I FEEL AS THOUGH I HAVE ALWAYS BEEN COLD

by

MATTHEW SCOTT PHILLIPS

(Under the Direction of Adrian P. Childs)

ABSTRACT

In accordance with the requirements for completion of the degree Doctor of Musical Arts, this document consists of three parts: An original composition, approximately forty minutes in length, for Pierrot Ensemble (flute, clarinet, violin, violoncello, piano, and percussion); an analysis of the compositional processes utilized in the composition; and analyses of works from the literature that are similarly constructed, as well as supporting discussion on the analyses of those works by prominent music theorists. The selected pieces from the repertoire are “Sorocaba” and “Botafogo,” from *Saudades do Brasil*, by Darius Milhaud, and the 20 Mazurkas, Op.50, no.1, by Karol Szymanowski. Each of these pieces utilizes a compositional technique that involves the use of multiple, simultaneous pitch-class collections. By drawing upon the observations of music theorists who have discussed this technique, this document proposes a rational model for approaching an analysis and composition of such a work.

The first chapter of this document is an introduction to *I Feel As Though I Have Always Been Cold* that includes a brief analytical overview of its three movements. The second chapter analyzes the works by Milhaud and Szymanowski. The third chapter applies the principles of the previously mentioned model to a detailed analysis of the composition for Pierrot Ensemble. It describes the various ways in which prolonged common tones, subcenter collections, and controlling collections are generated and used in the work. It also explores the effects of the collections and subcenters on musical aspects, such as harmonic modulation and textural dissonance. Following this analysis, in the fourth chapter, is a

discussion of the esthetic, narrative, and extramusical aspects of *I Feel As Though I Have Always Been Cold*. The composition is presented in full score as an appendix.

INDEX WORDS: Polytonal, Darius Milhaud, Pierrot ensemble, Karol Szymanowski, Sorocaba, Botafogo, Mazurkas, Original composition, Subcenter collection, Controlling collection, common tone, prolonged

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Chapter 1

INTRODUCTION

Original Composition for Pierrot Ensemble

I Feel As Though I Have Always Been Cold is an original composition for Pierrot Ensemble that utilizes multiple referential pitch-class collections operating simultaneously on the surface of the musical texture. While these collections may initially appear to be independent of each other, they are in fact controlled at the structural background by a single pitch-class collection that contains a primary tonal center. The surface-level collections will be referred to as "subcenter collections," and their tonics or finals will be called "subcenters." They are connected to the fundamental structure by their derivation from pitches that act as focal points. These pitches are diatonic to both the controlling collection and subcenter collection, and are prolonged by the musical structure. A pitch that connects the pitch-class collections in this way will be referred to as a "prolonged common tone."

The piece is written for the standard instrumentation of the Pierrot Ensemble: flute, clarinet, violin, cello, piano, and percussion. The percussion instruments include bass drum, floor tom, medium tom, medium gong, snare drum, tambourine, suspended cymbal, china cymbal, triangle, marimba, and glockenspiel. The composition is an attempt to create a musical metaphor on multiple levels. In a corporeal sense, the piece serves as a metaphor for the seeming endlessness of winter and the increasingly elusive, ephemeral quality of the memory of warmer seasons. The piece may also be thought of as a narrative of changing emotional states, which are brought on by a struggle to achieve a distant and ambiguous goal that is itself elusive and often seemingly unattainable.

The composition is approximately forty minutes in length, and is divided into three movements. The first movement, set in a moderate tempo, is meant to represent the first, ultimately unsuccessful attempt to reach the narratological goal. In the opening texture, there is a large amount of melodic independence asserted by each instrument, and, while each can be perceived as striving towards the same ultimate harmonic goal, their lack of interdependence makes that goal seemingly impossible to achieve. As the movement progresses, the melodies briefly align at measure 73, but only after an exhaustive and gradual decline in activity. This decline is designed to symbolize the cost of that alignment in terms of motivic energy. This cost is represented by longer rhythmic values and comparatively static melodic material. A final, half-hearted push to organize the various melodic ideas into a forward-moving and symbiotic whole is ultimately attempted, but climaxes in frustration and ultimately falls away, leaving the movement unresolved, both harmonically and metaphorically.

During this movement, the percussion has the most singular and unique rhythmic motive. It is the only rhythmic motive that consistently repeats in the opening measures. Through its consistency, the percussion is designed to represent the element most concerned with organizing the other instruments into a cohesive whole throughout this movement. However, because its initial rhythmic motive is, ironically, the most independent, it exerts little influence on the other melodies. This lack of influence can be understood as a symbolic failure to organize the composition. As the percussion grows even more independent, this failure is magnified, resulting in a passage in which the percussion is heavily featured, but in which the other instruments do not take part rhythmically. Instead, they play simultaneities designed to reflect the costly, brief alignment of measure 73.

There is also a narratological conflict between the notes C♯ and E, and their respective pitch-class collections, raising the question of which is the controlling collection, and thus, which will ultimately exude control over the harmonic structure of the work. The pitch collections present at the beginning of the piece are C♯ minor, E dorian, and G dorian. C♯ minor is the collection that occupies the

lowest register, and C♯ is the most structurally significant note of the bass structure (it is the prolonged common tone of E dorian from which C♯ minor is derived). E dorian, however, is the collection that prolongs the melodic material, and encapsulates the primary melodic motive. It is also the collection to which the other prolonged common tones (C# and G) are diatonic. G dorian occupies the highest registers, and is more ornamental. Since C♯ and E both can be heard as struggling to be considered the primary tonal center, there is a symbolic dichotomy between the two. This dichotomy is a further representation of the inherent independence of the various musical aspects of the work, and their inability to work together to achieve a symbolic goal. The conflict between these two pitch-classes is not resolved in the first movement.

These pitch-class collections eventually move to others throughout the course of the movement, in what seems to be an attempt at harmonic progress. However, the narratological conflict between the instrumental lines and the minor third-related C♯ and E dichotomy remains. These unchanging elements are meant to belie the delusion of emotional progress, and the inherent dissonance and narratological conflicts experience no real resolution. The movement ends in the same pitch-class collections with which it began, having seemingly failed to resolve any of its inherent conflicts.

The second movement is set in a slow tempo and is intended to reflect the exhaustion, frustration, and lack of will resulting from the narratological failure of the first movement. The piano, through its elongated rhythms, is meant to represent the inevitable progress of time, though our perception of time is not always perfect, especially concerning long durations. Therefore, the note-lengths of the sustained chords in the piano are varied. The descending melodies, minor modes, and pointalistic textures are intended to produce a feeling of sadness, punctuated by poignant bitterness. The E that carried narratological significance before is, in this movement, almost completely replaced by

C♯. Over the course of the second movement it further descends to B, representing a further decay of motivic energy.

There is a point during the second movement, at measure 65, which represents a brief moment of inspiration. This passage is designed to offer temporary relief, through thinner and more consonant textures, from the generally more anxious tone of the work. The respite is short lived, however, and the work climaxes in a tone meant to resemble renewed frustration, and falls back to the second movement's general state of immobility. This return is meant to represent another failure to progress towards a goal, which is the result of an even less forceful attempt than in the first movement.

The opening measures of the third movement represent a new and more vitriolic attempt to amass the energy required to make progress. The rhythmic element heard in the percussion from the first movement returns, seemingly to again attempt to gather the other disparate elements into cohesion once more. Unlike before, however, this time the percussive instruments succeed in bringing the other aspects of the texture into a type of unity. Rather than ignoring the rhythmic motive as they did in the first movement, the other instruments here align themselves, one by one, with the rhythmic gestures of the percussion. Having finally become organized, the work attempts a final, dramatic push towards the symbolic goal of harmonic and emotional stability.

This goal is never fully realized, but in the final measures (from measure 223 to the end), a type of resigned acceptance permeates. The narratological conflict between the notes C♯ and E is resolved, not by the disappearance of either note, but rather by the appearance of a subcenter collection in which C♯ is diatonic. Although the E does reappear, rather triumphantly, at the final climax, its reappearance coincides with the reappearance of C♯, as well with as the original pitch-class collections of the first movement. The reemergence of C♯ serves to negate the notion of E having truly achieved "victory" over C♯. In the final measures after the climax, C♯ becomes part of a subcenter collection, the subcenter of

which is A. In this sense, C♯, while still present, is no longer detrimental to the overall structure. Rather than competing with E for the role of primary tonal center, it is instead relegated to a foreground-level pitch-class, and as such, is less problematic. This method of resolving the conflict, without removing either note, further promotes the interpretation of the final passages as not having reached a state of resolution or accomplishment. Instead, a state of acceptance is achieved.

Analyses

I Feel as Though I Have Always Been Cold features a musical texture that utilizes multiple, simultaneous pitch-class collections. While these collections are distinct from each other on a foreground level, they are, nevertheless, unified in the structural background by a single "controlling collection," with its own primary tonal center. Other collections are derived by taking a note from the controlling collection and making it into a focal point, or "prolonged common tone." This prolonged common tone generates a new pitch-class collection, or "subcenter collection," which has a tonal center of its own ("subcenter"). For the composition of this piece, the chosen requirements for prolonged common tones are to be structurally prolonged by other elements of the musical texture, and to be diatonic to both the controlling collection and the relevant subcenter collection. For example, if E dorian is the controlling collection for a passage of musical material, C♯ could become the prolonged common tone of a C♯ minor pitch-class collection operating on the surface and structurally prolonging C♯. The prolonged common tone is very often the same pitch as the subcenter in the subcenter collection it generates. However, in certain situations (which will be explored in chapter 2), the prolonged common tone can generate a subcenter collection in which a different pitch-class acts as the subcenter. For example, the C♯ mentioned above could also be the prolonged common tone in an A major subcenter collection, the subcenter of which would be A.

The controlling collections of each movement may modulate in a traditional way, creating new collections on the structural middleground, while the original controlling collection is still the most

fundamental. Additionally, different notes from the controlling collection may be used as prolonged common tones, and generate different subcenter collections. These options allow for different levels of invariance between the notes of the individual subcenter collections, as well as between the subcenter collections and the controlling collection. The degree of surface-level dissonance in any given musical passage can be varied in this manner in order to finely control the sense of tension and resolution across the entirety of the work.

The inspiration for this type of composition was derived from compositions found in the previous repertoire that have colloquially been referred to as "polytonal," but might alternatively be described as featuring a controlling collection and subcenter collection. The theoretical basis for such an analysis is drawn from the writings of prominent theorists and their observations concerning polytonal works. In order to efficiently describe the compositional techniques used in *I Feel As Though I Have Always Been Cold,* as well as its technical, analytical, and conceptual origins in the musical repertoire, this document features three chapters following this introduction. The second chapter is a discussion and analysis of three works; two dances from Darius Milhaud's *Saudades do Brazil,* and the opening dance of Karol Szymanowski's *Mazurkas,* Op. 50. This chapter comments upon the analyses of these pieces, and others, contained in articles by Peter Kaminsky, Carol L. Krumhansl and Mark A. Schmuckler, Daniel Harrison, Ann K. McNamee, Edward Macan, William Thompson and Shulamit Mor, Milhaud himself, and Peter van den Toorn. The third chapter is a detailed analysis of the techniques used in *I Feel As Though I Have Always Been Cold*. It includes a description of its controlling collections, prolonged common tones, and the subcenters and subcenter collections derived from each. It will also discuss the implications that the collections have for musical aspects, such as harmonic modulation and textural dissonance. The fourth chapter will provide further commentary on the narratological, esthetic, and extramusical concepts explored in *I Feel As Though I Have Always Been Cold.* Following these chapters, Appendix A provides a full score of the work.

Chapter 2

ANALYSES OF WORKS FROM THE REPERTOIRE

In his 1923 treatise entitled, "Polytonalité et Atonalité," Darius Milhaud postulated that "having established twelve different tonalities, built upon the degrees of the chromatic scale, and having realized the possibility of passing from one key to another via modulation, we must bring to light the possibilities of superimposing multiple keys and allowing them to be heard simultaneously."[1] He defines this compositional approach as *Polytonalité* (polytonality), and proceeds not only to distinguish it from atonality, but to trace the origins of the technique to canons composed by Bach on intervals other than the octave.[2] He then extrapolates the textures derived from the notion of canons on any given note into a methodical list of all possible polychordal combinations, which he calls "superpositions."[3] As shown in Figure 1, this aggregate begins with two chords that have roots a semitone apart (Superposition I), and ends with two chords that have roots separated by a major seventh (Superposition XI). Each superposition within the table is meant to represent any possible expression of the intervallic distance between the roots of its two chords. For example, Superposition VI represents all T6-related triads, regardless of the actual pitch-classes, registral position, or voicings involved.

This working out of all possible bi-tonal chord combinations lends insight into Milhaud's polytonal thinking, and can be helpful in quickly seeing the number of notes that are invariant between

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[1] *"La croyance en douze tonalités définies, ayant pour base les différents degrés chromatiques de la gamme, devait, après avoir admis la possibilité, grâce aux modulations, de passer d'un ton à un autre, amener à étudier les possibilités de superposer plusieurs tons et de les faire entendre simultanément."* Darius Milhuad, "Polytonalité et Atonalité" (1923) in *Notes Sur La Musique: Essais Et Chroniques,* (Paris: Harmoniques Flammarion; 1982), 174. English translation by Rebecca Simpson-Litke and David Litke.

[2] *Ibid.* 174-175.

[3] "superposé," *Ibid.* 176.

the two chords in each pair. However, equating this notion of polytonality as a compositional process with one that can be used as an analytical tool creates challenges.

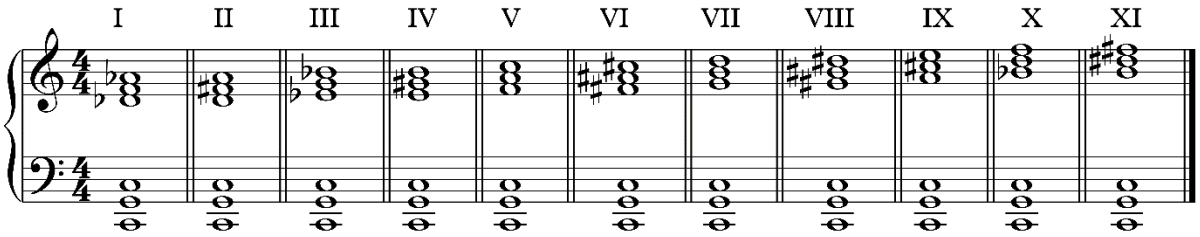

Figure 1: Milhaud's "Superpositions"

Even if a composer were to use this table and the concordant notion of combinations of triads as a means of choosing a harmonic texture for a work, the question of whether this method is perceptible or favorable over other methods of analysis has proven to be a topic of some controversy. Milhaud cites the famous "Petroushka Chord," from the second Tableau of Stravinsky's ballet of that name, as "the chord VI" of his table,[4] as shown in Figure 2.

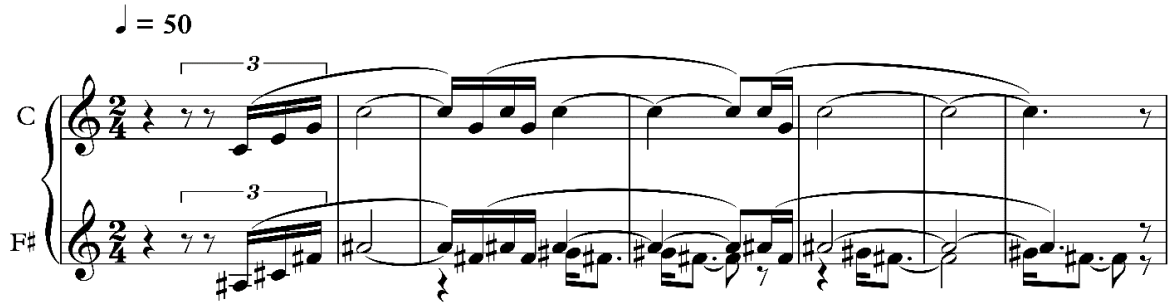

Figure 2: Example of Stravinsky's "Petroushka Chord"

While this example served Milhaud's purposes at the time (namely to establish precedent for his technique), it has led Pieter van den Toorn to argue strongly against polytonality's suitability as an analysis of this chord, and against its very existence in general. In his book, *The Music of Igor Stravinsky*,

[4] "*l'accord VI*," Darius Milhuad, "Polytonalité et Atonalité" (1923) in *Notes Sur La Musique: Essais Et Chroniques,* (Paris: Harmoniques Flammarion; 1982), 177.

van den Toorn points out that the "Petroushka Chord," which is composed of two major triads built on C and F♯ major, is a subset of an octatonic collection, arguing that "there is, in actuality, no simultaneous (tonally functional) unfolding of 'two keys,' but merely this oscillation or superimposition of the (0,6) tritone-related [047] triads of (Octatonic) Collection III at C and F♯."[5] Furthermore, van den Toorn refers to the notion of simultaneous tonalities as "real horrors of the musical imagination,"[6] and claims that "a simultaneous unfolding of separate 'tonalities' or 'keys' is not a part of our perceptual experience."[7]

This question of "perceptual experience" has become a catalyst for the exploration of multiple key centers by other scholars. In 1986, Carol L. Krumhansl and Mark A. Schmuckler conducted a series of experiments, based on the Petroushka chord, investigating "listeners' capacities for perceiving 'polytonality,' in which materials from more than one key are employed simultaneously."[8] Their results seem to support van den Toorn's assertions, inasmuch as they find no credible evidence that the parallel C and F♯ minor chords of that texture could be heard and processed independently.[9] The authors concludes that listeners are more likely to hear "a single complex organization" such as a subset of an octatonic collection.[10] In response to Krumhansl and Schmuckler's findings, William Forde Thompson and Shulamit Mor conducted experiments of their own based on two excerpts by Dubois and Milhaud. These experiments start from the hypothesis that other polytonal excerpts, which do not exhibit the parallelisms of rhythm and contour found in the Petroushka passage, may allow for the greater perception of two distinct key centers.[11] Their conclusion "suggests that listeners can perceive more

[5] Pieter van den Toorn, *The Music of Igor Stravinsky* (New Haven and London: Yale University Press, 1983), 64.
[6] *Ibid*. 64
[7] *Ibid.* 65
[8] Carol L Krumhansl and Mark A. Schmuckler, "The Petroushka Chord; A Perceptual Investigation," *Music Perception: An Interdisciplinary Journal,* Vol.4 No.2 (Winter 1986): 153.
[9] *Ibid.* 181.
[10] *Ibid.* 181.
[11] William Forde Thompson and Shulamit Mor, "A Perceptual Investigation of Polytonality," *Psychological Research* 54 (Spring 1992): 61.

than one tonal organization or key at the same time, and that each key may be weighted according to its perceived importance in the music."[12]

This concept of keys having different levels of perceived importance in a musical texture is carried further by Peter Kaminsky, who states that polychords "come into being according to whether, and to what extent, the treble can resist assimilation by the bass and retain its own distinct identity and priority."[13] As examples, he examines the first two piano pieces from Milhaud's suite, *Saudades do Brasil,* concluding that "these two movements…begin to frame an analytical approach to superimposition. On the one hand, each articulates a single key--that sounded by the bass--on a large scale; on the other hand, the treble…suggests a secondary pitch focus at the phrase level, given its less than thorough assimilation to the bass domain…"[14] For Kaminsky, the non-bass tonality of a bitonal work can resist the bass not only through dissonance created by notes not shared between the two keys, as in the case of "Botafogo," (the second piece of *Saudades do Brasil*), but can also achieve a similar bifurcation in other ways. In the later works of Ravel, for example, a new key can be introduced in the piece at some point in advance of the bass voice over which it will later be superimposed (giving the listener an opportunity to familiarize themselves with the new key). A new key might also be played in its own timbre, or associated with a particular dramatic character (for example, the teacup of Ravel's *L'Enfant et les sortilèges)*. In his own words, Kaminsky asserts that Ravel's later works provide "various possibilities for manipulating the tendency toward bass assimilation by means of attenuation…delay…or denial."[15]

There are, of course, other examples in the literature in which a single key does not so easily exude dominance over another, such as in Edward Macan's analysis of Gustav Holst's popular "Mars;

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[12] William Forde Thompson and Shulamit Mor, "A Perceptual Investigation of Polytonality," *Psychological Research* 54 (Spring 1992): 70.
[13] Peter Kaminsky, "Ravel's Late Music and the Problem of 'Polytonality'," *Music Theory Spectrum* Vol.26 No.2 (fall 2004): 241.
[14] *Ibid.* 244.
[15] *Ibid.* 262.

Bringer of War" overture from his orchestral suite, *The Planets*. Macan asserts that this work "offers an unusually clear example of two distinct tonal strata that, like the proverbial water and oil, simply refuse to absorb each other."[16] Macan also makes the point that Holst does not utilize two key centers in the "static" manner preferred by Stravinsky. [17] He instead insists that "two distinct textural strands…can be observed moving away from and then back to their respective tonics." [18] Much of the credibility of this essay lies in its ability to track these two independent tonal areas, both on middleground and foreground levels, as they each move through chords of different harmonic function in relation to their respective tonics.

When taking into account the observations made by Thompson and Mor (that multiple pitch centers may be weighted in perception, according to perceived importance), the assertion of Kaminsky (that this perceived importance can result in a collection being ascribed to the phrase level), and Macan's notion of structural differentiation (background, middleground, and foreground) of pitch-class collections, the possibility arises of a musical texture consisting of multiple collections. In such a texture, one of those collections assumes a role of structural prevalence over the others. By virtue of this prevalence, this pitch-class collection would occupy a background level in the structural framework, while the less prevalent, phrase-level collections would structurally prolong some element of the controlling collection. The level of dissonance that results from these collections (and therefore the collections' individual distinctiveness) will depend greatly upon the number of pitch-classes shared between them and these shared notes' ubiquity in the texture. In this particular approach, phrase-level collections will also have to be derived, in some rational way, from the controlling collection in order to be perceived as part of a larger musical structure.

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[16] Edward Macan, "Holst's'Mars': A model of Goal-oriented bitonality," in *Music in Performance and Society; Essays in Honor of Roland Jackson,* ed. Malcolm Cole and John Koegel (Warren, MI: Harmonie Park Press, 1997), 412.
[17] *Ibid*. 411.
[18] *Ibid.* 412.

The first piece of Milhaud's *Saudades do Brasil,* "Sorocaba," is an example of a structure which can be described as a controlling pitch-class collection that uses a prolonged common tone to derive another collection at the phrase level. It begins with an ostinato figure in the left hand that cycles between the tonic chord of the primary key, B♭ major, and an implied dominant of F. The melodic voice begins on the third of the tonic, D4 (see Figure3).

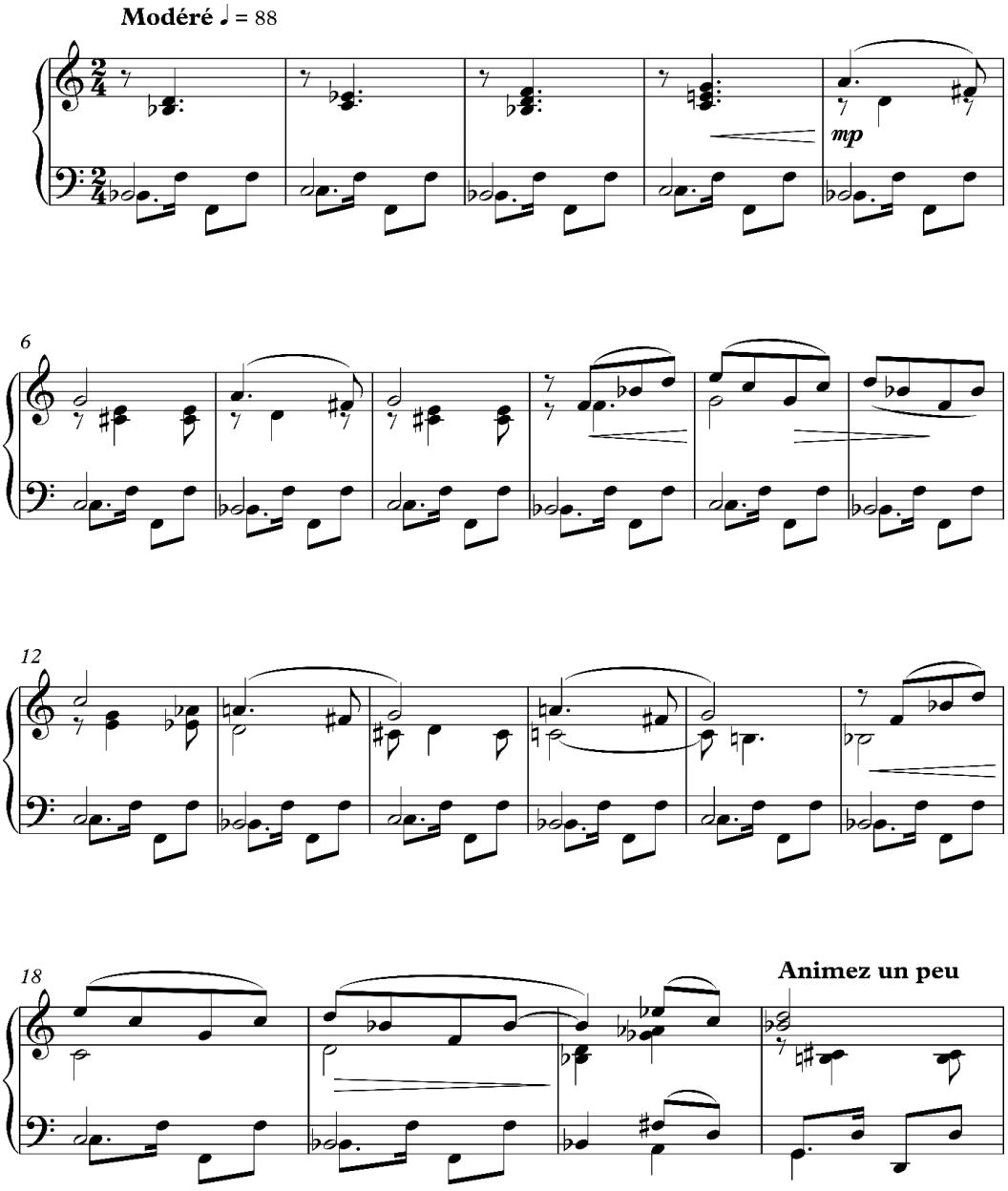

Figure 3: Milhaud, "Sorocaba" mm. 1-21

Beginning in measure 5, the voices of the right hand alternate between the notes of a D major and C♯ diminished chord, while in the left hand the ostinato continues. This texture is sustained until measure 9, at which point the melodic voice shifts into a higher octave. In this measure the subcenter collection created by the D major and C♯ diminished chords is briefly subsumed back into a single B♭ major tonality. In measures 13-17, the bifurcation of D major over B♭ major returns. The left-hand ostinato continues, and the original D4 that began the piece descends to the tonic note, B♭3, in measure 17. In measure 19, the D4 returns, allowing for the beginning of the next section at measure 21.

Figure 4 shows a graphic reduction of the texture found in the opening measures of "Sorocaba." Here, the prolonged common tones of the controlling collection are represented by open-head, middleground notes that are prolonged at the foreground by the other notes of the piece. The notes from the right hand, labeled "D Major," are derived from that tonality, and prolong the D4 in m.1, until m.17, when the subcenter collection is dissolved. The notes in the left hand remain in the fundamental key (or "controlling collection") of the piece, B♭ major.

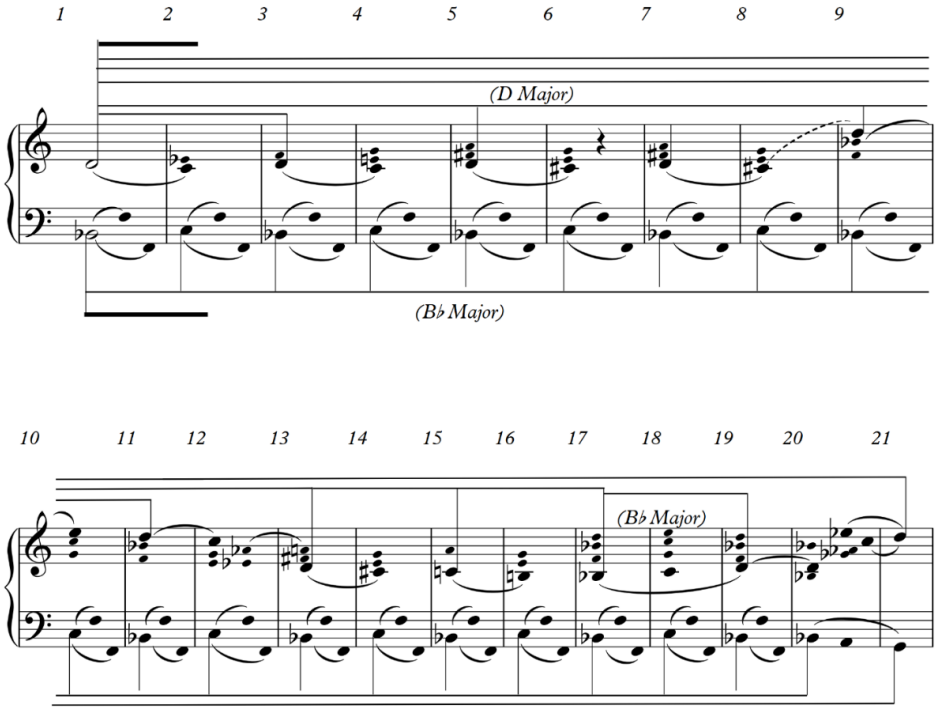

Figure 4: "Sorocaba" Structural Reduction, mm. 1-21

In this first section of "Sorocaba," Milhaud has used a subcenter and subcenter collection to prolong a structurally significant note (the third of the tonic chord) from the controlling collection. This prolonged tone implies, at a superficial level, a new pitch-class collection (D Major) by its use of the tonic-to-dominant motion of the D major and C♯ diminished chords. However, there are not, structurally speaking, two simultaneous keys at work in the background of the piece. The first section prolongs the root of the tonic chord in the left hand, and the third of that chord in the right. It is therefore still engaged, at the background structural level, in a prolongation of the tonic chord, B♭ major. As Kaminsky suggests, the prolonged common tone, and its resulting subcenter collection of D major is a textural construct, operating at the phrase level to add greater complexity to the tonality.

The mild level of dissonance in this dance is a product of the way in which the shared notes between the two pitch-class collections are used. In describing Milhaud's Second Chamber Symphony, Daniel Harrison notes that the traditional diatonic pitch-class collection can be generated by a cycle of T5 (or T7) operations, which he calls 5-cycle sets.[19] He also observes that the T6 relationship between the flute, and contrabass parts of the opening phrase of that piece creates a dearth of common tones between the two supposed pitch centers. He writes that "the lack of common tones between the figures promotes their structural independence from each other, and…the T6 operation itself, from the standpoint of 5-cycle relationships, produces pitch-class relationships of maximum separation within the cycle."[20] In other words, as a result of the very few number of pitch-classes that are common between them, these two pitch-class collections exhibit a maximal amount of independence from each other. Milhaud also accentuates this distinctiveness with the intervals he emphasizes. Harrison observes that

[19] Daniel Harrison, "Bitonality, Pentatonicsm and Diatonicism in a Work by Milhaud," *Music Theory in Concept and Practice* (Sept. 1997): 395.
[20] *Ibid.* 395.

the composer "deployed the pitches of the two figures so as to create pungent harmonic dissonances."[21] This second observation serves to highlight the importance not only of the number of shared tones, but the ways in which they are used.

Figure 5 illustrates the relationship, in terms of invariant pitch-classes, between the two collections used in "Sorocaba." The tones shared between them are bold and underlined. The controlling collection and subcenter collection contain three notes that are shared between them, D, G, and A. More important, however, is the prominence of these notes in the musical texture. All three of them are present in the first measures, and occupy tonally significant positions. D and A are members of the D major tonic triad in the right hand. G is a member of the dominant-functioning vii^{o} chord in the same key. D is also, as already noted, $\hat{3}$ of the controlling collection, B♭ major. The use of these shared tones implies that D major, as a subcenter collection, is highly integrated into the controlling collection of B♭ major. Therefore, the subcenter collection of D major possesses less individual distinctiveness than one a different collection with fewer or less emphasized shared notes might have.

D major:	**D**	E	F♯	**G**	**A**	B	C♯
B♭ major:	B♭	C	**D**	E♭	F	**G**	**A**

Figure 5: Pitch-class collections in "Sorocaba."

The placement and tonal function of the right hand notes further validate D as a prolonged common tone taken from the primary collection of B♭ major, and around which the subcenter collection of D major is created. This placement establishes simultaneity of tonal function across each structural level from background controlling collection, to surface-level subcenter collection. Two key centers operating simultaneously, using conflicting tonal functions (pre-dominant and dominant for example) does not appear to occur in "Sorocaba." The dominant-functioning C♯ diminished chord of D major in

[21] *Ibid.* 395.

the right hand coincides, temporally, with the dominant functioning F major in the B♭ key of the left hand. This congruency suggests that the functional relationship of the harmonies (tonic to dominant) is a cohesive, single concept, which unifies the piece on a background structural level.

The second dance in *Saudades do Brasil*, entitled "Botafogo," is similar in its construction, but offers a more complex relationship between the pitch-class collections. Figure 6 is a reproduction of the first section of this piece. After a two-measure introduction in F minor in the left hand, which employs a similar tonic-dominant ostinato as the one found in "Sorocaba," the right hand enters with "a scalar ascent in F♯ minor," as noted by Kaminsky.[22] This scale ascends from C♯4 to C♯5 in measures 3-7, and returns to C♯4 in measures 7-12. In measure 13, C♯4 is lowered a half step to C4, bringing the right hand into the key center of the left hand. The opening scalar ascent is repeated in measures 15-24, but in this second instance, it has been altered to leap from B4 to F♯5 in measure 18, rather than end on the octave at C♯5. After this embellishment, the descent of the scale arrives, not on C♯4, but on F♯4, which then is also lowered by a half step. This resolution also subsumes the right hand back into the F-minor key of the left.

[22] Peter Kaminsky, "Ravel's Late Music and the Problem of 'Polytonality'," Music Theory Spectrum Vol.26 No.2 (fall 2004): 242. Technically, this ascent is F♯ ascending melodic minor.

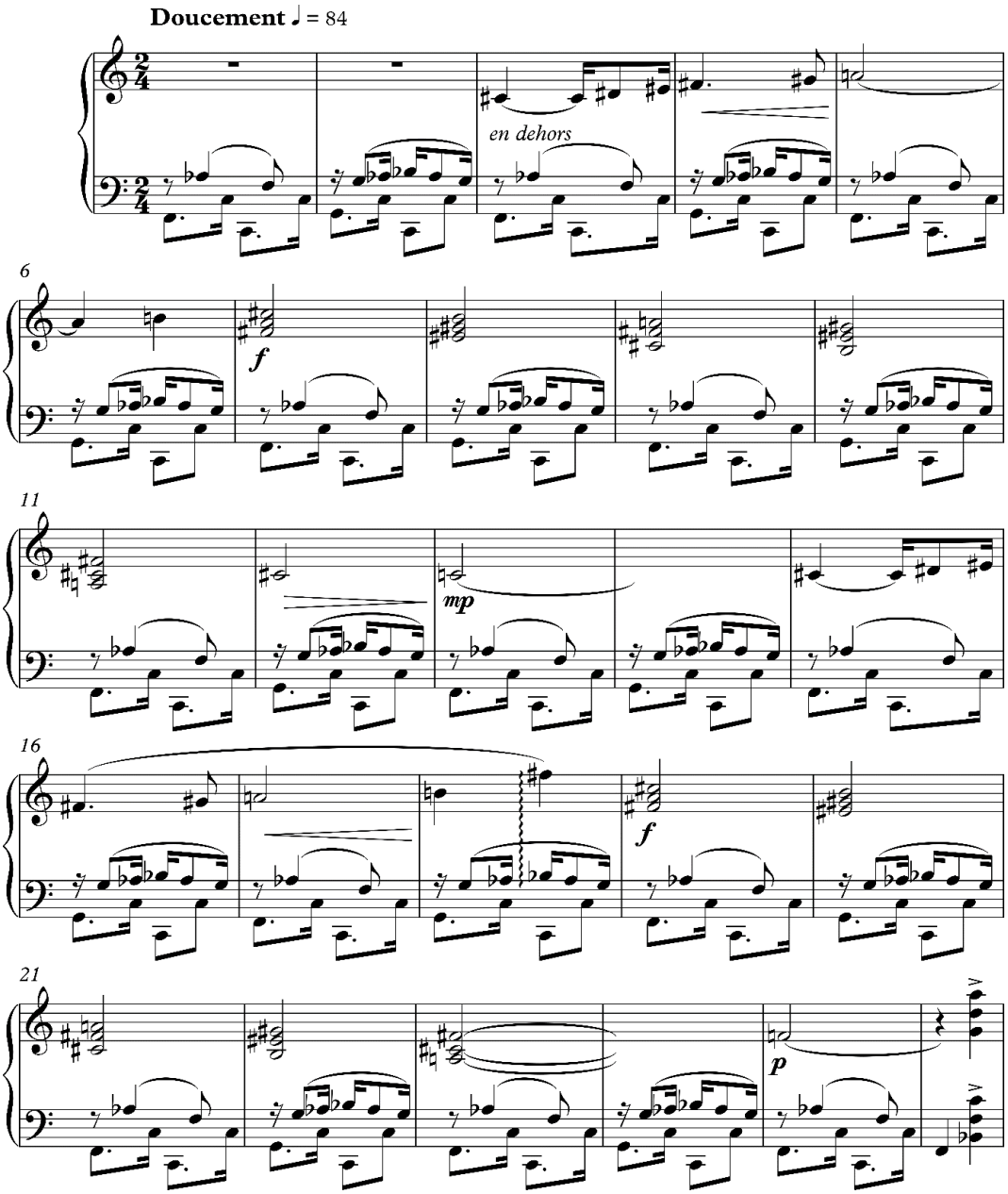

Figure 6: "Botafogo," mm. 1-26

In this opening section of "Botafogo," Milhaud employs a prolonged common tone in a manner very similar to the way in which it was employed in the first piece. C♯4 is a dominant-function prolongation on the surface level, and its enharmonic equivalent, D♭4, is diatonic to the controlling collection of the piece, F minor. In this particular dance, the prolonged tone is not a note of the tonic

chord of the controlling collection of F minor, but instead prolongs the note that is the enharmonic equivalent of ♭$\hat{6}$.

The C♯/D♭ is employed in a structural prolongation of the note that is $\hat{5}$ of the subcenter collection (F♯ minor), and the sounding ♭$\hat{6}$ of the controlling collection. This note then resolves, predictably, to the fifth of the controlling collection's tonic chord, C4. In its second iteration, the prolongation is adjusted to land on the F-minor tonic at F4, creating a dominant-tonic motion in F minor on a middleground level. Figure 7 is a graphic representation showing the manner by which ♭$\hat{6}$ is structurally prolonged by use of an F# minor pitch-class collection. The notes of the right hand that belong to F♯ minor are labeled as such, and their surface-level function is noted by their return to C♯4, which is then subsumed back into the F minor tonality by resolving down to C4. Similarly, the second phrase is adjusted to instead land on F♯4 in the right hand, and then resolves down to F4. In this opening section of "Botafogo," Milhaud employs a prolonged common tone in a manner very similar to the way in which it was employed in the first piece. C♯4 is a dominant-function prolongation on the surface level, and its enharmonic equivalent, D♭4, is diatonic to the controlling collection of the piece, F minor. In this particular dance, the prolonged tone is not a note of the tonic chord of the controlling collection of F minor, but instead prolongs the note that is the enharmonic equivalent of ♭$\hat{6}$.

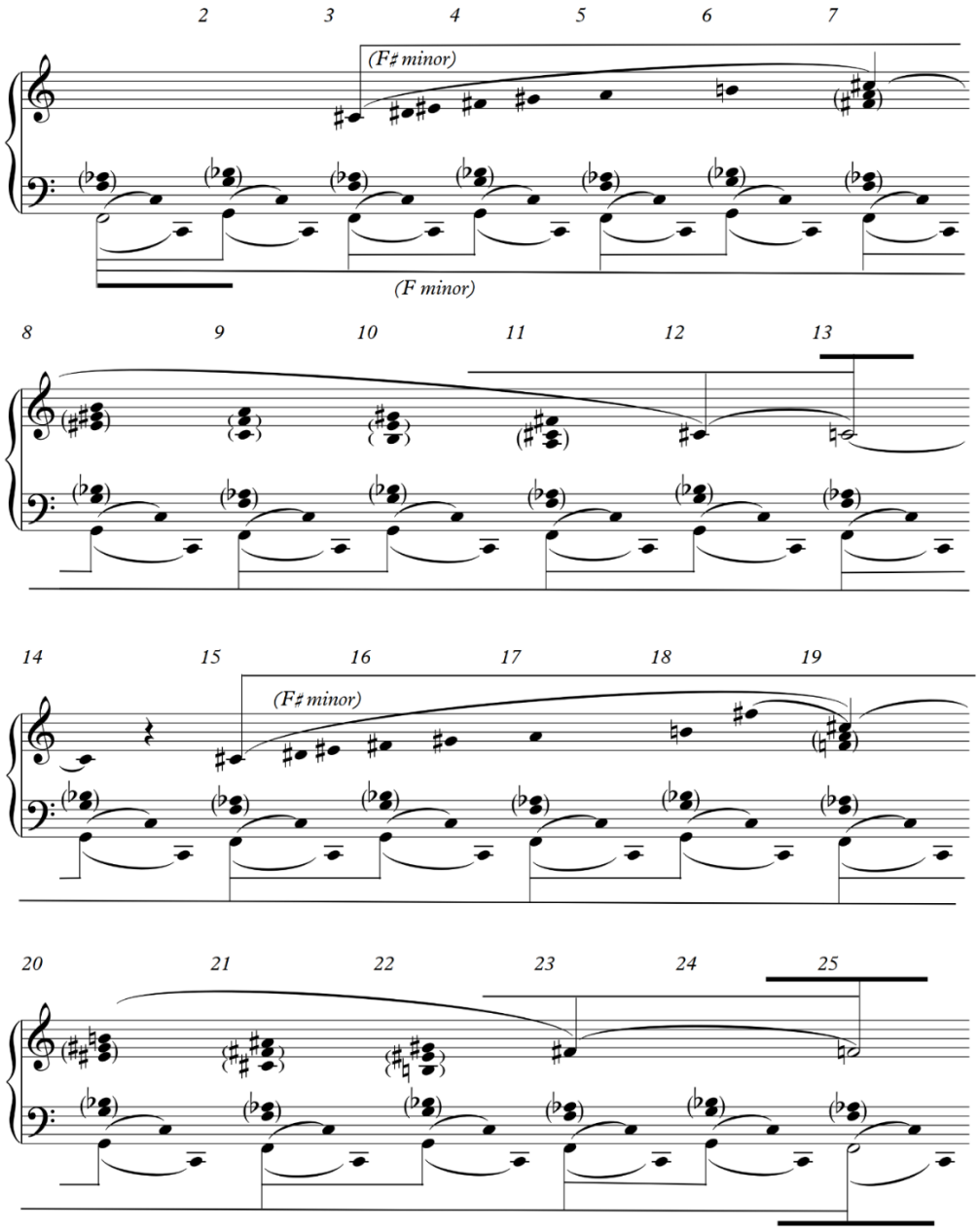

Figure 7: "Botafogo" Structural Reduction mm. 1-25.

Kaminsky observes that the notes associated with the right-hand subcenter collection of F♯ minor have no immediately obvious harmonic function in the controlling collection of F minor. Therefore, in his view, they retain enough autonomy for the bass voice's influence to be diminished. He

describes the subcenter collection's notes as "not being drawn into the orbit of F-minor."[23] This observation can be explained by the number of pitch-classes that are invariant between the two collections, and the manner in which they are used. The pitch-classes that occupy both of these collections are C♯/D♭ and G♯/A♭. E♯/F may also be included if F♯ minor happens to be altered to the ascending melodic minor form, and, therefore, includes the raised $\hat{6}$ and $\hat{7}$, as is the case here. D♯/E♭ would also be included in the left hand if that collection were specifically expressed as F natural minor. However, since neither E nor E♭ is present in the ostinato figure, this quality remains ambiguous. Figure 8 outlines the pitch-classes of these two collections, highlighting the invariant pitch classes with bold typeface, and underlines. F natural minor is listed as the left-hand pitch-class collection to reflect the unused possibility of E♭.

F♯ minor: (melodic)	F♯	**G♯**	A	B	**C♯**	**D♯**	**E♯**
F minor: (natural)	**F**	G	**A♭**	B♭	C	**D♭**	**(E♭)**

Figure 8: "Botafogo" Pitch-Class Collections.

Of these invariant pitch-classes, E♯ and G♯ are used in the subcenter collection in generally supporting roles. For example, E♯4 is a passing tone to the tonic of F♯ in measure 4, and G♯4 functions in the same manner, as a passing tone to the A in measure 5. In measure 8, the E♯ and G♯ are chord tones within a vii^{o} chord in F♯ minor. This chord tone identity also occurs for both of these pitch-classes (E♯ and G♯) in measures 10, 20, and 22.

[23] Peter Kaminsky, "Ravel's Late Music and the Problem of 'Polytonality'," Music Theory Spectrum Vol.26 No.2 (fall 2004): 242.

F and A♭ are, of course, very important to the left-hand key of F minor, F being the tonic, and A♭ the third of the tonic triad. However their enharmonic use in the subcenter collection's melody is sparse, or non-existent, and does not serve to emphasize the invariance these notes share with the controlling collection of F minor. Therefore, there is little connection to be heard between the left and right hands.

In "Botafogo," Milhaud creates a prolonged common tone, not from a note of the tonic triad, but rather from the enharmonic $\flat\hat{6}$ of the controlling collection of F minor. He also uses a subcenter collection (F♯ melodic minor) that has a subcenter on a different pitch-class (F♯) than the prolonged common tone (C♯). These choices create a greater structural complexity, as well as a more dissonant tonal landscape, and therefore, the two key centers sound more removed from each other.

At the beginning of the descent in measure 7, the consistent harmonic function across both keys is clear. As the F♯ minor scale descends through alternating F♯ minor and E♯ diminished chords, the left hand congruently alternates between F minor and C^7. The dominant note C♯4 that is reached in measure 12 occurs over a dominant function in the left hand, and the structure resolves back into a single key, with the C4 (fifth of the tonic chord) in measure 13.

The middle section of "Botafogo" (measures 27-42) also features a musical texture that prolongs a controlling pitch-class collection by means of a prolonged common tone and subcenter collection. Figure 9 reproduces the opening measures of this passage. The primary tonal center, F, is prolonged in the right hand by alternating harmonies of F Major and C Major (with an added 9^{th} and 13^{th} on the last eighth note), one per measure. The left hand continues to prolong the tonic chord as well by moving to its third, A♭, and creating from it a new subcenter collection, A♭ mixolydian. The left hand then alternates through chords of A♭ major (C being implied from the right hand) and G♭ major. In this section it is, therefore, the highest voice that retains the controlling collection of F major, and the lower "bass" voice, that has adopted a subcenter collection.

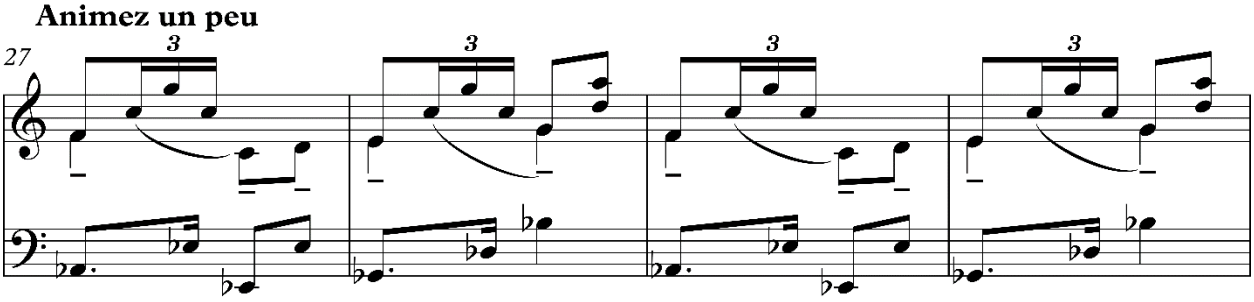

Figure 9: "Botafogo," mm. 27-30

Neither Milhaud's use of a subcenter and subcenter collection to prolong a note from a controlling collection, nor congruent harmonic motion in two keys, is unique to this composer. Polish pianist and composer Karol Szymanowski utilizes these concepts in a fashion similar to Milhaud. The first of Szymanowski's 20 Mazurkas (Op.50) creates from a specific focal pitch, a mode that is different from the primary key of the piece.

As shown in Figure 10, the opening of the first Mazurka is clearly dominated structurally by E which, along with its fifth B, occurs in the lowest register at measures 1, 5, 9 and 13. The main melody also features the pitch-class E as its beginning note, and point of arrival. The opening measures feature the aforementioned bass tones (E and B) below a melodic E5, which immediately leaps upwards to D6. From this pitch, the melody descends via scalar motion (the nature of which will be discussed shortly), the final destination of which is E5. Upon arriving at E5, the melody continues to descend to B4 and returns up to E5. At the beginning of this descent to B4, (end of measure 2) the left hand plays an A minor chord in first inversion, which is suspended until the return of E in measure 3. The following measure features repetitions of E in the right hand, beneath which the A-minor chord gradually moves to D Major, still in first inversion. This phrase then repeats at measure 5 with the addition of a final E minor chord that acts as resolution for the D major chord in measure 4. In total this phrase is repeated, with ornamental variation, a total of four times to comprise the first section of the dance.

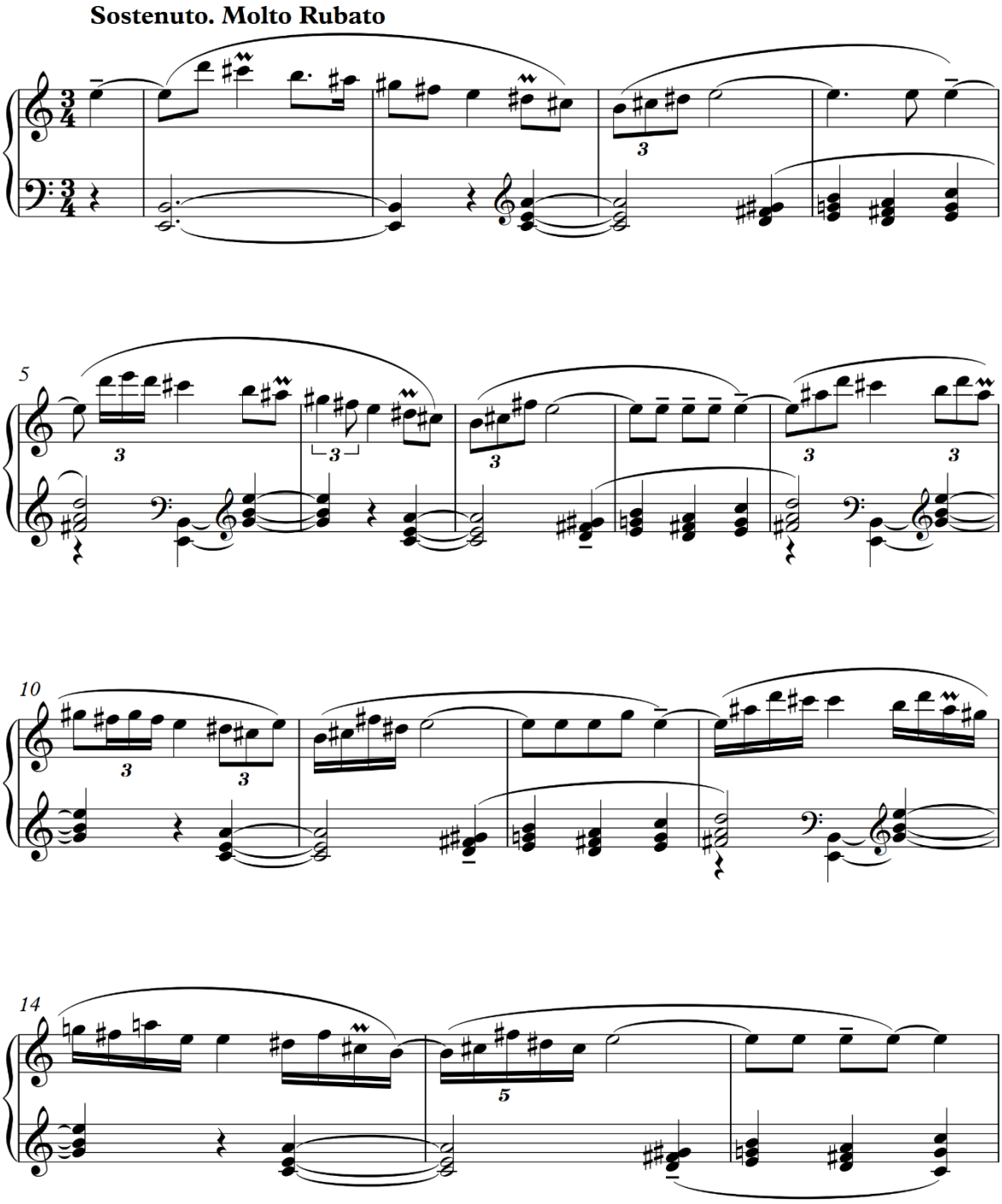

Figure 10: Szymanowski, Op.50, No.1, mm1-16

In her article discussing the bitonality in Syzmanwoksi's op. 50, Ann McNamee refers to the ancient Polish folk mode called the Podhalean mode. This mode contains a raised fourth scale degree

and lowered seventh scale degree compared to the major scale.[24] If its final were on E, as in this piece, it would be the equivalent of the acoustic collection AC^{+4}. The pedal tones in the bass comprise the tonic and dominant of the controlling collection, and the occurrence of the C♯5, as a simultaneity with this bass interval, lends to it an effect of ambiguity that is ultimately resolved by the mode's arrival on its final of E5.

