Kashchei

for nine instruments and electronics

Nina C. Young

Department of Music Research
Schulich School of Music
McGill University
Montreal
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Abstract

Kashchei is an original music composition scored for nine musicians and electronics with a duration of nineteen minutes. The analytical paper, presented in Volume 1 of this thesis, gives a general overview of the procedures and techniques used to create this piece. Volume 2 comprises the musical score. The electronics are available on the accompanying DVD. The inspiration for the work comes from the characters, visual representations, and sounds of Russian folklore – *skazki*. This work metaphorically represents the different layers of *Kashchei*, a prevalent villain in Russian fairytales who can only be defeated by breaking through several layers to reach his soul. The organization of the seven movement work narrates the layers around *Kashchei*'s soul and is woven around a theme quoted from Rimsky-Korsakov's opera *Kashchei the Deathless*. The sonic environment created by both orchestration and electronics attempts to recreate the surrealism of fairytales and the sweeping gestures and vibrancy of Russian lacquer art.

Résumé

Kachtcheï est une œuvre musicale pour neuf instruments et dispositif électronique, d'une durée de dix-neuf minutes. Une analyse technique de la composition, présentée dans le 1er Volume de cette thèse, fournit une vue d'ensemble des procédures et techniques utilisées dans la pièce. Le 2e Volume

contient la partition musicale et la description de la composante électronique. L'œuvre a été inspirée par les personnages, les motifs visuels, et le caractère sonore de la folklore russe – *skazki*. Cette composition représente de façon symbolique les divers couches de *Kachtcheï*, un personnage désagréable qui réapparait fréquemment dans les contes de fées russe. Traditionnellement, le héros qui cherche à vaincre *Kachtcheï* doit franchir plusieurs couches avant d'y arriver à son âme sans doute vulnérable. Structurellement, chacun des sept mouvements de l'œuvre représente une des couches qui protègent cet âme et est basé sur un thème tiré de l'opéra *Kachtcheï l'immortel* de Rimsky-Korsakov. L'environnement sonore de l'orchestration et du dispositif électronique, ensemble, tente de recréer le surréalisme des contes de fées et les grands gestes et le dynamisme de l'art du laque russe.

Acknowledgements

I would like to express my gratitude to those who inspired and helped me in the writing of my thesis. First of all I would like to thank my thesis advisor and teacher Professor Sean Ferguson for his support throughout my musical projects, my education at McGill, and for including me in the CIRMMT's Expanded Musical Practice Research Project supported by the FQRSC. I would like to thank the McGill Digital Composition Studios and Richard McKenzie for the facilities and support that helped make the electronics possible. I would also like to thank CIRMMT and Fabrice Marandola for providing this piece with its premier on February 8, 2011. The recordings of the Danilov Bells used to create the harmonic structure of the piece could not have been done without the support of Harvard's Lowell House.

On a personal level, I must express much thanks to my mother, Kira Young, who is the reason for my knowledge of Russian folklore and music. Professor Lars Lei lead an amazing seminar in Russian Opera in the Fall of 2009 that piqued my interest in the operas of Rimsky-Korsakov. Most of all I must thank my fiancé, Haralabos Stafylakis, for his unending support, both musical and moral, during the writing and editing of this work. With great love and admiration do I dedicate this piece to him.

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1 – Introduction

1.1 – Description

Kashchei is a work for nine instruments and electronics. It is comprised of seven movements, played without pause, and has a duration of approximately nineteen minutes. The work is scored for flute (doubling on piccolo), clarinet in Bb (doubling on bass clarinet), trumpet in C (doubling on piccolo trumpet in A), violin, viola, violoncello, piano, and two percussion. The electronic component consists of prepared soundfiles and live processing that are triggered by a performer with an onstage MIDI keyboard. The electronics are diffused through a nine-channel speaker arrangement. The work was inspired by Russian folklore.

1.2 – Poetics

1.2.1 – The myth of Kashchei – a villain from Russian folklore

Kashchei the Immortal (in Russian: *Кощей Безсмертний*) is a character of Russian folklore who makes an appearance in many popular fairytales, *skazki*, including *Marya Morevna*[1] also known as *The Death of Kashchei the Immortal, the Frog Princess*[2]*, Vasilisa the Wise*[3], and as the antagonist of fairytales involving Ivan Tsarevich. He is characterized as a dark, evil person of ugly, senile appearance and is sometimes depicted as either a scaly and amphibious or skeletal being. The etymology of his name suggests the root *kost*, or bone, signifying his tie the underworld.

