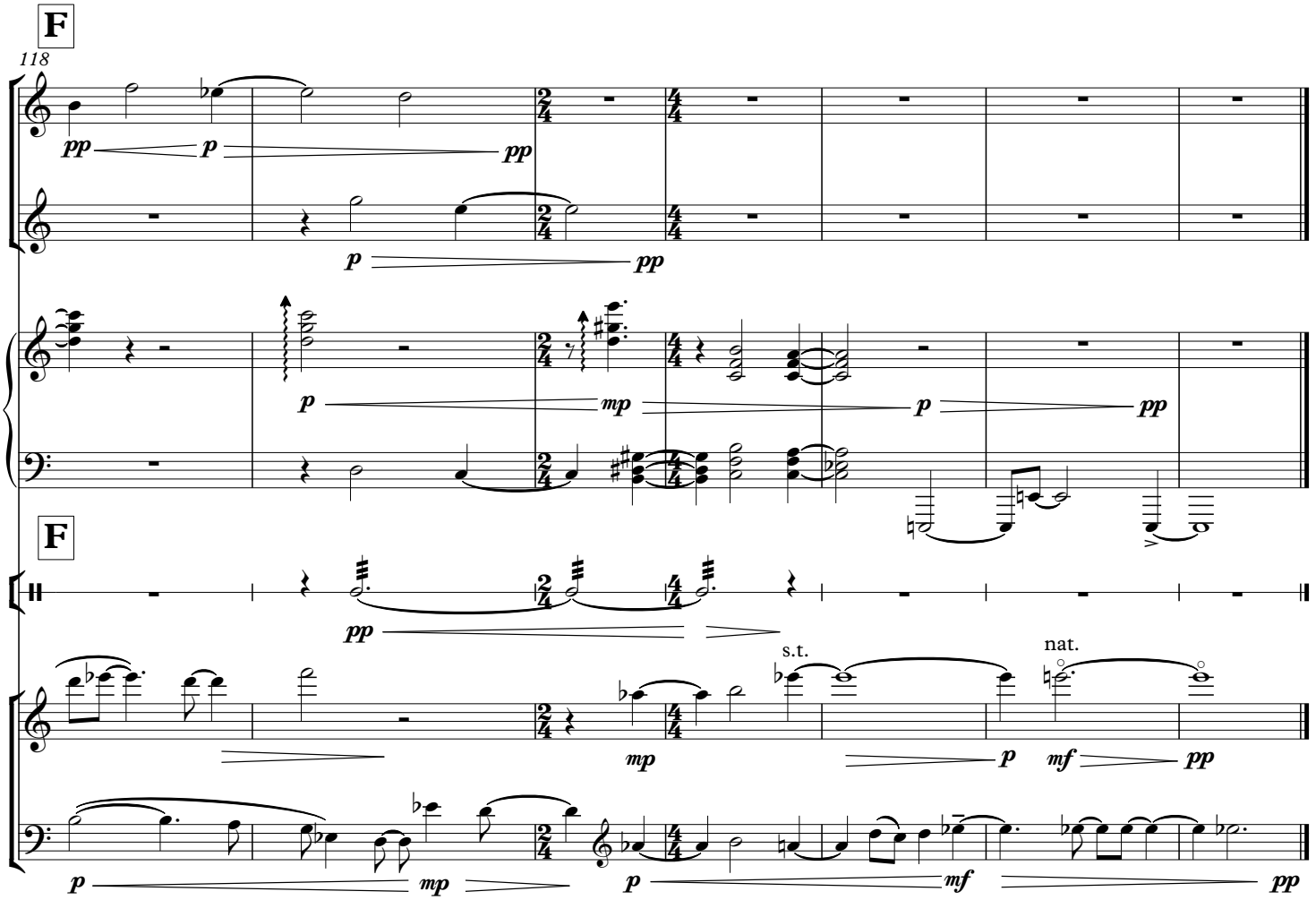

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Shadows Create the Night

for Piano Quintet

Angela Elizabeth Slater

Shadows Create the Night for piano quintet **(2014)**

Shadows Create the Night is loosely based on the poetic idea and narrative imagery of shadows coming together to form the darkness of the night. These shadows undergo transformations and interact in different ways throughout the night. The end of the piece represents the emergence of the dawn as the levels of light gradually increase and the dark shadows disappear turning night to day. This transformation is represented by the continually ascending cello note at the end, coloured by the violin harmonics.

Duration c.8 mins

Performance notes:

1) Sul ponticello and sul tasto are abbreviated in most cases to s.p. and s.t. respectively.

2) ⇢ : gradually move from one technique/position to another.

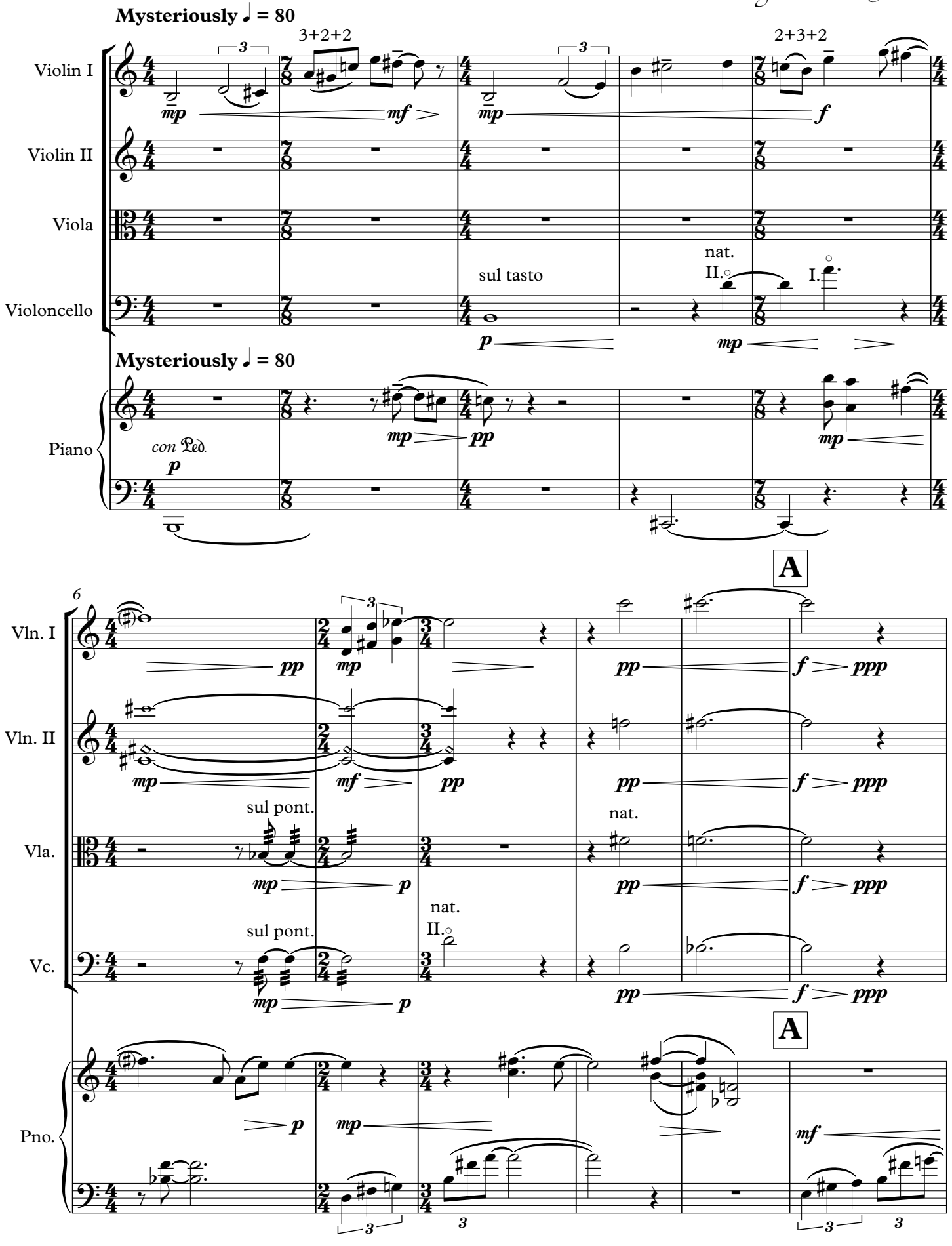
3) Trill to note in brackets above or at side of note.

4) The piano should use the sustain pedal liberally throughout

Shadows Create the Night

for Piano Quintet

Angela Elizabeth Slater



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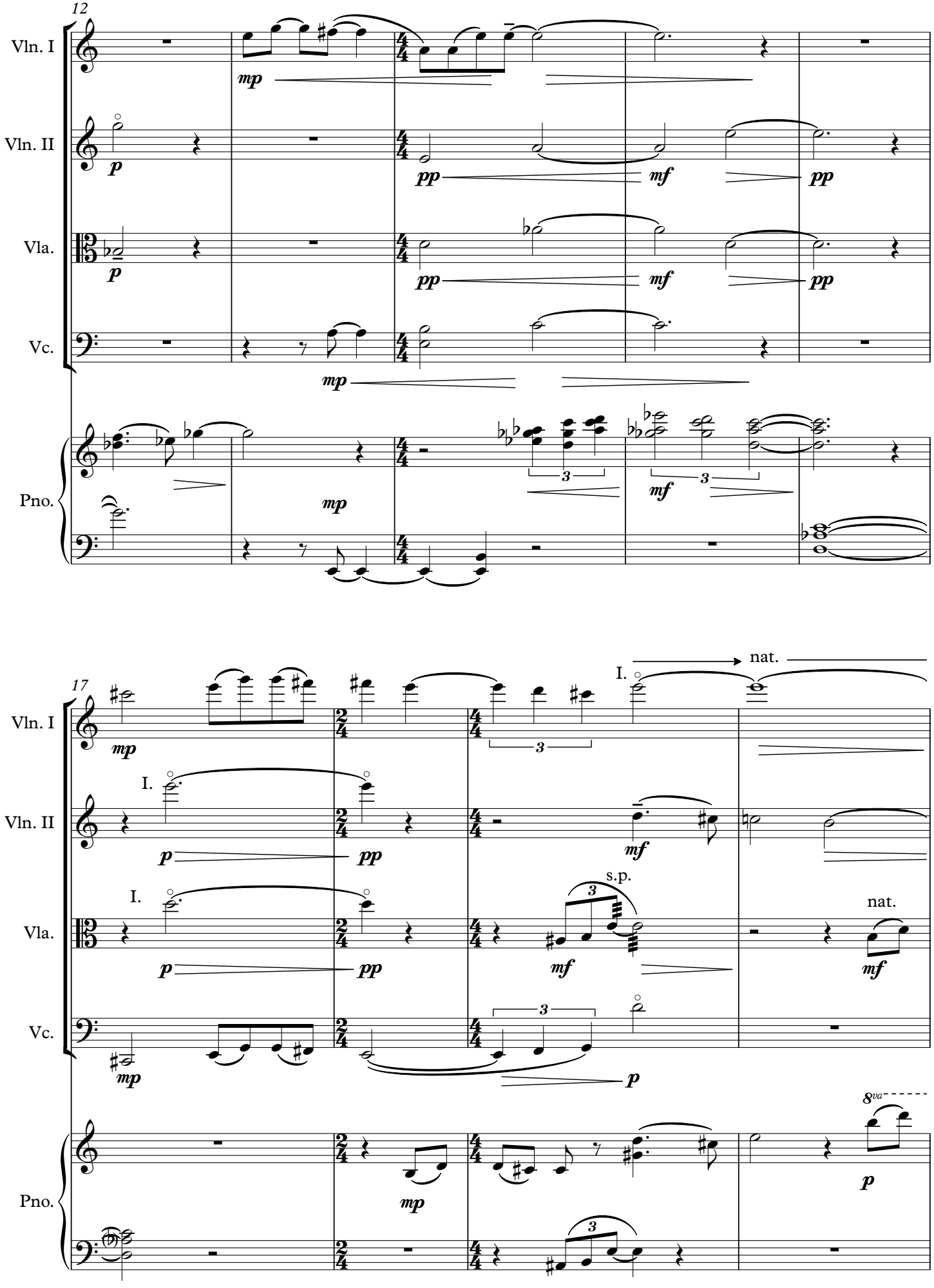

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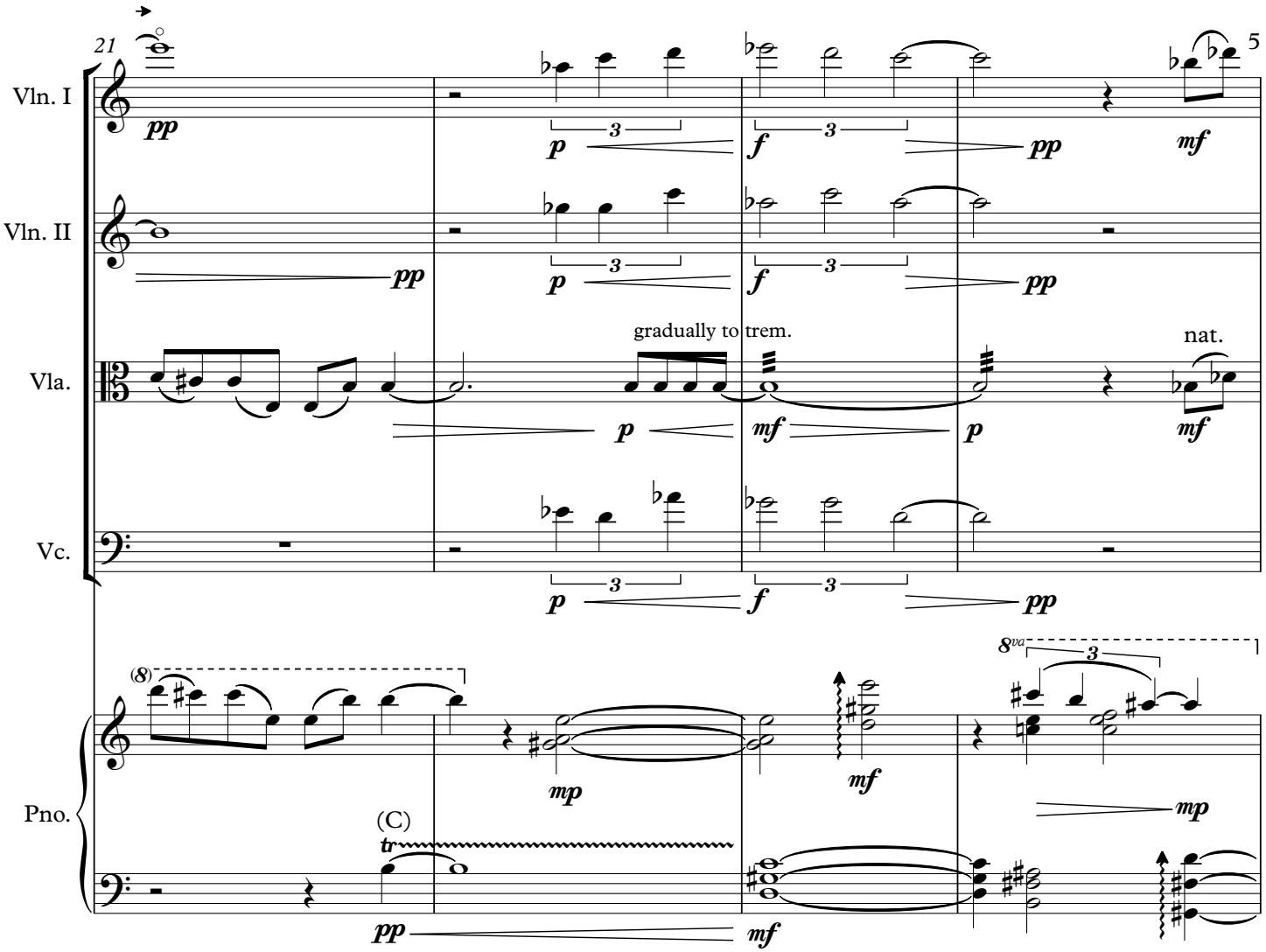

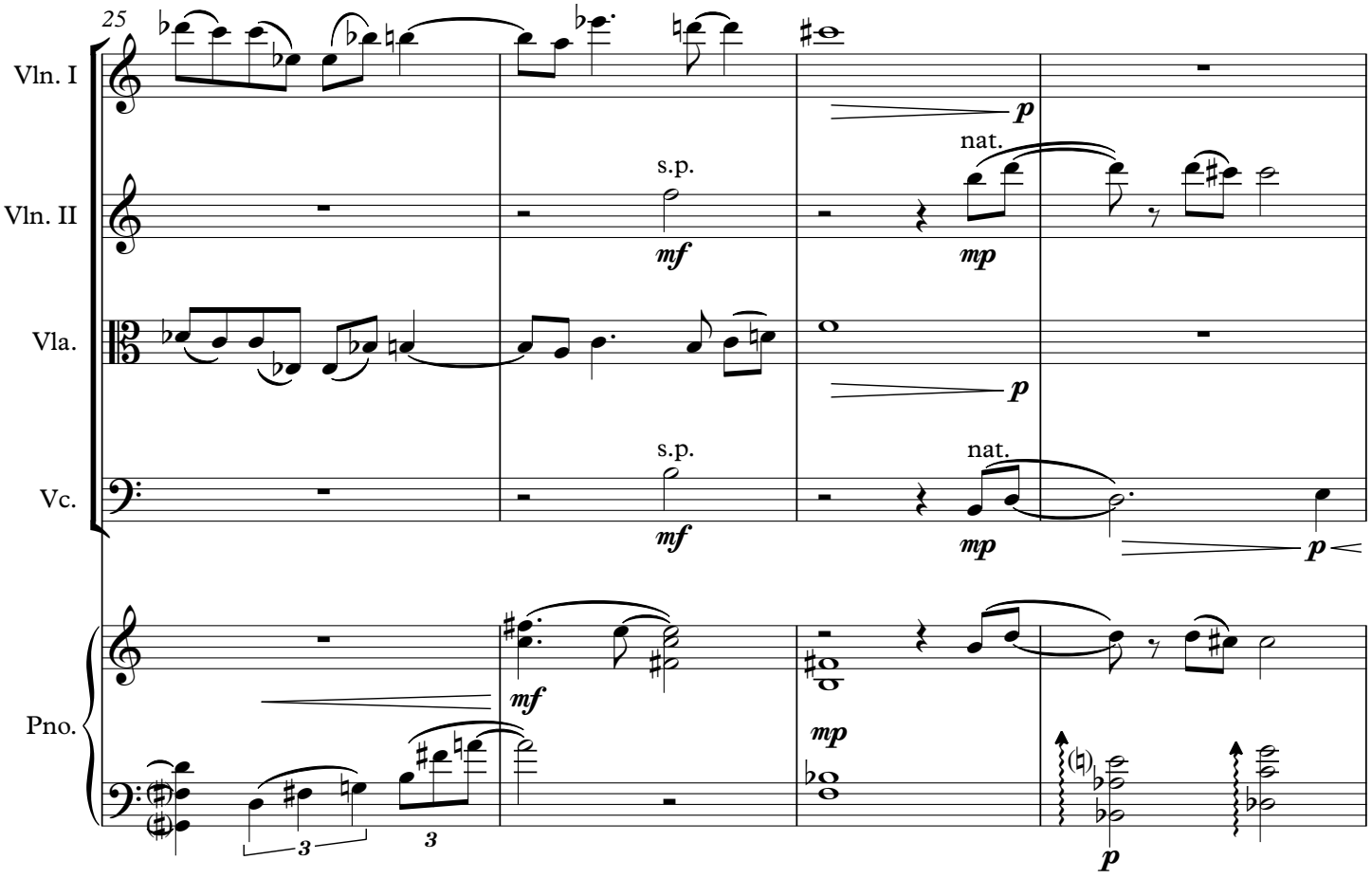

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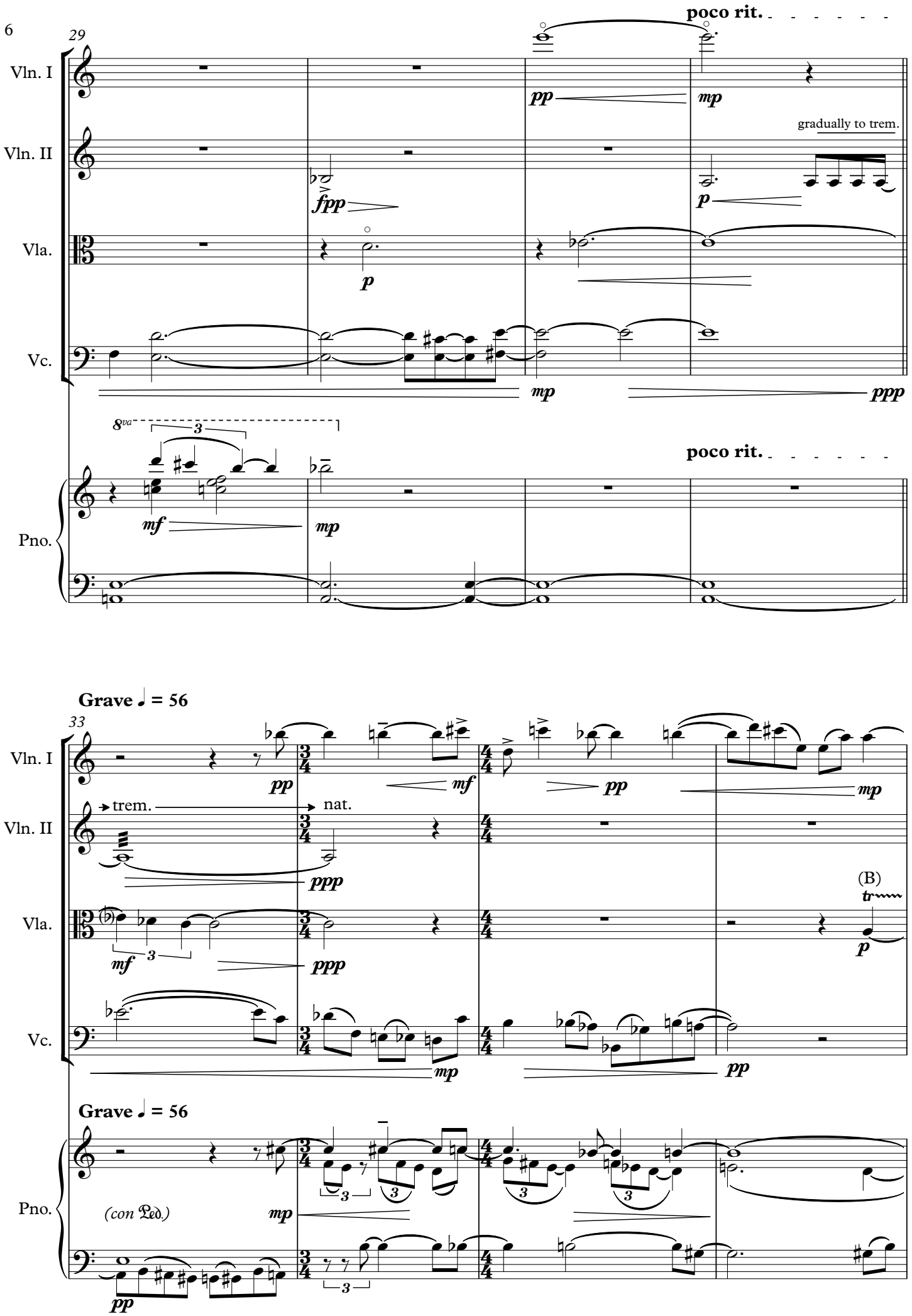

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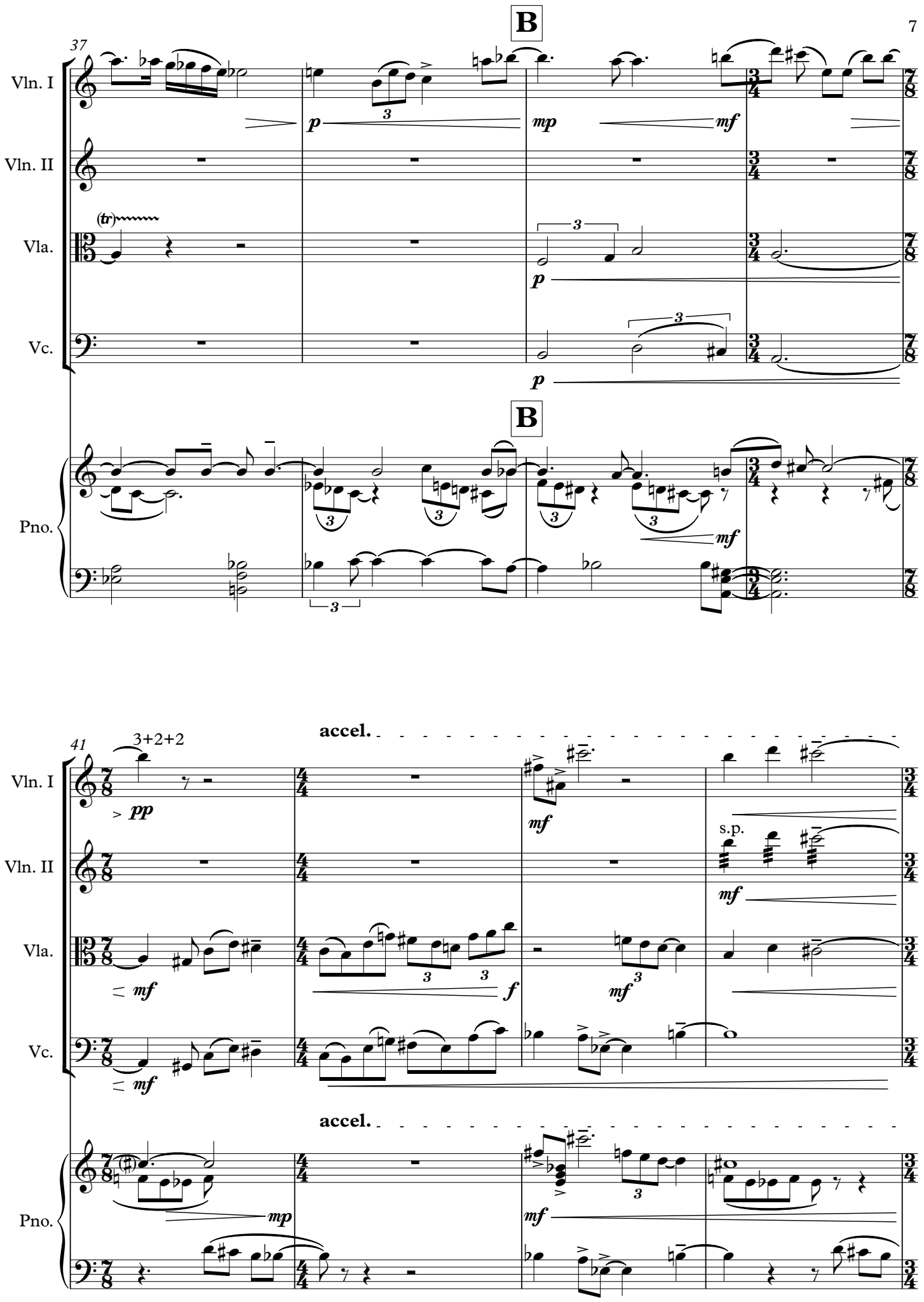

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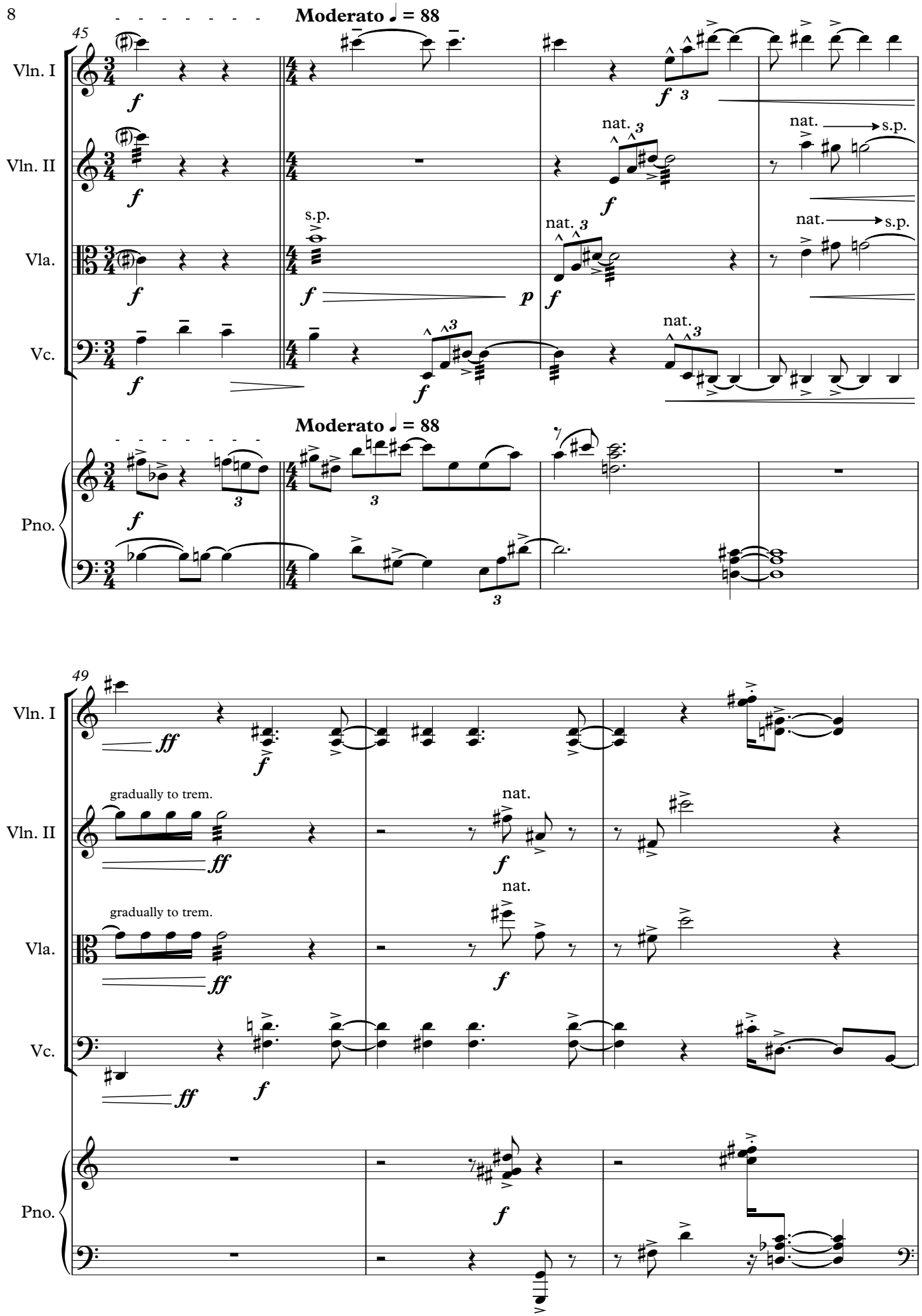

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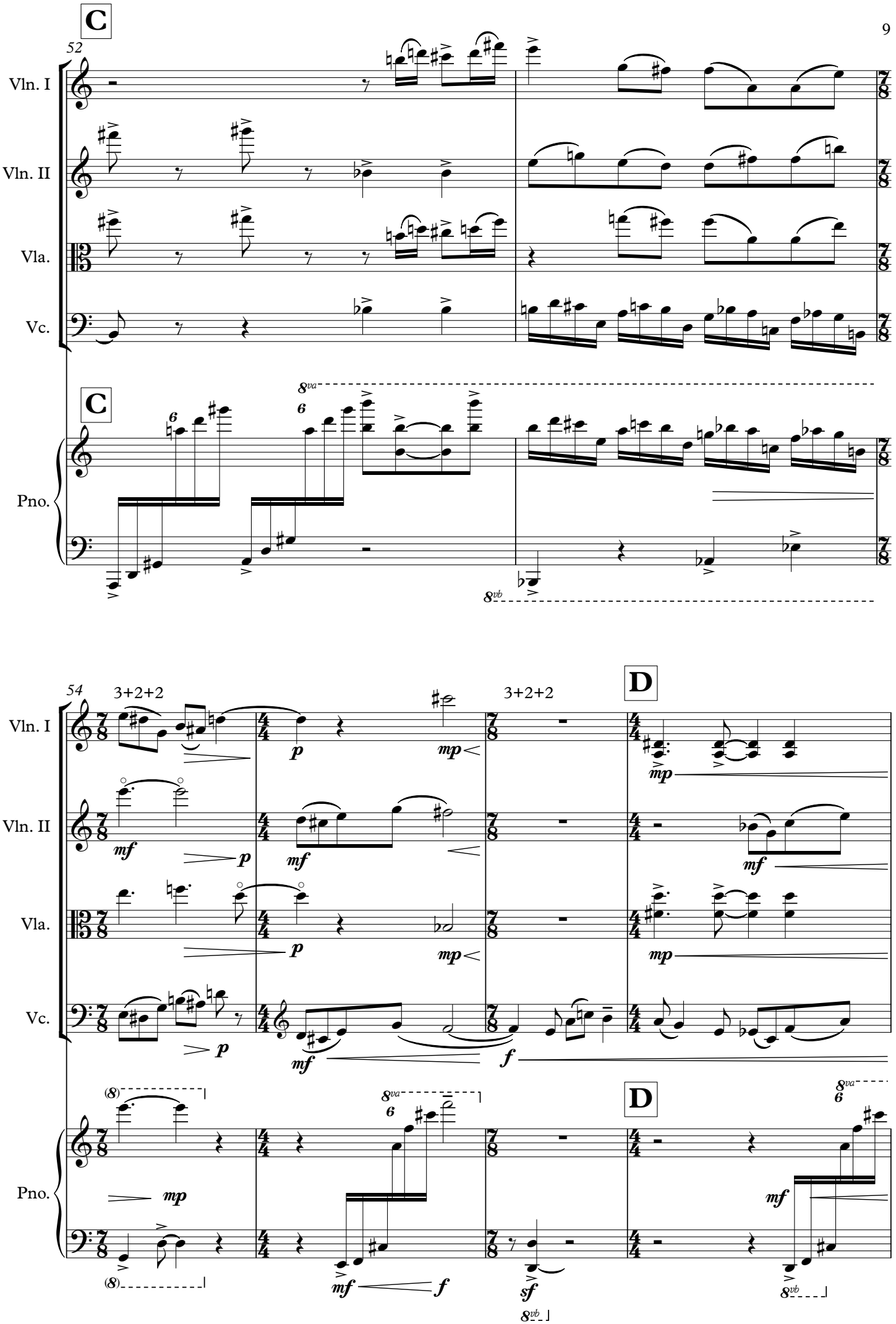

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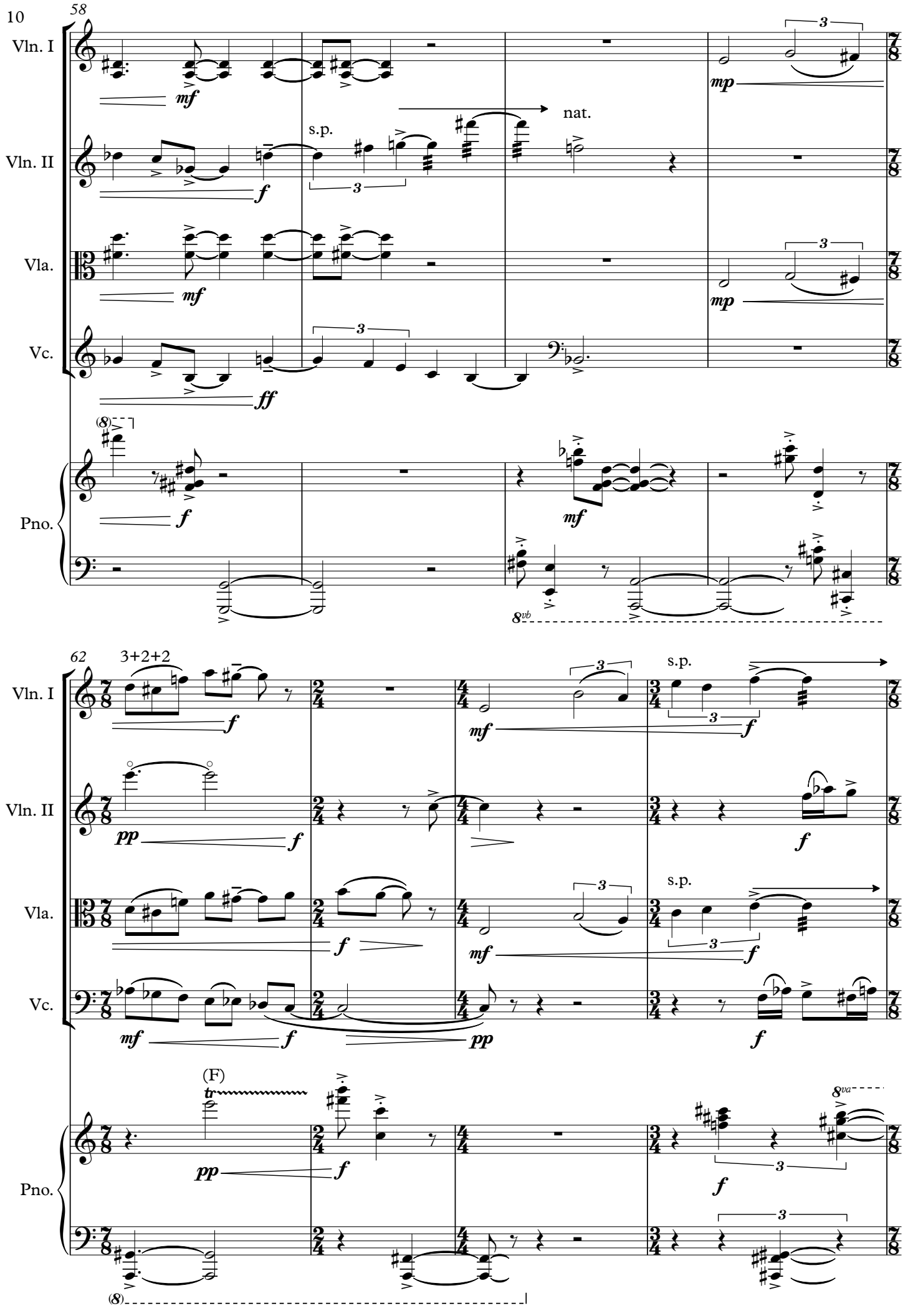

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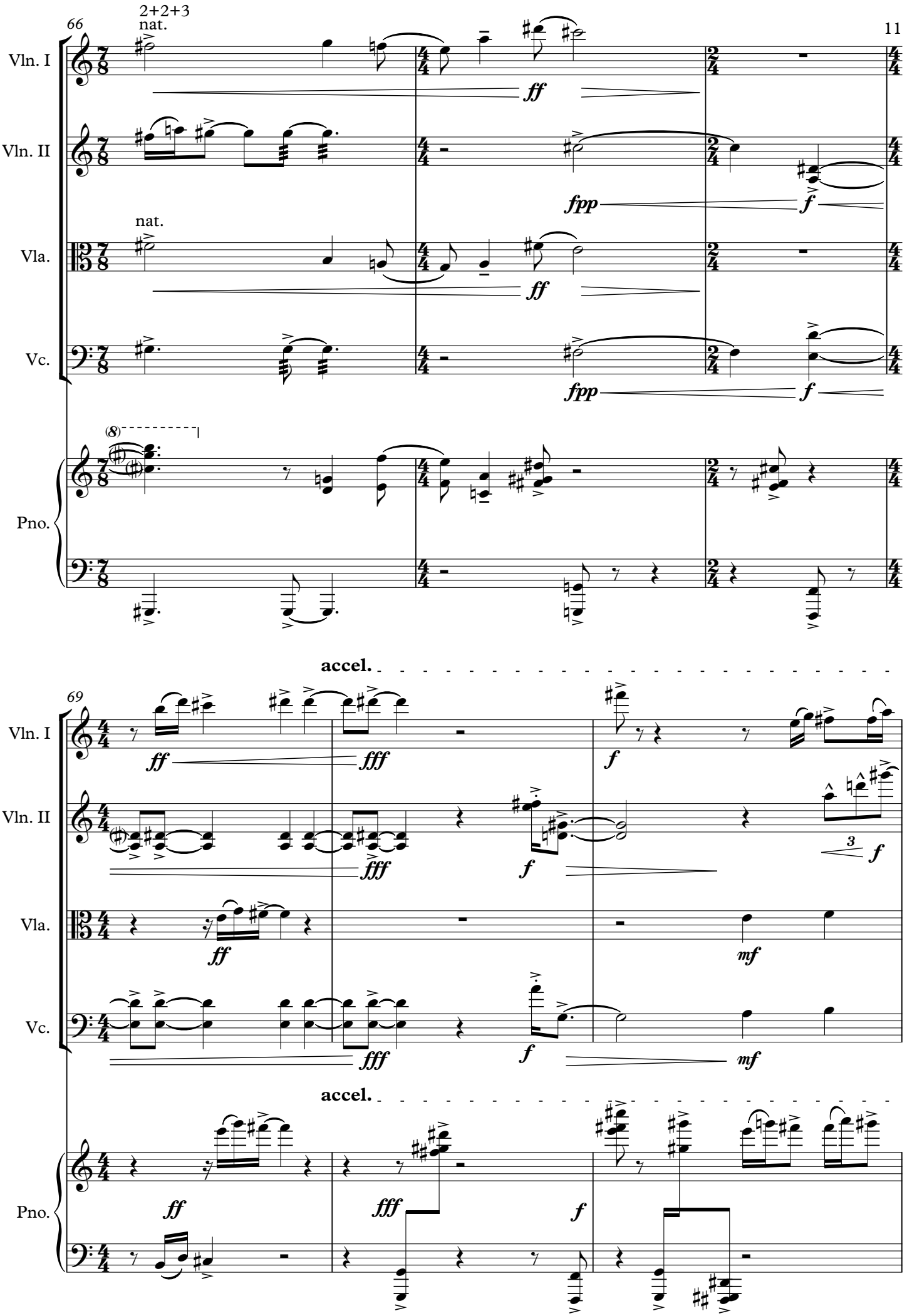

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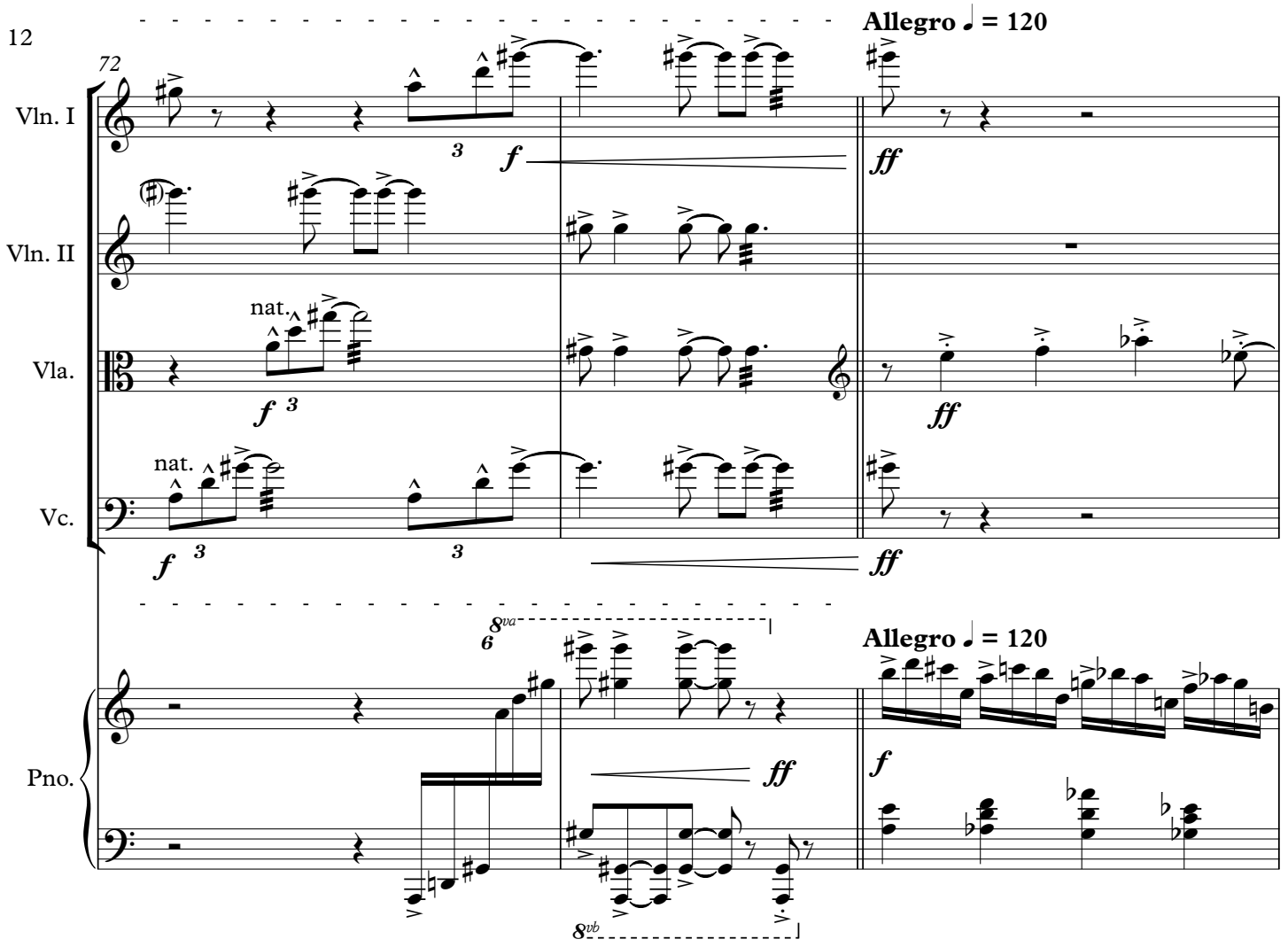

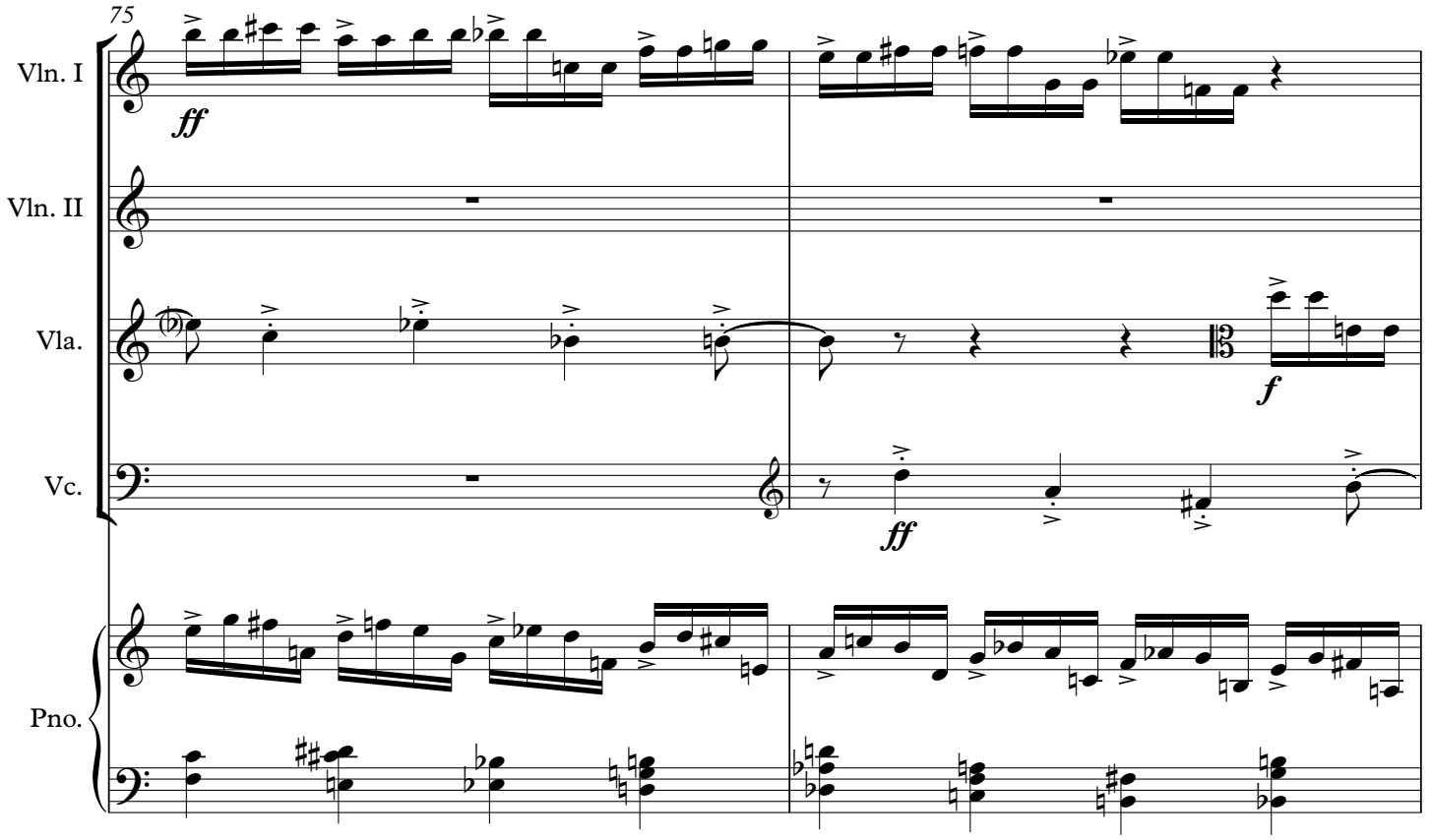

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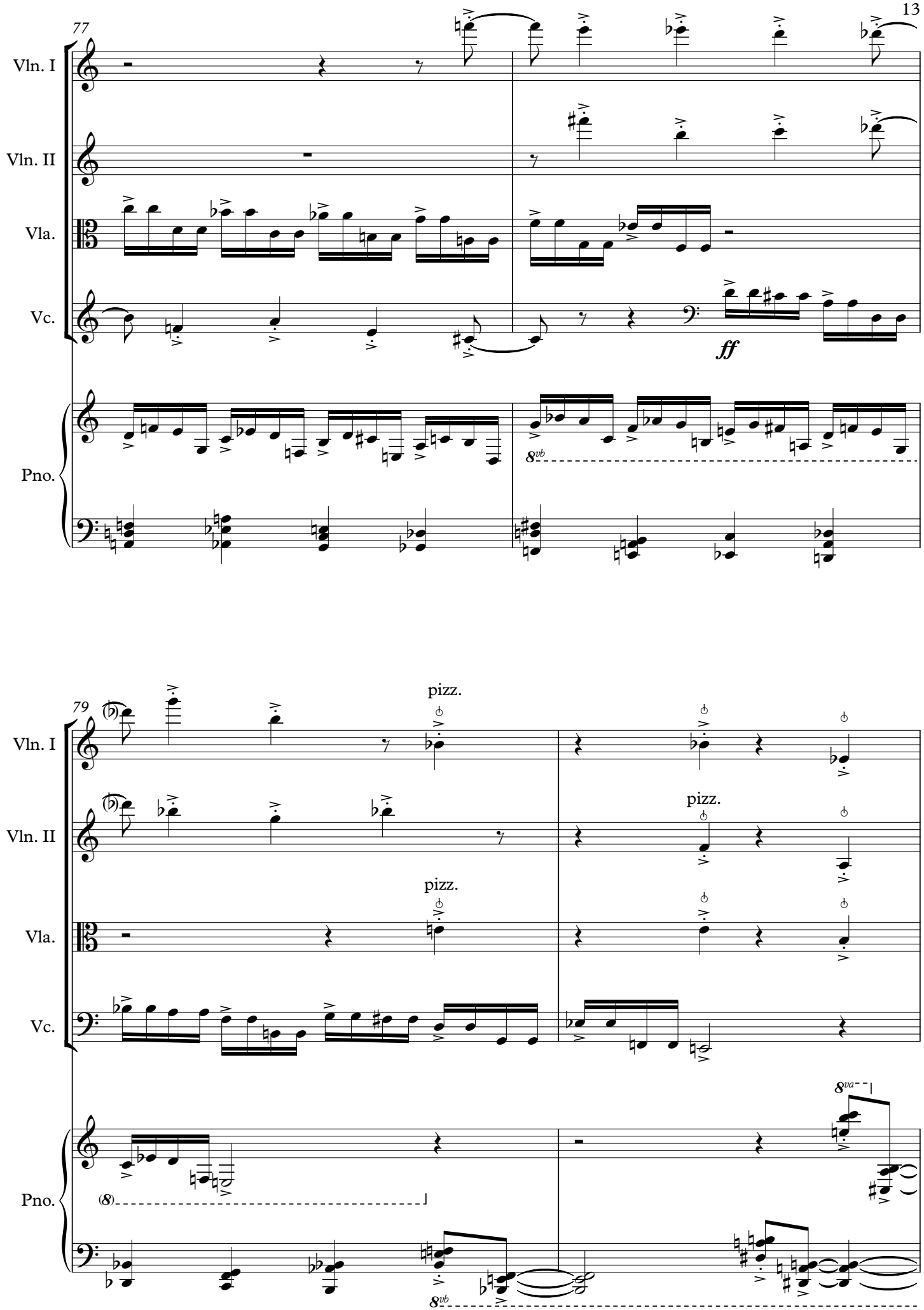