Given this observation, the melodic descent that comprises the first section of this Mazurka may be interpreted as an expression of the AC^{+4} collection (or Podhalean mode as McNamee calls it) that has been constructed from a prolonged common tone of E5.[25] Like Milhaud, Szymanowski has used a different mode to add greater dimension to a structurally significant note. In the case of Szymanowski's Mazurka, that note is E5, and the pitch-class collection that prolongs it is the E Podhalean mode. Below E5, in both hands, the controlling collection of the piece, E minor is expressed. In measures 3-4 this controlling collection is altered to E melodic minor, which includes D♯4 rather than the D4 that would be diatonic to E Podhalean. While the pitch-class collections in Op.50 No.1 share a single primary tonal center, the distinctiveness of the individual modes offers a level of structural complexity similar to that found in the first two pieces of *Saudades do Brasil.*

In measure 3, the right hand moves very rapidly through a single beat of implied dominant function then returns to the E5. Since this note is the primary tonal center of the piece, and since the preceding D♯ has strong leading tone tendencies, its tonic function is undeniable. However, the A minor chord beneath this resolution continues to be sustained, and is embellished by a G♯ diminished seventh chord[26], which means that the upper voice has been left suspended on its tonic of E. This incongruity may lead to an explanation of the suspension of melodic motion that occurs in the right hand in

[24] Ann K. McNamee, "Bitonality, Mode, and Interval in the Music of Karol Szymanowski" in *Journal of Music Theory*, vol. 29, No.1 (Spring 1985), 64.
[25] To call E5 a "subcenter" would be a dubious assertion, since this pitch-class is the primary tonal center of the piece.
[26] G♯4, while not diatonic to E minor, serves a foreground role of embellishing A.

measure 4. Having reached this point of rest, the upper voice suspends its motion until the lower key of E minor can reach the same functional space. This arrival is accomplished in measure 5 by taking over the E5 and spelling a tonic functioning E minor chord below it. Just before it does so, this tonic arrival is emphasized, not only by the reiteration of the E-B perfect 5th in the bass, but also by the reemergence of C♯6, which lends a great deal of strength to the interpretation (both intellectually and aurally) of C♯ as a note with an important role to play in this melody. The suspension of the harmonic motion in a single key, while the other key "catches up," demonstrates a more fluid interpretation of simultaneous function on the part of Szymanowski. Nevertheless, it has an analytical precedent in Macan's observations of the two keys in Holst's "Mars."[27] Figure 11 shows the structural prolongation of the E5, both above by E Podhalean and below by E melodic and natural minor.

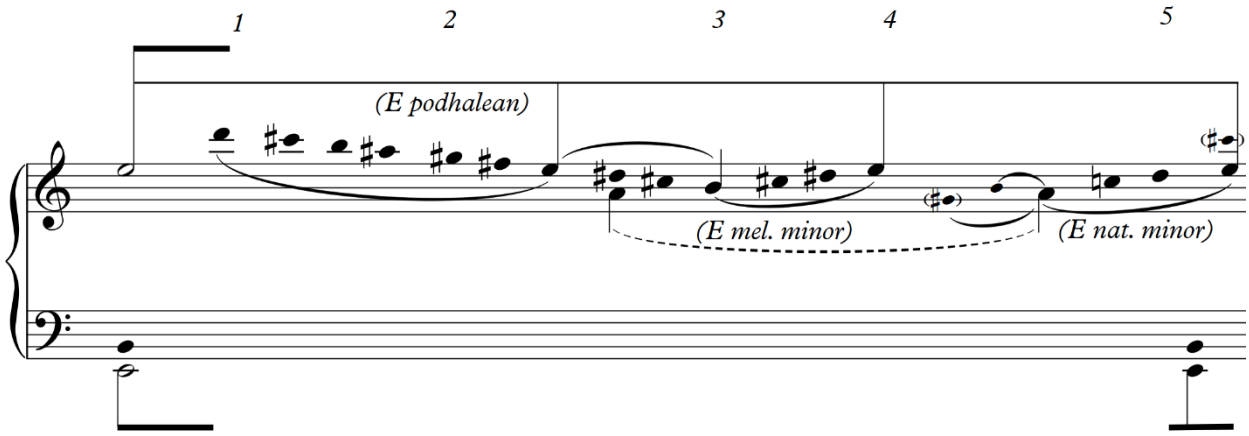

Figure 11: Szymanowki, Op. 50, No.1. Structural reduction, mm. 1-5

Each of the three works examined above create structural complexity by using a prolonged common tone to generate other pitch-class collections that operate on the foreground level. Each of these pitch-classes are also diatonic or enharmonically diatonic to the controlling collection, which

[27] In that piece, the C tonality remains on its dominant G throughout the first theme group of the exposition, until the upper D♭ harmony also reaches a dominant functioning chord, after which they both resolve to tonic and move to the secondary theme group. Furthermore, the C tonality is later suspended on its tonic and removed altogether throughout the first half of the development section, as the D♭ explores other tonal areas, only to reappear on the same drone in the retransition. See Edward Macan, "Holst's Mars': A Model of Goal-Oriented Bitonality," in *Music in Performance and Society; Essays in Honor of Roland Jackson,* ed. Malcolm Cole and John Koegel (Warren, MI: Harmonie Park Press, 1997).

contains the primary tonal center of the piece. In “Sorocaba” the prolonged common tone is the third of the tonic chord, D5, and the subcenter collection that prolongs this D5 is D major. In “Botafogo” the prolonged common tone is the enharmonic equivalent of F minor’s ♭$\hat{6}$, C♯4. The subcenter collection derived from this note is F♯ minor, of which the prolonged common tone is $\hat{5}$ and not the subcenter. This distinction lends a greater amount of complexity to the texture of this work than is found in “Sorocaba.” In both of these works, the level of individuality and distinctiveness perceptible in the subcenter collection is affected not only by the number of notes shared between the subcenter collection and controlling collection, but also by the ways in which these shared notes are used. Each of these pieces also employs temporally corresponding tonal functions in each of the collections. Szymanowski’s op.50, no.1 also uses a prolonged common tone to create a foreground level pitch-class collection. In this example, E5 generates the Polish Podhalean mode in the upper voice above it. This piece features a temporary suspension of harmonic motion on the tonic in the upper voice, until the lower voice arrives at a similar functional place.

The characteristics of each of these pieces, as well as the commentary provided by the above-mentioned theorists, have served as inspiration for the composition of *I Feel As Though I Have Always Been Cold*. The next chapter provides an explanation of the ways in which these principles are utilized in that work.

CHAPTER 3

ANALYSIS OF ORIGINAL COMPOSITION

I Feel As Though I Have Always Been Cold is a three-movement composition for Pierrot Ensemble that utilizes a harmonic texture devised of controlling collections, prolonged common tones, subcenters, and subcenter collections. The controlling collections operate on the background level structurally, while the subcenters and their subcenter collections operate on the foreground. The prolonged common tones, diatonic to both a controlling collection and subcenter collection, act as a bridge between them. Inspiration for the ideation of these concepts has been drawn from the aforementioned dances composed by Milhaud and Szymanowski, as well as the commentary provided by the theorists mentioned in the previous chapter. The following analysis makes no attempt to account for each individual controlling collection or subcenter collection in the composition. Rather, it provides a description of the features of the compositional methods that are most typically used in the piece. This description includes the manner by which subcenter collections are derived from a controlling collection, and discusses the impact those choices have on the level of dissonance and the overall structure. It also describes the methods by which controlling collections, and subcenter collections may modulate over the course of the work.

The pitch-class collections that operate at the surface of the composition (subcenter collections) are derived from prolonged common tones that are diatonic to the controlling collection. The controlling collection operates on the structural background. In this texture's most basic form, the prolonged common tone also acts as the subcenter (final or tonic) of the subcenter collection it generates. Measures 1-4 of the third movement, reproduced in Figure 12, provide a particularly clear example of this type of subcenter construction.

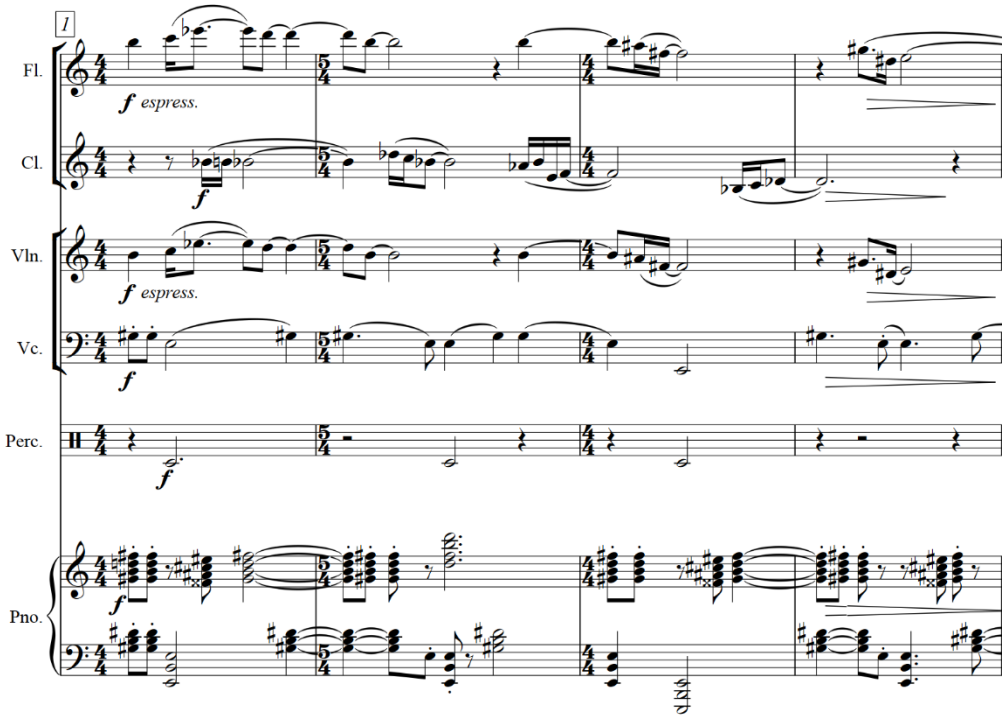

Figure 12: Phillips, Movement III, mm.1-4. Clarinet is in B♭

In this movement the controlling collection is an E major scale, which is implied by the opening passage by the octave-fifth intervals in the lowest voice in the piano. The musical material above this voice utilizes prolonged common tones on the third of the tonic chord (G♯), and the fifth (B). The subcenter collections generated by these prolonged common tones feature them as subcenters: G♯ minor and B minor. The main structural melody is expressed in the B minor collection and is played by the violin and by the flute, doubled at the octave. Congruently, the clarinet plays a counter-melody in the G♯ minor collection.[28] The piano, augmented by the cello, plays a chordal texture derived from notes included in both of these subcenter collections. The C and E♭ from measure 1, clearly not a part of the B minor subcenter collection, originate from the primary theme of the composition (reintroduced here),

[28] Some enharmonic equivalents are employed in the clarinet for the sake of convenience.

and function as neighbor notes to the D, which is diatonic to B minor. This foreground chromatic motion is similar to the G♯4 in Szymanowski's Op.50, no.1.

Figure 13 shows a graphic representation of the structure of this passage. The open-head notes signify the prolonged common tones, which are taken from the controlling collection of E Major. The other notes, which are elements of prolongation, show the B minor and G♯ minor subcenter collections. The notes with upward stems are from the B minor subcenter collection, and prolong B4. The notes with downward stems are from the G♯ minor subcenter collection, and prolong G♯4. On the left hand side of figure 13, is a reduction of this passage including foreground level embellishments, and on the right, is the reduction to the tonic chords of the collections. Given C and E♭'s role as foreground embellishments, they are removed from the reduction on the right side. The E in the violin and flute in measure 4 is from the controlling collection, and represents a narratological problem that must be resolved. This problem, its origins, and its resolutions will be discussed in chapter 4.

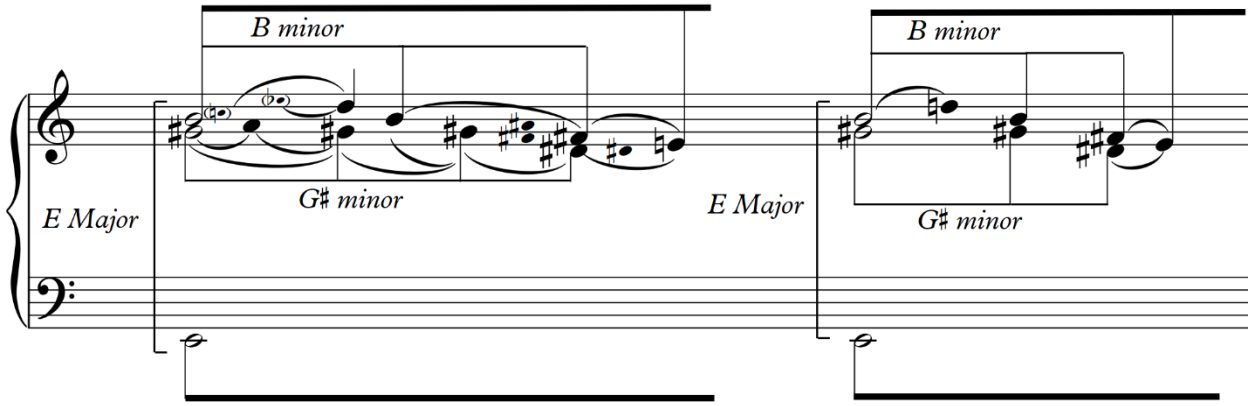

Figure 13: Phillips, Movement III, mm. 1-4, structural reductions

Another possibility, as demonstrated by the F♯ minor scale in "Botafogo," is a prolonged common tone that is not the subcenter (tonic or final) of the collection derived from it. In "Botafogo" C♯ is prolonged in the right hand by an F♯ melodic minor scale (see Figures 6 and 7 on pages 17 and 19, respectively). This arrangement makes C♯4 the prolonged common tone, and F♯ the subcenter. An

example of this type of construction occurs in the second movement of *I Feel As Though I Have Always Been Cold,* in measures 30-33. Figure 14 shows this passage from the score, while Figure 15 is the graphic reduction of the subcenters taken from the controlling collection. Again, the prolonged common tones have open-head notes. The larger stemmed notes are the subcenters of the subcenter collections.

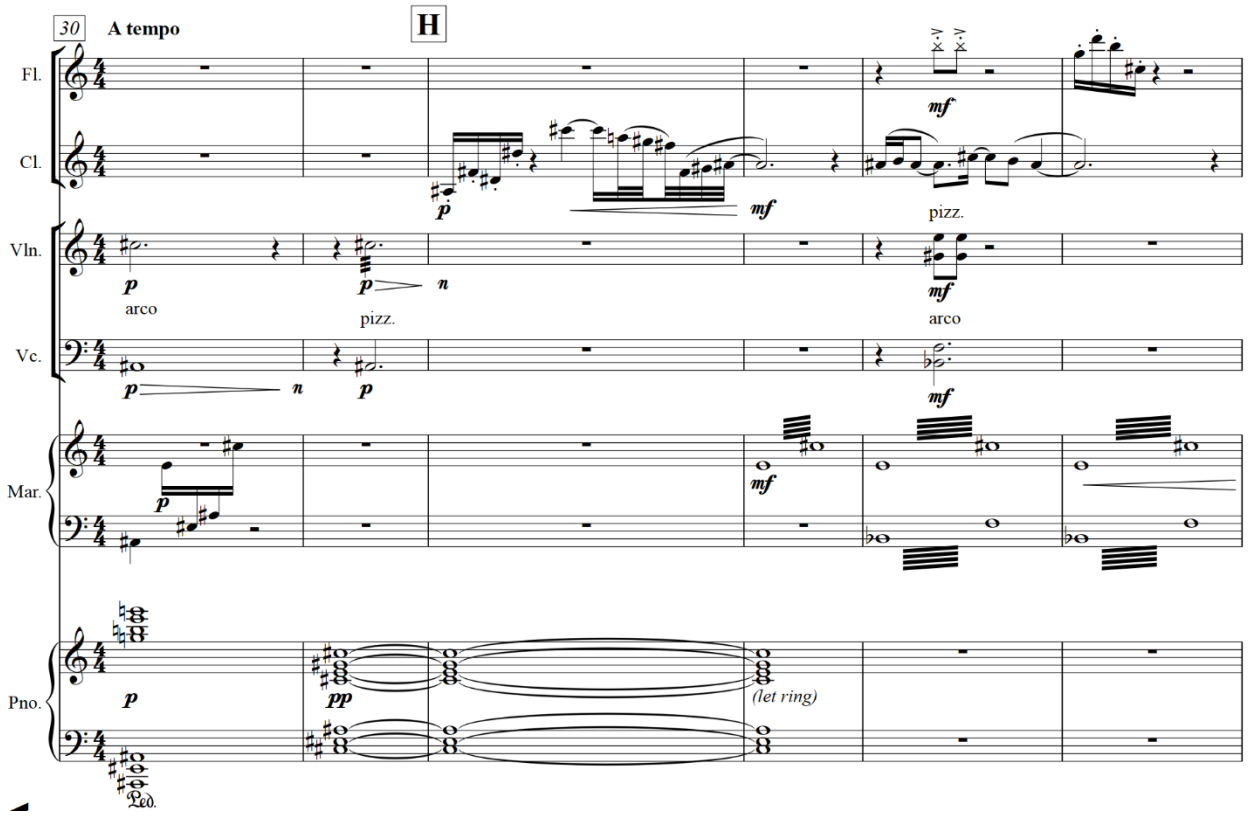

Figure 14: Phillips, Movement II, mm. 30-33. Clarinet in B♭

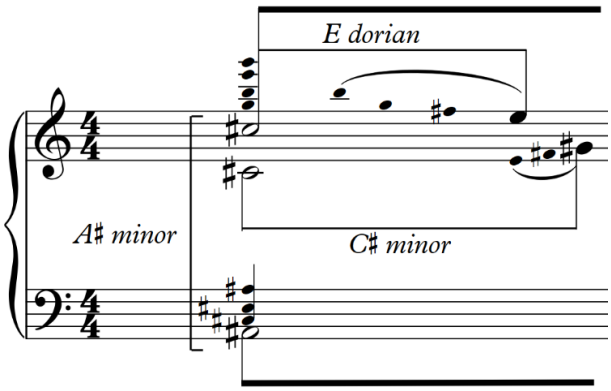

Figure 15: Phillips, Movement II, mm. 30-33, structural reduction

In this passage, the controlling collection is an A♯ minor scale, articulated by the left hand of the piano, the bass clef of the marimba[29], and the cello. C♯4 is the first prolonged common tone, around which is constructed a C♯ minor scale played in the right hand of the piano and lower notes of the clarinet melody. In this example, the prolonged common tone, and the subcenter of the subcenter collection are the same note, C♯4. Around C♯5, however, is constructed an E dorian scale, which is responsible for the higher part of the clarinet melody. In the case of the E dorian collection, the E5 subcenter is different from the C♯5 that acts as its prolonged common tone. C#5 is the most structurally significant note of the melody. It is present in the violin, the marimba, and in the sustained chords of the piano. It is also the goal of the clarinet's first melodic gesture. However, the upper voice of the clarinet melody outlines an E minor chord. This chord, in E dorian, is built upon $\hat{1}$ and is therefore a parallel to the A♯ minor chord and C♯ minor chord from the other collections. This type of parallelism (chords built on congruous scale or modal degrees) is also a feature of "Sorocaba," "Botafogo," and to a lesser extent, Szymanowski's op.50 no.1.

In his assessment of "Botafogo," Kaminsky described the F♯ minor subcenter collection as "not being drawn into the orbit of F-minor,"[30] implying that this particular subcenter collection has a greater perceptual distinctiveness when compared to the subcenter collection in "Sorocaba." This difference in the levels of distinctiveness can be explained by the number of notes that remain invariant between the subcenter collections and controlling collections and the melodic and structural use of these notes. Using various subcenters and subcenter collections with different numbers of invariant pitch-classes is

[29] In the case of the marimba, some enharmonic equivalents are employed.
[30] Peter Kaminsky, "Ravel's Late Music and the Problem of 'Polytonality'," *Music Theory Spectrum* Vol.26 No.2 (fall 2004): 242.

an effective way to manipulate the level of individuality perceptible in the various collections. This method is used consistently in *I Feel As Though I Have Always Been Cold.*

At measure 50 of the second movement, the controlling collection is an E dorian scale, from which are created two prolonged common tones at G4 and C♯/D♭6. Figure 16 shows this structural prolongation. The subcenter collections derived from these prolonged tones are G melodic minor (played most noticeably in the clarinet) and B♭ natural minor (played primarily in the flute). Note that, while C♯/D♭6 is the prolonged common tone that is diatonic to the controlling collection, it is not the subcenter of the B♭ minor subcenter collection. Rather, like before, it is the note within B♭ minor that, because of its prolongation, is most structurally significant.[31]

The first subcenter collection of G melodic minor and the controlling collection of E dorian have Five notes that are invariant between them; E, F#, G, A, and D. Figure 17 highlights the invariance between these two collections. All of these pitch-classes are present, and four of them are used in structurally significant ways. E is the primary tonal center of this passage. G is the tonic of the G minor subcenter collection, as well as the third of the controlling collection. D is the fifth of the G minor subcenter collection, the seventh modal degree of the controlling collection, and is used prominently in the clarinet melody.

A is present in measure 53 in both the G minor and B♭ minor subcenter collections. It is also played as a pedal tone in the violin in measures 51 and 53. This use of the invariant pitches makes this subcenter's ability to "not [be] drawn into the orbit,"[32] of its controlling collection less distinct, and the overall perceptibility of the subcenter collection weaker.

[31] The B♭ tonic chord is played in the piano accompaniment.

[32] Peter Kaminsky, "Ravel's Late Music and the Problem of 'Polytonality'," *Music Theory Spectrum* Vol.26 No.2 (fall 2004): 242.

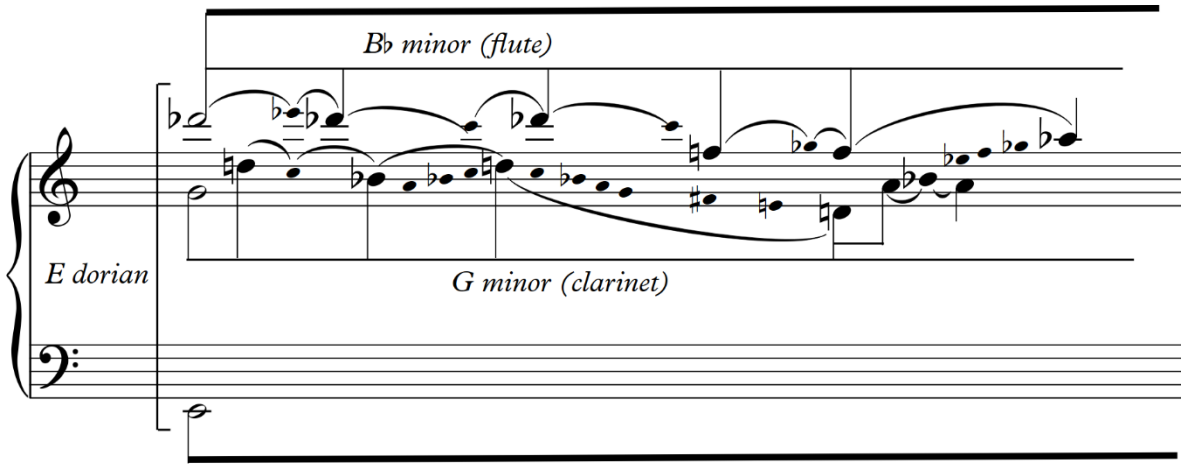

Figure 16: Phillips, Movement II, mm. 50-53, structural reduction

G minor:	**G**	**A**	B♭	C	**D**	**E**	**F♯**
E dorian:	**E**	**F♯**	**G**	**A**	B	C♯	**D**

Figure 17: Phillips, Movement II, mm.50-53, E dorian, and G minor pitch collections. Invariant pitch-classes are bold and underlined.

By comparison, there are only two notes that are enharmonically invariant between the E dorian controlling collection, and the B♭ natural minor subcenter collection (see Figure 18). Furthermore, the textural significance of these notes is also diminished. The C♯/D♭, while being the prolonged common tone from which B♭ minor was derived, is used infrequently as part of the E dorian controlling collection. It is generally heard only as part of the flute melody. The F♯/G♭, while maintaining certain significance in the controlling collection, is used in the subcenter collection only as a neighbor or passing tone. It typically resolves to either the F or G that borders it.

Bb minor:	B♭	C	**D♭**	E♭	F	**G♭**	A♭
E dorian:	E	**F♯**	G	A	B	**C♯**	D

Figure 18: Phillips, Movement II, mm. 50-53, E dorian and B♭ minor collections. Invariant pitch-classes are bold and underlined.

Because the G minor subcenter collection is expressed in ways that highlight its relationship with the controlling collection of E dorian, and also because the B♭ minor collection is comparatively removed, the primary source of chromatic conflict in this passage is the relationship between E dorian and the B♭ minor subcenter collection. The G minor subcenter collection subtly intensifies the chromatic nature of the E dorian texture, but the melody played in the flute is the most perceptibly removed from the controlling collection and has the most individuality.

By comparison, beginning at measure 65 of the same movement, there is a texture in which the subcenter collections generate less dissonance, and are less perceptibly removed from the controlling collection. Figure 19 is a structural reduction of this passage. Here, there is a controlling collection of C minor, with prolonged common tones located on F5 (subcenter collection is F lydian)[33] and B♭2 (subcenter collection is B♭ minor). [34]

[33] The mode of the subcenter collection centered on F5 is labeled lydian because of B pitch-classes that occur later in the passage.

[34] Note that, as is the case with the middle section of "Botafogo," it is a subcenter that is in the lowest sounding voice, while the controlling collection is prolonged in a higher one.

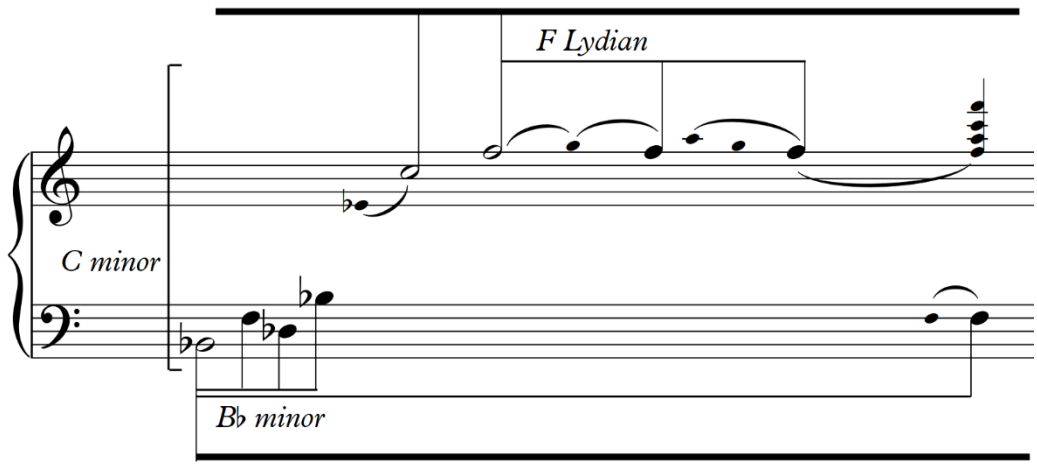

Figure 19: Phillips, Movement II, mm. 65-66 structural reduction.

The relationship between the C minor controlling collection, and the F lydian subcenter collection offers four pitch-classes that are invariant between them. Figure 20 illustrates these invariances. Included among them are the subcenters of both collections (F and C), both of which are featured heavily in the music. D and G are also invariant, and although they are used primarily as passing or neighbor tones, they are still present. By comparison, E and A♭ are used very sparingly (they are not present in the first two measures). A, B♭, and B are only used as passing or neighbor tones in one of the collections. For these reasons, the level of dissonance between these two collections is much lower than in the section beginning at measure 51, and the individuality of the F Lydian subcenter is, in general, much more subtle.

F Lydian:	**F**	**G**	A	B	**C**	**D**	E
C minor:	**C**	**D**	E♭	**F**	**G**	A♭	B♭

Figure 20: Phillips, Movement II, mm.65-66, C minor and F lydian pitch collections. Invariant pitch-classes are bold and underlined.

The lower subcenter collection of this passage also offers very little divergence from the controlling collection. Figure 21 shows these pitch-class collections, and their invariant notes. Between the B♭ minor and C minor collection there are five invariant pitch-classes. Again, both collections' subcenters are included. In this instance, the subcenter collection's $\hat{5}$ is also invariant. This invariance means that the B♭ minor chord in measure 65 is mostly invariant.

B♭ minor:	**B♭**	**C**	D♭	**E♭**	**F**	G♭	**A♭**
C minor:	**C**	D	**E♭**	**F**	G	**A♭**	**B♭**

Figure 21: Phillips, Movement II, mm.65-66, C minor and B♭ minor pitch collections

The passage from measures 65-66 of the second movement is generally very consonant. However, both F lydian and B♭ minor have a $\hat{3}$ that is not shared. The A from F lydian is heavily featured in the uppermost voice. The D♭ from B♭ minor is heard prominently in the bass. For these reasons, there is still room for a certain amount of distinctiveness and chromatic texture to be heard. By contrast, the passage that ends the third movement, from measures 223-275, is based on a harmonic texture that has almost no inherent dissonance. Figure 22 is a structural reduction of the opening measures of this passage. The controlling collection, E Major, creates prolonged common tones at B4 and A2. The subcenter collections associated with these pitches are B Major and A Major respectively. Because each of these subcenter collections has only a single note that is not an invariant (D in the case of A Major, A♯ in the case of B Major), there is no room for either subcenter collection to assert any individuality. Even if the variant pitch-classes were heavily prominent (which they are not) there would simply be too few of them to add a high level of divergence. The result is a harmonic texture in which the controlling collection, E major, is exceptionally prominent, and the subcenter collections have very little aural distinctiveness.

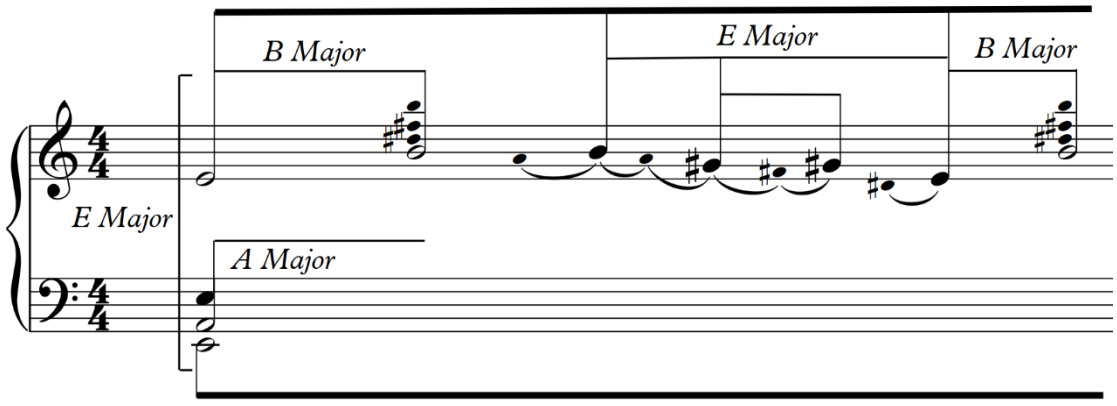

Figure 22: Phillips, Movement III, mm. 223-226 structural reduction.

These examples illustrate the manner in which the choices of prolonged common tones, and the surface-level collections derived from them, can be used to alter the chromaticism and level of dissonance in the musical texture from one passage to the next. As Peter Kaminsky has suggested, each surface-level collection's unique, contextual ability to "retain its own distinct identity and priority"[35] determines the ability of that collection to distinguish itself from the controlling collection. The extent to which this distinction exists determines the level of chromaticism and dissonance inherent in the structure. The manipulation of this inherent characteristic can be used for narratological, formal, and dramatic effect.

I Feel As Though I Have Always Been Cold clearly does not utilize a single controlling collection and set of subcenter collections throughout, nor is each movement confined to a single set of collections. Rather, controlling collections are allowed to modulate to new areas. When this modulation occurs, the prolonged common tones tend to move as well, and may either occupy equivalent positions in the new collection or shift to different pitches. In addition to modulation of a controlling collection,

[35] Peter Kaminsky, "Ravel's Late Music and the Problem of 'Polytonality'," *Music Theory Spectrum* Vol.26 No.2 (fall 2004): 241.

the prolonged common tones of an existing collection can move to new pitches within that collection, without the controlling collection itself modulating.

The first example of a controlling collection modulating occurs in measure 22 of the first movement. The controlling collection that begins the movement is an E dorian scale, from which prolonged common tones are derived on C♯3 (subcenter collection is C♯ minor), and G5 (subcenter collection is G dorian). At measure 23, there is neighbor note motion at the middleground level, which propels the E Dorian controlling collection downward to D Dorian. The prolonged tones also move by lower neighbor motion to B3 and F5, respectively. This motions creates subcenter collections of B minor and F minor. In this instance, the original controlling collection of E Dorian is still the most fundamental (and as such returns at measure 141), but in measure 22, it has moved by neighbor motion at the middleground structural level, taking its prolonged common tones with it. Figure 23 shows the structural reduction of the collections, beginning at measure 1 (open-head notes are prolonged common tones taken from the controlling collection), and again at measure 22 after their motion to new collections.

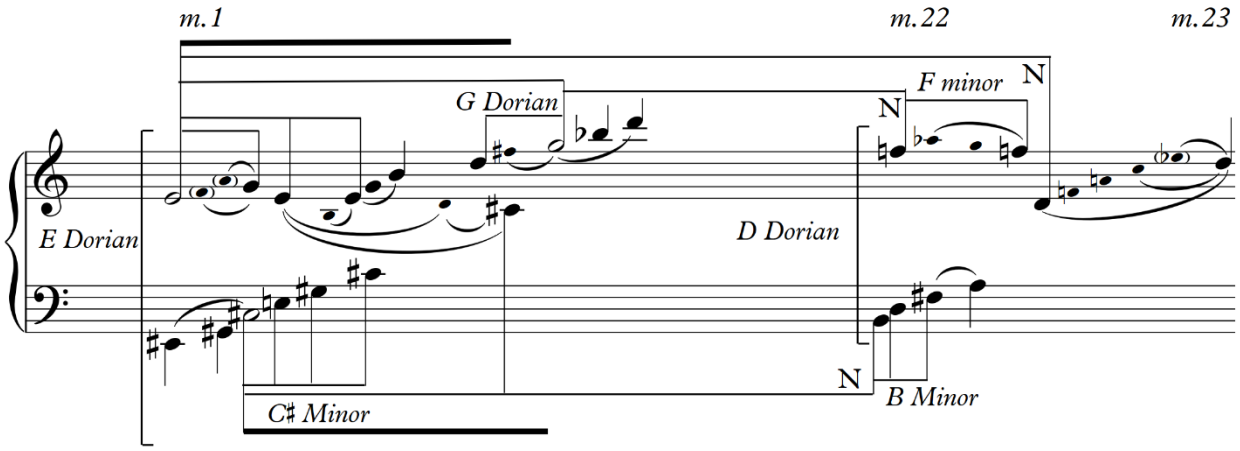

Figure 23: Phillips, Movement I, reduction of m.1 and mm.22-23.

A similar form of modulation occurs at the third beat of measure 30 of the third movement (Figure 24). This movement begins in a controlling collection of E major, from which prolonged common tones are derived at G♯4 (G♯ minor) and B4 (B minor). In this passage also, the controlling collection

moves, at the middleground level, by neighbor motion, this time upwards to F♯ major. The prolonged common tones also move upward by neighbor motion. The G#4 moves to A#4 to create an A# minor subcenter collection. The B4 moves to C#5, to create a C# minor subcenter collection. Again, while the E major collection is the most fundamental, and eventually returns, a modulation of both collections and prolonged common tones has occurred locally.

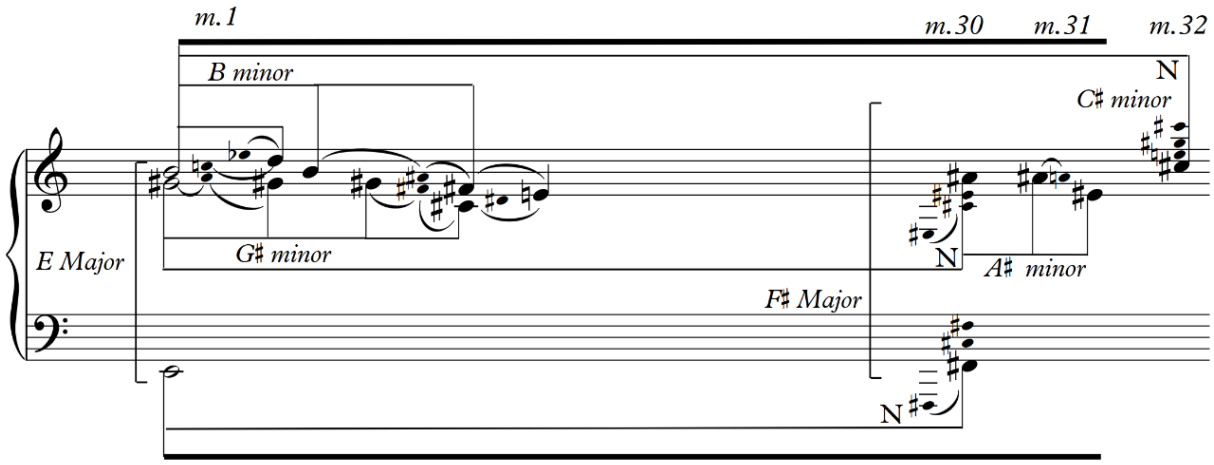

Figure 24: Phillips, Movement III, Structural Reduction of m.1 and mm. 30-32

In measure 115 of the third movement, there is a passage in which the prolonged common tones of a controlling collection move to different pitches within that collection, while the controlling collection itself does not change. Figure 25 illustrates this change of prolonged tones and their corresponding subcenter collections. The controlling collection of the passage beginning at measure 68 of the third movement is B dorian, from which the subcenter collections of E minor and F♯ minor are derived from the prolonged common tones of E4 and F♯5. In measure 115 the B dorian collection does not change, but the E4 prolonged common tone moves down by a minor third to C♯4. The F♯5 moves by neighbor motion to G♯5. This type of prolonged common tone motion, in which the controlling collection remains constant, is very effective in creating subtle shifts of the overall level of dissonance in the harmonic texture, and the individual distinctiveness of the subcenter collections.

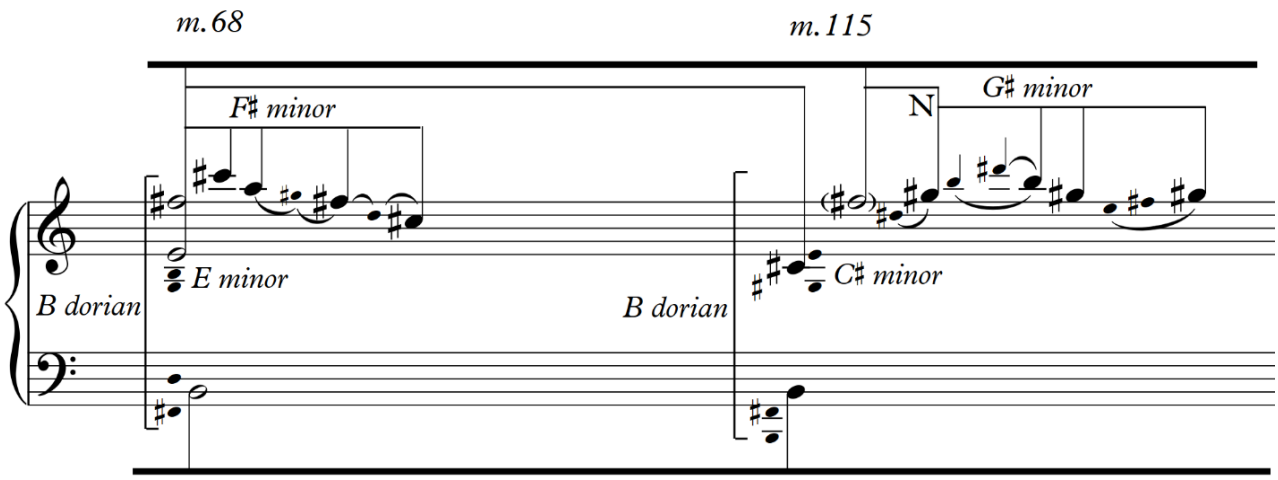

Figure 25: Phillips, Movement III, reduction of m. 68 and m.115

In other cases, the controlling collection moves, and entirely new prolonged common tones are then derived from it. For example, in measure 50 of the second movement, the controlling collection is G dorian, with prolonged tones at E2 and B♭5. The subcenter collections which are derived from these tones are E minor and B♭ minor. As the controlling collection modulates to C minor, however, new prolonged common tones appear at B♭2 and F5 (see Figure 26). This combination of a modulating controlling collection with new subcenter collections in a more consonant relationship to the controlling collection, results in a harmonic texture, beginning at measure 65, that is drastically less dissonant and imbued with greater clarity.

The possibilities of modulating in these ways allow the composition to be less static, by allowing it to change its harmonic texture over time. They can also imbue it with a sense of harmonic, esthetic, and narratological direction. These different methods of modulation allow *I Feel As Though I Have Always Been Cold* to travel through a wide range of emotional representations by altering the controlling collections, the prolonged common tones and corresponding subcenter collections; and the invariant relationships between them.

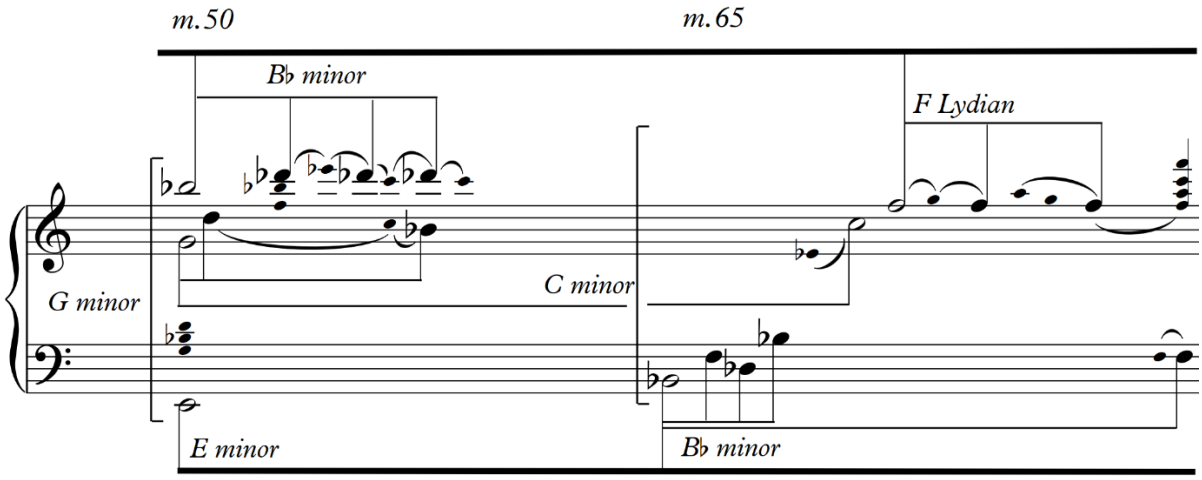

Figure 26: Phillips, Movement II, reduction of m.50, and m.65.

CHAPTER 4

ESTHETICS AND NARRATOLOGICAL GOALS

An example of the ways in which controlling collections and their subcenters are used to esthetic and narratological effect in *I Feel As Though I Have Always Been Cold* can be found in the opening measures. The composition opens with an intended narratological problem involving two pitch classes C♯ and E, and the question as to which one should be considered the primary tonal center of the piece. E dorian may seem to be the most apt candidate, since it contains not only the C♯ of the C♯ minor collection, but also the G of the G dorian collection, which is also present. Additionally, the E4 of the first measure (played in the clarinet) is the most prominently prolonged note of the melodic structure, and is further supported by an E3 sustained into measure 4, that is the goal of a melodic descent (see Figure 27).

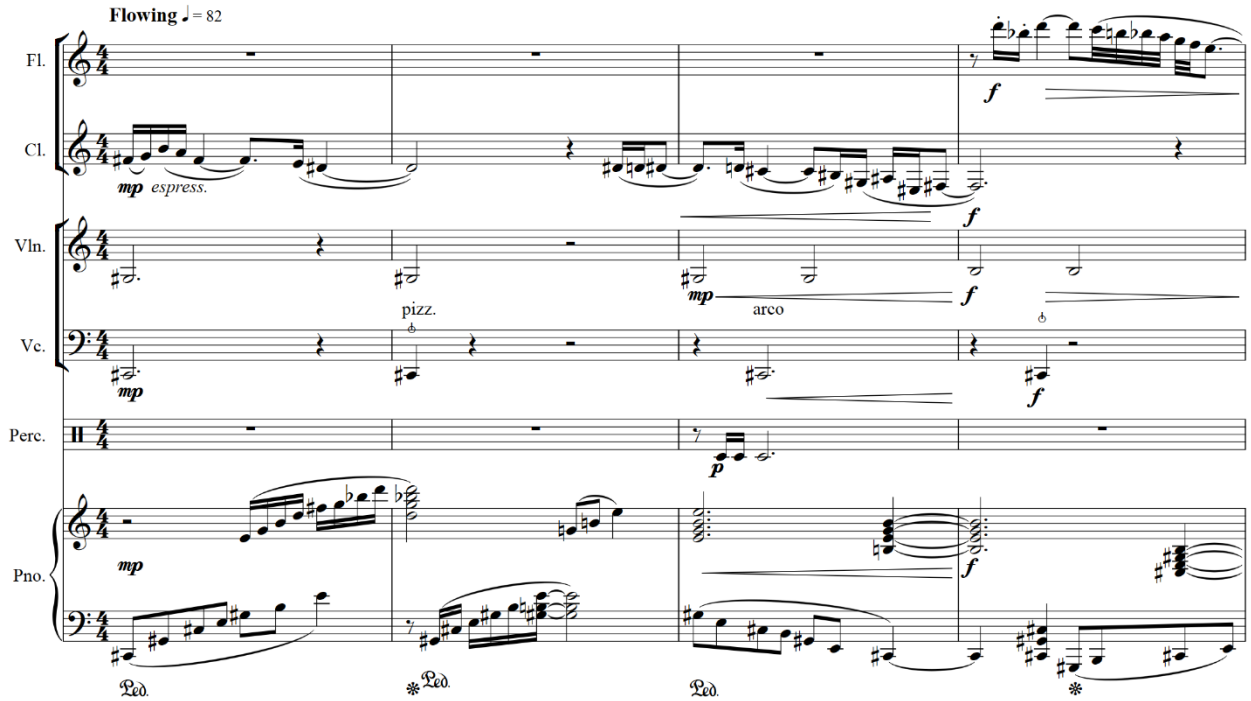

Figure 27: Phillips, Movement I, mm.1-4. Clarinet is in B♭.

However, the C♯ subcenter occupies a perceptually strong position in the lowest voice of the texture. While this position might not necessitate that C♯ minor be considered the controlling collection, it is intended to lend a great deal of perceptual importance to it. Furthermore, the E4 structural melodic note immediately descends through a passing note D4 to the C♯4, the tonic of this collection. Also, if C♯ minor were to be considered the controlling collection, E4 would make a convincing prolonged common tone, out of which E minor could be derived. However, this interpretation would exclude the other prolonged tone, G5, since it is not a note diatonic to C♯ minor. Consideration of some other pitch-class collection (C♯ locrian, for example) would have to ignore the G♯2 and G♯3, both of which are prominent in the lowest pitch-class collection.

This confusion regarding the roles of C♯ and E and their corresponding pitch-class collections is representative of a greater narratological conflict at work in the composition. While E can be heard to play the more prominent role, its presence is constantly undermined by the C♯ that fights it for control. Before E can be perceived as having reached its goal of prominence in the musical structure, this conflict, it would seem, would have to be resolved.

Also of esthetic note is the rhythmic and melodic independence that is meant to be expressed by the individual instruments in the introduction. While the piano plays an arpeggiated texture decorated with sustained chords, the clarinet plays a highly chromatic and rhythmically disjunct melody. This melody is complimented by an equally chromatic counter-melody in the flute. The violin plays sustained notes in its lowest register, while the cello alternates between sustained notes and Bartók pizzacatos. These cello notes occasionally align with the violin, and occasionally accent the chords in the left hand of the piano or mimic the left hand exactly. None of these parts display a great deal of rhythmic uniformity.

The most unique and consistent element of this texture is the rhythmic figure played by the bass drum. The two sixteenth-note motive recurs several times in the opening measures. This consistency, amidst the comparative chaos of the other instruments, is designed to prelude a struggle between the percussion and the other instruments. The percussion can be heard as a force of stability. The other instruments, whose content is often completely independent from that of the percussion, can be heard as being in conflict with the percussion and each other. In these opening measures, the bass drum, through the regularity of its rhythmic pattern, can be heard to represent an attempt to force conformity on the other instruments. This attempt goes completely unheeded and is unsuccessful. By measure 23, the bass drum part has lost its distinctive rhythmic motive and plays only whole notes. This loss of distinctiveness is a representation of resignation brought about by failure.

By measure 73 (Rehearsal Mark C), after slowly declining, the highly rhythmic, animated, and independent nature of the wind and strings instruments' parts has completely faded away. This fading away can be seen as symbolizing the toll the instruments' chaos has inflicted on the motivation required to move forward. The conflict between C♯ and E persists, but now C♯, as the dominant of the upcoming F♯ minor controlling collection, has supplanted E as the most viable of the two. E is still present, but can be perceived as subservient, both as a minor third of a C♯ minor chord, and as an unexplainable dissonance itself in measure 72 (see Figure 28). While the other instruments have lost a great deal of motivic energy since the introduction, here, the percussion generates greater rhythmic variety. This increased activity in the percussion part may be interpreted as its attempt to organize and re-energize the now largely static notes of the other instruments. However, it is even less influential than before, and the winds and strings continue to play their textures consisting of sustained, unmoving notes, throughout this passage.

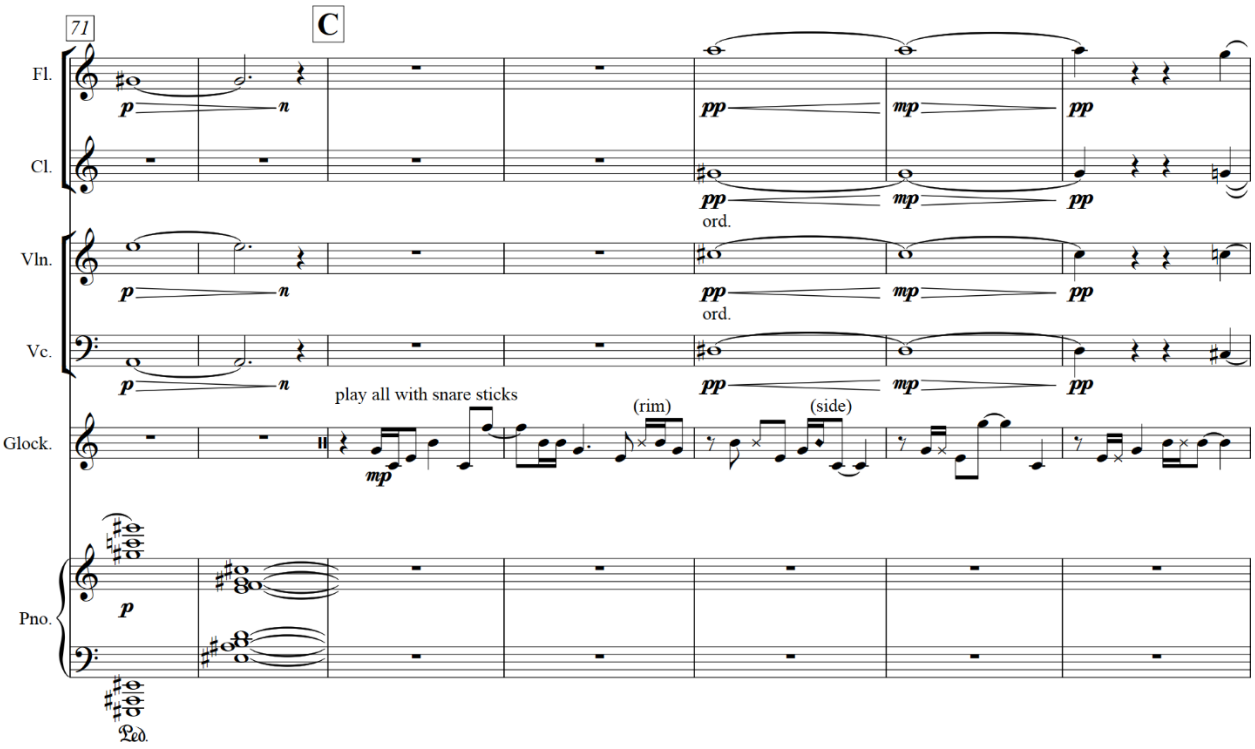

Figure 28: Phillips, Movement I, mm.71-77, Clarinet is in B♭

From measure 93 to measure 141, the other instruments can be interpreted as making their own attempt to recapture the ambitious energy of the opening. They slowly build in tempo and rhythmic activity, and reach a climactic point at measure 141 (Rehearsal G). However, the potential for this climactic point to be interpreted as success is undermined by the return of the C♯, as well as by the original conflict between the C♯ minor and E dorian pitch-class collections (see Figure 29). The E, which can be heard as having struggled to regain its relevance, does so at this point only to again be undermined by C♯, which returns in the same prominent position in the lowest register it had in the opening measures. The movement ends with no feeling of resolution, and no sense that any of these narratological conflicts have been resolved. In fact, in the final measures, C♯ has entirely supplanted E, which is not present in the final chord. (See Figure 30).