[1] in Russian: *Мария Моревна.* Alexander Afansyev
[2] in Russian*: Царевна Лягушка*
[3] in Russian: *Василиса Премудрая*

Kashchei functions as the antagonist in most stories. He is an evil sorcerer with shape-shifting capabilities, and often takes the form of a whirlwind. Despite being evil, he is inwardly emotional and craves female companionship. His evil deeds mostly consist of kidnapping and imprisoning promised princesses and other young maidens whom he then attempts to charm within the comfort of his lair. The heroic princes in these stories desperately struggle to free the maidens, as Kashchei is immortal, which in this case means that he cannot be slain by conventional means (i.e. inflicting physical harm). The essence of his life is encapsulted outside of his flesh in a needle that is itself hidden with an egg on the mystical island of Buyan[4]. Only by finding this egg and breaking the needle can one overcome Kashchei's powers. In one *skazka*, the princess Tsarevna Darisa asks Kashchei where his death lies. He explains,

> My death is far from hence, and hard to find, on the wide ocean: in that sea is the island of Buyan, and upon this island there grows a green oak, and beneath this oak is an iron chest, and in this iron chest is a small basket, and in this basket is a hare, and in this hare is a duck, and in this duck is an egg; and he who finds this egg and breaks it, at that same instant causes my death.[5]

Once the egg is broken, Kashchei begins to weaken, becomes sick, loses his magical powers, and soon after, dies.

As with most elements of cultural folklore, there are many variations on the tale of Kashchei. In my own work, I have been particularly inspired by the depiction of Kashchei as an outwardly evil character who secretly pines for love and female companionship. My interpretation encases his soul within five layers buried under an oak tree on the island of Buyan. The successive layers, working outward from the core, are:

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[4] Buyan is a mysterious, magical, disappearing island commonly found in Russian *skazki* that is somewhat akin to Avalon.

[5] Steele, 27

an egg
within a duck
within a hare
within a small basket
within an iron chest

1.2.2 – Kashchei's musical history

Kashchei has had numerous appearances in music history ranging from Slavic folk songs and poetry to Soviet film music. Within the classical music canon he has been most famously featured in Rimsky-Korsakov's opera *Kashchei the Deathless* and in Stravinsky's ballet *The Firebird*.

1.2.2.a – *Kashchei the Deathless*

Kashchei the Deathless was completed by Rimsky-Korsakov in 1902, with a later revision of the ending in 1906. The premier took place in Moscow at the Solodovnikov Theatre on December 25, 1902. The work is a three scene, one act opera, which has been described as an autumnal parable (Rimsky-Korsakov wrote a set of seasonal operas). The libretto, written by Rimsky-Korsakov and his daughter, is based on a draft called *Ivan-Korolevich* by Yevgeny Maximovich Petrovsky and combines several Russian fairytales about Kashchei. In this version, Kashchei, the evil sorcerer, kidnaps Tsarevna Nenaglyadnaya-krasa (Unearthly-beauty) who is eventually rescued by Ivan Tsarevich. Ivan manages to kill Kashchei by finding his death in the tears of Kashchei's daughter, Kashcheyevna, who secretly pines for the prince.

The opera was harmonically innovative for its time, with a clear duality established by the composer between the tonal, lyrical beauty of "good"[6] and the dense, harmonic chromaticism of "evil" that is founded upon a chain of ascending thirds. Rimsky-Korsakov was very proud of his harmonic invention which seemed to please the intellectual crowds. He is quoted as saying,

> I can satisfy your curiosity in part, for I've already shown some of the first scene to Glazunov, and, despite his dislike for opera in general and program music in particular, this time he declared that he didn't expect anything like this from me.[7]