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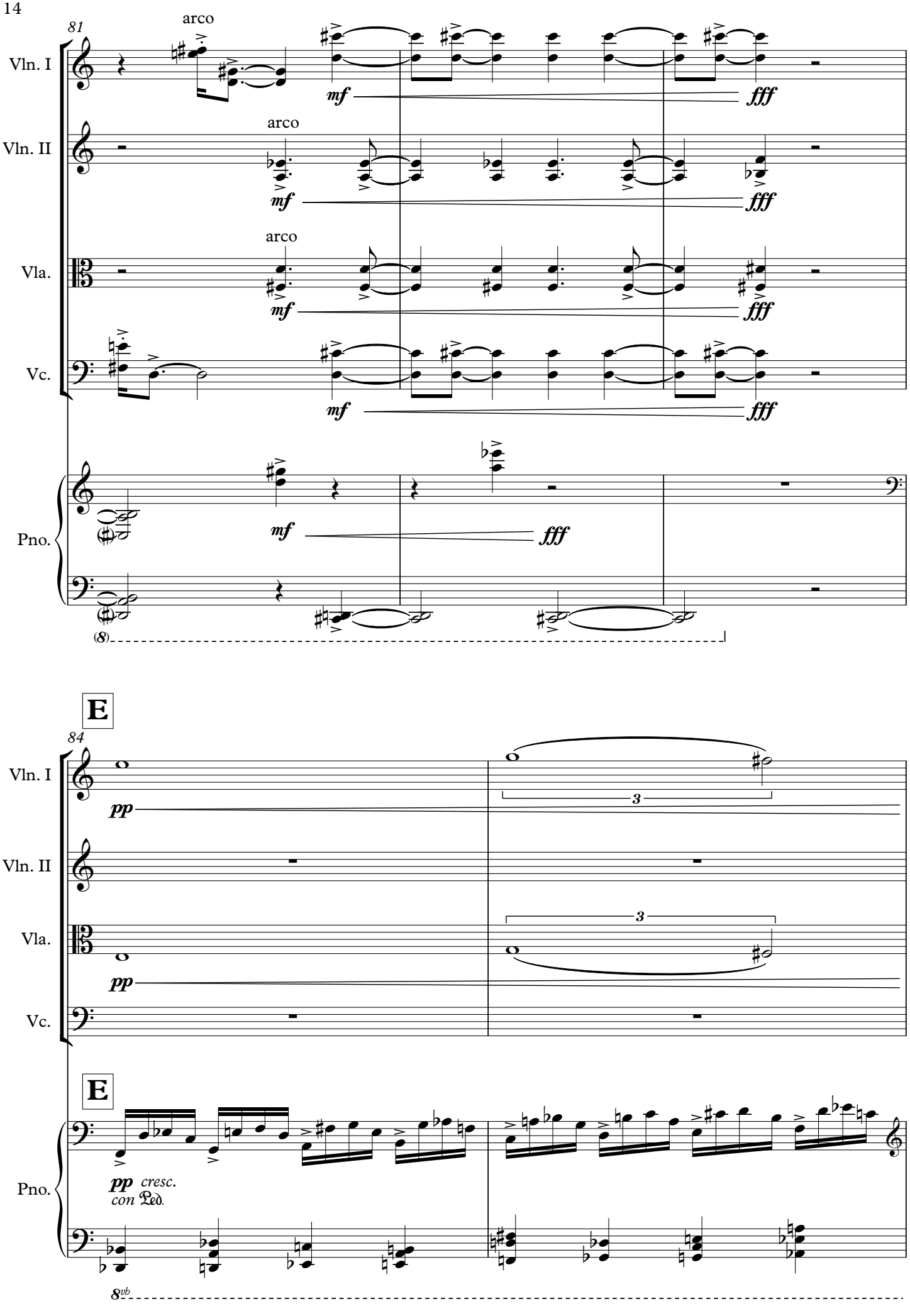

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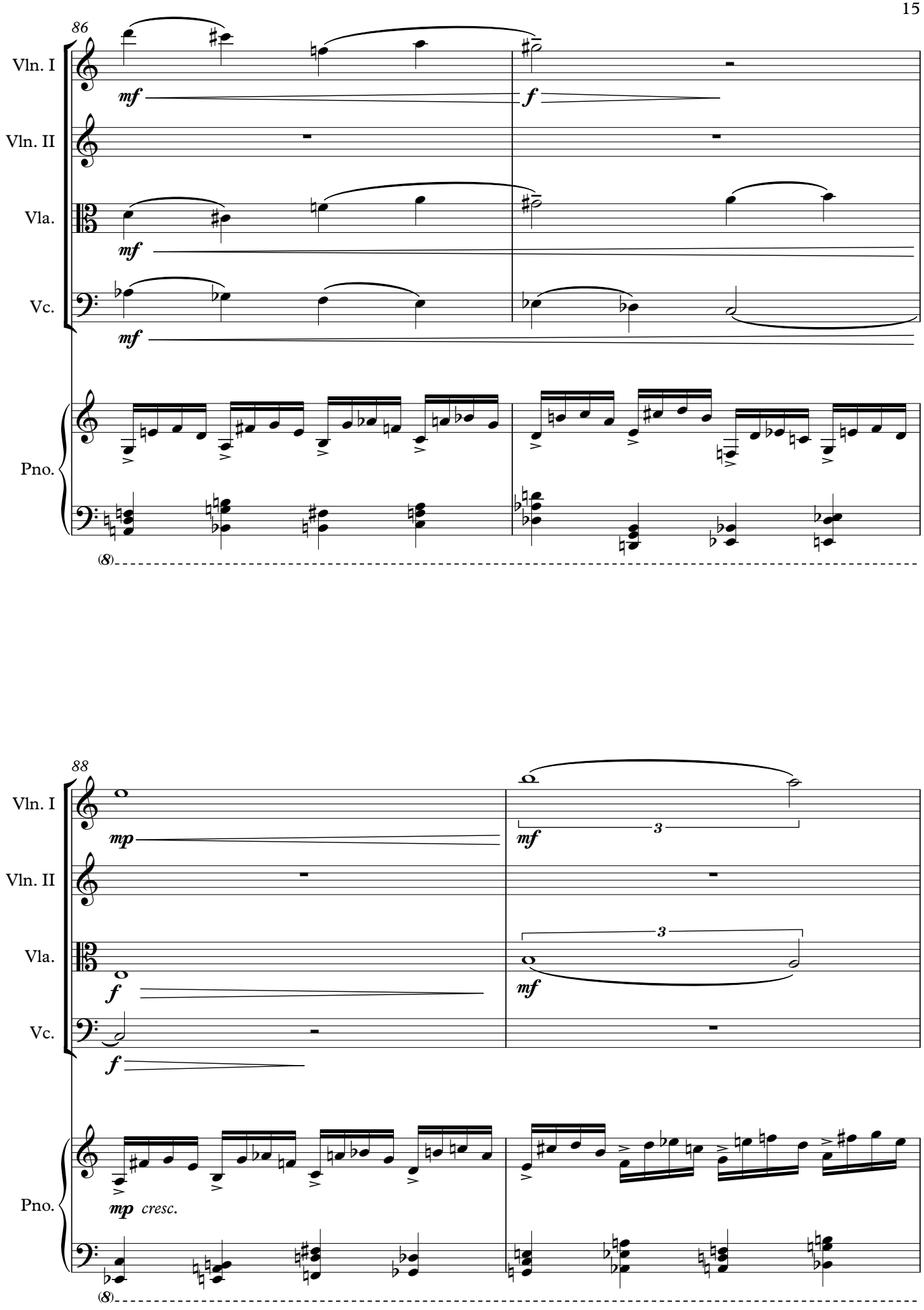

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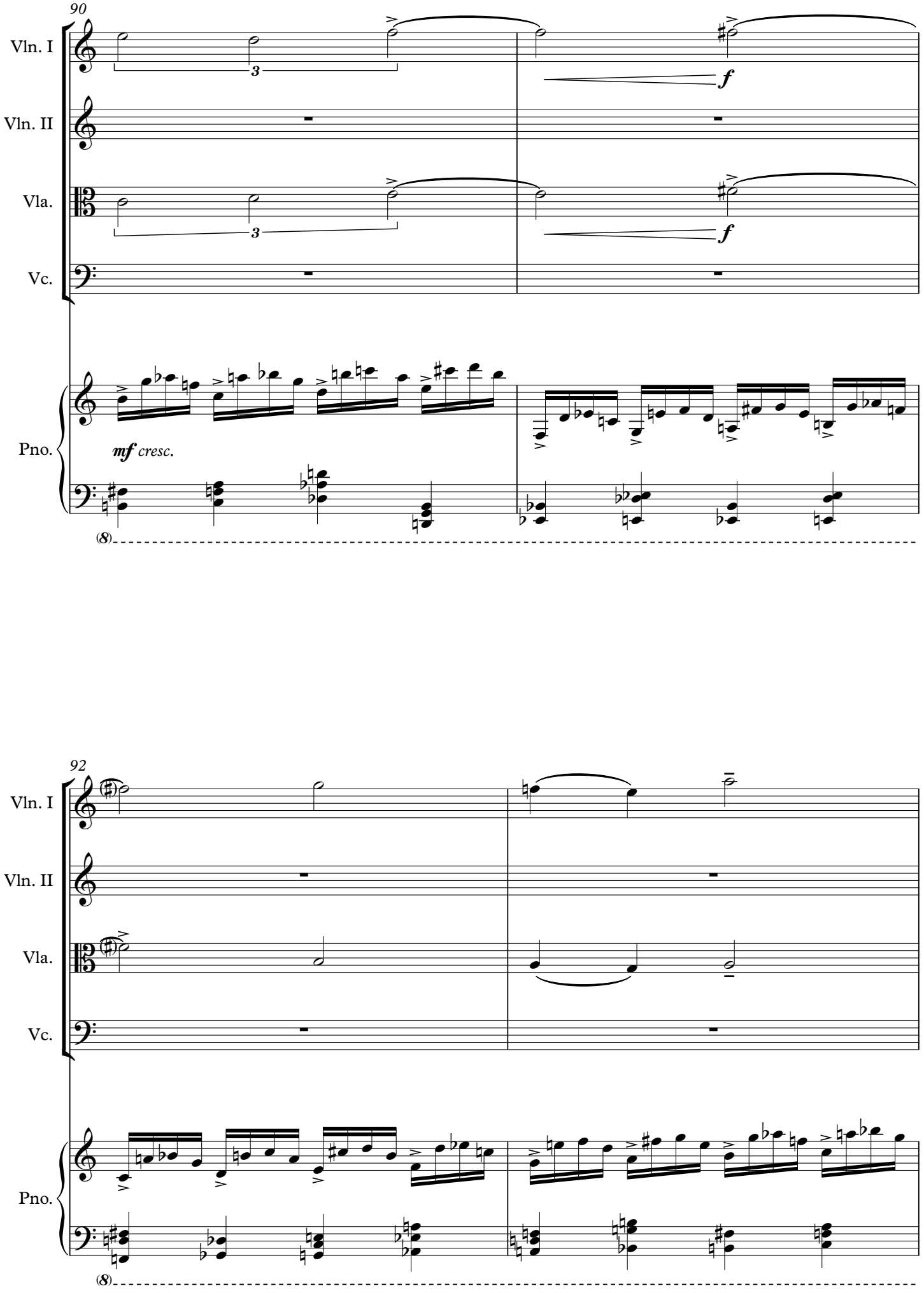

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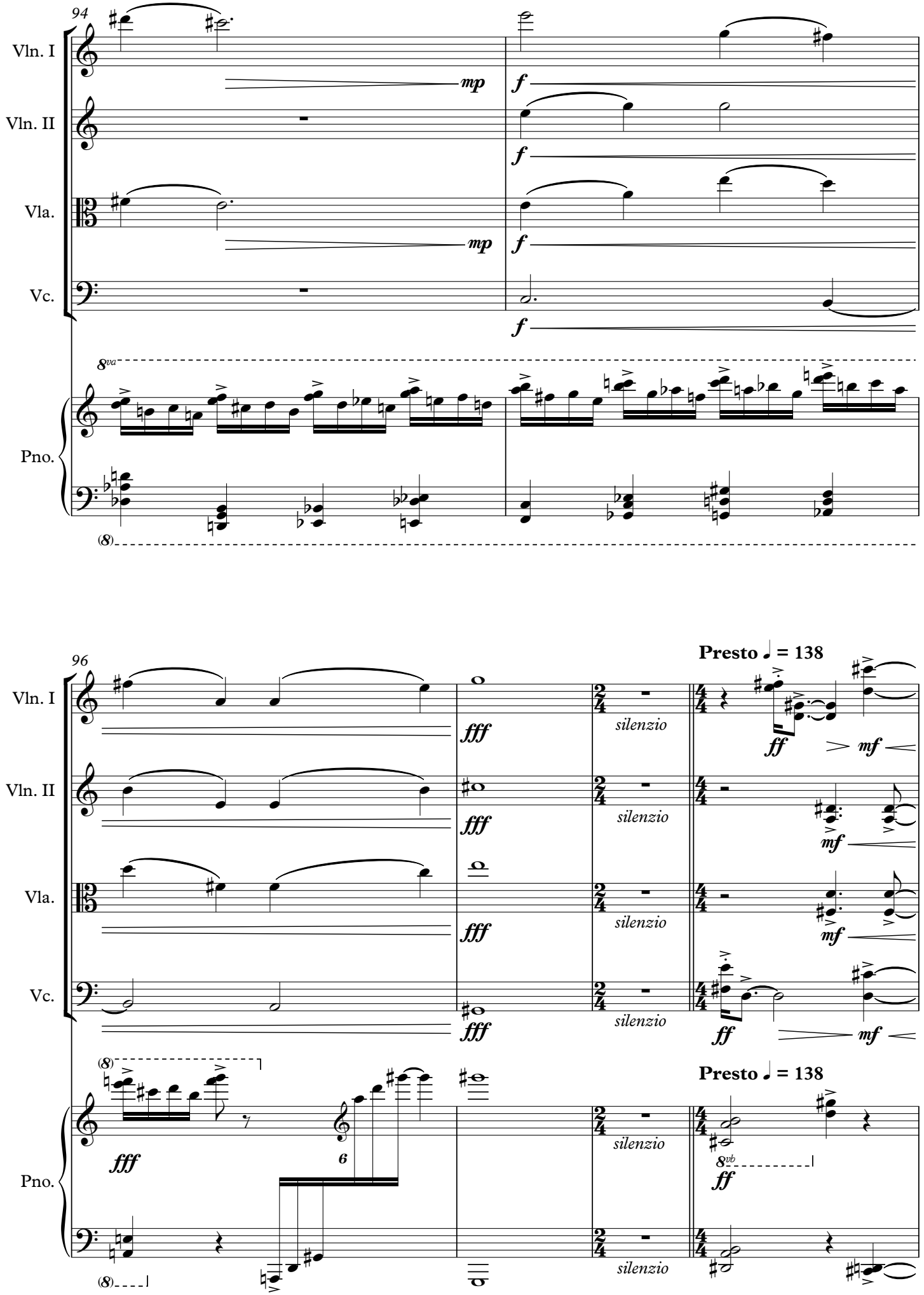

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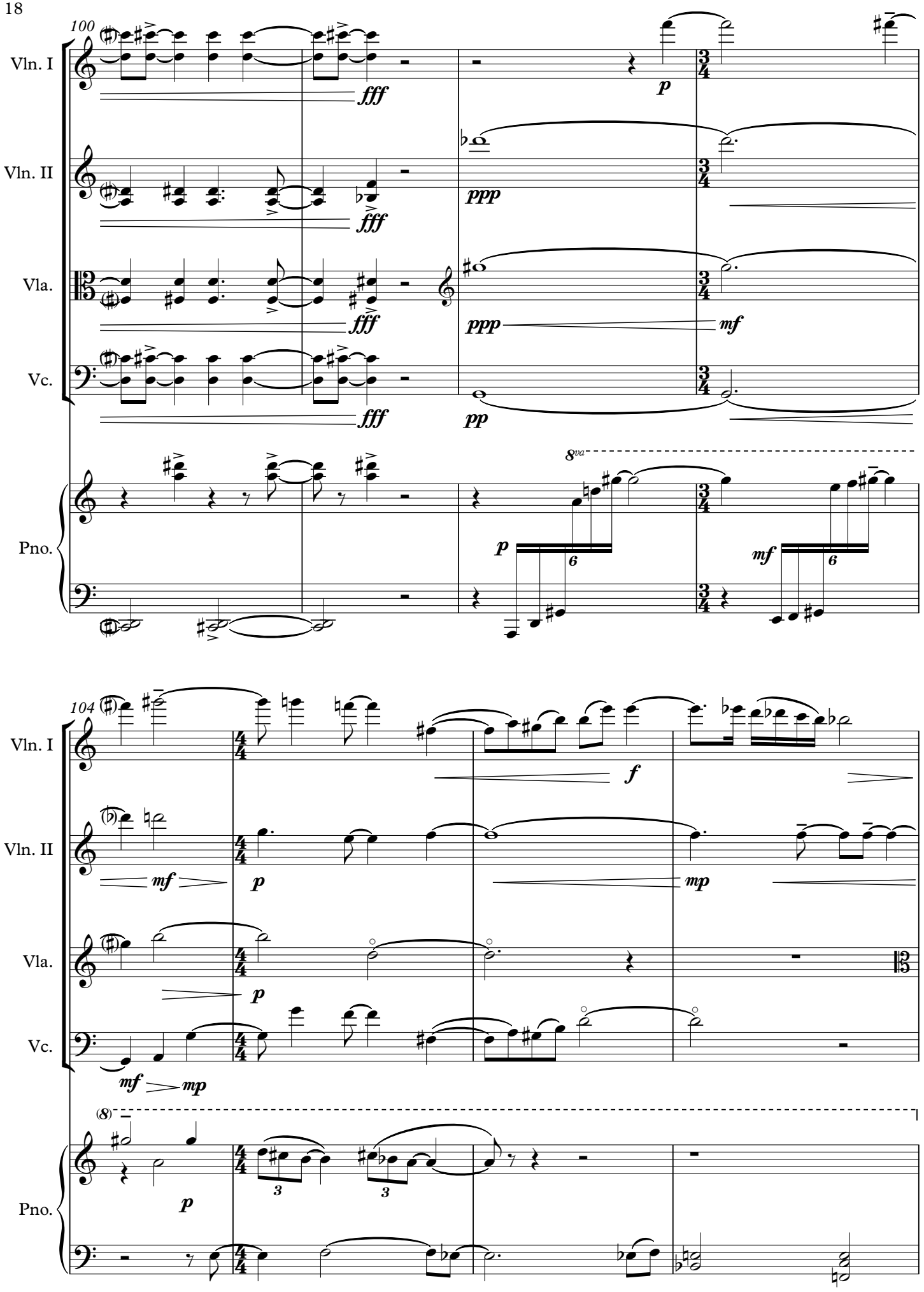

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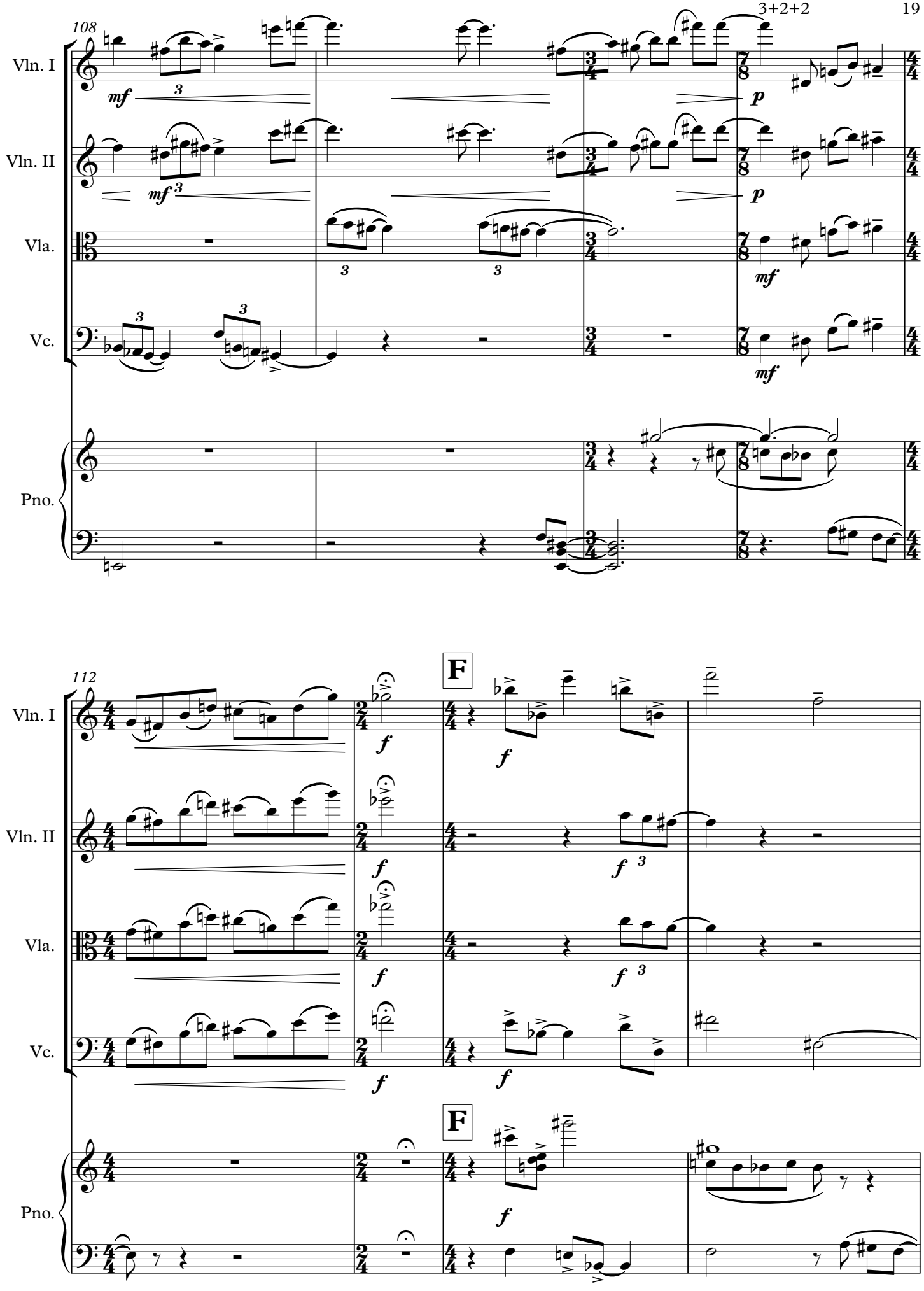
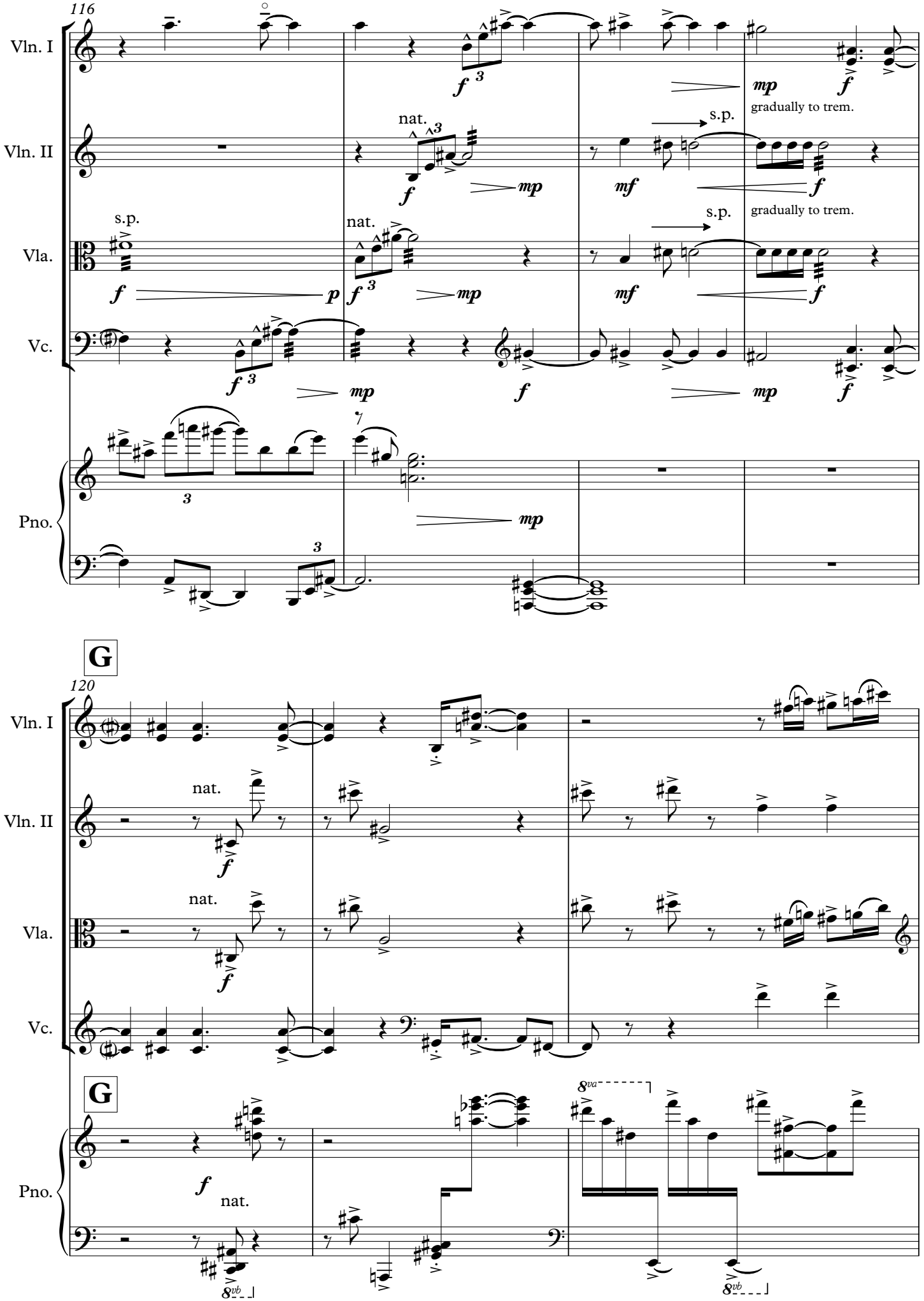

108
Vln. I
Vln. II
Vla.
Vc.
Pno.
mf
p
mf
112
F
f



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123

3+2+2

Vln. I

Vln. II

Vla.

Vc.

Pno.

126

3+2+2

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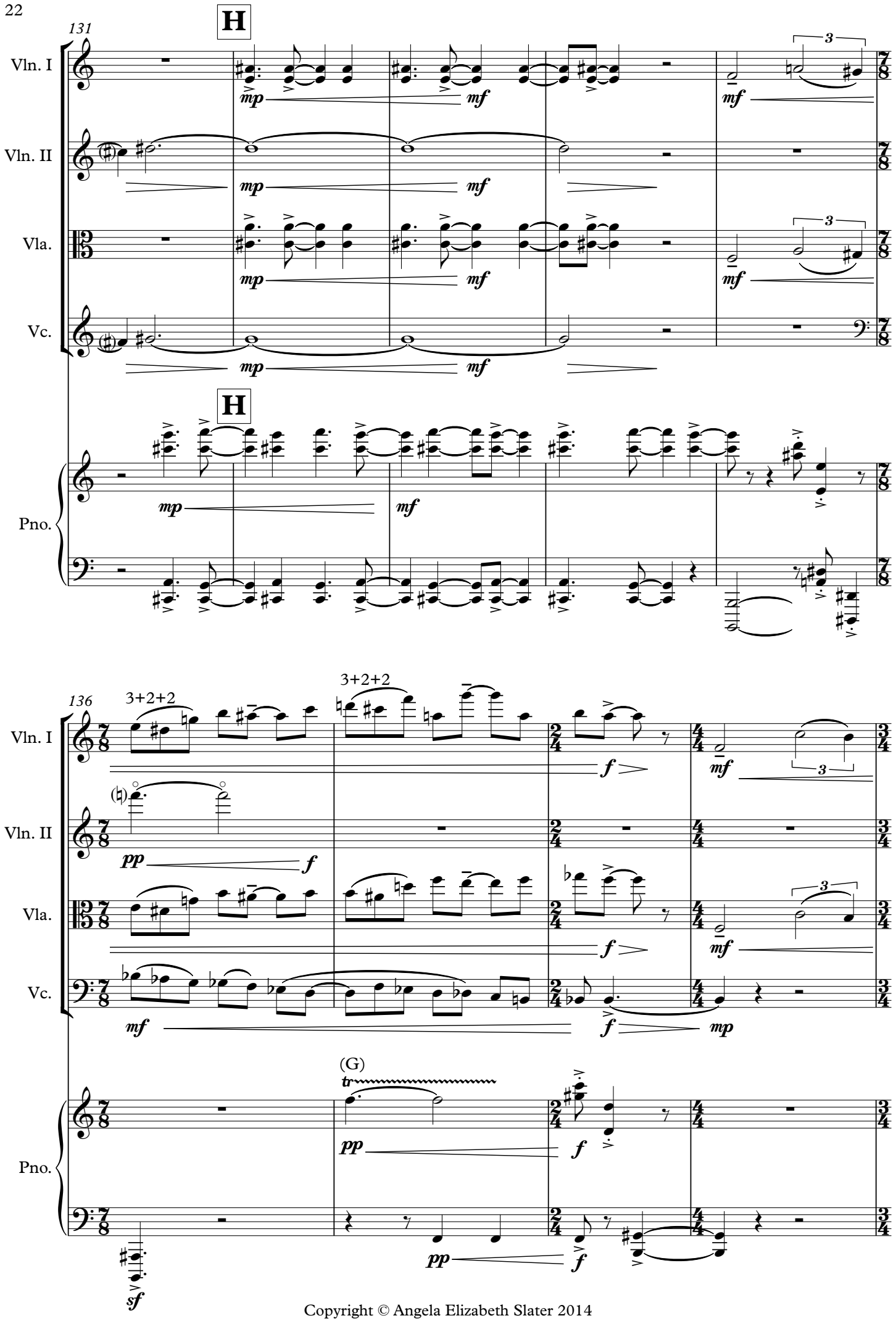

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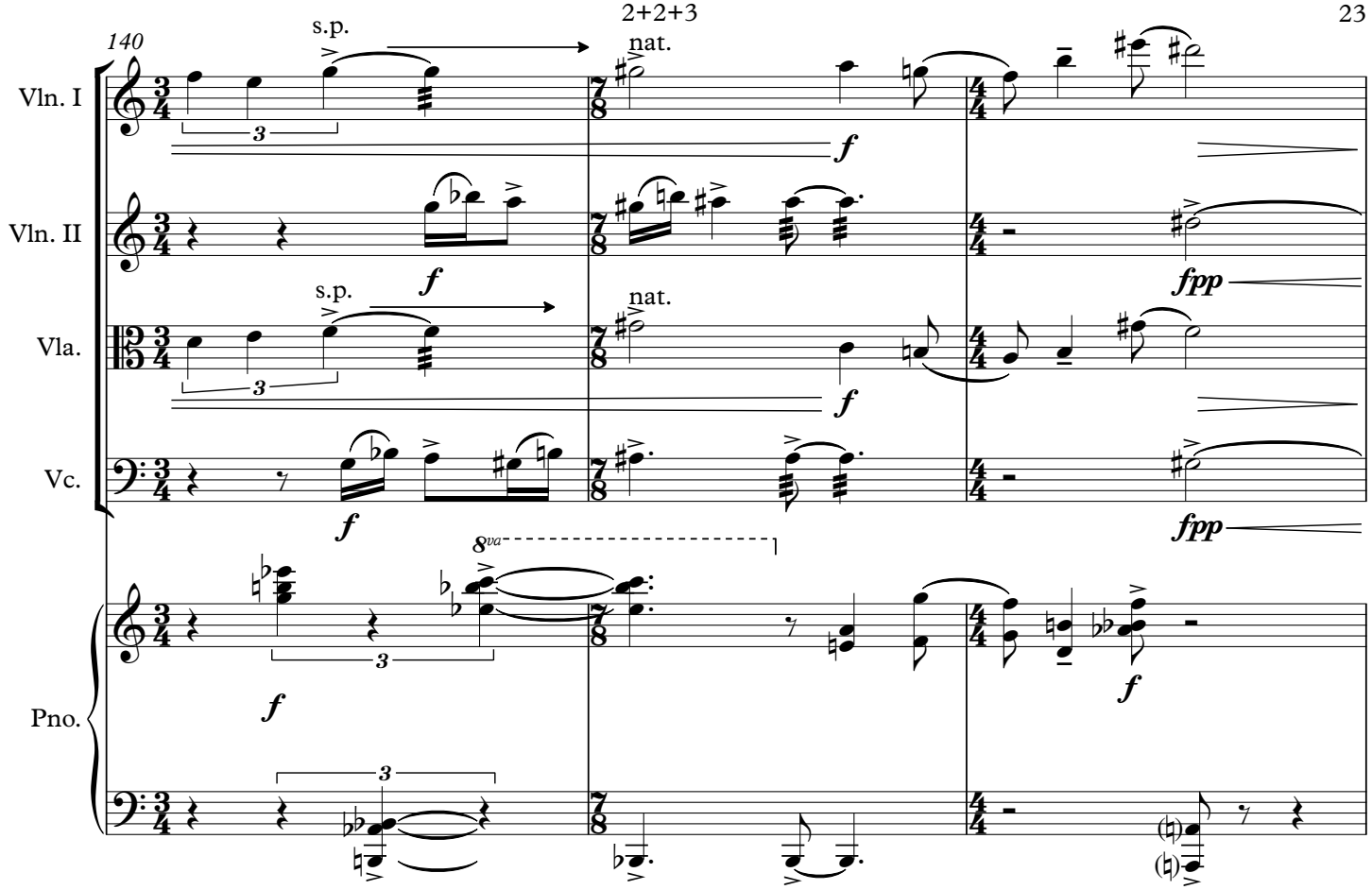

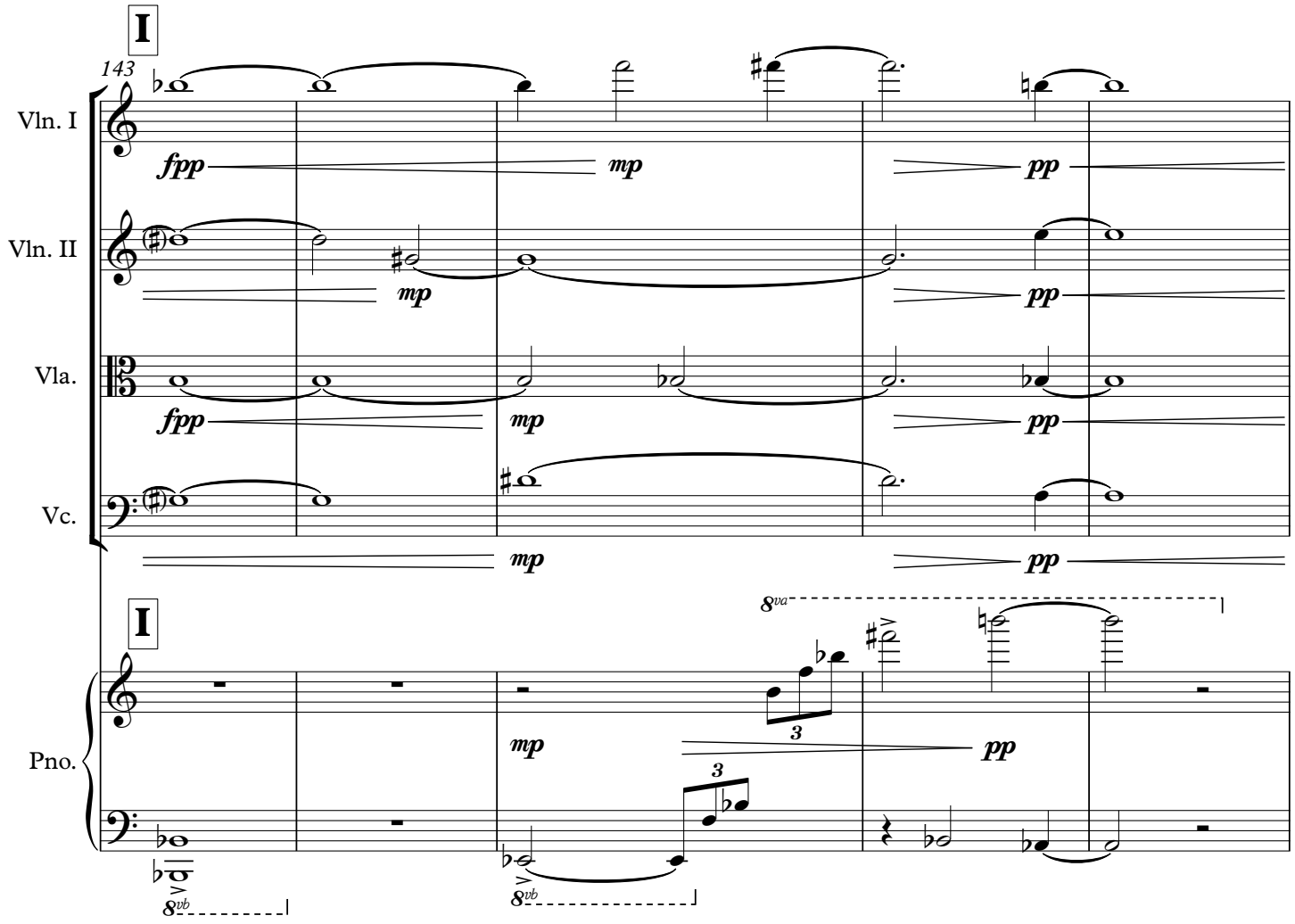

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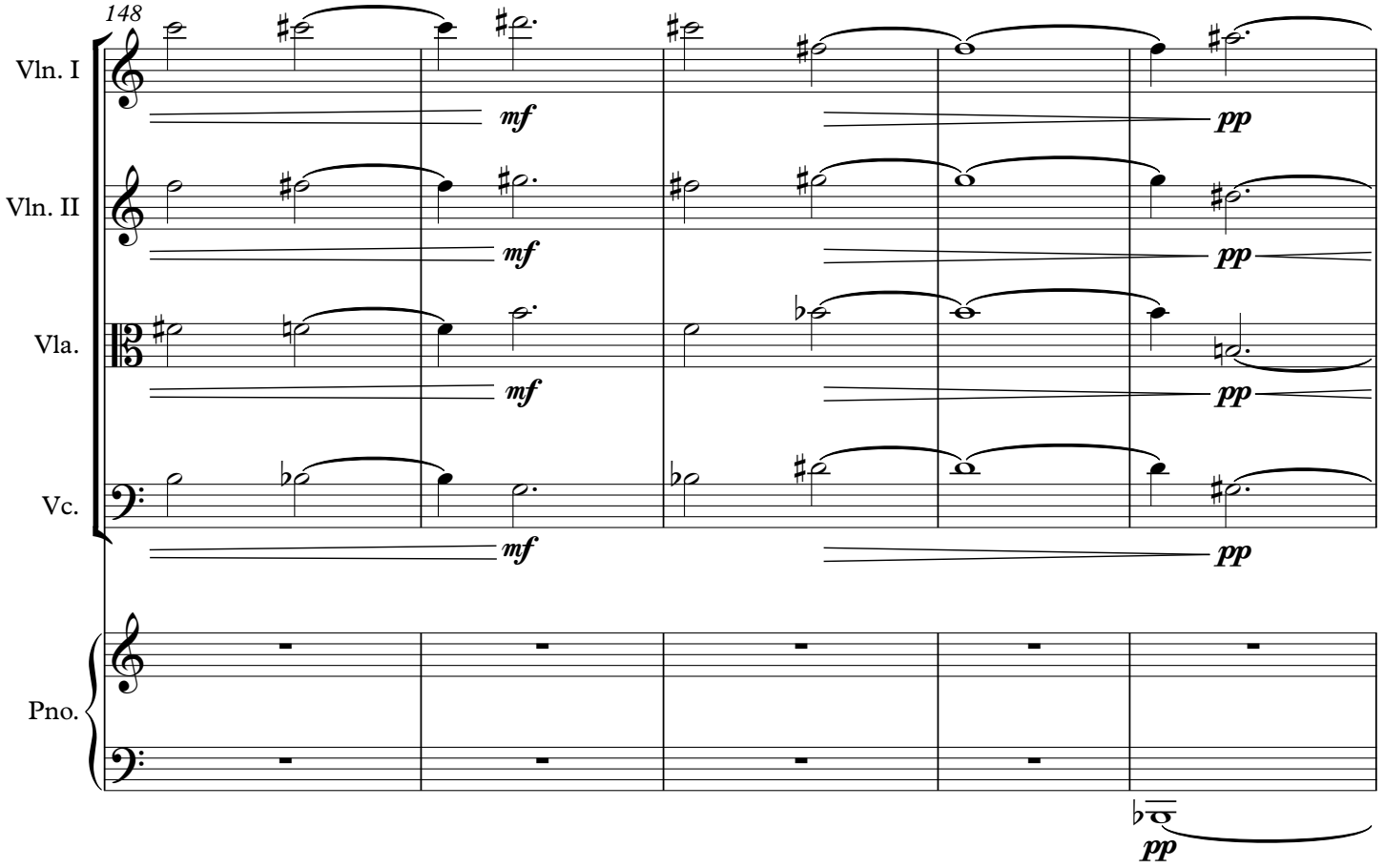

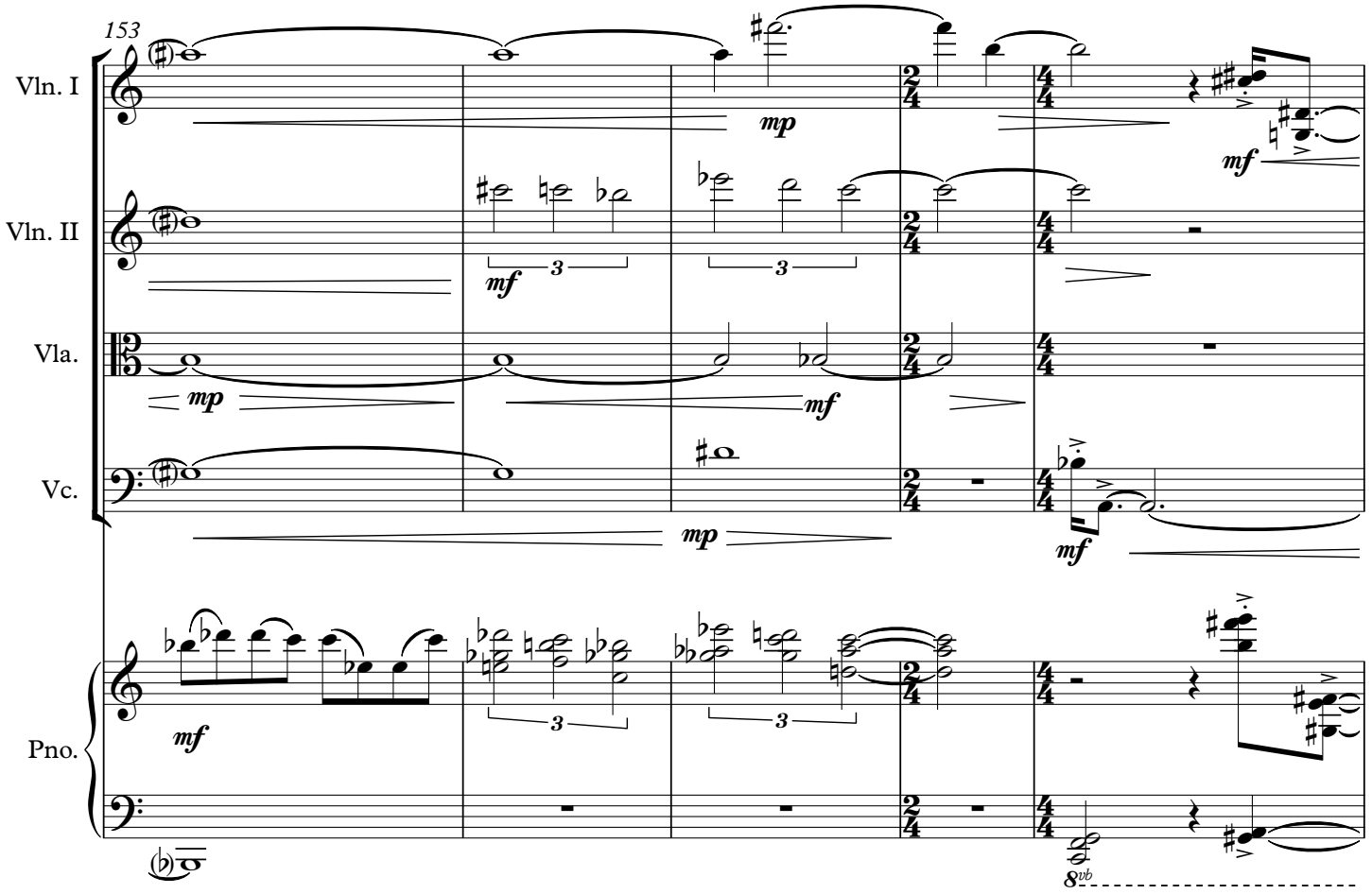

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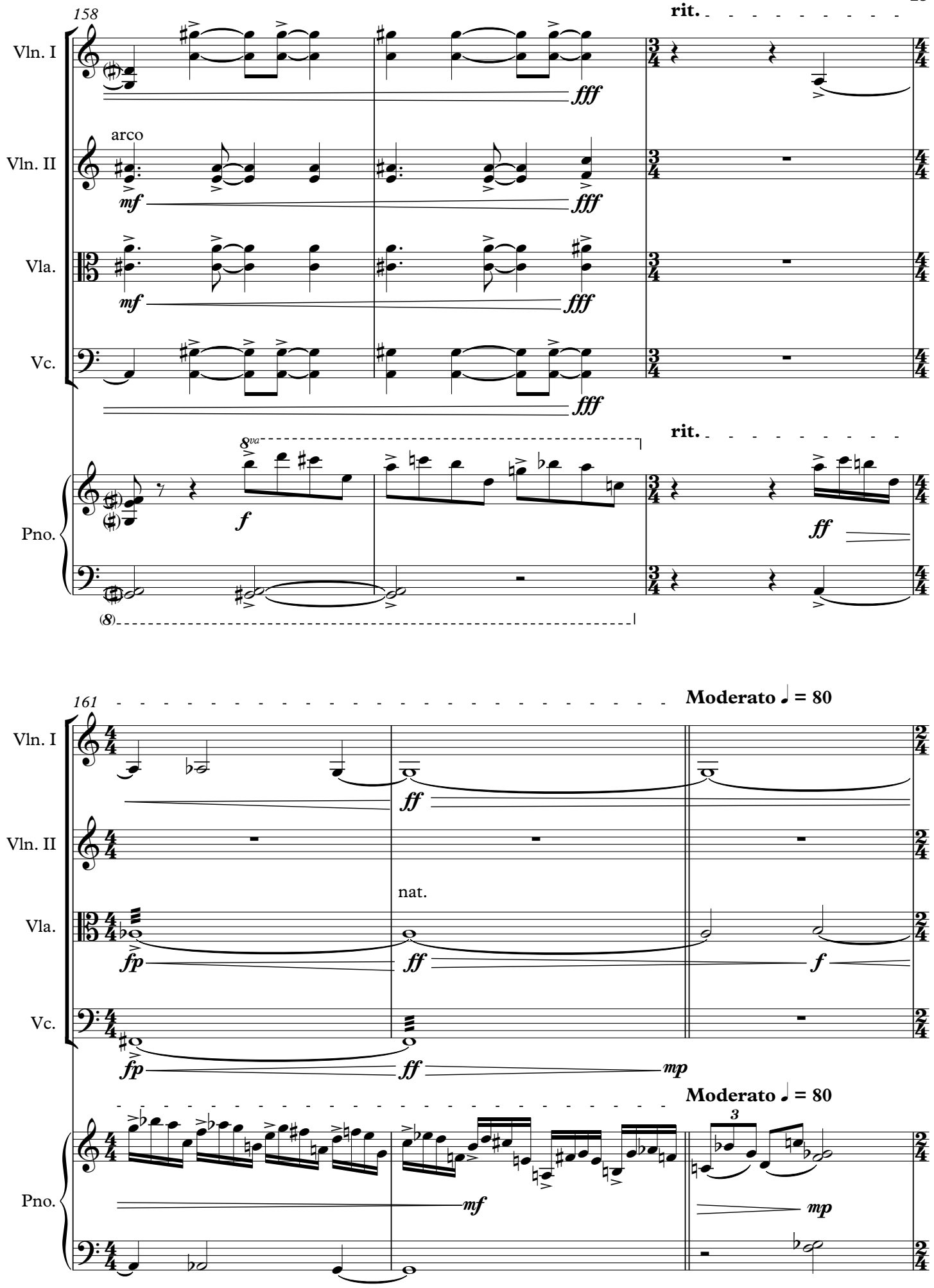

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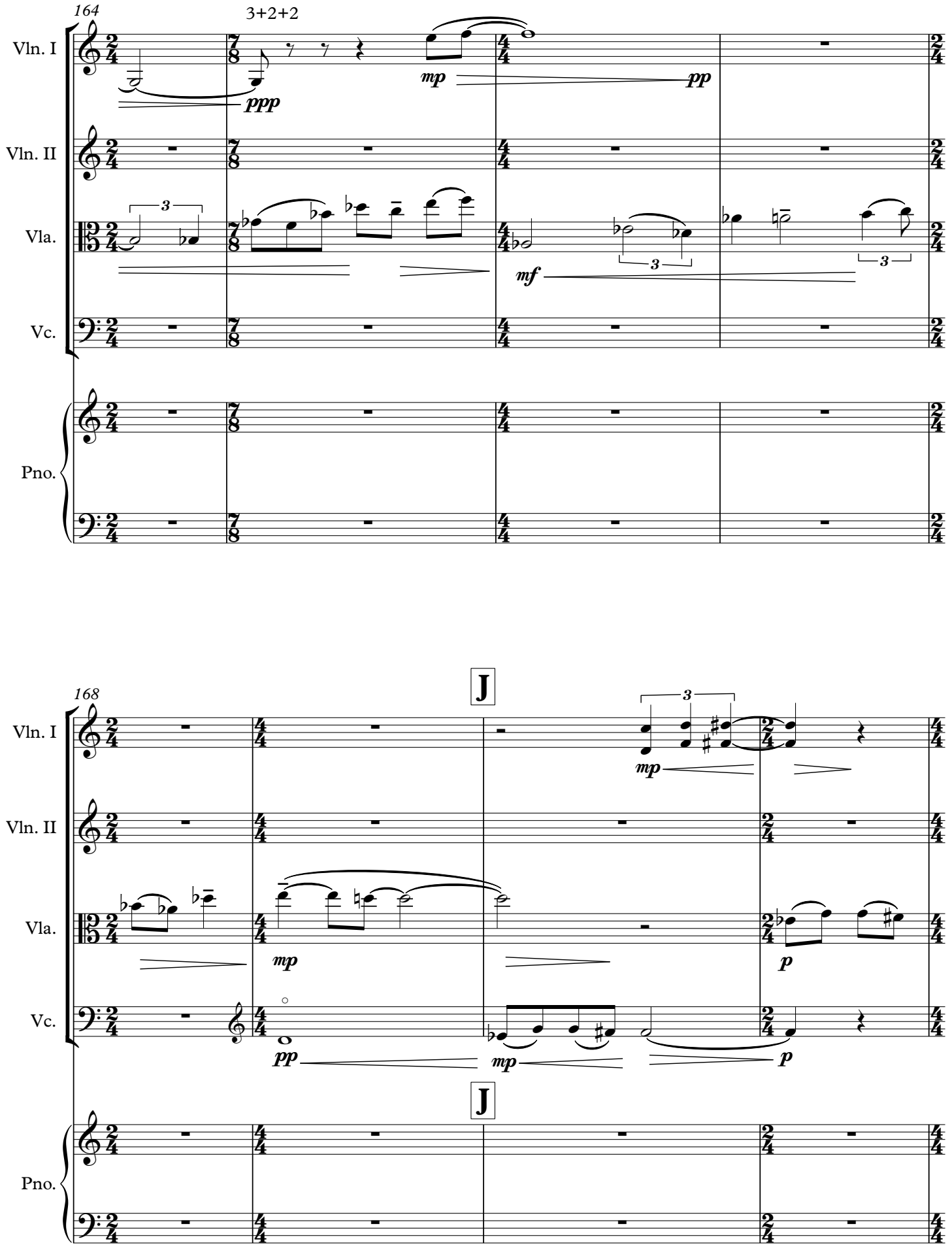

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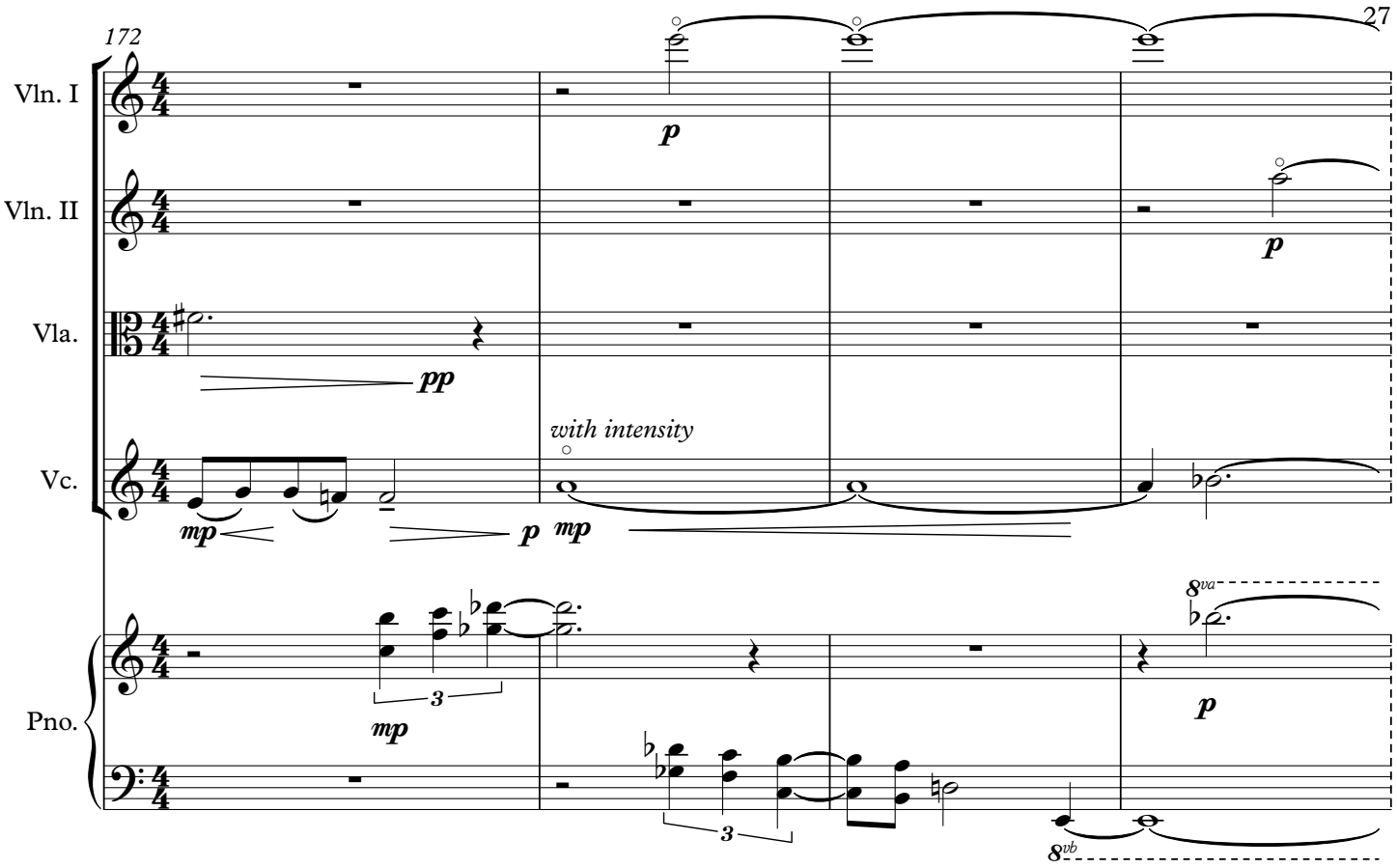

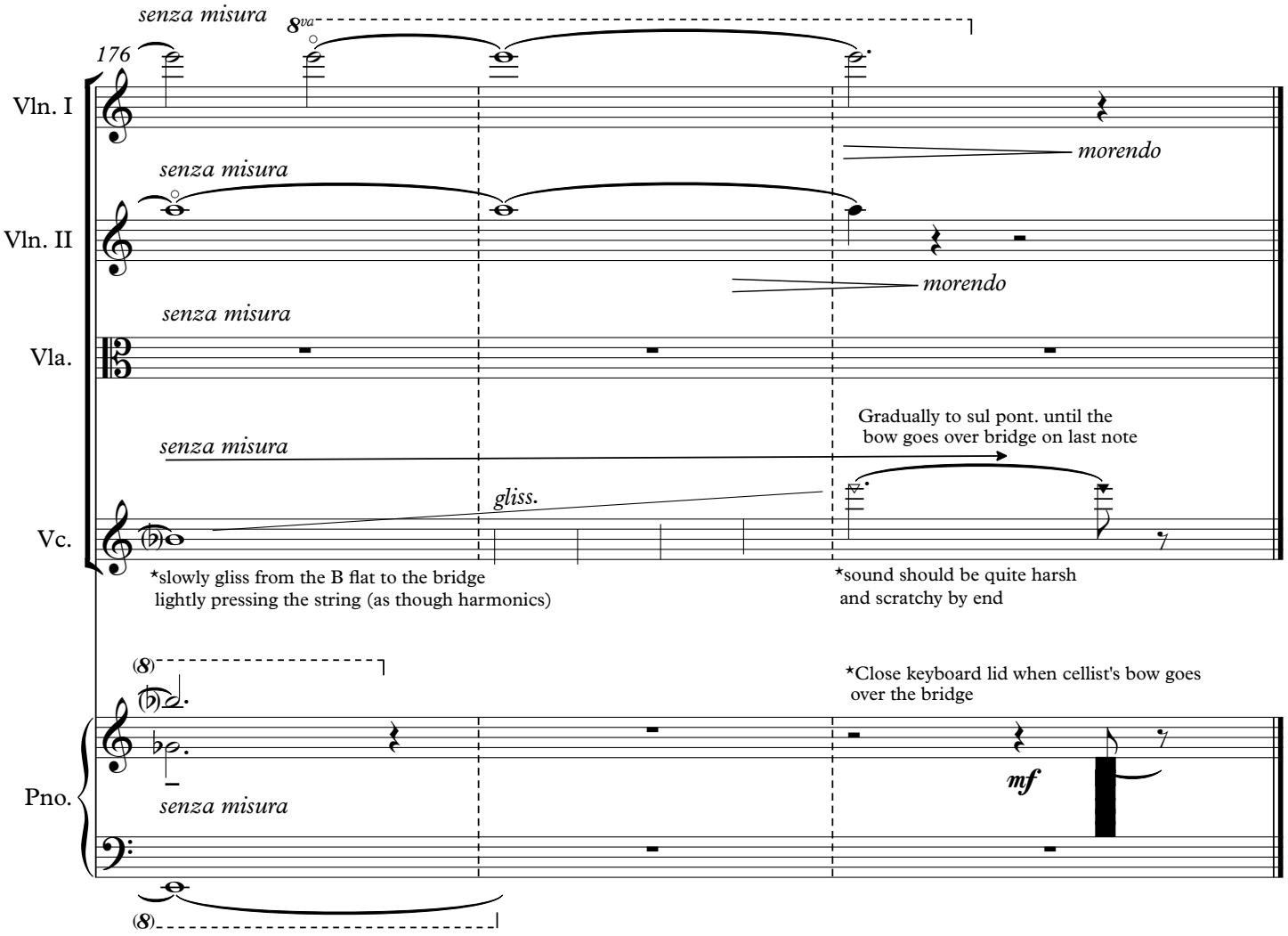

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Roil in Stillness

Ripples and Waves

for orchestra
(2015)

Full Score

Angela Elizabeth Slater

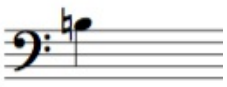
***Roil in stillness (Ripples and Waves)* for orchestra (2015)**

Roil in Stillness is from a series of works that are inspired by the natural world. The music is influenced by imagery linked to roiled, turbulent waters, especially the representation of ripples and waves through different compositional means. The climax of the piece creates an aural representation of ripples reaching a central point, highlighted by a dramatic dissonant chord, before descending away again.