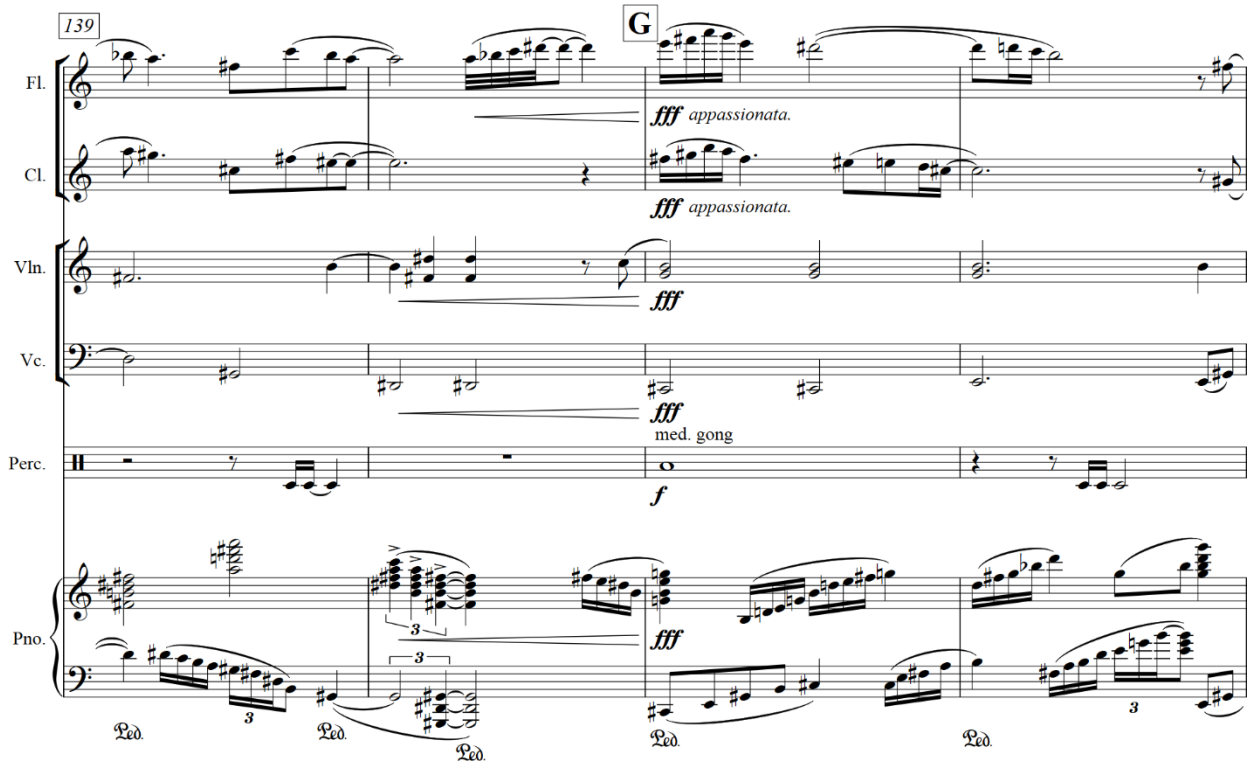

Figure 29: Phillips, Movement I; mm. 139-142, Clarinet is in B♭

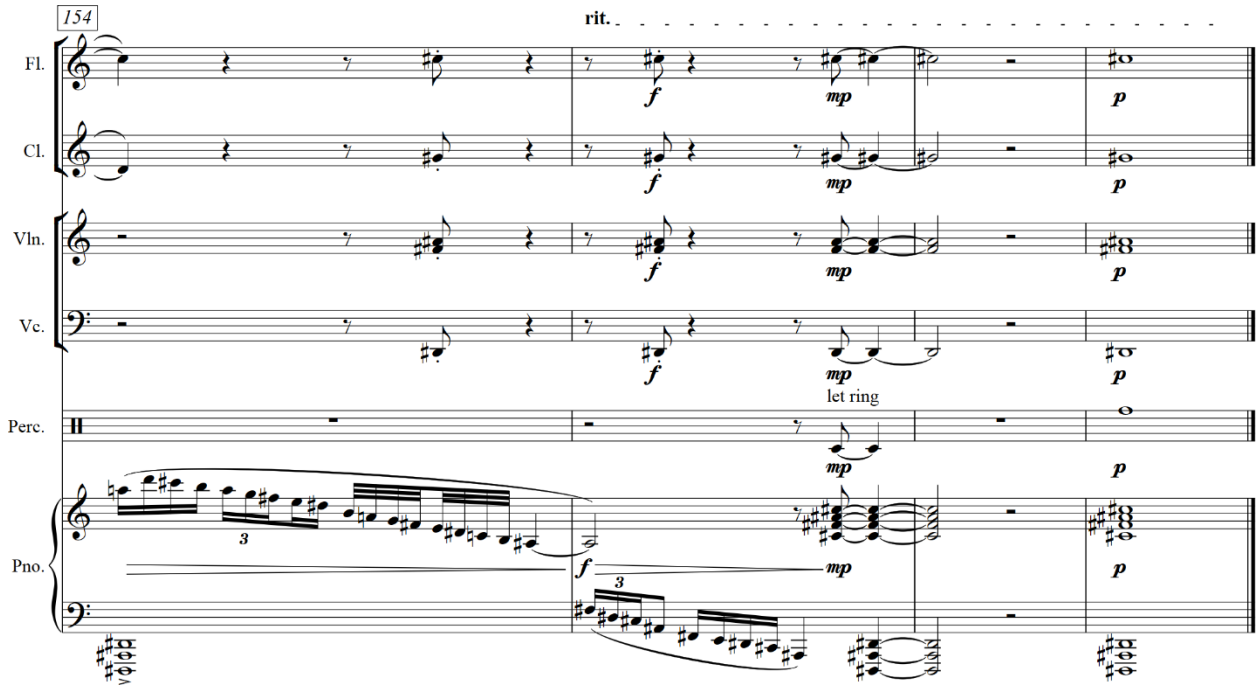

Figure 30: Phillips, Movement I, Final Measures.

The second movement can be interpreted as an expression of the exhaustion created by the failure of the first movement to ultimately progress towards the narratological goals of the composition. In the opening measures of this movement, the piano plays sustained chords in a representation of the continued forward motion of time, while the violin plays a descending line, accented by the other instruments' short rhythmic figures. This melody is dominated by C♯, which might seem to be the victor of the first movement's conflicts. The percussion part is also greatly changed. The rhythmically motivic unpitched percussion of the first movement is replaced by the marimba, which is comparatively more static. It is not perceived as making any attempt to organize the other elements of the work. Rather, it provides mostly timbral color to the gestures performed by the cello and flute, and arpeggiates the chords played by the piano. The controlling collection of F♯ dorian has prolonged common tones of D♯2 and A4, creating subcenter collections of D♯ minor and A minor, respectively. Therefore, the invariant relationships between the collections remain consistent from the first movement to the beginning of the second (see Figure 31).

Changes in the relationships between the controlling collection and subcenter collections can also be used for narratological purpose, as they are, for example, in measure 65 of the second movement (Rehearsal J). This measure begins a passage that can represent a momentary inspiration amid the comparatively resigned tone of the movement. In this moment, energy might be said to begin to be amassed for a second attempt at the symbolic goal.

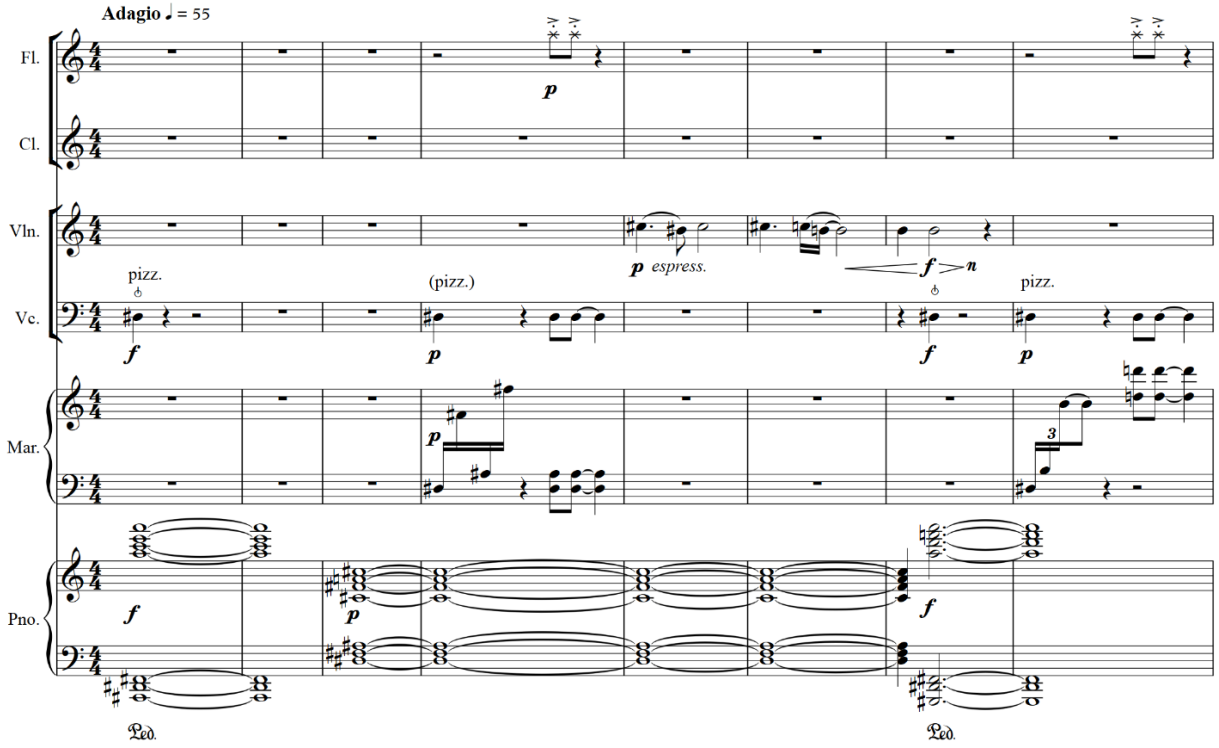

Figure 31: Phillips, Movement II; mm.1-8.

As discussed earlier (see Figures 19-21 on pages 35-36, and Figure 26 on page 41), the C minor controlling collection of this passage offers subcenter collections of B♭ minor, and F lydian. The shared tones between C minor, F lydian, and B♭ minor, and the way in which they are used offer a chromatic texture of greater invariance and, therefore, less dissonance. This texture provides a perceptible level of clarity to the passage (see Figure 32).

However, this moment of clarity does not ultimately translate into a metaphorical success or symbol of forward progress. Beginning in measure 95, the bass drum, returning with its "organizing" motive from the first movement makes another attempt to influence the other melodic elements. It can be perceived as completely failing to do so. A climactic moment appears at measure 114, in which the string instruments are confined to a restrictive arpeggiated texture. The piano is also similarly confined to the voicing of chords in multiple octaves. All of these instruments are symbolically "frozen" and

unable to move forward (See figure 33).

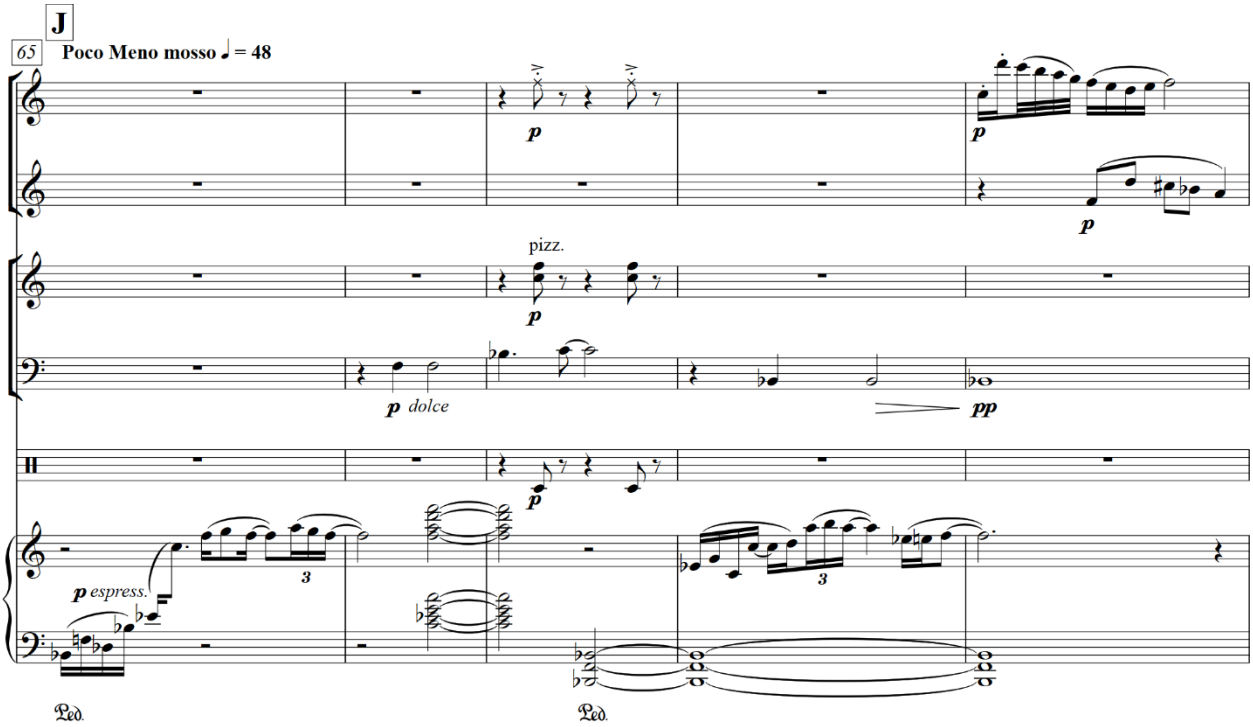

Figure 32: Phillips, Movement II; mm.65-69

During this passage, the invariance levels between the controlling collection and subcenter collections return to a level similar to what has been heard in the first movement. As the movement draws to a close, the concept of being frozen is reiterated by the clarinet. The C♯ has, over the course of this movement, moved downward to B, and this note is the most prominent of the clarinet's final melody (see Figure 34). The melody played in the clarinet in this passage is unable to "escape" this note, despite metaphorically half-hearted attempts to do so, and the movement ends, again, with no real symbolic progress having been made.

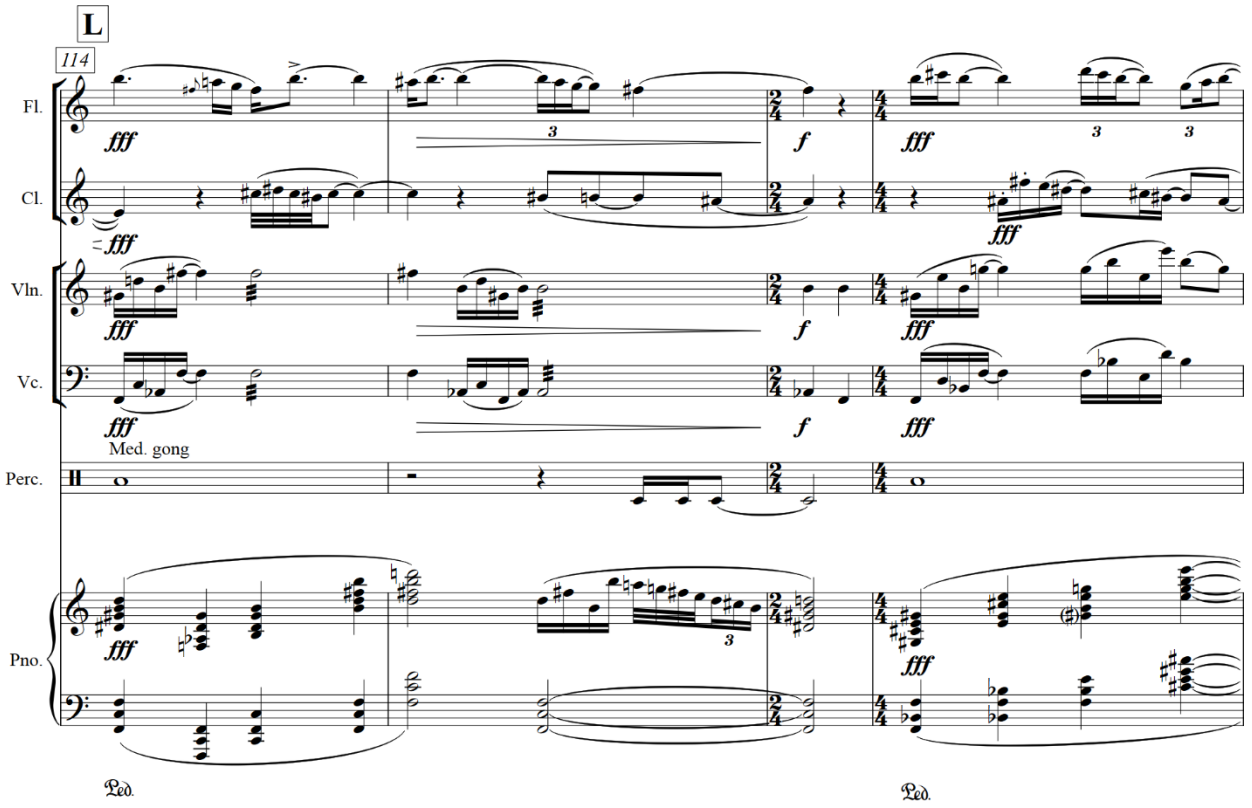

Figure 33: Phillips, Movement II, mm.114-117.

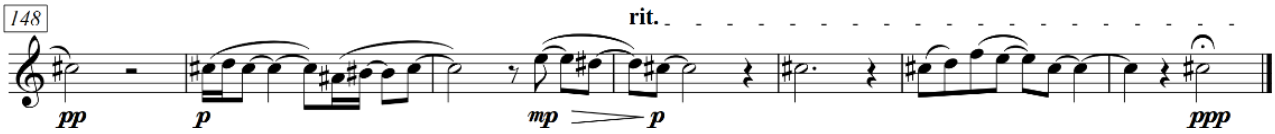

Figure 34; Phillips, Movement II, Final measures, Clarinet in B♭.

At the beginning of the third movement, the first movement's original motive, associated with the original drive towards the harmonic goal, returns, as does E. At this point, E does not retain its significance or dominance, but through the syncopated rhythms of the piano and disjointed melodies of the winds and strings, it can be interpreted as making a passionate attempt to regain its former prestige (See Figure 12 on page 28). Meanwhile the bass drum, having been symbolically unsuccessful in "organizing" the other instruments into conformity has, here, become a symbolic slave to the left hand of the piano. It mimics the piano rhythmically and symbolically asserts no independence.

However, after several measures of rhythmically mimicking the piano, the percussion once again becomes the most rhythmically active and individualistic line of the texture. This change occurs at measure 68 (see Figure 35). The increased activity, like before, is a symbolic attempt to "organize" the chaotic and disparate musical elements expressed in the other instruments. In this instance however, the other instruments gradually fall into synchronicity with the percussion. In measure 114 of the third movement, the other instruments are in rhythmic alignment with the percussion and are, symbolically, finally ready to work together towards the narratological goal of the composition- namely the resolution of the conflict between E and C# (see Figure 36).

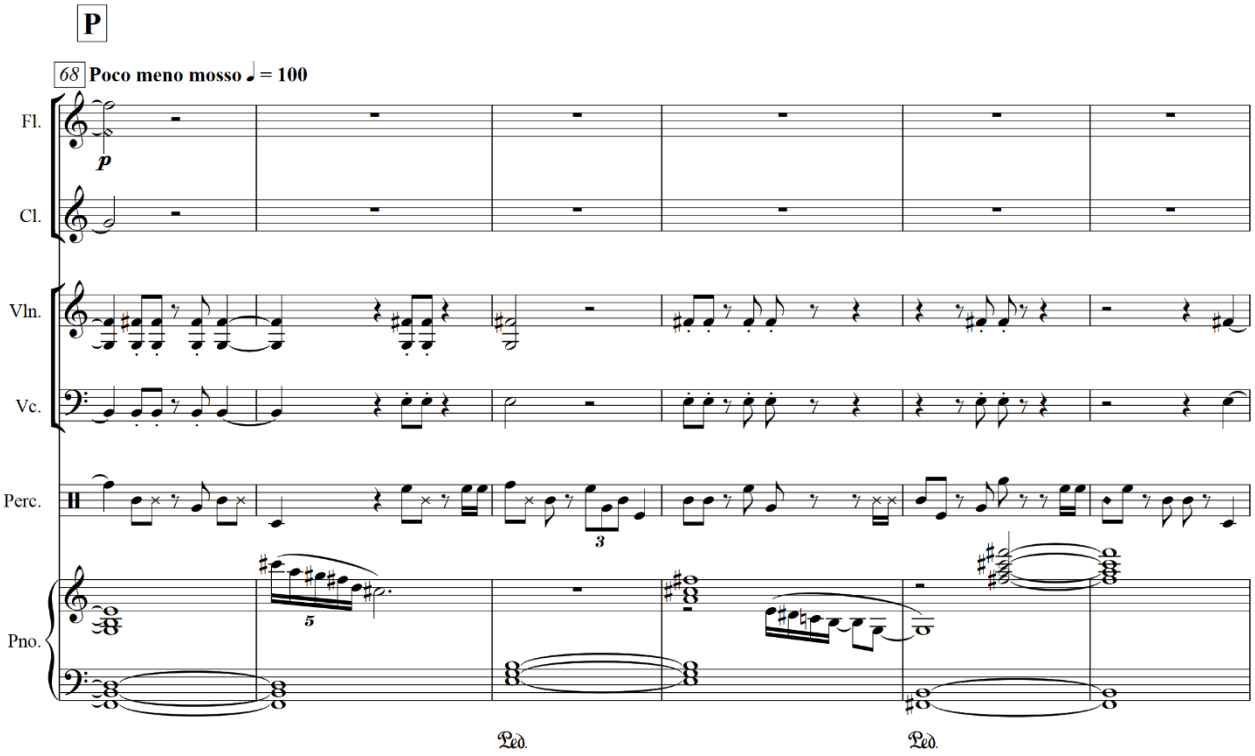

Figure 35: Phillips, Movement III, mm.68-71.

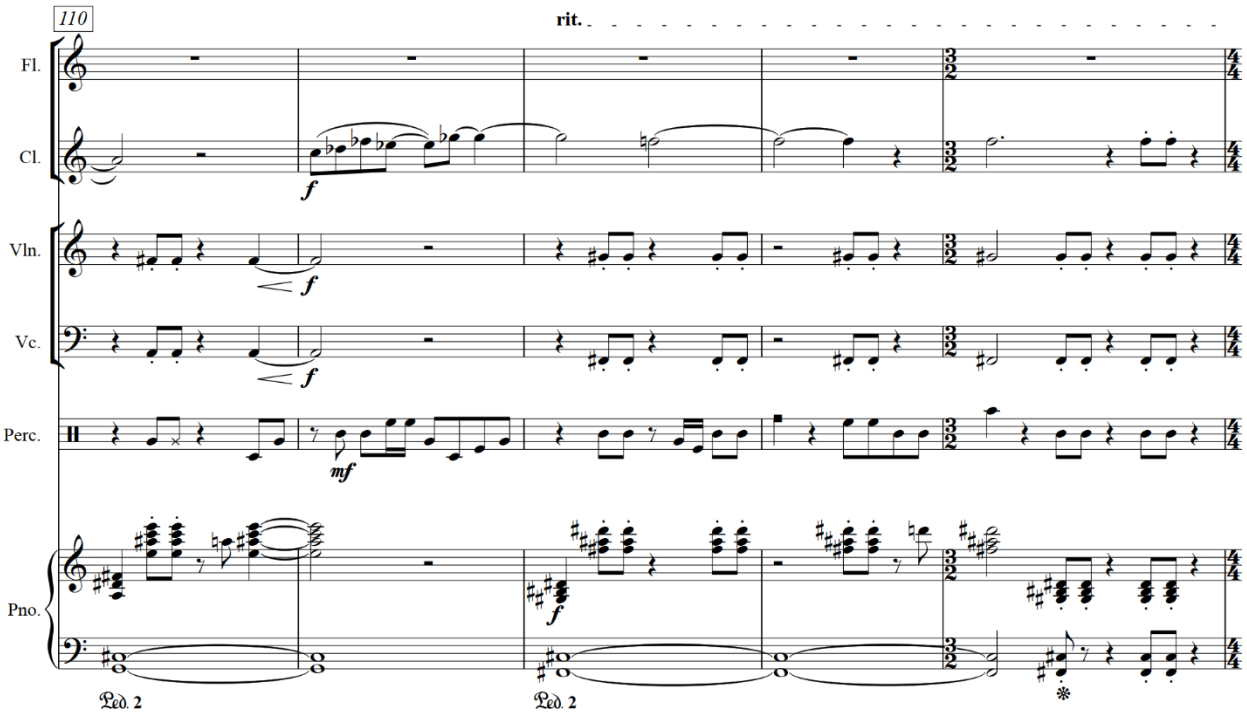

Figure 36: Phillips, Movement III, mm.110-114, Clarinet is in B♭

With the conflict involving the percussion symbolically resolved, the resolution of this final narratological conflict (between C# and E) may be thought of as the primary purpose of the piece's final measures. At measure 115 of the third movement a new, less dissonant section begins (Figure 37). This section features a controlling collection of B Major and subcenter collections of C# minor and G# minor. This harmonic texture provides a great deal of consonance through its shared tones. However, the C#, now a prolonged common tone and subcenter, remains a persistent source of perceived conflict. Its presence in the violin and piano permeates this passage, and continues to hold sway over the E (Figure 37).

The E is still present, though not structurally as significant here as C# (merely a minor third above a subcenter). In measure 169, the syncopated rhythms of the movement's introduction return, and energy begins to build towards a climax, which occurs at measure 204. E is a prominent note of this

climax. It is the highest pitch heard in measure 204, and is the most structurally significant melodic note of the passage that follows. In these ways, it may have seemed to reach a symbolic victory.

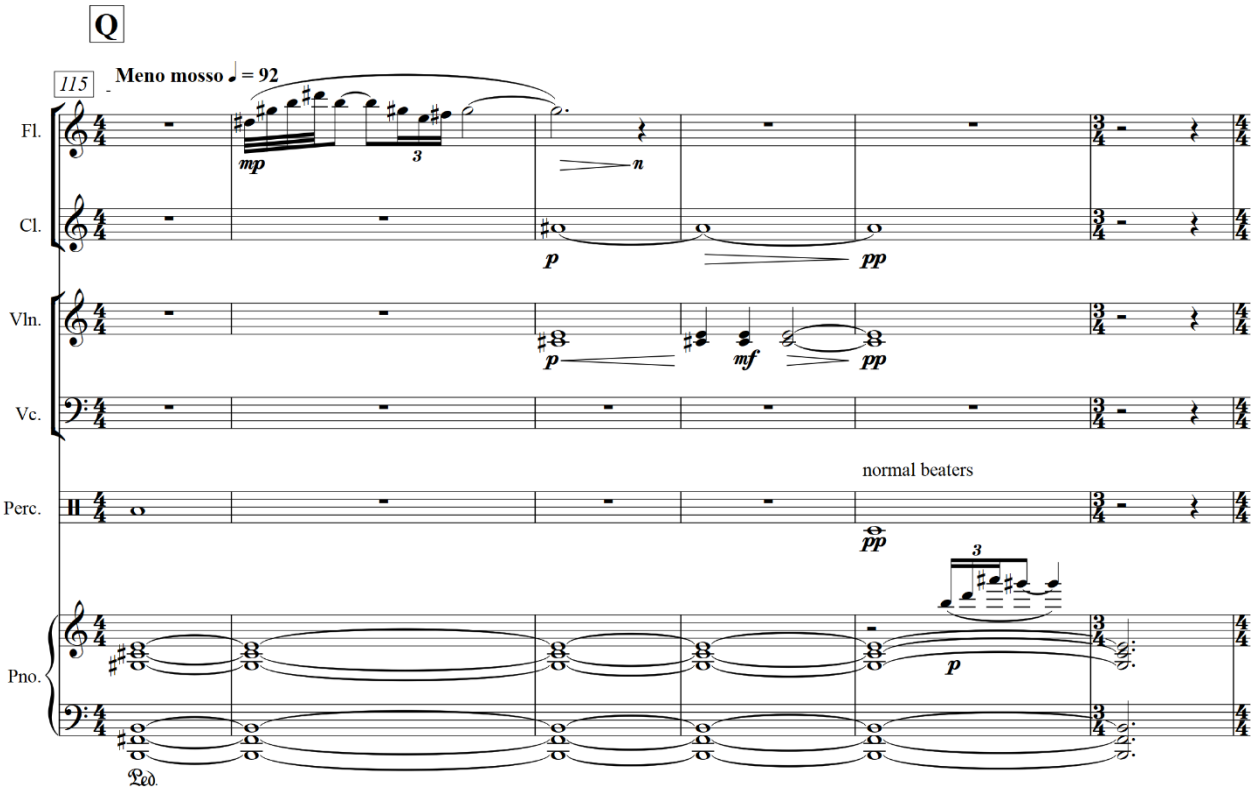

Figure 37: Phillips, Movement III, mm.115-118

However, with its reemergence, C# returns to its own symbolically significant bass-voice position of the first movement. The controlling collection and subcenters here are exactly the same as the beginning and end of the first movement. This similarity can be perceived as undermining, for a final time, the notion of real harmonic progress (see Figure 38).

The resolution of this perceived conflict does not come with the elimination of C#, as might be expected, but rather with a type of symbolic "acceptance" of its inevitability. In the final measures of the piece, beginning at measure 223 of the third movement, the E has clearly reestablished itself as the

primary melodic note. The controlling collection is E major, out of which are derived prolonged common tones at A3 and B4, which generate subcenter collections at A major and B major.

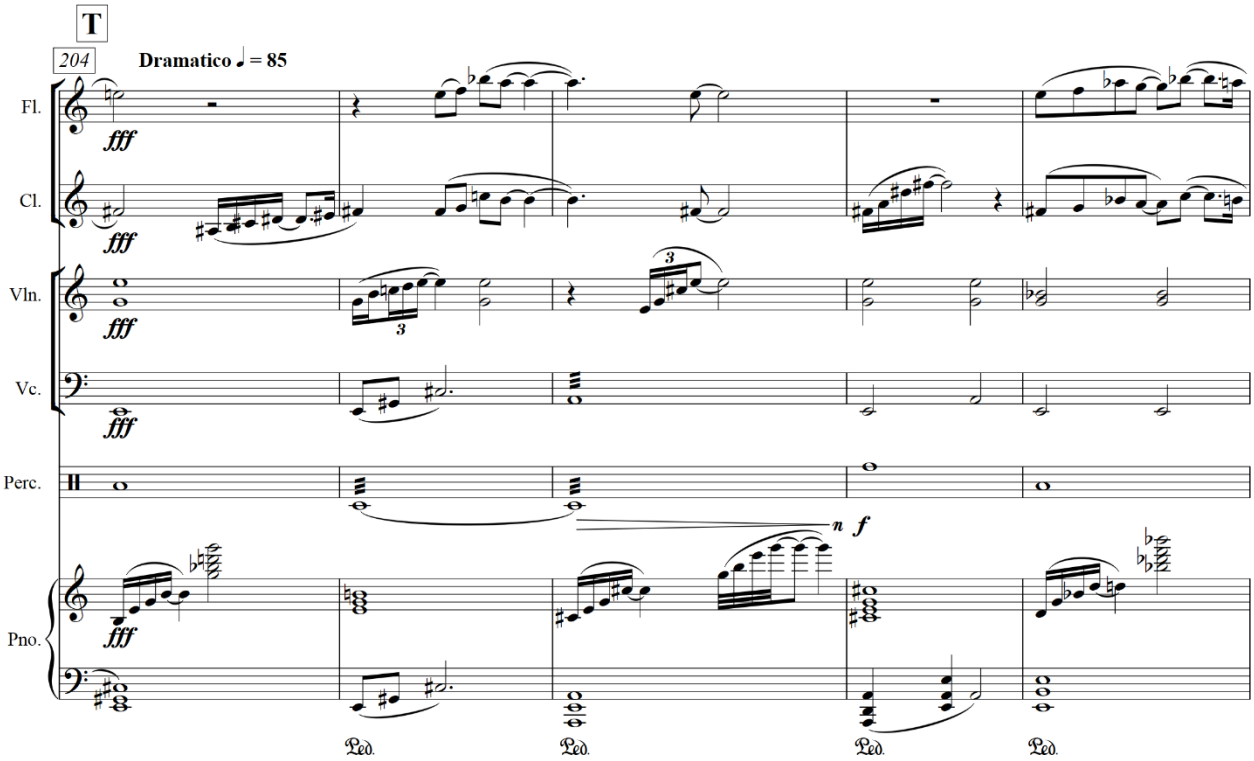

Figure 38: Phillips, Movement III, mm.204-208

The C♯ is now the third of the tonic chord in the A major subcenter collection, and as such is not a prolonged common tone or subcenter that competes with E for structural significance. As such, it can be perceived as less problematic than in its previous appearances (see Figure 39).

I Feel As Though I Have Always Been Cold is, in a corporeal sense, a metaphor for the seeming endlessness of winter, and the increasingly elusive and ephemeral quality of the memory of warmer temperatures. It is possible to interpret the remaining presence of C♯ as symbolic of the feeling that colder weather has always been present, and always will be. The piece may also be thought of as a narrative of changing emotional states that are brought about by a struggle to achieve a distant goal that is elusive and often seemingly unattainable. Just as cold temperature can bring about a feeling of

permanence or of being “frozen”, so can the struggle to achieve the personal goals also seem perpetually undermined and always out of reach.

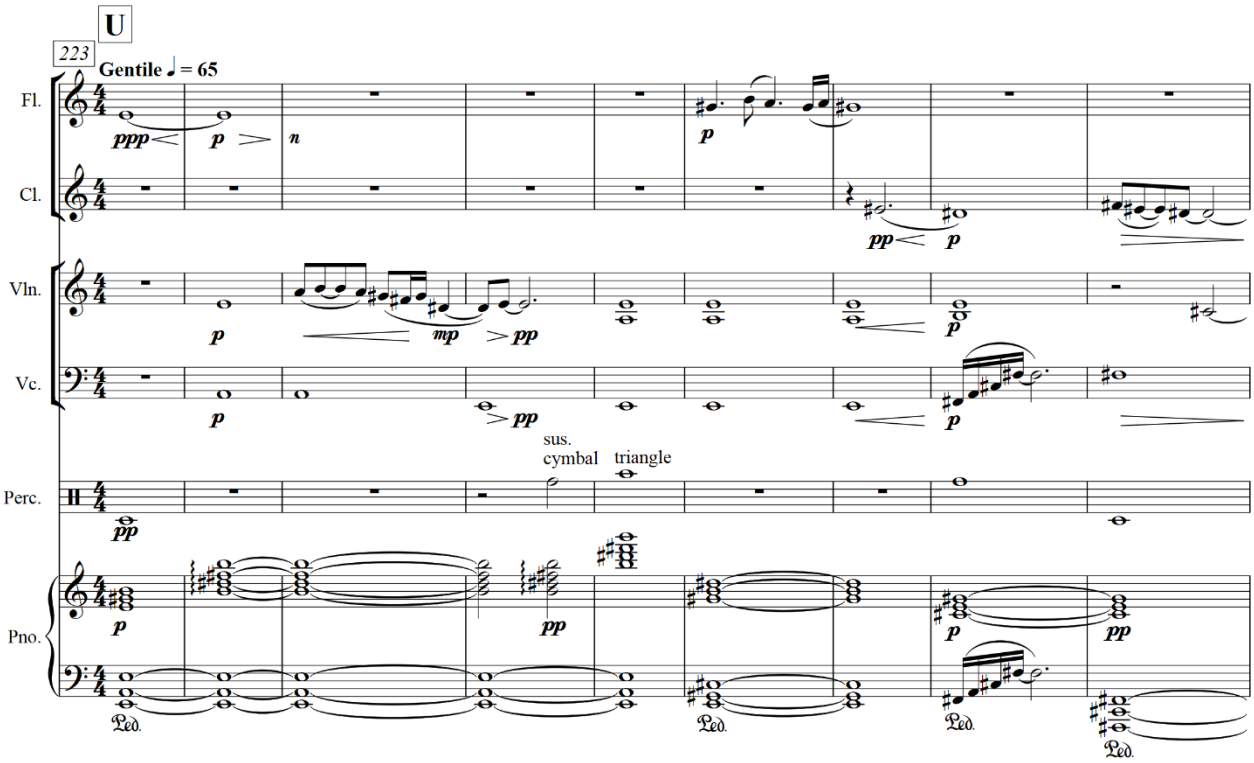

Figure 39: Phillips, Movement III, mm.223-231

Conclusion:

The structural model presented here, used to compose *I Feel As Though I Have Always Been Cold*, is derived from analyses of works that utilize multiple pitch-class collections. Pieter van den Toorn, supported by Carol L Krumhansl and Mark A. Schmuckler, define the harmonic texture of multiple, simultaneous pitch-class collections as a “single complex organization.”[36] William Forde Thompson and Shulamit Mor are able to, in certain contexts, observe perceptibility of, and distinction between the individual collections that comprise that complex organization. They suggest that individual pitch-class collections are perceptible and, furthermore, may be heard as having different levels of importance to

[36] Carol L Krumhansl and Mark A. Schmuckler, “The Petroushka Chord; A Perceptual Investigation,” *Music Perception: An Interdisciplinary Journal,* Vol.4 No.2 (Winter 1986): 181.

the texture. Peter Kaminsky further postulates that this importance can be heard as a primary key augmented by a "secondary pitch focus"[37] at the phrase level. Kaminsky's observations are, in turn, further supported by Edward Macan and his analysis of foreground and background pitch-class collections in Holst's "Mars." Examination of "Sorocaba," and "Botafogo," from Milhaud's *Saudades do Brasil,* and of Karol Szymanowski's Mazurka Op.50, no.1, support the observations made by these theorists. Each of these pieces features a controlling collection, with a primary tonal center operating at the background, while a secondary pitch focus or subcenter generates a different collection at the foreground. The subcenter collections at the foreground are connected to the controlling collection through prolonged common tones, which are diatonic to both.

I Feel As Though I Have Always Been Cold is composed using this theory of multiple pitch-class collections, operating at varying structural levels within the harmonic texture. Each section of the piece contains a controlling collection with a primary tonal center. From this controlling collection, prolonged common tones generate subcenter collections that operate on the foreground level. These tones need not necessarily be the subcenter (i.e the tonic or final) of the subcenter collection, but are generally notes prolonged by the structure. They must also be diatonic to both the subcenter collection, and controlling collection. The pitch-classes shared between the two collections will determine the extent to which the subcenter collection is able to assert its own individuality over the controlling collection. The more invariant pitch-classes there are, the less distinctive the subcenter collection will be. Controlling collections also modulate throughout the piece. When they do so, new prolonged common tones are generated from the new controlling collection. These prolonged tones may be from the same scale degrees as the previous ones, relative to the new controlling collection, or they may be completely different. In addition to this form of modulation, the prolonged common tones of a controlling collection may shift, while the controlling collection remains the same, generating new subcenter collections.

[37] Peter Kaminsky, "Ravel's Late Music and the Problem of 'Polytonality'," *Music Theory Spectrum* Vol.26 No.2 (fall 2004): 244.

These various methods of creating subcenter collections may be used to create esthetic effect and narratological relationships, as they are in *I Feel As Though I Have Always Been Cold*. The symbolic struggle for control over the structure, carried out by the notes C♯ and E throughout the piece, is emphasized in the opening measures by the subcenter collections of C♯ minor and E dorian. In other passages, the levels of dissonance and individuality of the subcenter collections (which is a product of their level of invariance with the controlling collection) serve to highlight moments that are symbolic of struggle, failure, and acceptance. *I Feel As Though I Have Always Been Cold* has programmatic elements related not only to freezing temperatures, but to a "frozen" emotional quality, and to the endless striving to reach a goal that is dubious in its attainability. Such expression lends itself well to the compositional methods outlined here and their ability to express very subtle emotional states and shifts. Because prolonged common tones and subcenter collections have been utilized in this piece to augment a controlling collection that operates in the background, *I Feel As Though I Have Always Been Cold* has an affect that is unique to itself, and is much richer than one produced by a single collection alone.

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APPENDIX

I Feel As Though I Have Always Been Cold

Matthew Scott Phillips

For Pierrot Ensemble

(Flute, Clarinet in B♭, Violin,
Violoncello, Percussion, and Piano)

All Accidentals apply until the end of the measure, and in the specified octave only.
Some cautionary accidentals have been provided

All tremolos are unmeasured

Flute:

= harmonic: lower note is fundamental

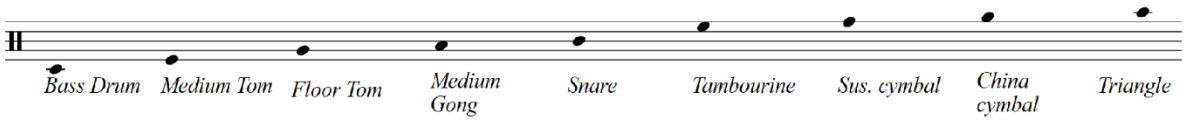
= tounge pizzacato

Strings:

= harmonic: lower note is fundamental/open string

= bartok pizzacato

Unpitched Percussion:



= rimshot

= strike the dome of the cymbal

= strike the side of the drum

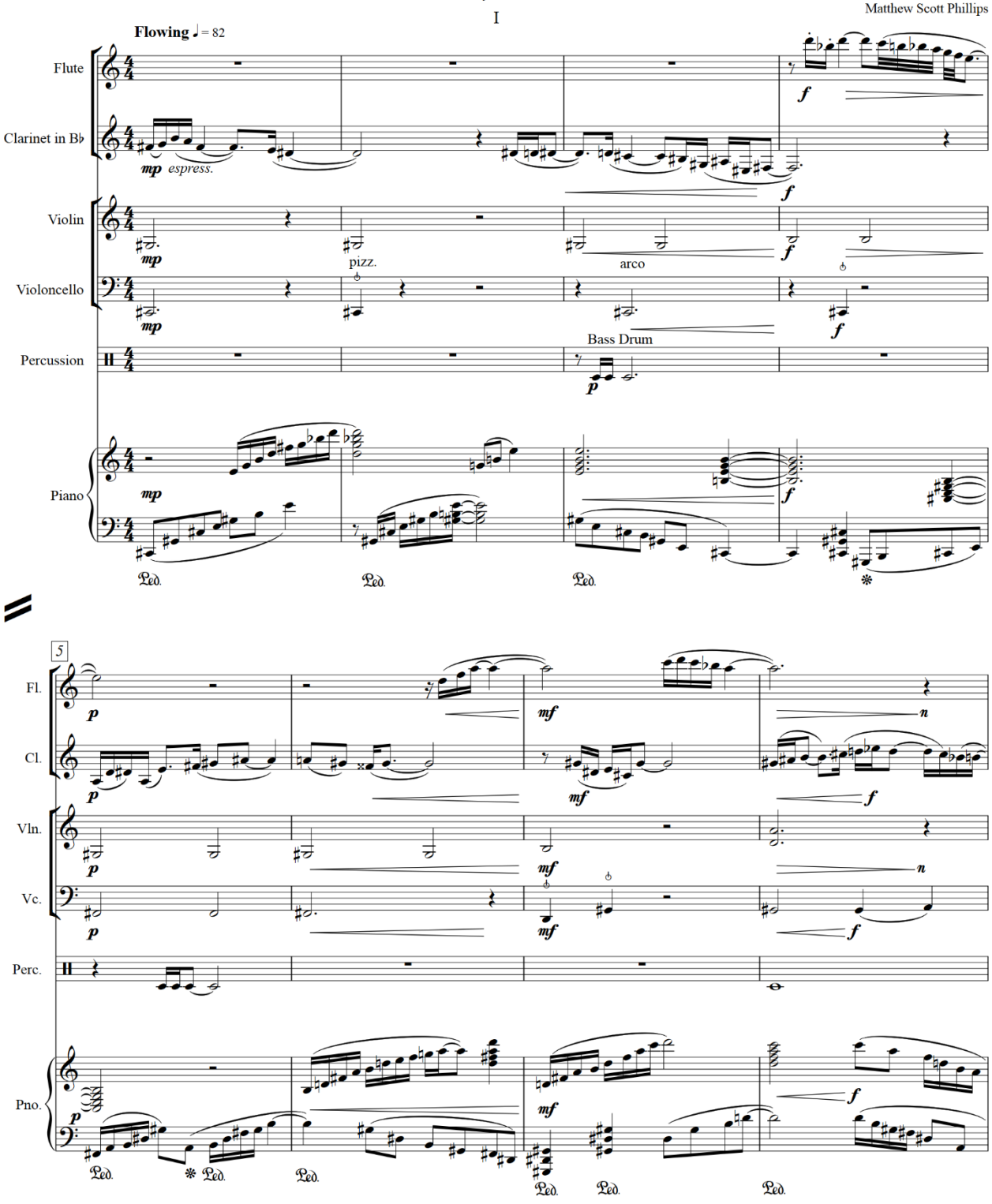
Pitched Percussion:

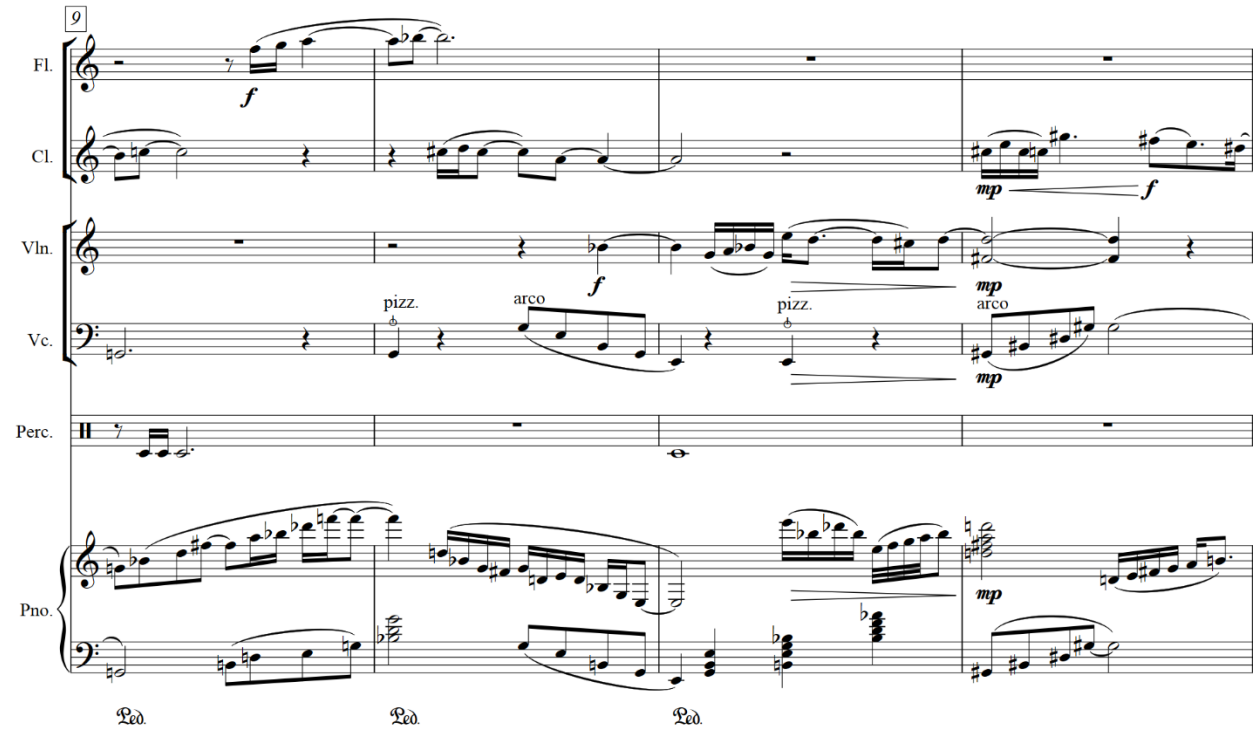
Glockenspiel
Marimba

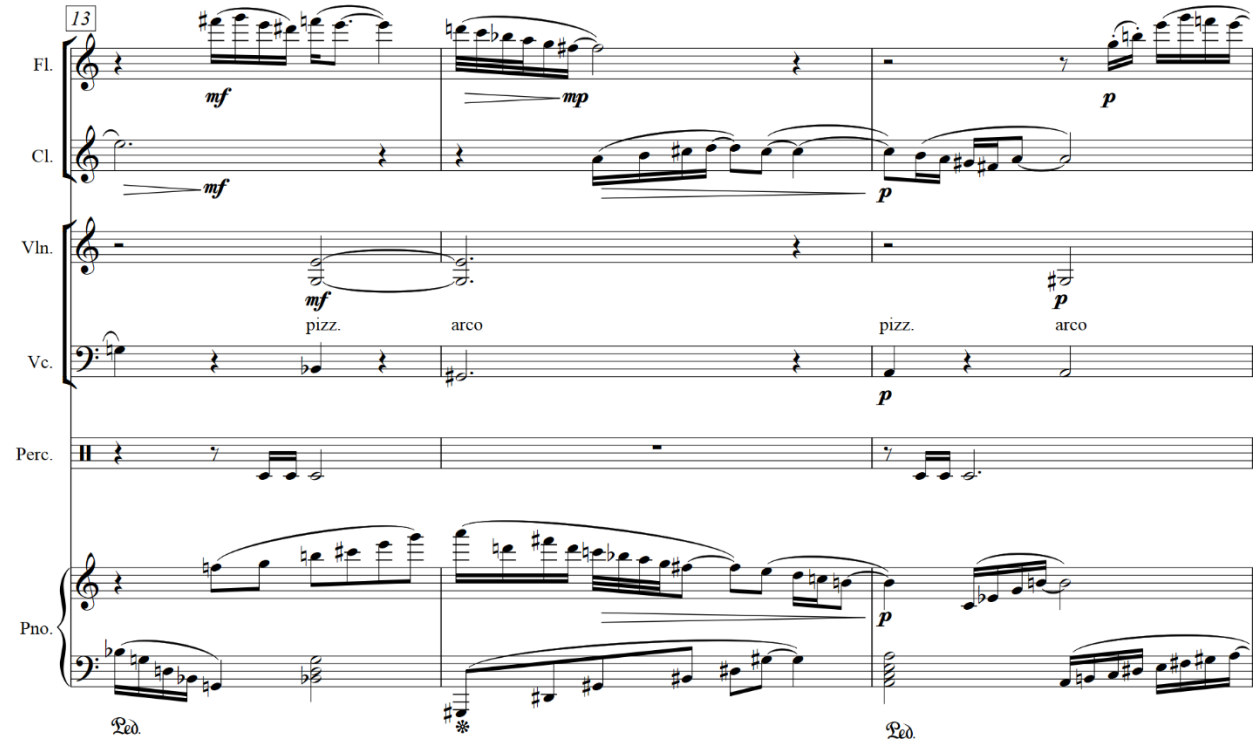
I Feel As Though I Have Always Been Cold

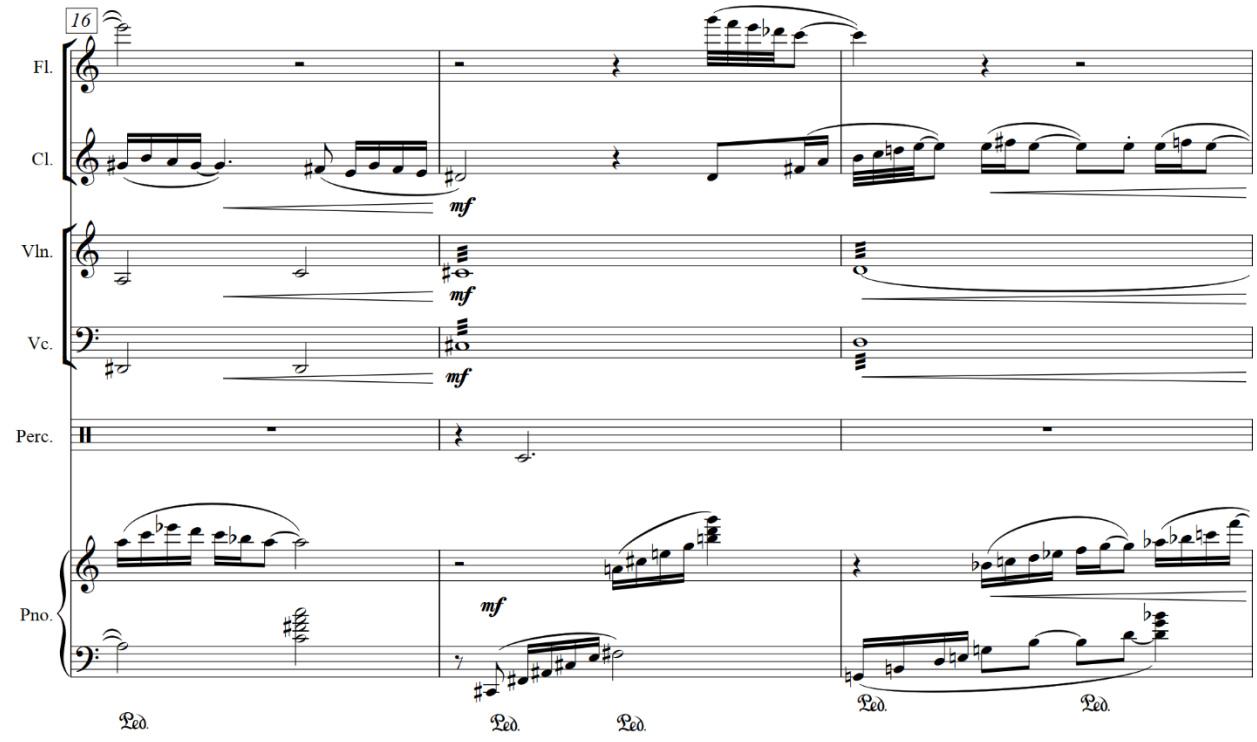
Matthew Scott Phillips

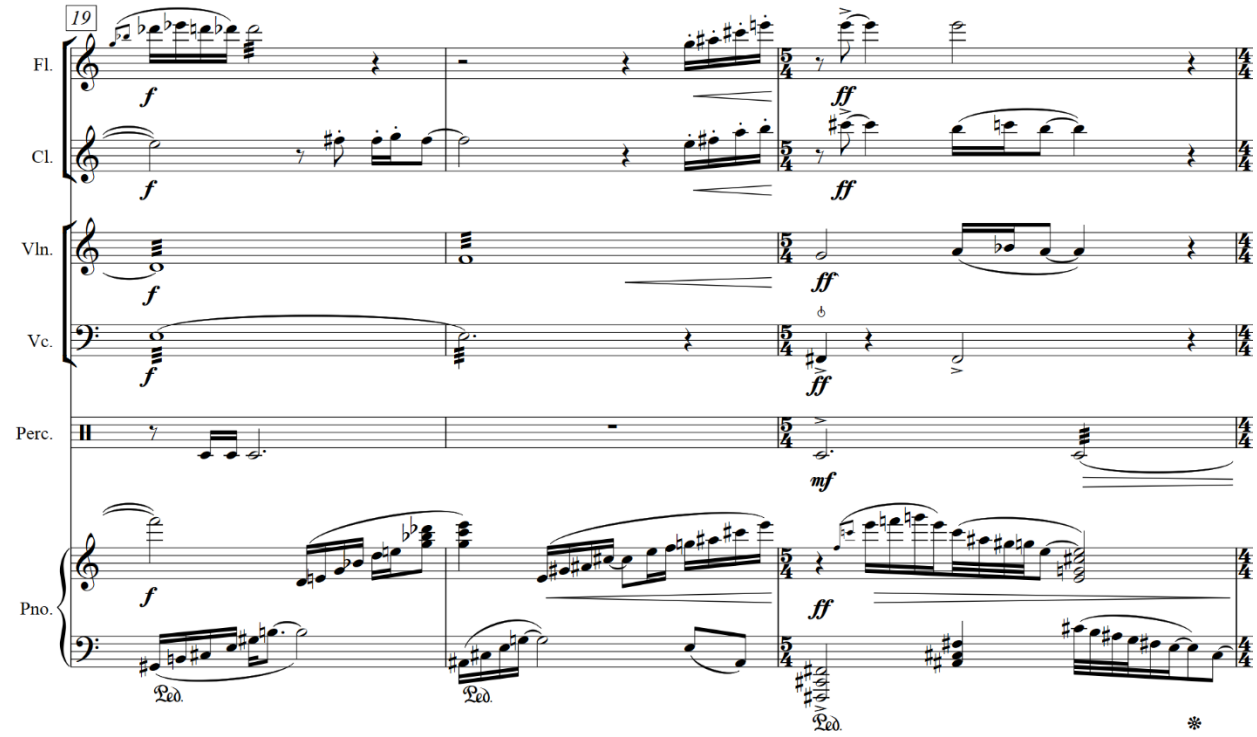
I

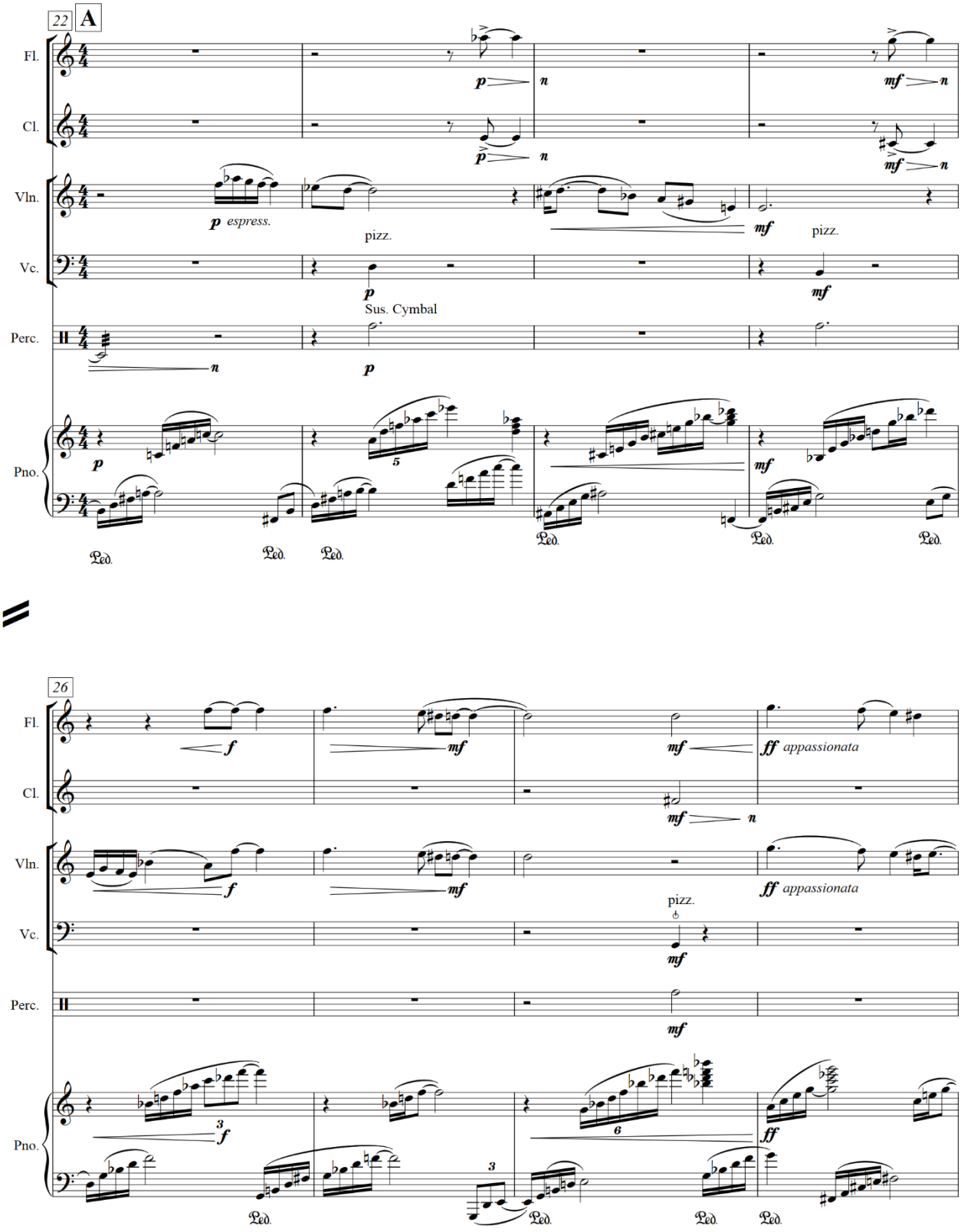


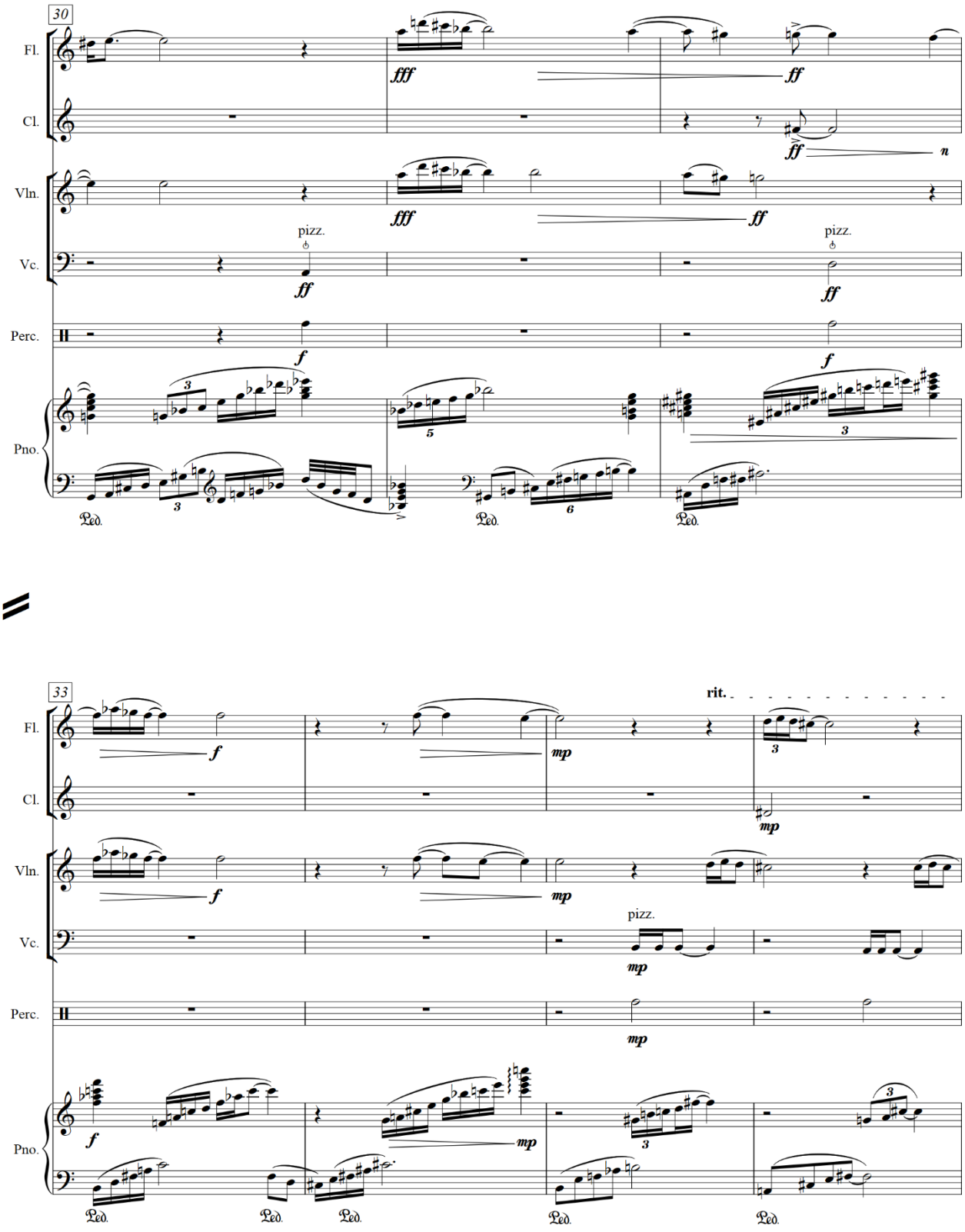

9
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
mp
pizz.
arco
Ped.