Another observer explains,

> Overall it left a powerful impression...It was evident that [Rimsky-Korsakov] is highly pleased with what he calls his "layered harmonies" (the shining skulls, snowstorm, Kashcheyevna's enchanted garden, scene of Kashchei's death, etc.). Thus, when Felix Blumenfeld expressed doubt that there is such a harmony as that used at the moment of Kashchei's death (when one hears chromatic progressions in the orchestra dissolve against the background of a diminished seventh chord C, Eb, F#, A...[and] amid this tonal chaos, there suddenly rings out an incredibly daring Bb), Rimsky-Korsakov replied not without pride: "Not in a textbook perhaps, but nevertheless it's superb. What's more, my major thirds aren't so bad either!"[8]

Interestingly enough, the opera, despite its estrangement from the popular harmonic idiom, became a "revolutionary work" that was encouraged in the Soviet repertoire. This popularity was perhaps due to the duality of good and evil and its portrayal of Russian folk culture. It is also a result of the political significance that the opera attracted when a student-run performance was directed by Glazunov at the St. Petersburg Conservatory after Rimsky-Korsakov was fired for supporting a student strike.[9]

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[6] " 'By the way,' said Rimsky-Korsakov, 'you might take note of the fact that this if the first opera of mine which ends in sunny D major." (Yastrebtsev, 310)

[7] Yastrebstev, 310

[8] Yastrebtsev, 311.

[9] Rimsky-Korsakov (*My Musical Life*), 347.

1.2.2.b – *The Firebird*

Western audiences most commonly associate Kashchei with Igor Stravinsky's ballet, *The Firebird*. The ballet, in two scenes, was written in 1910 for Diaghilev's Ballets Russes, choreographed by Michel Fokine. The premier performance took place on June 25, 1919 in Paris, France. Stravinsky later revised the work in 1911, 1919, and 1945.

The narrative of this work combines the *skazki* of the Firebird with *The Death of Kashchei the Immortal*. The tale begins with Ivan Tsarevich wandering around Kashchei's magical kingdom. There, in a garden, Ivan encounters the Firebird and hunts it down. The Firebird promises to assist Ivan in exchange for freedom. Ivan then encounters thirteen princesses and falls in love with one of them. He goes to Kashchei to ask for the princess's hand in marriage. Kashchei becomes angered and sends evil creatures to prey upon Ivan. The Firebird then comes to Ivan's assistance and places a magical spell on Kashchei and all of his mignons, making them dance (*The Infernal Dance*) until they fall into a deep slumber. While everyone is sleeping, the Firebird reveals to Ivan the secret to Kashchei's mortality, which involves breaking a mystical egg that contains his soul. Ivan then finds the egg and breaks it, thus killing Kashchei and ending the magical spells on the kingdom.

It is important to note the musical relationship between this work and Rimsky-Korsakov's opera. Stravinsky began studies with Rimsky-Korsakov in 1906 and was thus exposed to the harmonic and motivic methods of his teacher. Richard Taruskin makes a point of connecting Rimsky-Korsakov's harmonic systems (e.g. an octatonic scale referred to by Russian contemporaries as the *Korsakovian* scale) with Stravinsky's harmonic world.[10] There is no doubt that Stravinsky was completely aware

[10] Taruskin, *Cheremor to Kashchei: Harmonic Sorcery; Or, Stravinsky's "Angle"*, 132.

of and thinking about Rimsky-Korsakov's Kashchei-themed opera when he was composing *The Firebird*. The two works both exhibit an octatonic scale system and an underlining of the tritone in relationship to Kashchei. In fact, one can see a similarity in Rimsky-Korsakov's innovative ladder of thirds used in *Kashchei the Deathless* (see Figure 1) to that used in *The Firebird* (see Figure 2).