Angela Elizabeth Slater

Scoring:
3 Flutes (2nd and 3rd doubling Piccolo)
3 Oboes (3rd doubling Cor anglais)
3 Clarinets in B♭ (3rd doubling Bass clarinet)
3 Bassoons (3rd doubling Contrabassoon)

4 Horns in F
3 Trumpets in B♭
2 Trombones
Bass Trombone
Tuba

Timpani:
4 drums including pitch: 

Percussion (2 players):
Player 1: crotales (2 octaves required, written: C4 - C6),
whip, 5 woodblocks, bell tree, glockenspiel,
ratchet, guiro, tam-tam, bass drum.
Player 2: 5 woodblocks, glockenspiel, crotales (bow required),
whip, bell tree, tam-tam, guiro.

Harp
Celesta
Strings

The score is notated in C

Note: Throughout the score, piccolo and celesta sound an octave higher than written, glockenspiel and crotales sound two octaves higher than written and contrabassoon and double bass sound an octave lower than written.

Duration c. 11'

Performance notes:

1) Sul ponticello and sul tasto are abbreviated in most cases to s.p. and s.t. respectively.

2) Nat → Sul pont.: gradually move from normal position to bowing near the bridge (and vice versa)

3) Nat → Trem.: gradually introduce tremolo (or vice versa)

4) Nat → Trill: gradually introduce trill (or vice versa)

5) Note in bracket above trill (i.e (A)) is the note to trill to.

6) Dynamic markings are in the Celesta part to indicate character and shaping.

7) When 'unmeasured' - - → appears above demisemiquavers the player should represent the rhythm in a free manner.

8) Repeated notes with slur above are to be given a pulsation quality.

Roil in Stillness

Ripples and Waves

Angela Elizabeth Slater

Con brio ♩ = c. 112

A

Flute 1

Flute 2 (dbl. picc.)

Piccolo

Oboe 1

Oboe 2

Oboe 3

Clarinet in B♭ 1

Clarinet in B♭ 2

Clarinet in B♭ 3 (dbl. bass cl.)

Bassoon 1

Bassoon 2

Bassoon 3 (dbl. contra.)

Crotales

Percussion I

Wood Blocks

Percussion II

Harp

D♮ C♮ B♭ : E♮ F G A

B♮ C♯

Celesta

Con brio ♩ = c. 112

A

solo

Violin solo

gli altri: divisi a 2

Violin I

divisi a 2

Violin II

Viola

Violoncello

Contrabass

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9

Fl. 1

(unmeasured)

Fl. 2

(unmeasured)

Picc.

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Cl. 2

Bsn. 1

Timp.

Crotales

To Whip

Perc.I

Whip

Glockenspiel

To Wood Blocks

Perc. II

Wood Blocks

To Glock.

Hp.

Cel.

unis.

Vln. I

tutti div. a 2

(unmeasured)

s.p.

Vln. II

divisi a 3

divisi a 2

nat.

Vla.

arco

Vc.

Cb.

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15

4

B

flz.

(nat.)

(G)

(unmeasured)

(unmeasured)

Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Cl. 1

Cl. 2

Cl.3

Hn. 1

Hn. 2

Tpt. 1

Tpt. 2

Timp.

Wood Blocks

Perc. I

(Whip)

To W.B.

Glockenspiel

Perc. II

Hp.

D♯ C♮ F♯ A♯

Cel.

Ped.

B

(unmeasured)

solo

Vln.S

Vln. I

div. a 3

nat.

div. a 2

s.p.

Vln. II

div. a 3

div. a 4

nat.

pizz.

arco

s.p.

Vla.

div. a 2

unis.

Vc.

Cb.

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22

C

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Cl.3
Bsn. 1
Bsn. 2
Bsn. 3
Hn. 1
Hn. 2
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc I.
Perc II
Hp.
Cel.
Vln.S
Vln. I
Vln. II
Vla.
Vc.
Cb.

To Whip
To Crot.
(outside players)
(unmeasured)
div. a 2
pizz.
arco
unis.
divisi a 2
s.p.
(G)

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28

D

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Bsn. 1
Bsn. 2
Bsn. 3
Timp.
Perc. I
Perc.II
Hp.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

Whip
To W.B.
Wood Blocks
Bell Tree
Crotales
tutti div. a 2
arco
pizz.

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33

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Cl.3
Bsn. 1
Bsn. 2
Bsn. 3
Hn. 1
Hn. 2
Hn. 3
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc.I.
Perc.II
Crotales
Hp.
C♯ F♮ A♮
Cel.
Vln. I
unis.
div. a 2
Vln. II
unis.
(arco)
div. a 2
Vla.
(arco)
Vc.
(arco)
Cb.

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Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Cl.3
Bsn. 1
Bsn. 2
Bsn. 3
Hn. 1
Hn. 2
Hn. 3
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc.I.
Perc.II
Hp.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

E

(G)
(A)
(B)
(C)

Glockenspiel
(Crotales)
Whip
div. a 3
pizz.

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46

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Cl. 1
Cl. 2
Cl.3
To Cbsn.
Bsn. 3
Contrabassoon
Hn. 1
Hn. 2
Hn. 3
Tpt. 1
Tpt. 2
Tpt. 3
B. Tbn.
Timp.
Woodblocks
Perc. I
Whip
To Whip
Glockenspiel
Perc.II
Crotales
Hp.
D♮ C♮ F♯ A♯
Cel.
Ped.
Vln. I
Vln. II
Vla.
Vc.
Cb.
pizz.
arco
div. a 2
unis.

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54

F **Growing turbulence and intensity**

10

Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Cl. 2

no trill

Cl.3

Bsn. 1

Bsn. 2

Cbsn.

Timp.

Perc. I

Bell Tree

Perc. II

Hp.

gliss.

A♭

Cel.

Growing turbulence and intensity

F **solo**

Vln.S

Vln. I

Vln. II

div. a 4

(s.t.)

(outside players)

nat.

Vla.

div. a 2

Vc.

Cb.

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61

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Cl. 1
Cl. 2
Cl.3
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Timp.
Perc. I.
Perc. II
Hp.
Cel.
Vln.S
Vln. I
Vln. II
Vla.
Vc.
Cb.

G

(Wood Blocks)

(Crotales)

(D♮ C♮ B♮ : E♮ F♯ G♮ A♭)

F♮

rip

(solo)

tutti div. a 2

div. a 2

outside players

s.p.

pizz.

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Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Cl. 2

Cl.3

Tpt. 1

Tpt. 2

Tpt. 3

Tbn. 1

Tbn. 2

B. Tbn.

Tba.

Timp.

Perc. I

Perc.II

To Whip

Hp.

Cel.

Ped.

Vln.S

Vln. I

nat.

Vln. II

nat.

div. a 2

Vla.

unis.

Vc.

unis.

Cb.

arco

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13

74

Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Tpt. 1

Tpt. 2

Tpt. 3

Tbn. 1

Tbn. 2

B. Tbn.

Tba.

Timp.

Perc. I

Perc.II

Whip

Crotales

Hp.

G♯ A♯

Cel.

Vln.S

Vln. I

Vln. II

Vla.

Vc.

Cb.

pizz.

79 **H**

14

Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Cl. 2

Cl.3

Bsn. 1

Bsn. 2

Cbsn.

Timp.

Perc.II

Hp.

(D♮ C♮ B♮ : E♮ F♮ G♯ A♯)

Cel.

H

Vln. I

Vln. II

Vla.

Vc.

Cb.

arco

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15

85

I **Softly, with an inner restlessness**

Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Cl. 2

Cl.3

Bsn. 1

Bsn. 2

Cbsn.

Timp.

Perc. I

Perc.II

Hp.

Cel.

I **Softly, with an inner restlessness**

Vln. I

Vln. II

Vla.

Vc.

Cb.

(F♯)

(F)

(G)

no trill

(D)

no trill

(C)

no trill

Bell Tree

gliss.

outside players

(nat.)

outside players

(nat.)

outside players

(nat.)

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Cl.3
Bsn. 1
Bsn. 2
Cbsn.
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Timp.
Perc. I
Perc.II
Hp.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

con sord.
senza sord.
Ratchet
Whip
A♭
G♯
nat.
pizz.
gliss.

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17

J **Boldly**

98

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Cl.3
Bsn. 1
Bsn. 2
Cbsn.
Hn. 1
Hn. 2
Hn. 3
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc. 1
Perc. II
Hp.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

(E) (Bb) (C) (G) (B) no trill 2 & 4 rip (Wood Blocks) Crotales Whip Eb pizz. arco

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105

K

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Cl.3
Bsn. 1
Bsn. 2
Cbsn.

Hn. 1
Hn. 2
Hn. 3
Hn. 4
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.

Perc. I.
Perc. II
Bell Tree

Hp.
(D♯ C♯ B♯ : E♭ F♯ G♯ A♭)
E♯ F♯

Cel.

K

Vln. I
Vln. II
Vla.
Vc.
Cb.
div. a 4
div. a 4
div. a 3
div. a 2
div. a 2
div. a 2

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113

L **Restless and slowly growing**

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Cl.3
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Perc. I.
Perc. II
Hp.
Cel.

(unmeasured)
(unmeasured)
To B. Cl.
rip
(Woodblocks)
To T.-t.
Crotales
F♮

Restless and slowly growing

solo

Vln.S
Vln. I
Vln. II
Vla.
Vc.
Cb.

div. a 3
div. a 2
div. a 4
unis.
s.p.

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119

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Cl.3
Bsn. 1
Bsn. 2
Cbsn.
Hn. 1
Perc. I
Perc. II
Hp.
Cel.
Vln.S
Vln. I
Vln. II
Vla.
Vc.
Cb.

(E) no trill
(B)
(A) no trill
(C)
(D) no trill
To B. Cl.
Tam-tam
A♮
G♭ A♯
nat.

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126

Fl. 1
Fl. 2
Picc.
To B. Cl.
Cl.3
Bass Clarinet in B♭
Cbsn.
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
(Wood Blocks)
To B. D.
Perc. I
(Bass Drum)
Whip
Perc. II
Hp.
(D♮ C♮ B♮ : E♮ F♮ G♭ A♯)
G♮
Cel.
Vln.S
Vln. I
Vln. II
Vla.
Vc.
Cb.

M (G)

trem. → nat.

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133

Softly, with an inner turbulence

(C)

N

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Cbsn.
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc. I
Perc. II
To T.-t.
Vln.S
Vln. I
Vln. II
Vla.
Vc.
Cb.
solo
pizz.
arco
nat.

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140

O Building tension

(G)

Fl. 1

Fl. 2

Picc.

(C)

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Cl. 2

B. Cl.

Bsn. 1

Bsn. 2

Cbsn.

Timp.

Bass Drum

Perc. I

Perc. II

Hp.

(D♮ C♮ B♮ : E♮ F♮ G♮ A♯)

A♭

Cel.

O Building tension

Vln.S

outside players

(C♯)

(C♮)

no trill

Vln. I

tutti div. a 2

Vln. II

Vla.

Vc.

nat.

Cb.

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148

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Cbsn.
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc. I
Perc. II
Tam-tam
Whip
To Whip
Vln.S
Vln. I
Vln. II
Vla.
Vc.
Cb.
pizz.

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155 **P**

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Hn. 1
Hn. 2
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Perc. I
Vln.S
Vln. I
Vln. II
Vla.
Vc.
Cb.

(C)
1 & 3
2 & 4
Bass Drum
arco
(pizz.)
nat.

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162

Q

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Cbsn.
Hn. 1
1 & 3
Hn. 2
2 & 4
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
B. Tbn.
Tba.
Timp.
Perc. I
Whip
Perc. II
Q
Vln.S
Vln. I
Vln. II
Vla.
Vc.
Cb.
pizz.
arco
nat.
trem.

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169

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Cbsn.

1 & 3

2 & 4

Hn. 1
Hn. 2
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.

Timp.

To Gro.

Perc. I
Perc. II

Whip

Hp.

(D♯ C♯ B♯ : E♯ F♯ G♯ A♭)

E♭

Cel.

Vln. I
Vln. II
Vla.
Vc.
Cb.

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175

28

R **With rising energy**

Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Cl. 1

Cl. 2

Clarinet in B♭

B. Cl.

Bsn. 1

Bsn. 2

Hn. 2

Hn. 3

B. Tbn.

Timp.

Perc. I

(fast scape)

To Crot.

Crotales

To Gro.

Perc. II

Hp.

Cel.

Ped.

sim.

With rising energy

R

Vln. I

div. a 4

Vln. II

1 & 2

div. a 4

Vla.

3 & 4 tacet

Vc.

Cb.

nat.

181

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Cl. 3
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Timp.
Guiro
Perc. I.
Perc. II
Hp.
A♯
A♭
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

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186

30

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Cl. 1
Cl. 2
Cl. 3
Bsn. 1
Bsn. 2
Hn. 1
Hn. 2
Hn. 3
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
Timp.
Perc. I.
Perc. II
Hp.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

flz.
nat.
(unmeasured)
S
(Guiro)
Whip
To W.B.
C♯
div. a 4
div. a 2
arco
Ped.

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31

191

Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Cl. 1

Cl. 2

Cl. 3

Bsn. 1

Bsn. 2

Hn. 2

Tpt. 1

Tpt. 2

Tpt. 3

Tbn. 1

Tbn. 2

B. Tbn.

Tba.

Timp.

Perc. I

Perc. II

Hp.

Cel.

Vln. I

Vln. II

Vla.

Vc.

Cb.

(F)

(E)

To B. Cl.

Bass Clarinet
in B♭

2 & 4

(Guiro)

Wood Blocks

T

div. a 3

pizz.

arco

unis.

div. a 2

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196

32

Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Cl. 2

B. Cl.

Tpt. 1

Tpt. 2

Tpt. 3

Tbn. 1

Tbn. 2

B. Tbn.

Tba.

Timp.

Perc. I.

Perc. II

Hp.

Cel.

Vln. I

Vln. II

Vla.

Vc.

Cb.

(unmeasured)

(A♭)

(F)

(E)

Bass Drum

(Whip)

unis.

div. a 2

div. a 4

33

201

3 + 2

U

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Cbsn.
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
B. D.
Perc. II
Hp.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

no trill

no trill

To T.-t.

div. a 2

arco

unis.

pizz.

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207

V BLARING!

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Cbsn.
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc. I.
Perc. II.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

(C)

Bass Drum
Tam-tam

div. a 4
arco
div. a 2
trem.
s.p.
nat.

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W

215

(C)

let the sound dissipate

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Contrabassoon
Cbsn.
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc. I.
Perc. II
Cel.
W
Vln. I
Vln. II
Vla.
Vc.
Cb.

f p sub.ff sfz fff ff mp fp sf gliss. 8va 8vb

X **With Cascading energy**

(unmeasured)

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Cbsn.
Hn. 1
Hn. 2
Hn. 3
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc. I.
Perc. II
Hp.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

Wood Blocks
To W.B.
Guiro

X **With Cascading energy**

div. a 2
unis.
pizz.
arco

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37

228

Y

Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Cl. 2

Bsn. 1

Bsn. 2

Tpt. 1

Tpt. 2

Tpt. 3

Tbn. 1

B. Tbn.

Tba.

Timp.

Perc. I.

Perc II.

Hp.

Cel.

Vln. I

Vln. II

Vla.

Vc.

Cb.

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235

38

Z

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Cbsn.
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc. I
Perc II.
Hp.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

To B. D.
To T.-t.
Tam-tam
D♭

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AA **Softly, with building agitation**

241

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Cbsn.
Hn. 1
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
B. Tbn.
Tba.
Timp.
Perc II.
Hp.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

(G) (D) (E) no trill

Tam-tam

D♮ B♮
E♮ F♯ G♯ A♯

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(G)

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Cbsn.
Hn. 1
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
B. Tbn.
Tba.
Timp.
Hp.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

gliss.

253

BB

Fl. 1
Fl. 2
Picc.
Cl. 1
Cl. 2
B. Cl.
Cbsn.
Hn. 1
Hn. 2
Hn. 3
Hn. 4
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Vln. I
Vln. II
Vla.
Vc.
Cb.

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Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Ob. 3

B. Cl.

Cbsn.

B. Tbn.

Tba.

Timp.

Perc. I

Bass Drum

Hp.

Cel.

Vln.S

Vln. I

unis.

Vln. II

unis.

Vla.

Vc.

Cb.

264

(F)

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Cbsn.
Hn. 1
1 & 3
Hn. 2
2 & 4
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc. I
To W.B.
Vln. I
Vln. II
div. a 2
Vla.
Vc.
Cb.

gliss.

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270

CC

DD

Fl. 1

Fl. 2

Picc.

Cl. 1

Cl. 2

B. Cl.

Bsn. 2

To Bsn.

Cbsn.

Hn. 1

Hn. 2

2, 4 & 3

rip

Tpt. 1

Tpt. 2

Tpt. 3

Tbn. 1

Tbn. 2

B. Tbn.

Tba.

Timp.

Perc. I

Wood Blocks

Perc. II

Tam-tam

Hp.

(D♮ C♮ B♮ : E♮ F♯ G♯ A♯)

gliss.

F♮ E♭ G♮

Vln. I

div. a 2

Vln. II

arco

Vla.

Vc.

Cb.

276

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Bsn. 2
Cbsn.
Tbn. 1
Tbn. 2
B. Tbn.
Tba.
Timp.
Perc. II
Hp.
Cel.
Vln. I
Vln. II
Vla.
Vc.
Cb.

(C)

(D♮ C♮ B♮ : E♭ F♮ G♮ A♯)

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EE

282 (tr)

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
B. Cl.
Bsn. 1
Bsn. 2
Cbsn.
Timp.
Perc. I
Perc. II
Hp.
Cel.

nat.

Wood Blocks

To W.Ch.

E♮ G♯

Ped.

EE

Vln. I
Vln. II
Vla.
Vc.
Cb.

div. a 4

div. a 2

arco

s.p.

nat.

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47

287

(unmeasured)

(unmeasured)

FF

Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Cl. 2

B. Cl.

To Cl.

Bsn. 1

Bsn. 2

Hn. 1

Hn. 2

Hn. 3

Hn. 4

Tpt. 1

Tpt. 2

Tpt. 3

Tbn. 1

Tbn. 2

B. Tbn.

Tba.

Timp.

Bell Tree

To B. D.

W.Ch.

Bass Drum

Tam-tam

T.-t.

FF

Vln. I

nat.

div. a 4

Vln. II

nat.

Vla.

nat.

Vc.

Cb.

Fl. 1

Fl. 2

Picc.

Ob. 1

Ob. 2

Hn. 1

Hn. 2

Hn. 3

Hn. 4

Tpt. 1

Tpt. 2

Tpt. 3

Tbn. 1

Tbn. 2

B. Tbn.

Tba.

Timp.

Perc. I

Perc. II

To W.B.

To Whip

Hp.

(D♮ C♮ B♮ : E♮ F♮ G♯ A♯)

Cel.

Vln. I

Vln. II

Vla.

Vc.

Cb.

div. a 2

s.p.

unis.

nat.

pizz.

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49

GG

298

Fl. 1

Fl. 2

Picc.

Ob. 1

Cl. 1

Cl. 2

Clarinet in B♭

Cl. 3

Bsn. 1

Bsn. 2

Bsn. 3

Hn. 1

Hn. 2

Hn. 3

Tpt. 1

Tpt. 2

Tpt. 3

Tbn. 1

Tbn. 2

B. Tbn.

Tba.

Timp.

To Glock.

Perc. I

(Glockenspiel)

Crotales

Whip

To Crot.

Perc. II

Hp.

F♯ A♮

C♯ A♯

Cel.

GG

Vln. I

Vln. II

Vla.

Vc.

Cb.

arco

pizz.

div. a 3

div. a 2

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HH

304

II

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Cl. 3
Bsn. 1
Bsn. 2
Bsn. 3
Hn. 1
Hn. 2
Hn. 3
Tpt. 1
Tpt. 2
Tpt. 3
Tbn. 1
Tbn. 2
B. Tbn.
Perc. I
Perc. II
Hp.
F♮ A♮
Cel.
HH
II
Vln. I
Vln. II
Vla.
Vc.
Cb.
(F)
(E)
(C)
arco
pizz.
solo

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309 **Still, but restless and rising**

Fl. 1
Fl. 2
Picc.
Ob. 1
Ob. 2
Ob. 3
Cl. 1
Cl. 2
Cl. 3
Bsn. 1
Bsn. 2
Bsn. 3
Timp.
Perc. II
(Crotales)
mp
Hp.
C♯ E♭
Cel.

Still, but restless and rising
solo

Vln.S
mp 5
f 6
f
Vln. I
arco
outside players
mf 6
f 3 *p*
tr
(C♯)
pp
Vln. II
arco
outside players
mf *f*
mp
pp
Vla.
Vc.
5 *ff*
mf 6
3
unis. - outside players
f
3 3
mf *ff*
Cb.
pp

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317

JJ

Fl. 1

Fl. 2

To Picc.

Piccolo

Picc.

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Cl. 2

Cl. 3

Bsn. 1

Bsn. 2

Bsn. 3

Timp.

Perc. I

(Glockenspiel)

Perc. II

Hp.

G♯

Cel.

Vln.S

Vln. I

Vln. II

tutti div. a 2

Vla.

Vc.

tutti

Cb.

pizz.

arco

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KK

323

Repeat, ad lib.
rit.

Fl. 1

Picc.

Picc.

Ob. 1

Ob. 2

Ob. 3

Cl. 1

Cl. 2

Cl. 3

Bsn. 1

Bsn. 2

Bsn. 3

Timp.

Perc. I

Perc. II

Hp.

Cel.

Vln.S

Vln. I

tutti div. a 2

Vln. II

Vla.

Vc.

Cb.

no trill

do not repeat

take bow

(bowed)

Crotales

arco

s.p.

nat.

s.p

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Apparitions

for chamber choir

SSSAAATTTBBB

Angela Elizabeth Slater

Apparitions for chamber choir (2015) by Angela Elizabeth Slater

Apparitions is full of vivid imagery and explores many textural and timbral possibilties that voices can offer. It is written for SSSAAATTTBBB chamber choir. It sets my own poem:

As the sky ripples and aches
My haunting stature still
But the heart is swept away
Hands cling, that cannot grasp
Something half seen, no,
Eyes open for,
Beautiful scars in the sky
All asleep, one day…(die)

Angela Elizabeth Slater

c.7 mins

Performance notes:

1) trill notes - trill to note in brackets above or at the side of the trill note.

2) | ‿ | : headless notes are to be sung in a breathy or whispered voice.

3) x : cross note heads to given a percussive sound with hardly any pitch.

4) Boxed material is to be sung freely and repeated, gradually increasing in frequency and dynamic level until indicated to stop repeating.

5) → : gradually change from one technique to another.

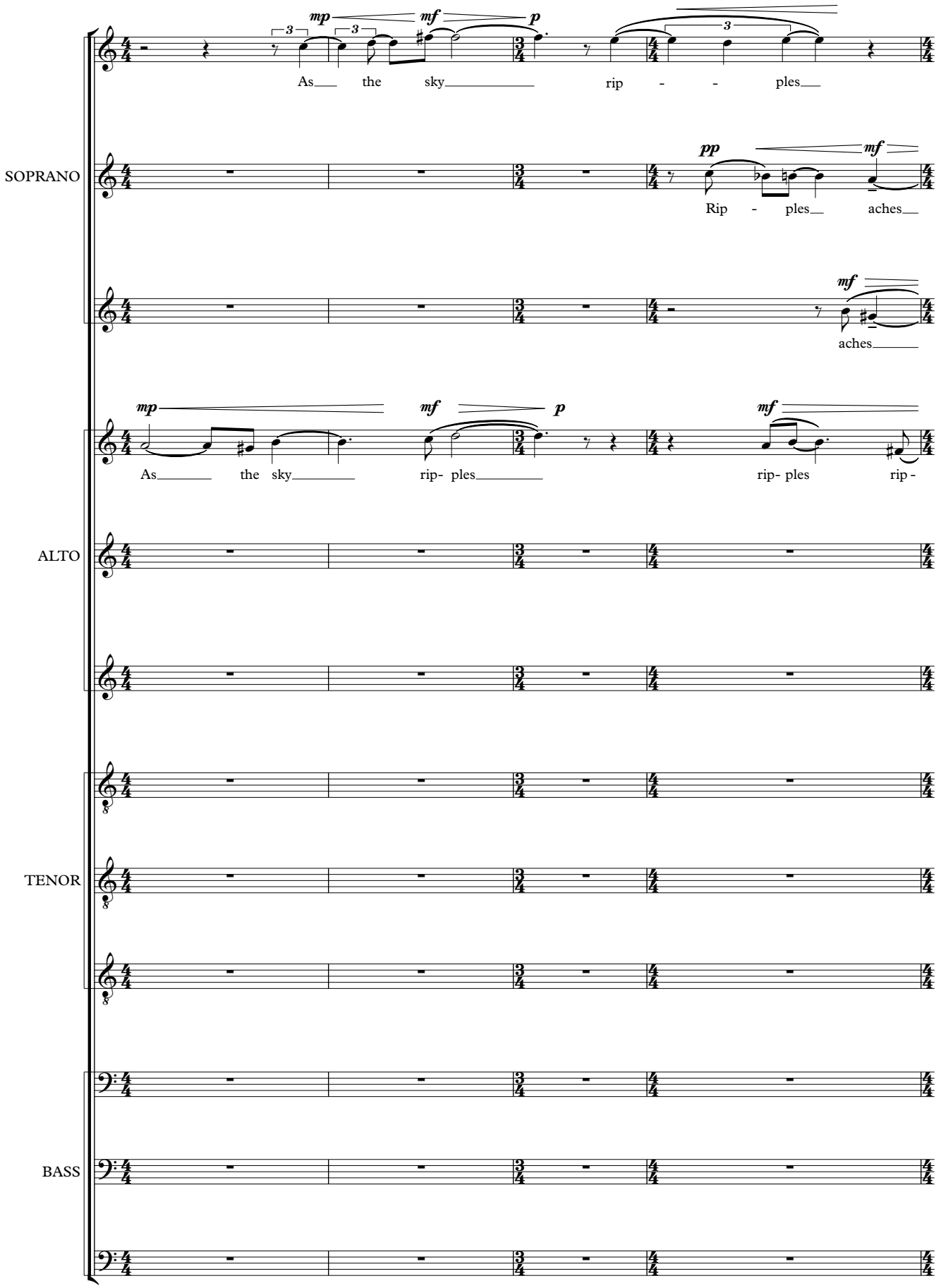
6) At pause marks with words underneath these are to be whispered; the timing is left to the discretion of the conductor.

7) Words split in unusual ways should be pronounced phonetically following the split e.g heart split into he-ar-t. In this instance the singer should sing a 'he[e]' sound followed by an 'ar[r]' sound and end the word clearly on a 't'.

Apparitions

for chamber choir

Angela Elizabeth Slater



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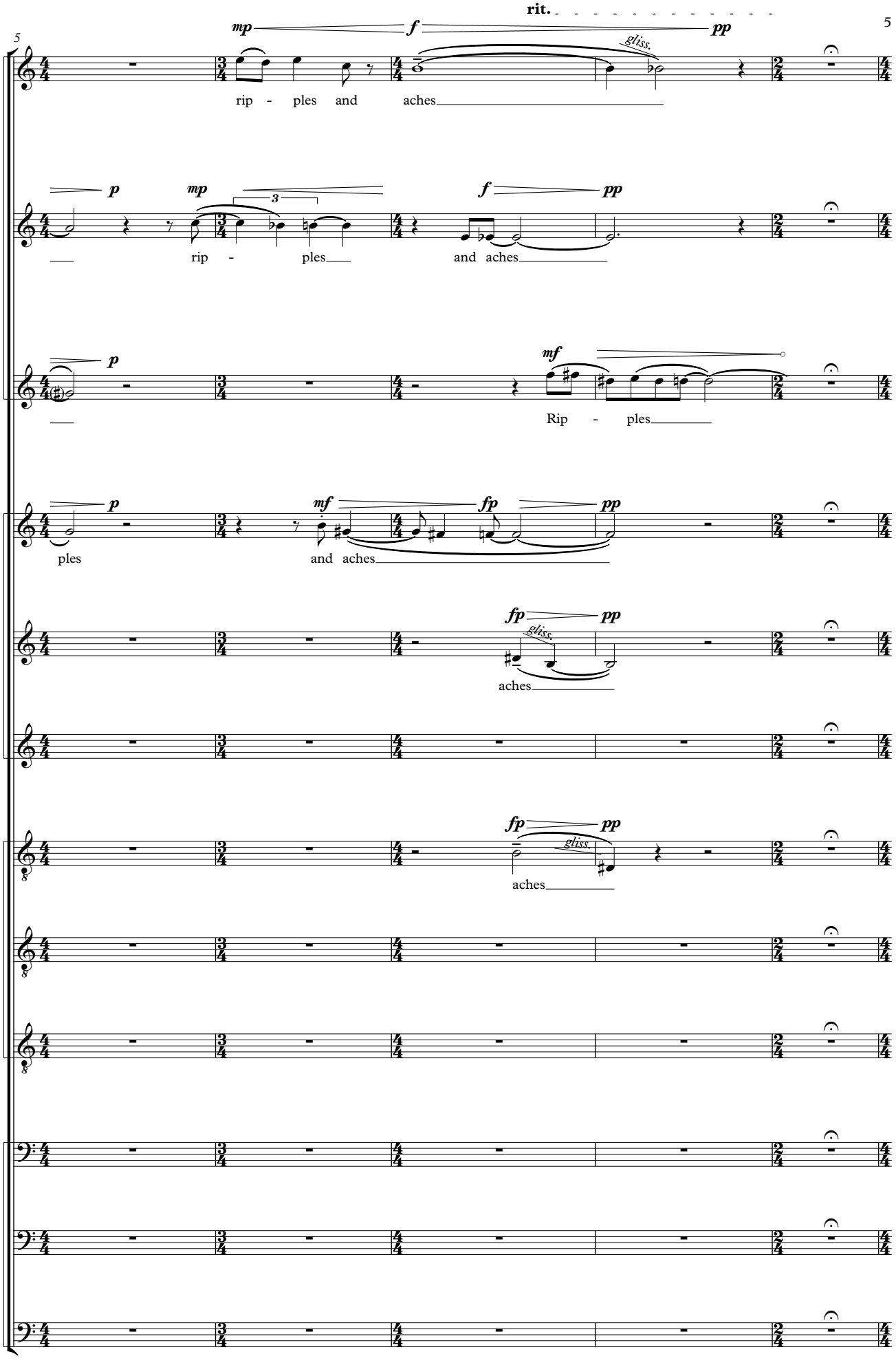

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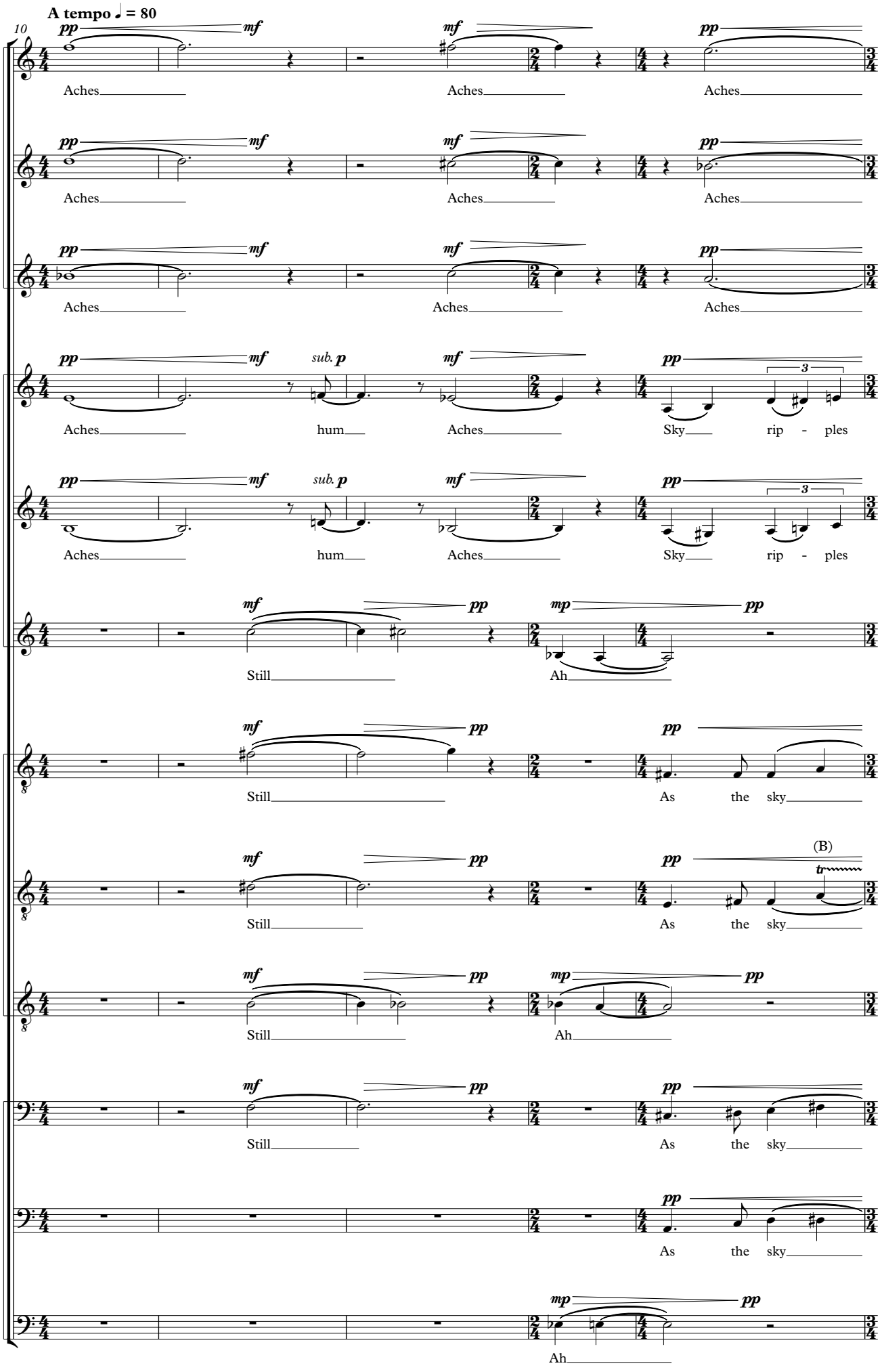

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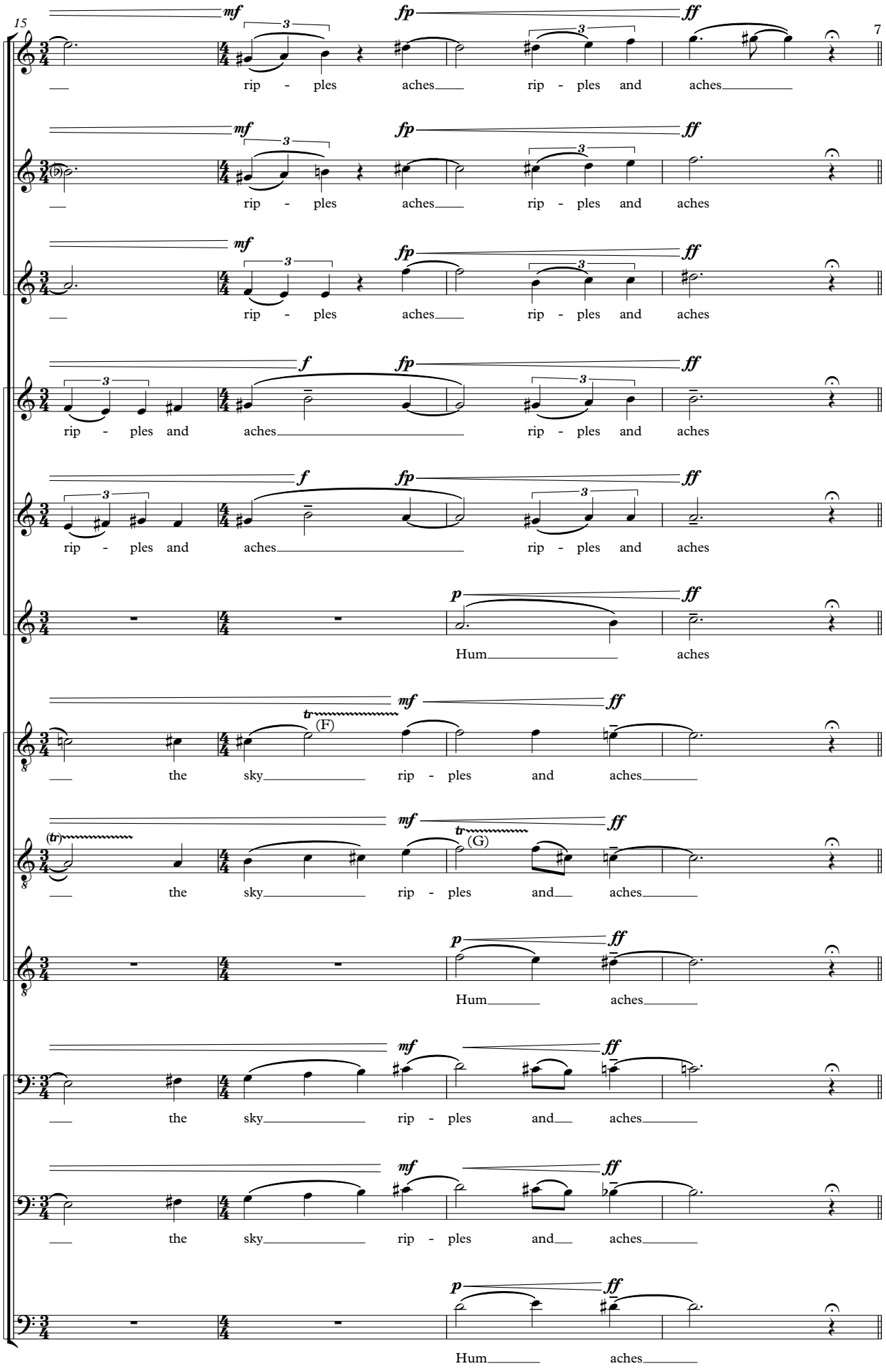

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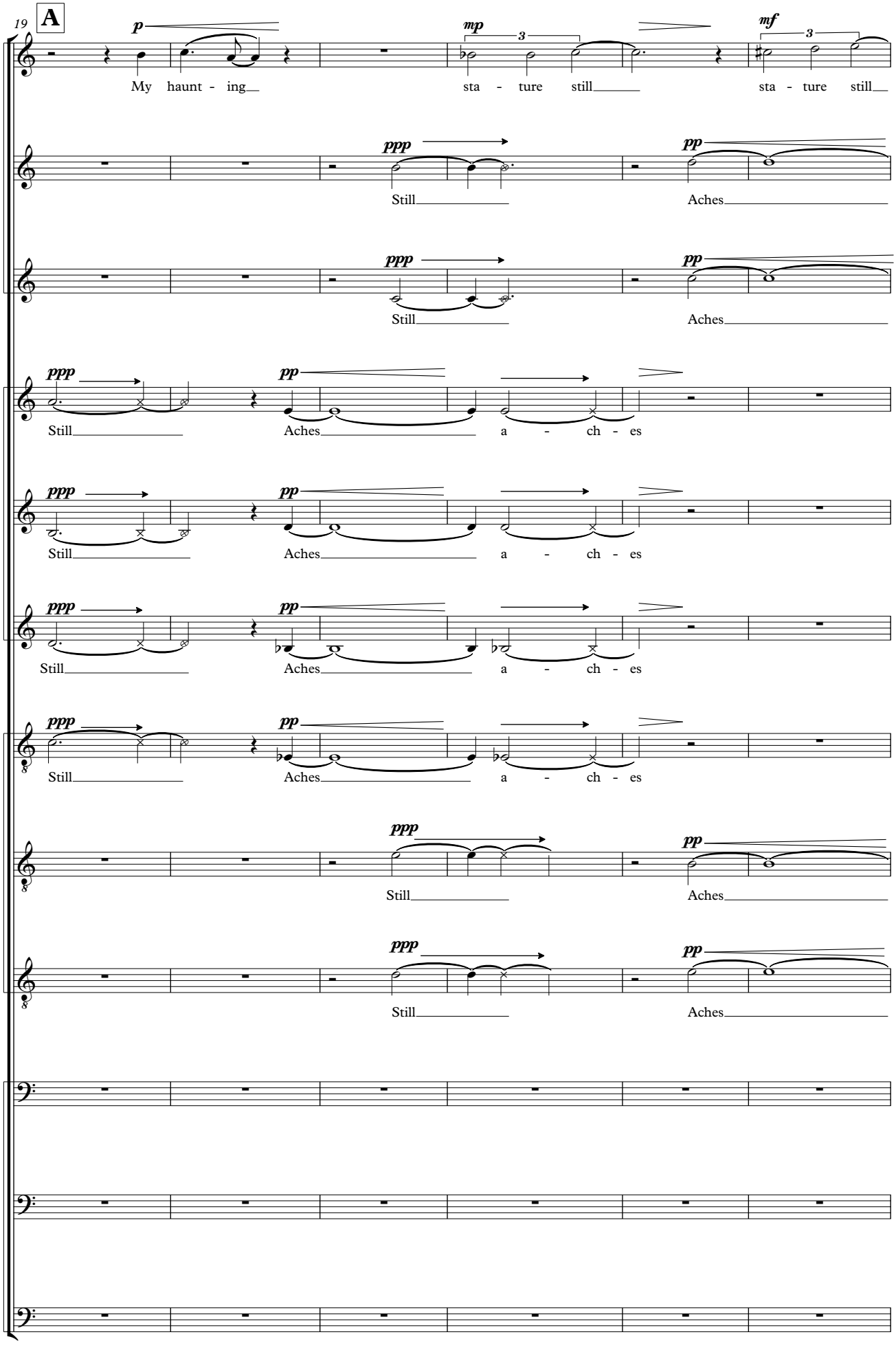

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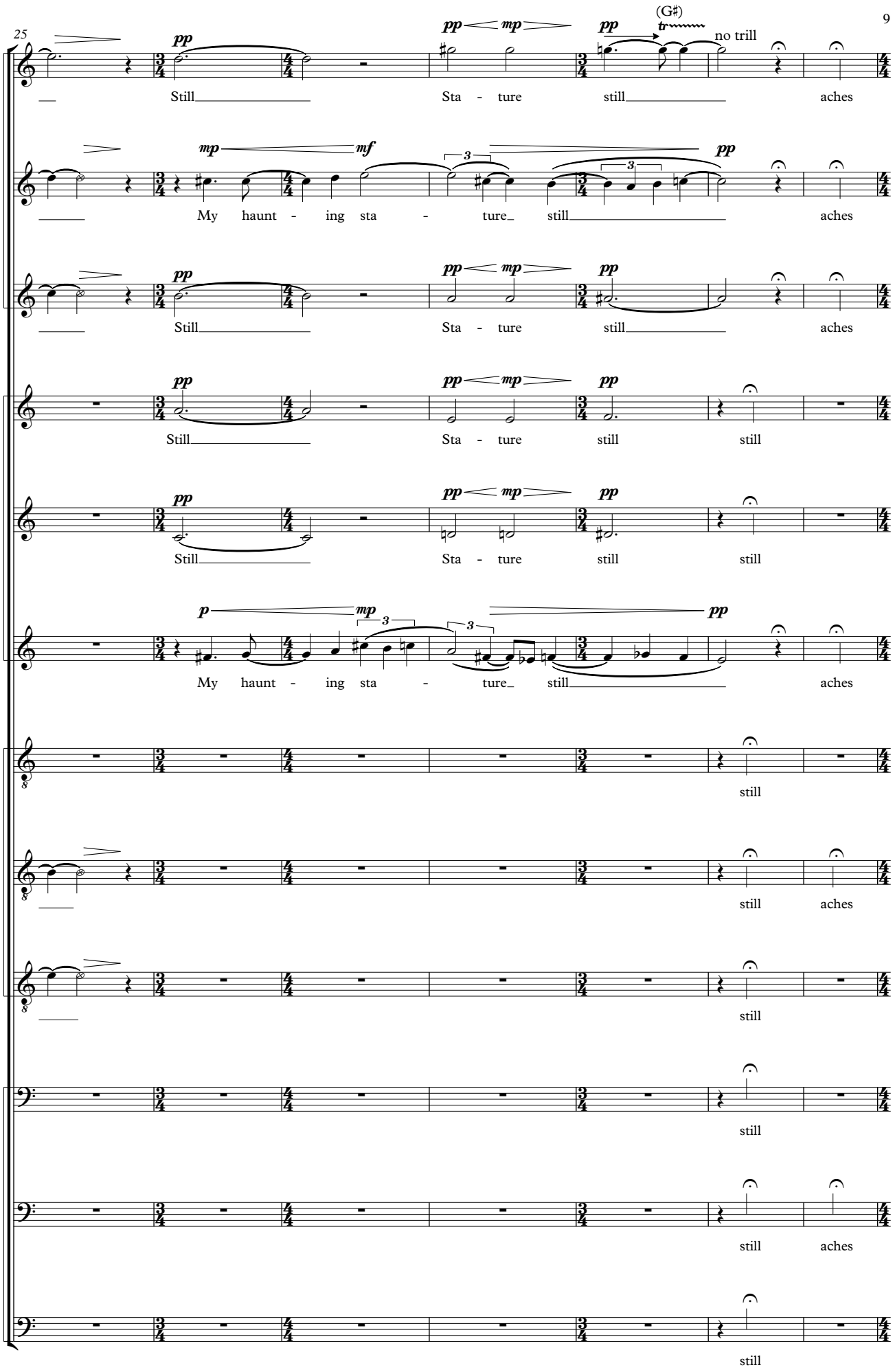

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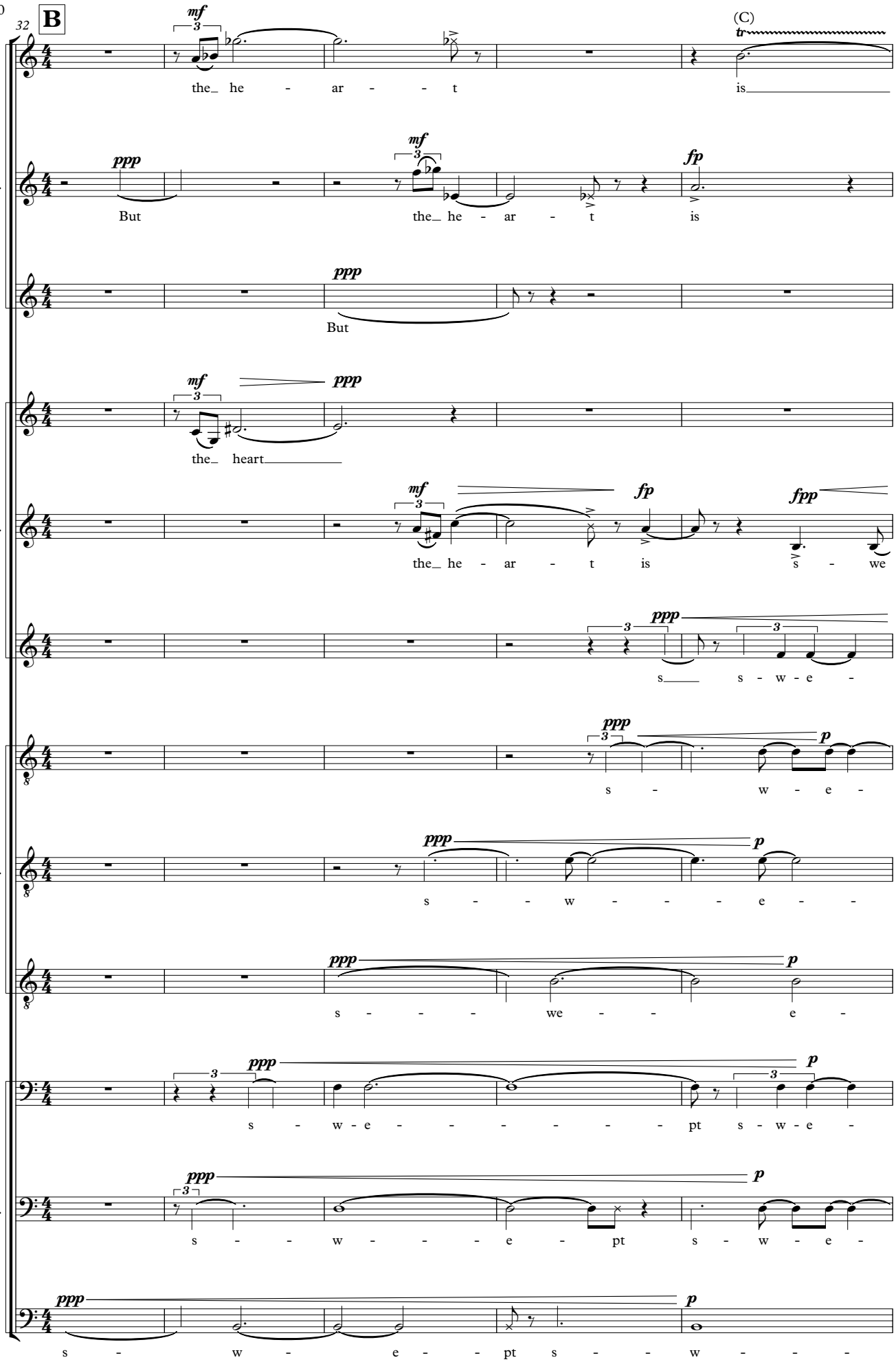