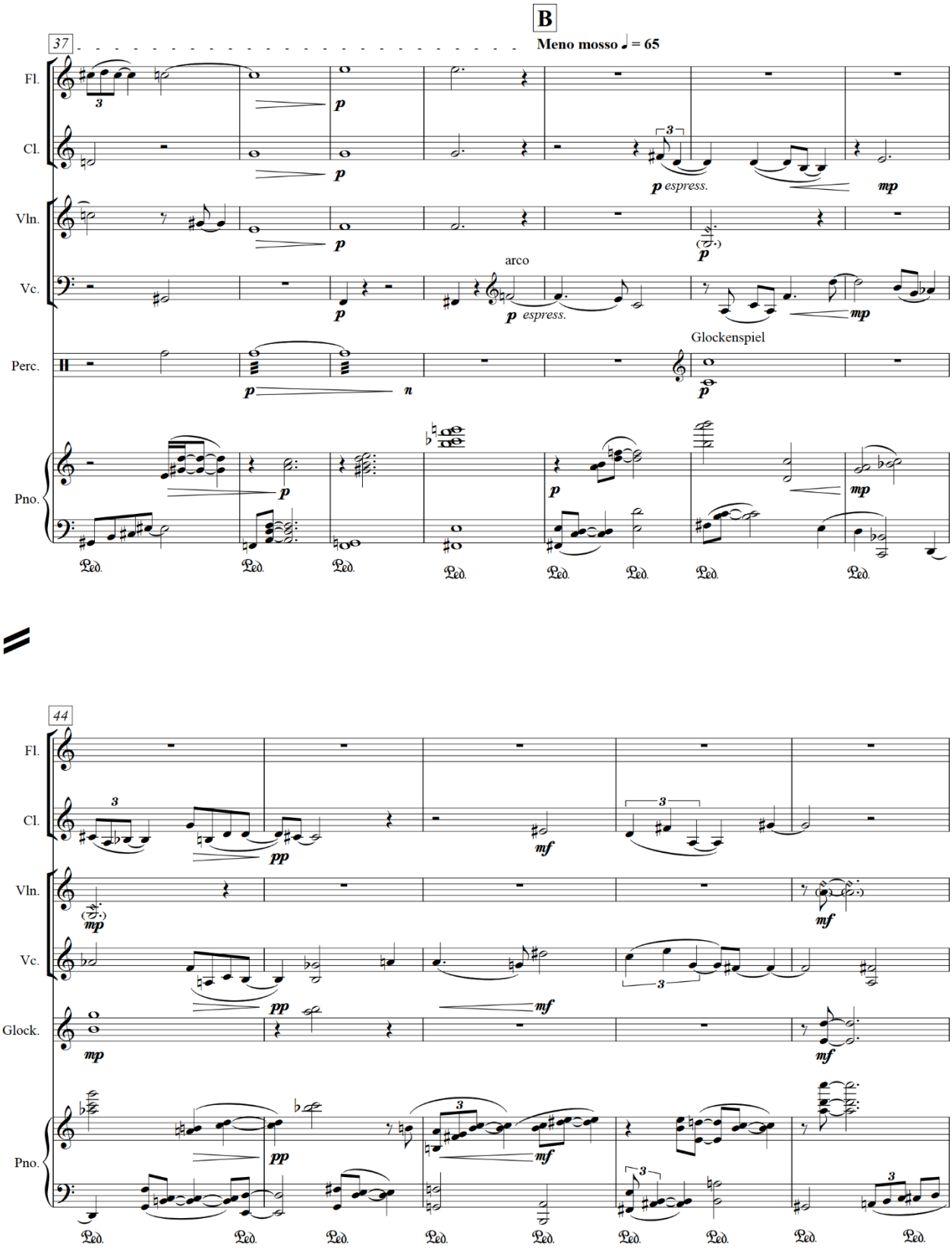

13
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
mp
p
pizz.
arco
Ped.

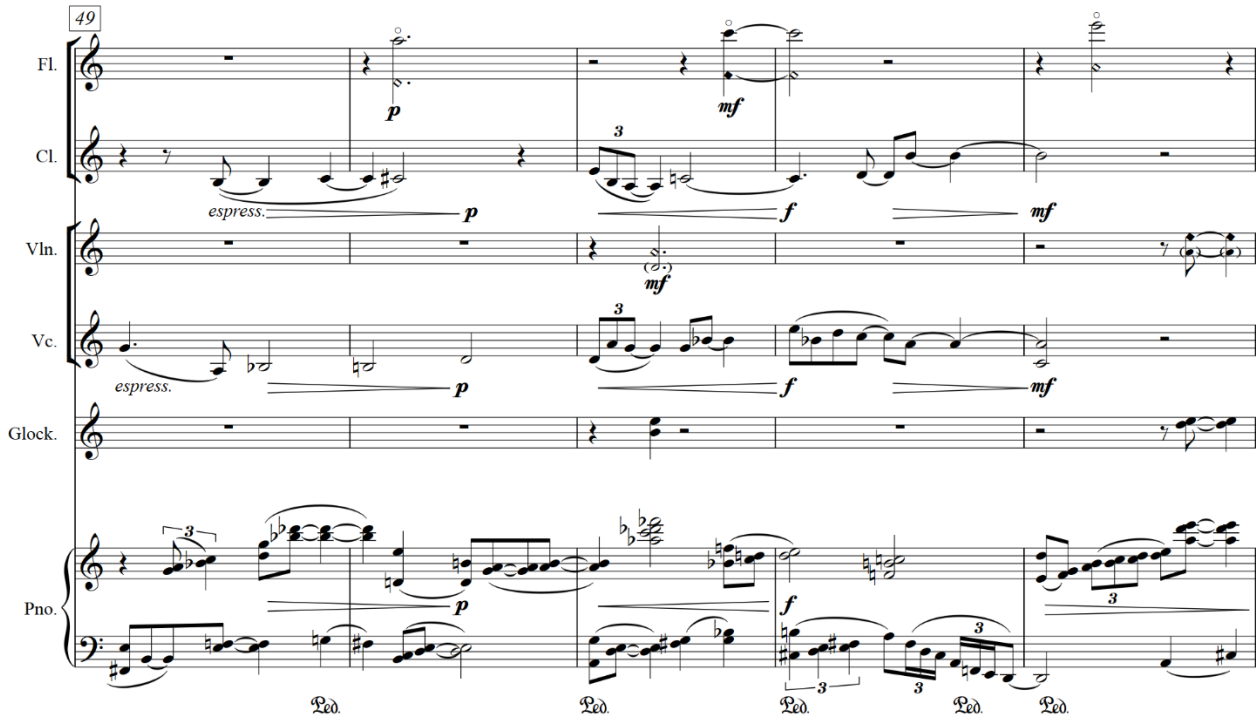

16
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
Ped.

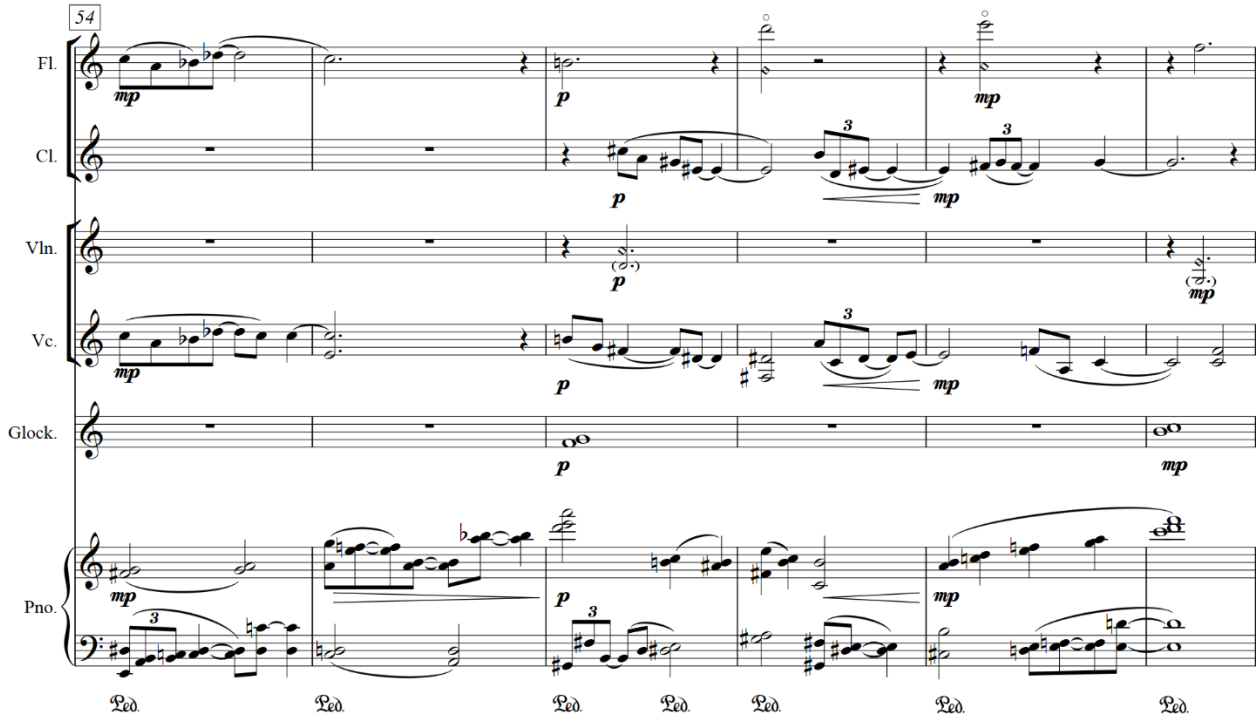

19
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
ff
mf
Ped.

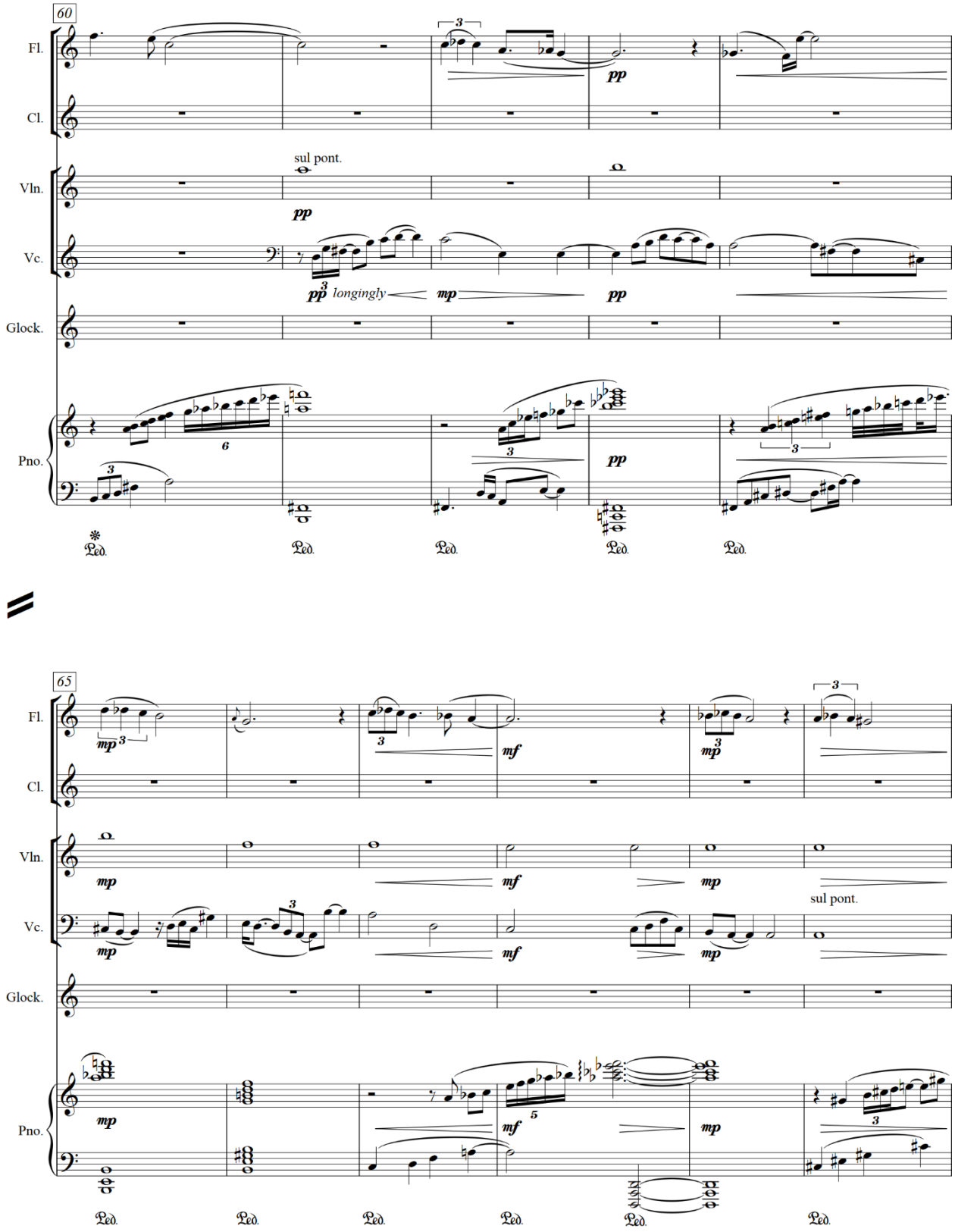

22
A
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
p espress.
pizz.
Sus. Cymbal
mf
pizz.
26
f
ff appassionata
3
6
Ped.

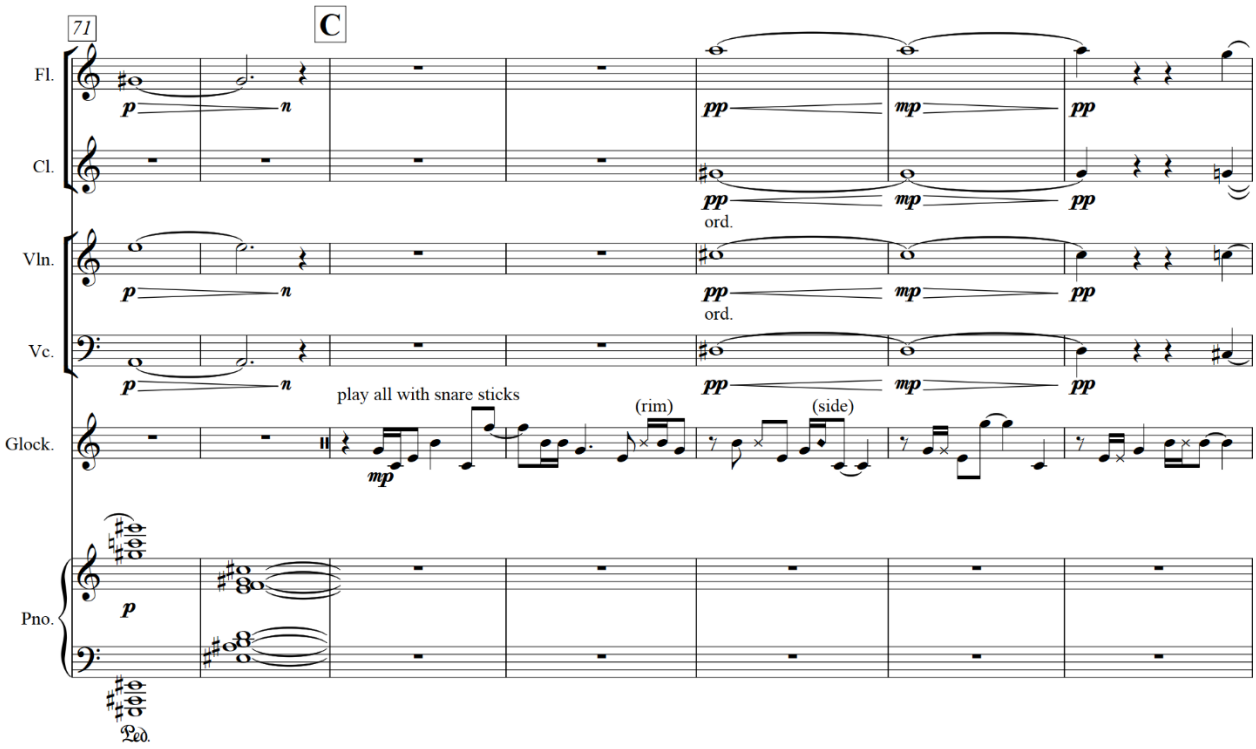

30
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
fff
ff
pizz.
f
Ped.
33
rit.
mp

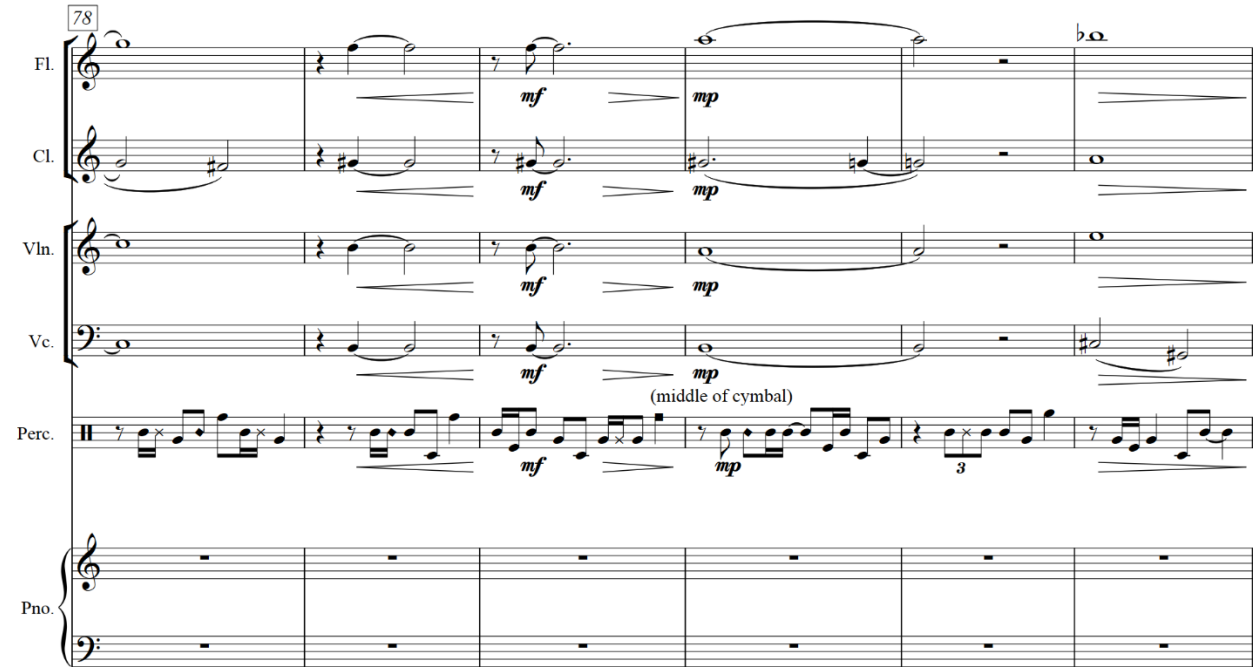

B
37
Meno mosso ♩ = 65
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
p
p espress.
mp
arco
Glockenspiel
n
Ped.
44
pp
mf
mp
Glock.

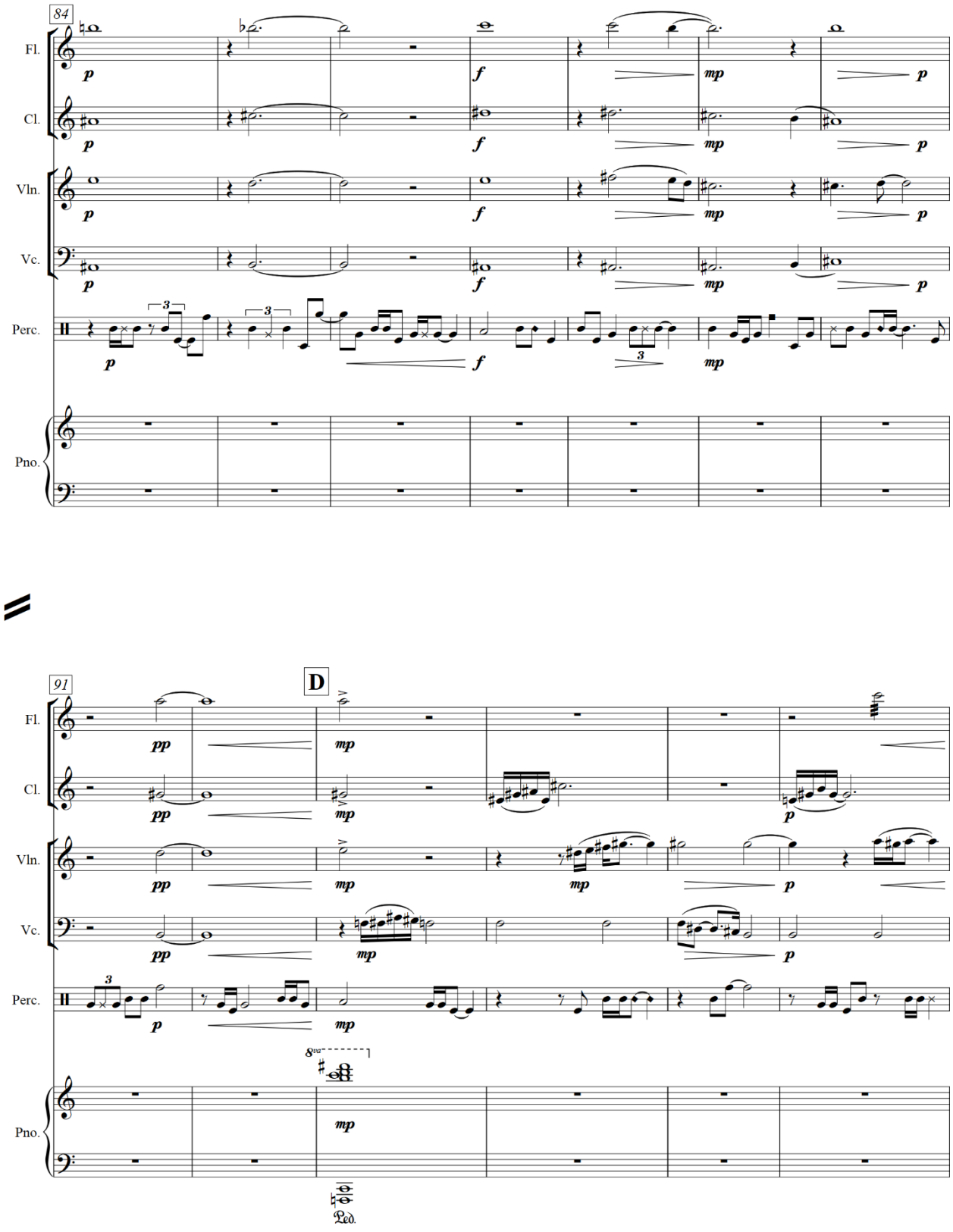

49
Fl.
Cl.
Vln.
Vc.
Glock.
Pno.
espress.
espress.
p
mf
f
mf
Ped.


54
Fl.
Cl.
Vln.
Vc.
Glock.
Pno.
mp
p
Ped.

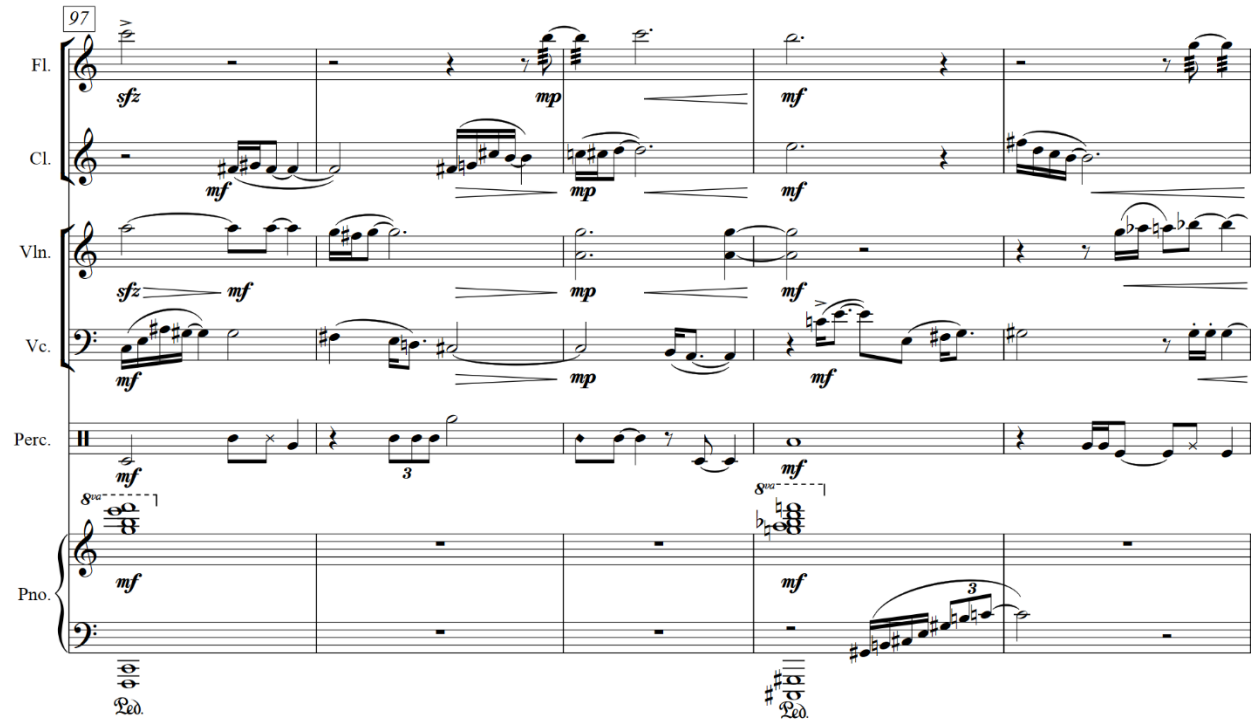

60
Fl.
Cl.
Vln.
Vc.
Glock.
Pno.
sul pont.
pp
longingly
mp
65
mf
sul pont.

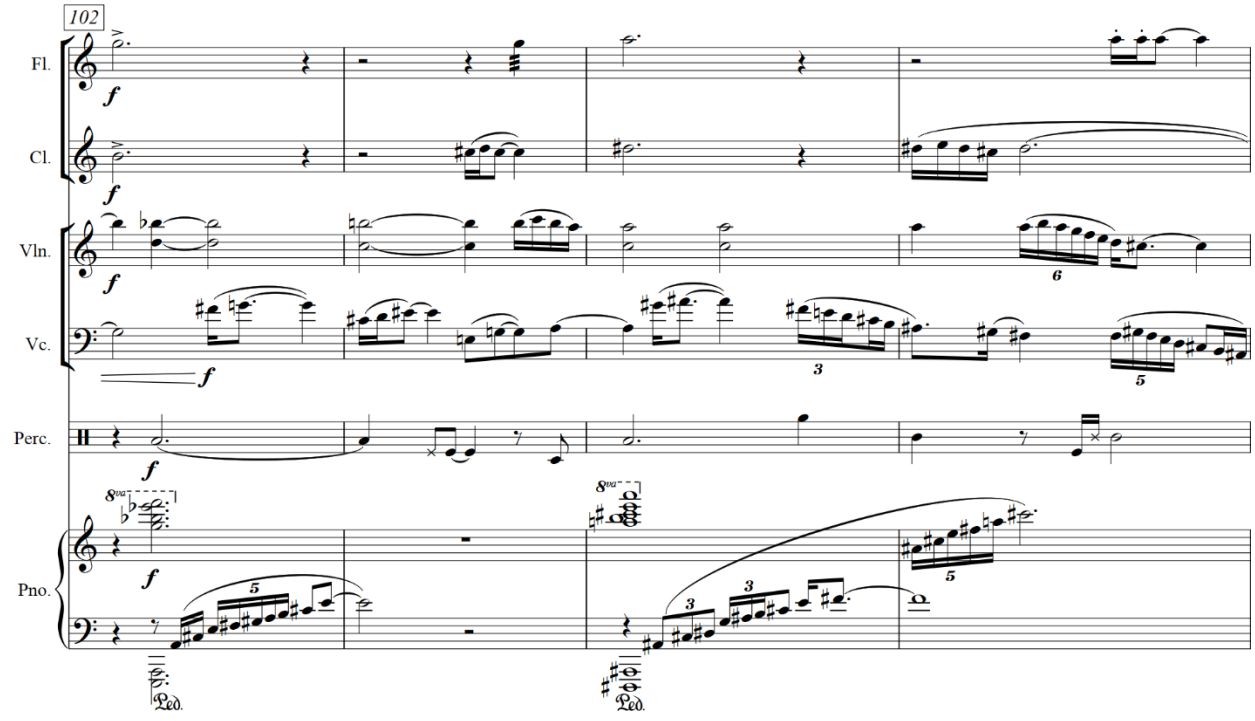

71
C
Fl.
Cl.
Vln.
Vc.
Glock.
Pno.
p
n
pp
mp
ord.
play all with snare sticks
(rim)
(side)
mp
Ped.

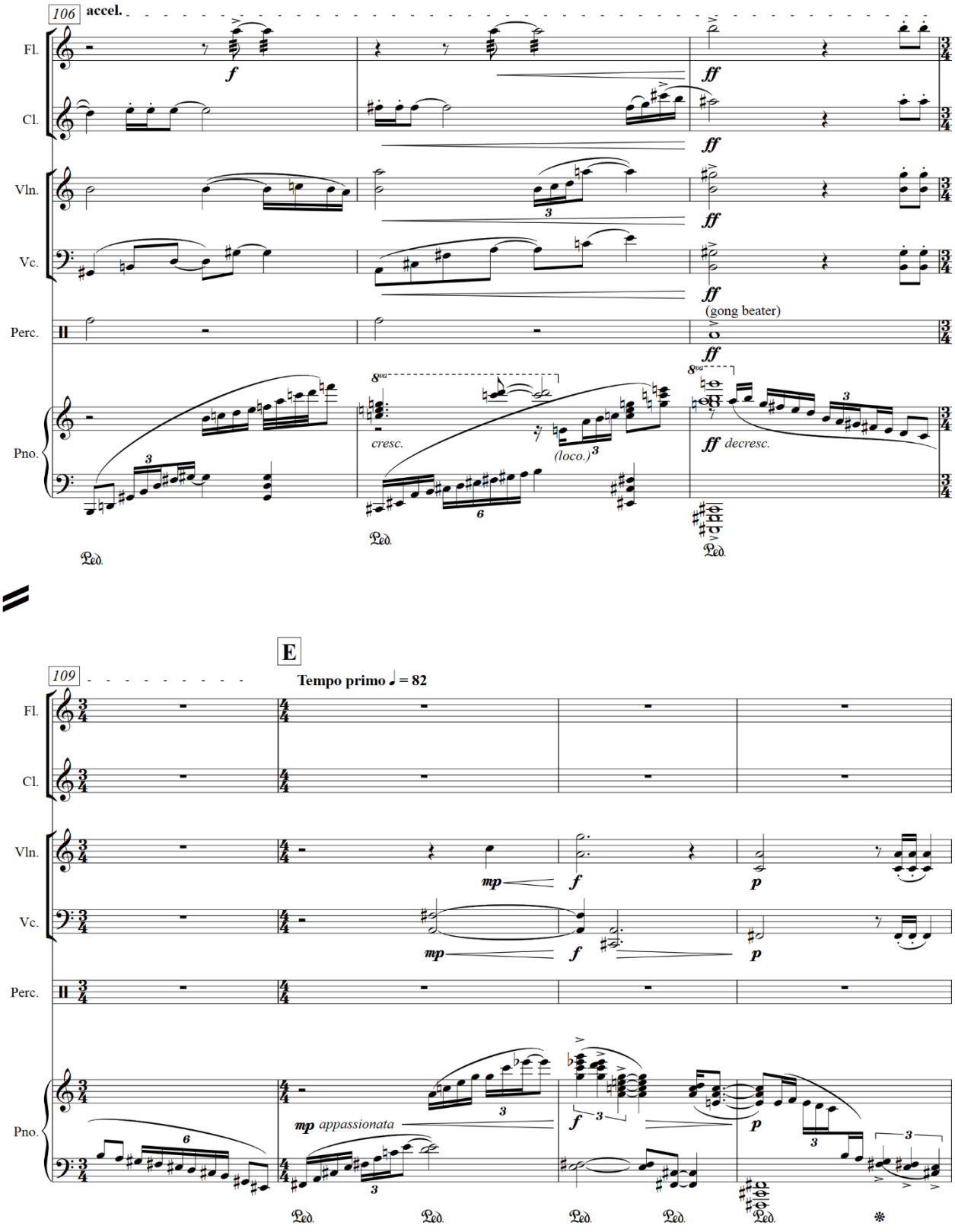

78
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
mp
(middle of cymbal)
3

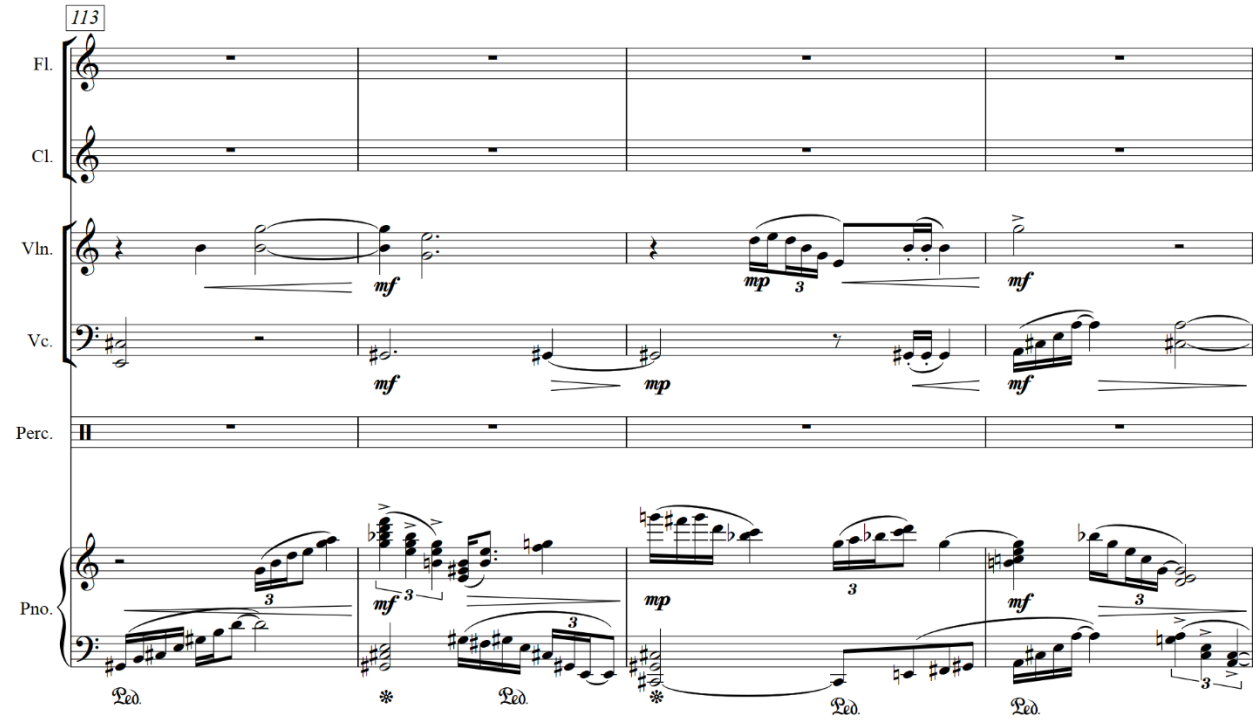

84
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
p
f
mp
p
3

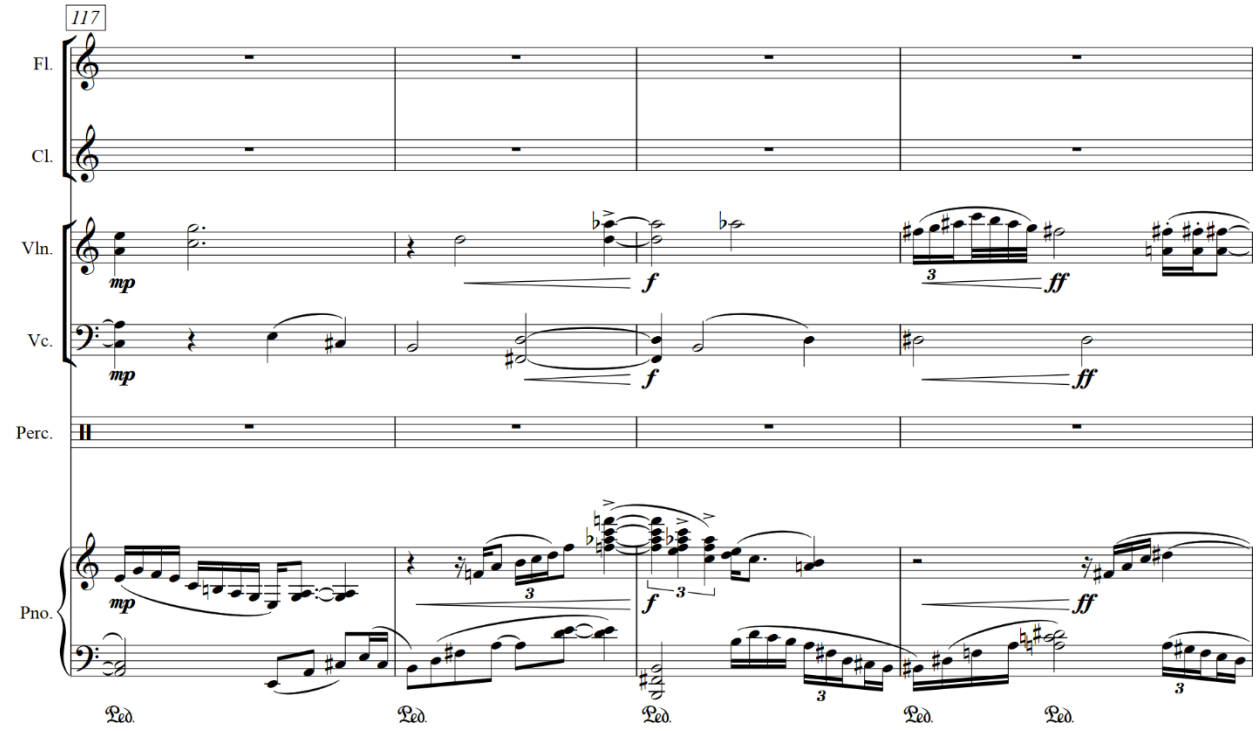
91
D
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
pp
mp
p
8va
Ped.

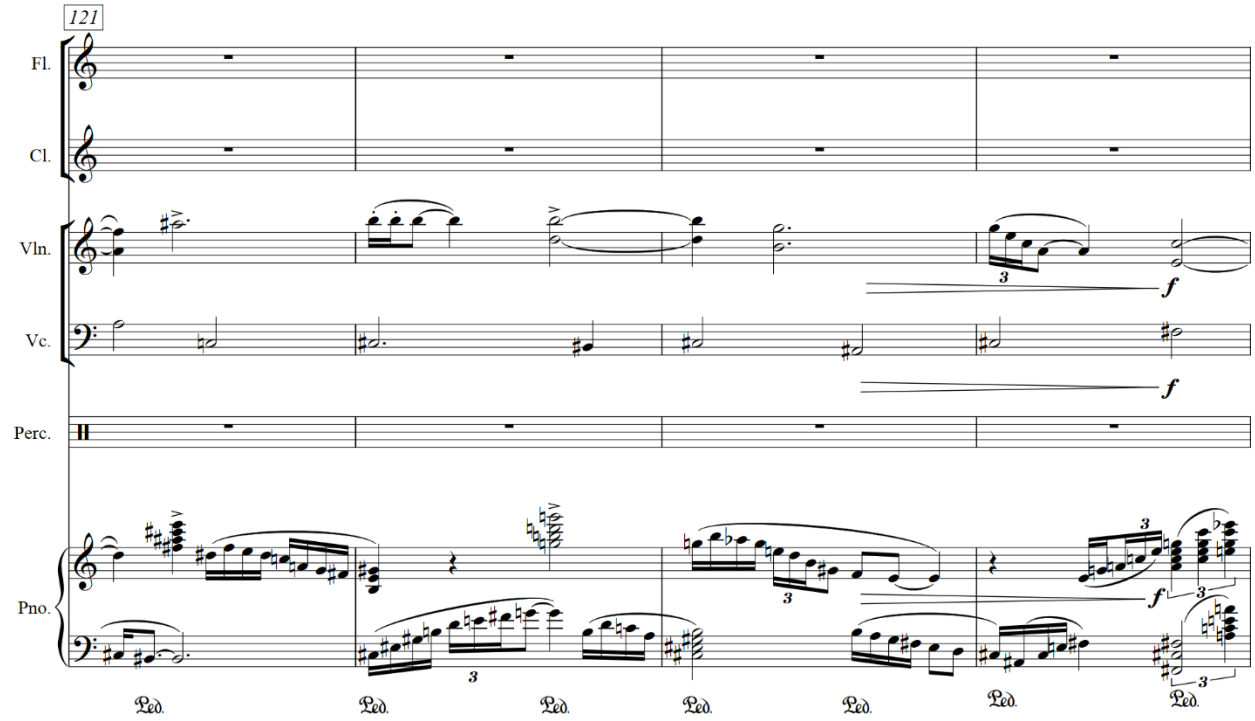

97
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
sfz
mf
mp
mf
Ped.

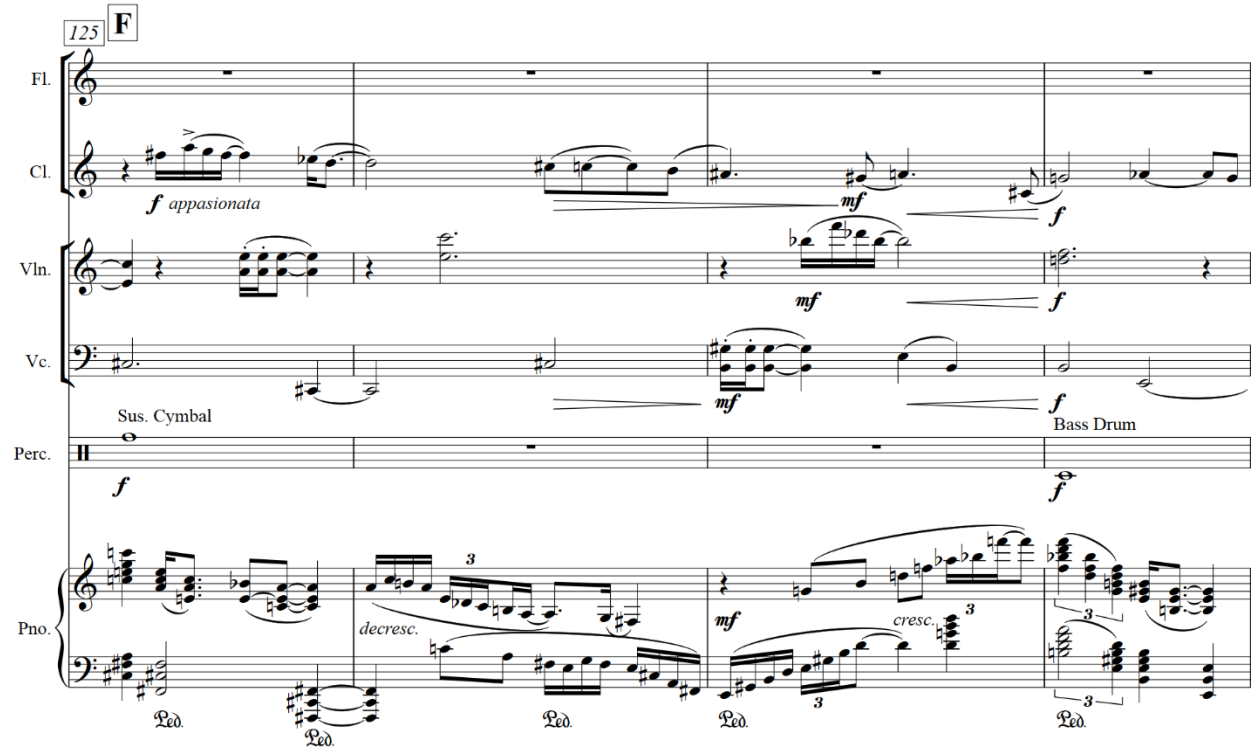

102
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
Ped.