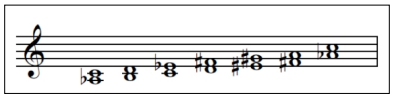

Figure 1: Ladder of thirds used in *Kashchei the Deathless*

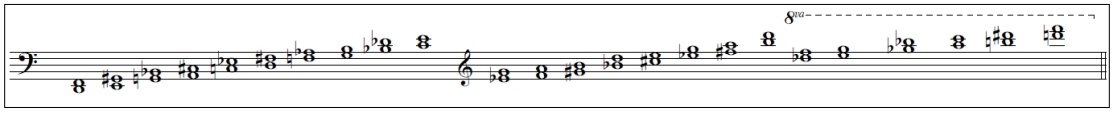

Figure 2: Ladder of thirds used in *The Firebird*

1.2.3 – Kashchei as a personal compositional tool

The character of Kashchei, the narrative of his immortality, and his presence in the classical music canon serve as the inspirational foundation for my work *Kashchei*. The piece is a tone poem, narrating the story of Kashchei's soul. The program depicts the unraveling of the layers one must unfold to reach the essence of Kashchei's life. Each movement is informed by and named after one of the layers, and the progression between movements is loosely rooted in the principle of reverse variations – where a system of variation is used, but through a gradual reduction in complexity with the theme only exposed at the end of the work. As the music progresses through time, the core musical material (a quotation from Rimsky-Korsakov's *Kashchei the Deathless*) is gradually exposed. This process can be related to the wooden Russian doll, the *matryoshka*, where a

simple, small doll is concealed within the shells of many, larger, increasingly elaborate ones. Similarly, one must unfold many layers to reach the essence of Kashchei's life: as each movement (variation) is peeled away the listener gets closer to the core musical material that defines Kashchei's soul.

The goal of the compositional elements utilized to create this piece is to inform the listener of the narrative and to immerse him in a sonic environment akin to the surrealism of fairytales. During the compositional process, the poetic narrative became a direct compositional tool that dictated the structural form, harmony, motivic development, orchestration, texture, and fusion of natural, instrumental sounds with those of the electronics.

2 – Programmatic Music

2.1 – A brief look at program music

The term 'program music' introduced into musical discourse by Franz Liszt, a composer who certainly did not invent the idea, but utilized it in many of his works. He defined a program as,

> a preface added to a piece of instrumental music, by means of which the composer intends to guard the listener against a wrong poetical interpretation, and to direct his attention to the poetical idea of the whole or to a particular part of it.[11]

The idea of programmatic music is most often associated with instrumental music. The lack of an audible text requires a certain creative approach in delivering the narrative, environment, or emotional qualities that the program commands. Unlike in absolute music, in programmatic music the nature of the music unfolds based on the subject it is trying to portray, rather than on the standard, autonomous principles of concert music. Liszt explains that,

> In programme music … the return, change, modification, and modulation of the motifs are conditioned by their relation to a poetic idea …. All exclusively musical considerations, though they should not be neglected, have to be subordinated to the action of the given subject.[12]

Although the idea of program music was popularized and labeled as such in the nineteenth century, it was certainly a device used much earlier in the Western music tradition. Pre-Romantic examples include Heinrich Ignaz Biber's *Sonata representativa*, Antonio Vivaldi's *The Four Seasons*, and Ludvig van Beethoven's *Symphony No. 6 (Pastoral)*. It is during the Romantic Period that programmatic music was truly embraced. The music of Hector

[11] Scruton, *The Aesthetic Understanding*, 41.
[12] Engel, J. J., 69.

Berlioz helped to define a new direction for narrative portrayal in music through creating musical character identities. The solo viola takes on the role of the main character in *Harold en Italie*. Berlioz introduced the concept of *ideé fixe* – a melody that takes on the role of a character or feeling. The listener can easily identify the character and track its development through the course of a piece, aiding in the recanting of a work's narrative. This is most clearly presented in Berlioz's *Symphonie Fantastique*, a piece that manages to fit 19th century programmatic elements into the confines of a symphonic structure.

Franz Liszt embraced the creation of a specific genre exclusive to program music – the symphonic poem – that steered away from the necessity to stick to classical symphonic structure. This genre, also referred to as a tone poem, comes out of a nineteenth century ideal to unify the arts[13]. With the symphonic poem, instrumental music now had unending creative possibilities that veered away from traditional formal prescriptions of symphonic movements. Continuous, multi-movement works with radical motivic and harmonic development were now permissible, as these elements could be driven by the needs of narrative. Certain proponents of program music claimed that it allowed instrumental music to transcend above the highest form of musical expression, which was at the time opera. The concept of *ideé fixe* evolved into *leitmotif* – a recurring theme in the form of a melodic, harmonic, and/or rhythmic motiv used to identify characters and dramatic action within an instrumental piece. This concept is used throughout programmatic works of Liszt and Strauss and in Wagner's operas.