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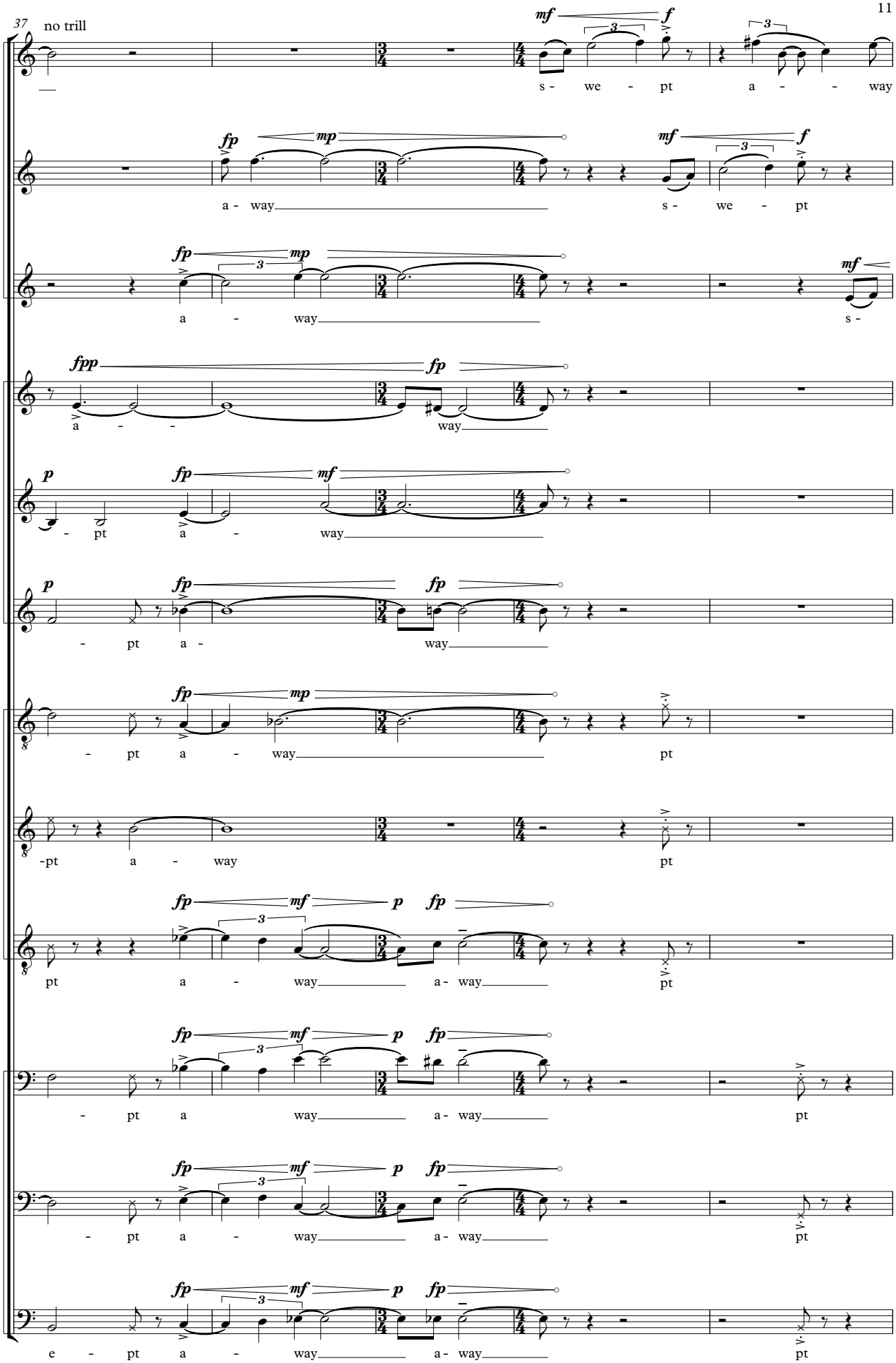

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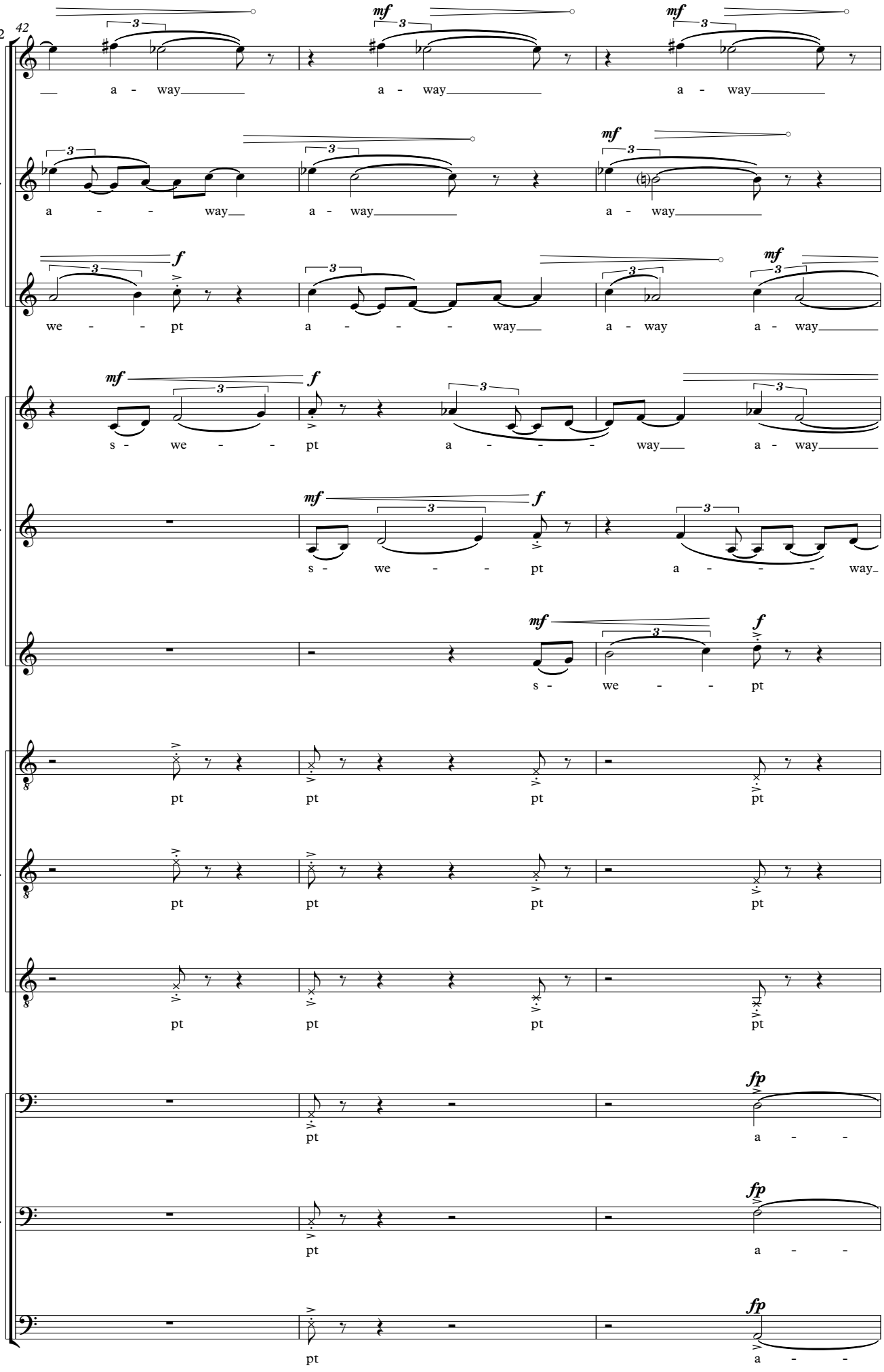

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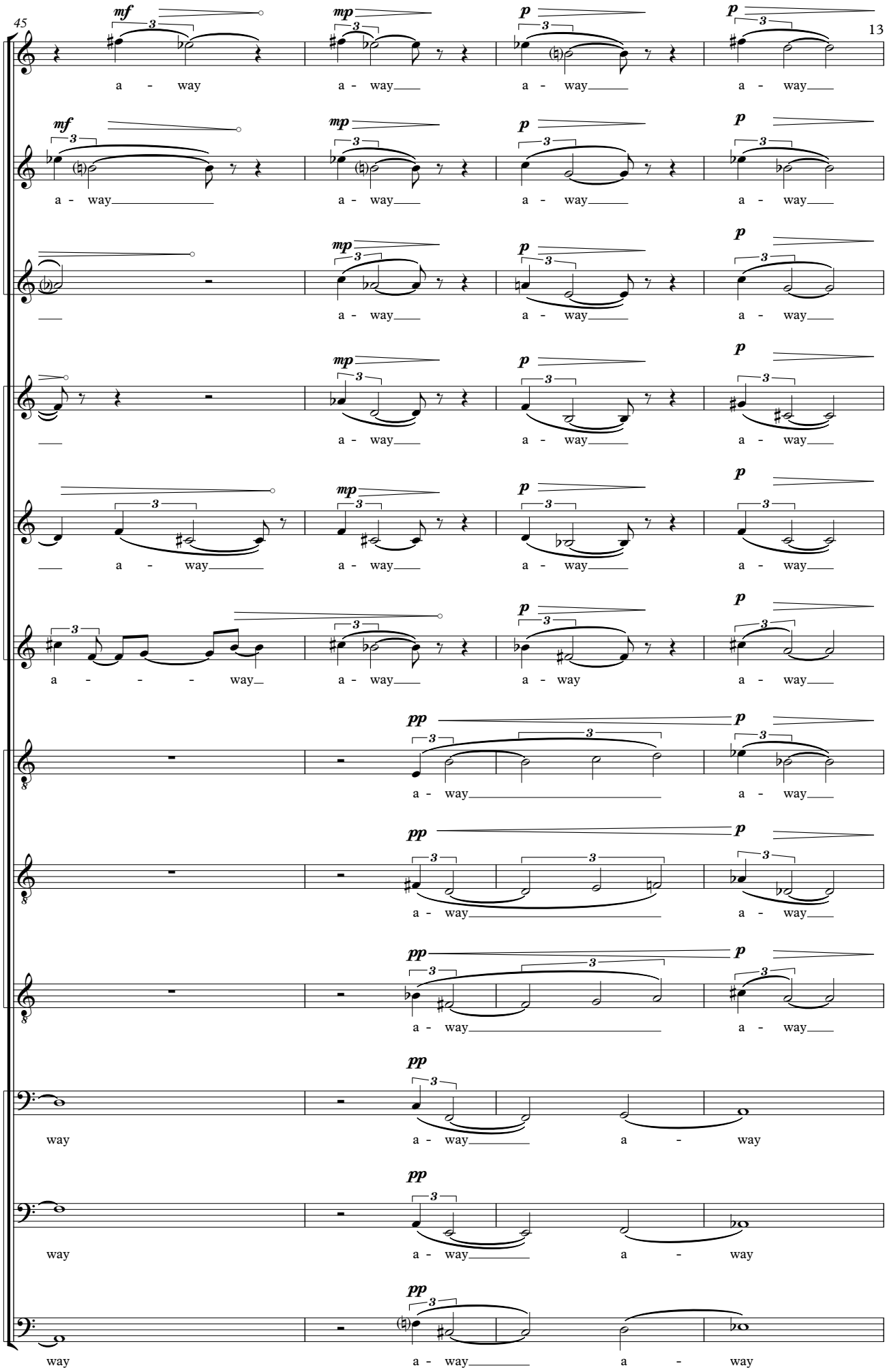
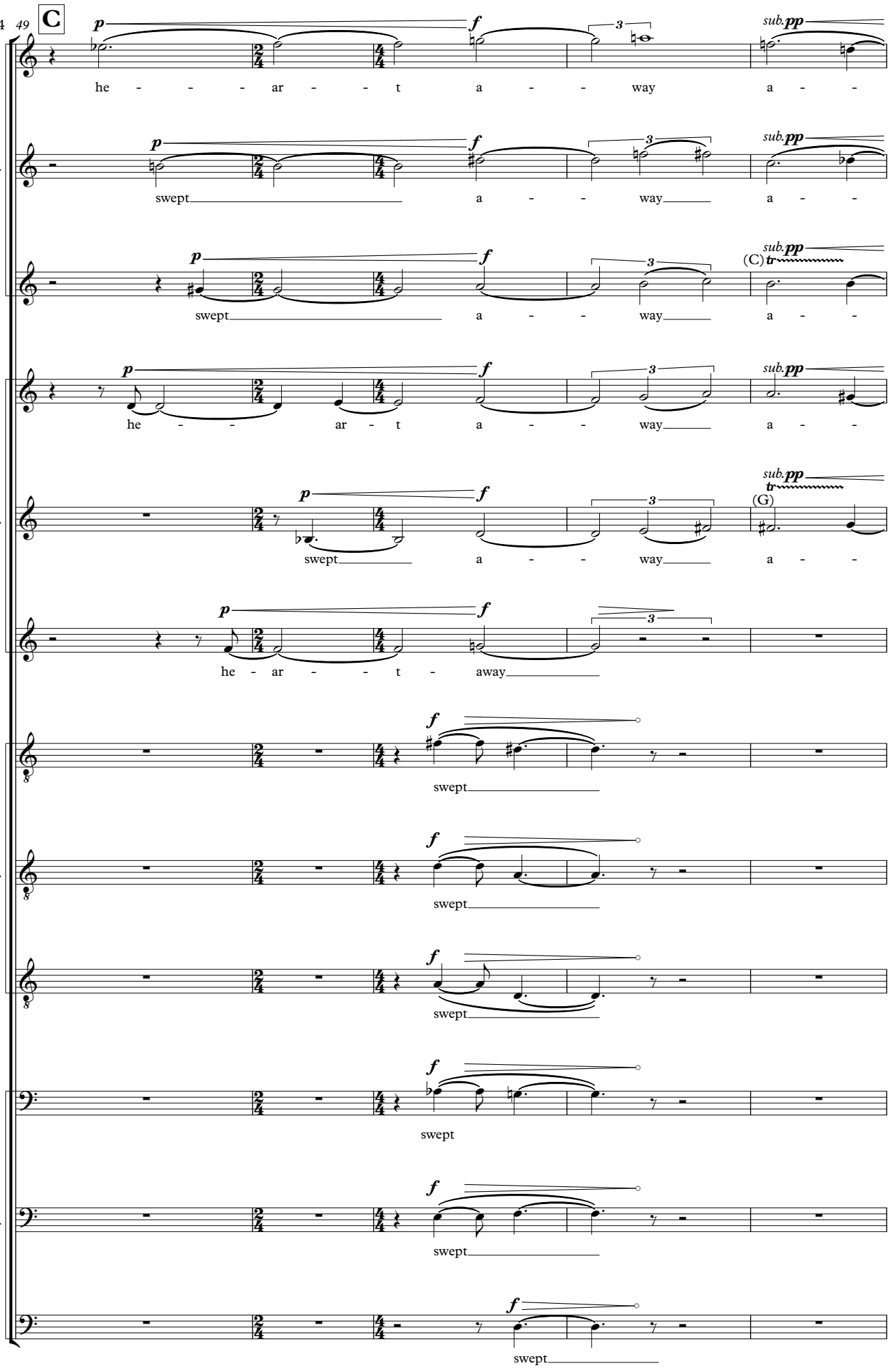

45
13
S.
A.
T.
B.
mf
mp
p
pp
3
a - way
a - way
a - way



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a little slower, building in speed gradually

54

S.

A.

T.

B.

mf p sub.pp mf

- way Hands cling Hands cling

mf mp sub.pp mf

- way Hands cling Hands cling

mf sub.pp mf

a - way Hands cling Hands cling

mf gliss. sub.pp mf

a - way Hands cling Hands cling

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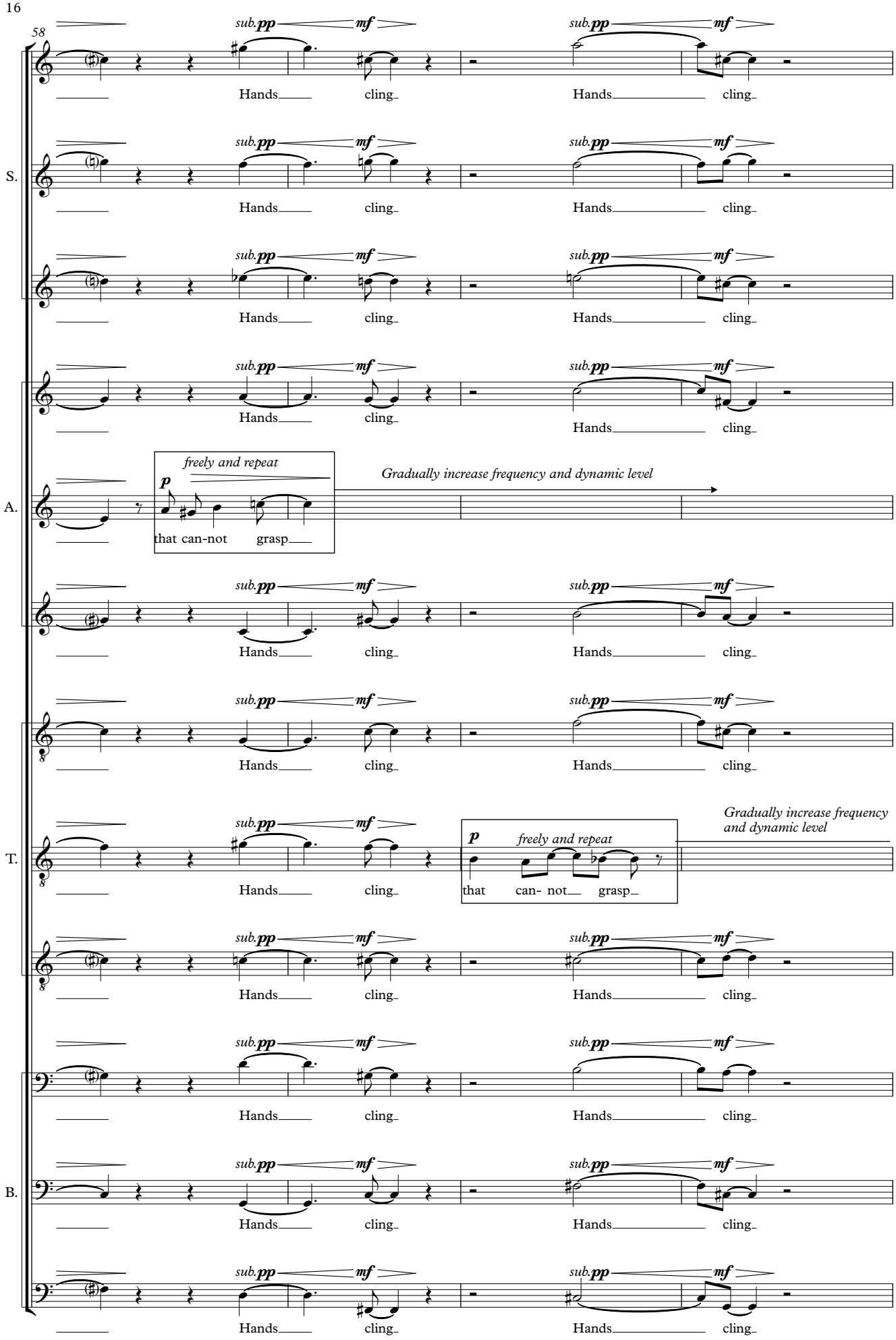

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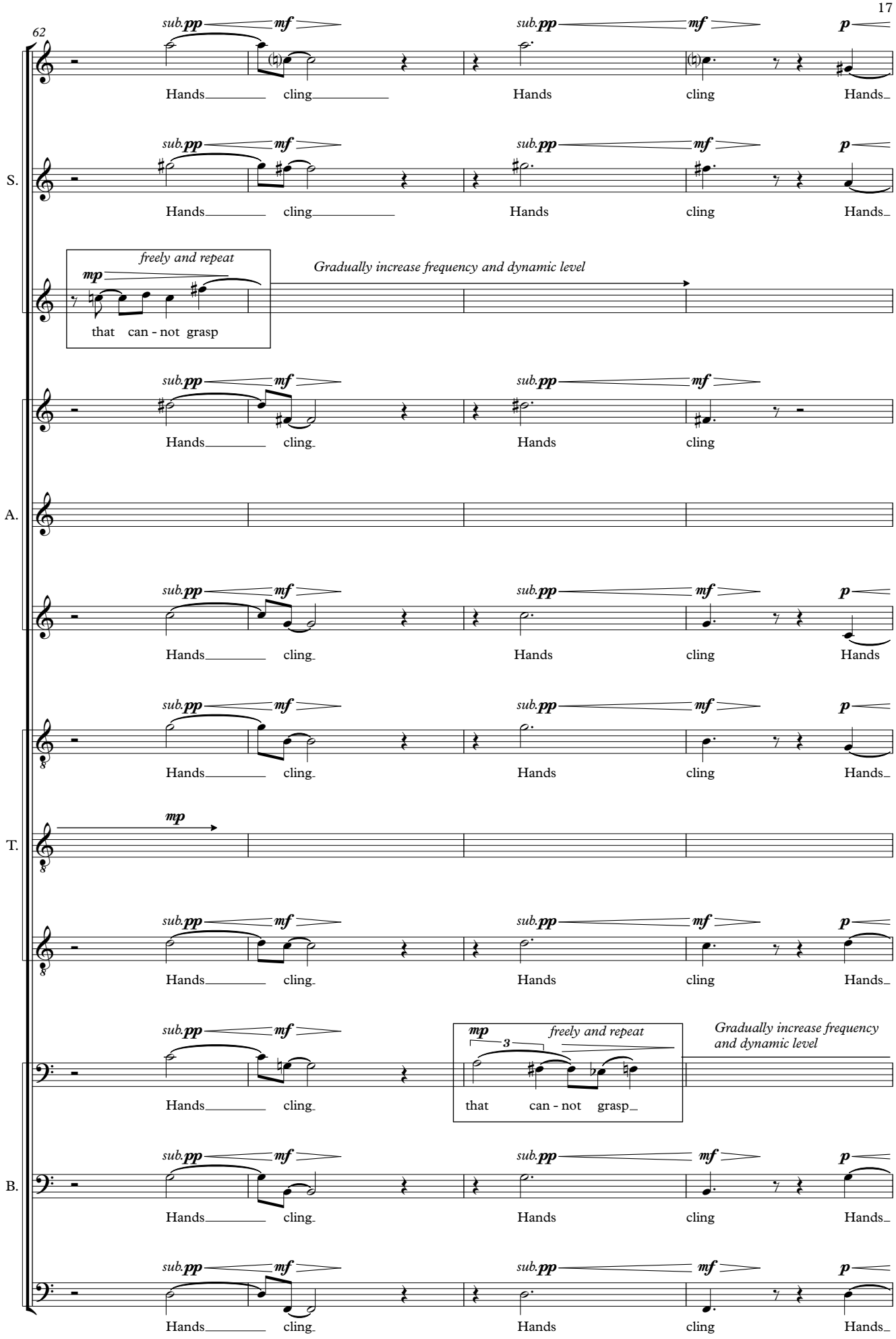

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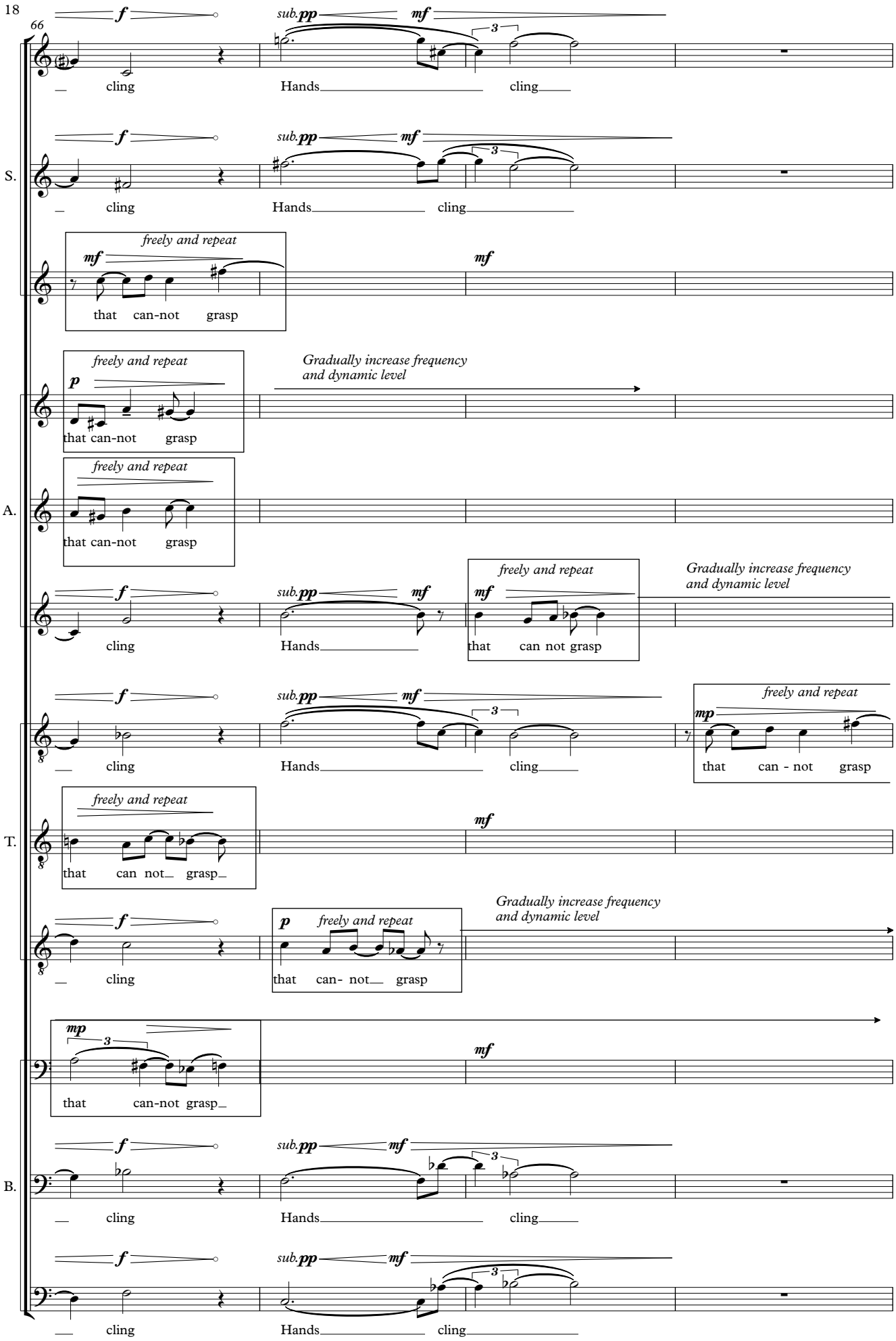

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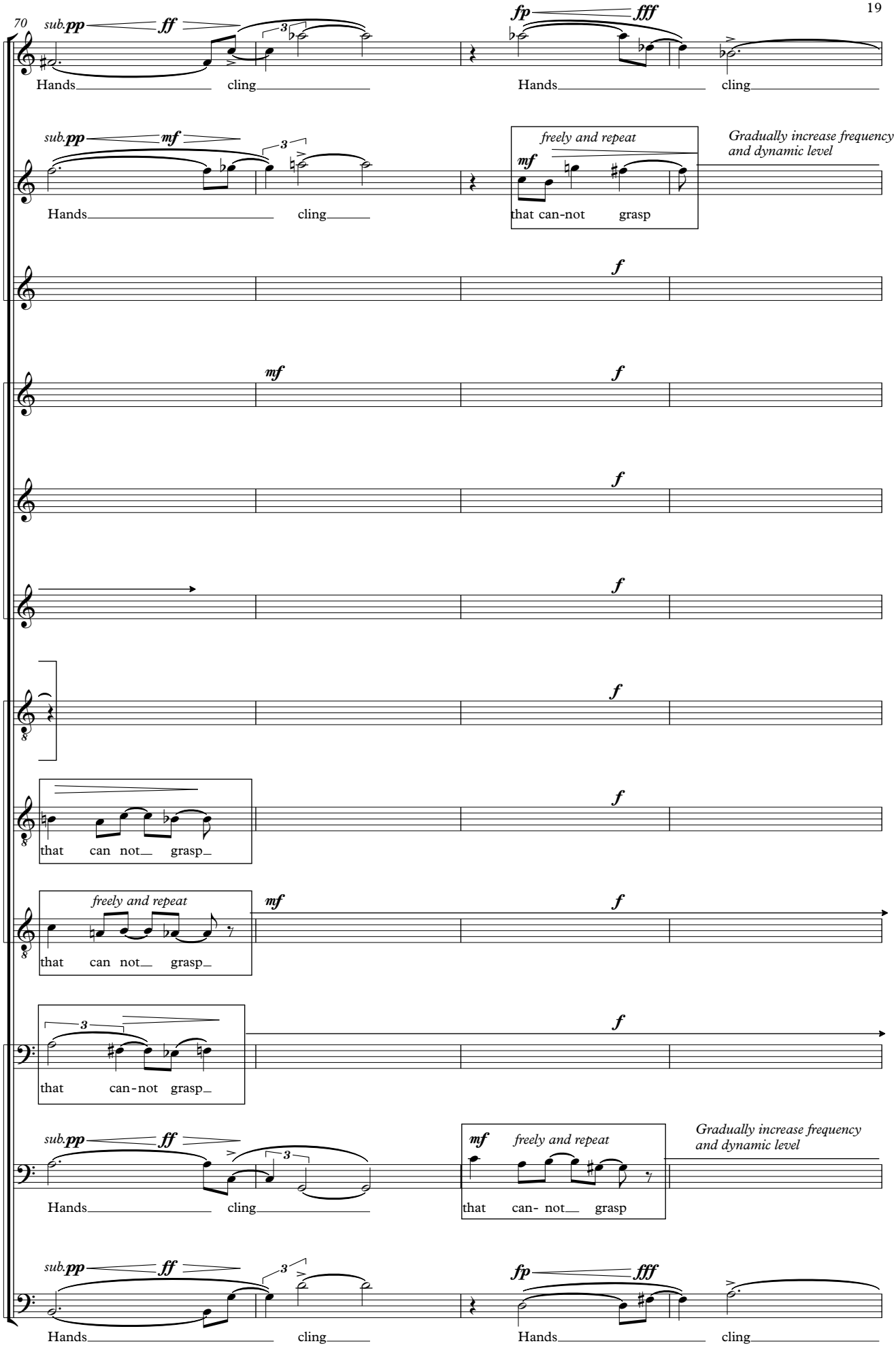

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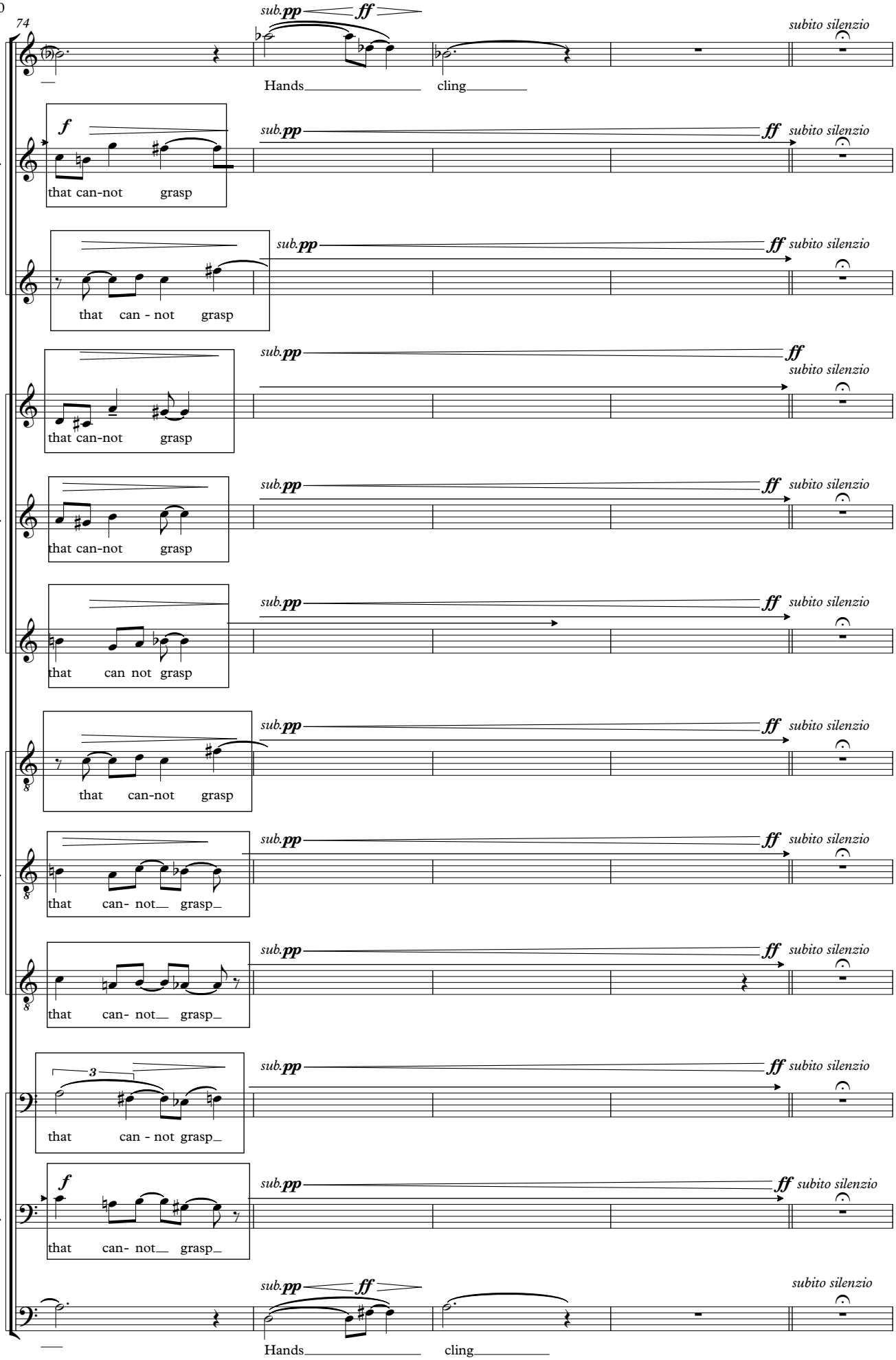

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A tempo (♩ =80)

79

mf *ff* *mp*

that can-not grasp Some - thing half seen

S.

that can-not grasp

that can - not grasp

that can-not grasp Some-thing half seen

A.

that can-not grasp Some - thing

that can - not grasp

that can-not grasp

that can - not grasp

T.

that can-not grasp

that can - not grasp

that can-not grasp

B.

that can-not grasp

that can - not grasp

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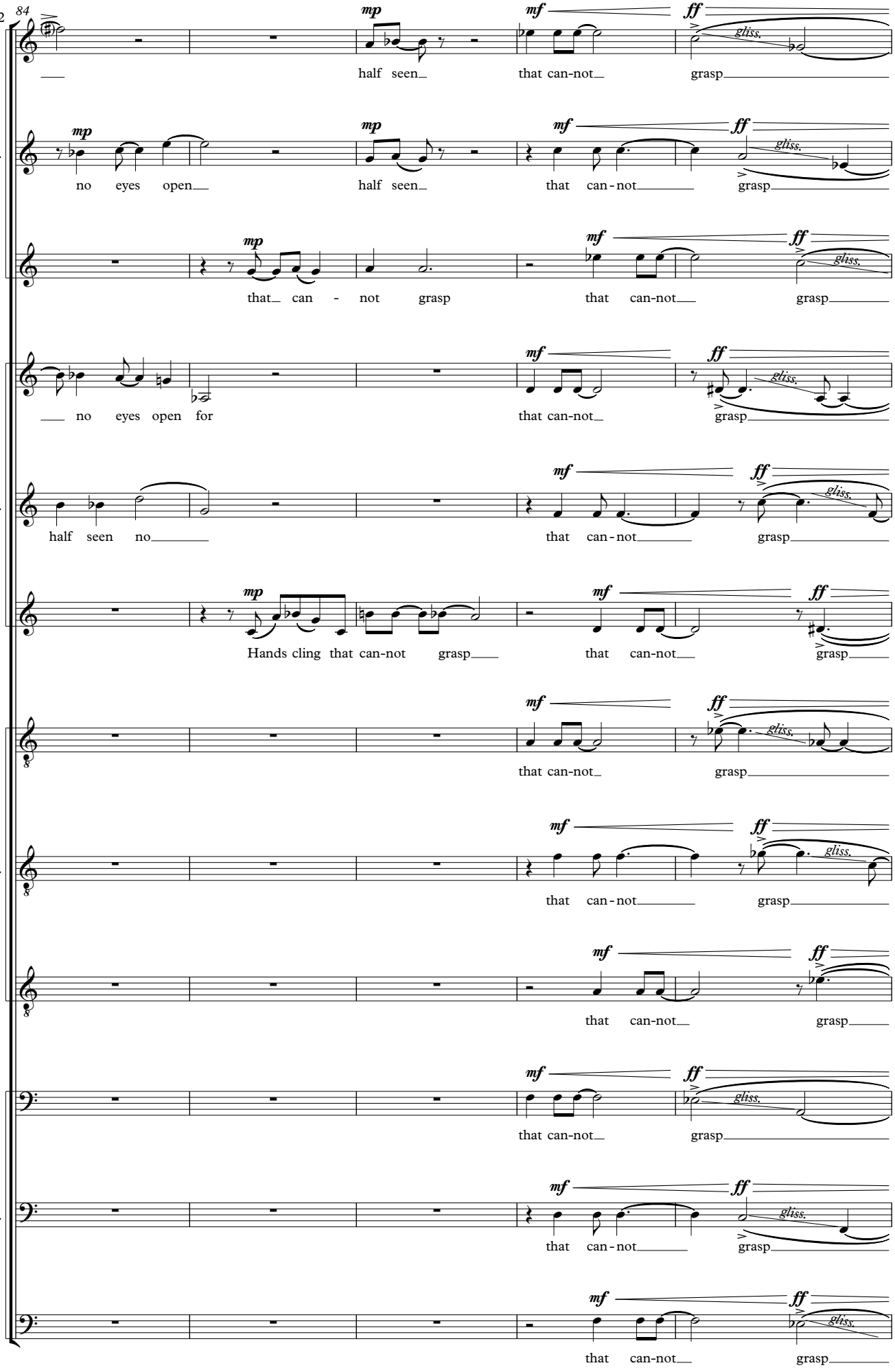

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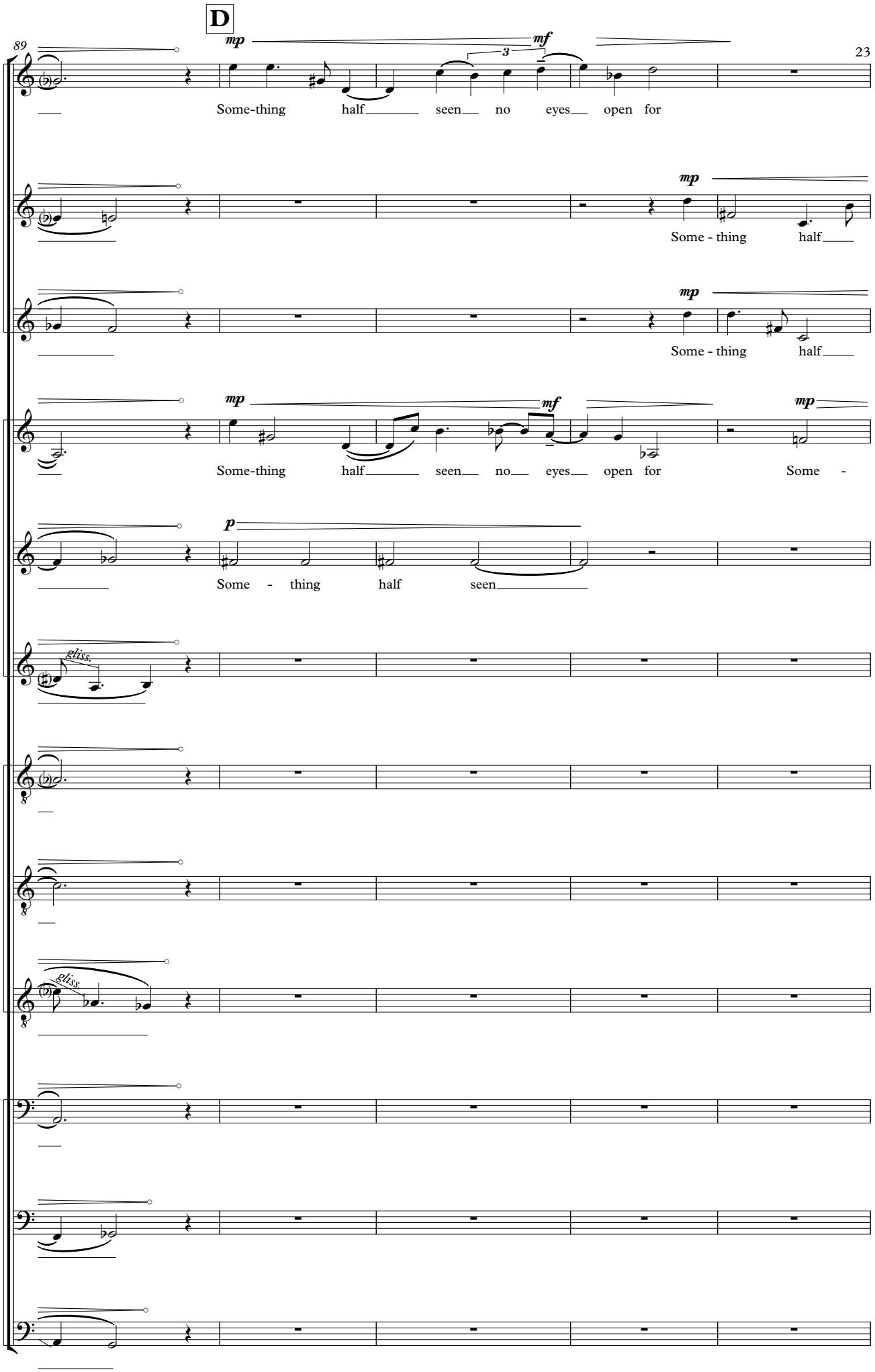

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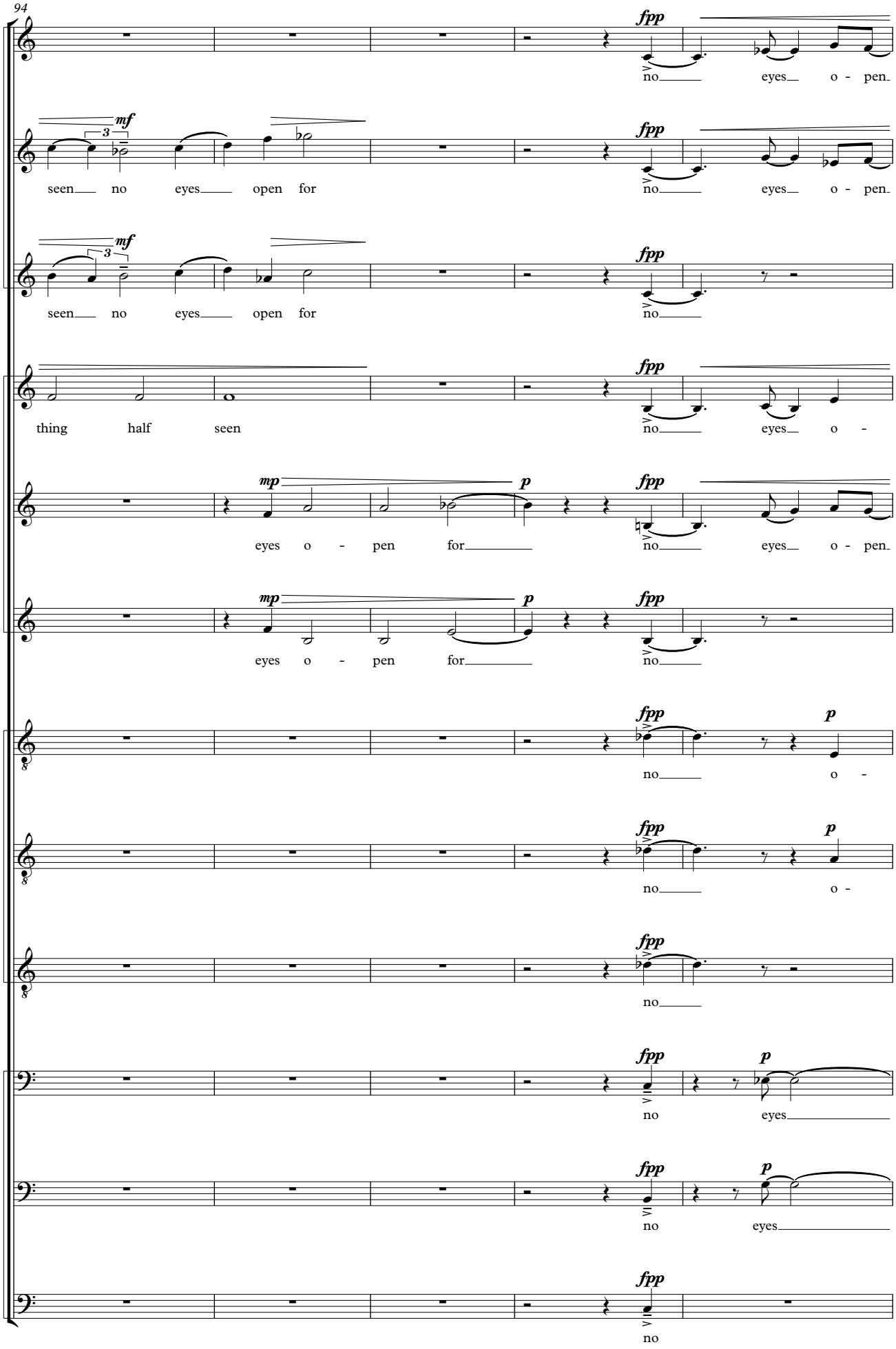

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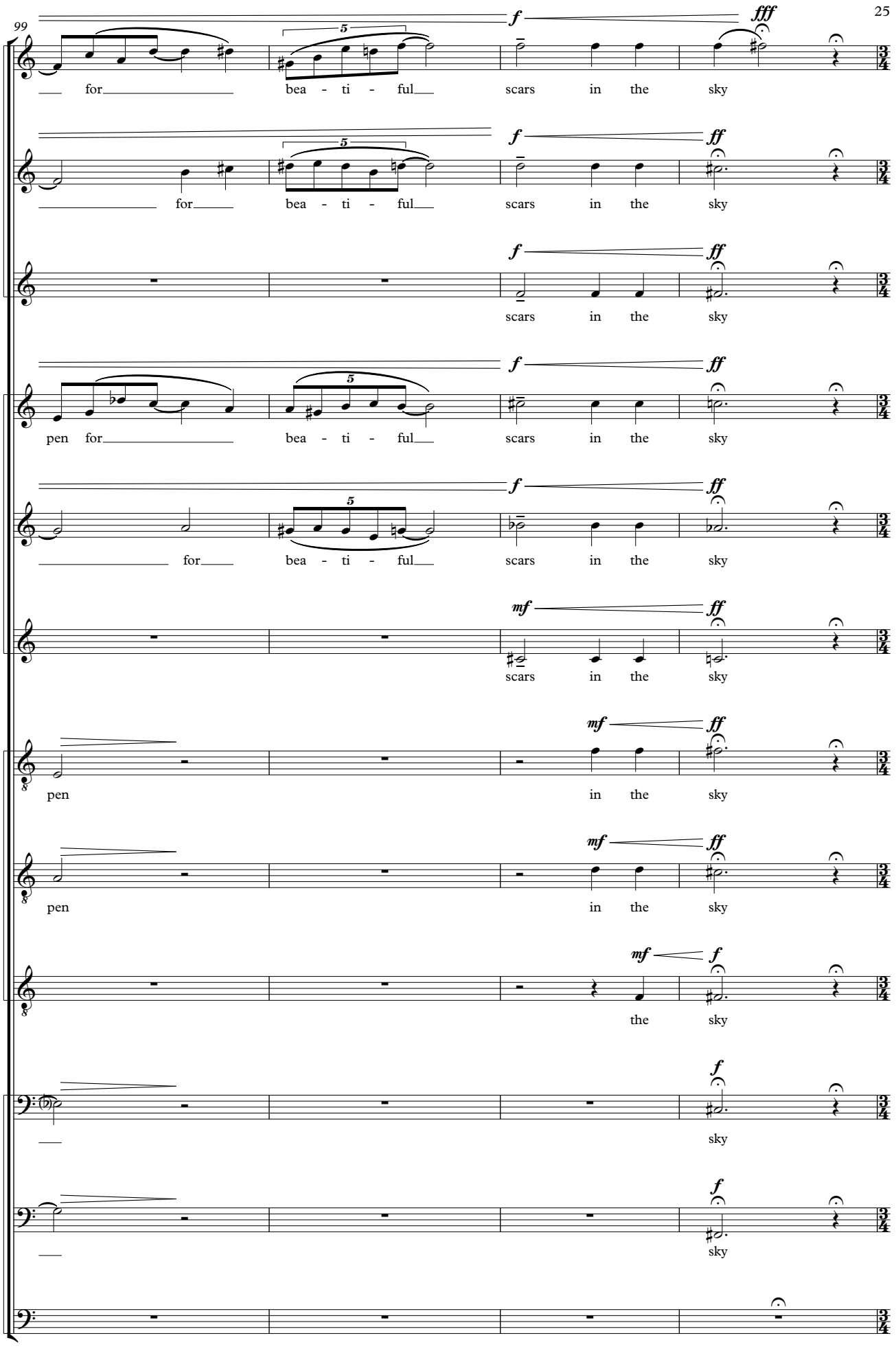

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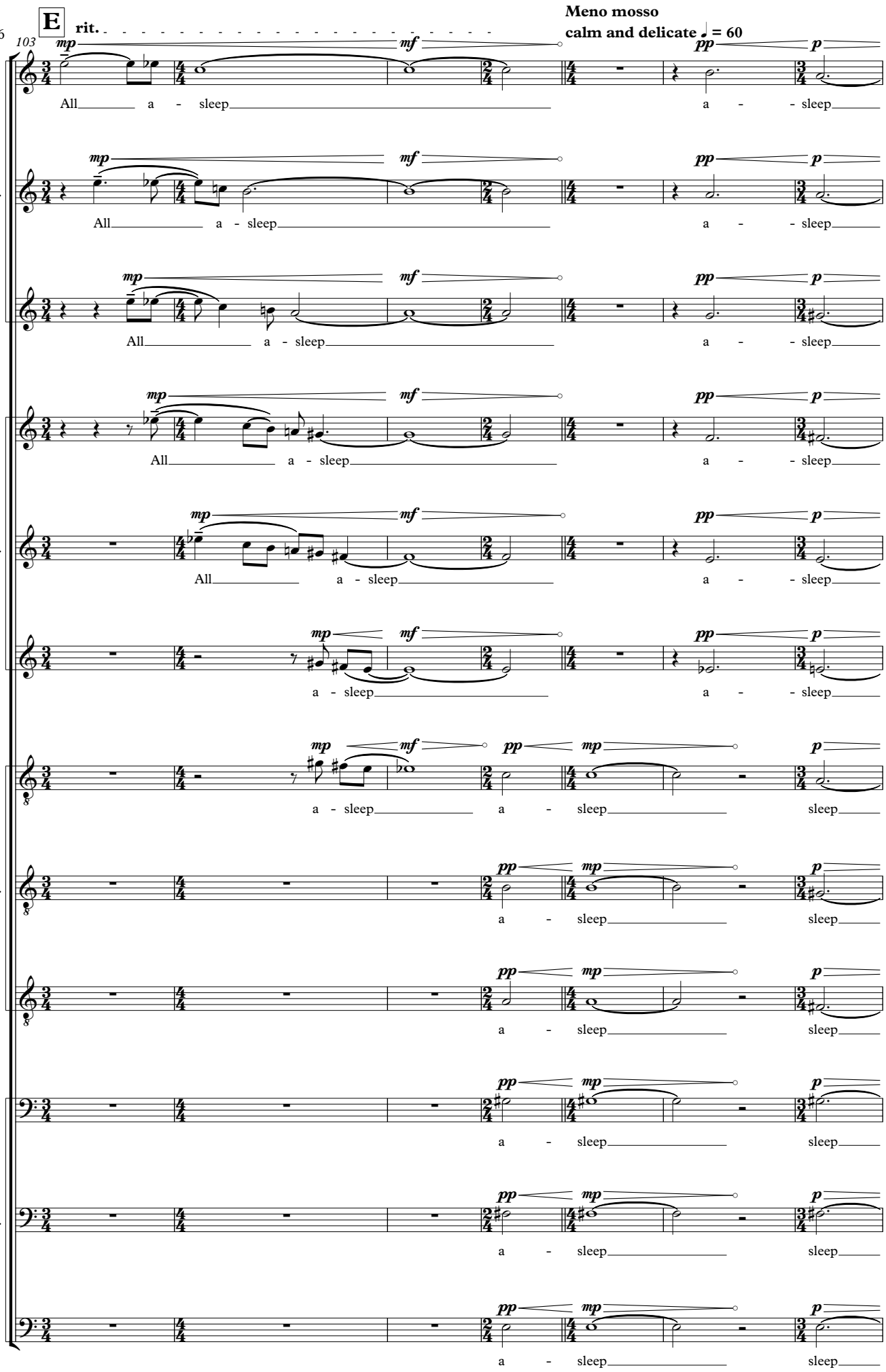

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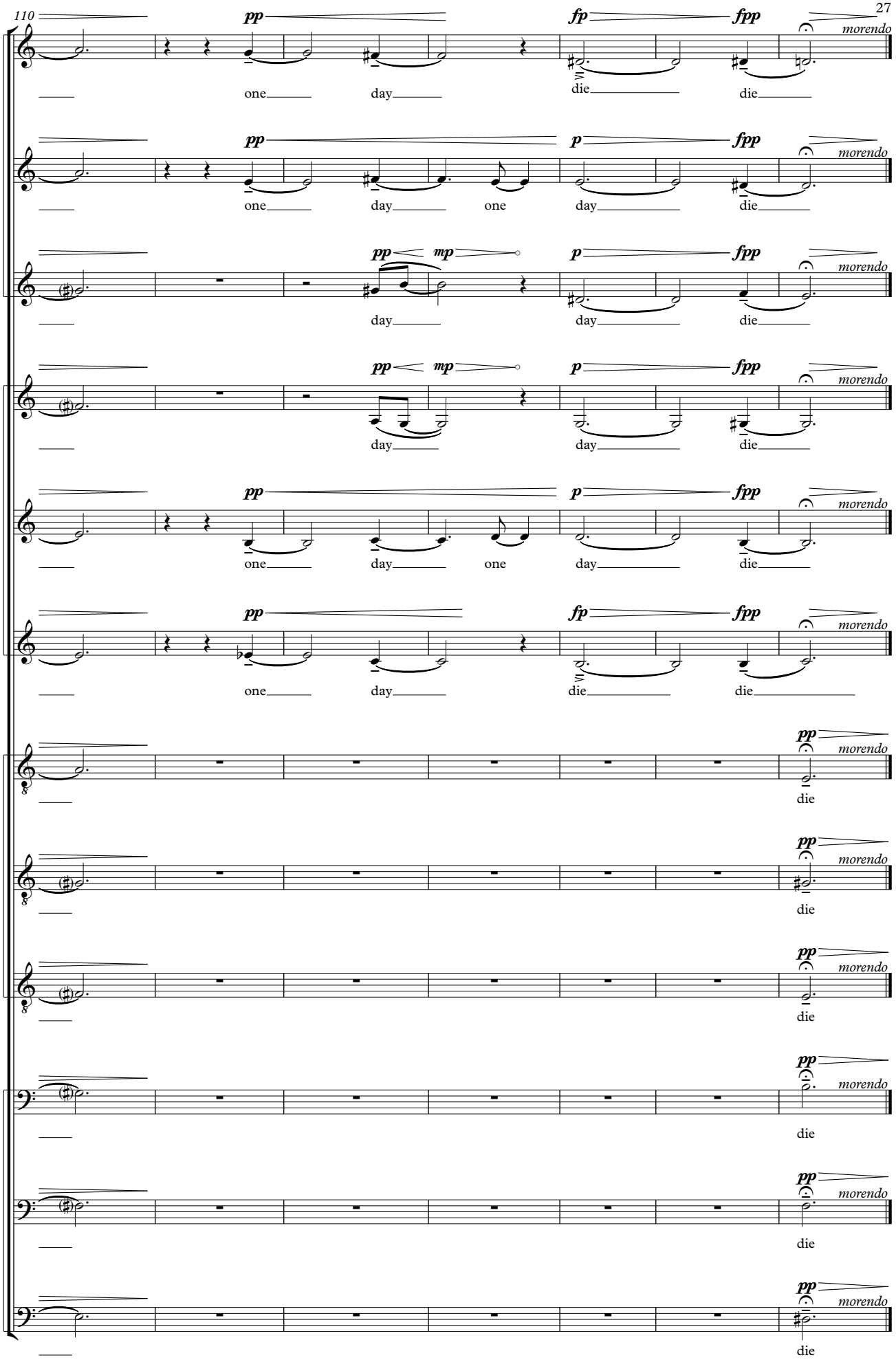

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Rainbow Fires

for piano trio

Angela Elizabeth Slater

Rainbow Fires for piano trio (2015)

Rainbow Fires (2015) was written for the Fournier Trio as part of the Advanced Composition Course at the 2015 Dartington International Summer School, where my place was generously funded by the Boltini Trust. The piece takes on the imagery and concept of rainbow fires, a rare natural phenomenon where clouds appear to be aflame with rainbow colours due to light being refracted by ice crystals in the atmosphere. It explores the different colours and associates elements air, fire and ice with different colours.