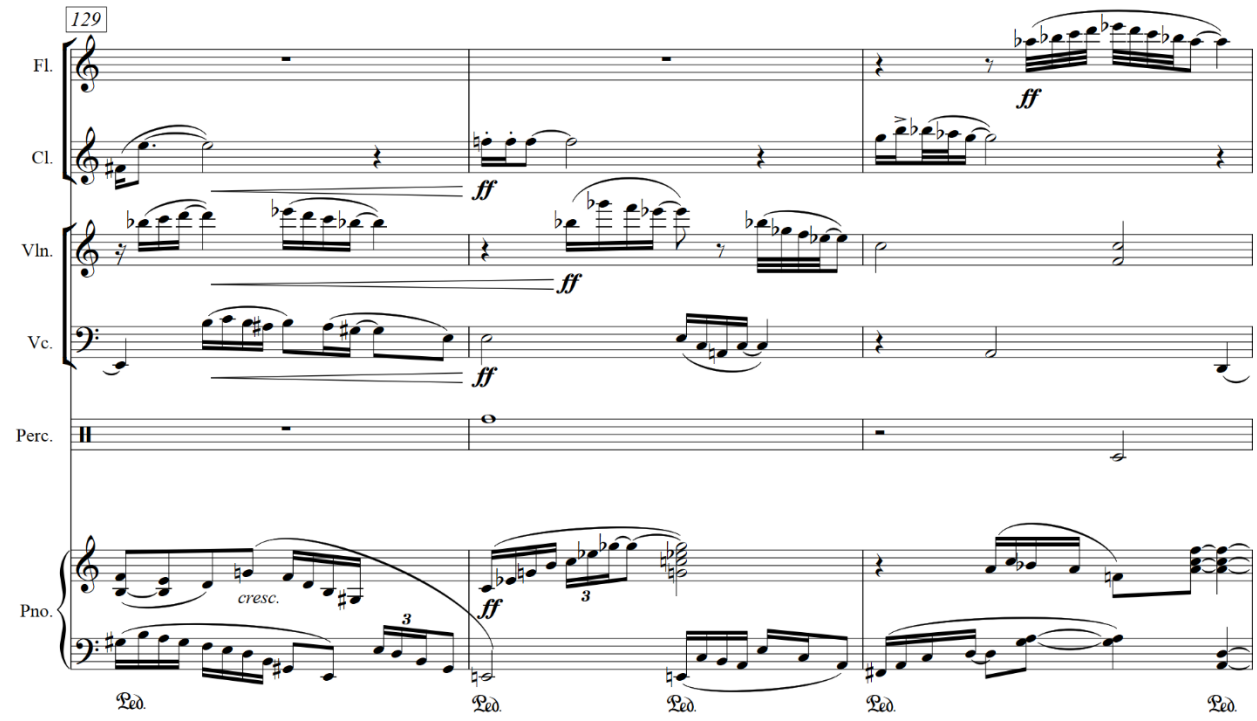

106
accel.
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
ff
(gong beater)
cresc.
(loco.)
ff decresc.
Ped.
E
109
Tempo primo ♩ = 82
mp
p
mp appassionata
*

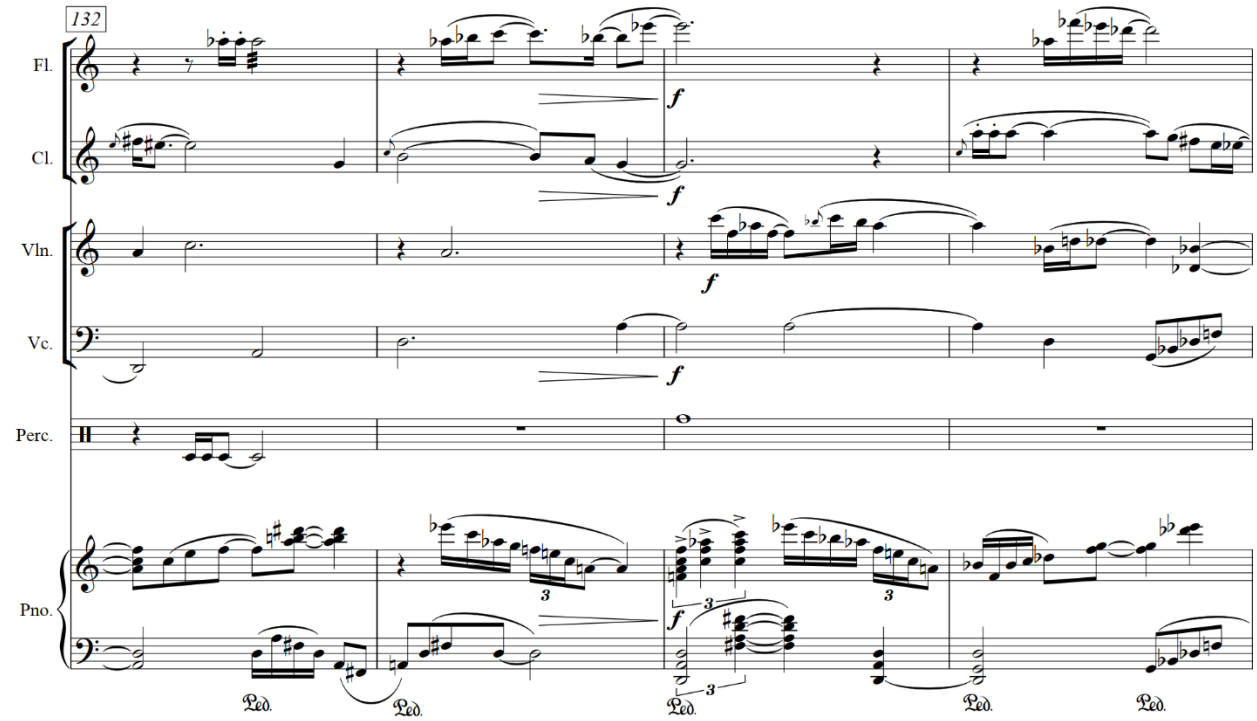

113
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
mp
mf
mf
mf
mp
mf
mp
mf
Ped.
Ped.
Ped.
Ped.

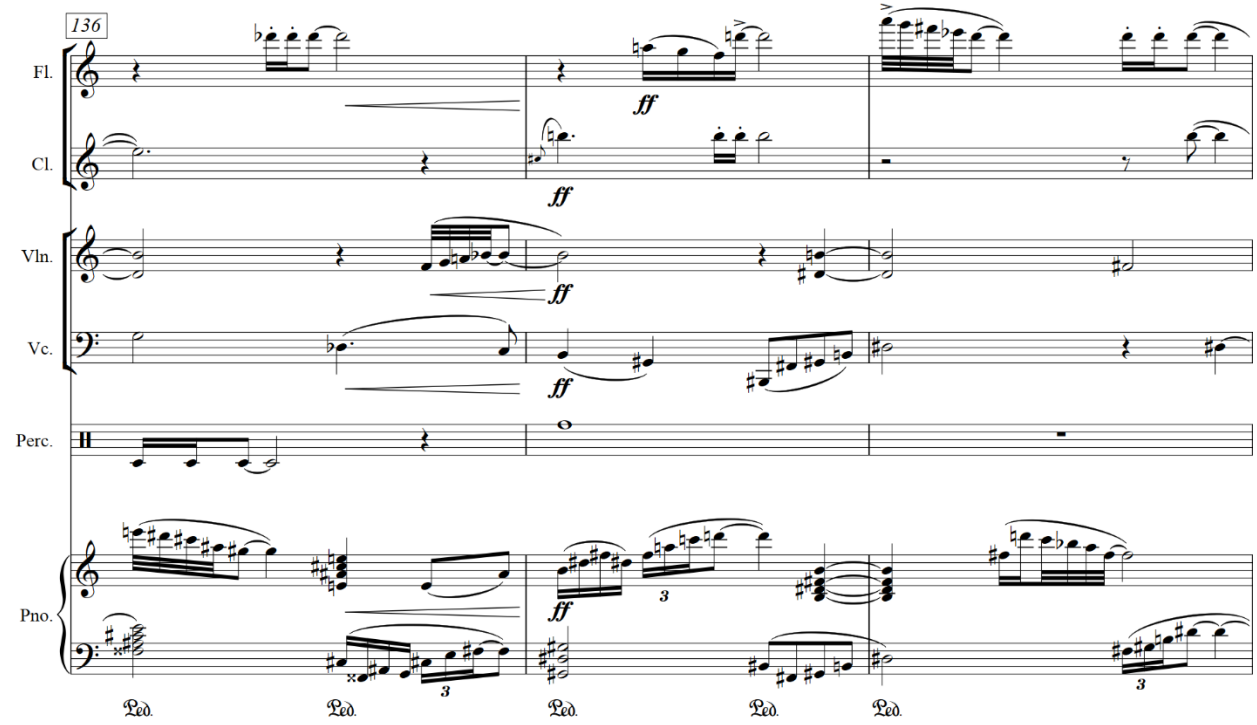

117
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mp
f
ff
mp
f
ff
mp
f
ff
Ped.
Ped.
Ped.
Ped.
Ped.

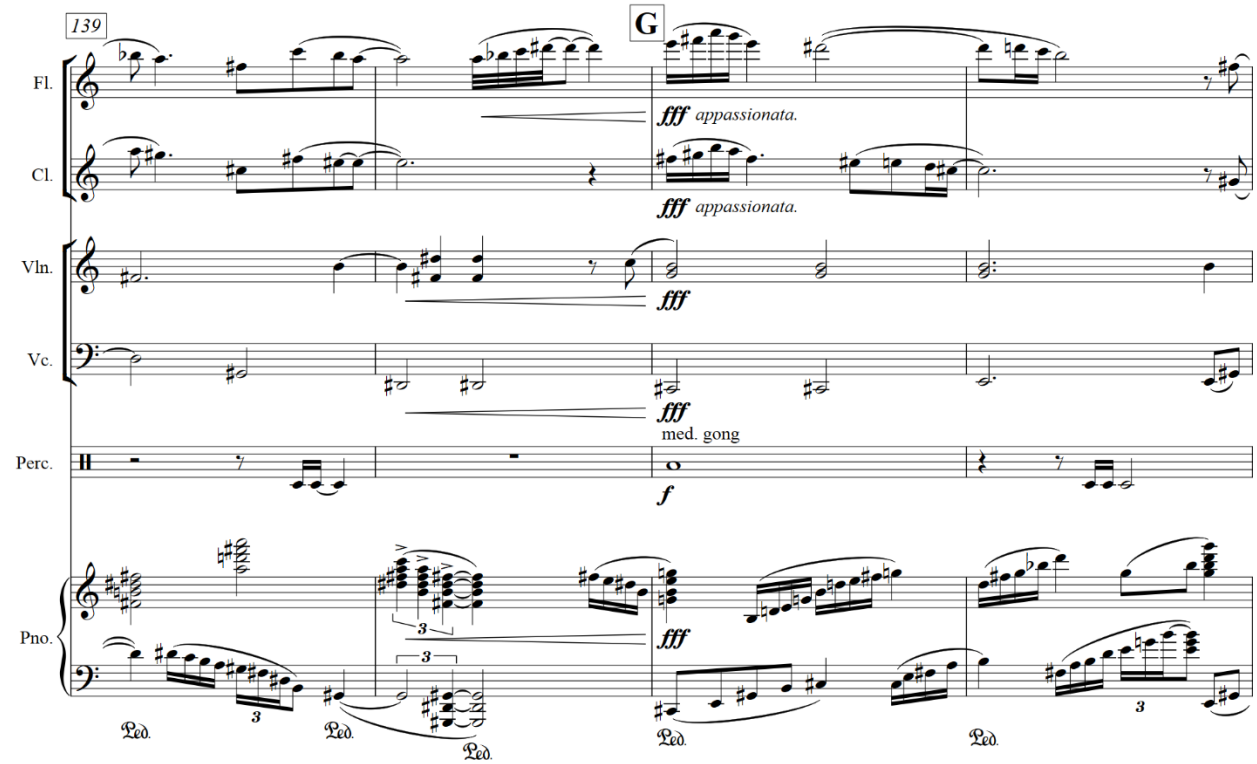

121
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
3
Ped.

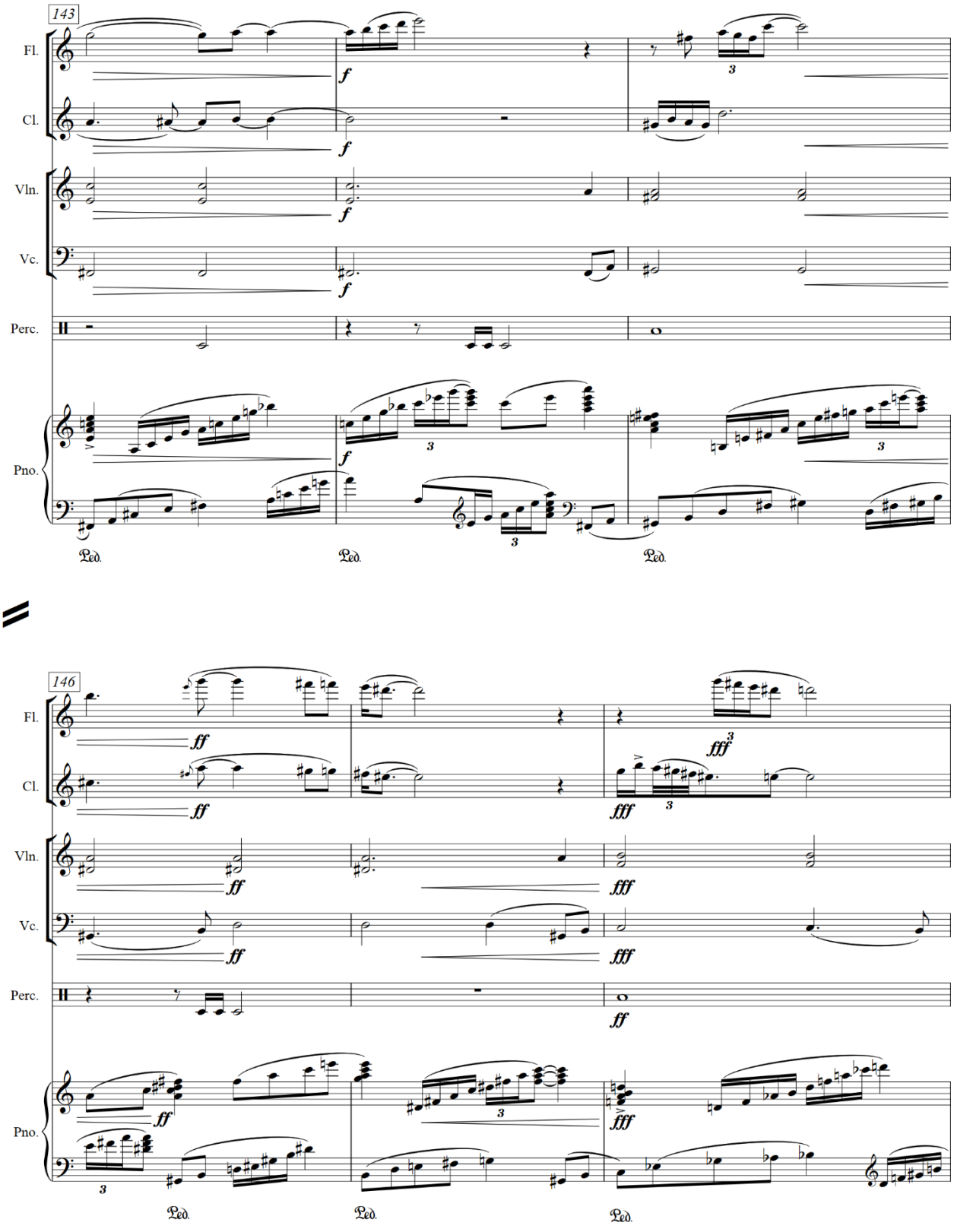

125
F
Fl.
Cl.
f appasionata
mf
Vln.
Vc.
Sus. Cymbal
Bass Drum
Perc.
Pno.
decresc.
cresc.
Ped.

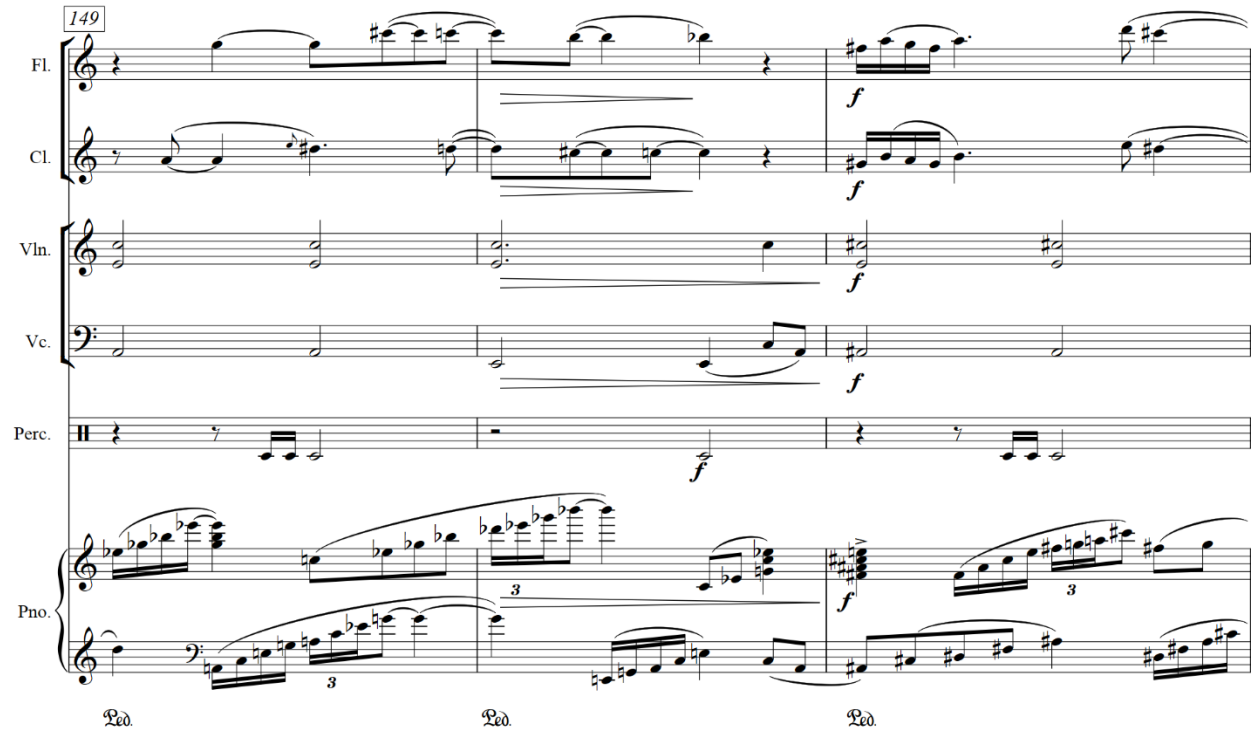

129
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
ff
cresc.
Ped.

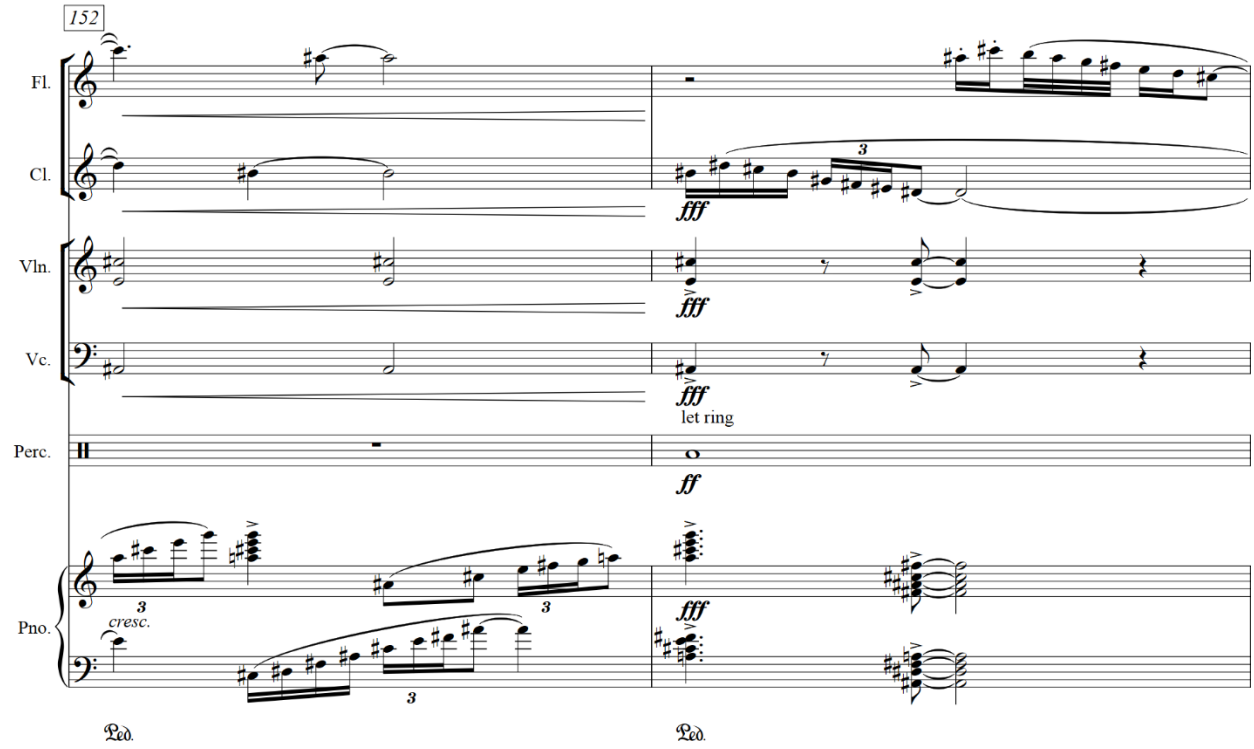

132
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
Ped.

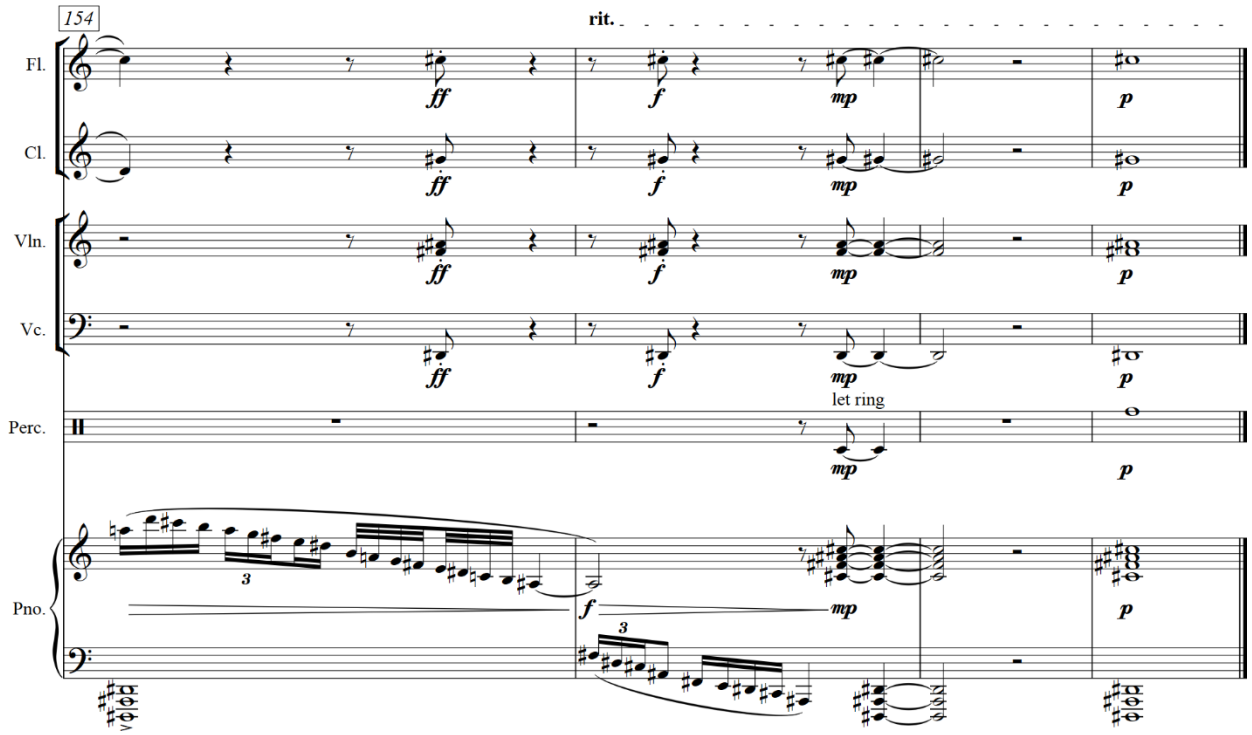

136
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
ff
3
Ped.

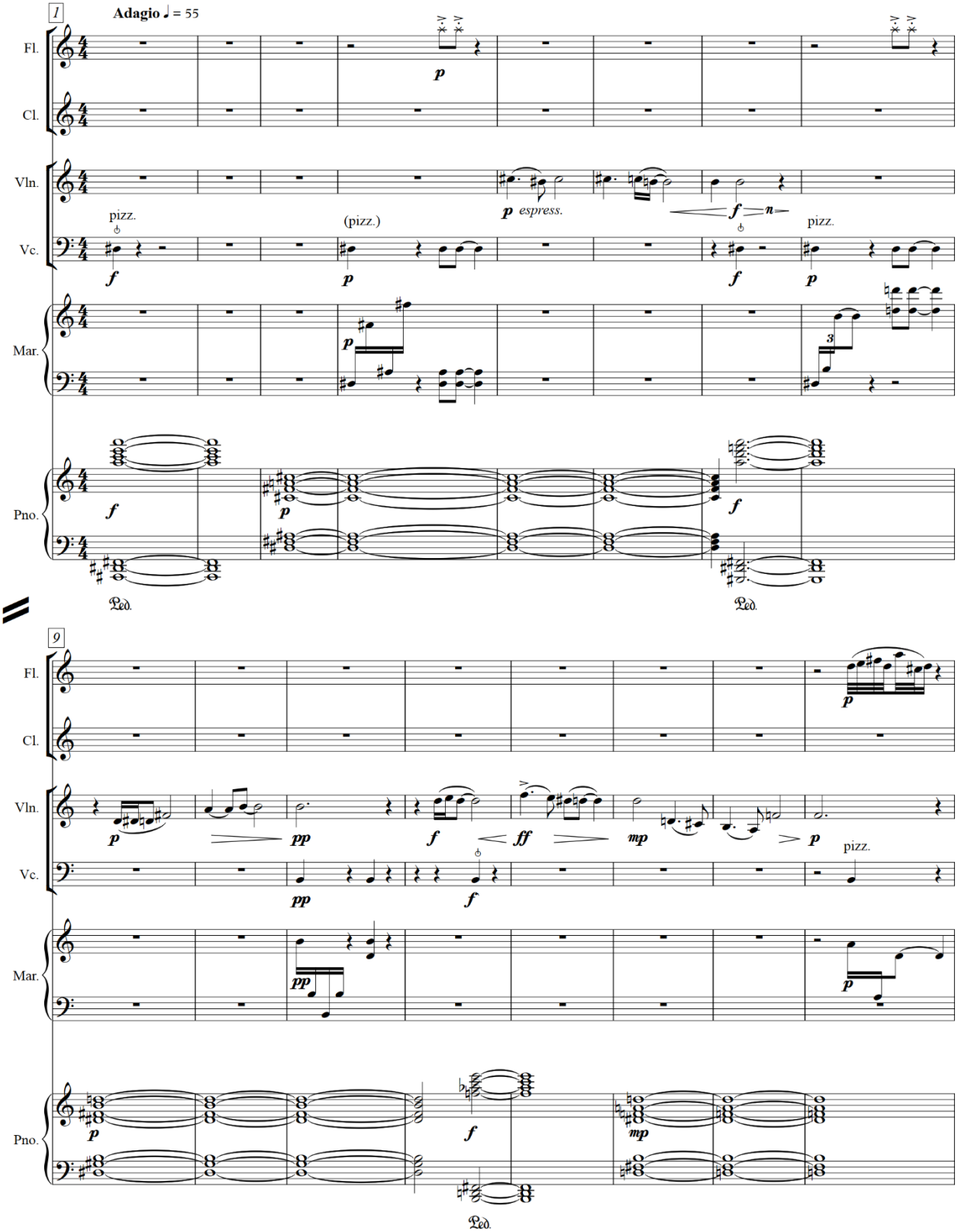

139
G
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
fff appassionata.
fff
med. gong
f
3
Ped.

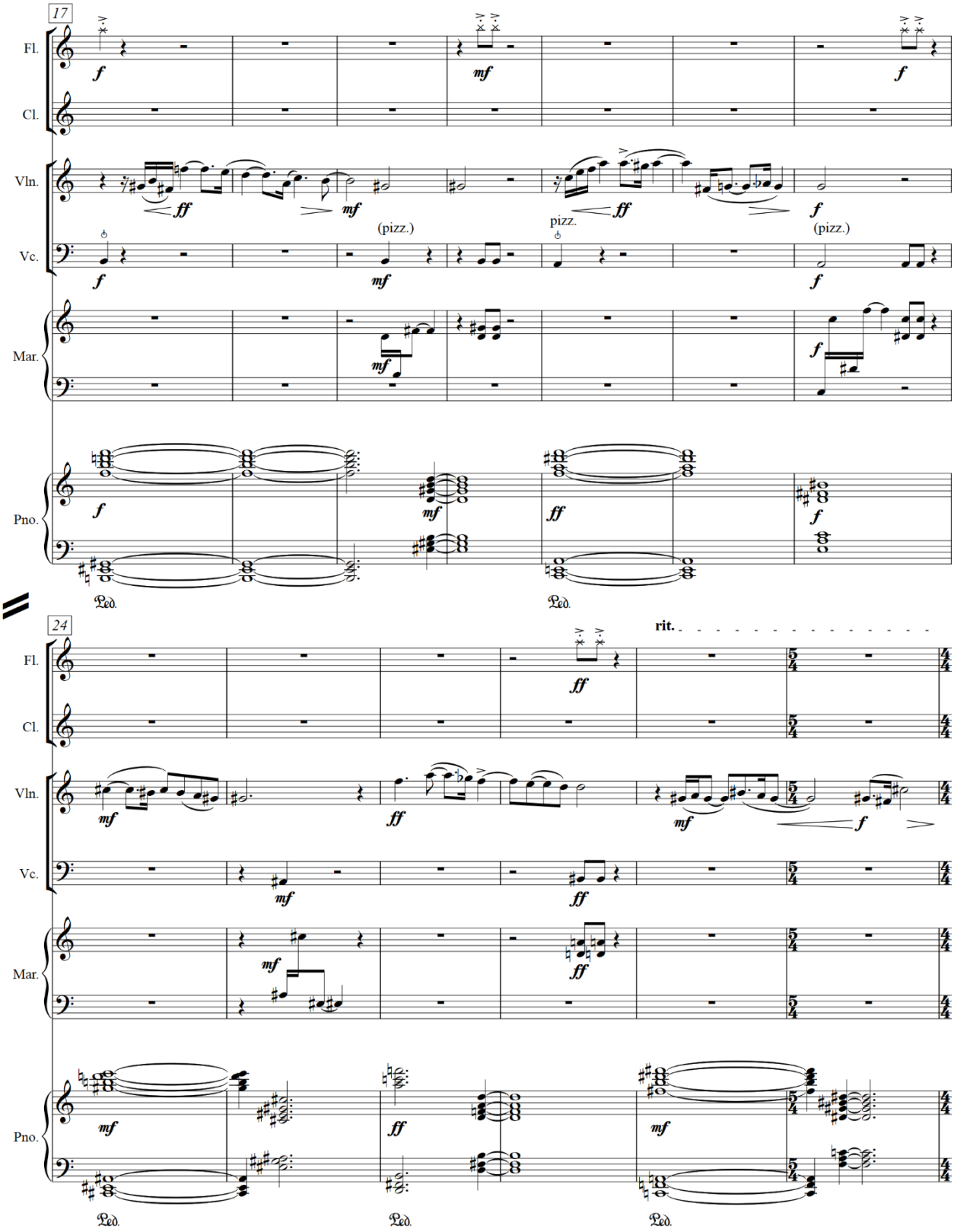

143
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
3
Ped.
Ped.
Ped.
146
ff
fff
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
Ped.
Ped.
Ped.

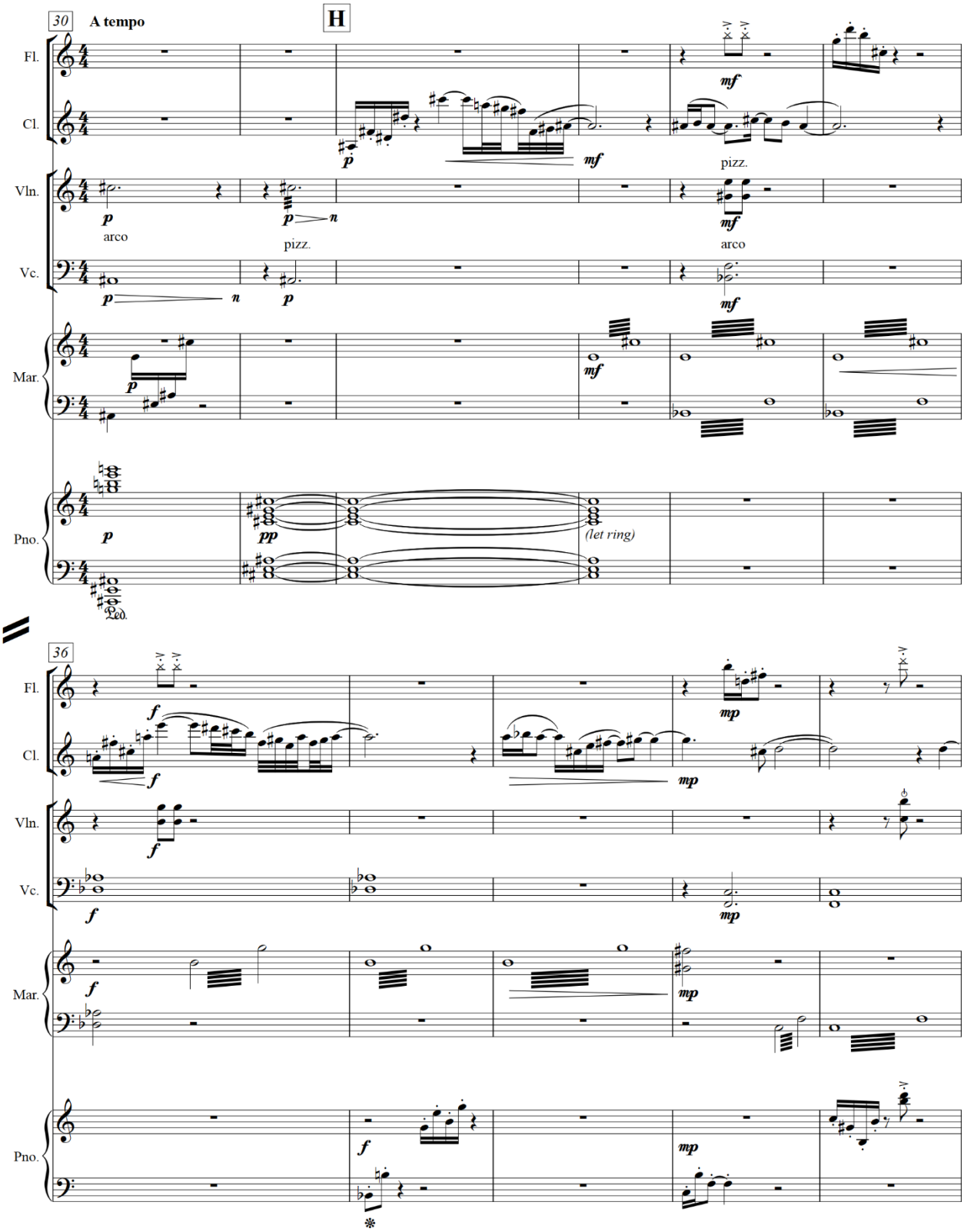

149
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
3
Ped.
Ped.
Ped.

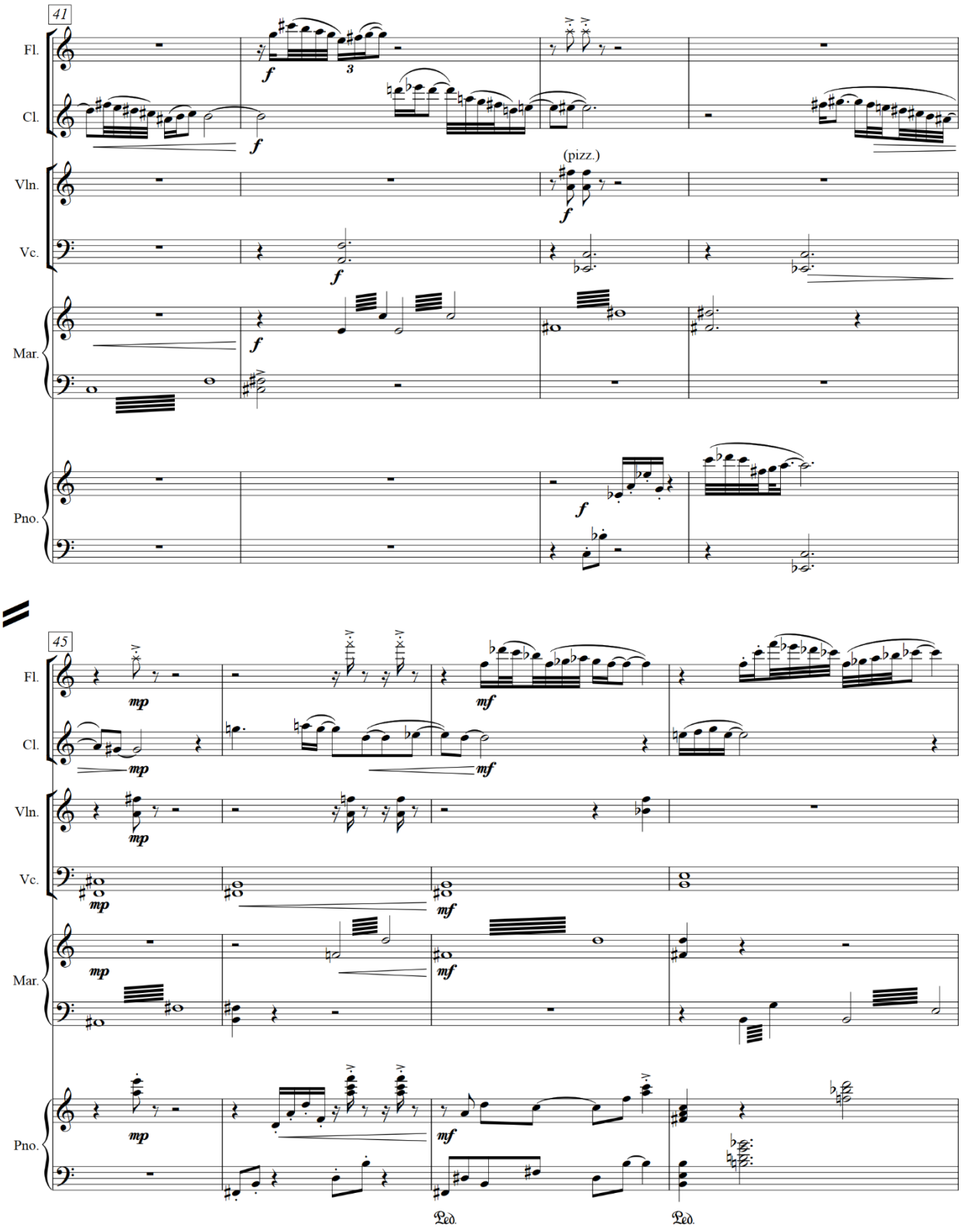

152
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
fff
let ring
ff
3
cresc.
Ped.
Ped.