Programmatic music became very popular, especially amongst the nationalistic composers of the 19th and early 20th centuries.

[13] Mendl, R. W. S.

Contemporaries of Liszt, including Smetana, César Franck, Tchaikovsky, Rimsky-Korsakov, and Richard Strauss, implemented the genre into their own musical canon. This concept of narrative composition led to the musical approach that Wagner took in his operatic works, that Ravel took in *Daphnis and Chloé*, and of course, that Stravinsky took in his ballets. Programmatic music directly influenced the development of film music.

There can be much debate in whether certain pieces of music are to be considered truly programmatic depending on the classifier's point of view. Some critics consider that any music that is even remotely representational, imitative, or simply expressive in character should be defined as programmatic music while others adhere more closely to the concept of narrative dictating the compositional elements of a work. Beethoven's *Symphony No. 6* (*Pastoral*) is often debated. The piece creates a natural, pastoral sonic environment and even sonically recants a thunderstorm (fourth movement, *Allegro*) and the running water of a brook (second movement, *Andante molto mosso*). In fact the movements even come with special text markings:

1. Erwachen heiterer Empfindungen bei der Ankunft auf dem Lande *(Awakening of cheerful feelings upon arrival in the country)*: Allegro ma non troppo
2. Szene am Bach *(Scene at the brook)*: Andante molto mosso
3. Lustiges Zusammensein der Landleute *(Happy gathering of country folk)*: Allegro
4. Gewitter, Sturm *(Thunderstorm; Storm)*: Allegro
5. Hirtengesang. Frohe und dankbare Gefühle nach dem Sturm *(Shepherds' song; cheerful and thankful feelings after the storm)*: Allegretto

However, the form of the piece as well as the harmonic and melodic treatment is not determined by the programmatic, poetic elements. Rather, the pastoral qualities are woven within the confines of the Classical symphonic tradition. Claude Debussy's *Préludes* present a debatable 20th

century example of program music. The composer provides descriptive titles for each piece. However, he explicitly placed the titles at the end of the pieces, probably to ensure that they were not essential in defining each work, but perhaps rather in labeling an expressive atmosphere as an afterthought.

2.2 – *Kashchei* as a tone poem

The composition of *Kashchei* was directly founded on the narrative I describe in section 1.2.1. The subsequent chapters will explain how the narrative, in the programmatic tradition, controlled my approach to form, orchestration, textural fabric, harmony, motivic development, and electronics.

3 – Form

3.1 – Introduction

Kashchei is presented as a series of seven linked movements, played without pause.

I. An Oak Tree on the Island of Buyan
II. The Iron Chest
III. A Small Basket
IV. The Hare
V. A Duck
VI. Egg
VII. The Death of Kashchei

Poetically, each movement functions in the narrative as a layer concealing Kashchei's soul, which when exposed leads to his death. The form of the work was established so as to better convey the tale to the listener.