Angela Elizabeth Slater

Duration c.9 mins

Performance notes:

1) Sul ponticello, sul tasto and col legno are abbreviated in most cases to s.p., s.t. and c.l. respectively.

2) . --→ : gradually move from one technique/position to another.

3) Left hand pizz. indicated by + underneath the notehead.

4) Bisbigliando - alternate the timbre of the note. Duration of bisbigliando is indicated by a dotted line and arrow

e.g. - - - - - →

5) Trill to note in brackets above or at side of note.

6) Circular bowing will be indicated by the symbol  and an initial indication of 'circular bowing'.

7) Behind the bridge is represented by × noteheads, plus 'behind the bridge' at first instance.

8) Pressure trill: a trill produced by alternating the finger pressure between normal () and light (harmonic)

9) Notes tied with accents and ***fp*** directions should given a pulsing effect rather than being clearly rearticulated each time.

10) Tremolo speed changes are marked with an indication of speed, e.g. fast, and then an → to the desired speed.

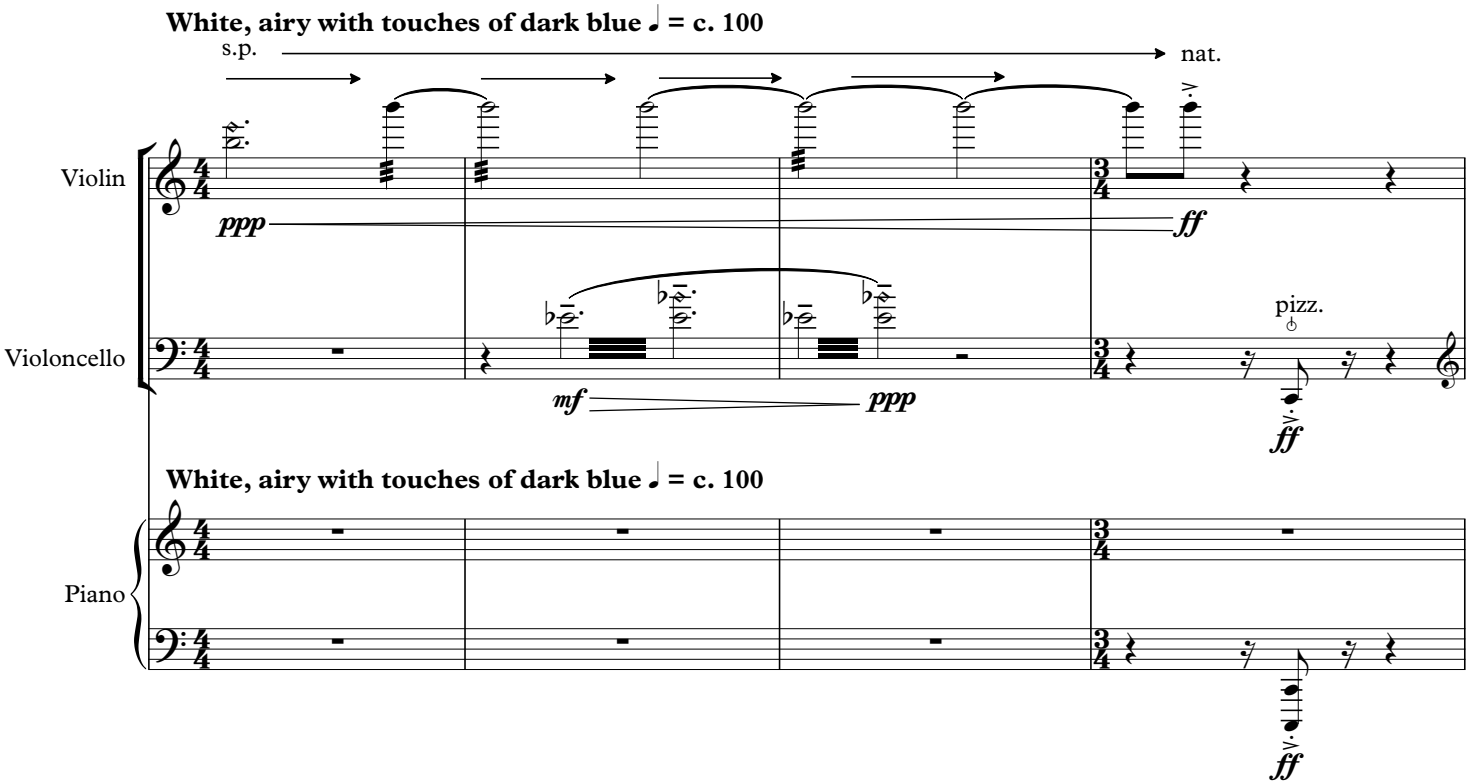
11) The sustain pedal for the piano should be used at the discretion of the performer.

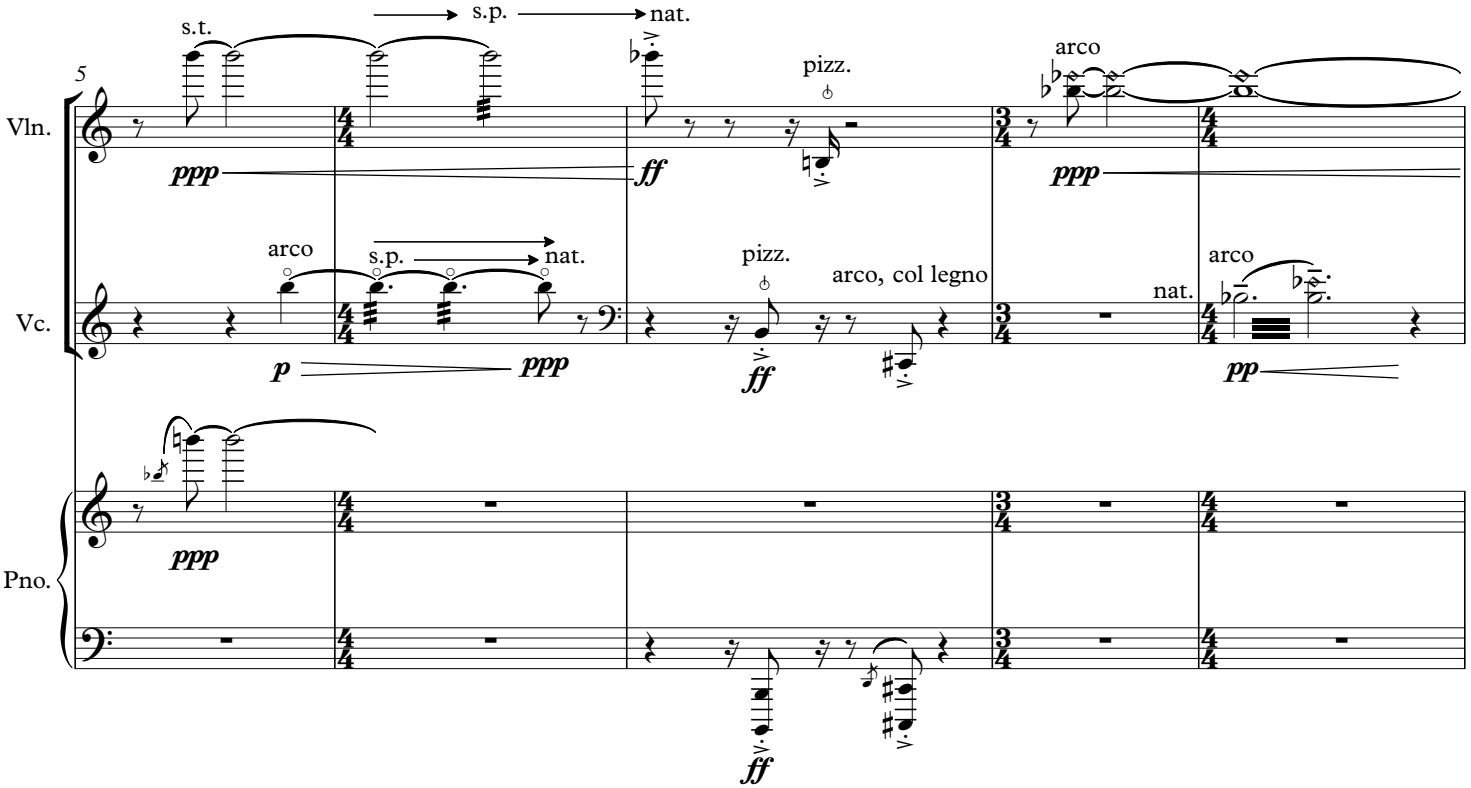
12) In the piano part particularly large-spread chords may be arpeggiated if required.

Rainbow Fires

for the Fournier Trio

Angela Elizabeth Slater





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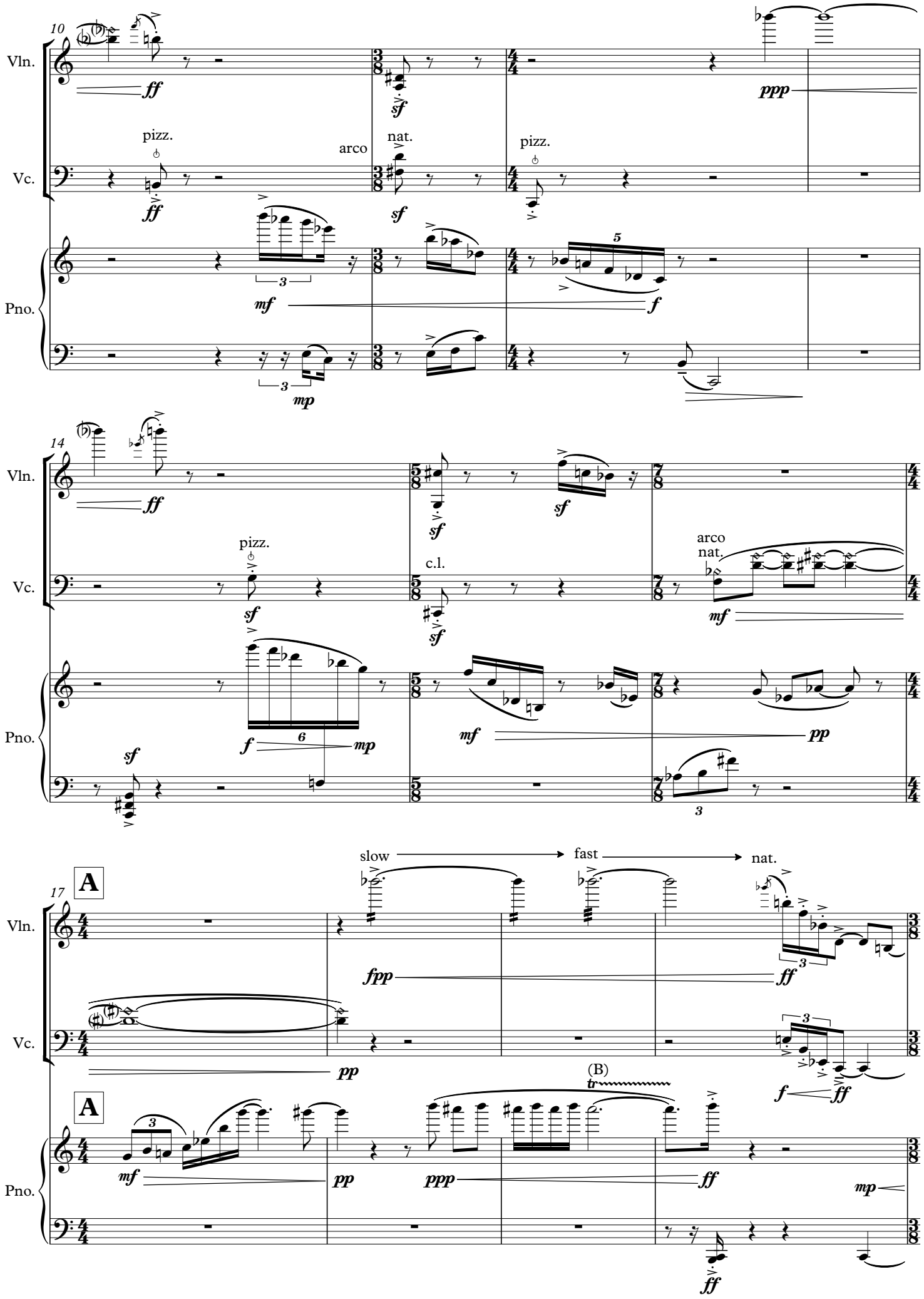

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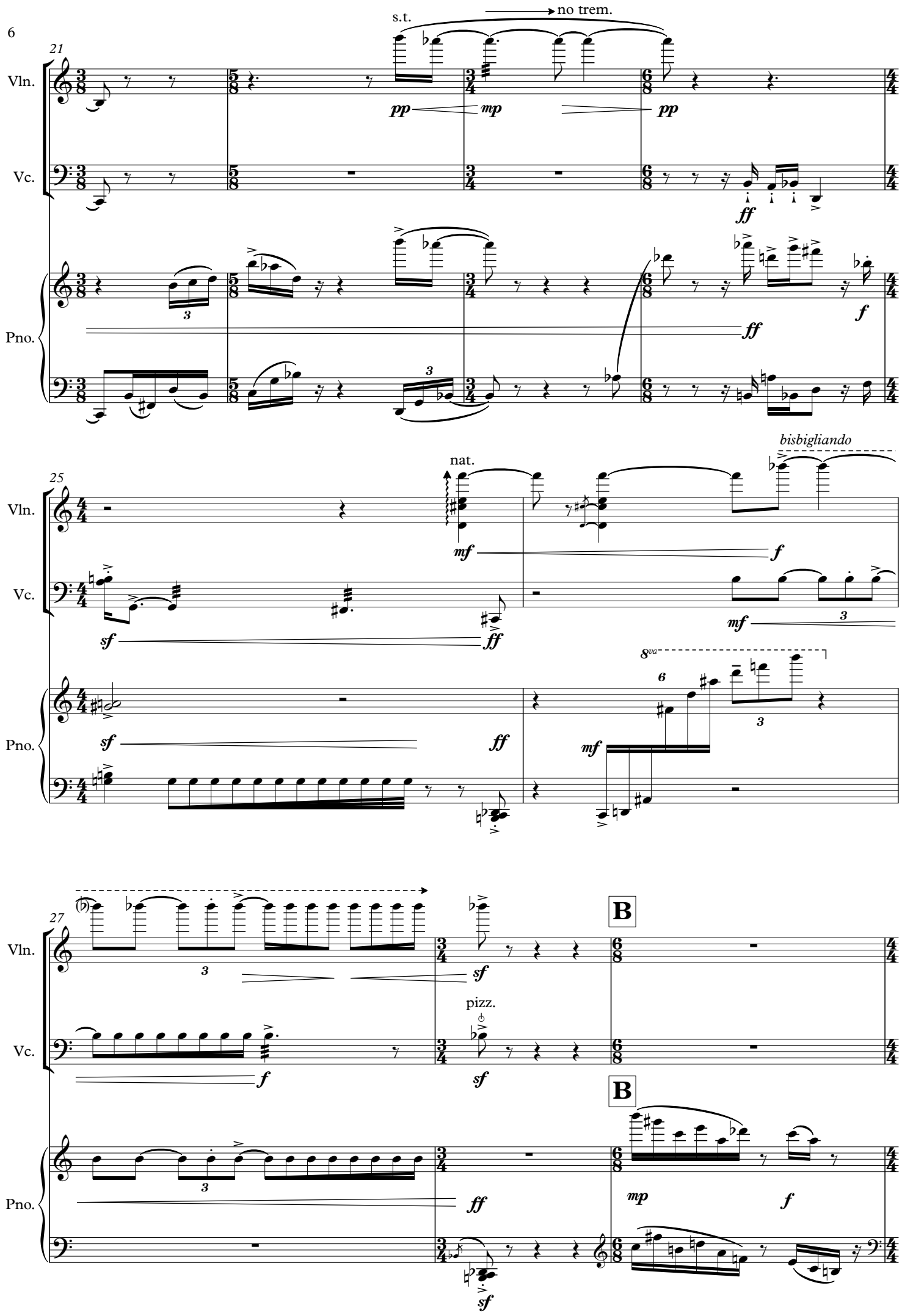

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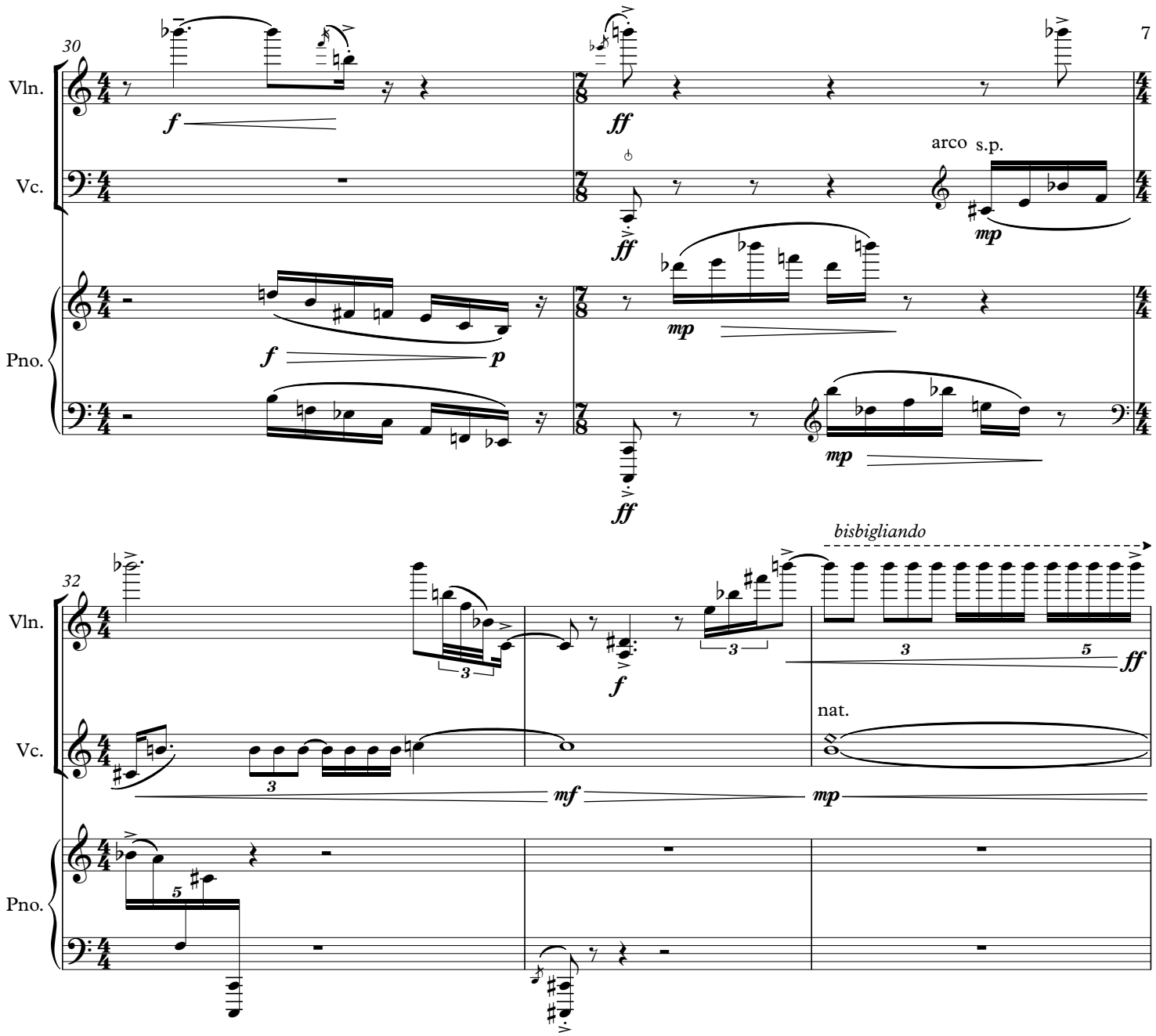
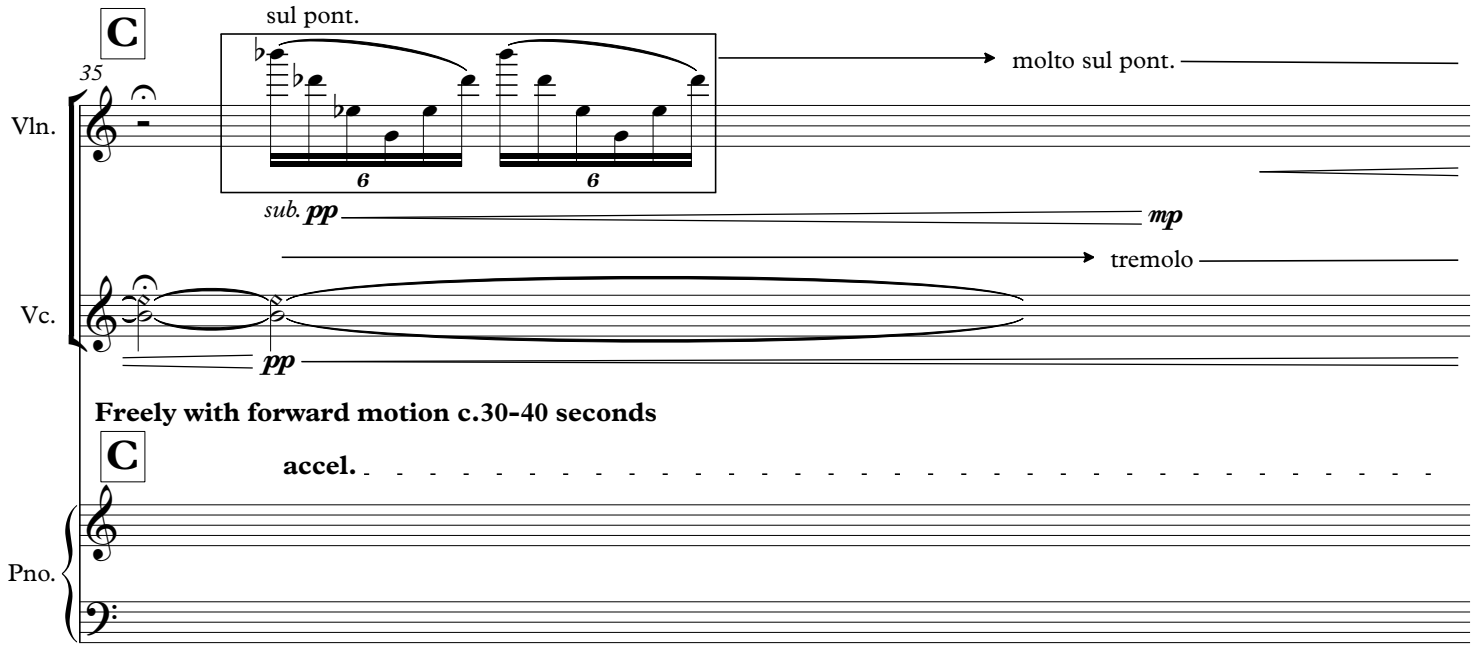


Freely with forward motion c.30-40 seconds

accel.



Freely with forward motion c.30-40 seconds

C

accel.

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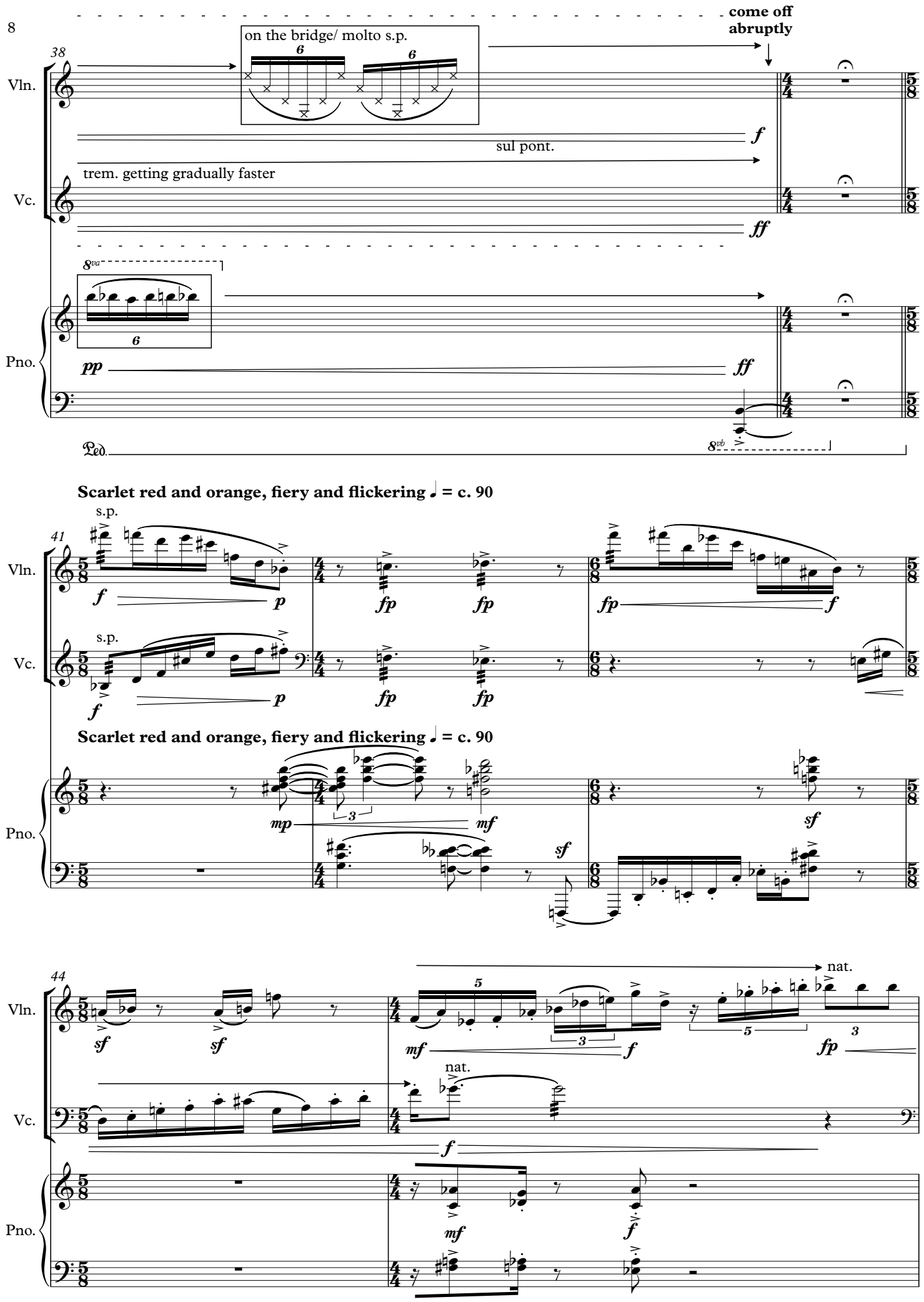

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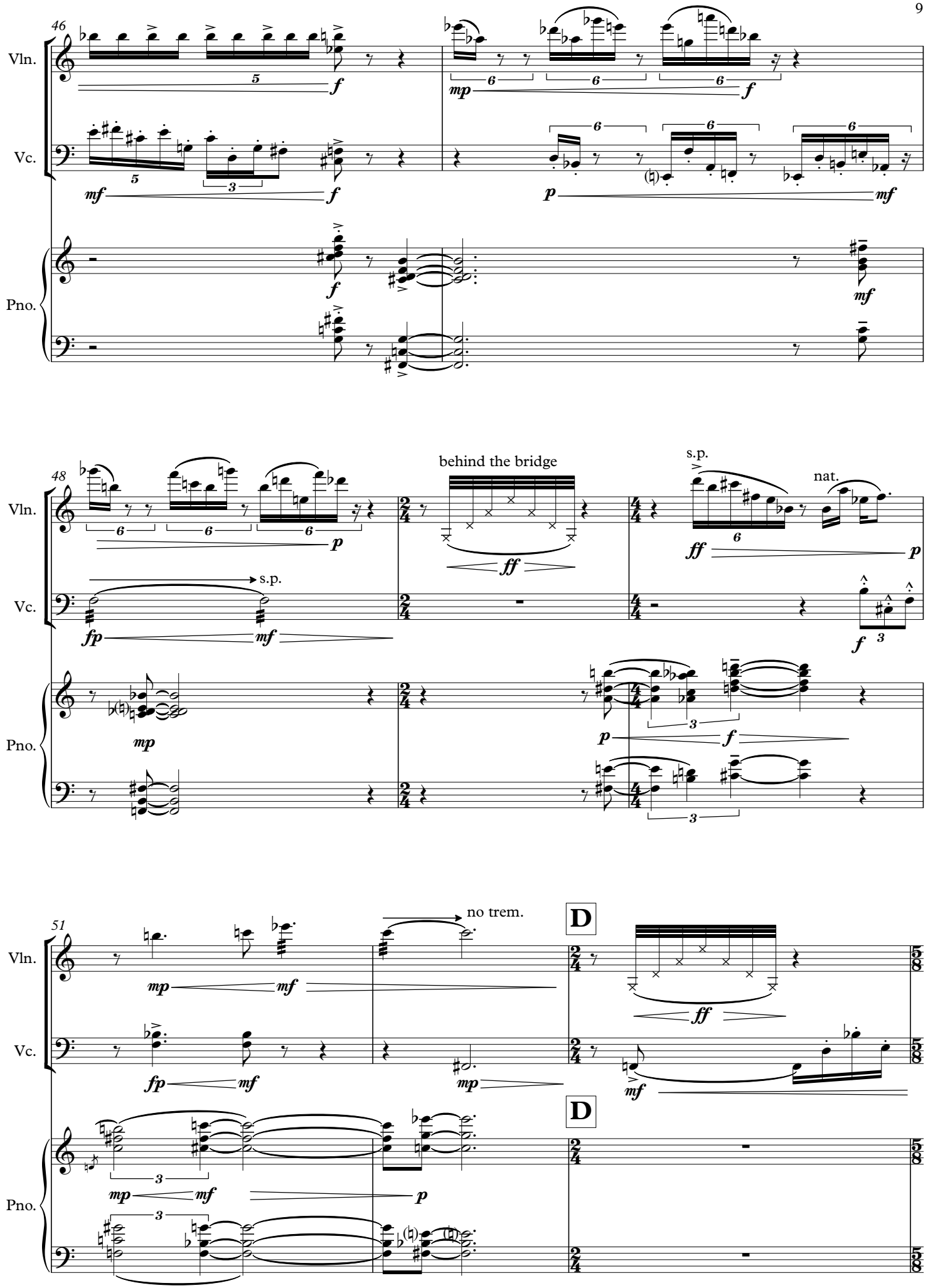

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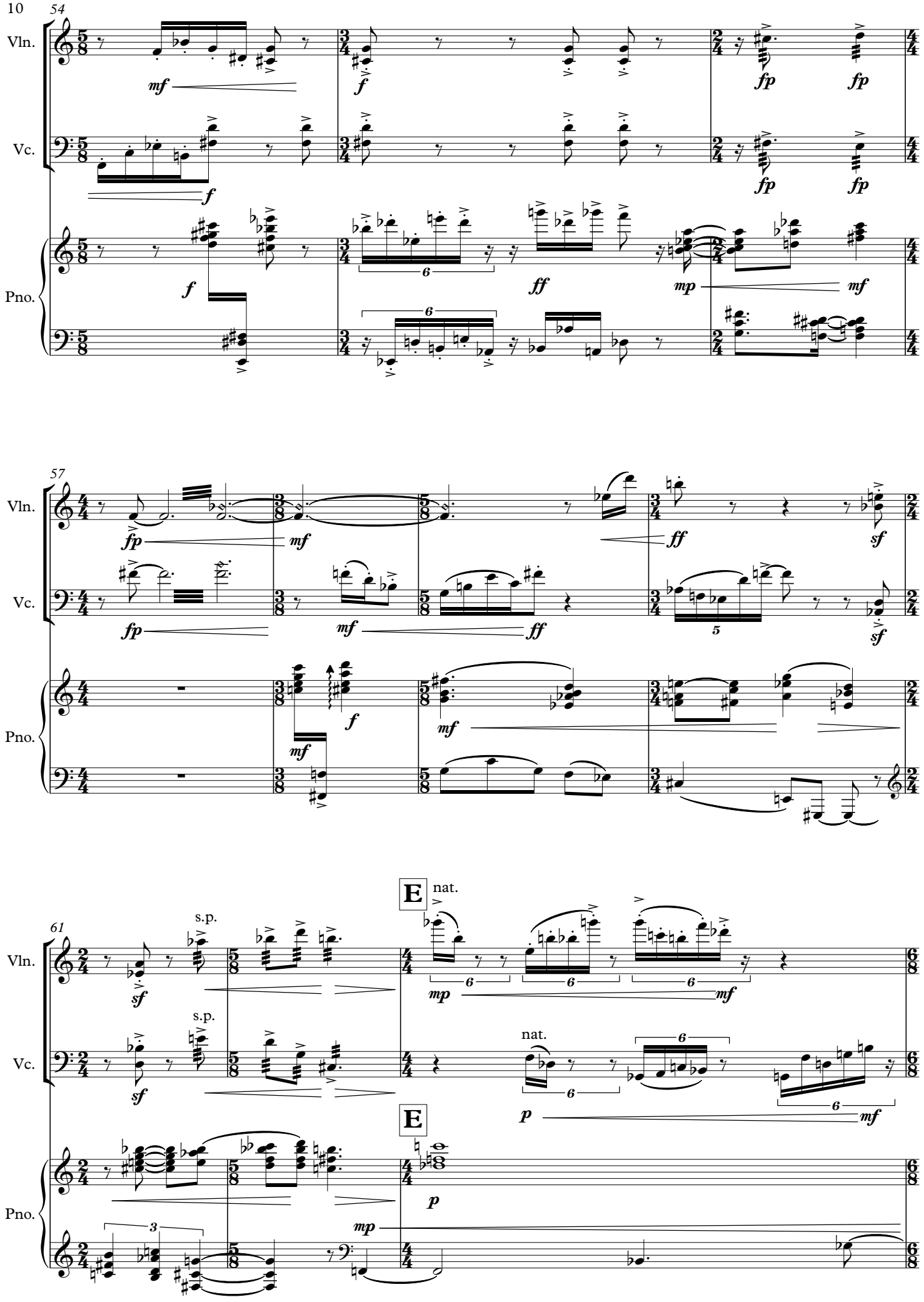

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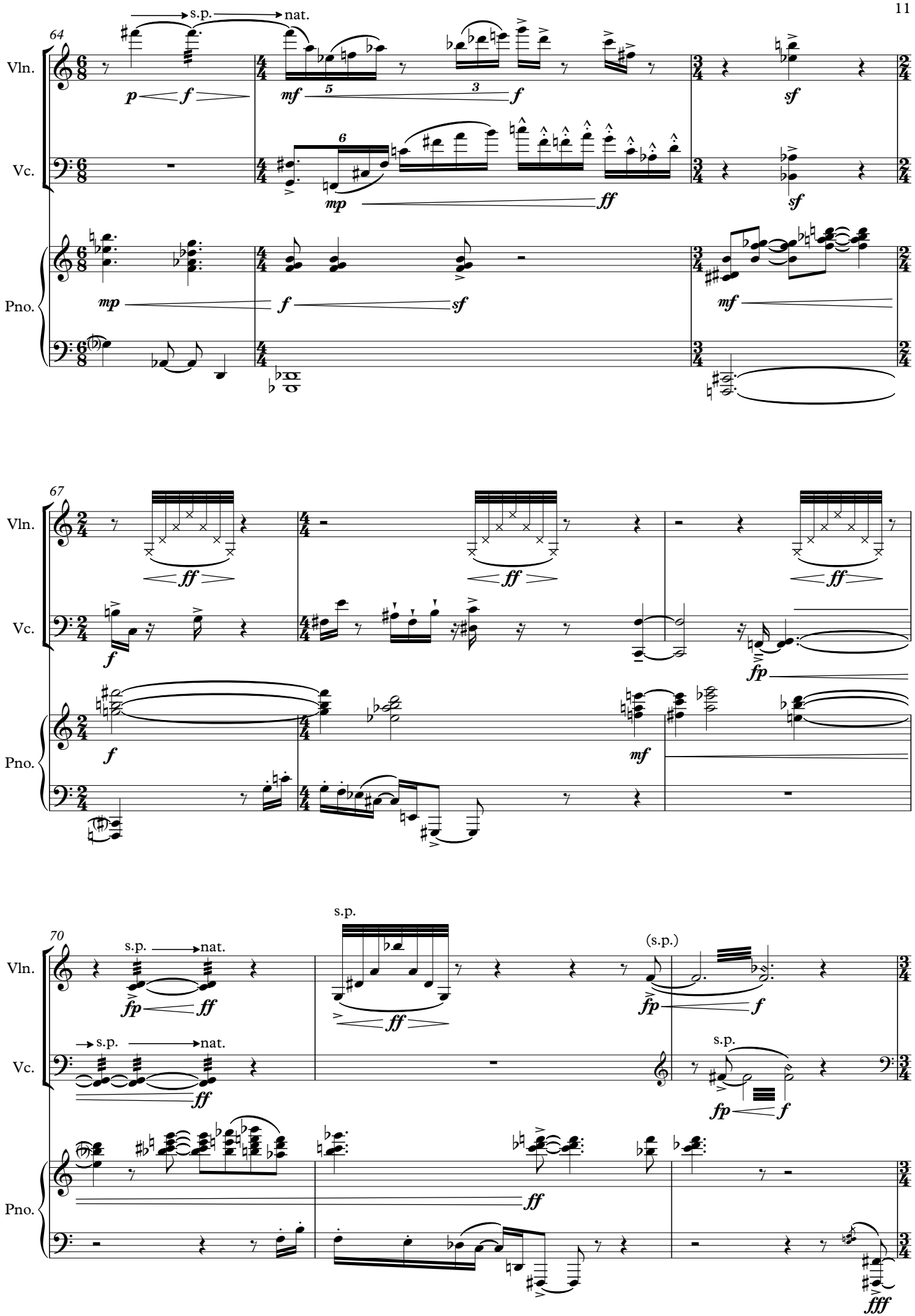

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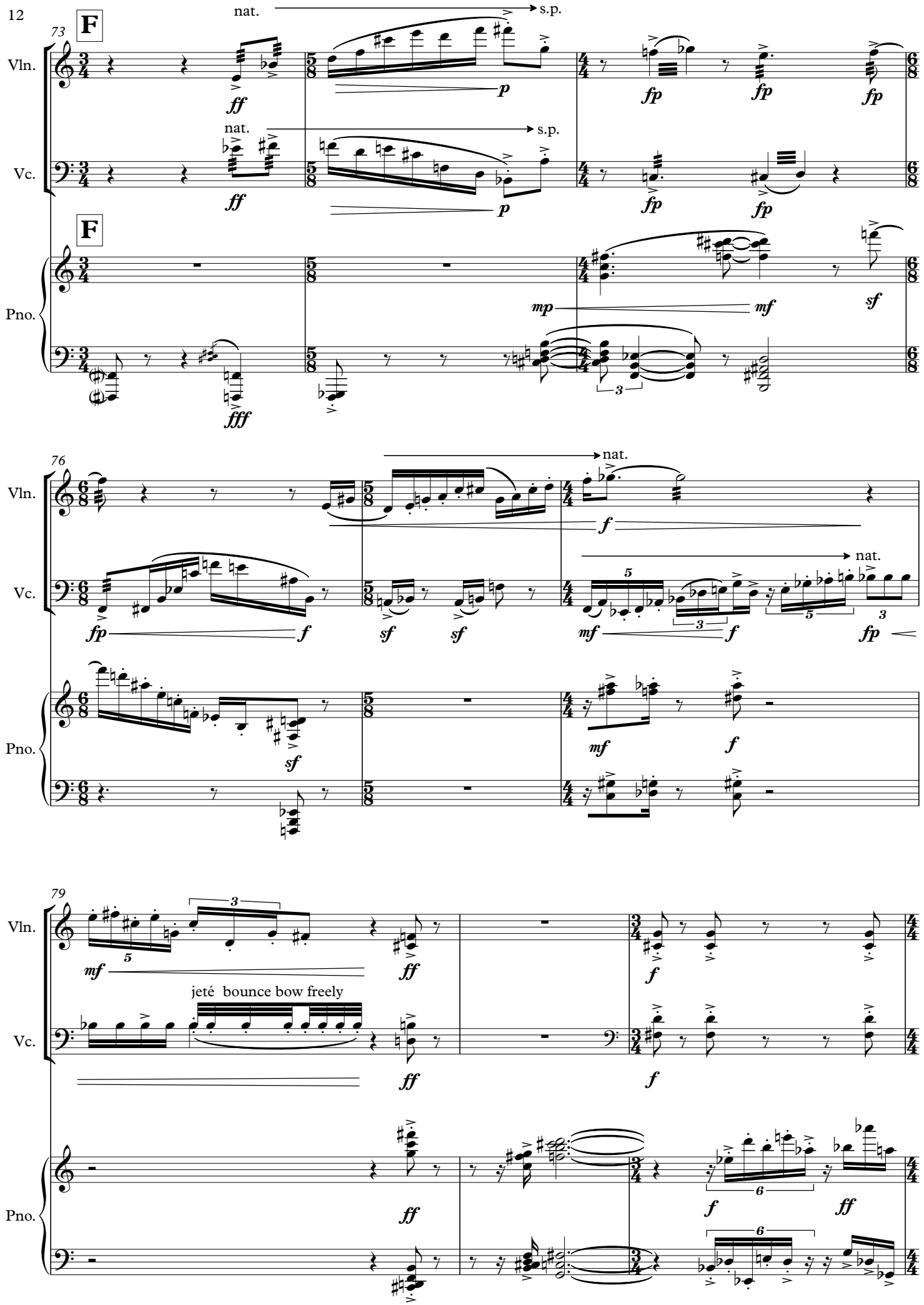

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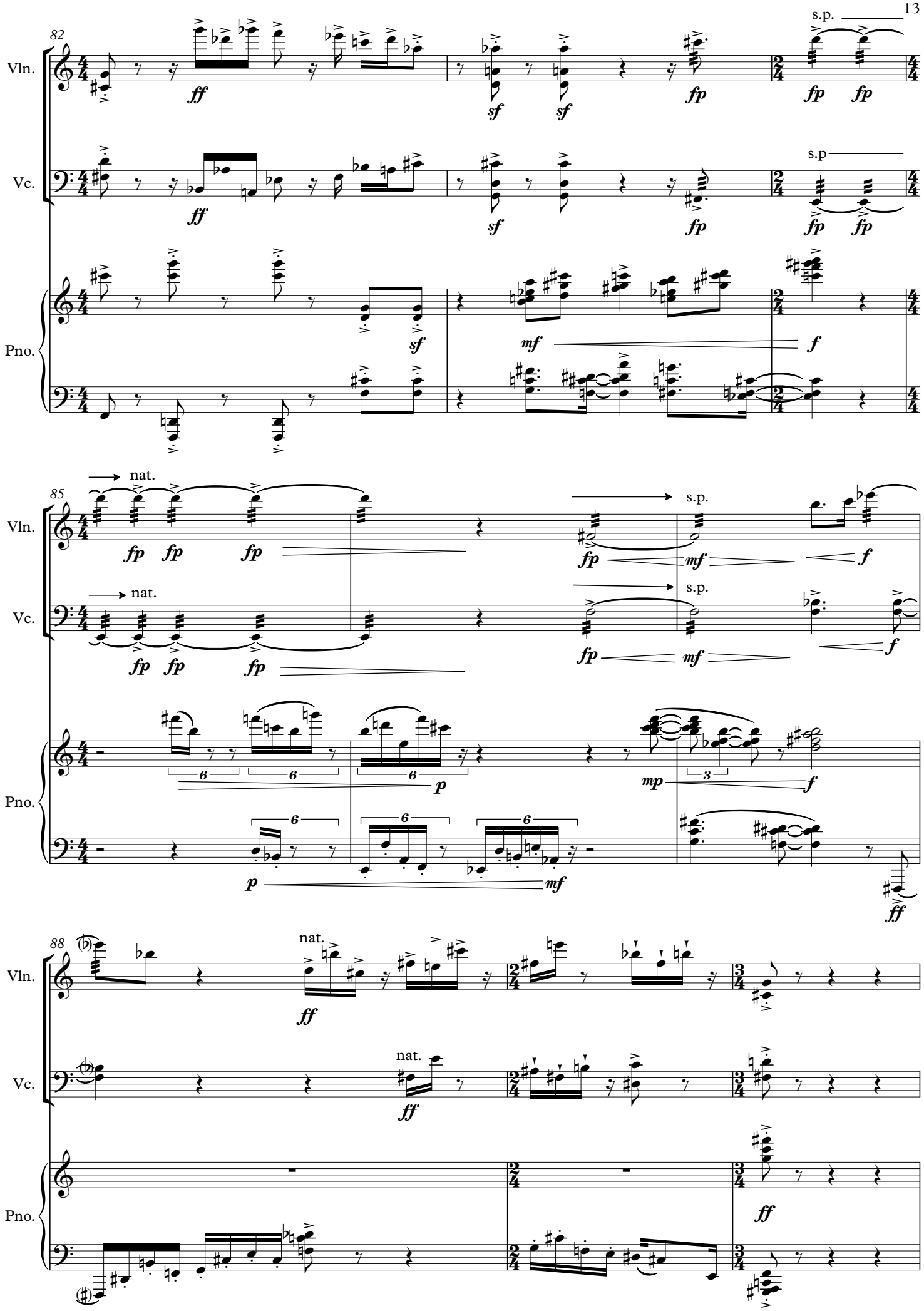

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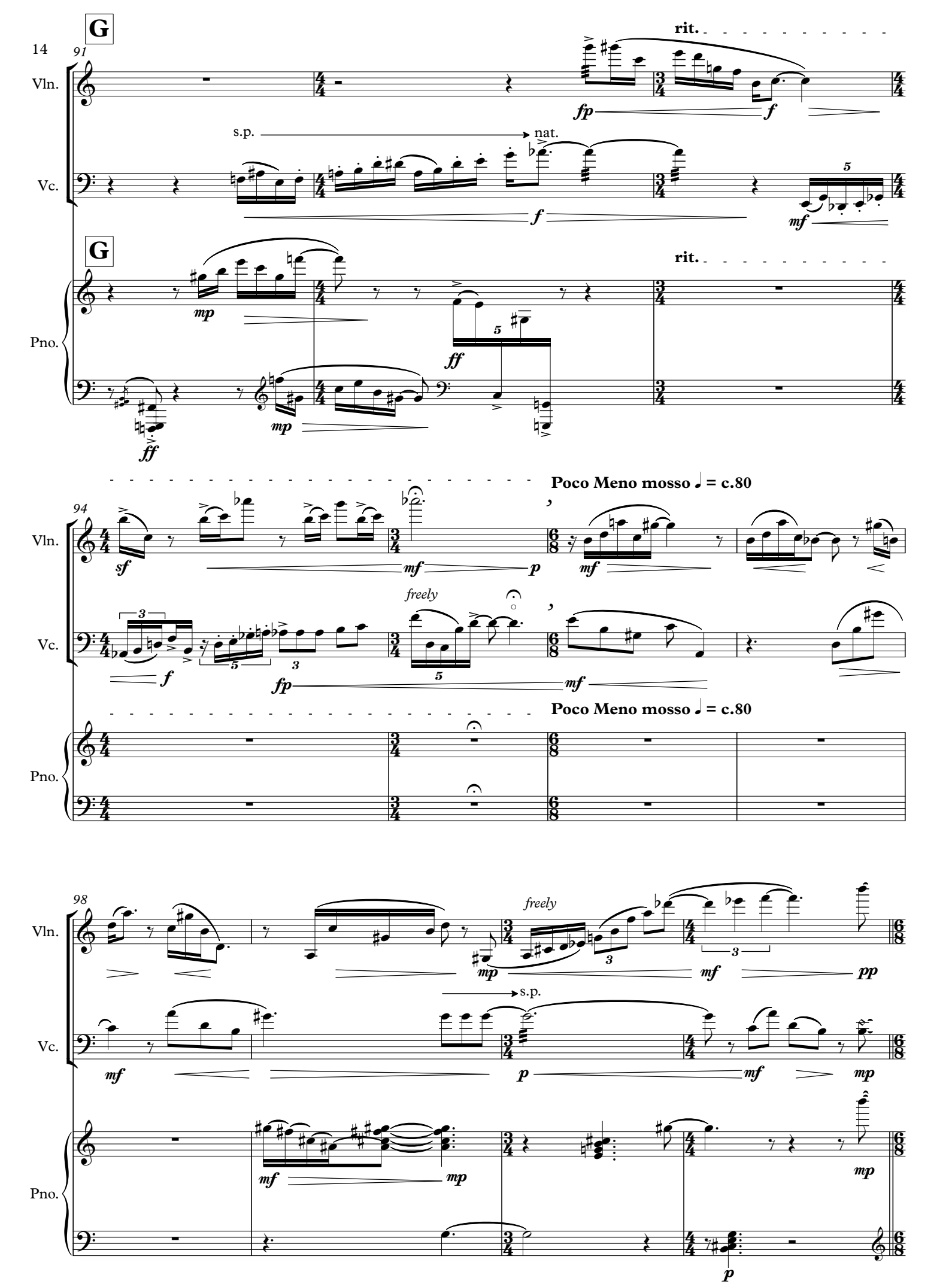