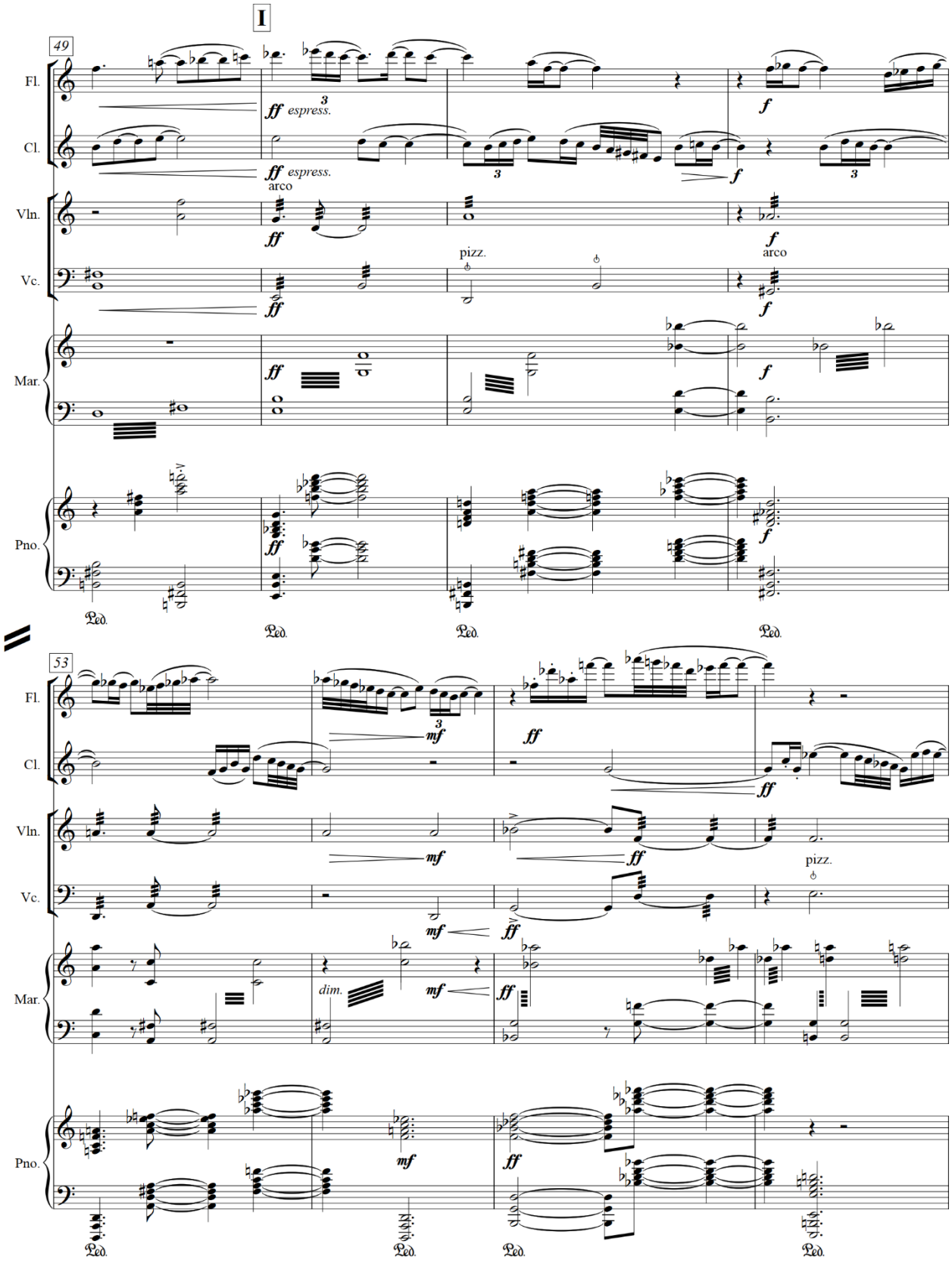

154
rit.
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
let ring

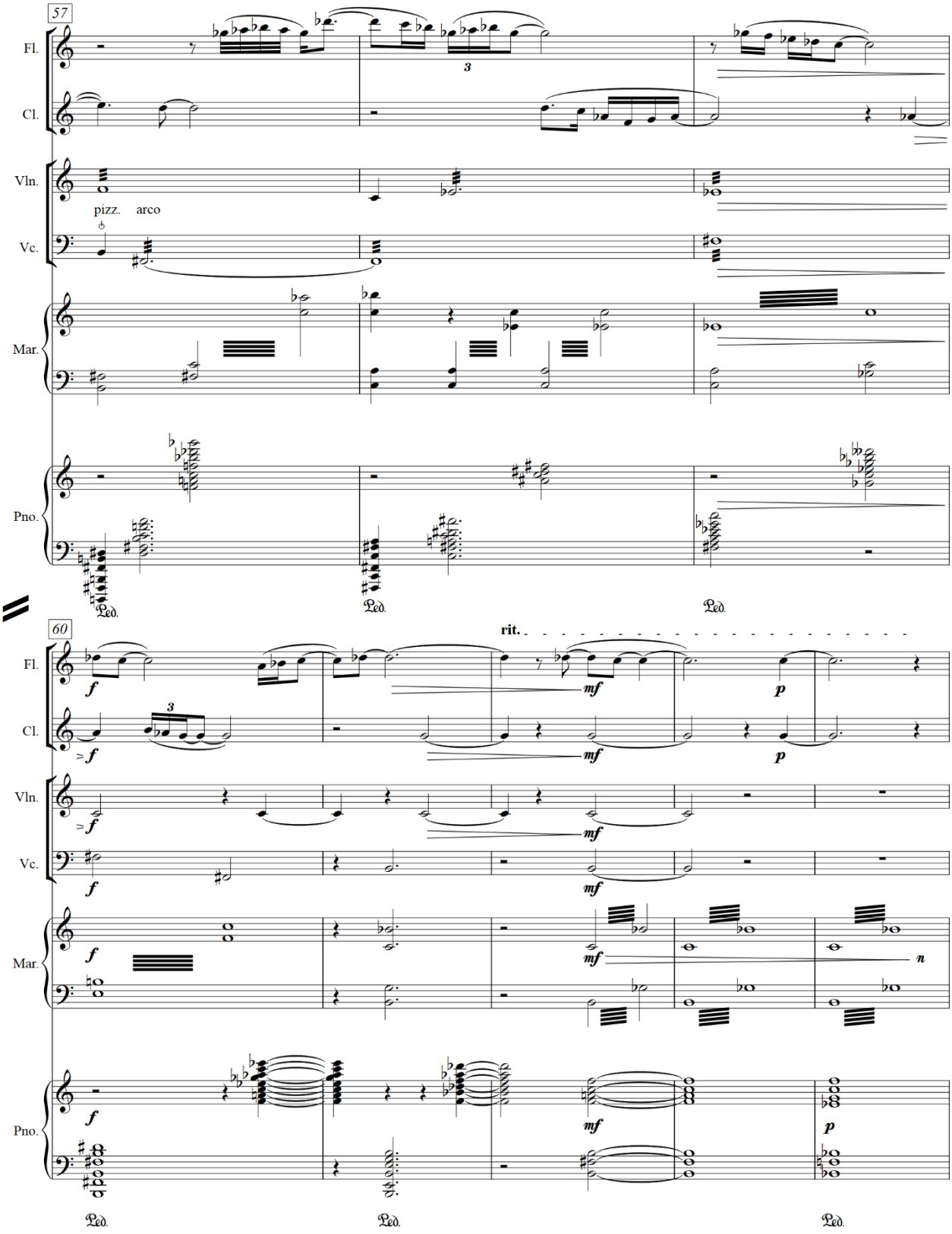

1
Adagio ♩ = 55
Fl.
Cl.
Vln.
Vc.
Mar.
Pno.
pizz.
(pizz.)
espress.
pizz.
Ped.
9
Fl.
Cl.
Vln.
Vc.
Mar.
Pno.
pizz.
Ped.

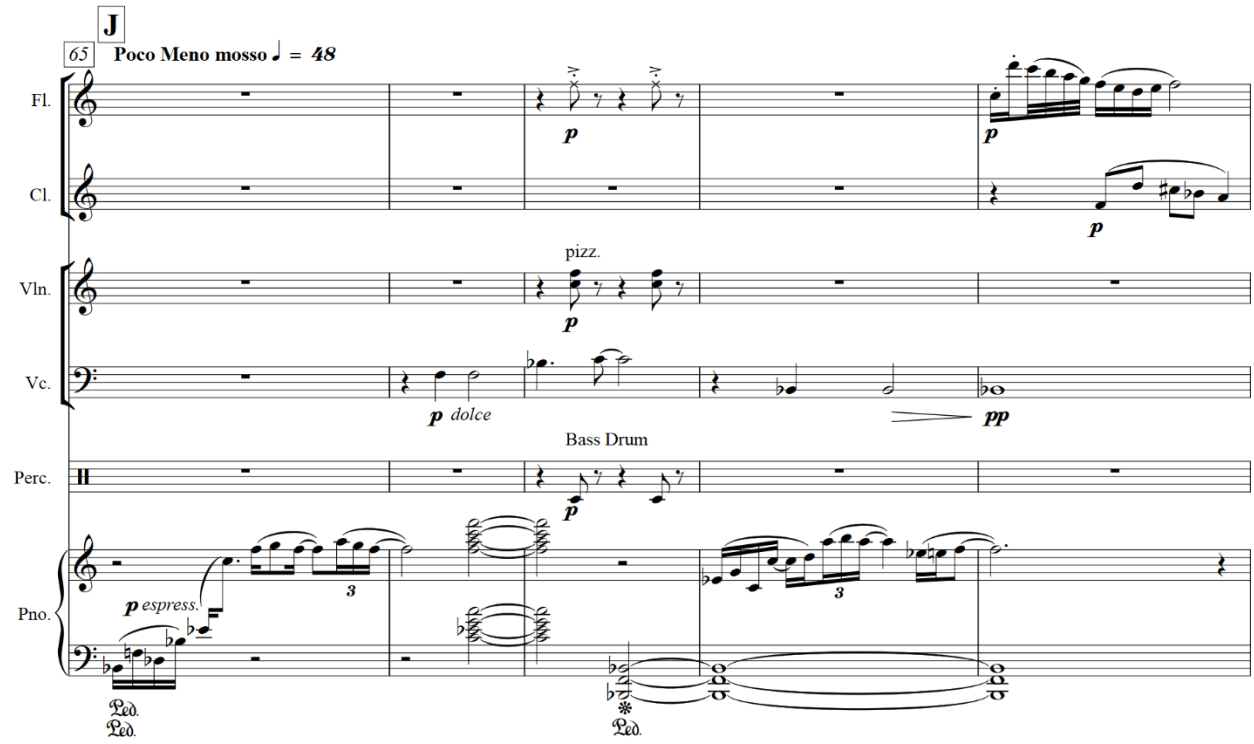

17
Fl.
Cl.
Vln.
Vc.
Mar.
Pno.
(pizz.)
pizz.
(pizz.)
Ped.
24
rit.

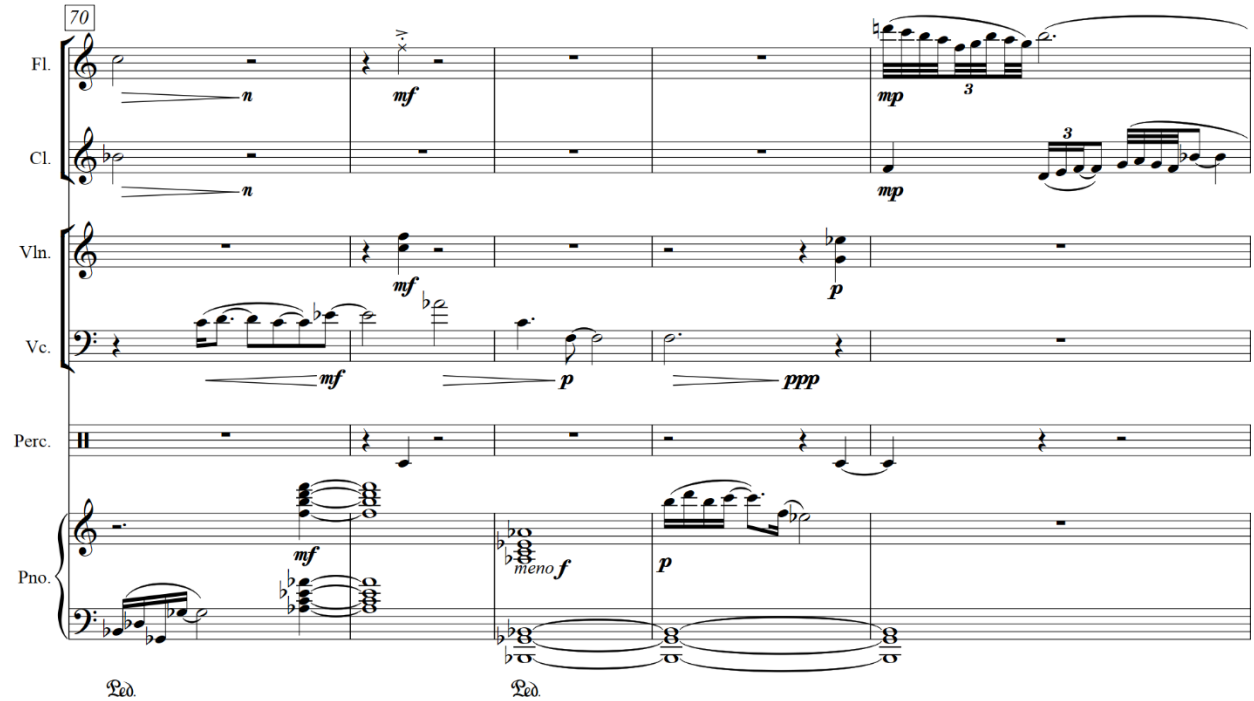

30
A tempo
H
Fl.
Cl.
Vln.
Vc.
Mar.
Pno.
arco
pizz.
arco
(let ring)
36

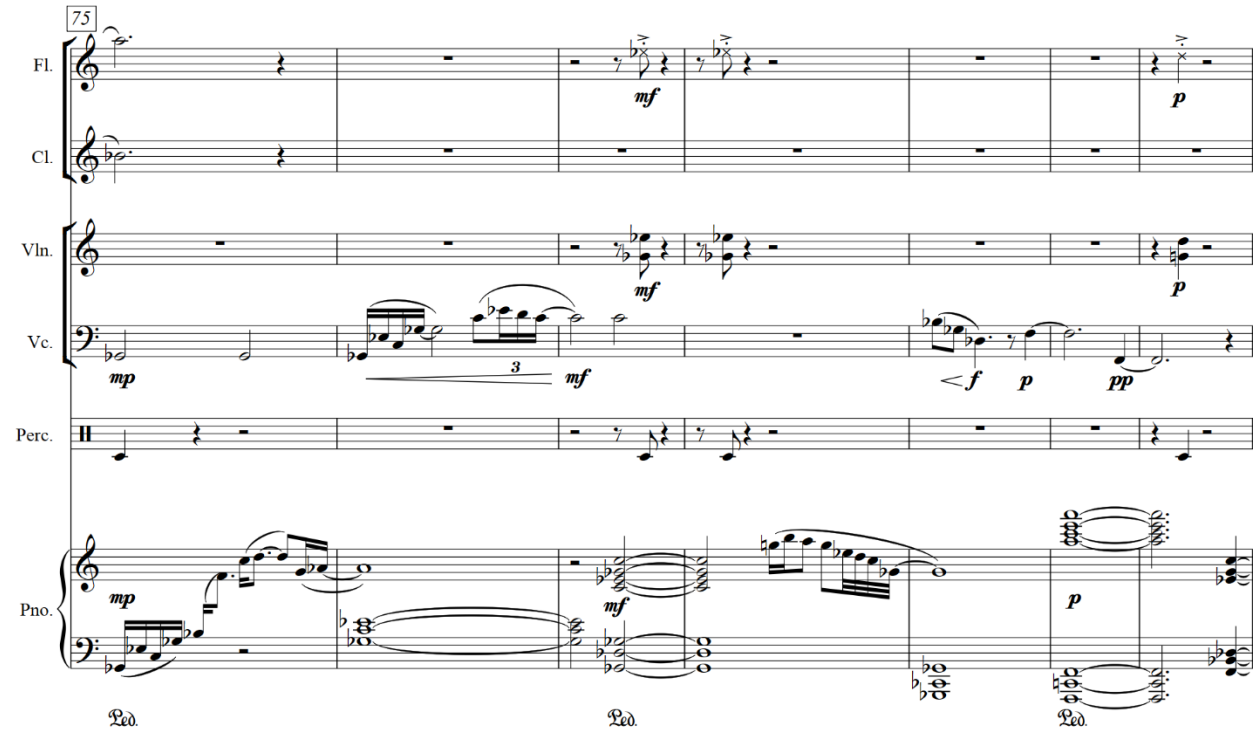

41
Fl.
Cl.
Vln.
Vc.
Mar.
Pno.
(pizz.)
45
Ped.
Ped.

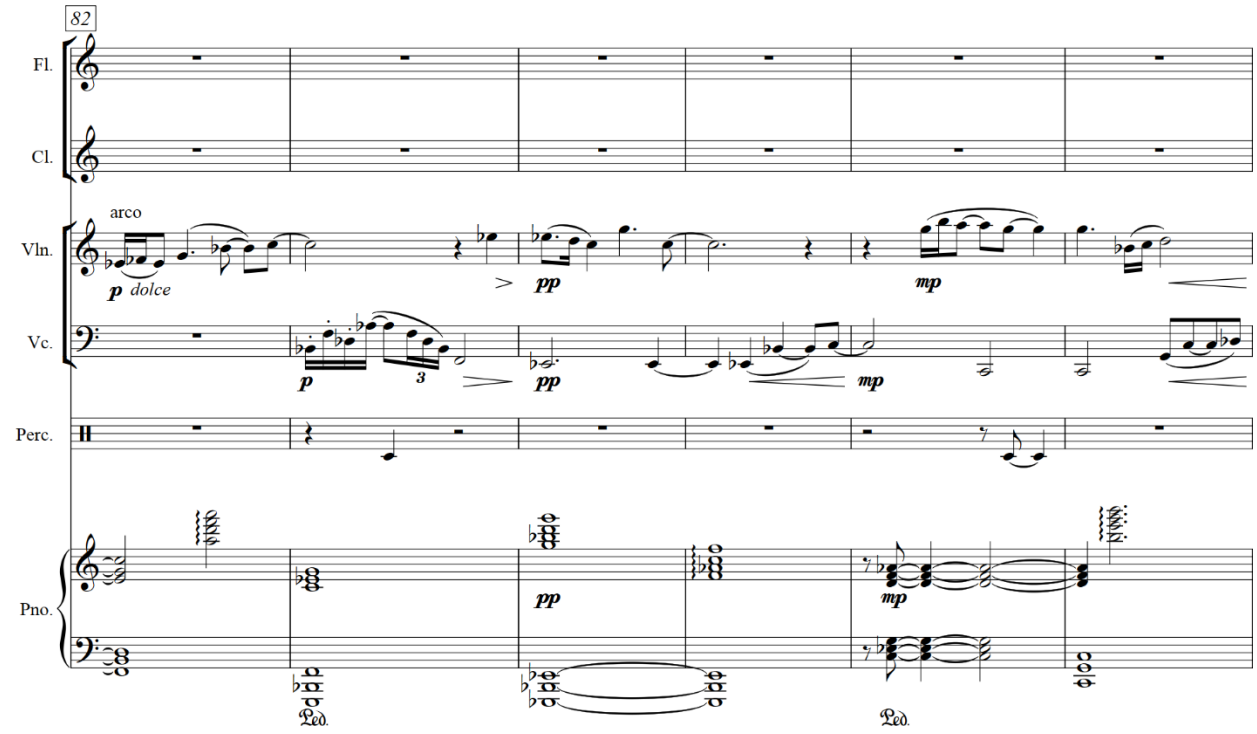

I
49
Fl.
Cl.
Vln.
Vc.
Mar.
Pno.
ff espress.
arco
pizz.
f
Ped.
53
mf
dim.
ff

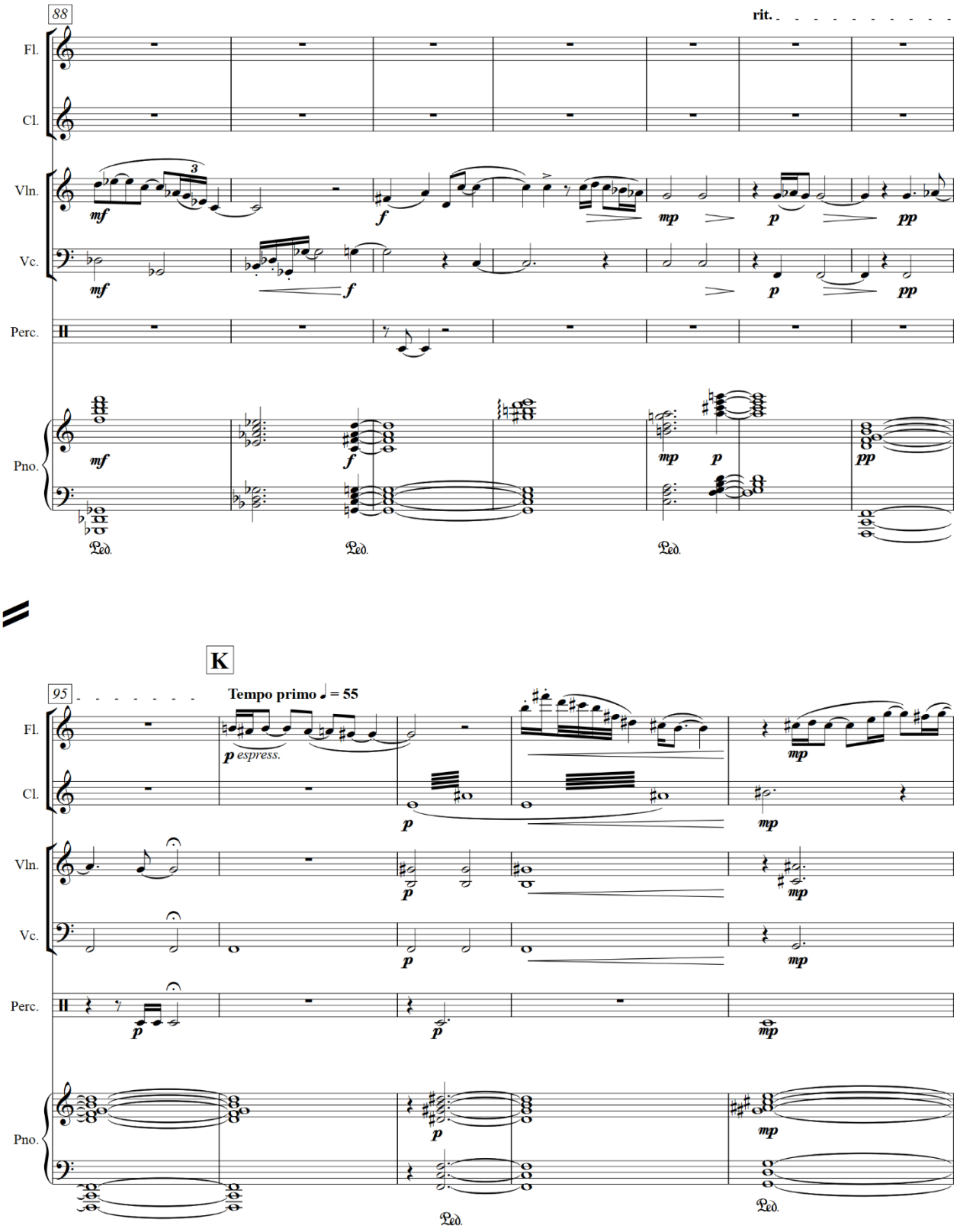

57
Fl.
Cl.
Vln.
pizz.
arco
Vc.
Mar.
Pno.
Ped.
Ped.
Ped.
60
rit.
Fl.
Cl.
Vln.
Vc.
Mar.
Pno.
Ped.
Ped.
Ped.

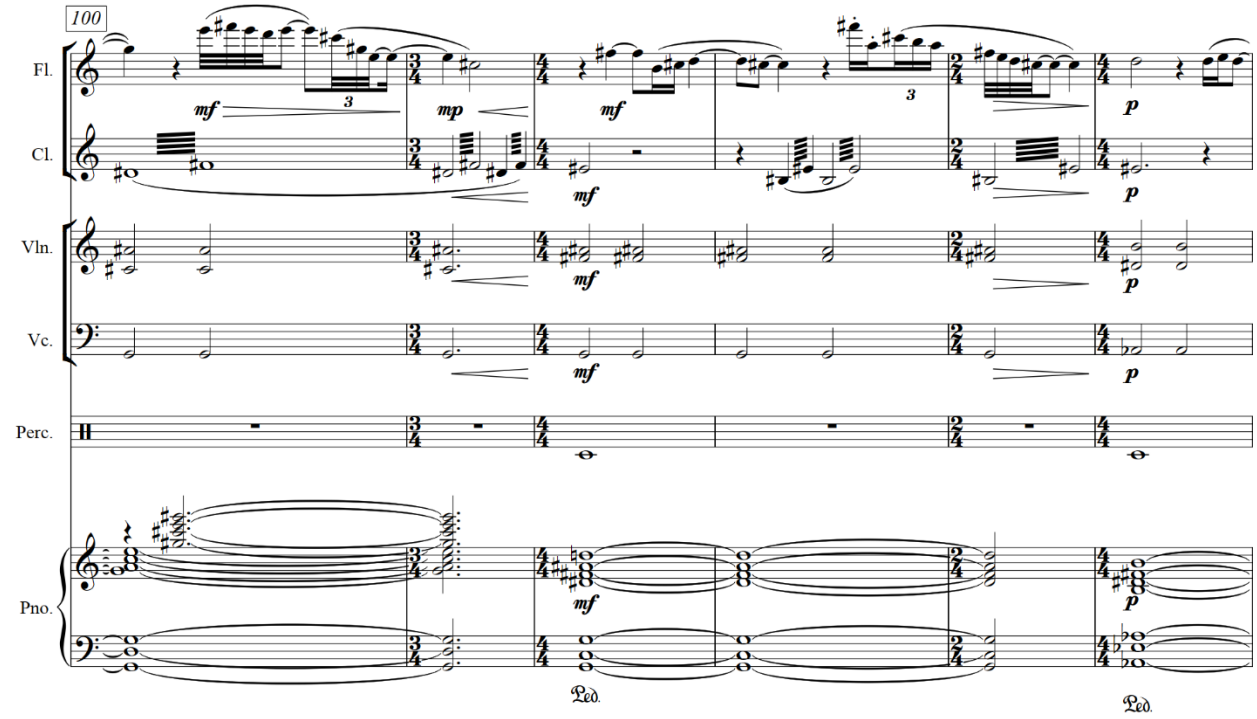

J
65
Poco Meno mosso ♩ = 48
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
pizz.
p dolce
pp
Bass Drum
p espress.
3
Ped.
Ped.
Ped.

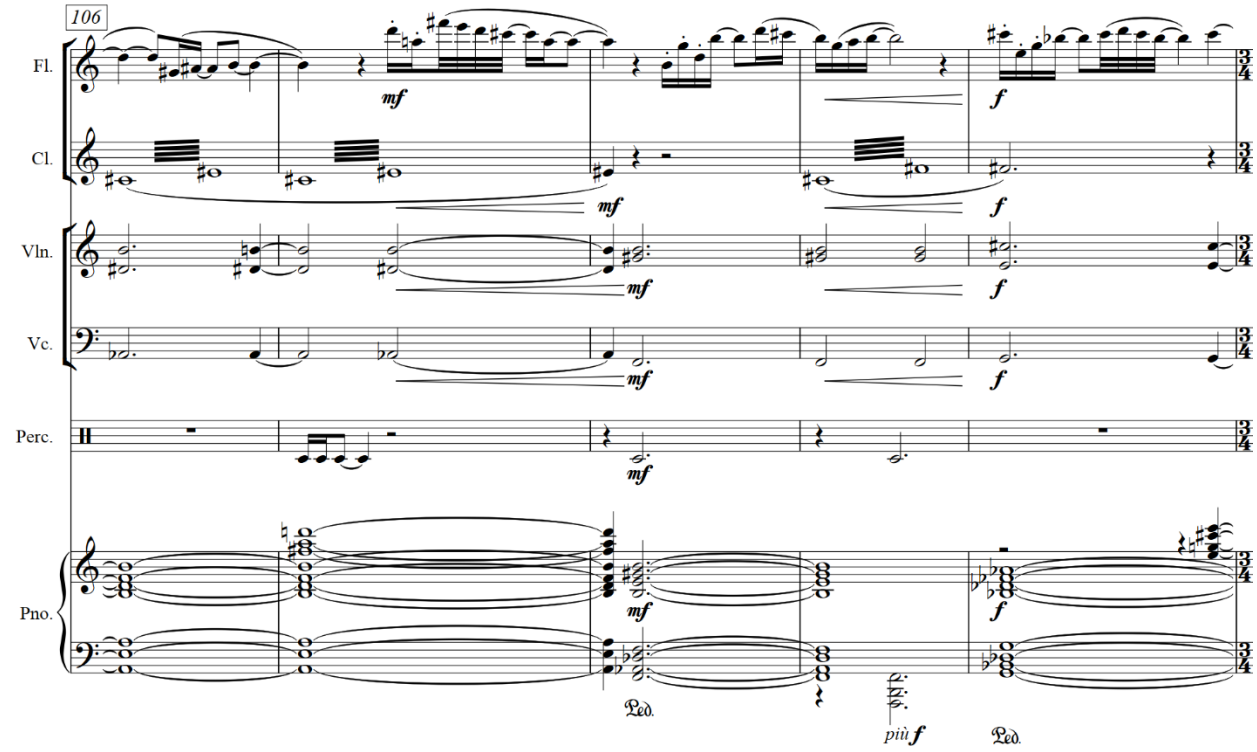

70
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
n
mf
mp
3
p
ppp
meno f
Ped.
Ped.

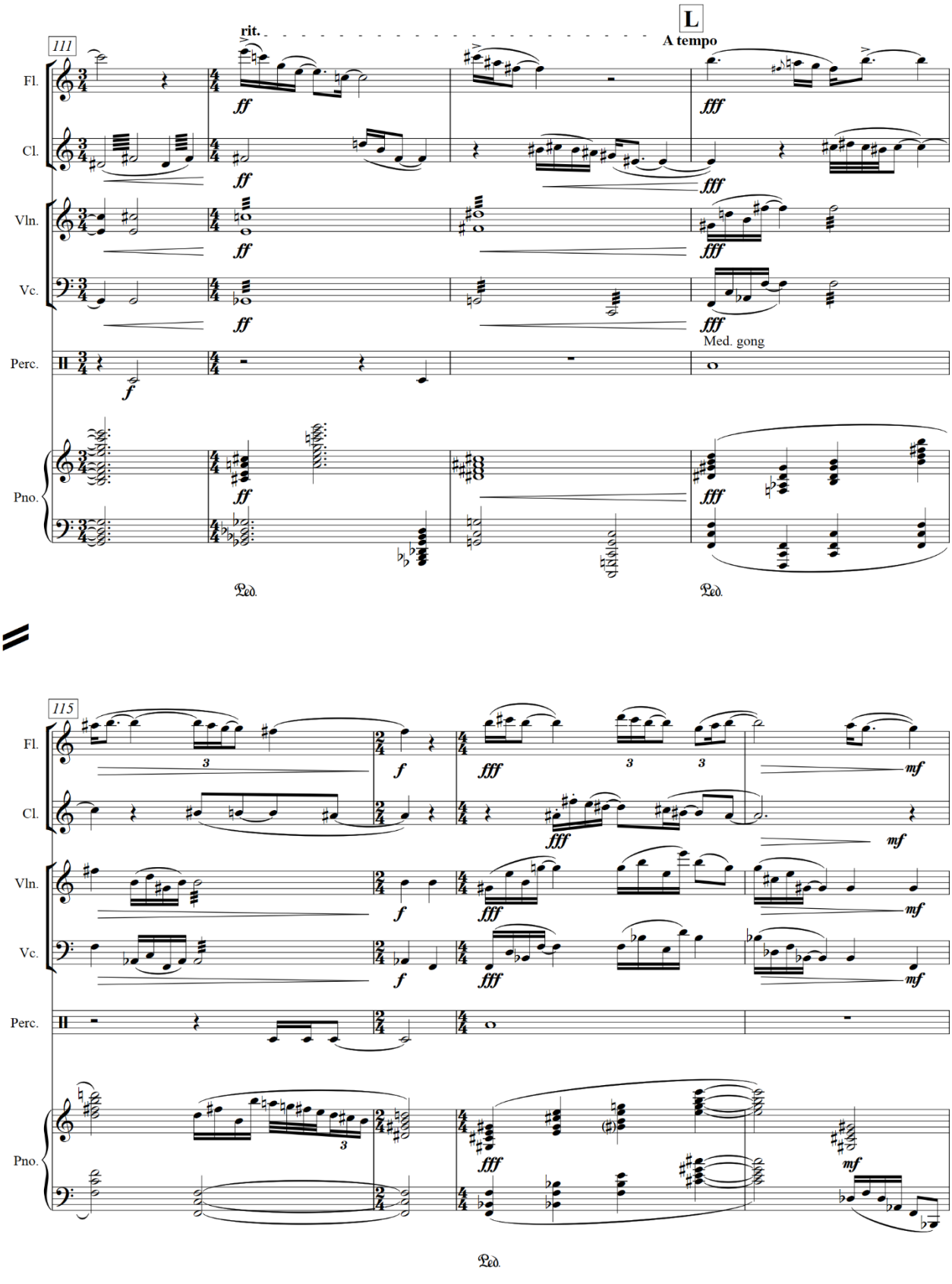

75
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
p
mp
3
f
pp
Ped.

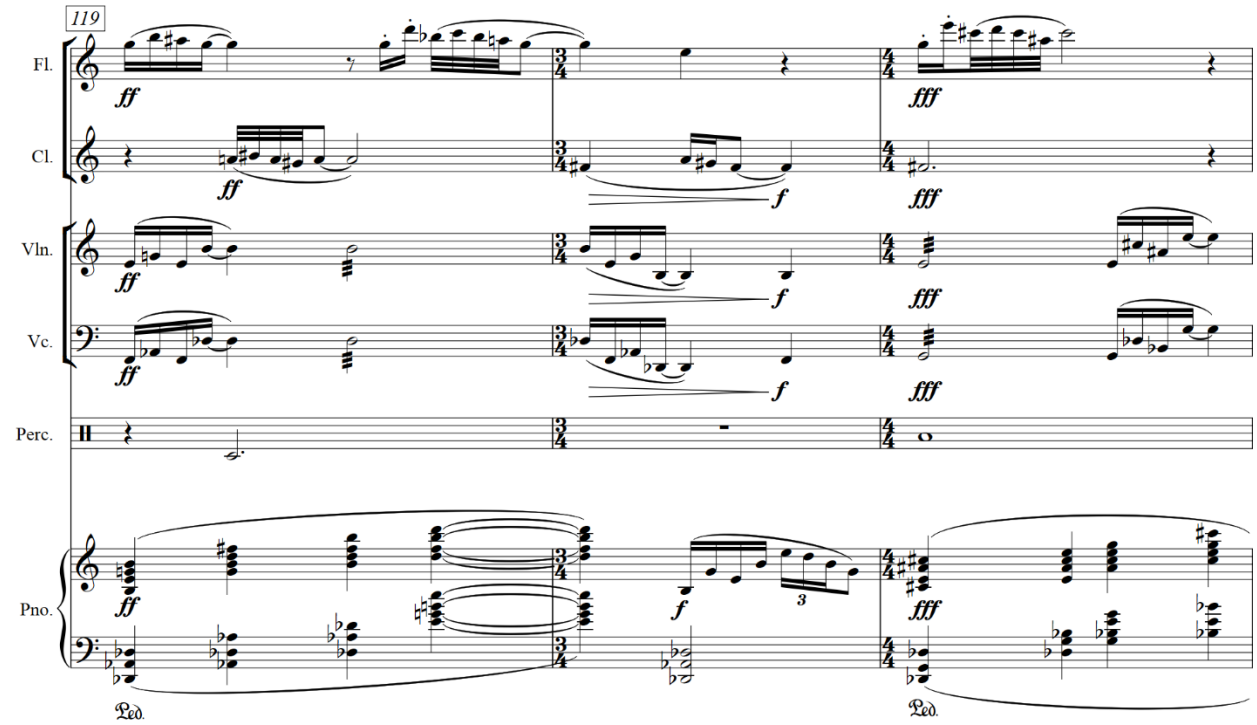

82
Fl.
Cl.
arco
Vln.
Vc.
Perc.
Pno.
p dolce
pp
mp
3
Ped.

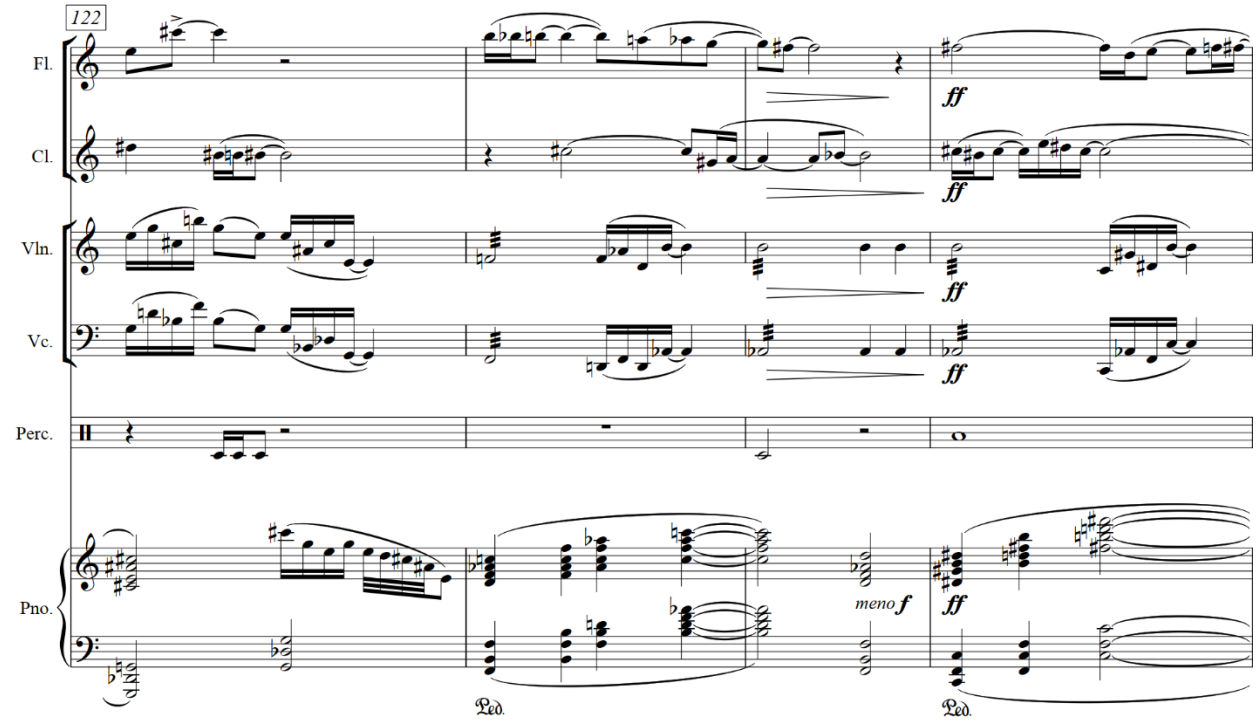

88
rit.
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
f
mp
p
pp
Ped.
K
95
Tempo primo ♩ = 55
p espress.

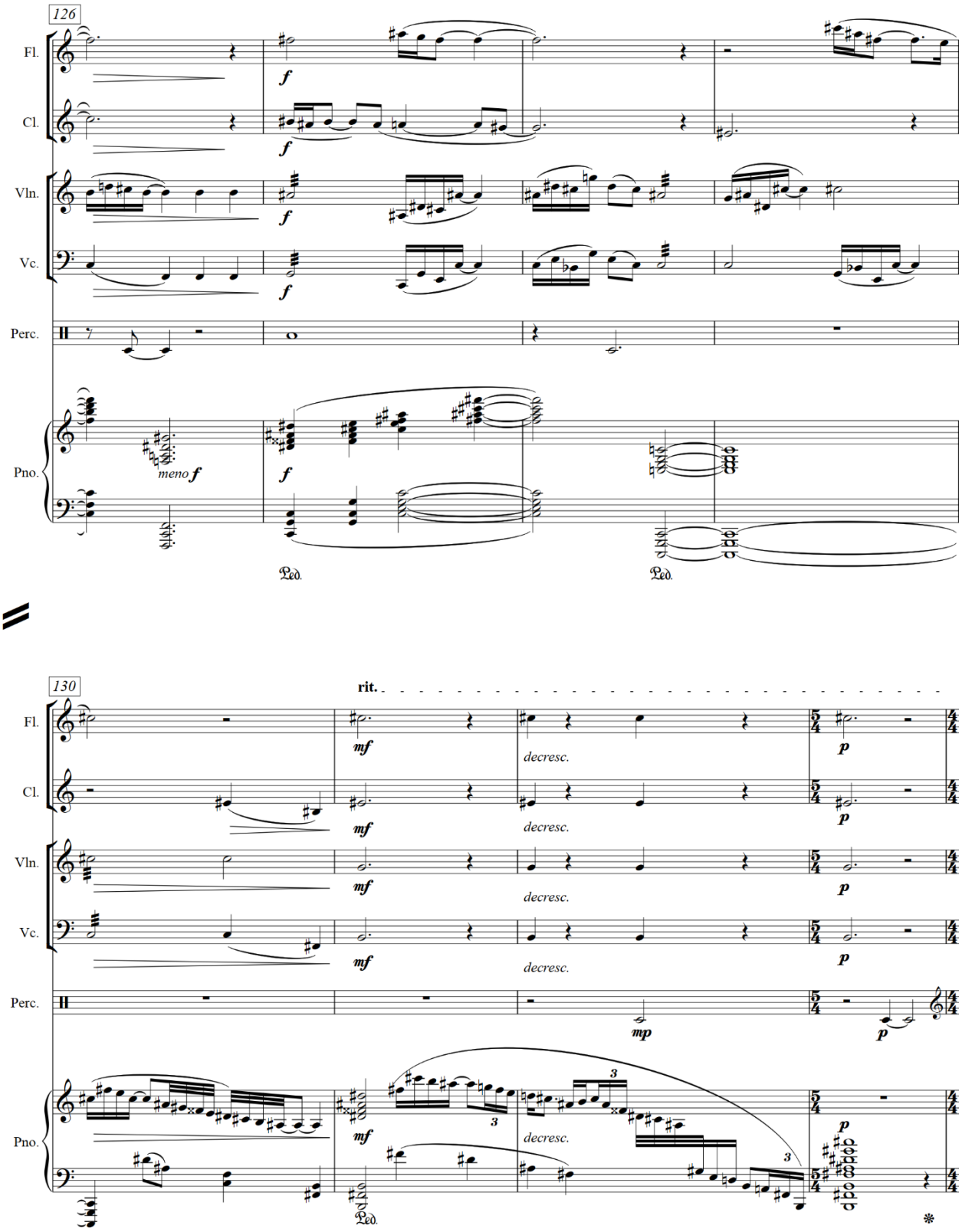

100
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
mp
p
3
Ped.

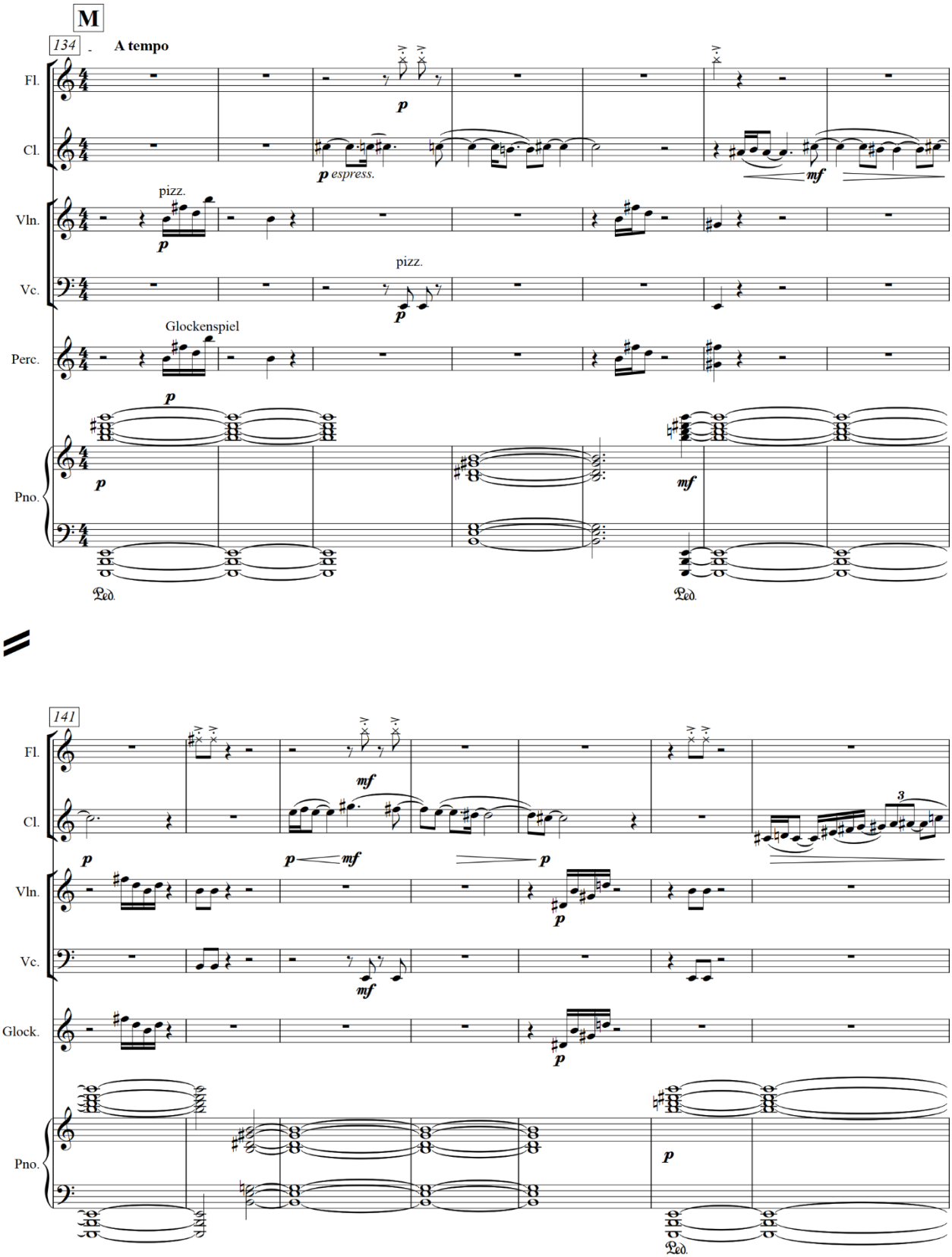

106
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
f
più f
3
Ped.

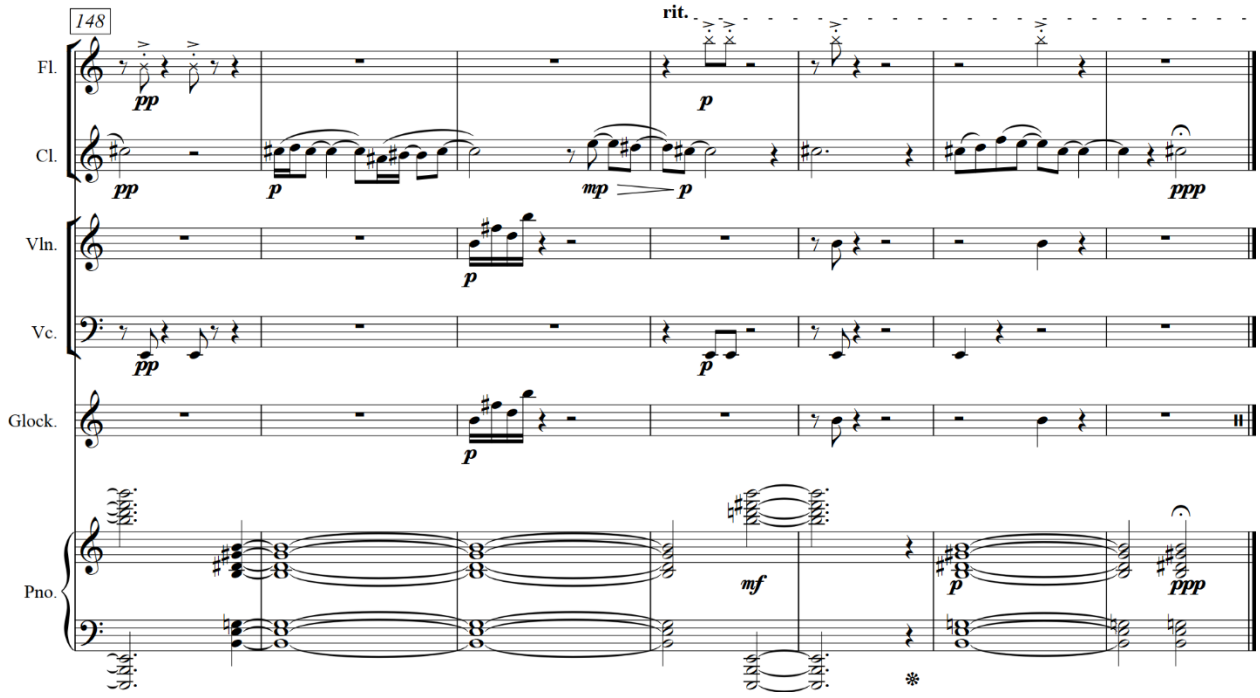

111
rit.
L
A tempo
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
ff
fff
f
Med. gong
Ped.
115
mf

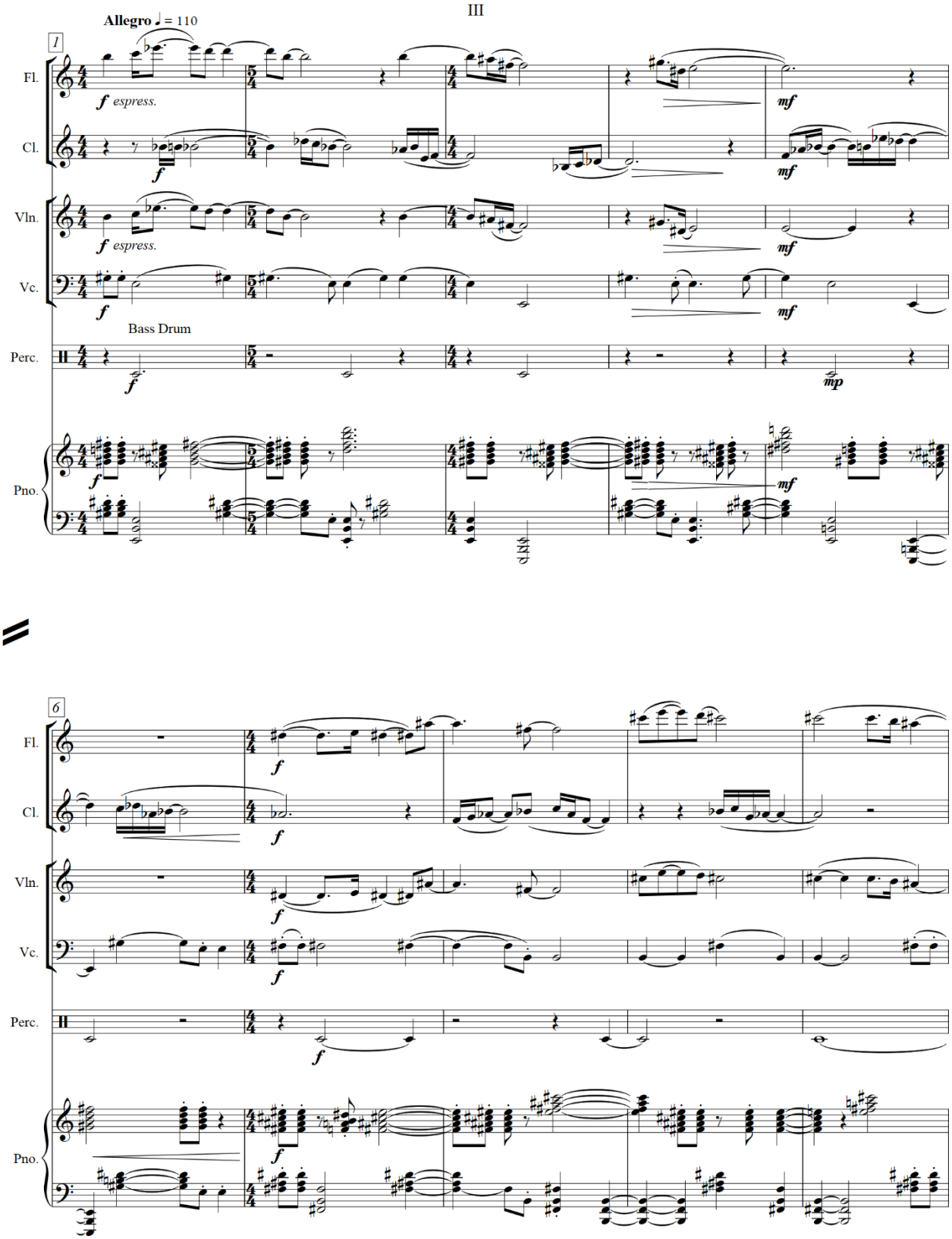

119
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
ff
fff
f
3
Ped.

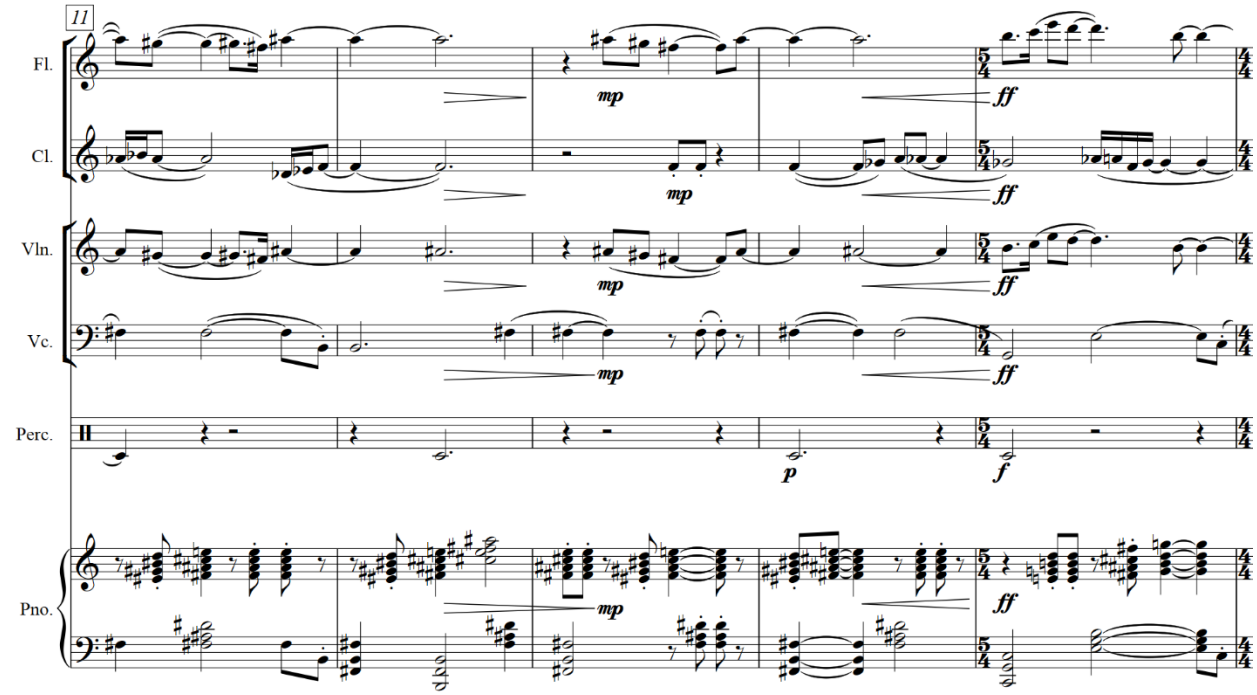

122
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
ff
meno f
Ped.

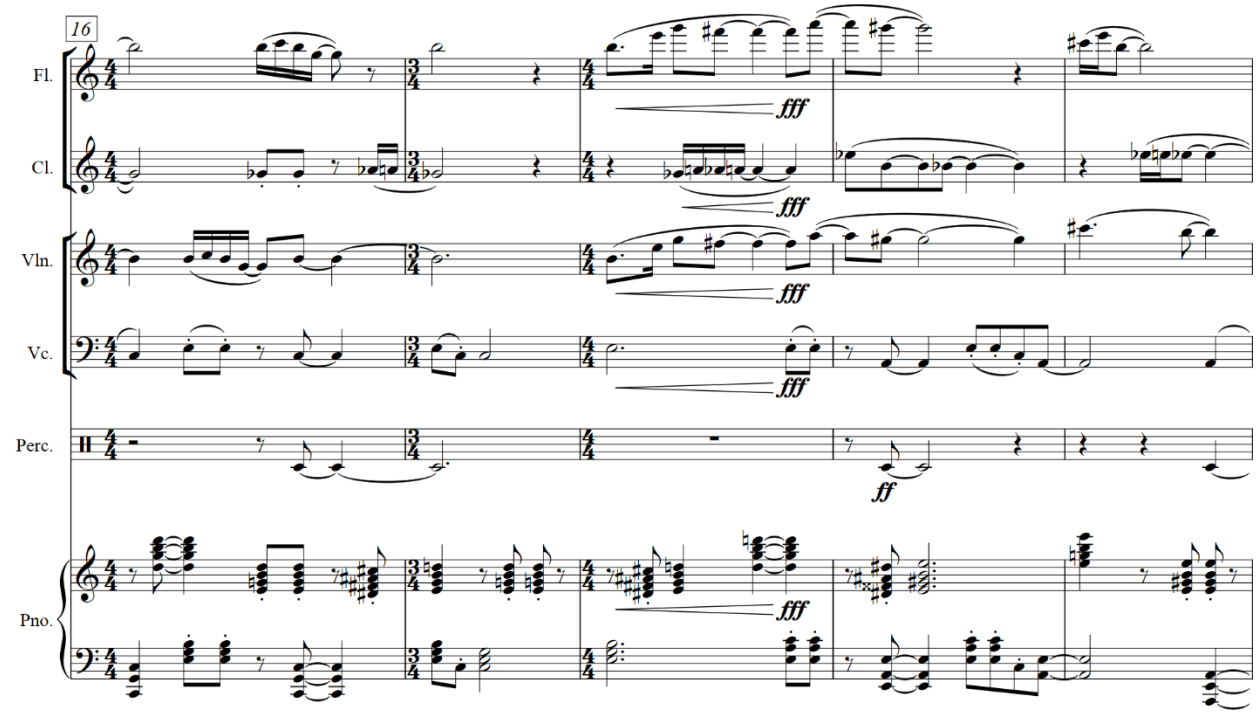

126
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
meno f
Ped.
130
rit.
mf
decresc.
p
mp

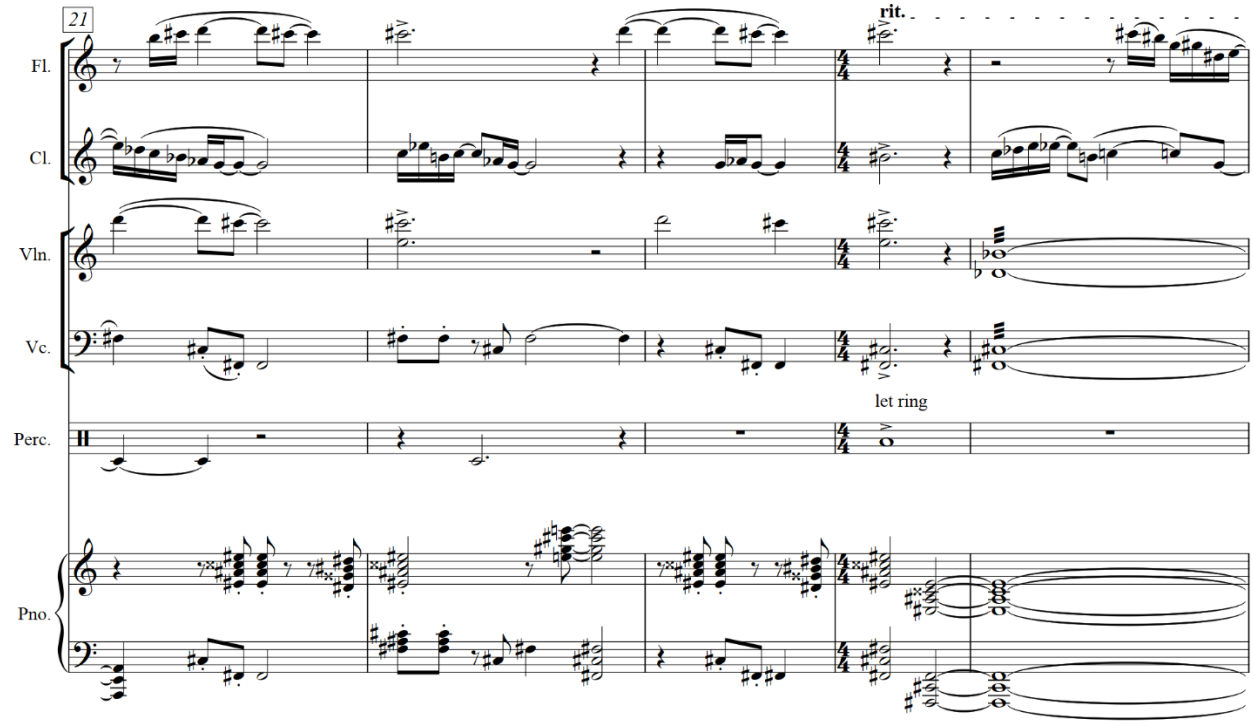

M
134
A tempo
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
p
p espress.
mf
pizz.
Glockenspiel
Ped.
141
Glock.
3

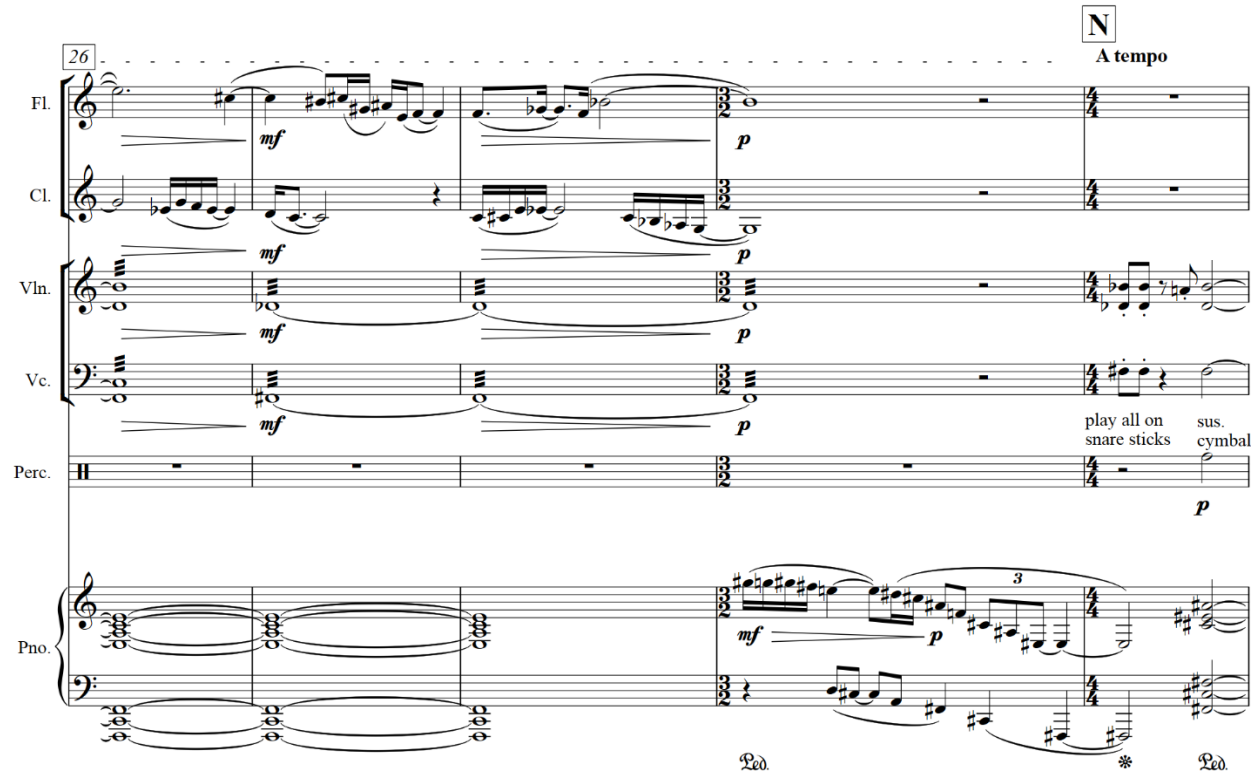

148
rit.
Fl.
Cl.
Vln.
Vc.
Glock.
Pno.
pp
p
mp
ppp
mf

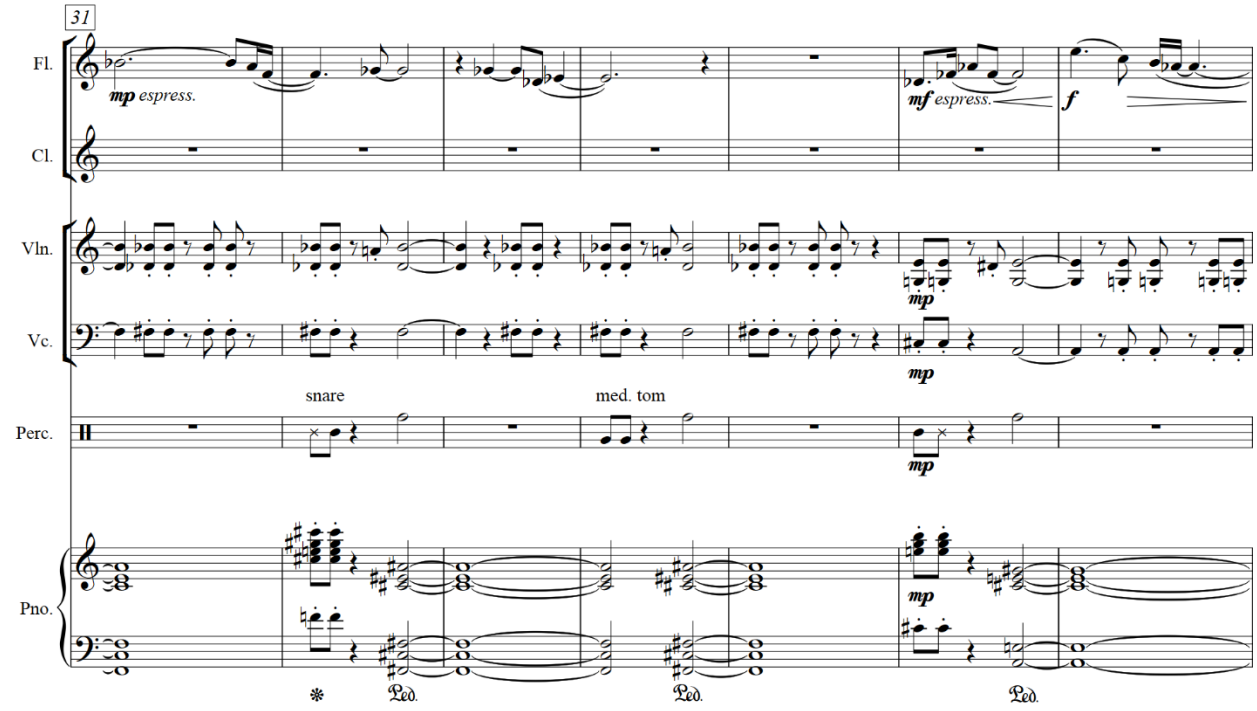

Allegro ♩ = 110
1
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f espress.
mf
Bass Drum
mp
6

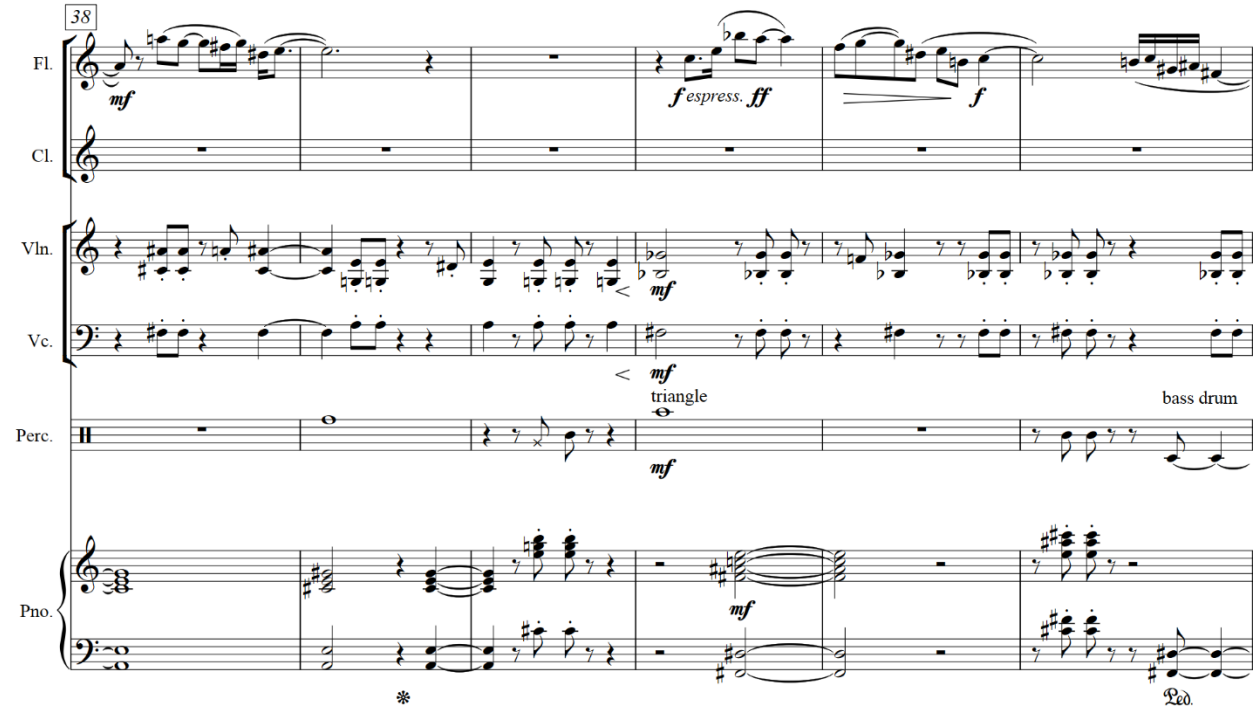

11
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mp
ff
p
f

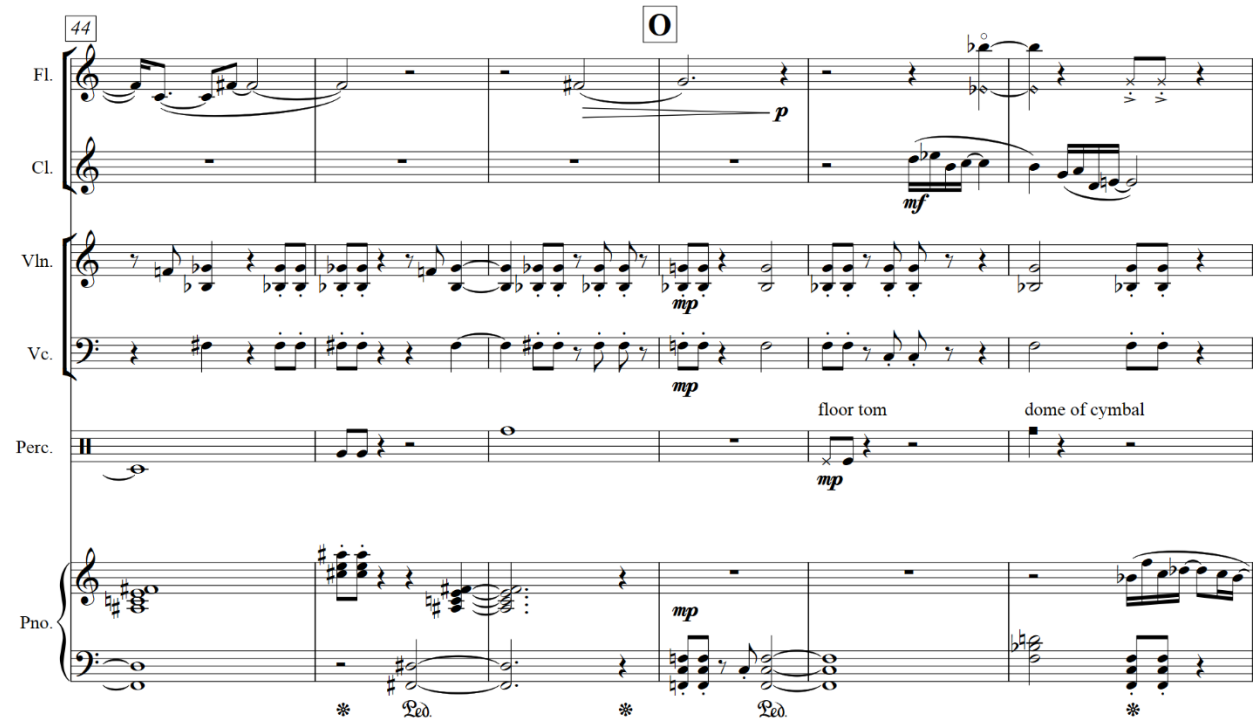

16
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
fff
ff

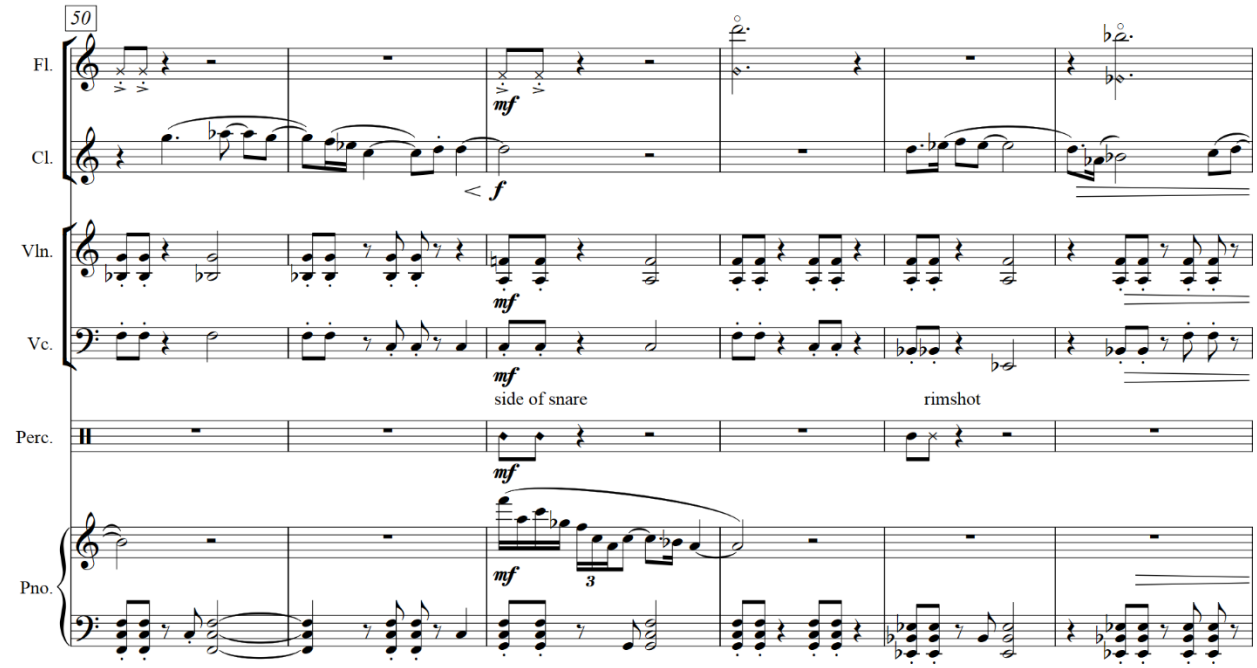

21
rit.
Fl.
Cl.
Vln.
Vc.
let ring
Perc.
Pno.