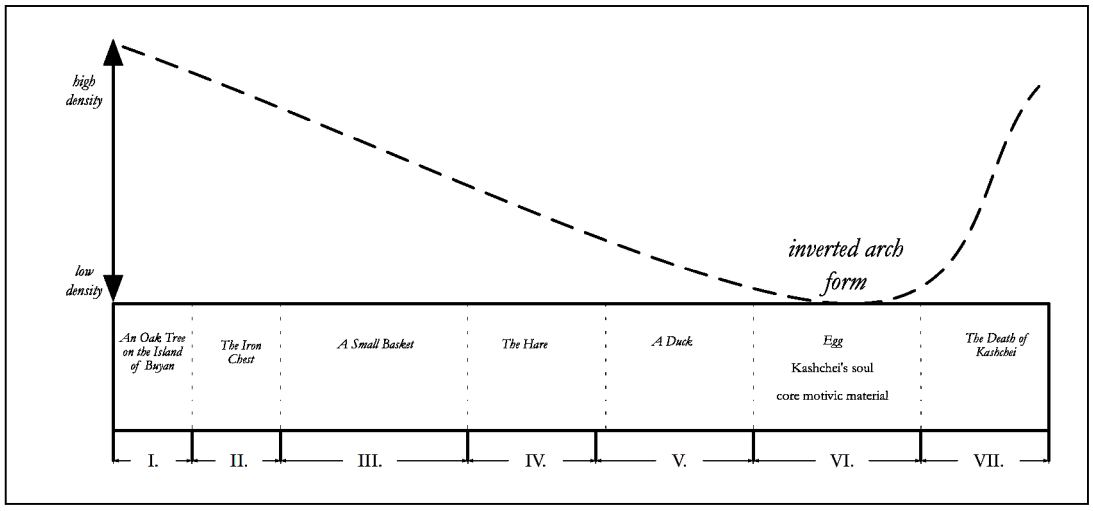

Figure 3: Form of *Kashchei*

The piece has an asymmetrical inverted arch form, beginning with a high density of notes, thick orchestration, heavy electronics, and a dense, microtonal harmonic language. As each movement unfolds, a process of simplification occurs, which in the course of the narrative brings us closer

to Kashchei's soul. This is accomplished through a gradual reduction in textural density, orchestration, electronics, and harmonic complexity to unveil the core thematic material in its most basic form in movement VI. The music of this movement is characterized by a violin and cello duet, with subtle electronics that eventually fade away, leaving movement VII as purely instrumental.

3.2 – Methods of delineating form

Since the piece is played without a pause between movements, but the individual movements are so important for the narration of the program, it was important to construct audible elements that would allow for the listener to easily grasp a distinction between movements. Each movement features its own unique orchestration and textural fabric whose function is to characterize one of the layers that envelops Kashchei's soul. A distinctive soundmark is placed between the end of one movement and the beginning of the next; this functions as a formal separator. Within each movement, the parameters of motivic development, harmony, and electronics also assist in defining one movement from another.

3.2.1 – Soundmark

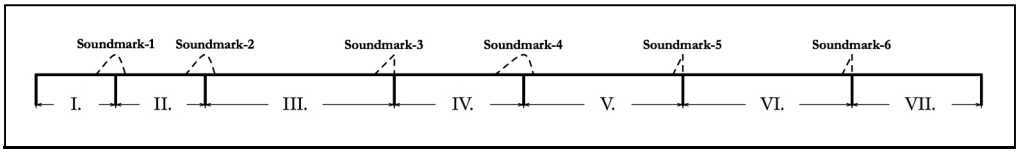

Figure 4: Soundmarks over time

I placed a distinctive sound event, unique to the transition between each movement, to create formal separators without requiring a pause between movements. I will refer to these sound events as 'soundmarks'.

The soundmark is a term coined by Murray Schafer[14] that is derived from the idea of a landmark. Thus a soundmark has unique characteristics that provide contextual information to the listener. In today's commercial industry, soundmarks are used as sonic trademarks and can even be commercially registered. In the case of my own work, the soundmarks function as local landmarks that indicate the arrival at a new movement; there are six of them. Poetically, these soundmarks represent breaking through one layer to reveal the next. The soundmarks are characterized by louder dynamics, distinct percussion writing, and in most cases an impactful event in the electronics. Once the soundmark fades away, the new movement is revealed as though it was always there, already in motion.

Soundmark-1 spans from measures 23 to 30. It features an increase in dynamics as well as in rhythmic and textural density that begins building up in measure 23. This is accompanied by an electronic trigger (Cue 11 in measure 23) – a soundfile made of reversed bells that reach their loudest point on the downbeat of measure 29. The entire ensemble (with electronics) plays on the downbeat on measure 29, quickly fading out to give way to the new textural fabric. This change in texture is prepared by two loud bass drum hits on the upbeat of measure 29.

Soundmark-2 spans from measures 61 to 65. It is similarly characterized by a build-up (measures 61 – 63). The electronics (Cues 29, 30, 31) add textural density and forward motion by clarifying the harmonic motion. A large *tutti* attack on the downbeat of measure 64 signals the change to movement III.

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[14] Schafer

Soundmark-3 spans from measures 101 to 105. It is characterized by a fade-out in the pitched instrumental writing while a crescendo is heard on the rolled suspended cymbal and thunder sheet, without electronics. The galloping motion that characterizes movement IV is then heard as the flute and clarinet fade in.