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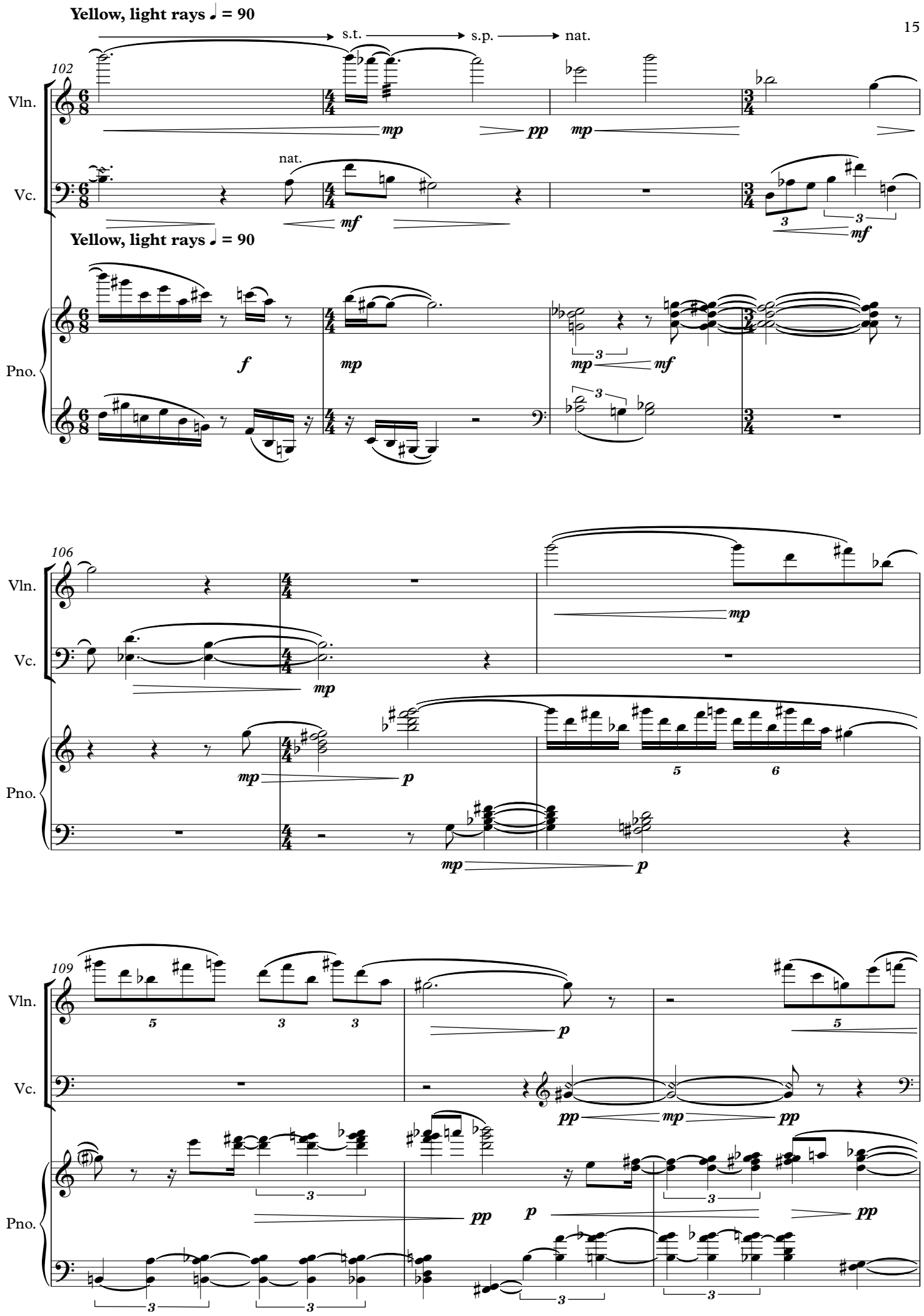

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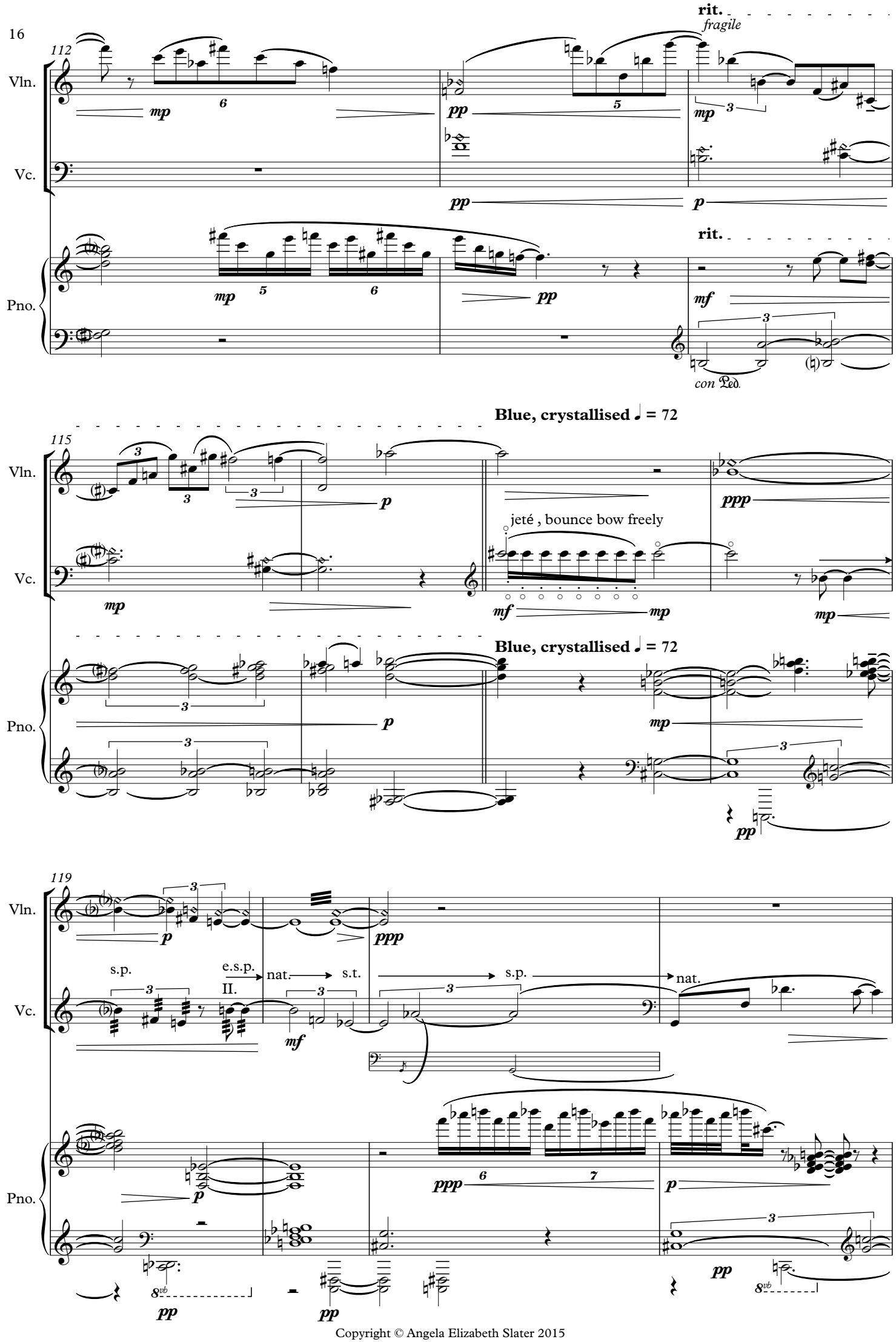

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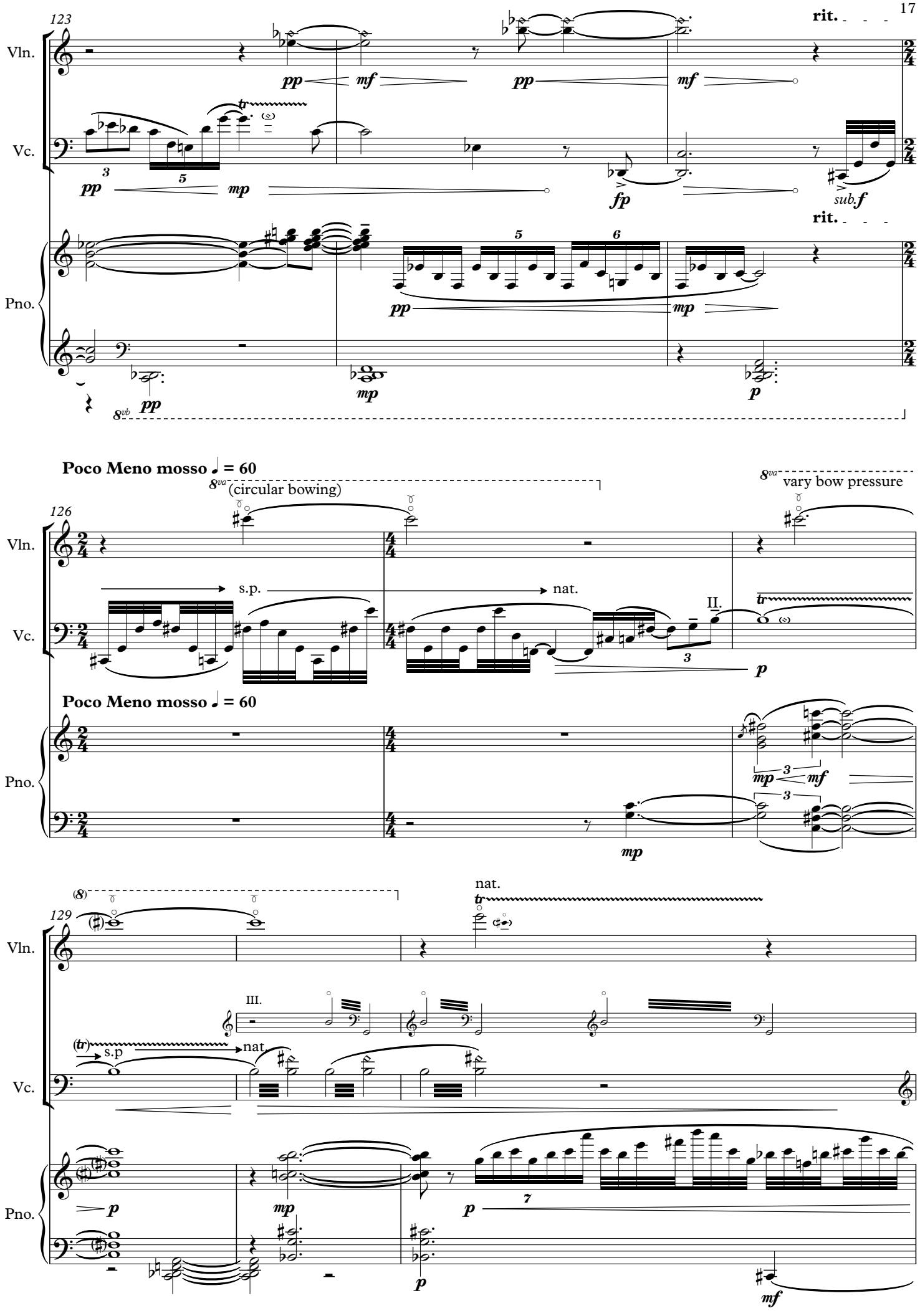

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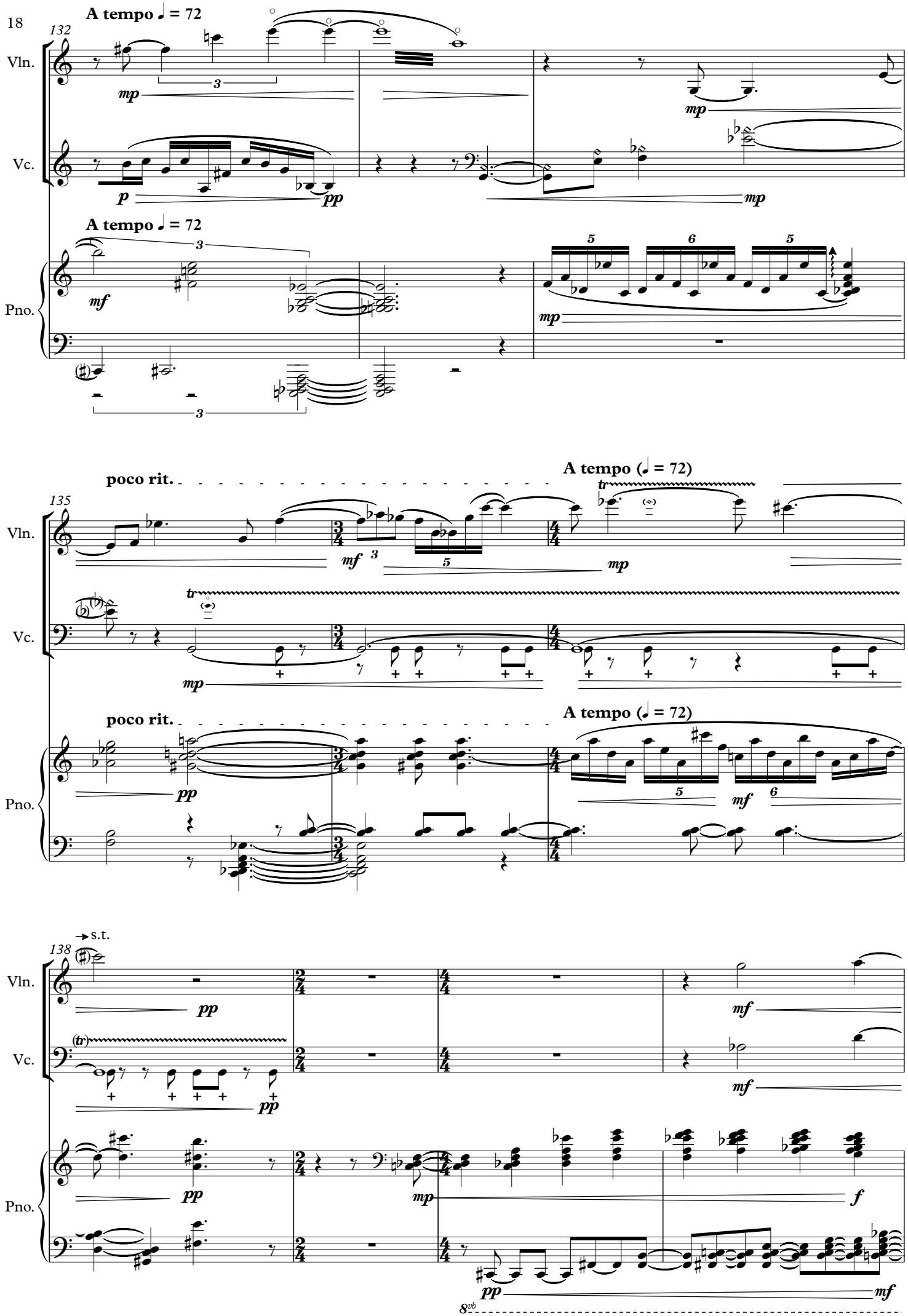

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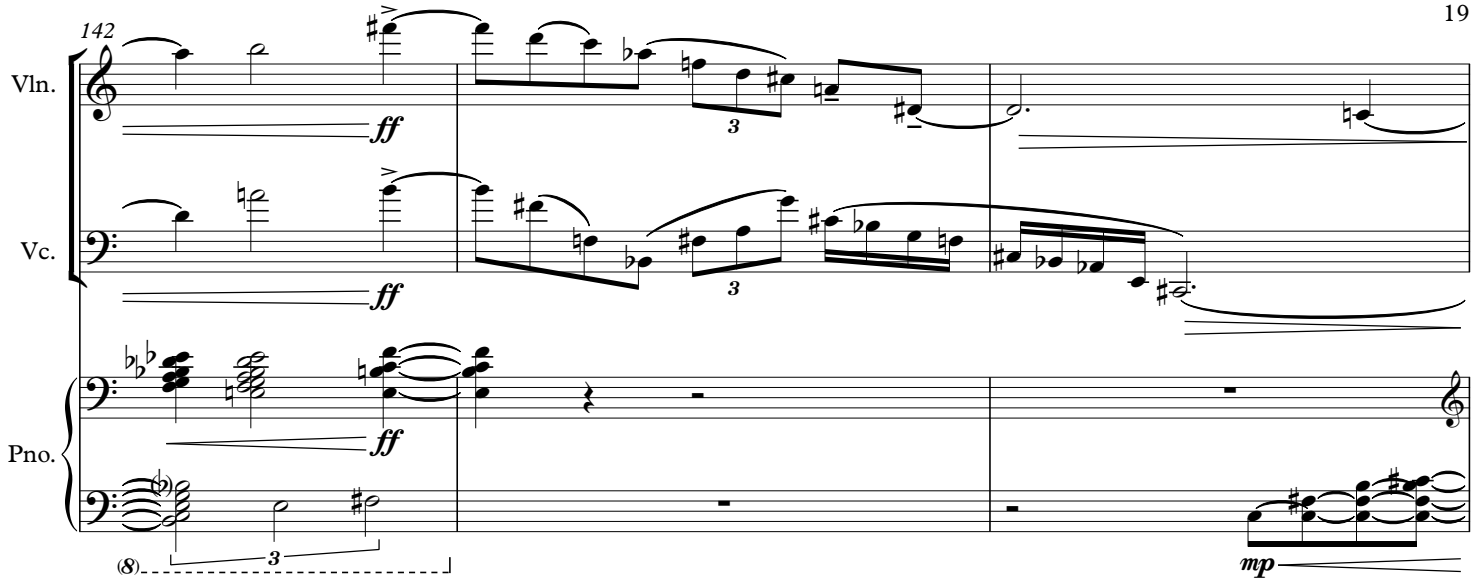

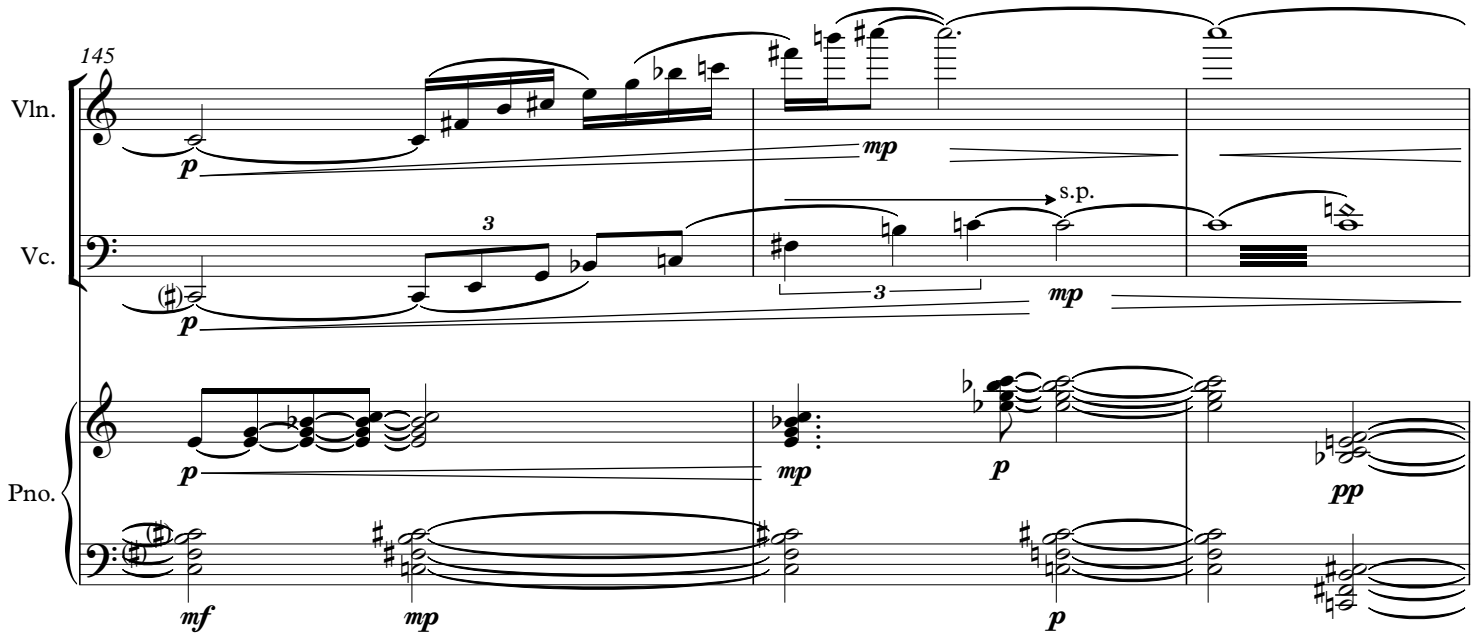

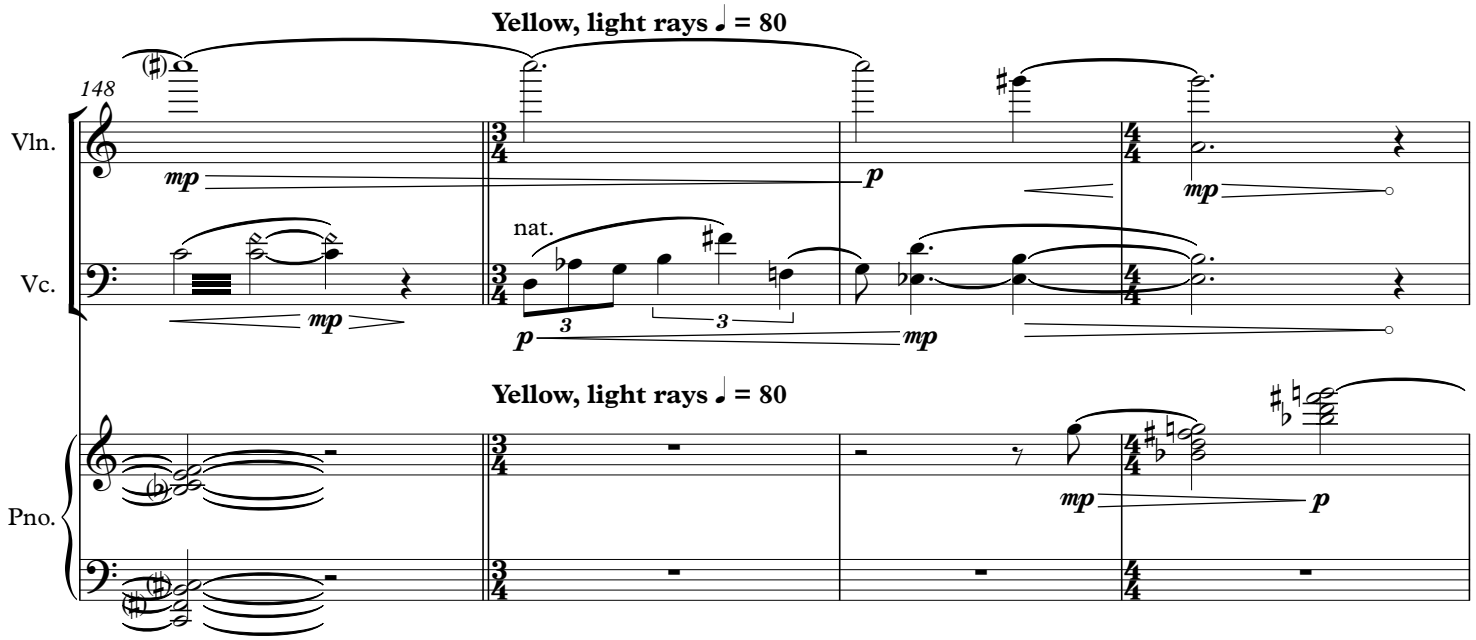

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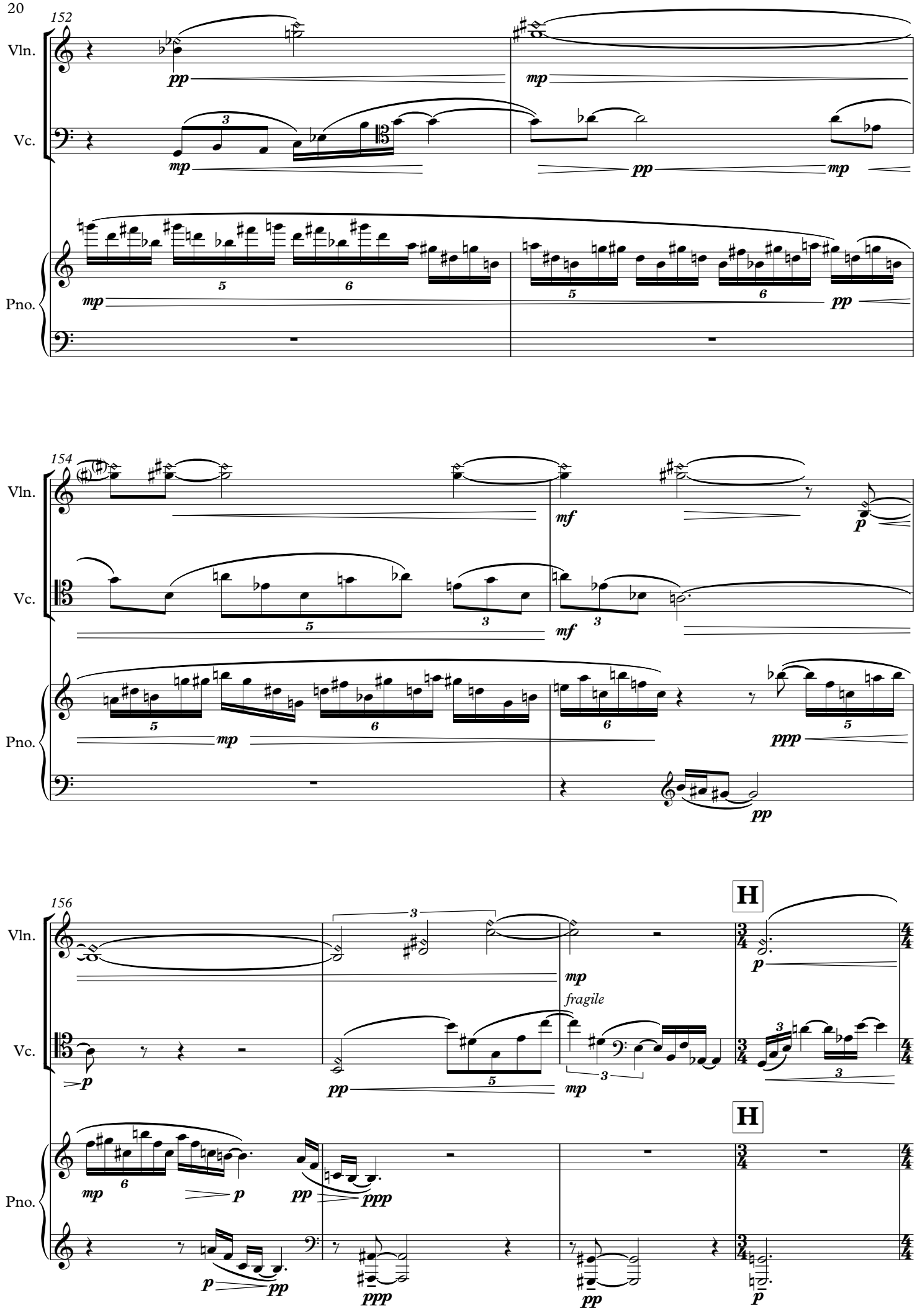

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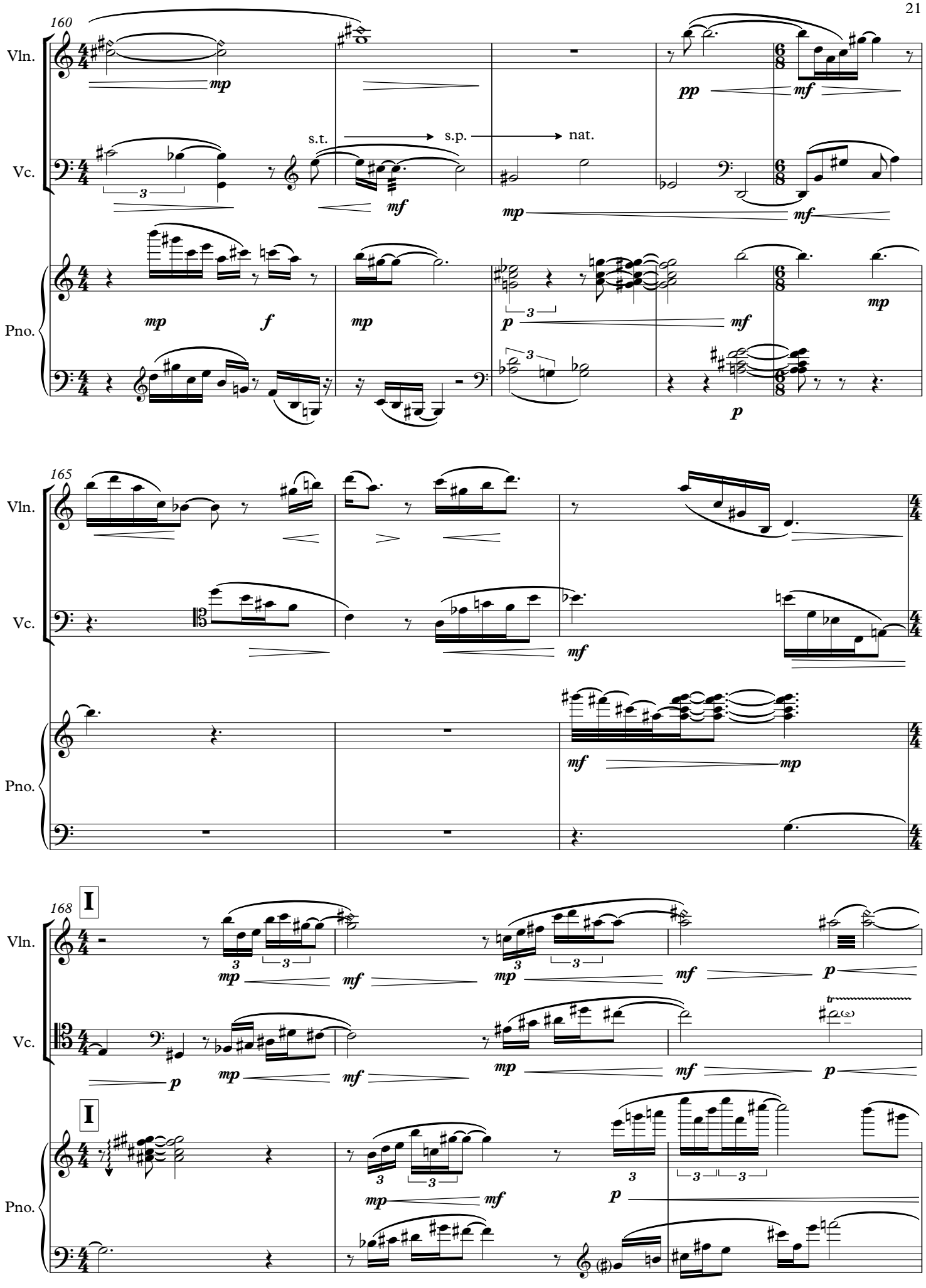

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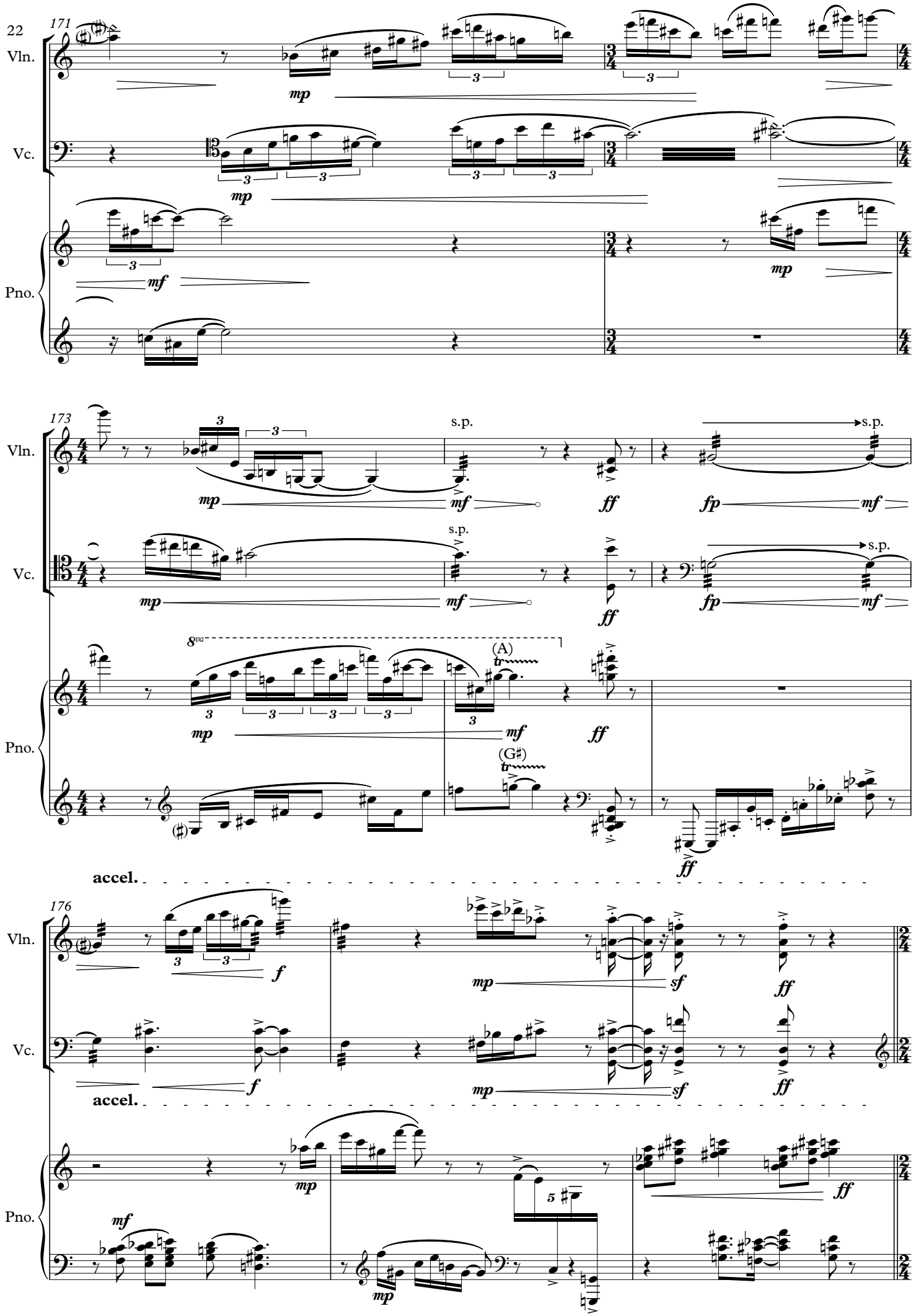

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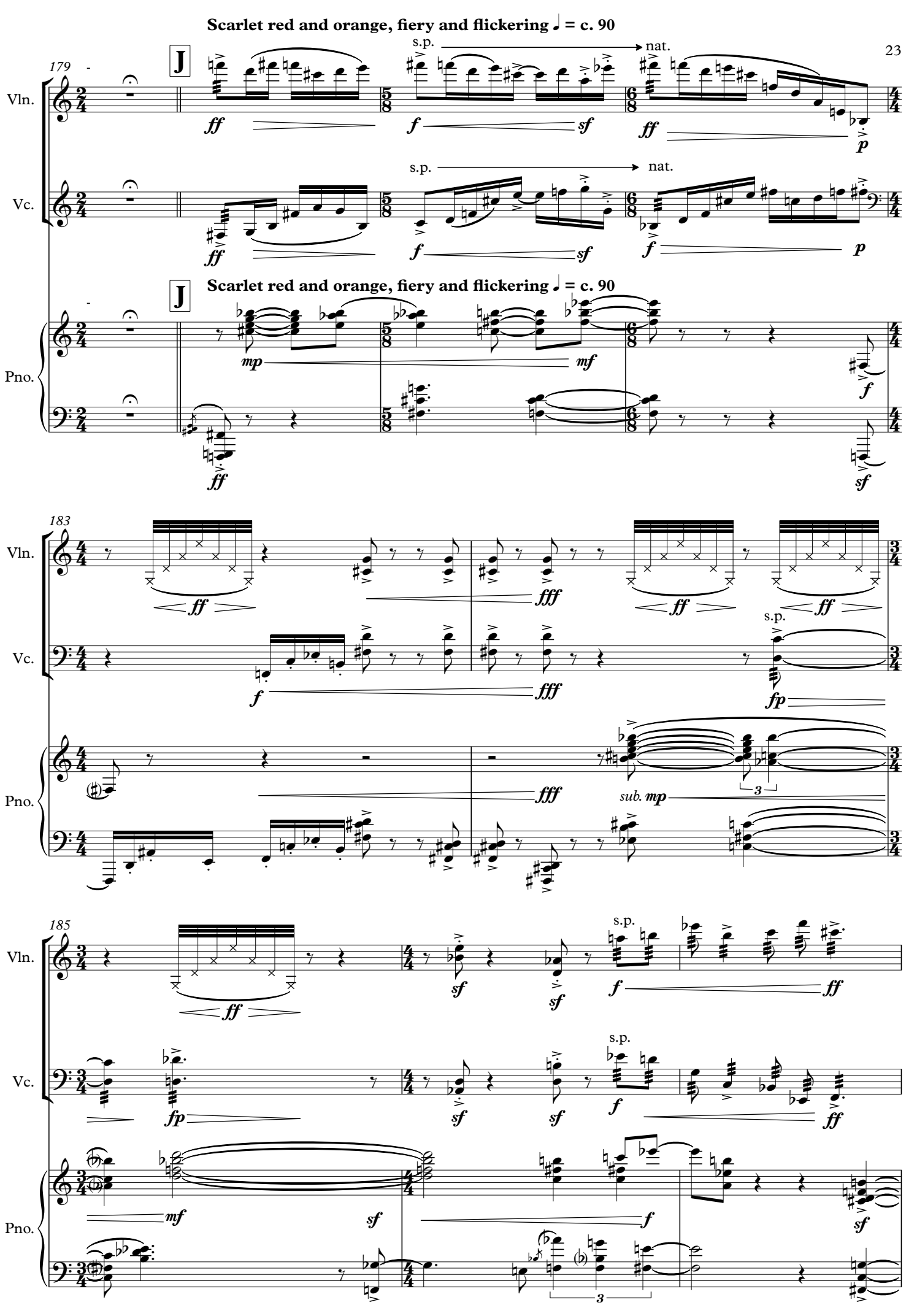

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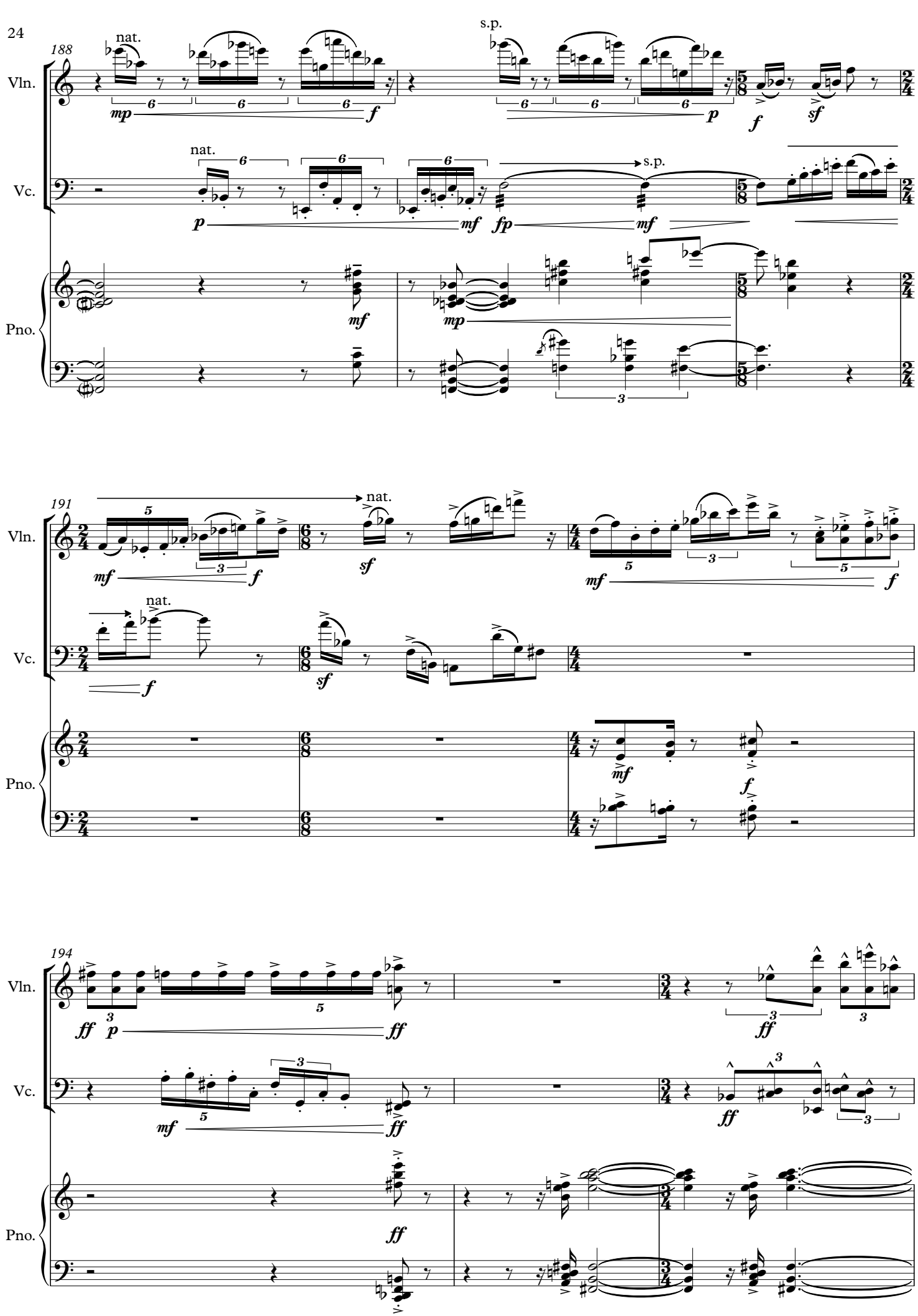

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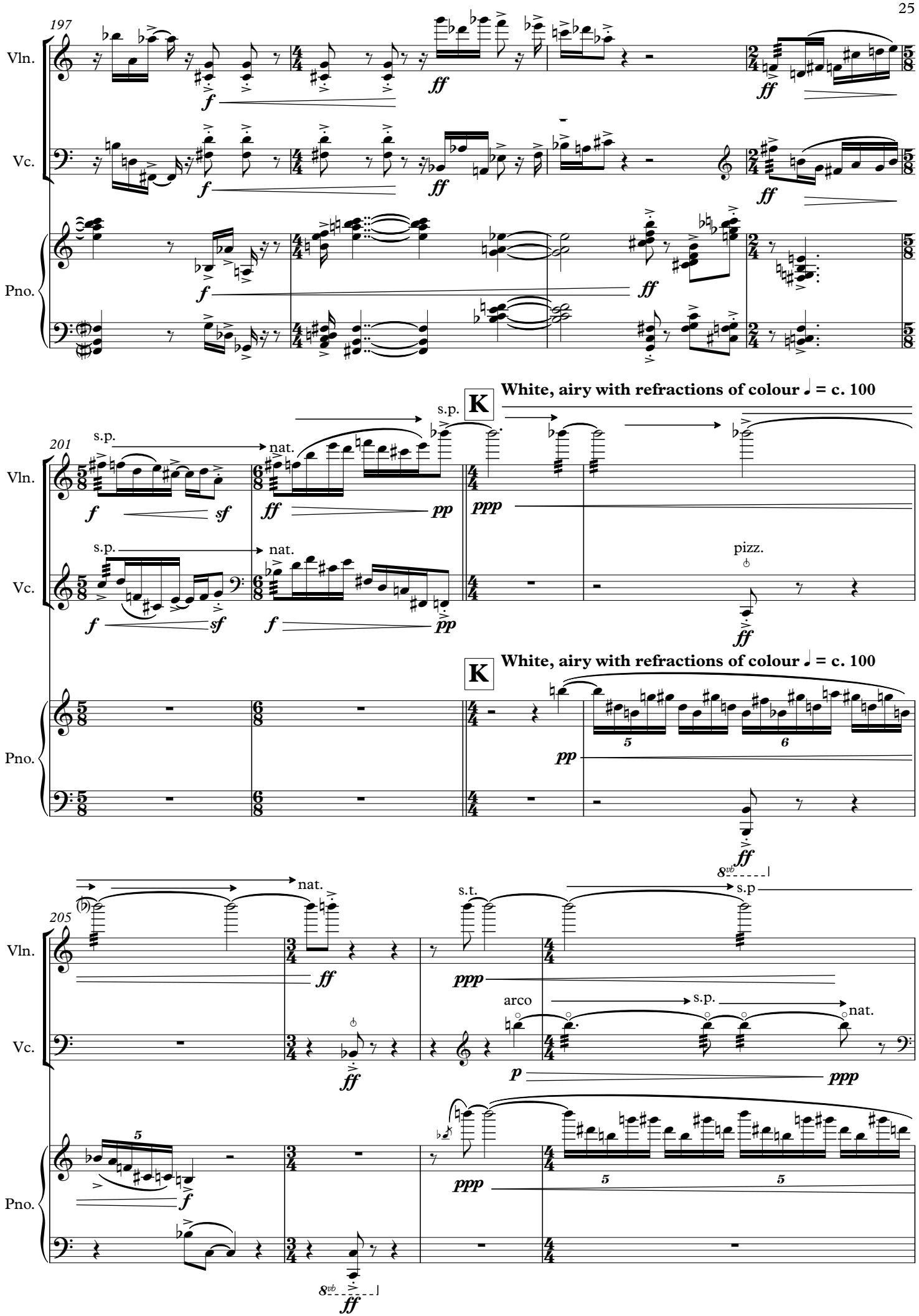

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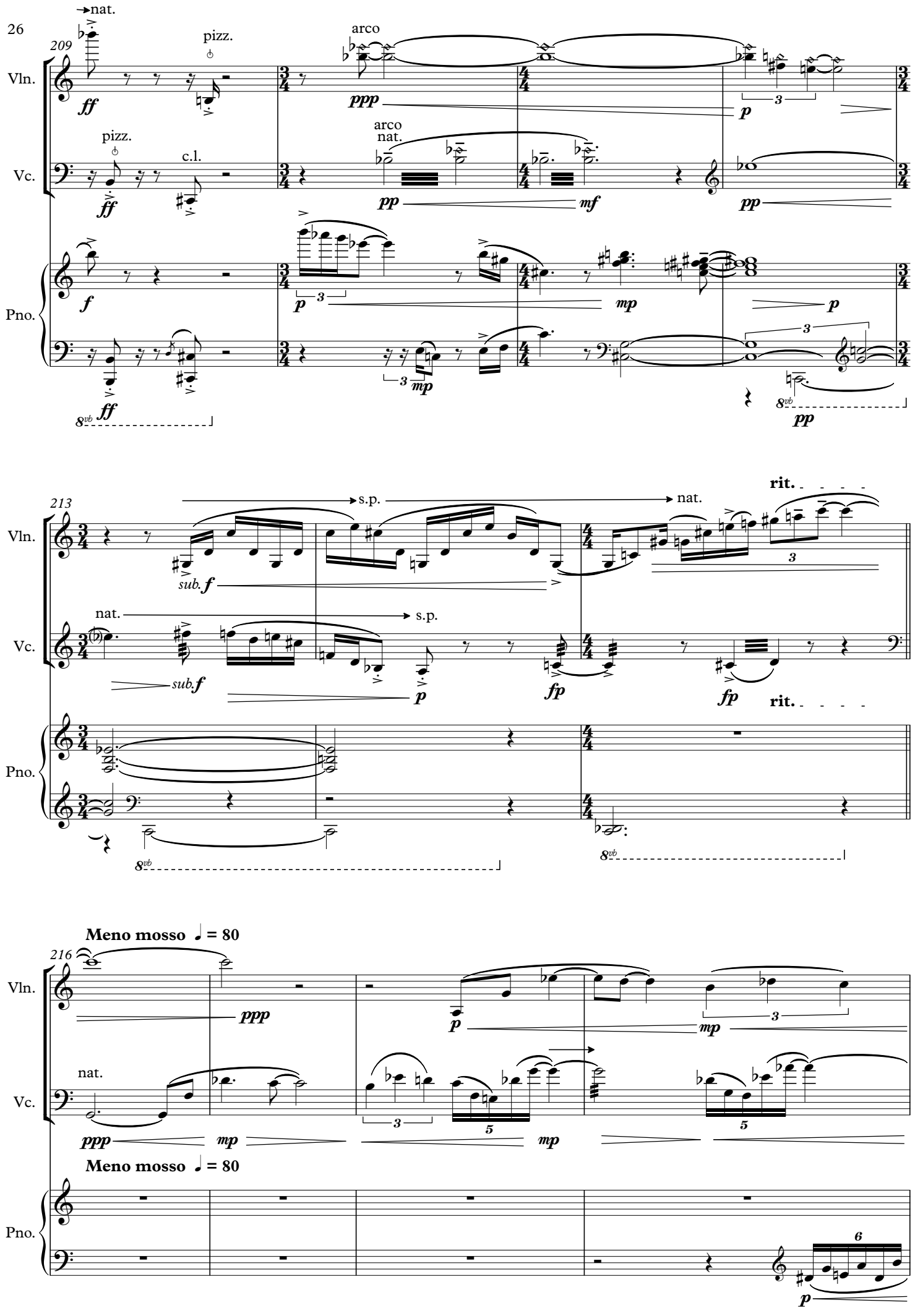

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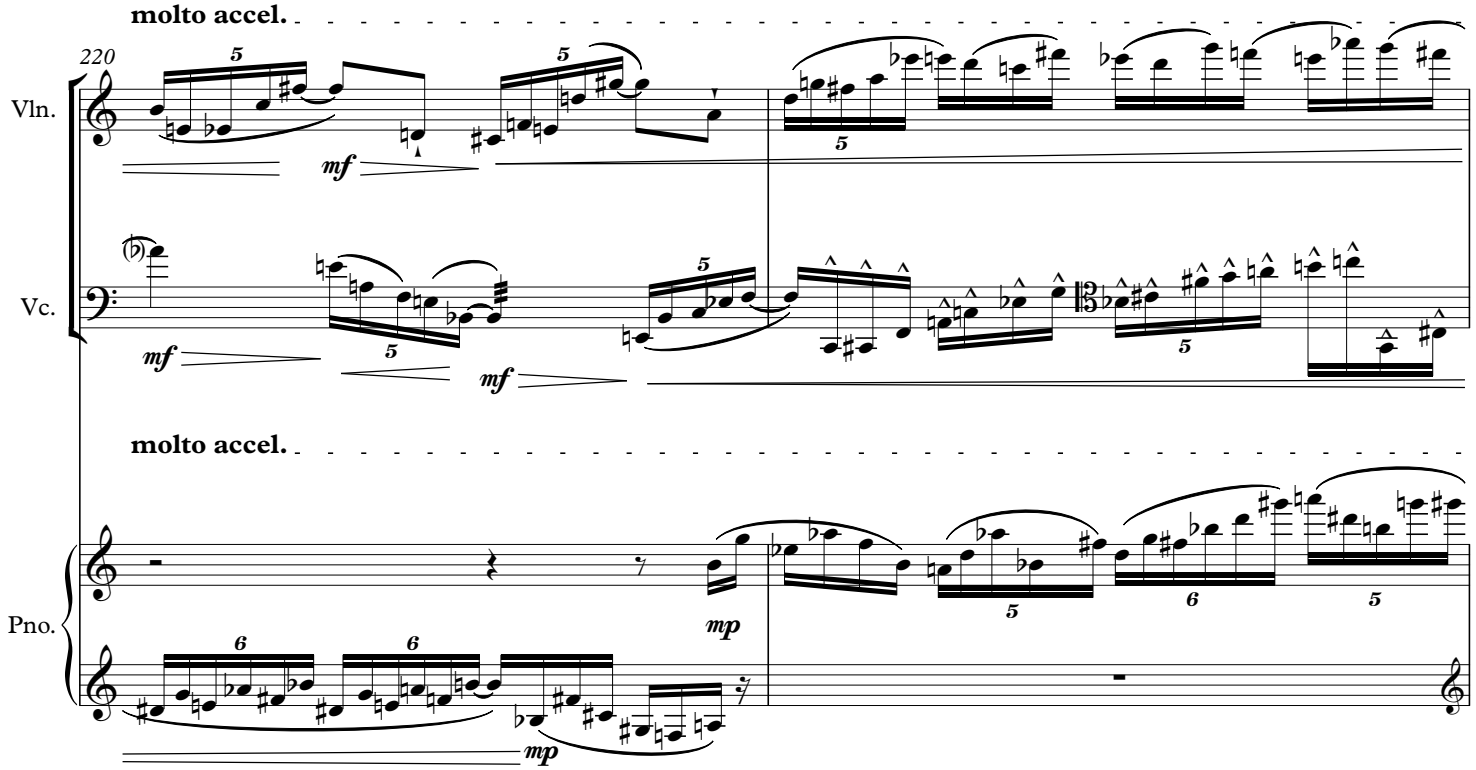

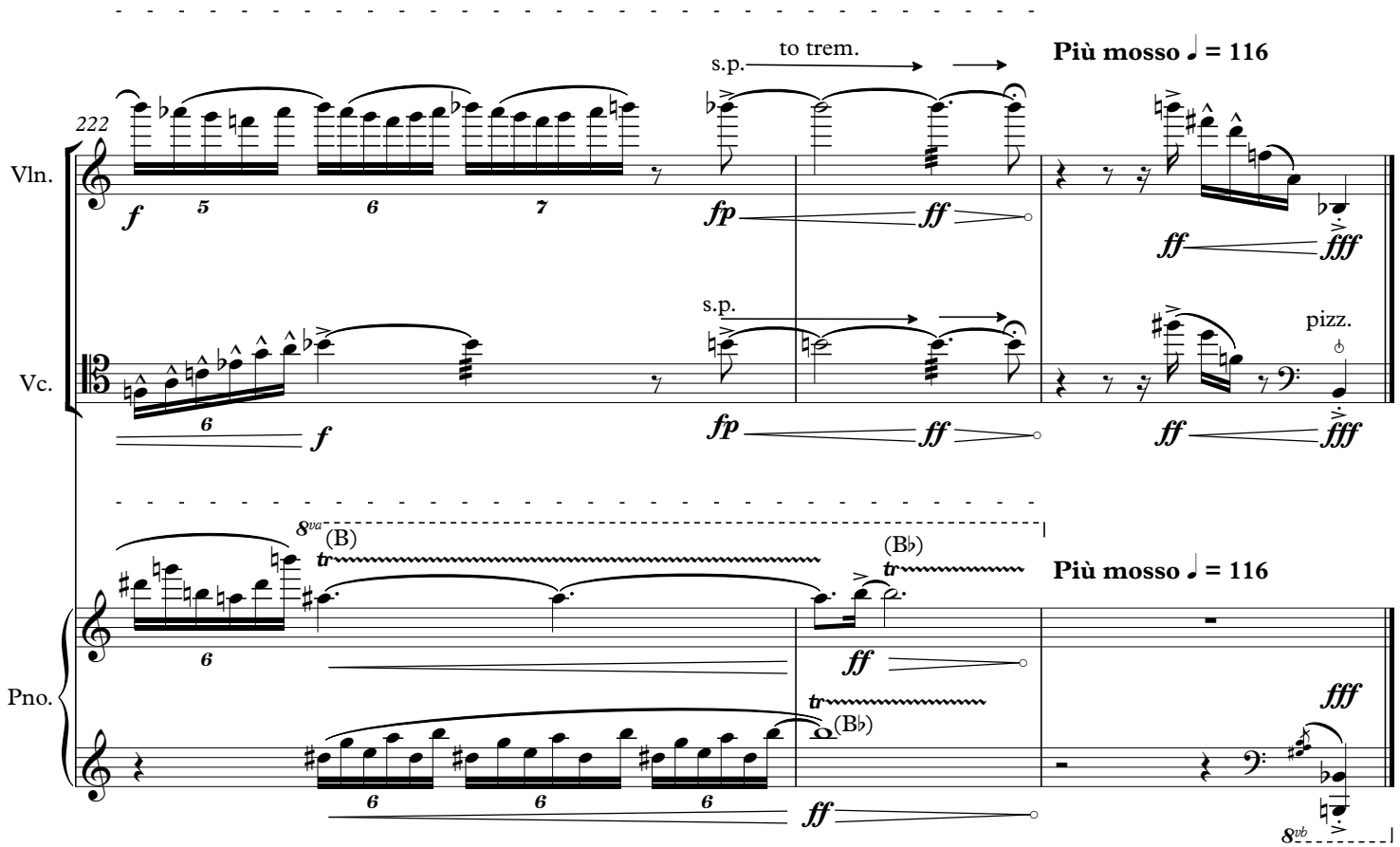

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Nacreous Contours

for solo B♭ clarinet

Angela Elizabeth Slater

***Nacreous Contours* for solo B♭ Clarinet (2016)**

Nacreous Contours (2016) was written for Dov Goldberg as part of the Psappha Composing for Clarinet scheme 2015-2016. The piece explores the imagery of nacreous cloud, travelling through the base of the cloud, and up to the pearly ethers at the top.