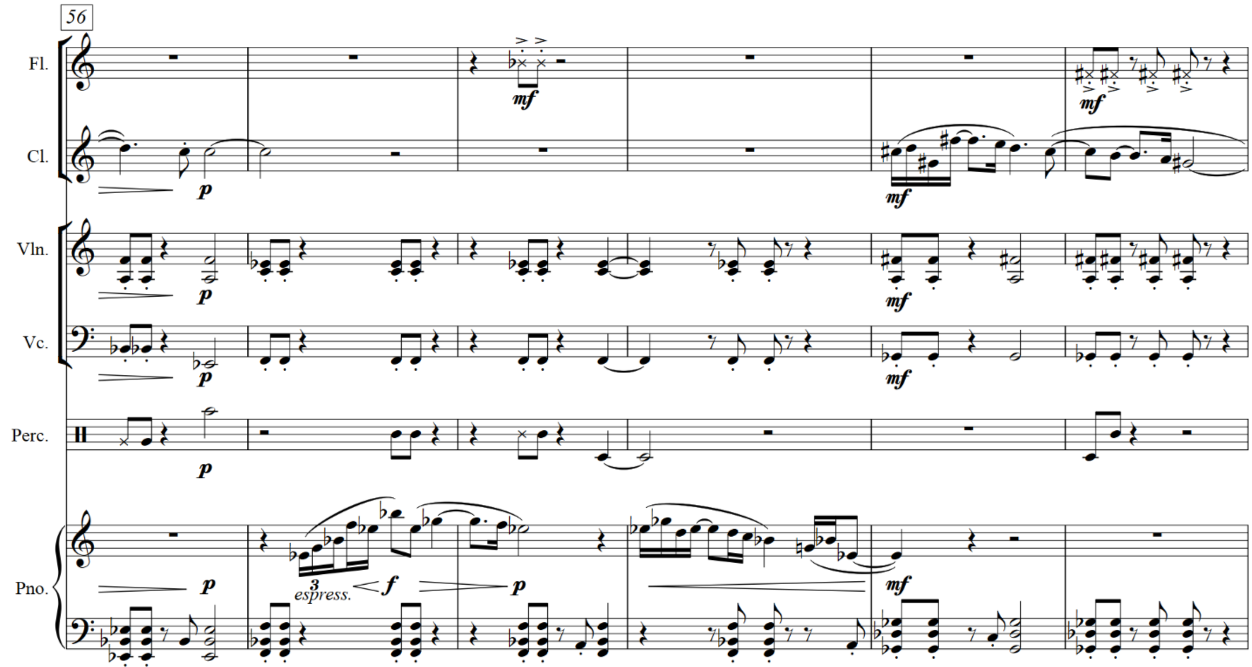

26
N
A tempo
Fl.
mf
p
Cl.
mf
p
Vln.
mf
p
Vc.
mf
p
play all on snare sticks
sus. cymbal
Perc.
p
Pno.
mf
p
3
Ped.
Ped.

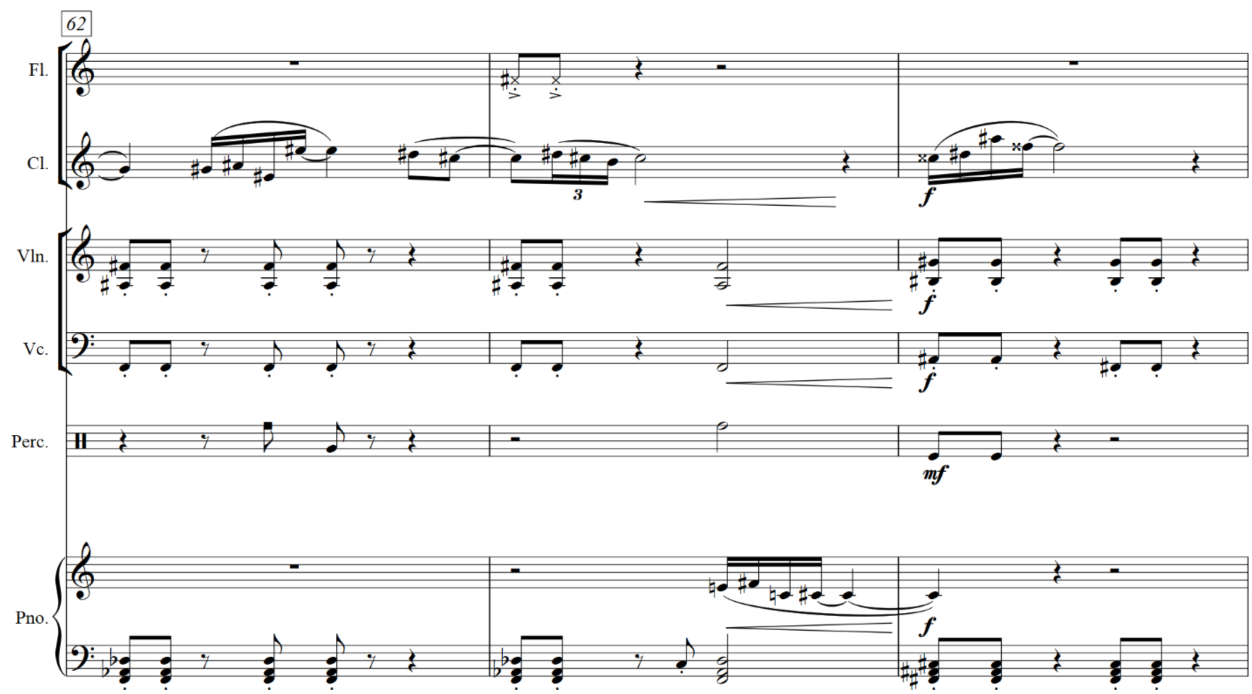

31
Fl.
mp espress.
mf espress.
f
Cl.
Vln.
mp
Vc.
mp
snare
med. tom
Perc.
mp
Pno.
mp
Ped.
Ped.
Ped.

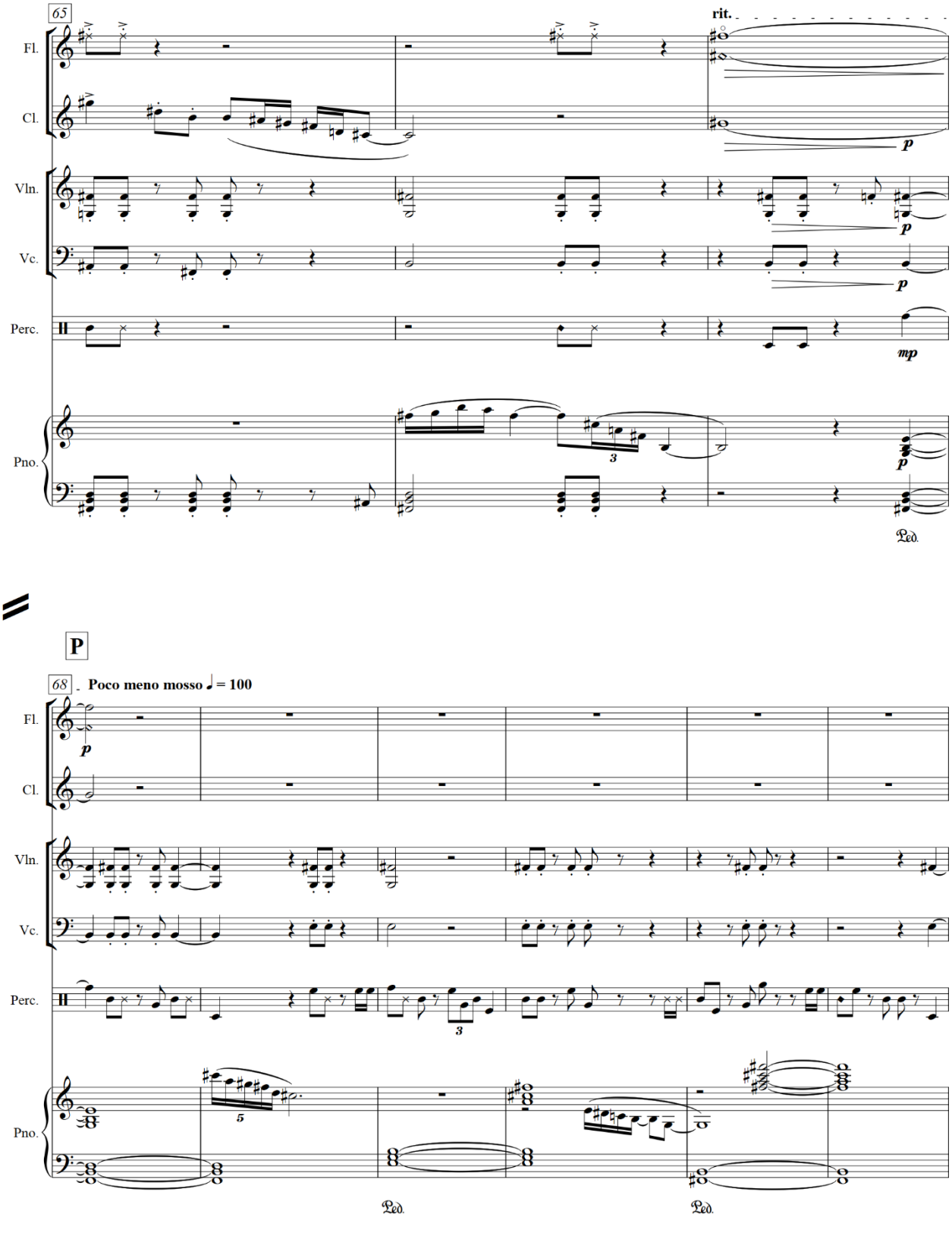

38
Fl.
mf
f espress. ff
f
Cl.
Vln.
mf
Vc.
mf
triangle
bass drum
Perc.
mf
Pno.
mf
Ped.

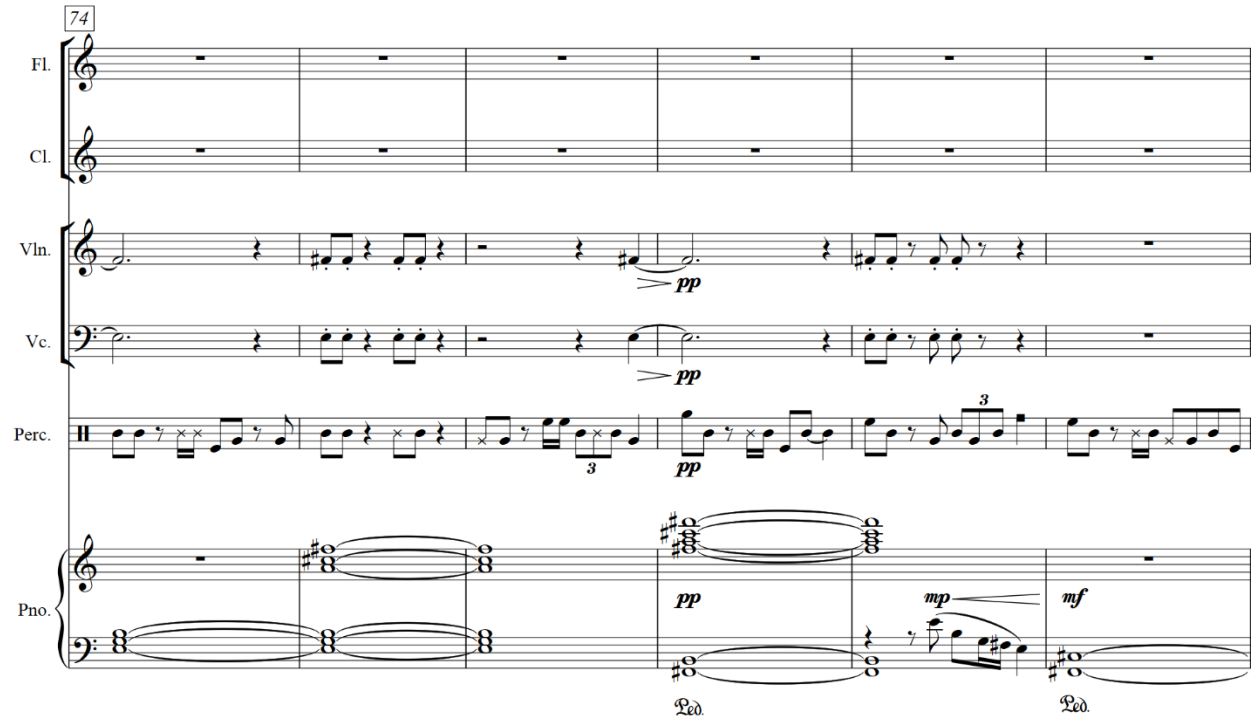

44
O
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
p
mf
mp
mp
floor tom
dome of cymbal
mp
Ped.
Ped.

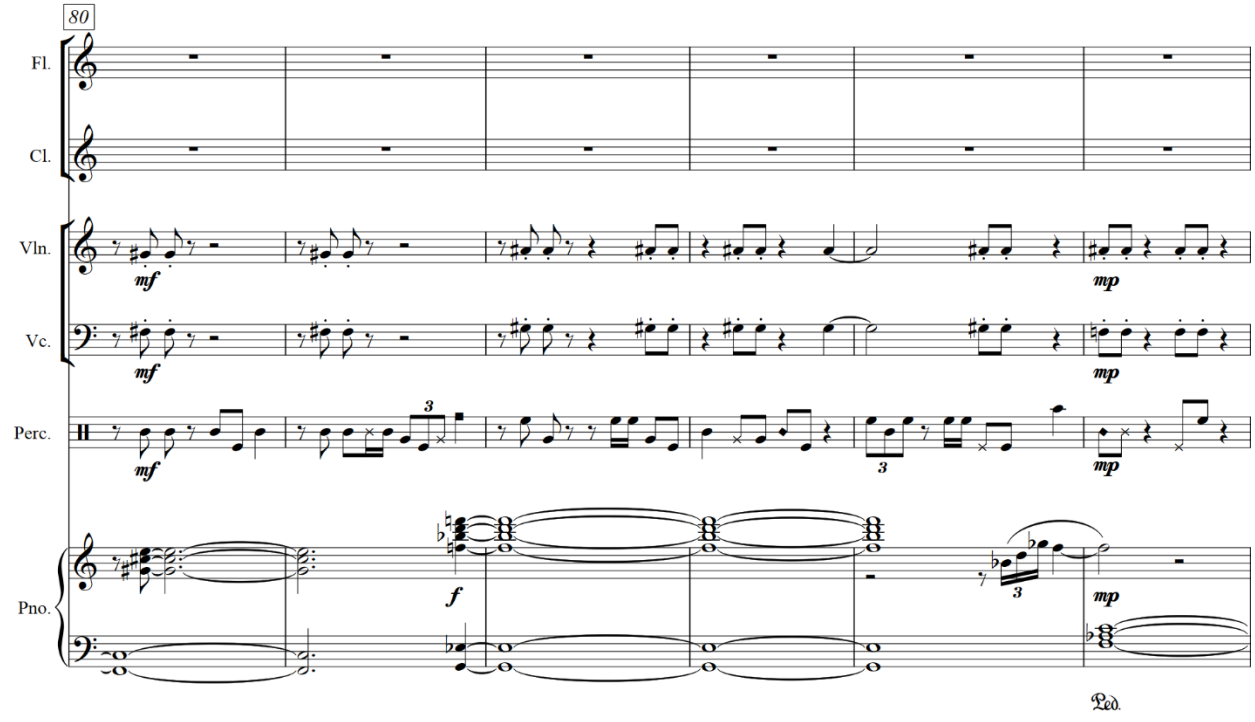

50
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
f
mf
mf
side of snare
rimshot
mf
mf
3

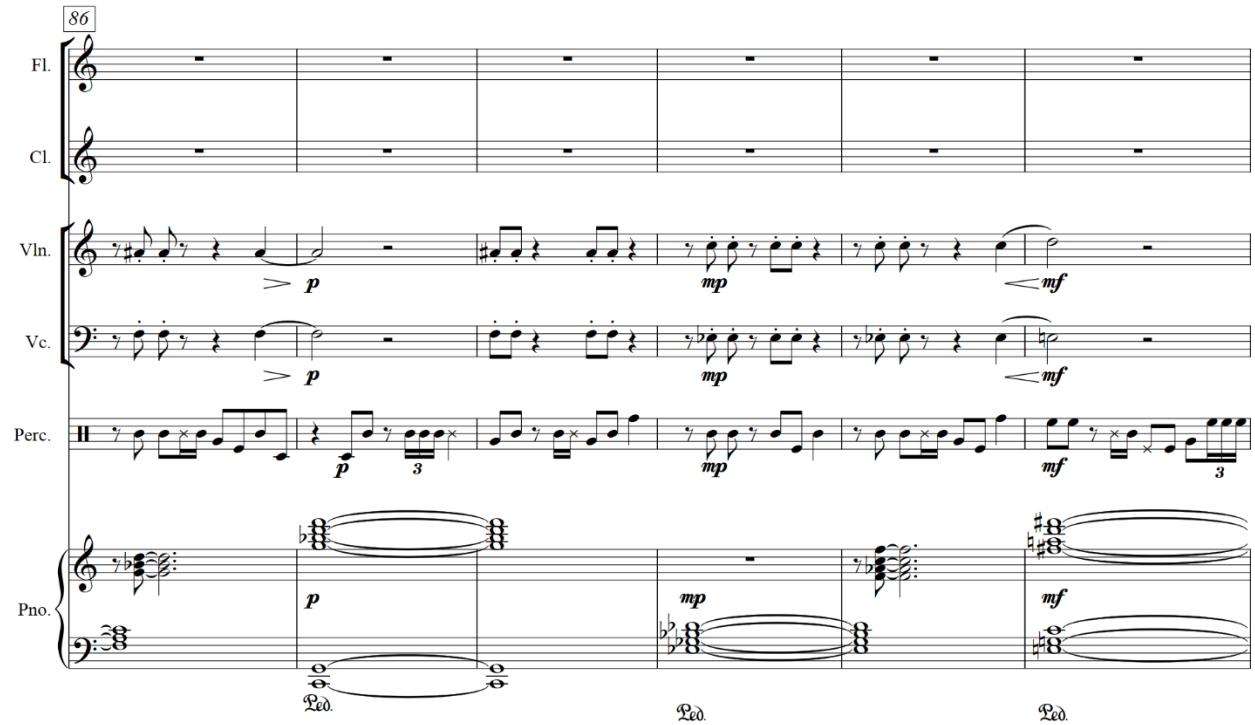

56
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
p
espress.
f
3

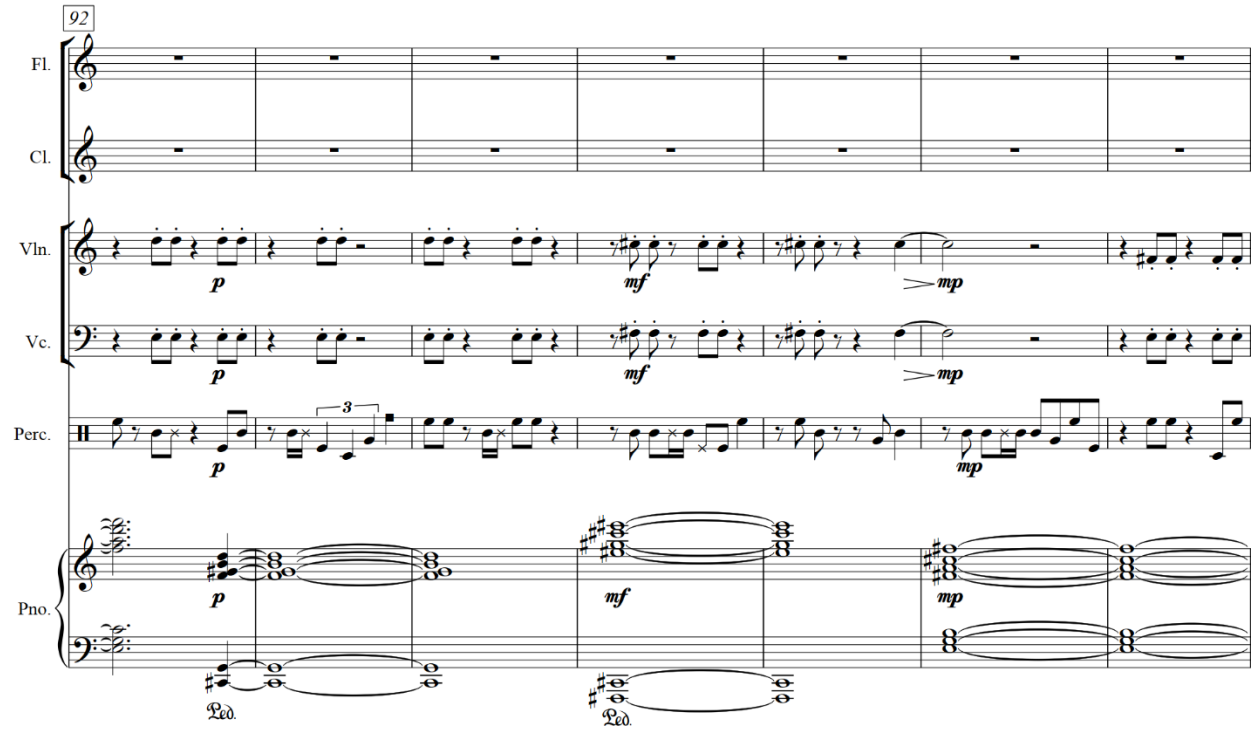

62
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
mf
3

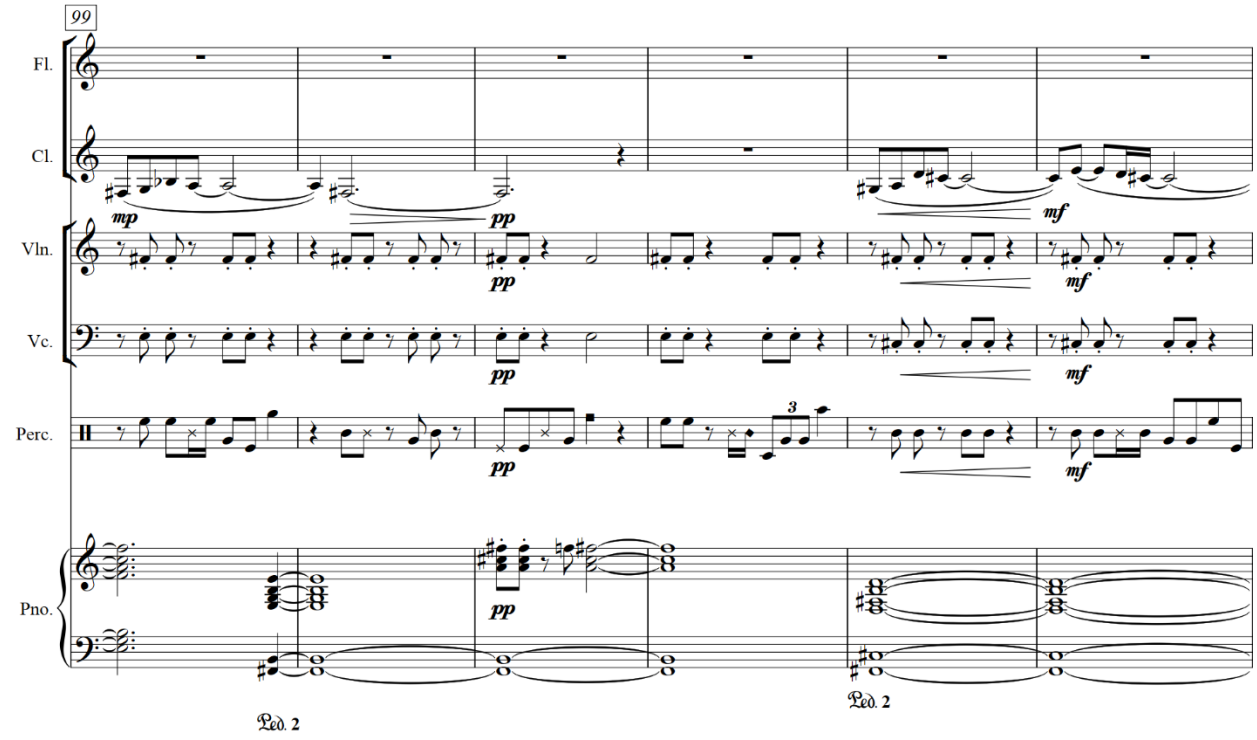

65
rit.
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
p
mp
3
Ped.
P
68
Poco meno mosso ♩ = 100
5
Ped.
Ped.

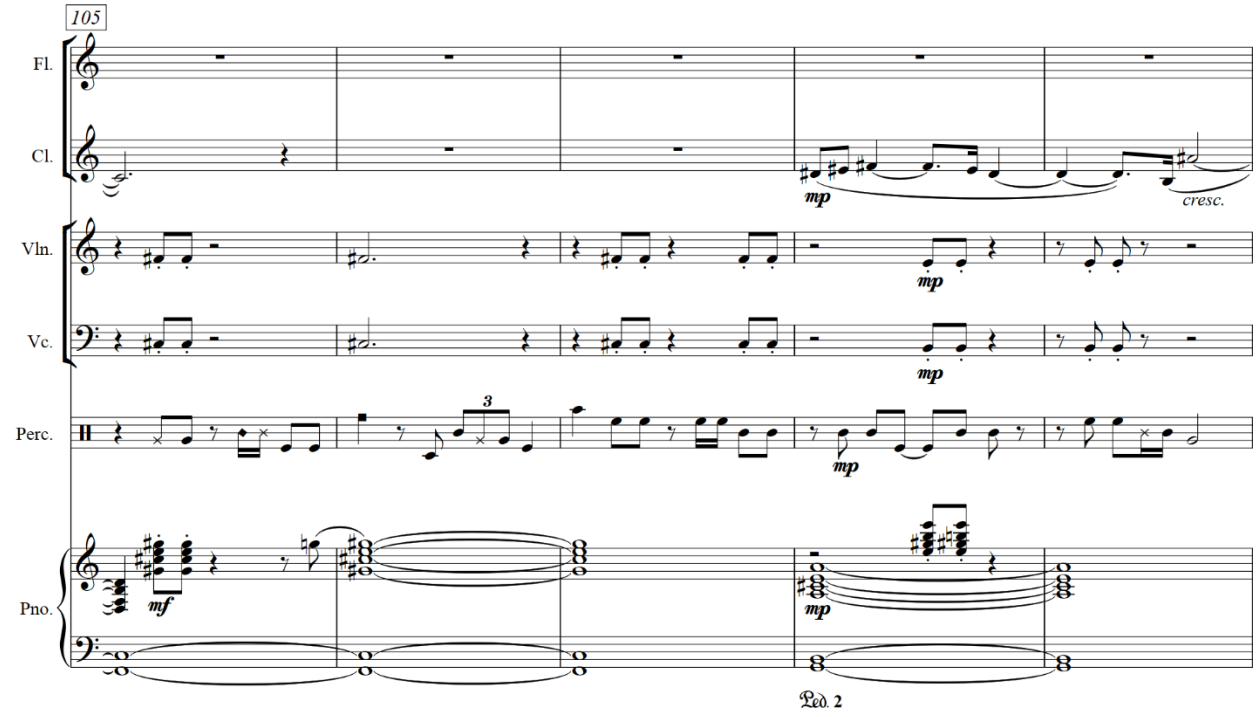

74
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
pp
pp
pp
pp
mp
mf
Ped.
Ped.

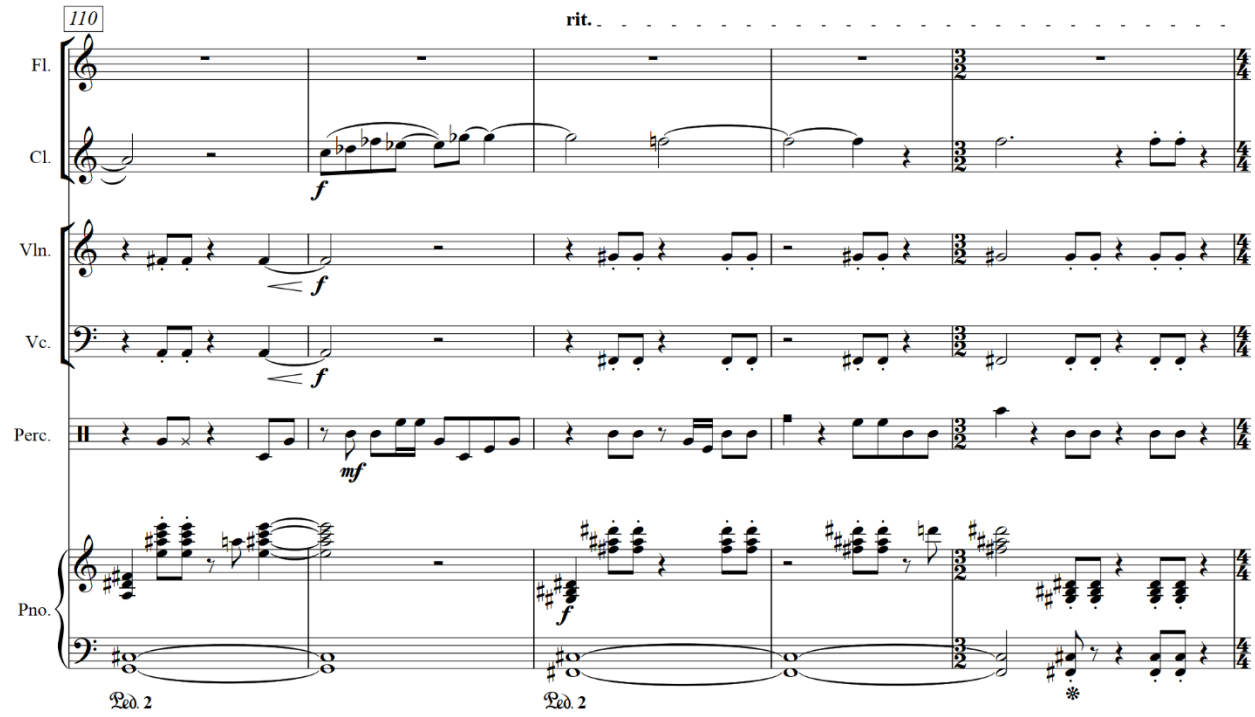

80
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
mf
mf
mp
mp
mp
f
mp
Ped.

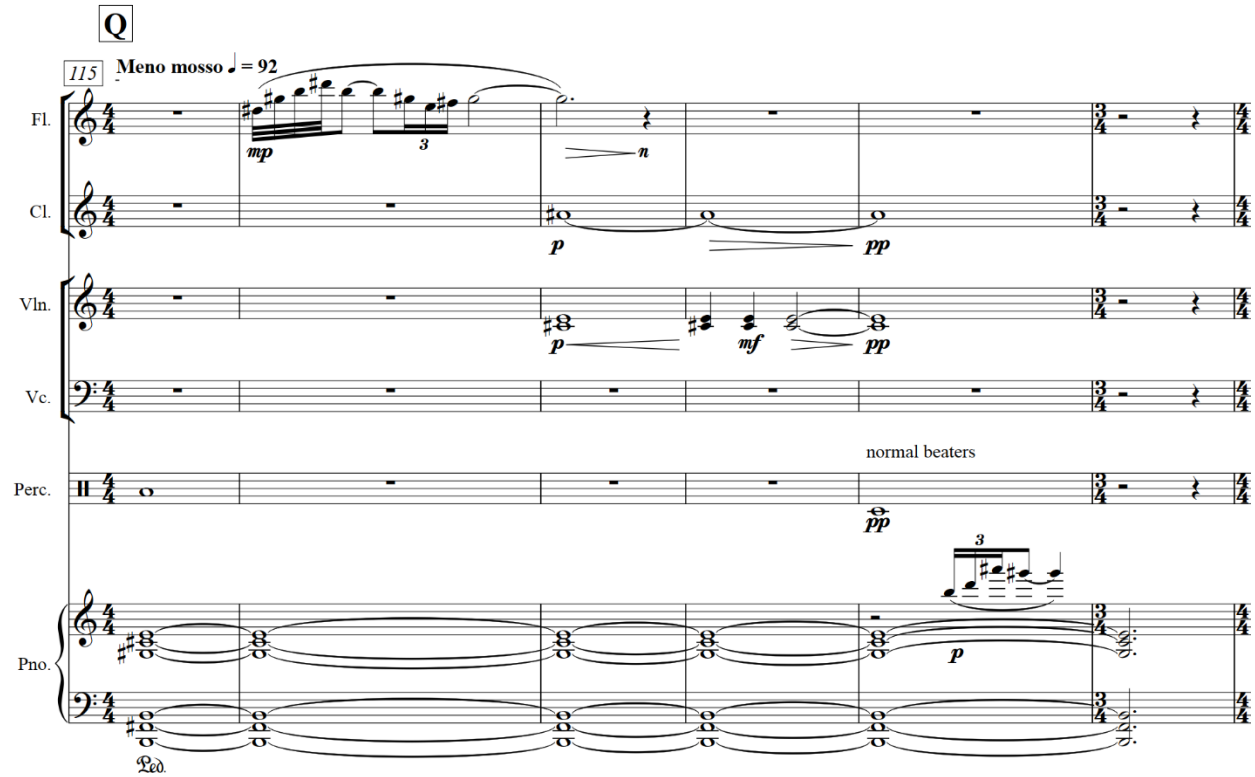

86
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
p
mp
mf
3
Ped.

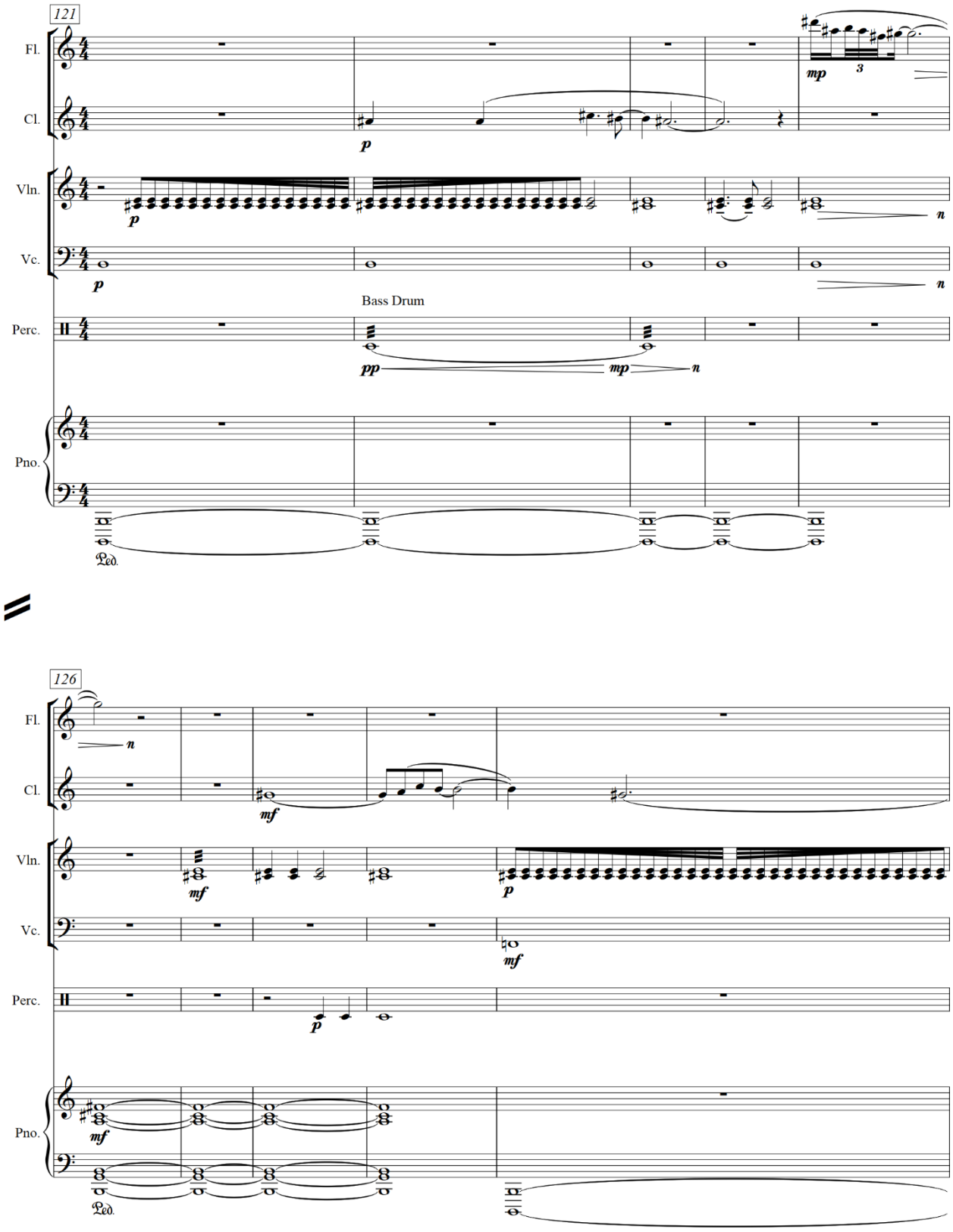

92
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
p
mf
mp
3
Ped.

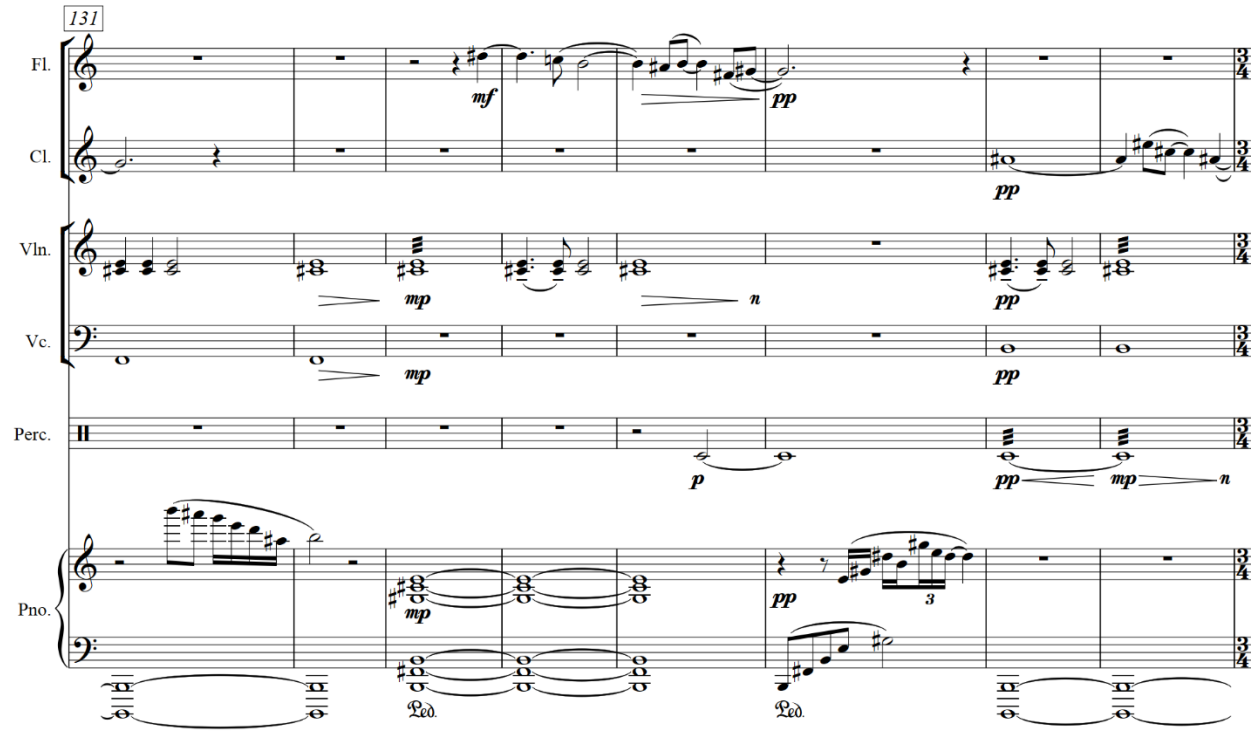

99
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mp
pp
mf
3
Ped. 2

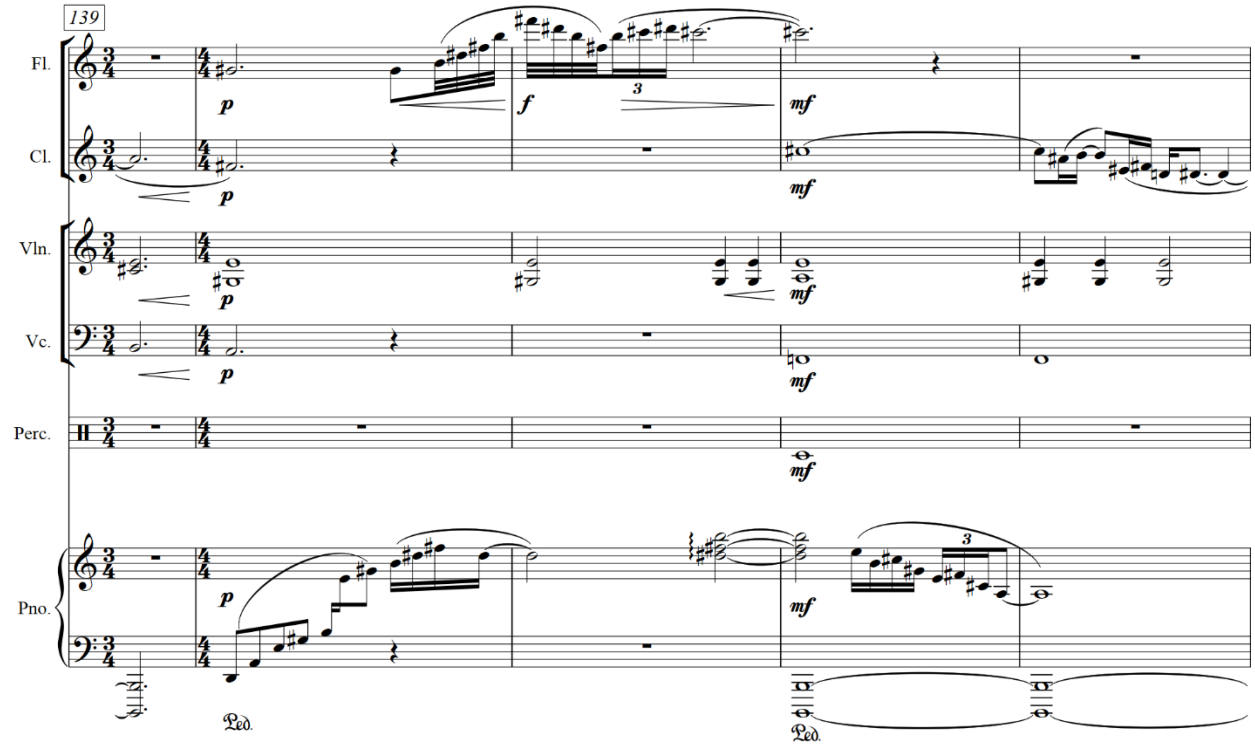

105
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mp
mf
cresc.
3
Ped. 2

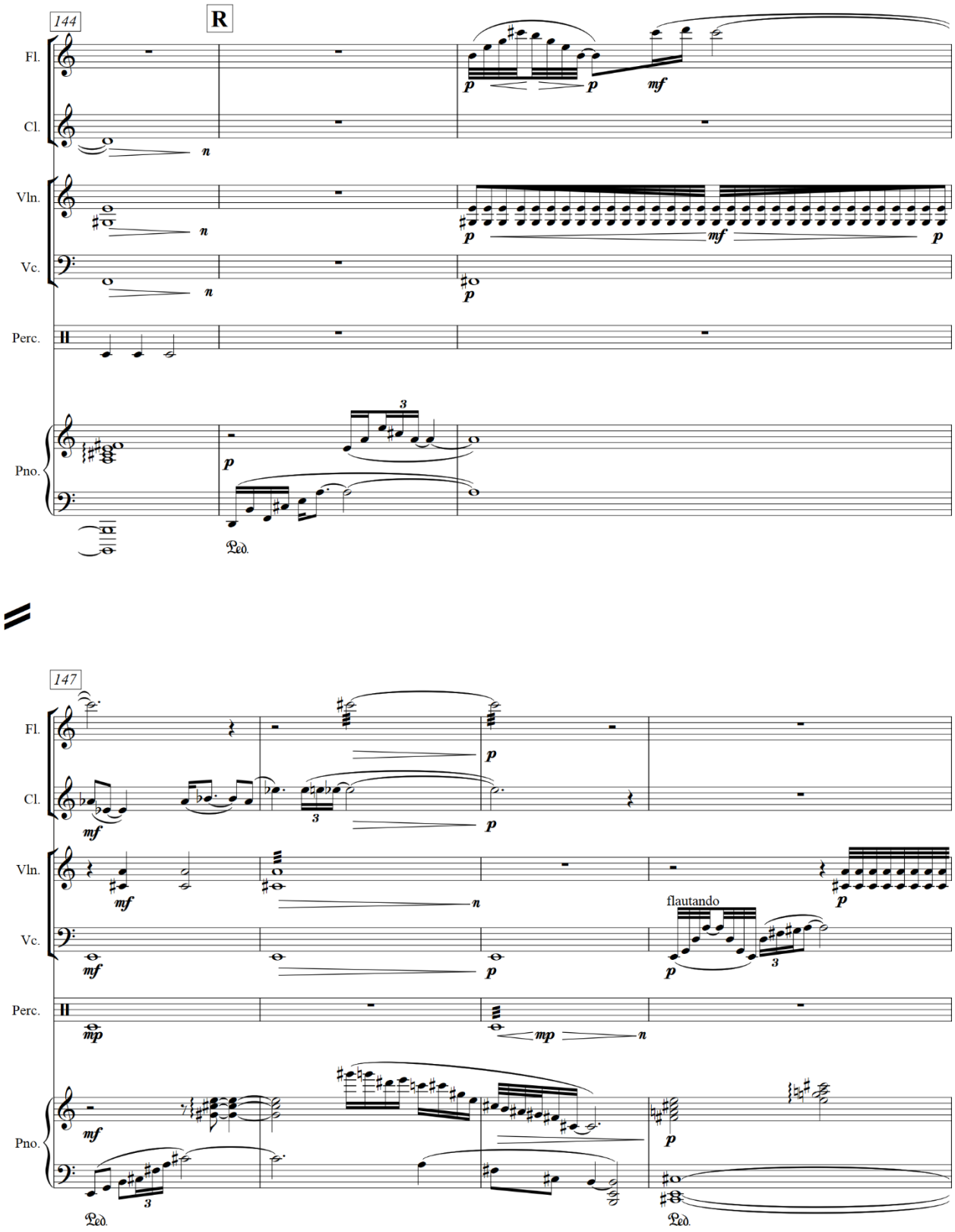

110
rit.
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
mf
Ped. 2
Ped. 2

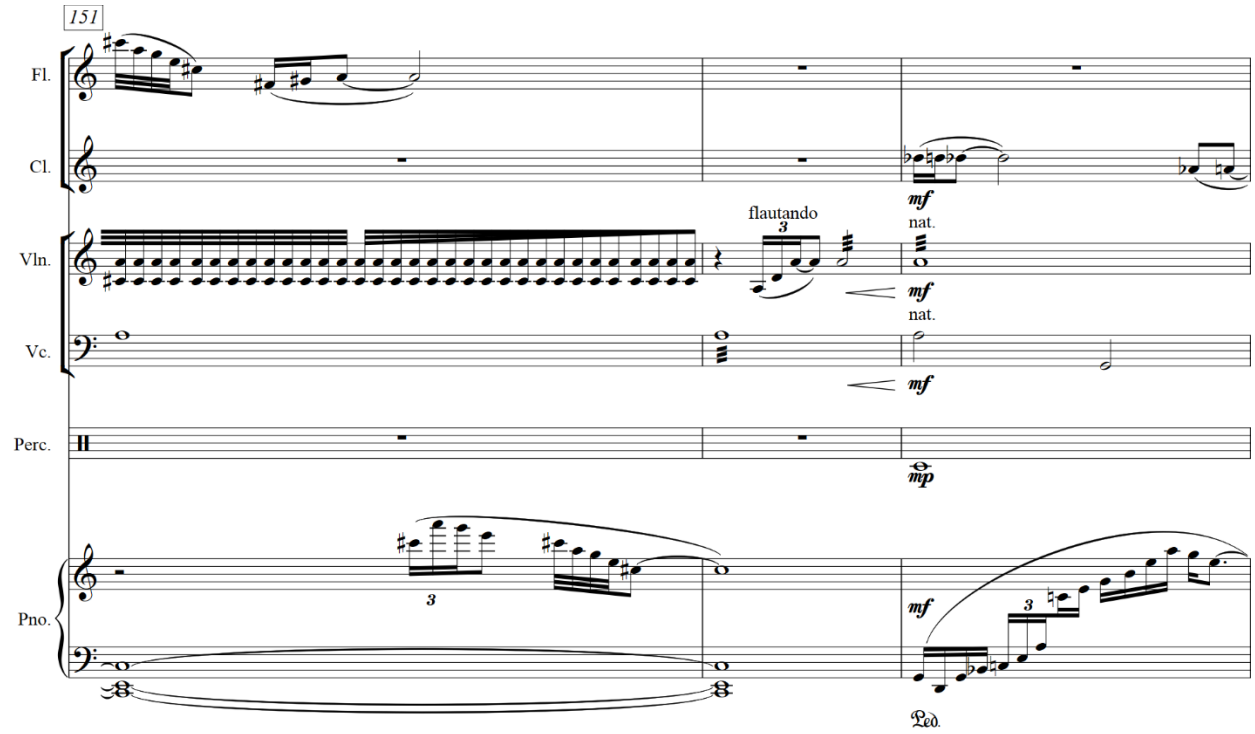

Q
115
Meno mosso ♩ = 92
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mp
3
n
p
pp
mf
normal beaters
Ped.