Soundmark-4 spans from measures 171 to 178. Movement IV is interrupted by a tempo and textural change in measure 171. The music builds up into a full ensemble (with electronics) attack on the downbeat of movement V.

Soundmark-5 occurs in measure 220. It is prepared by the material in measures 209 to 219, allowing movement V to transition into VI with a full ensemble (and electronics) attack on the downbeat of movement VI. This then fades away to reveal a solo violoncello passage.

Soundmark-6 occurs in measures 265 to 266. It features a rolled percussion crescendo (similar to Soundmark-3, but with different instrumentation) that interrupts the melodic violin and violoncello duet and leads into the dense and loud seventh movement.

3.2.2 – Orchestration

In creating a musical narrative based on a fairytale, an orchestration with vivid colors and distinct timbres was an important priority. I desired the instrumental and electronic sounds to mimic the gestures and colors of Russian lacquer art, famous for its colorful and intricate designs. Fairytales are the basis of much of this art work, but the style is actually founded in the practice of icon painting. With the collapse of Imperial Russia, and subsequently the Russian Orthodox Church, icon painters, in need of income, developed a craft of lacquer art. Thus there is a marriage between realism (in the technical composition of human characters and setting) and

mysticism. Within the lacquer art, the magical elements are emphasized using gold leaf and other shimmering substances. Similarly, within my own orchestration, the electronics are used to add an element of fantasy and magic to the work. Figure 5 shows the cover of a Russian lacquer box illustrating the tale of Kashchei.

Figure 5: A typical example of a Russian lacquer box cover.
This one illustrates a scene for the tale of Kashchei.

Each movement has a distinct approach to orchestration, with different instrumental voices in the foreground, middle ground, and background. The orchestration aids in creating the macro, inverted-arch form. The different orchestration layers used in each movement are depicted in Figure 6. Each movement also has a narrative reason for the orchestrational choices; three examples will be cited for the purpose of this analysis.

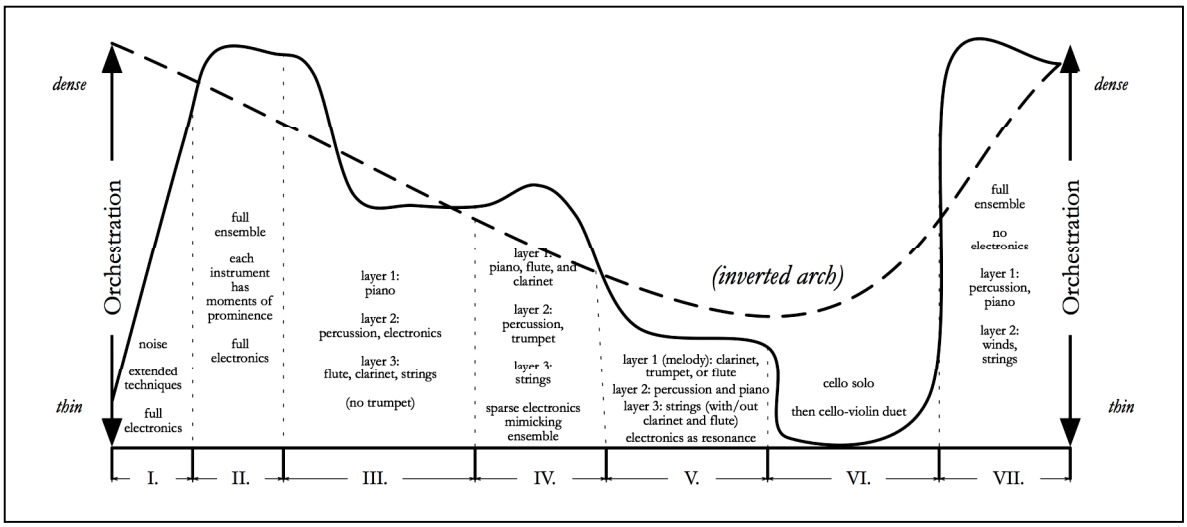

Figure 6: Orchestration (over time) as a method of delineating form

In the first movement, the use of full ensemble orchestration with noise elements, extended techniques, and electronics allowed me to musically construct a sonic world that would sound like an environmental recording of the fictional Island of Buyan. The flute, clarinet, and trumpet lines mimic the calls of birds and nighttime frogs that populate the area. Their gestures are accentuated and colored with trills and grace notes. The noise element created by the sandpaper blocks, scraped wind gong, and viola and violoncello bowing the bridge mimics the wind and the rustling of leaves.