Duration c. 10 mins

Angela Elizabeth Slater

Performance notes:

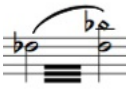
1) SK = side key

2) Some notes have stems omitted to indicate a greater rhythmic freedom.

3) → = gradual shift from one technique to another.

4)  slow vibrato: very slow and wide oscillation

5) Harmonics will be indicated as follows:  showing the fundamental and the harmonic.

6) Harmonic/timbral tremolos between fundamental and harmonic will be indicated as follows: 

7) Blowing/air sounds are indicated with × noteheads.

8) 'Tktktk' represents a more marked percussive effect, akin to double tonguing.

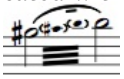
9) Fluttertongue is indicated with flz. and tremolo markings.

10) Slaptongue will be indicated by: 

12) Key slaps will be indicated by: +

13)Notes tied with accents should be given a pulsing effect rather than being rearticulated

14) Time signatures are omitted and there is minimal use of barlines to create a fluid and free rhythmic nature to the musical structures.

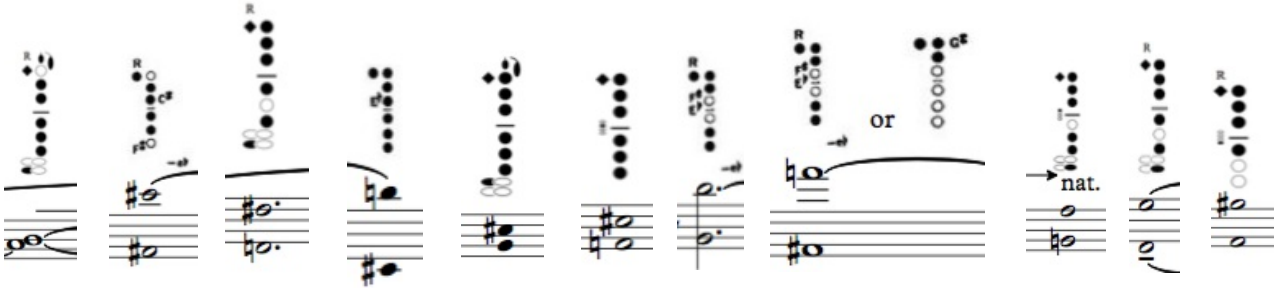
15) Double trills are indicated with tremolo between the main two notes and small noteheads showing other pitches involved e.g. 

16) Certain passages need to be amplified with a microphone. These are indicated by 'MIC' and return to no amplification when 'no MIC' is indicated.

17) Dotted overarching phrase markings have been used and should not be confused with articulation markings.

18) Fluctuating tone colour and intensity is represented by: 

19)The following multiphonics are used in this piece:



Transposing score

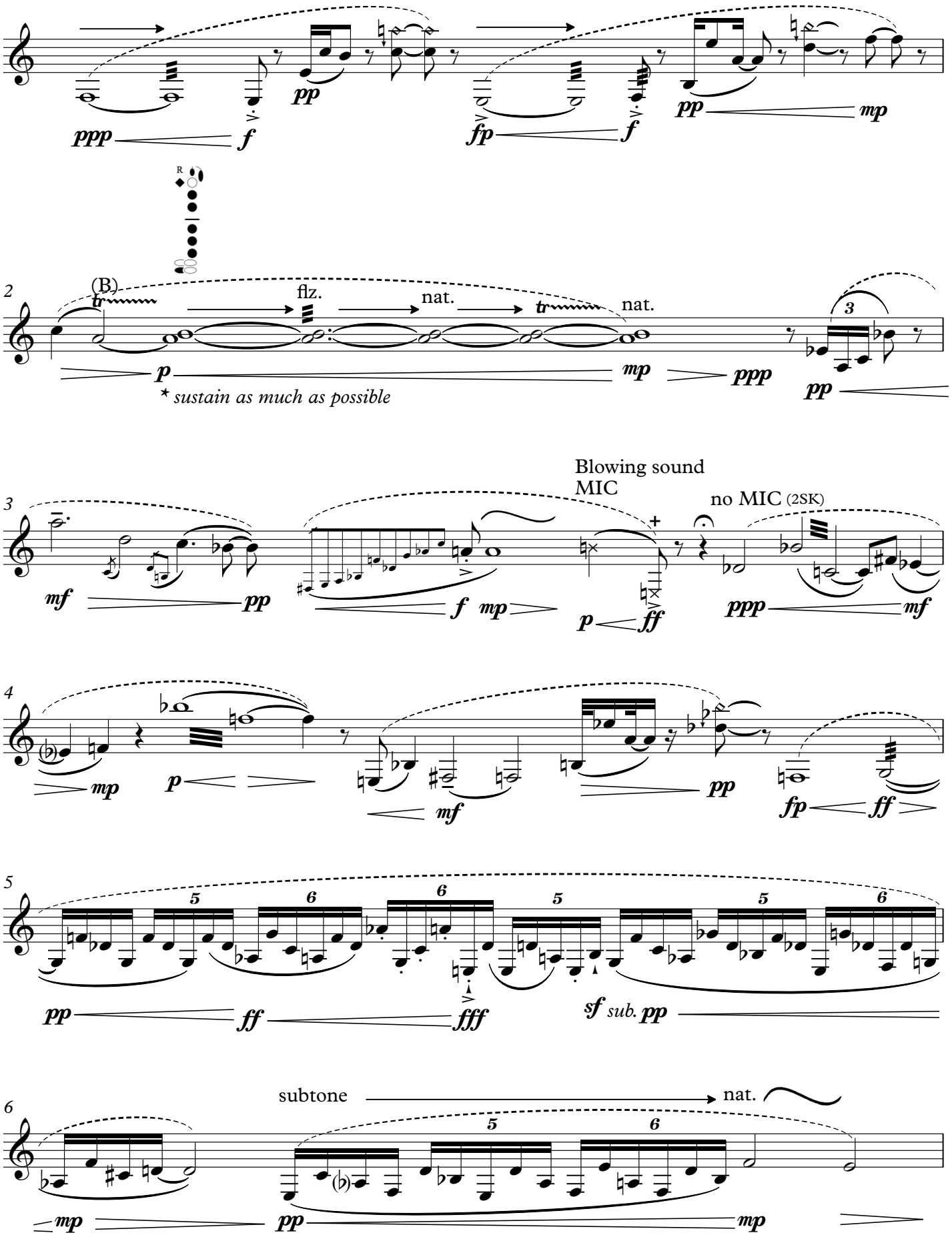
Nacreous Contours

for Dov Goldberg

Angela Elizabeth Slater

Clarinet in B♭

Freely, charcoal grey with glimpses of light ♩ = 76



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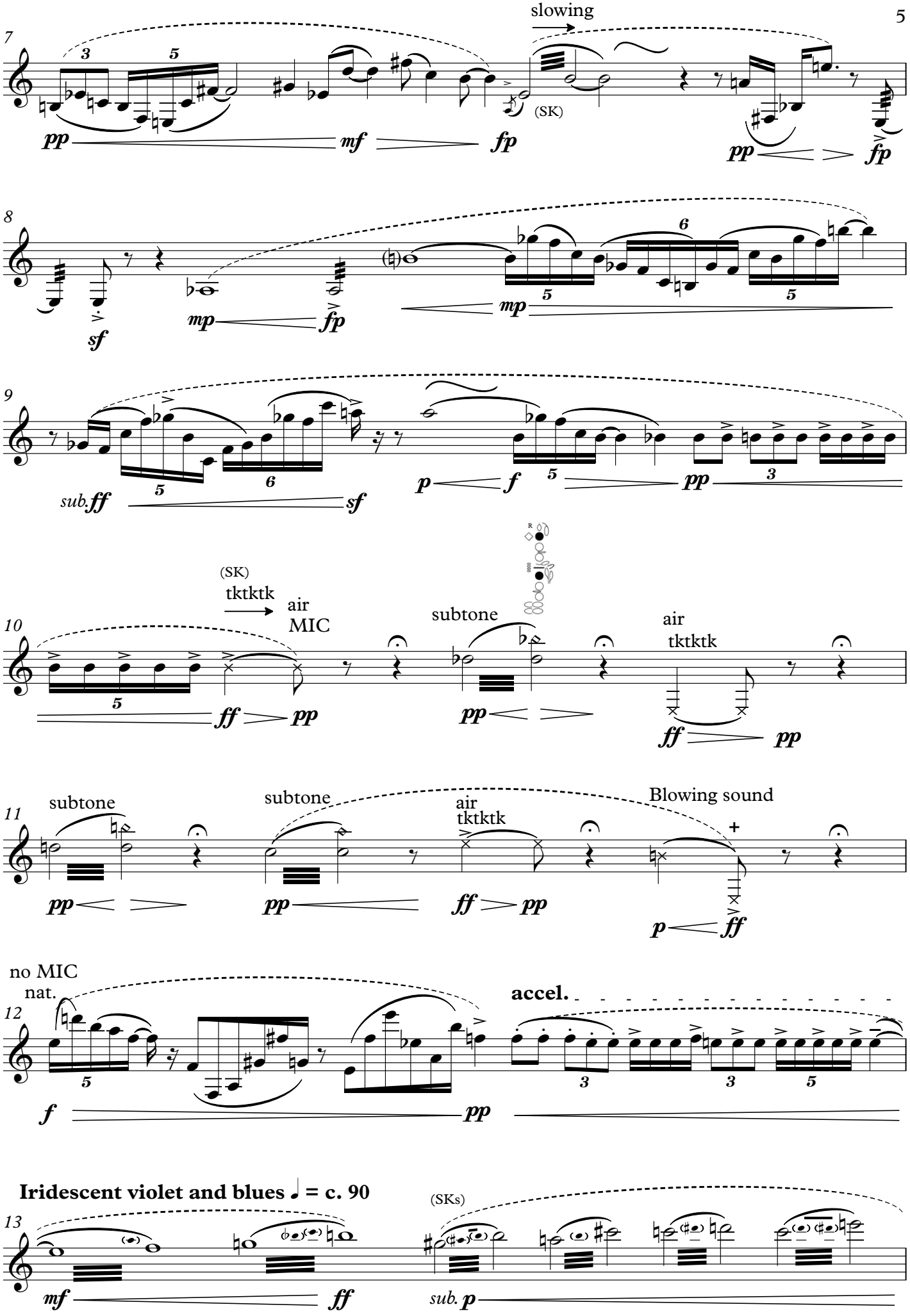

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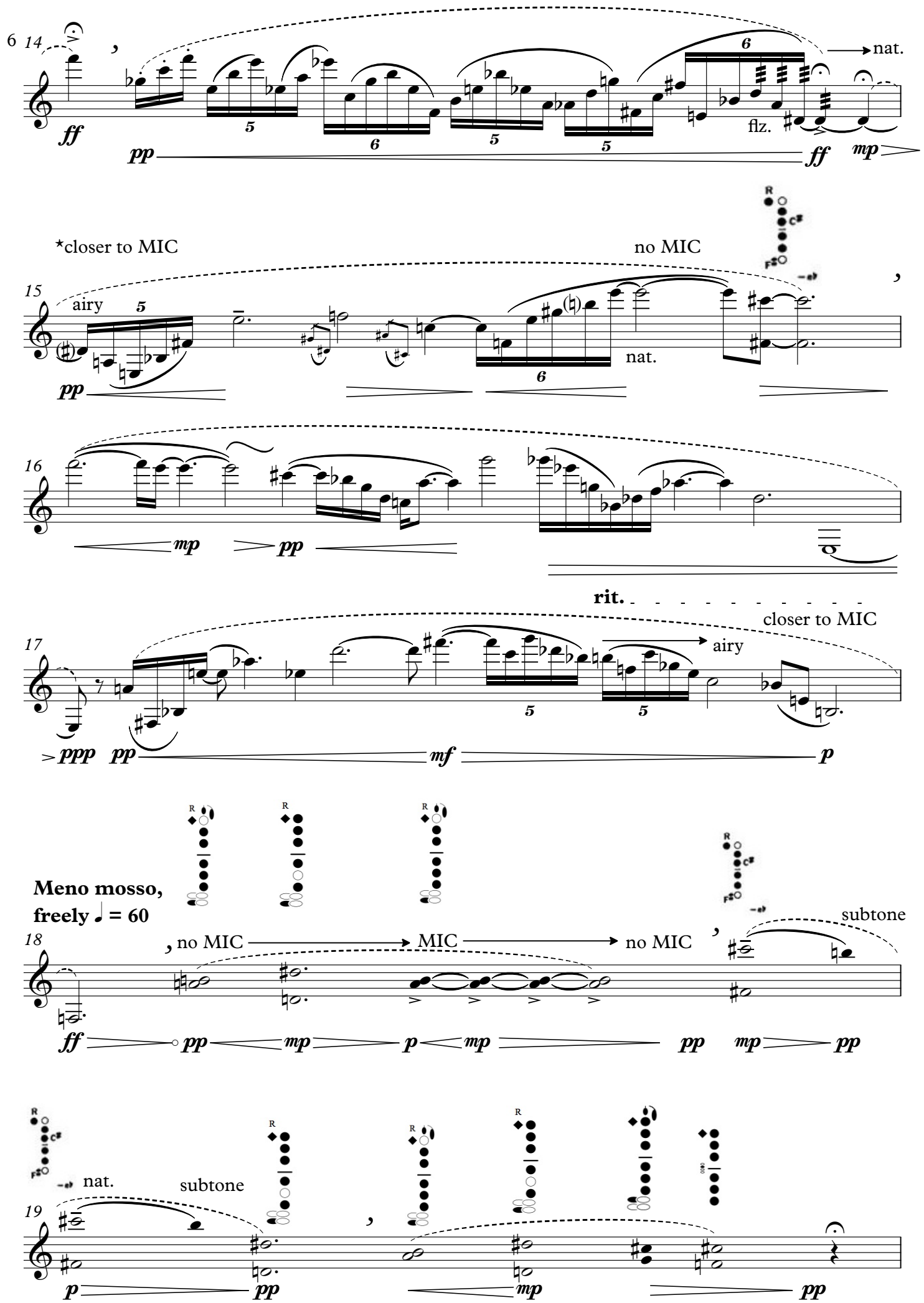

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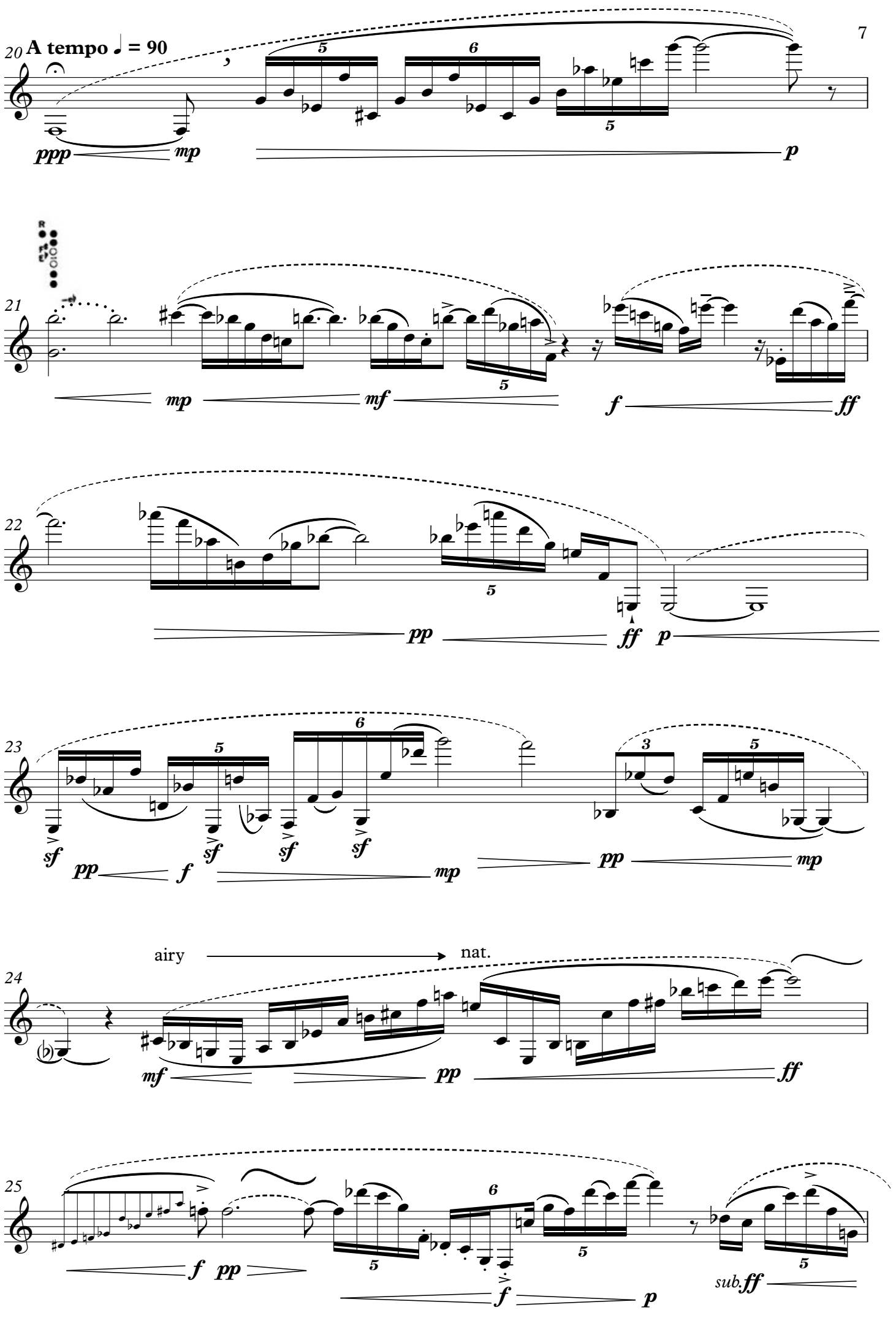
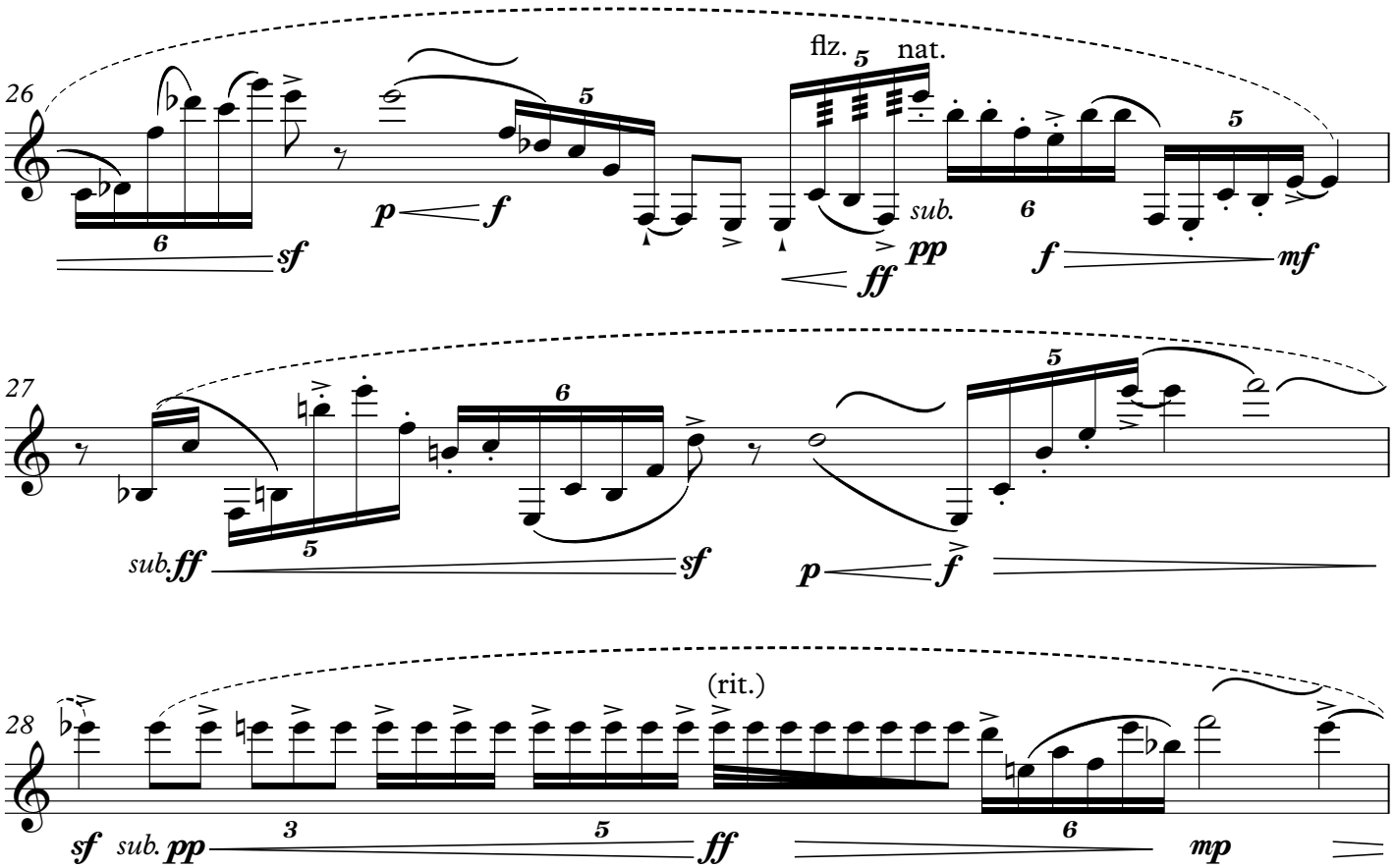
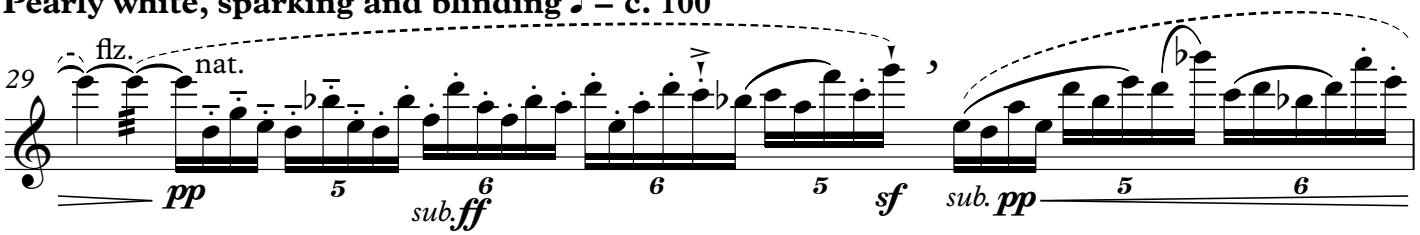
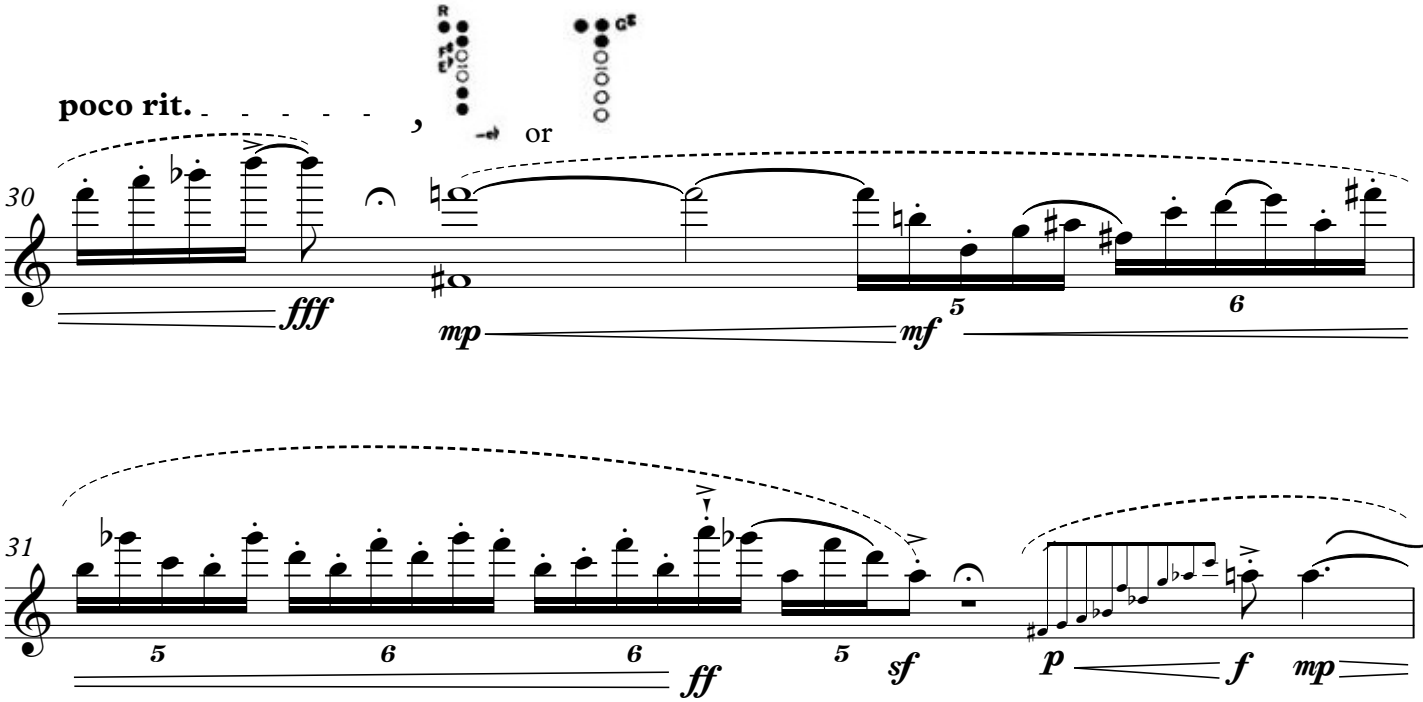

20
A tempo ♩ = 90
ppp
mp
p
21
mp
mf
f
ff
22
pp
ff
p
23
sf
pp
f
mp
3
5
6
24
airy
nat.
mf
pp
ff
25
f
pp
sub.ff



Pearly white, sparking and blinding ♩ = c. 100



poco rit.



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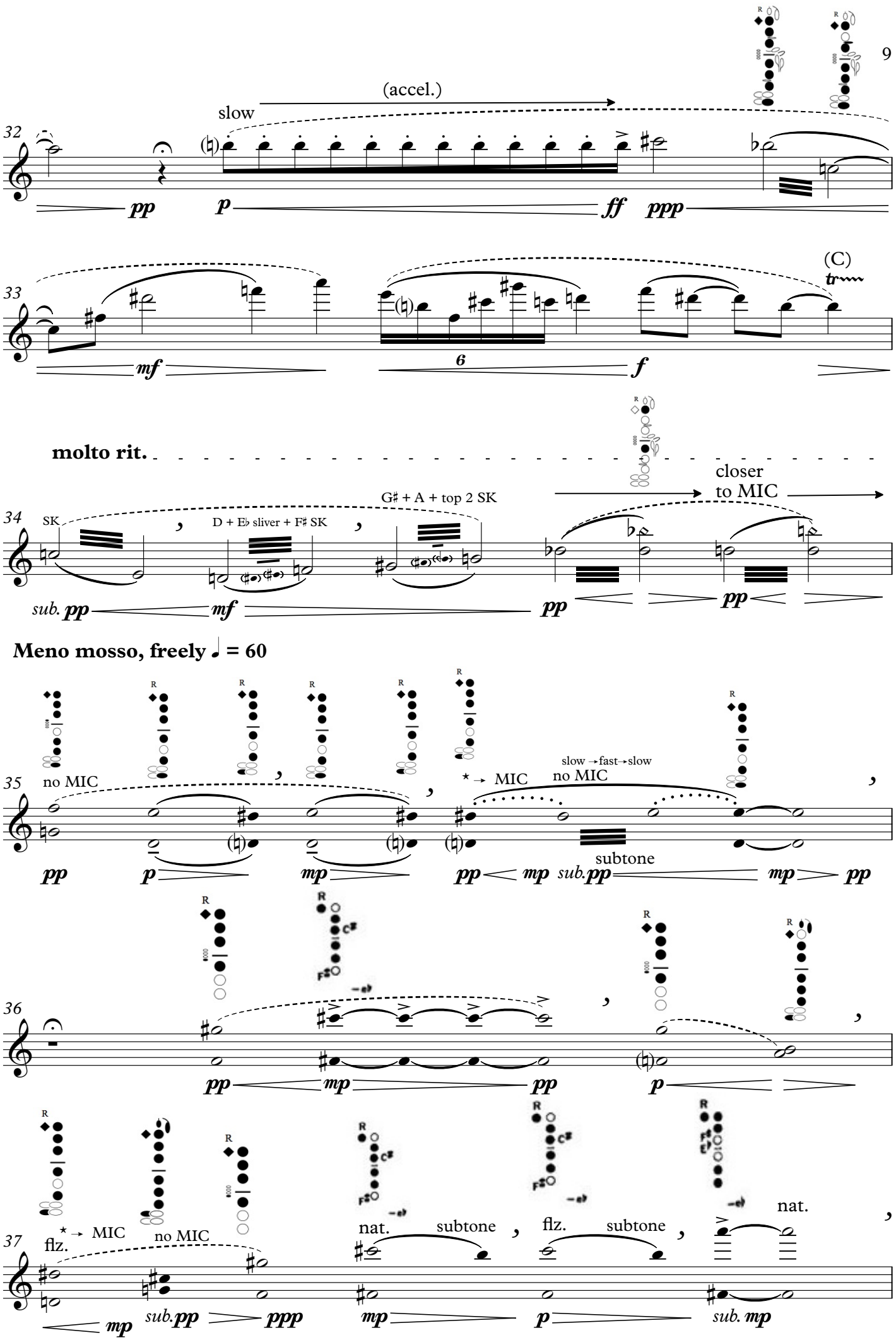

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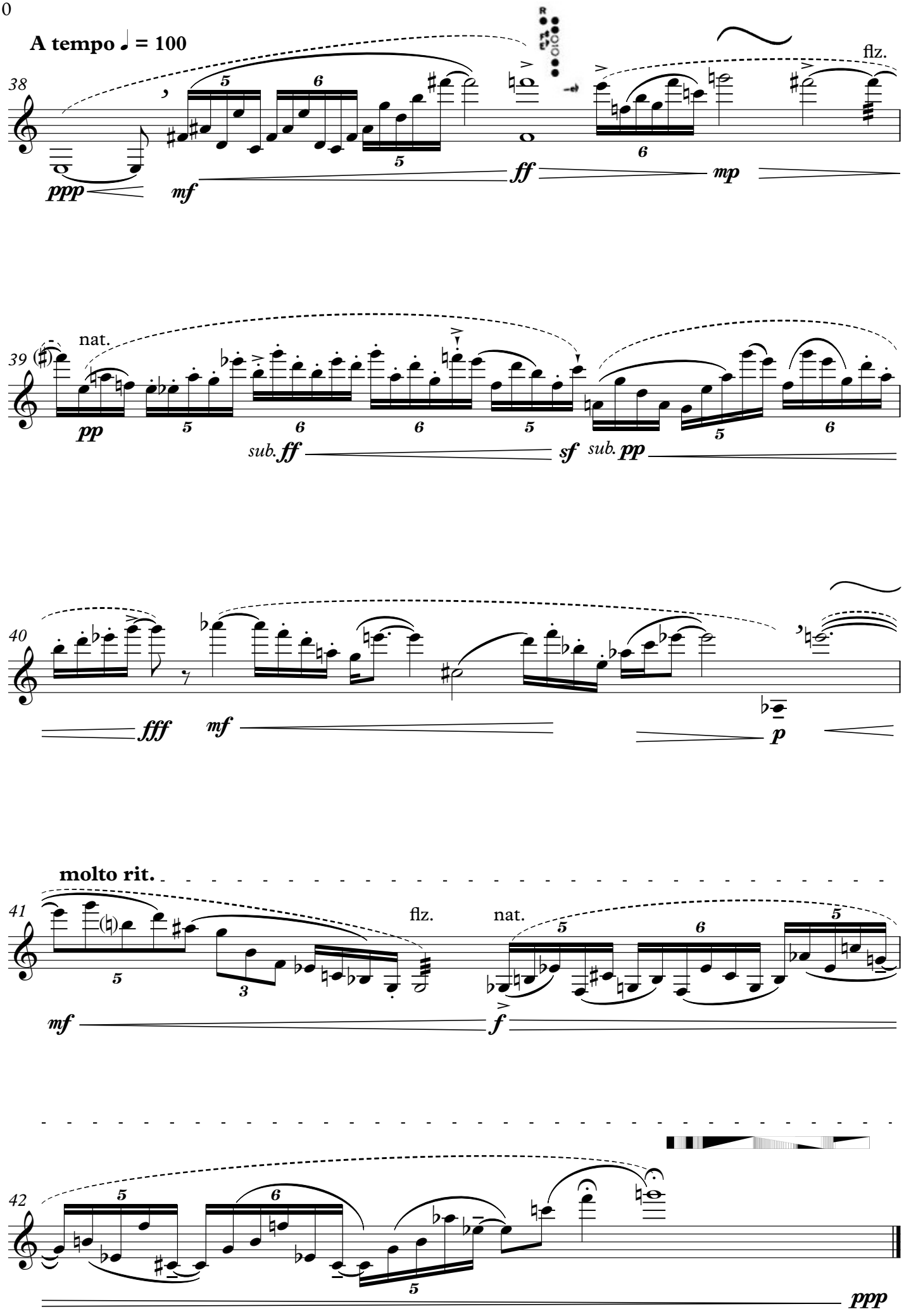

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Veiling of the Sun

for string quartet

Angela Elizabeth Slater

***Veiling of the Sun* for string quartet 2016**

Veiling of the Sun was written for the Bozzini Quartet as part of the 2016 soundfestival (Aberdeen) Composers Day - Writing for String Quartet.

The piece explores ideas and imagery associated with a solar eclipse. It explores different representations of light and uses timbral dissonance to represent the blocking out of light. These moments gradually increase in rhythmic pacing as the sun becomes more and more covered by the moon. The last passage represents the final glimpses of light around the edge of the moon before the eclipse reaches totality and darkness truly takes hold.

c. 4 mins

Angela Elizabeth Slater

Performance notes:

1) Sul ponticello and sul tasto are abbreviated in most cases to S.P. and S.T. respectively. Normal playing position is reinstated by indication of nat..

2) . -> : gradually move from one technique/position to another.

3) Left hand pizz. indicated by + underneath or above the notehead.

4) Tremolo speed changes are marked with an indication of speed, e.g. fast, and then an ---> to the desired speed.

5) Circular bowing will be indicated by the symbol .

6) Bowing on the bridge is indicated by 

7) Playing so softly that no discernable pitch is created and just the sound of the bow is heard when indicated with 'x' noteheads.

8) When there is more than one note to trill to, alternate freely between the options given.

9) Pressure trill: a trill produced by alternating the finger pressure between normal (o) and light (harmonic).

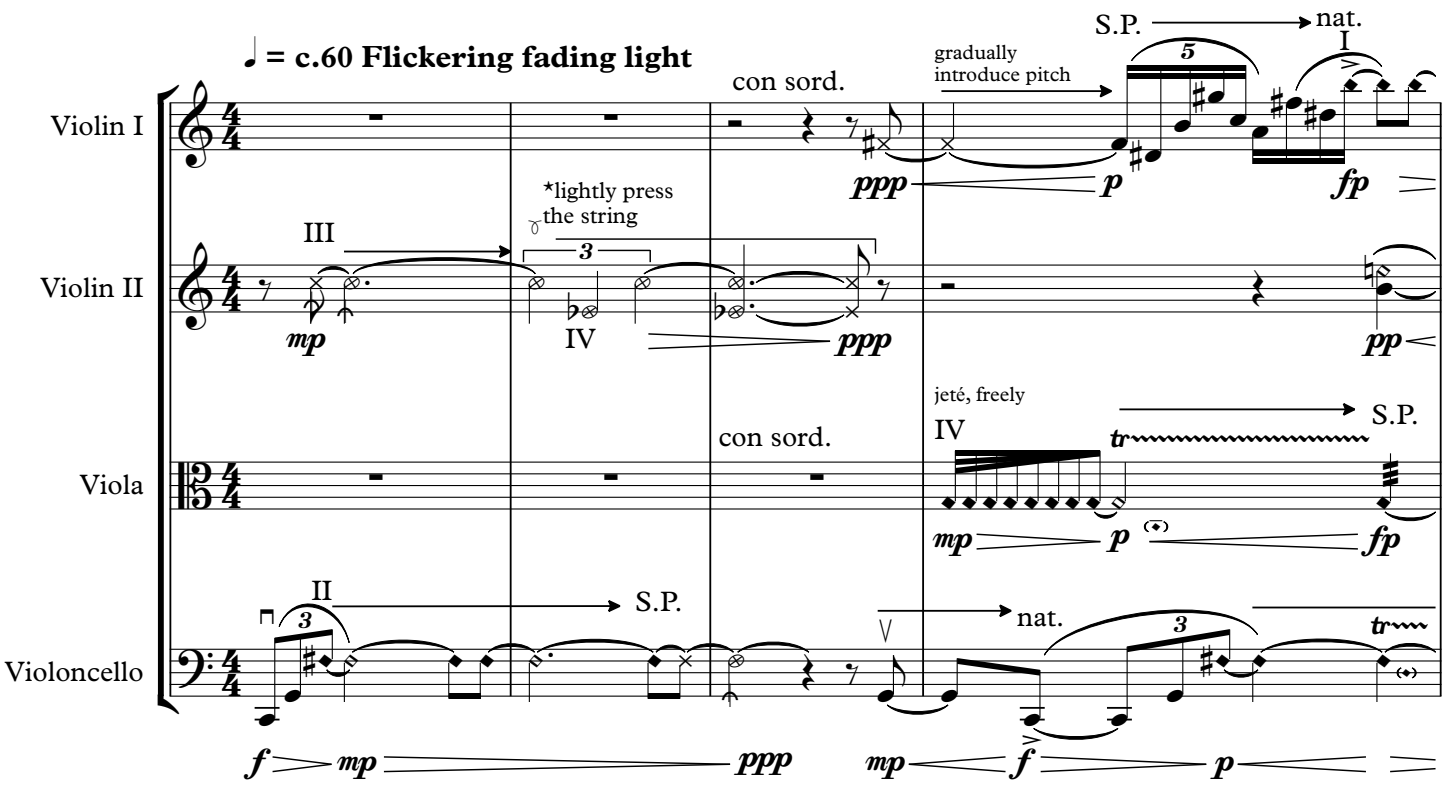
These will be indicated with the same note as a harmonic in brackets with a tr symbol above.

10)  Add bow pressure to produce a distorted sound, in which the sounding pitch is completely replaced by noise and then comes back to tone again.

Veiling of the Sun

for the Bozzini Quartet

Angela Elizabeth Slater



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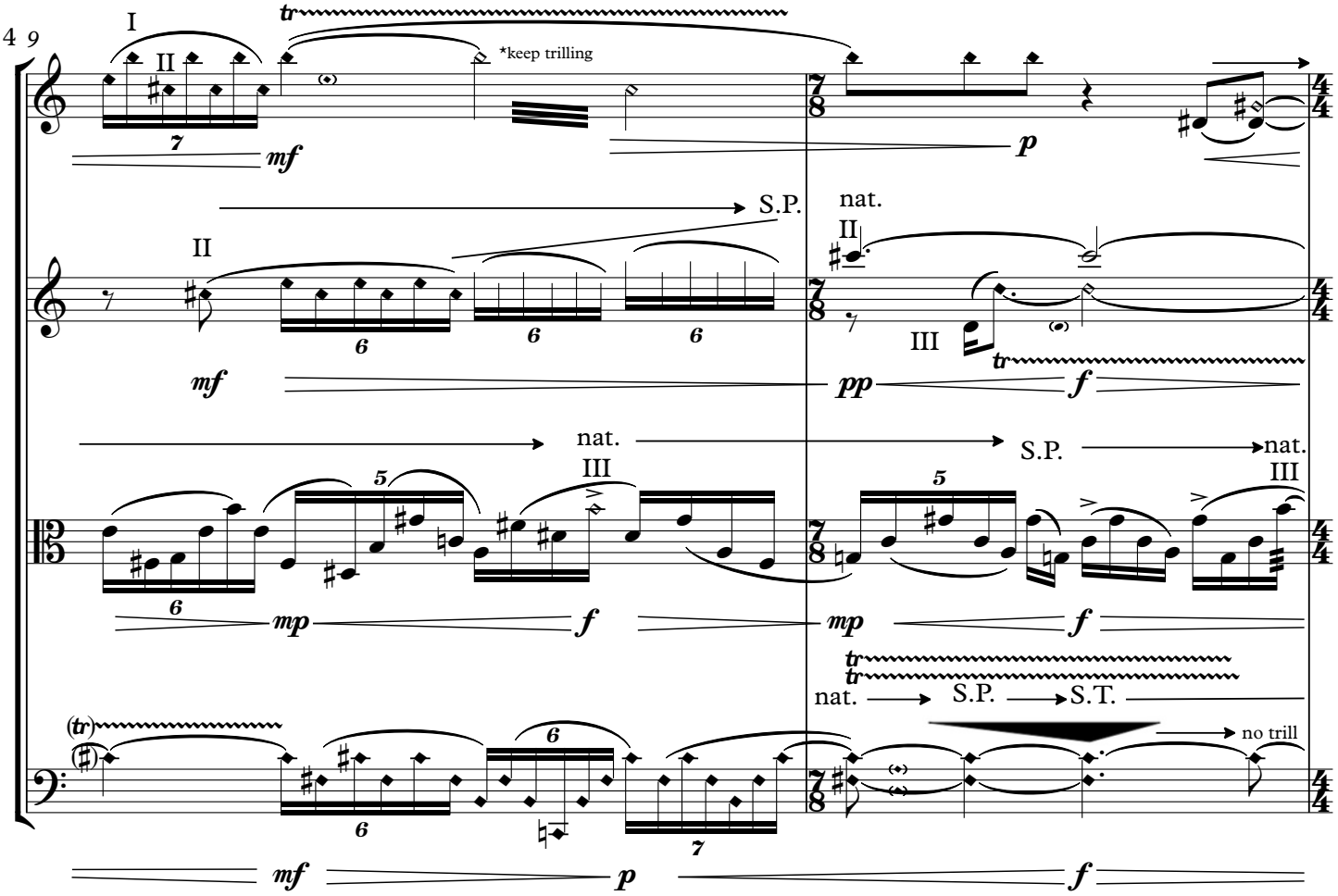

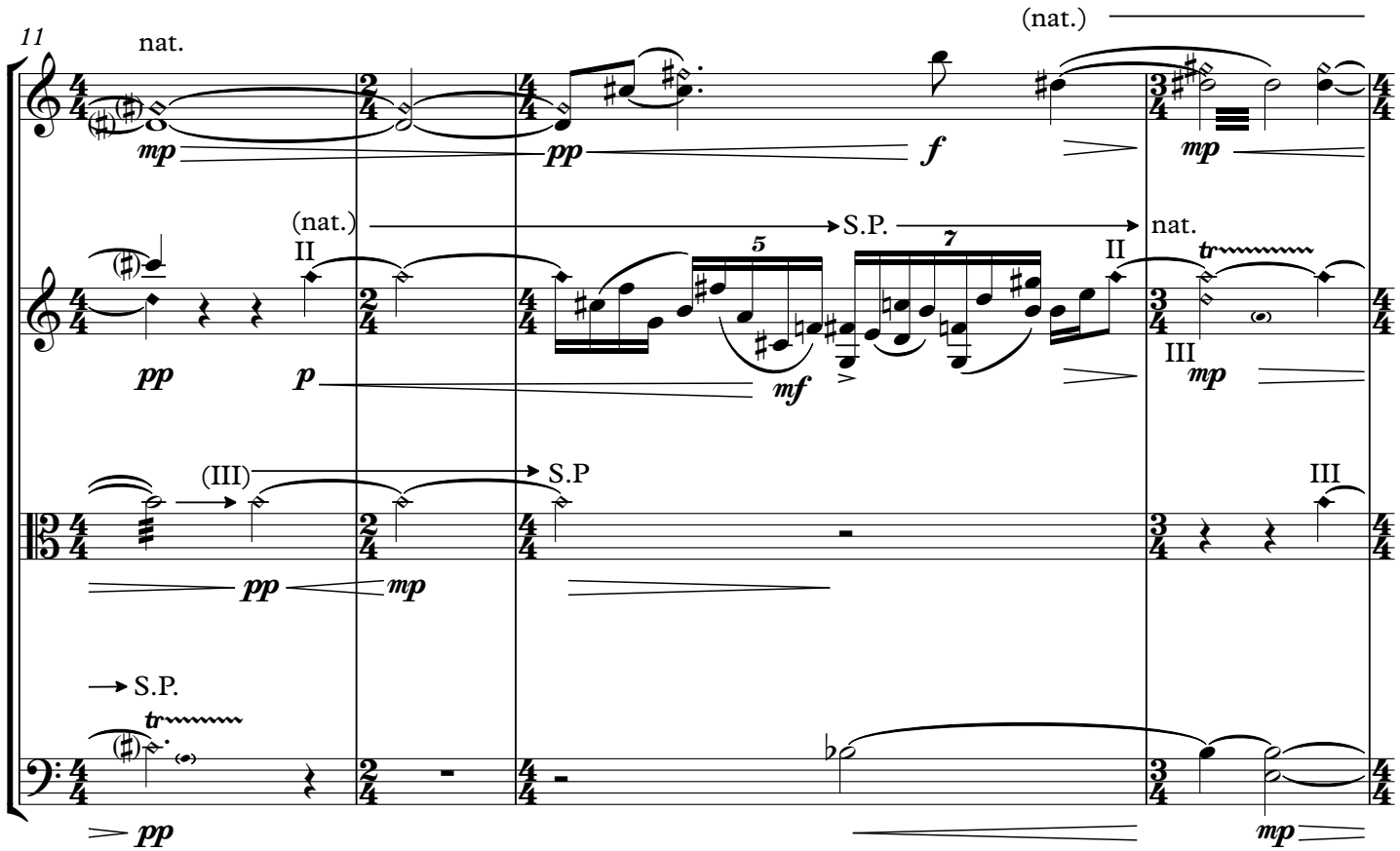

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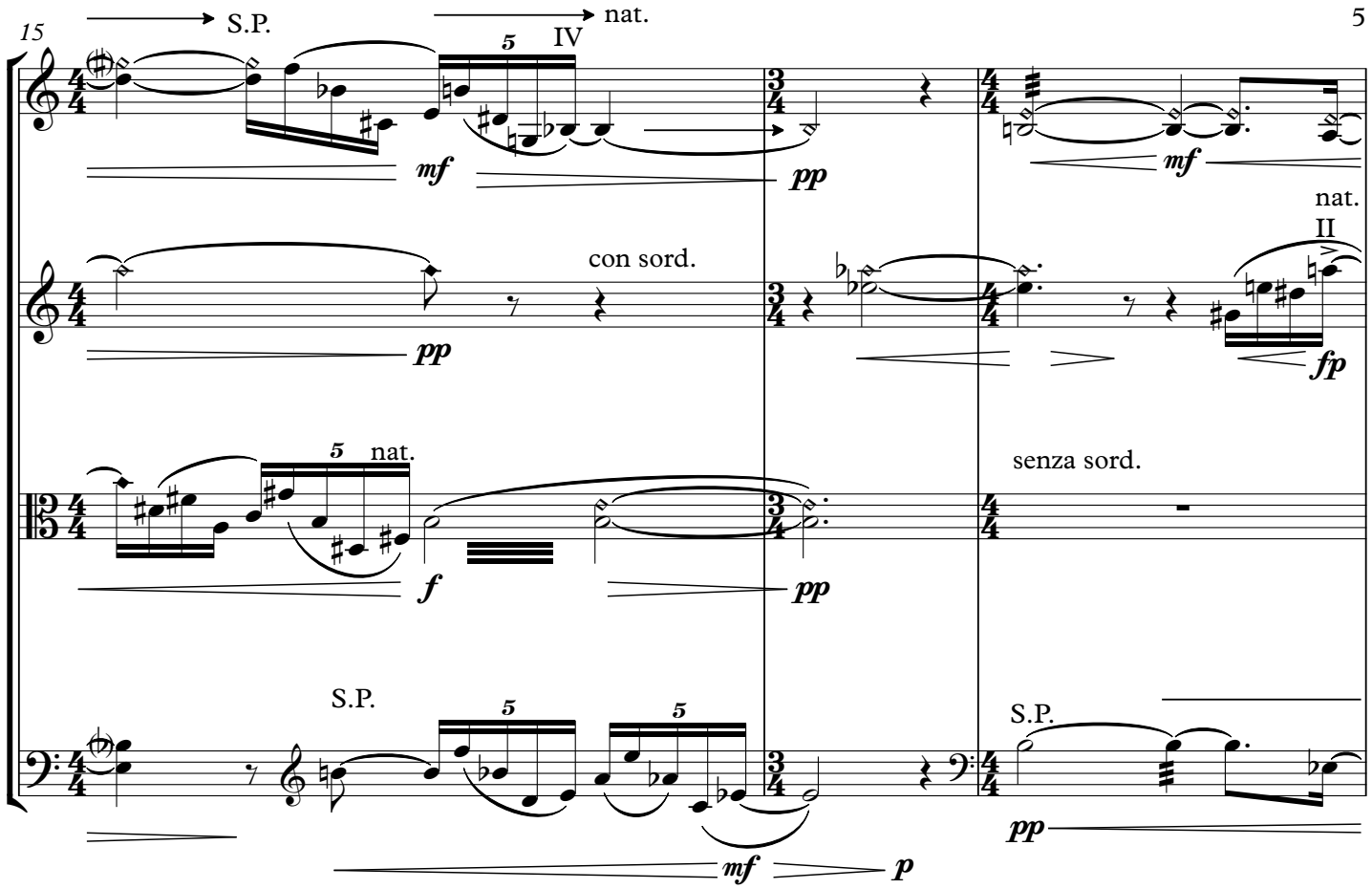