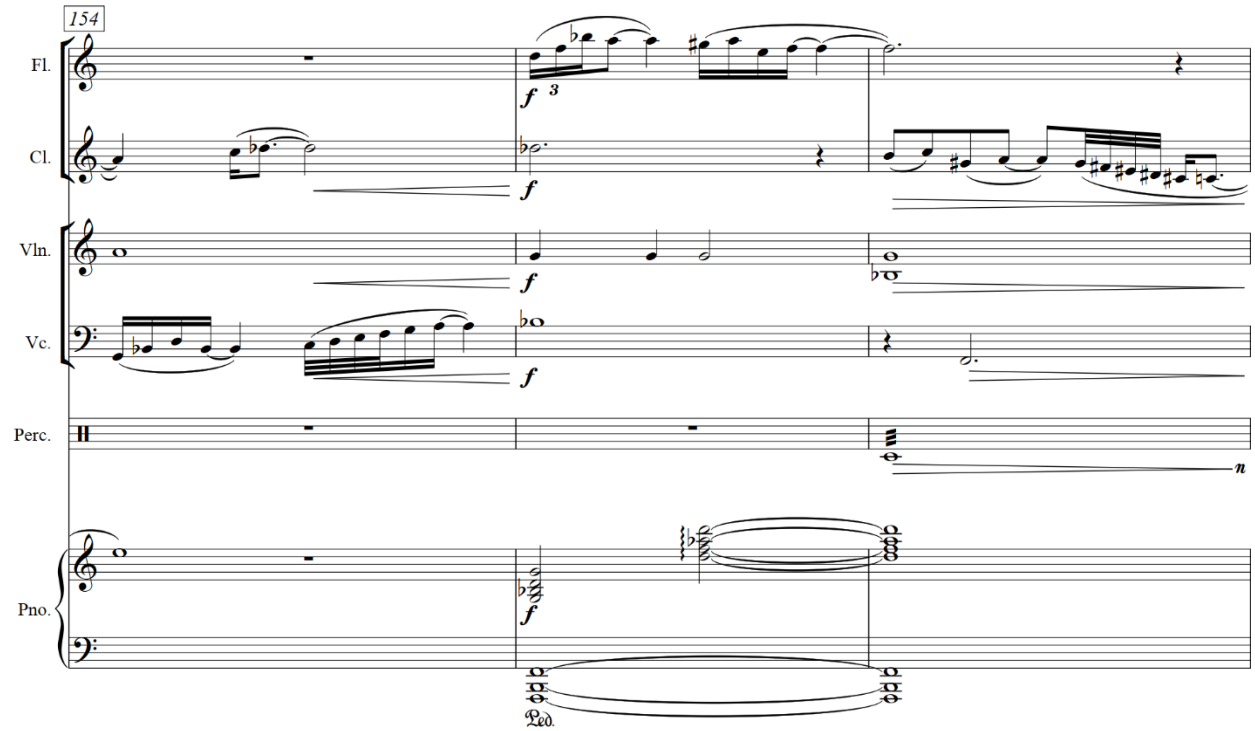

121
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
Bass Drum
126

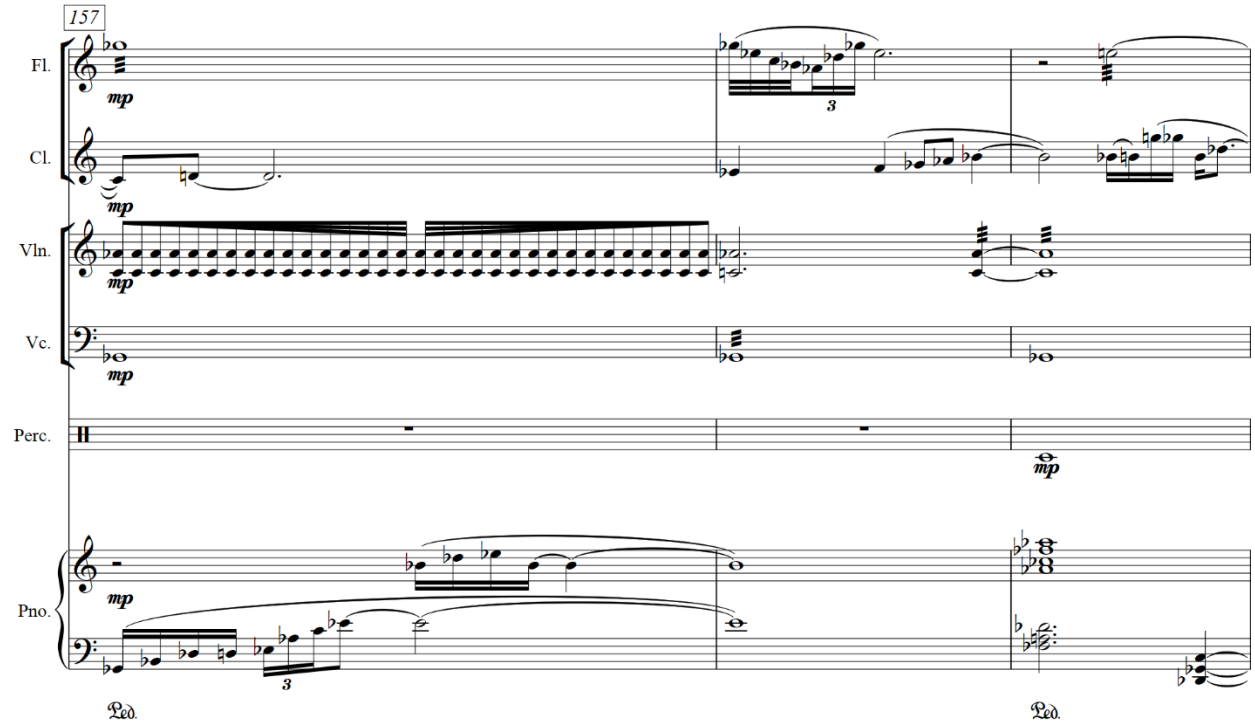

131
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
pp
mp
n
p
3
Ped.

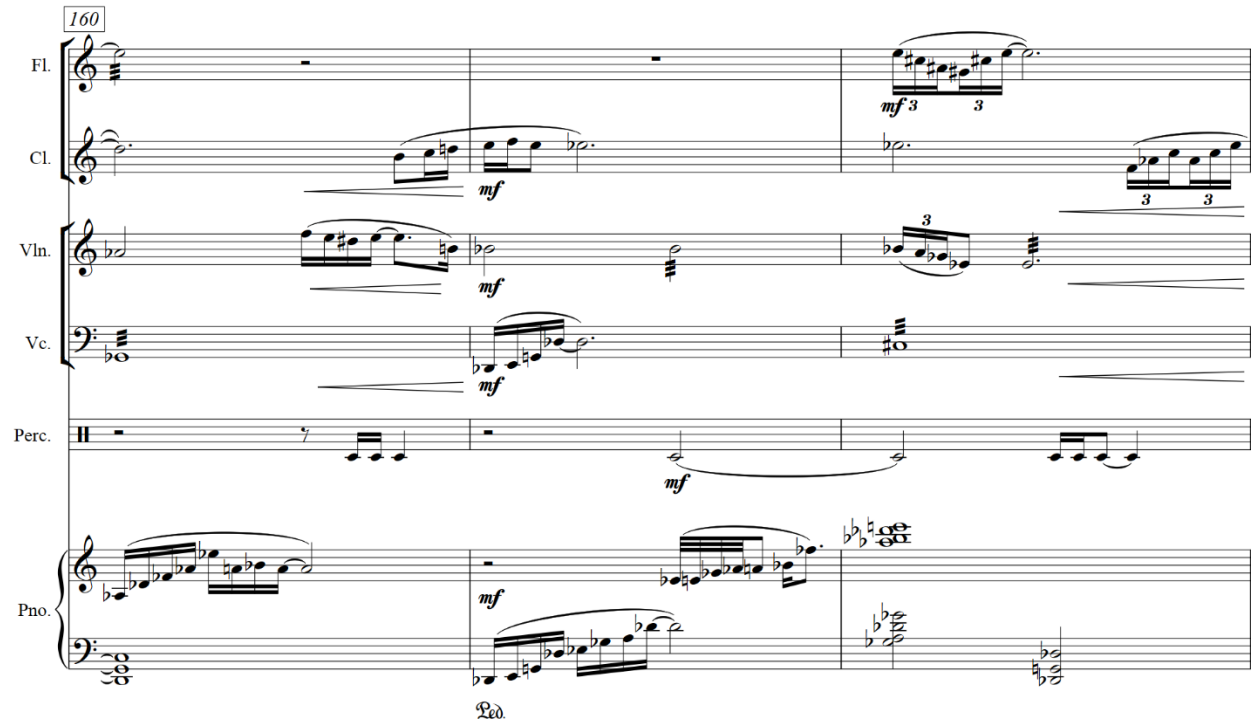

139
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
p
f
mf
3
Ped.

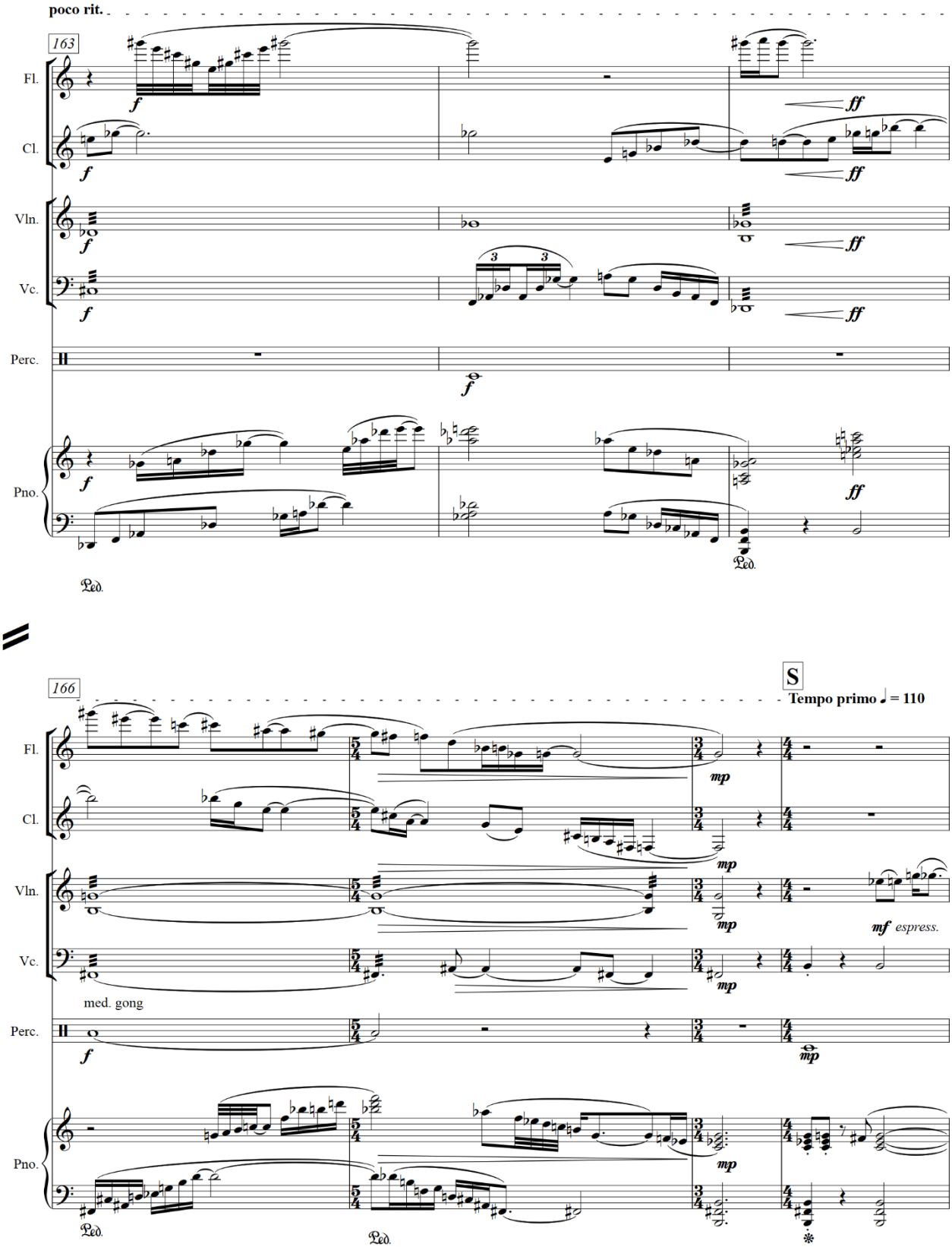

144
R
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
147
flautando

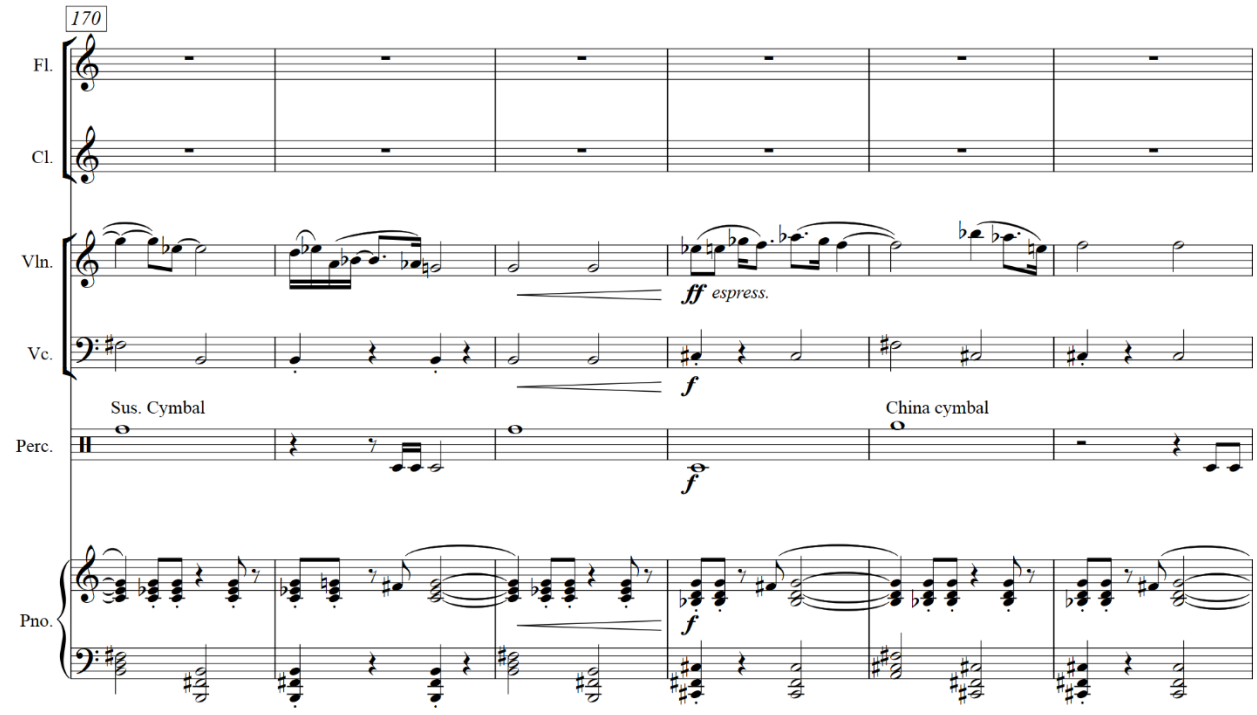

151
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
flautando
3
mf
nat.
mf
nat.
mf
mp
3
mf
3
Ped.

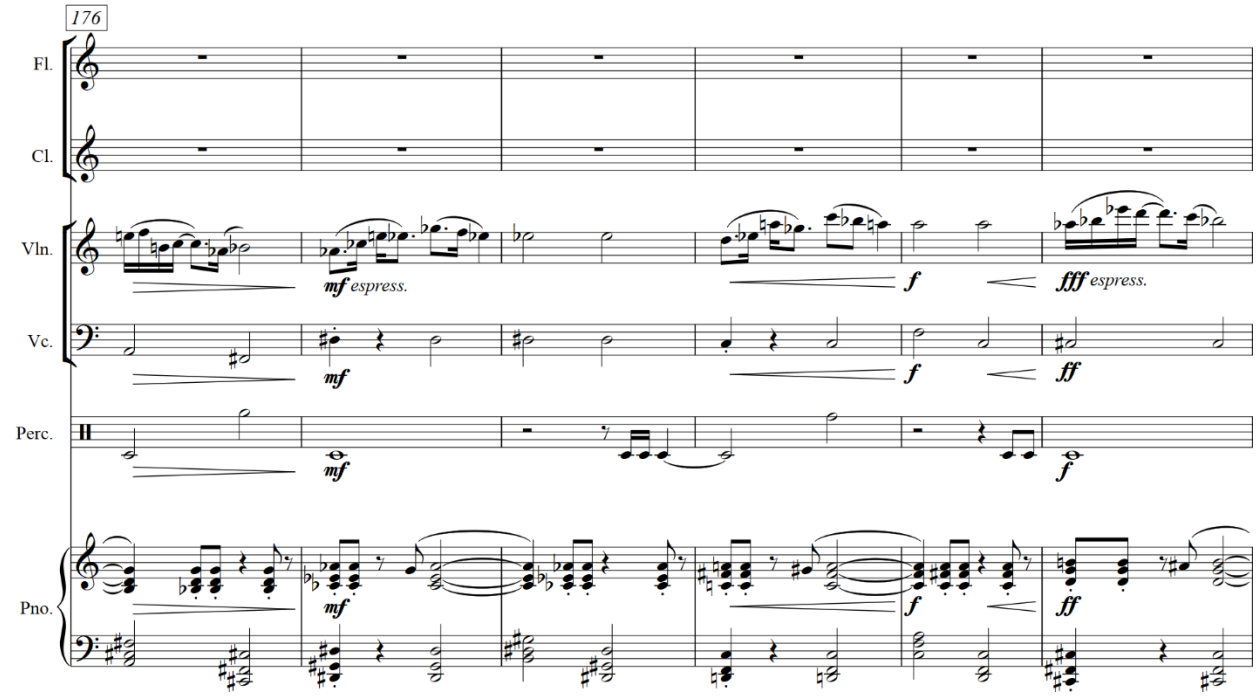

154
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
3
f
f
f
n
f
Ped.

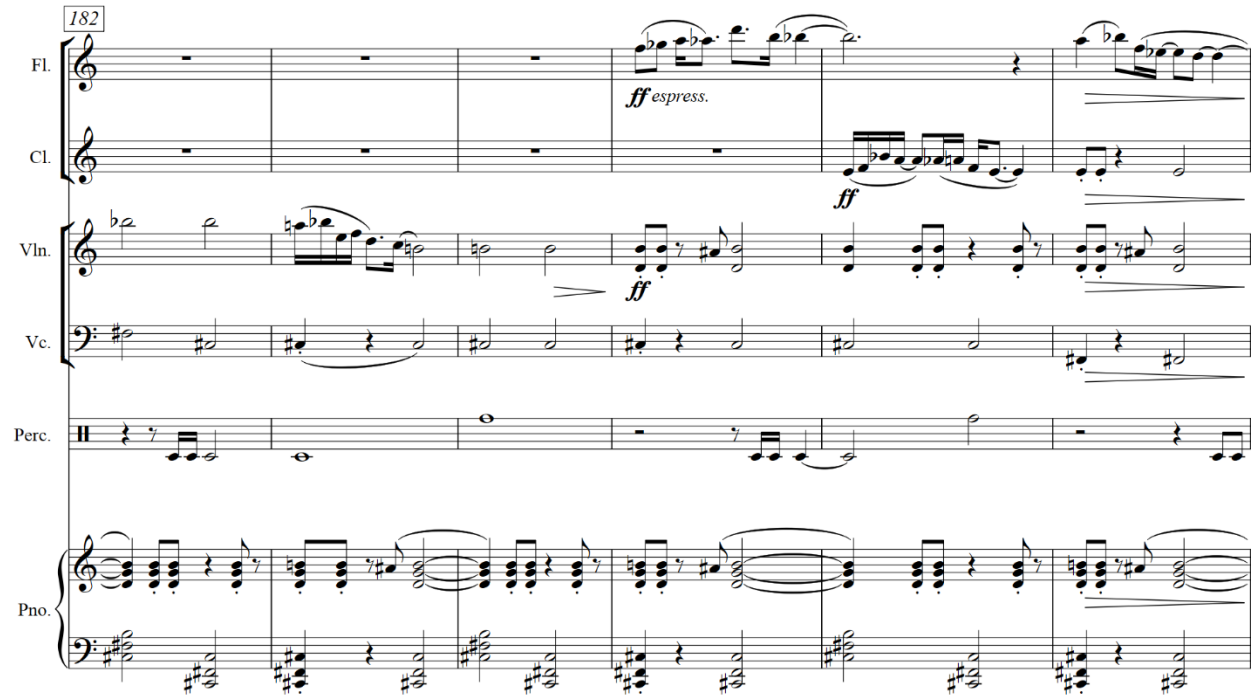

157
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mp
3
Ped.
Ped.

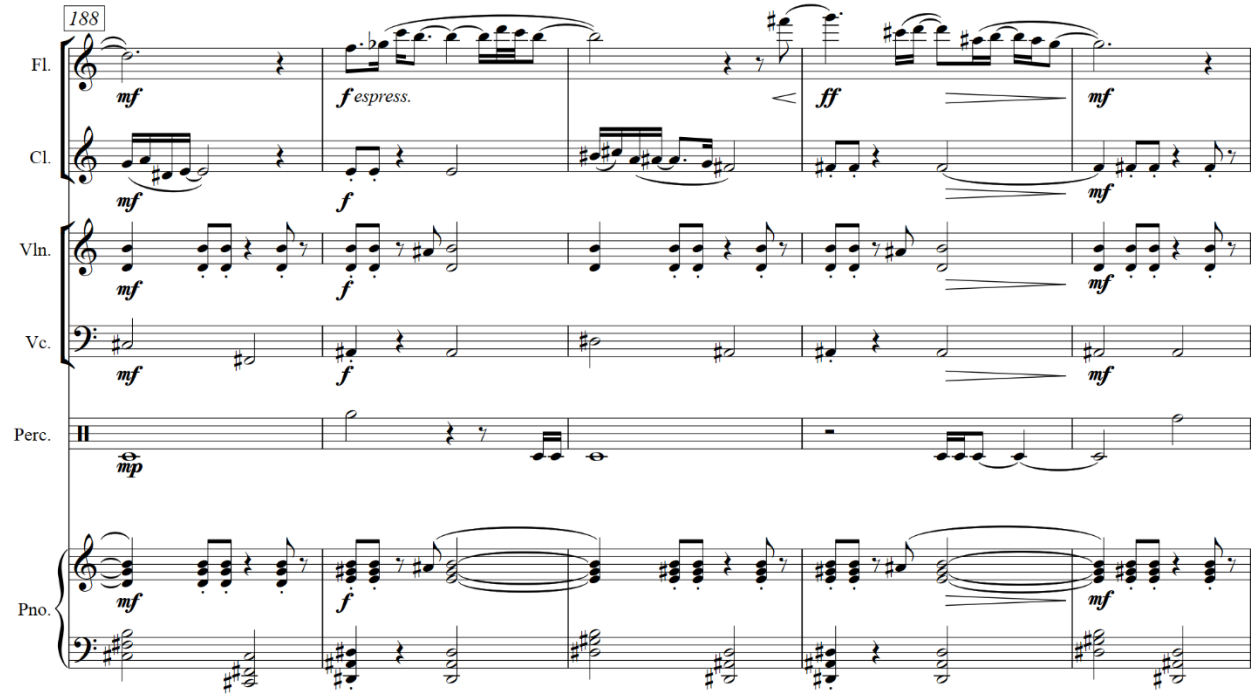

160
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
mf 3
3
Ped.

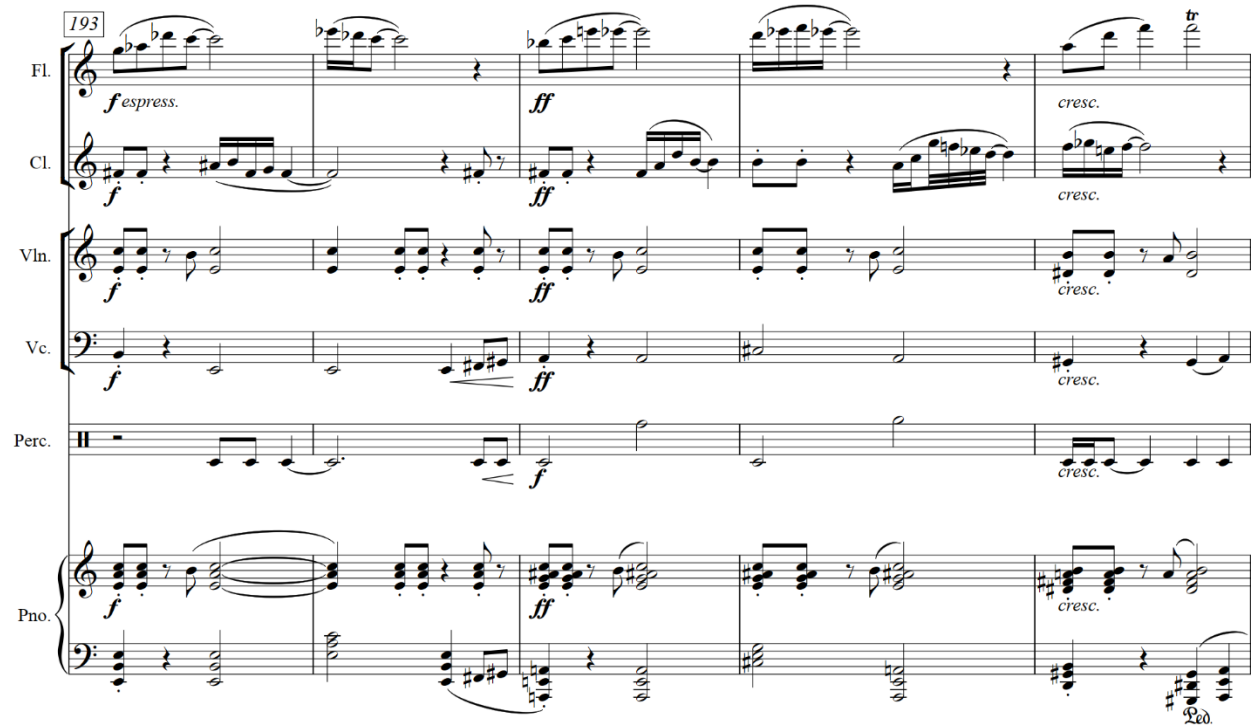

poco rit.
163
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f
ff
3
Ped.
166
S
Tempo primo ♩ = 110
mp
mf espress.
med. gong

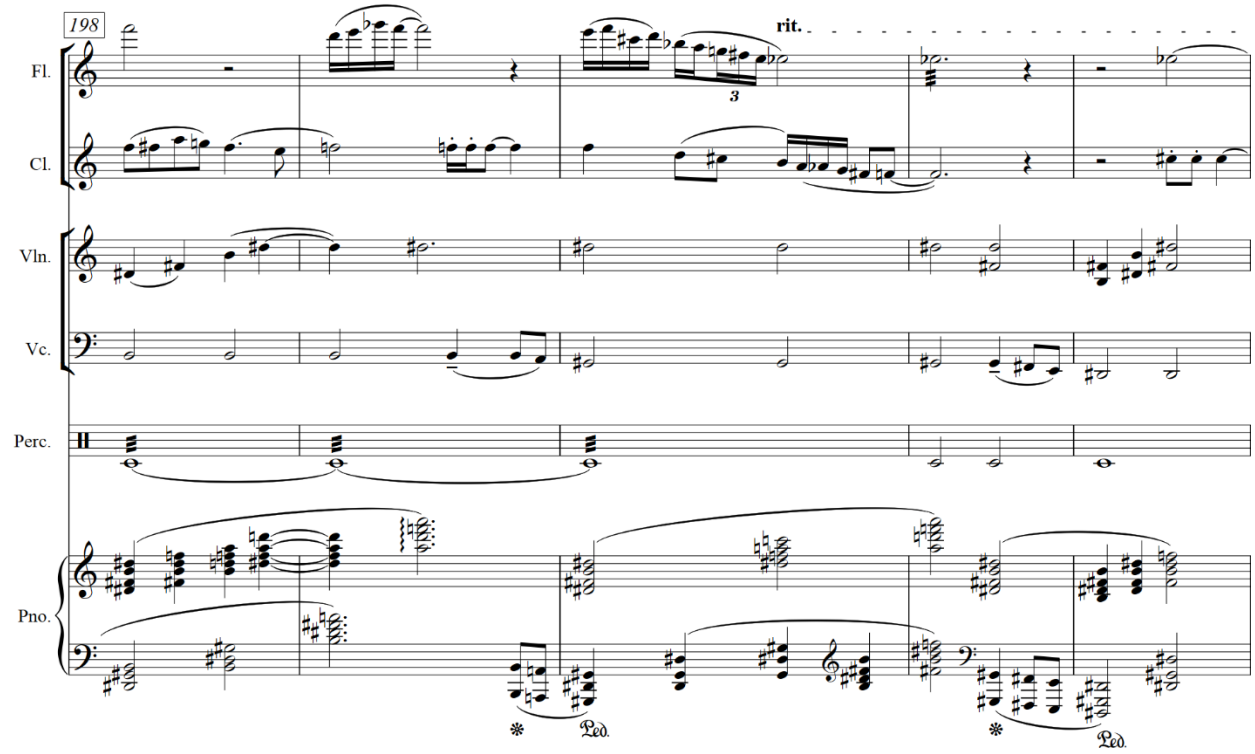

170
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
ff espress.
f
Sus. Cymbal
China cymbal

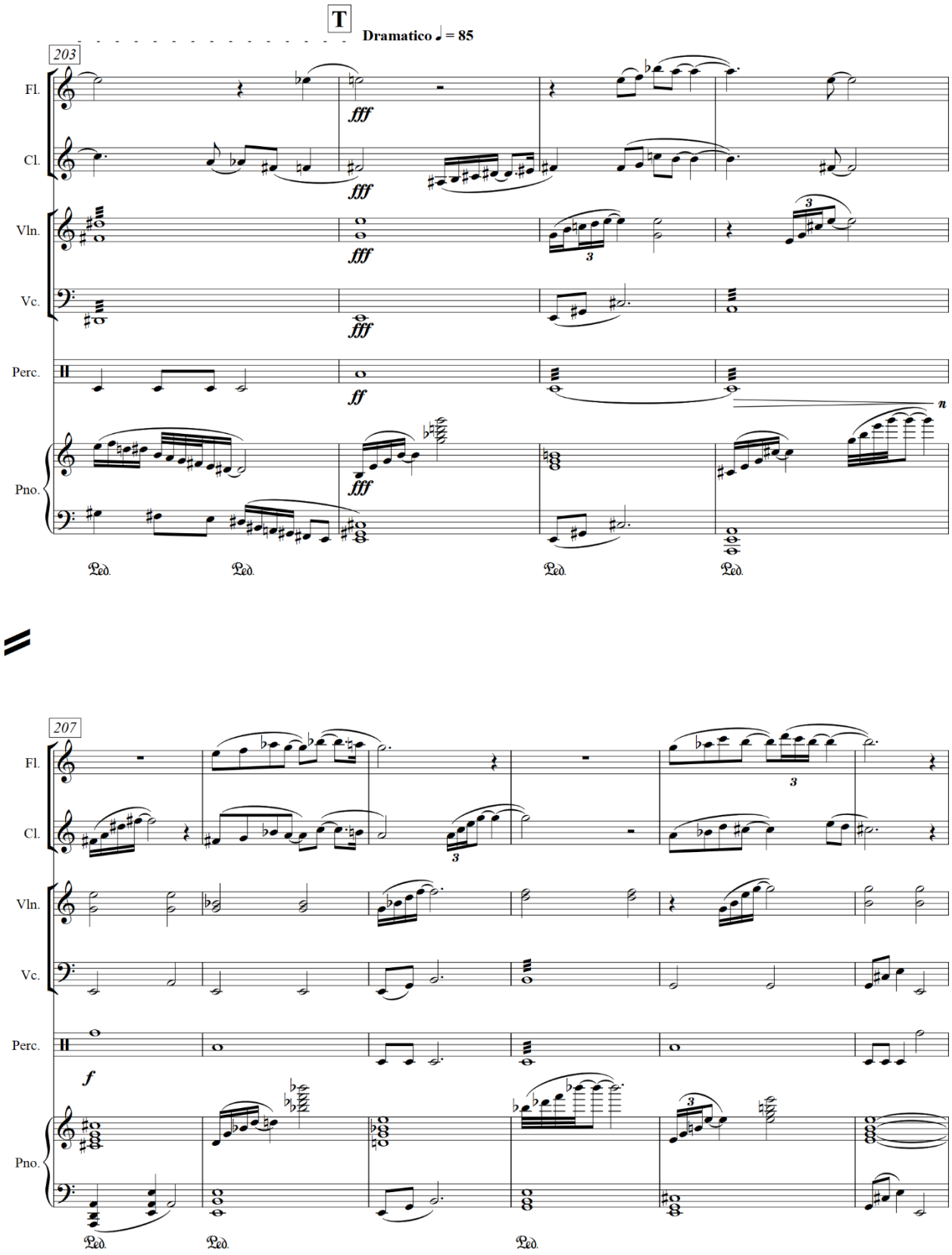

176
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf espress.
f
fff espress.
mf
ff

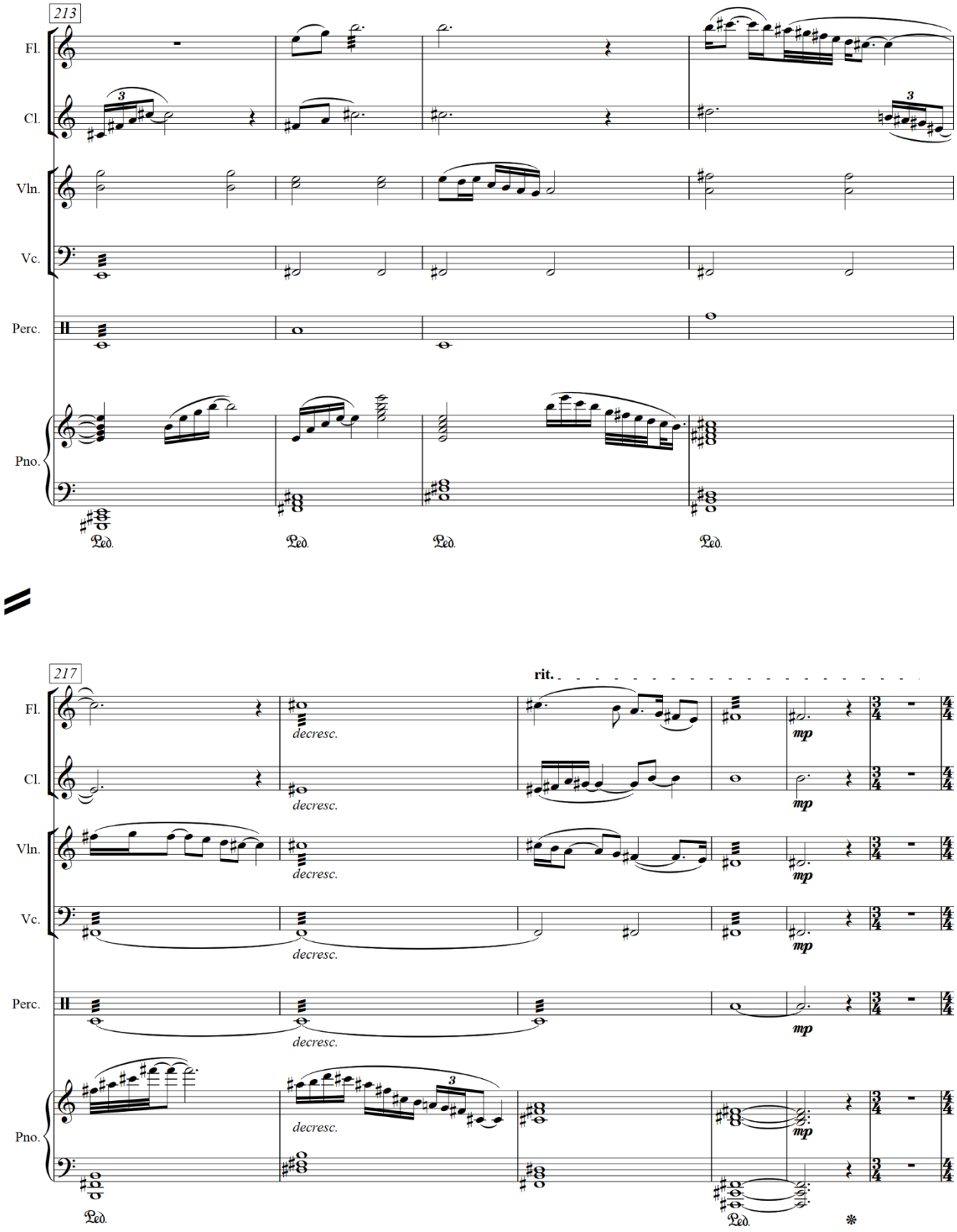

182
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
ff espress.
ff
ff
ff

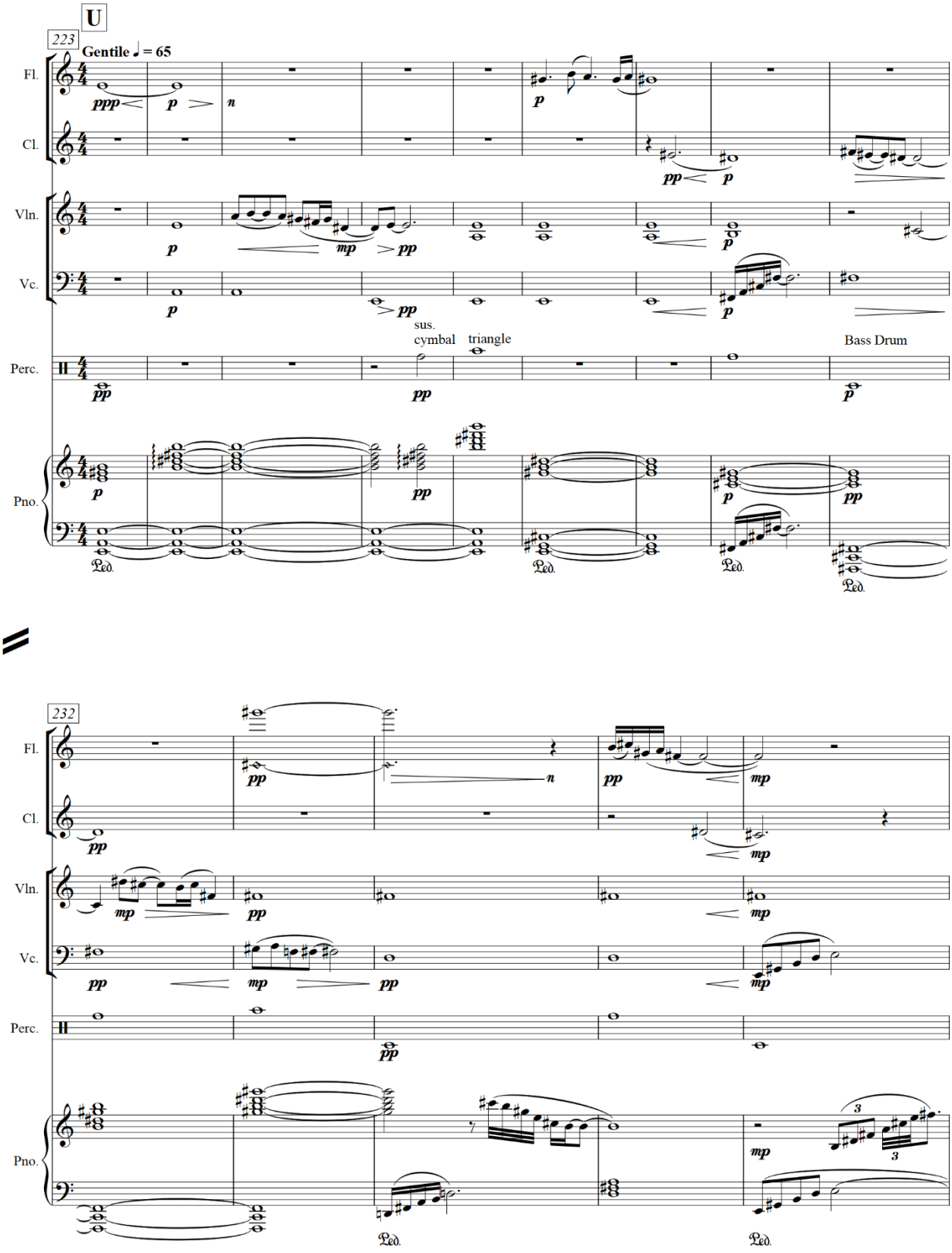

188
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
mf
f espress.
f
ff
mf
mp

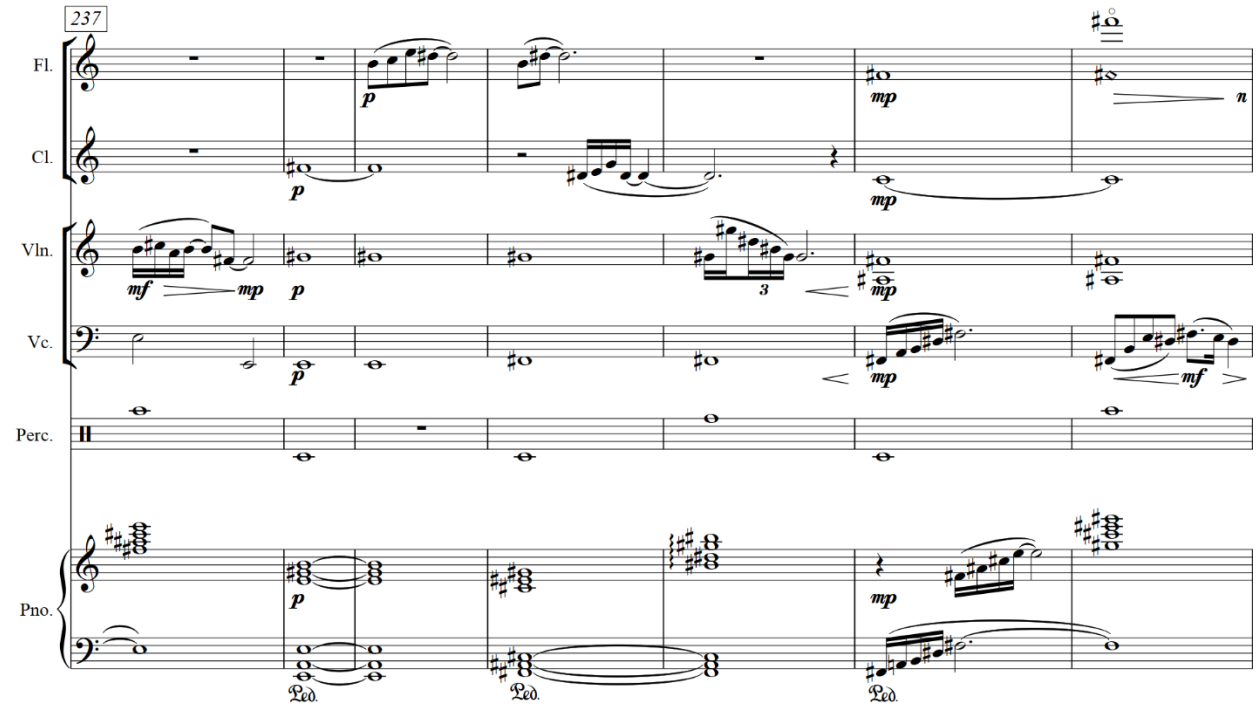

193
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
f espress.
ff
cresc.
tr
Ped.

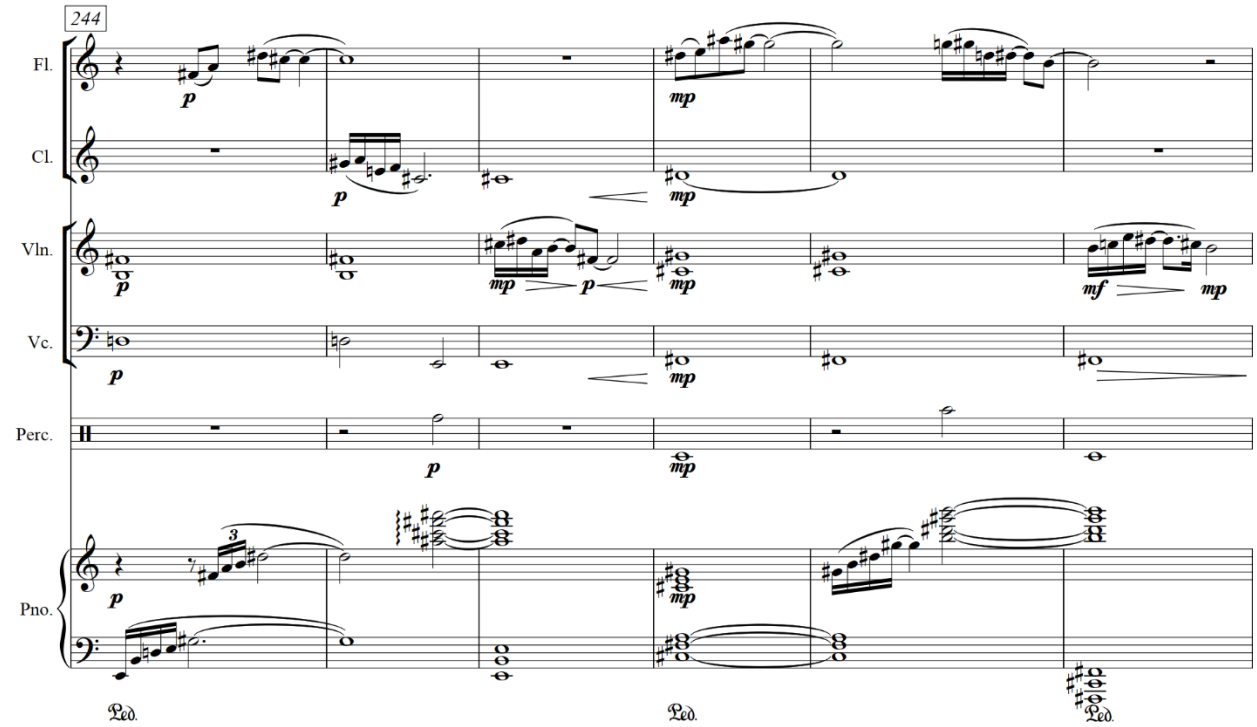

198
rit.
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
3
Ped.

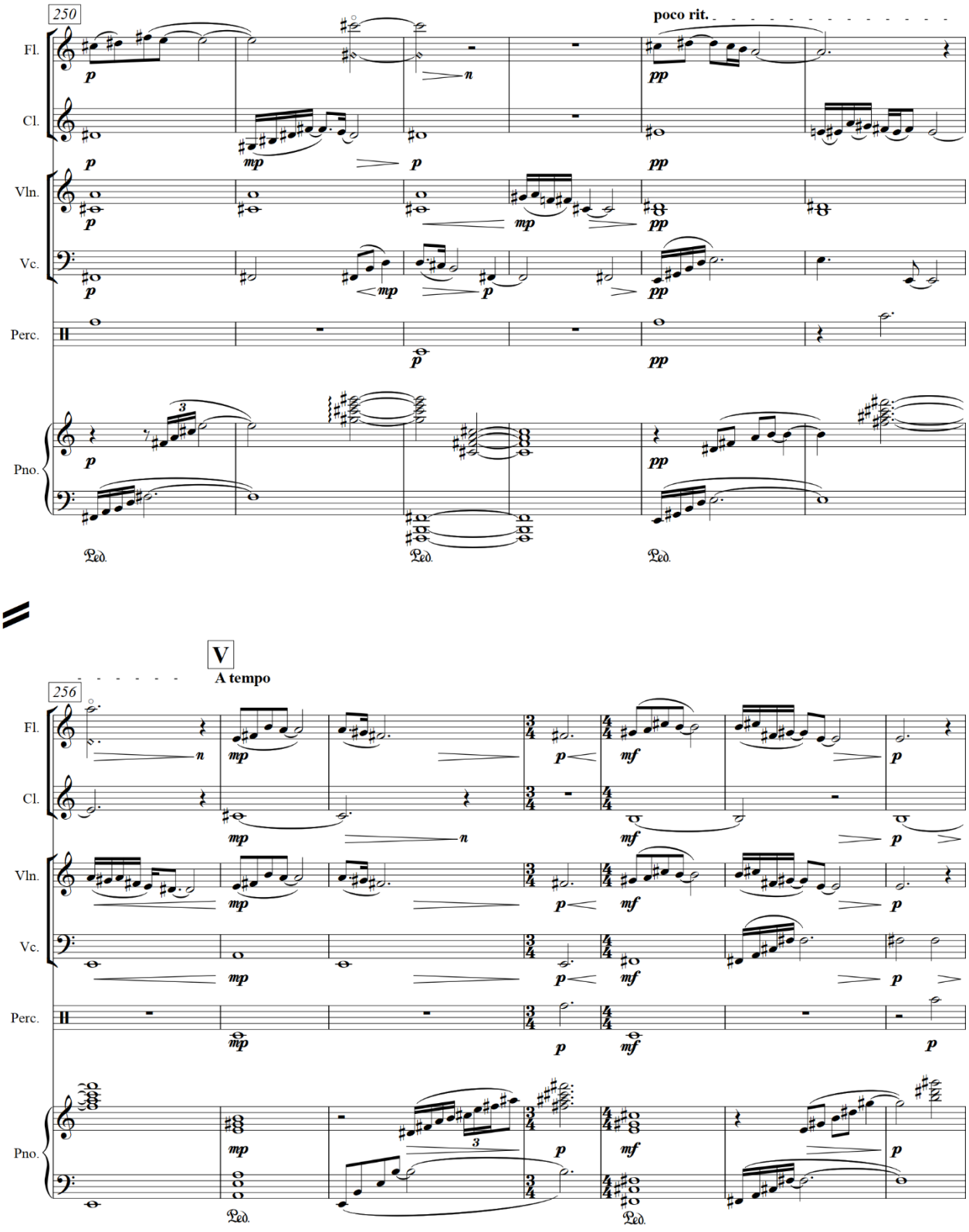

T
Dramatico ♩ = 85
203
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
fff
ff
207
f
Ped.

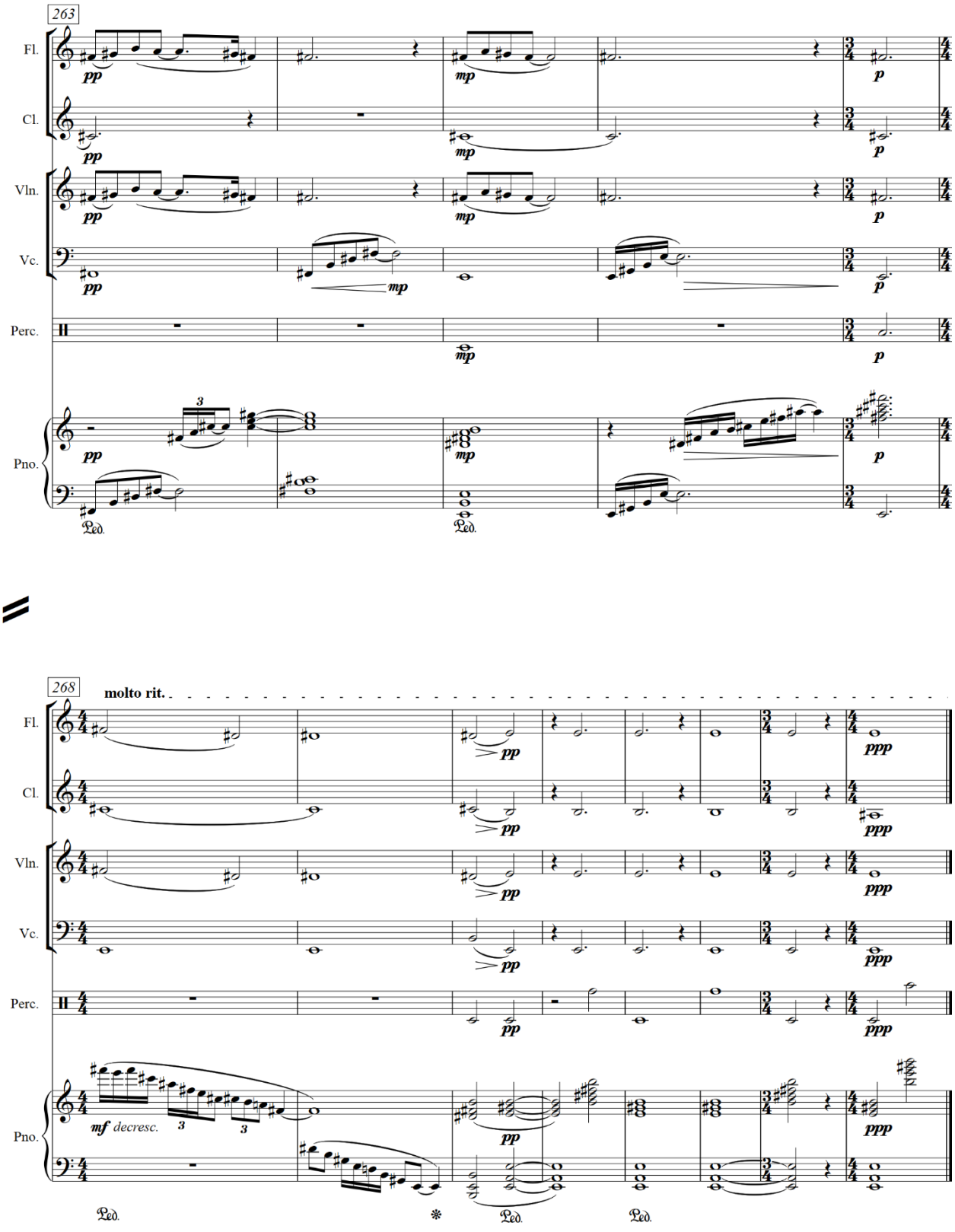

213
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
Ped.
Ped.
Ped.
Ped.
217
rit.
decresc.
mp
Ped.
Ped.


U
223
Gentile ♩ = 65
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
sus.
cymbal
triangle
Bass Drum
232


237
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
Ped.


244
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
Ped.


250
poco rit.
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
Ped.
V
A tempo
256


263
Fl.
Cl.
Vln.
Vc.
Perc.
Pno.
pp
mp
p
Ped.
268
molto rit.
ppp
mf decresc.
3