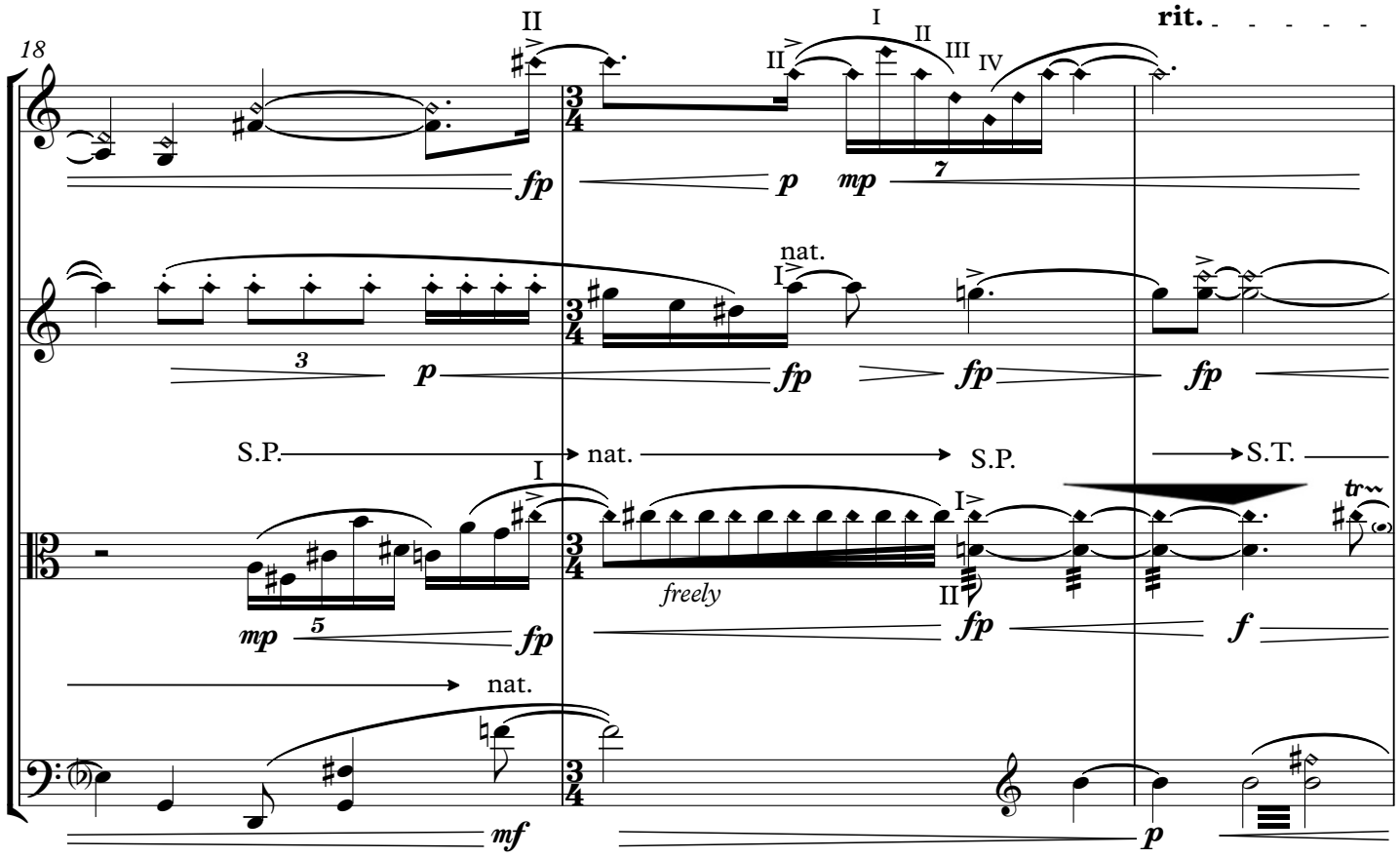

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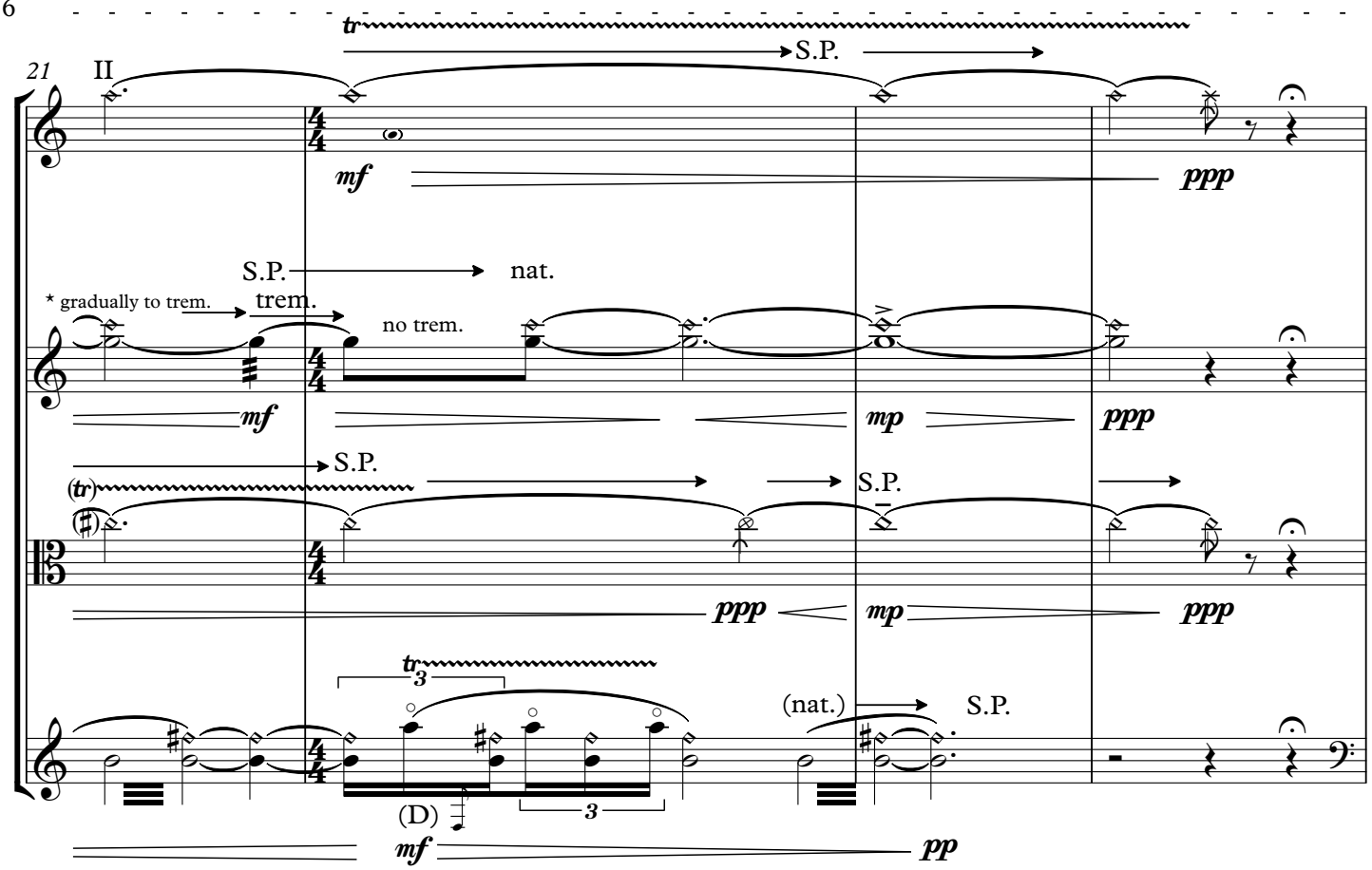
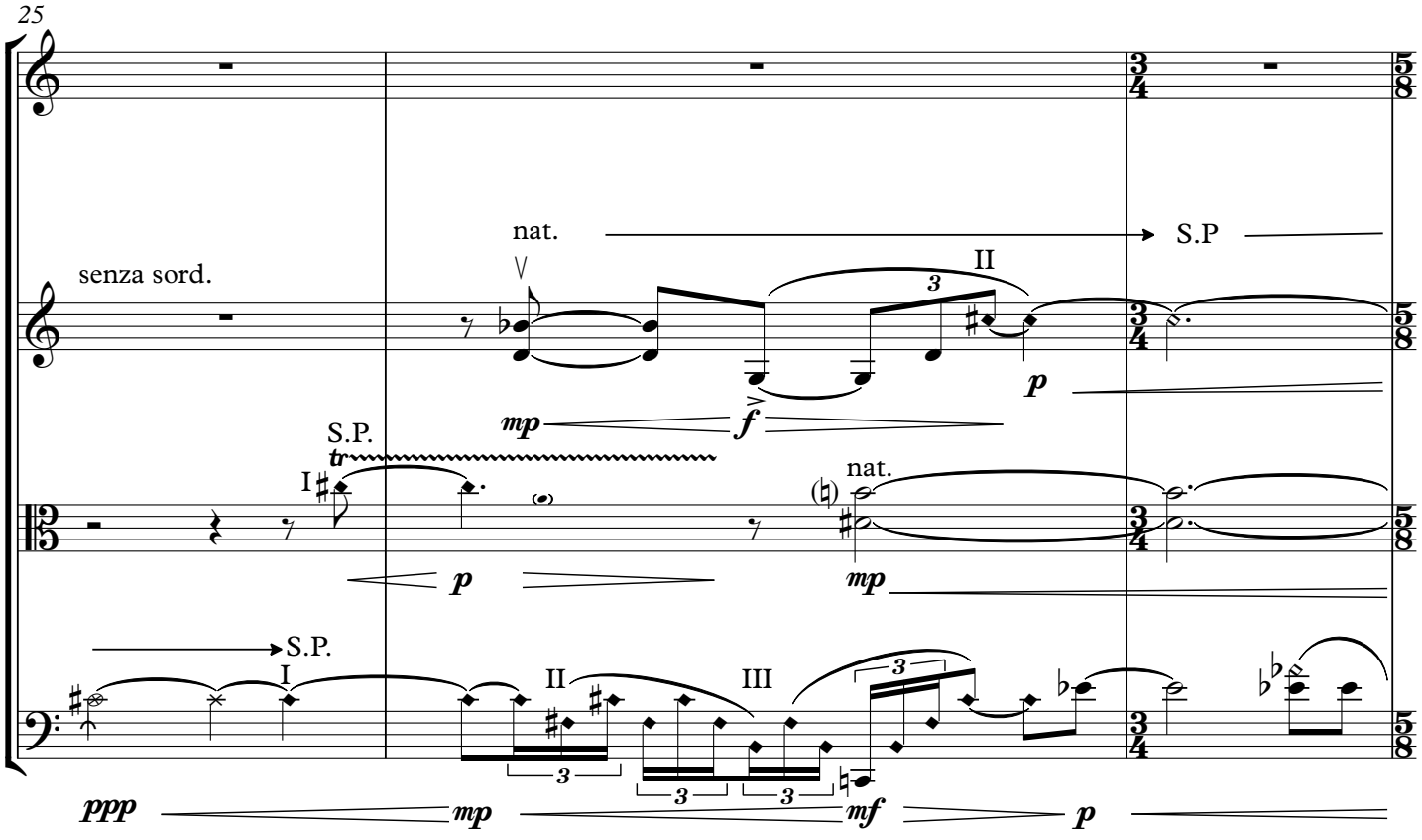


A tempo ♩ = c. 60



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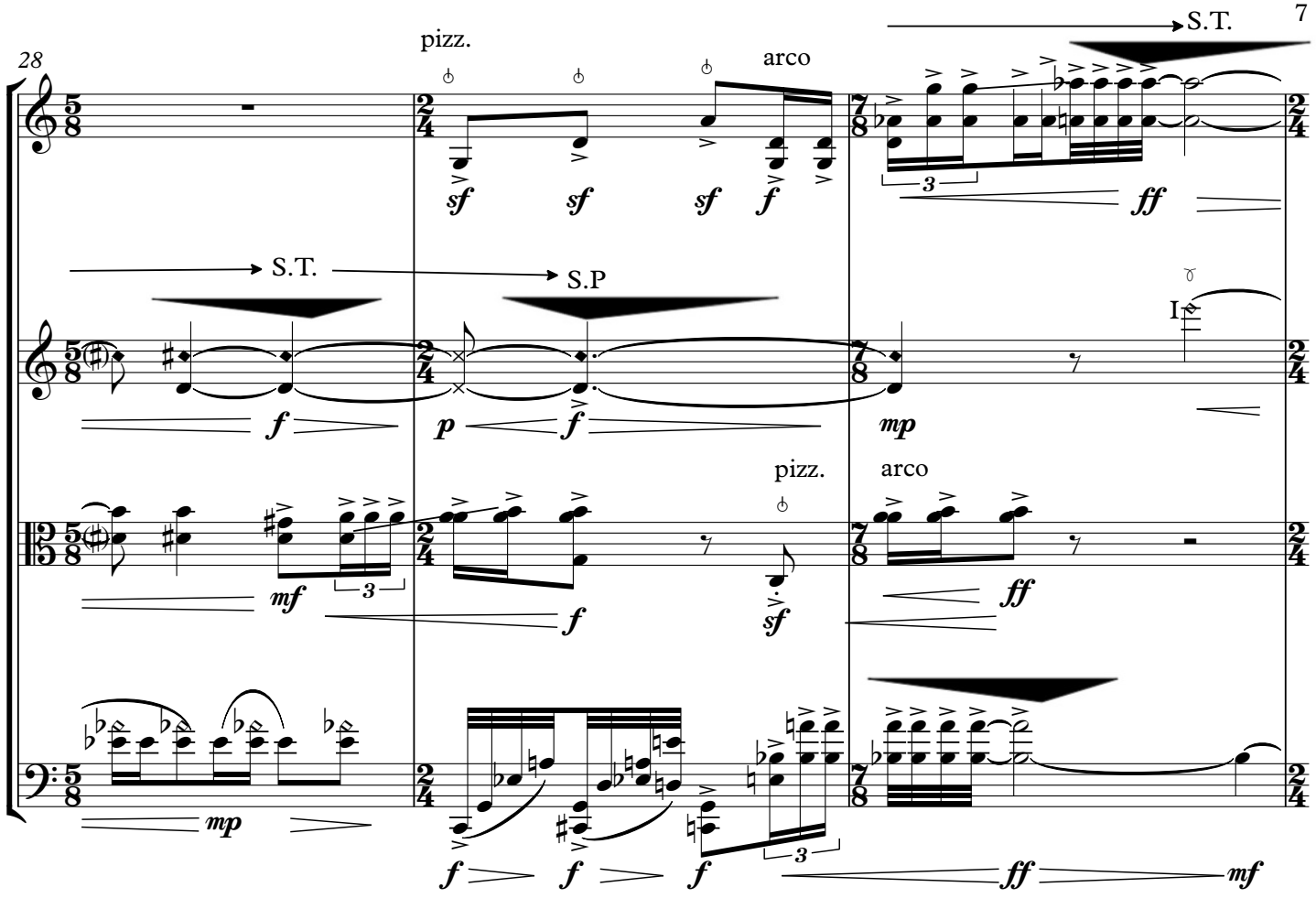

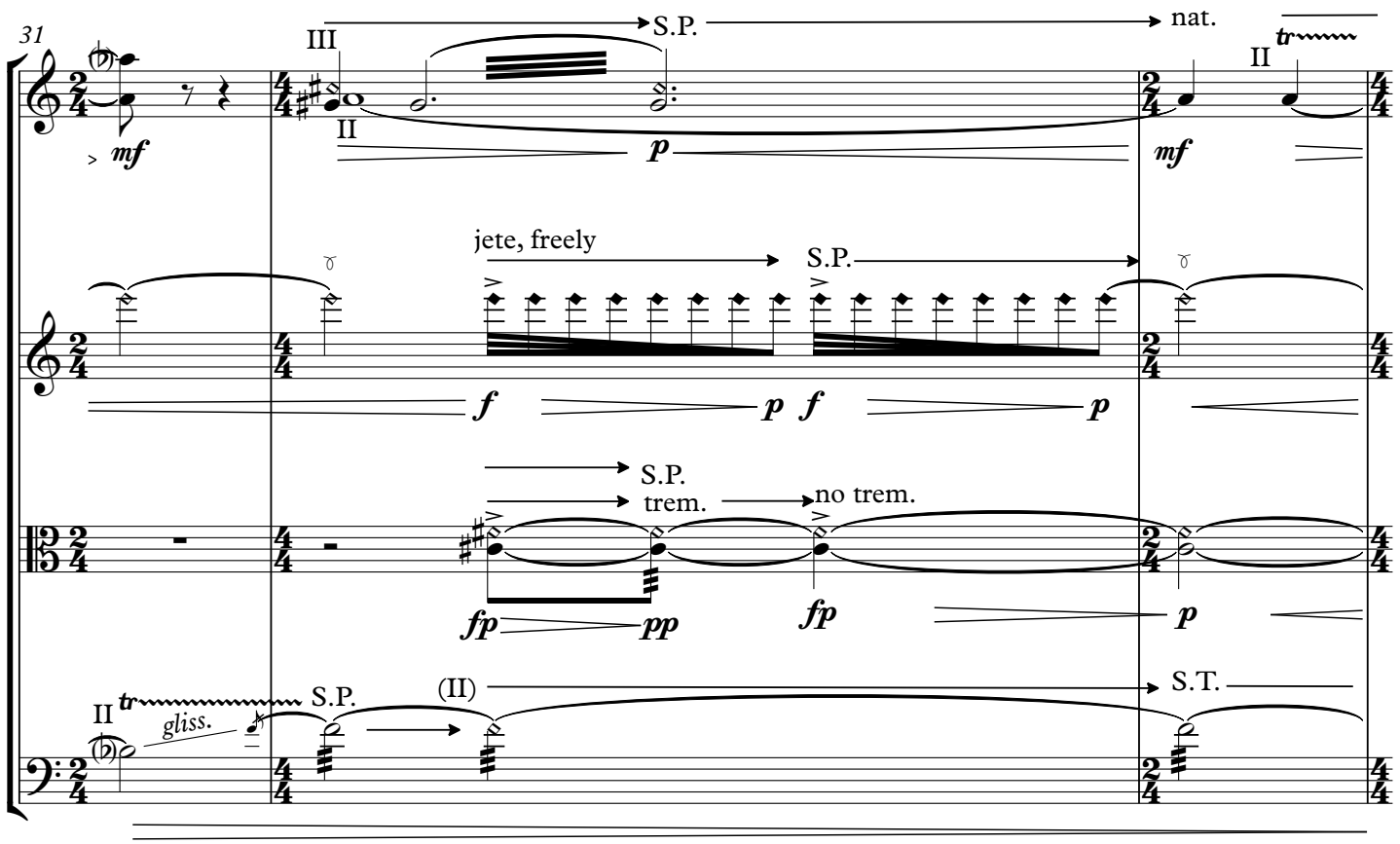

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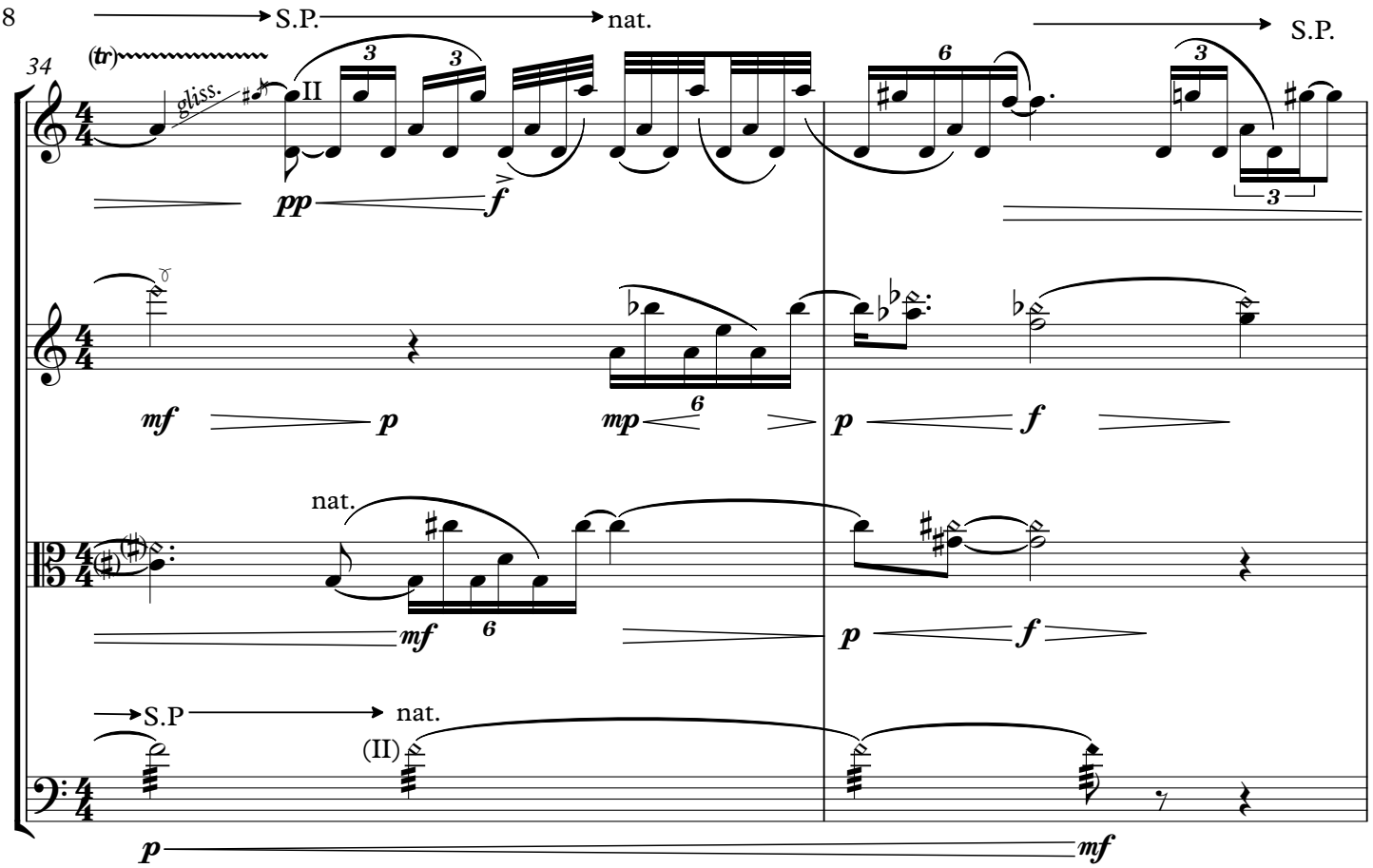

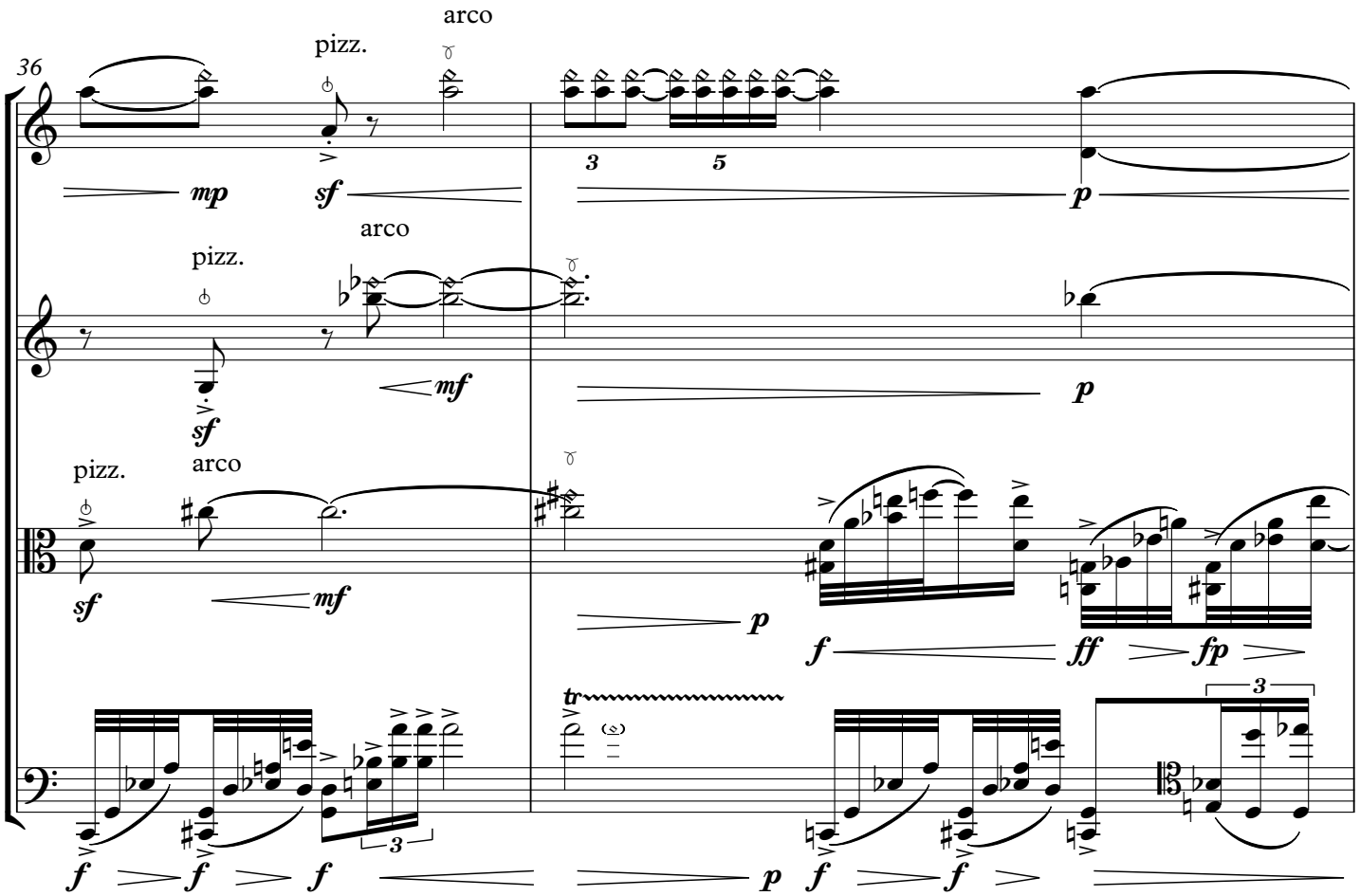

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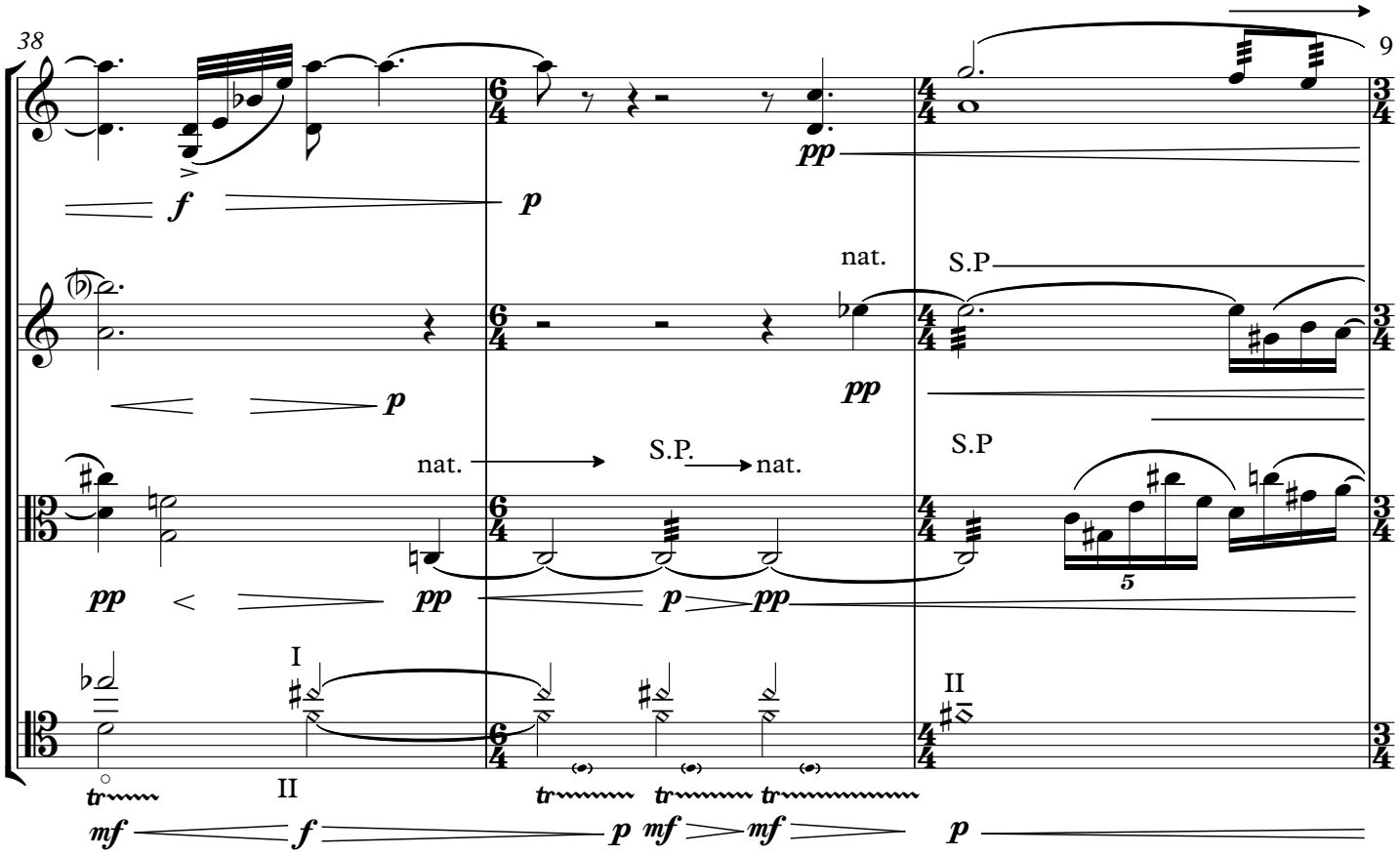

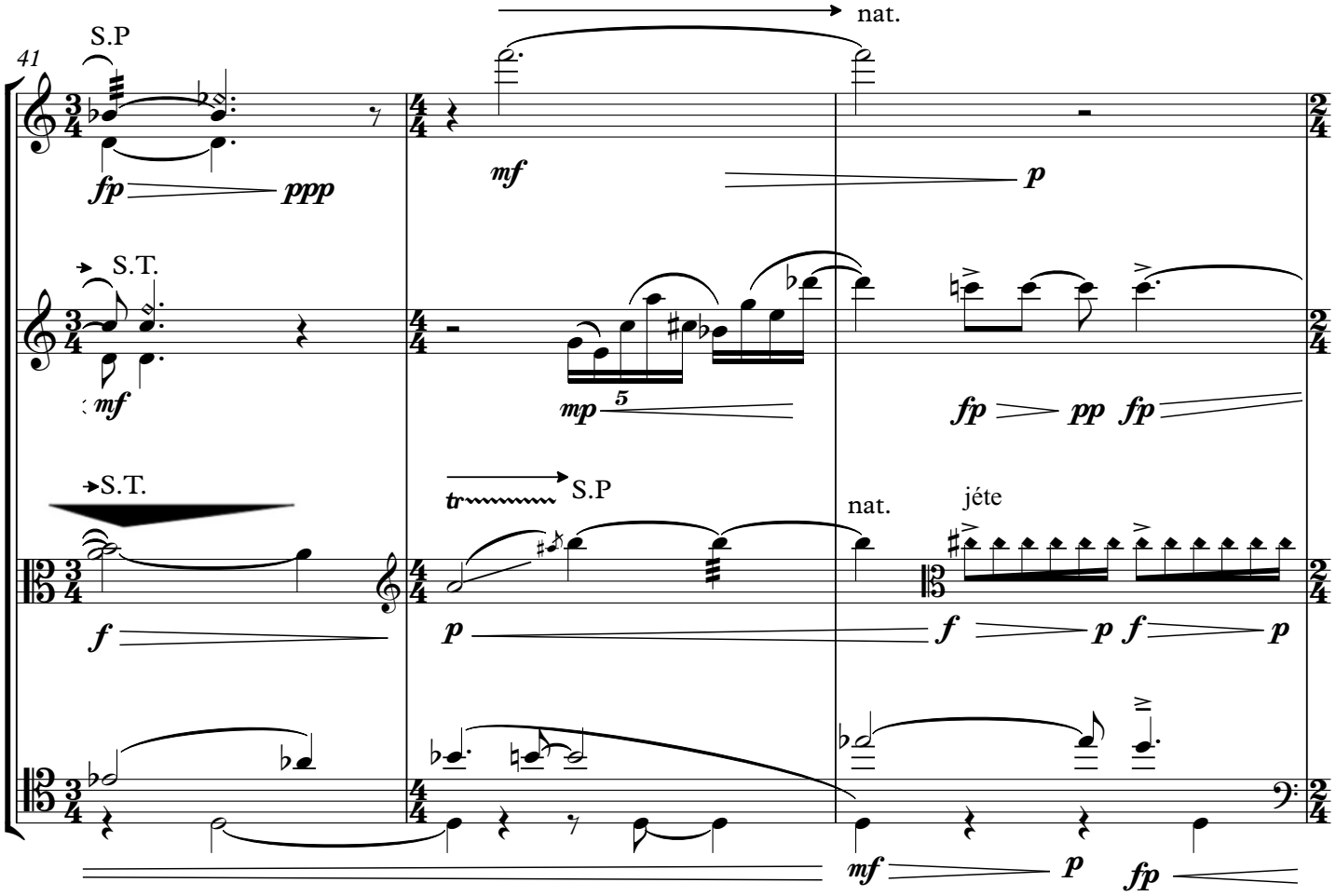

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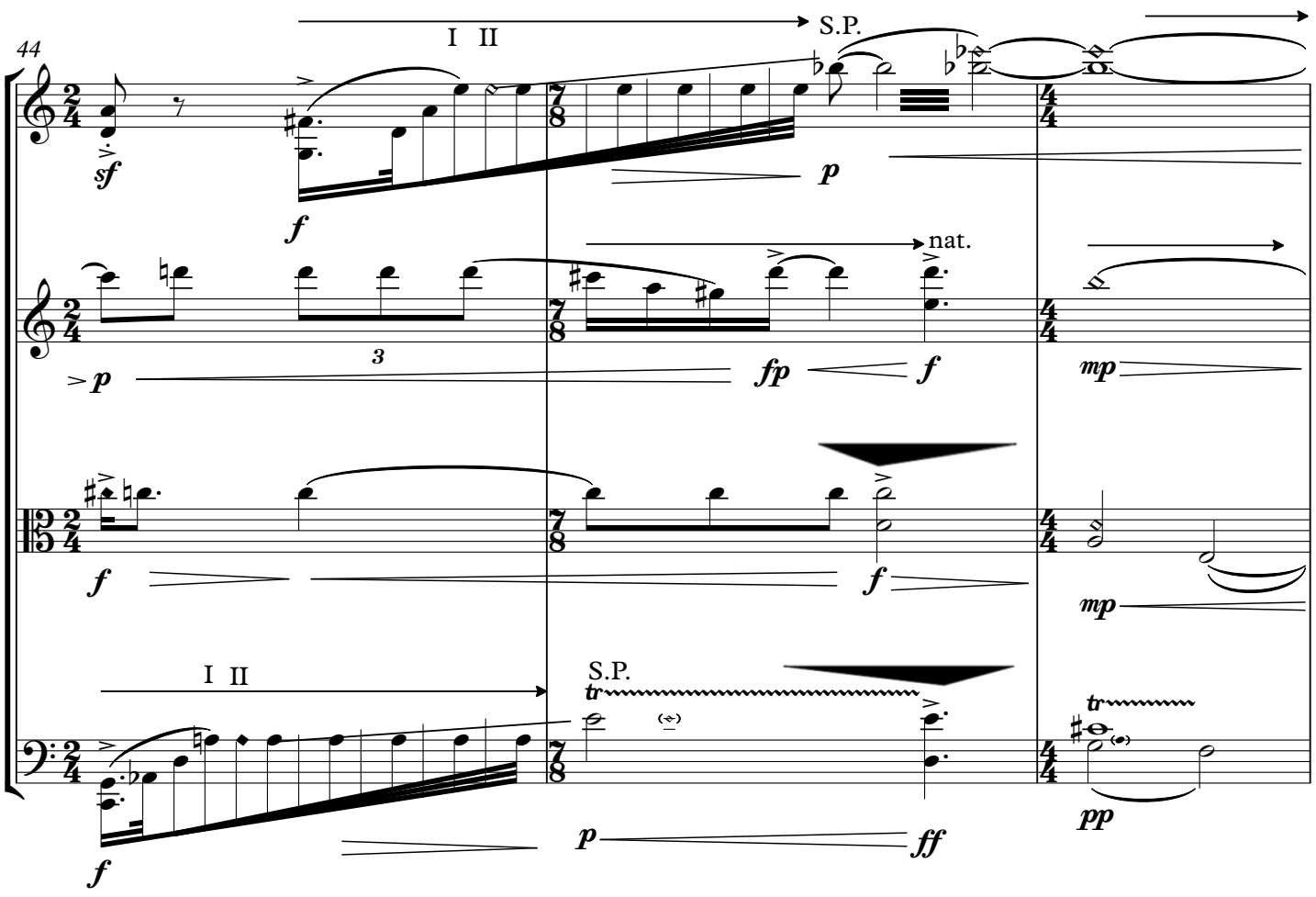

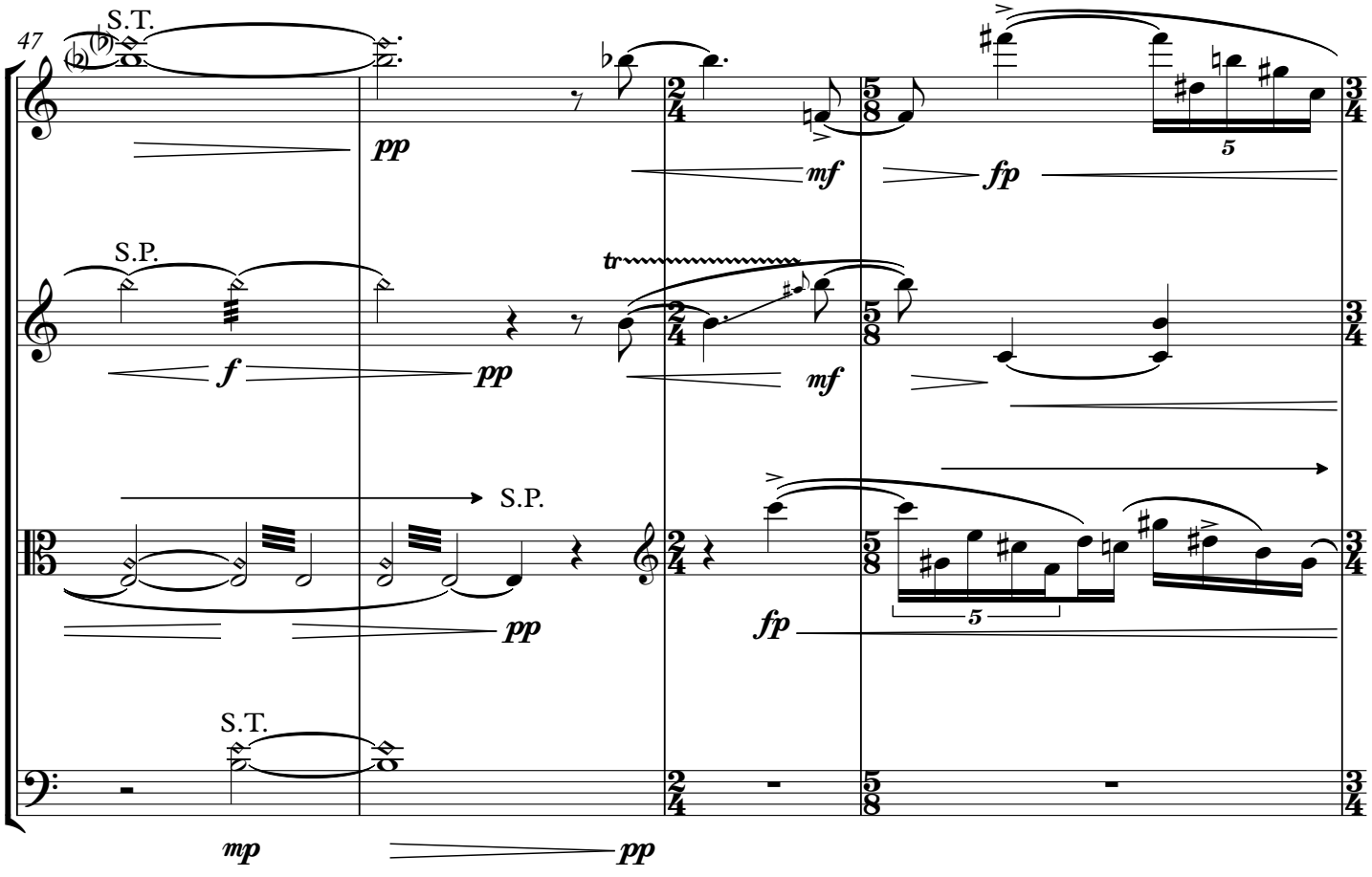

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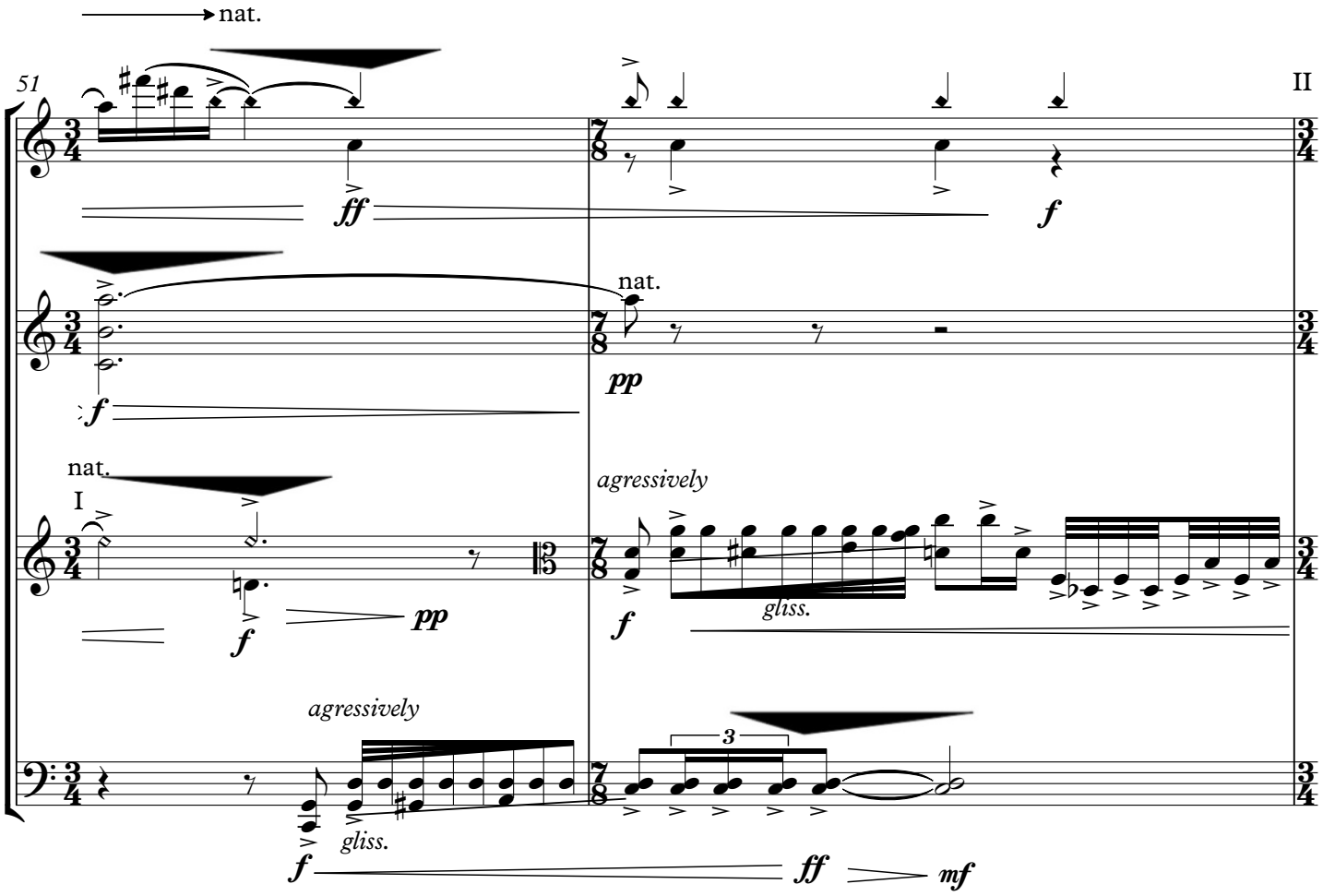

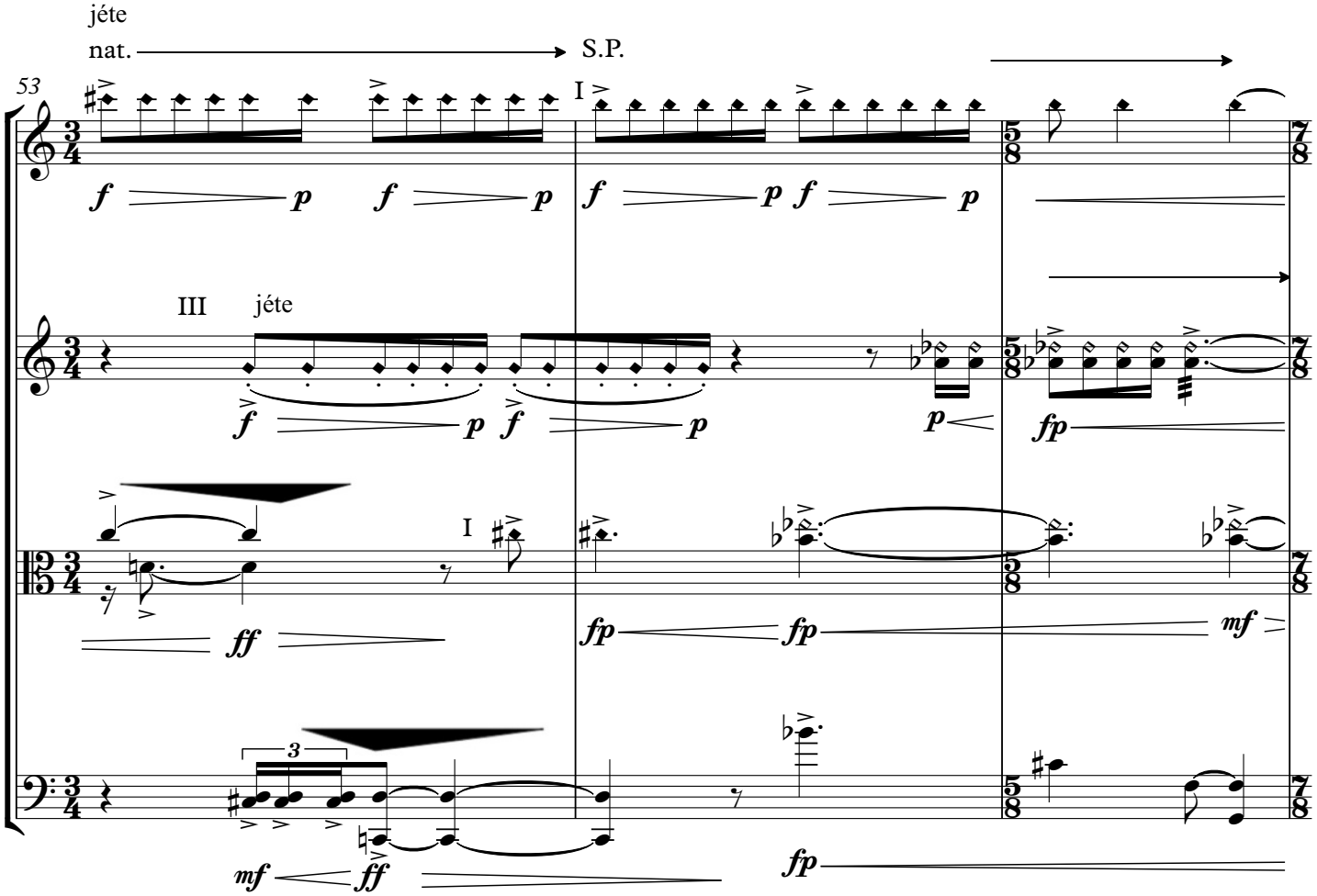

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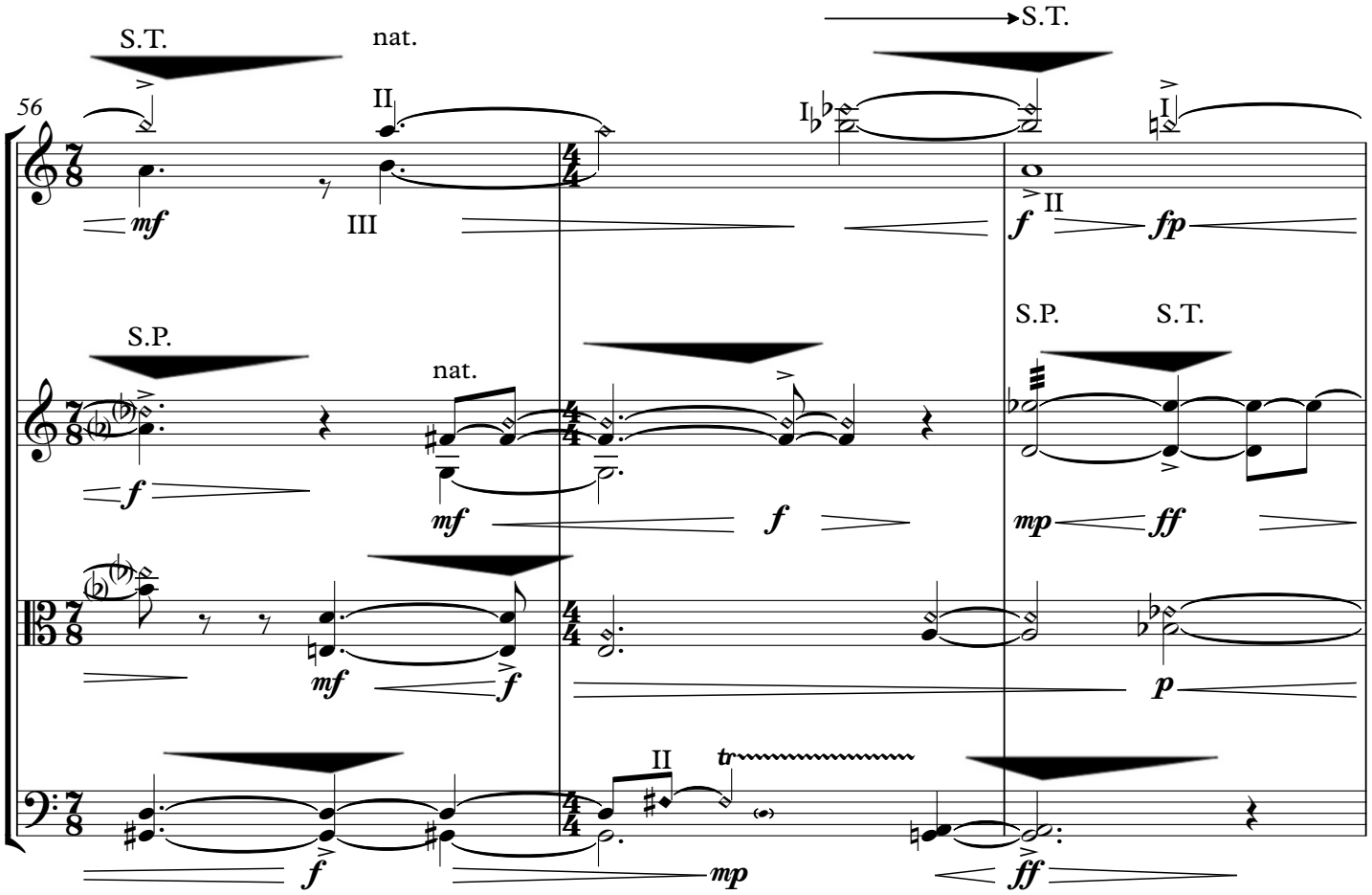
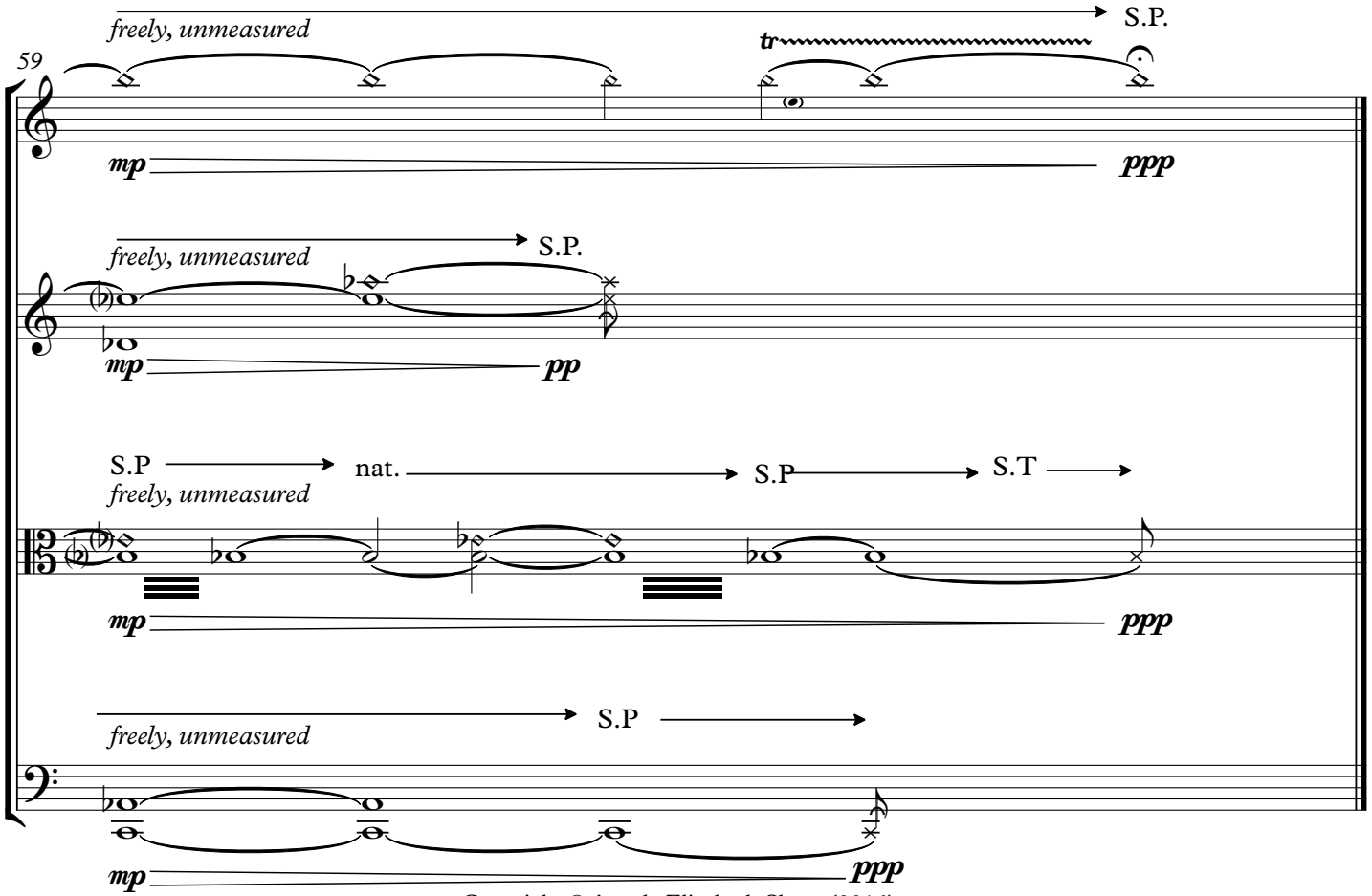


Freely, with expression as the last light fades c.30-45 secs.



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