The orchestrational choice for movement IV (The Hare) allowed me to sonically paint the steady racing of a hare as it jumps through a field. The foundation of the movement is created by the combination of flute, clarinet, and piano playing a continuous running passage. The hare is represented by the trumpet articulating the strong beats of each measure. The percussion (vibraphone and xylophone) accentuate the "jumping" of the trumpet and assists in signaling harmonic changes. The strings provide

harmonic support. The harmonic changes in this movement are akin to the hare suddenly turning and changing his directional path.

Movement VI (Egg) represents the inner-most layer of Kashchei and contains the core material for the entire work. Here, the orchestrational choice of solo and duet is very important to the work's program. The solo violoncello that begins the movement represents Kashchei – his voice, his soul, his desires. In measure 227 the violoncello is joined by a muted violin. The violin represents Kashchei's vision of his beloved Tzarevna. Despite being outwardly evil, at the core of his soul he pines for beauty and love (thus the modal string duet). In measure 250 the violin distantly repeats the Tzarevna's theme (from the Rismky-Korsakov opera) while the violoncello continues to play (lament) with variations on the theme. Finally, the aggressive, full ensemble of the last movement (The Death of Kashchei) consumes the duet.

3.2.3 – Textural fabric

There are several different musical textures found throughout *Kashchei*:

monophonic
homophonic
polyphonic
heterophonic
homorhythmic
polyrhythmic
micropolyphonic/spectral
onomatopoeic

These textural types are woven together to create additive and compound textures unique to each movement. A general change in textural density from densely to loosely woven corresponds with the aforementioned inverted arch form. These textural changes relate closely to the orchestration and help to define the different movements and contribute

to the comprehension of the narrative. Figure 7 depicts each movement with its textural characteristics.

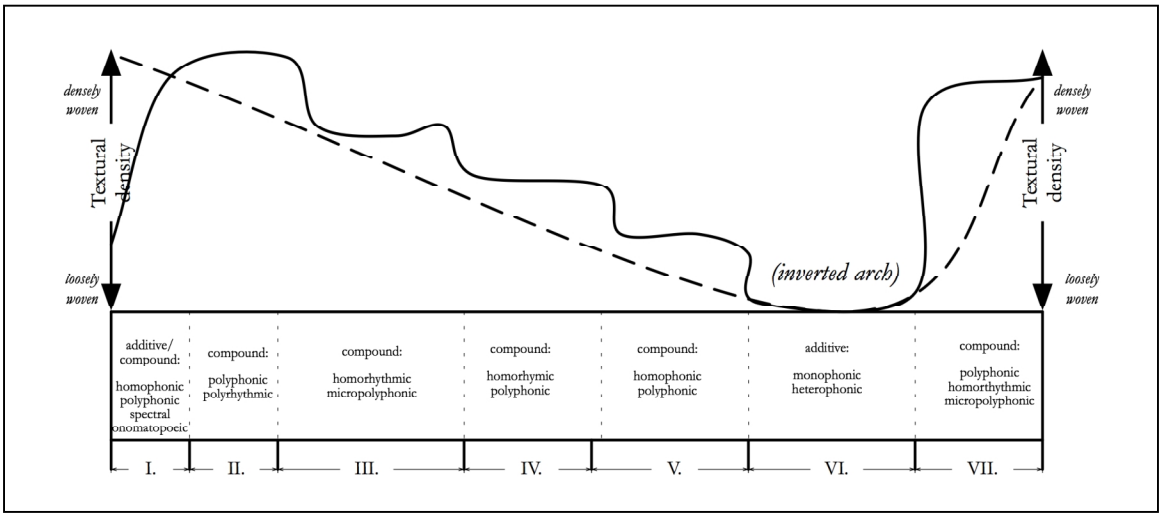

Figure 7: Textural density (over time) as a method of delineating form

3.2.4 – Motivic development

The core motivic material of *Kashchei* pays homage to the motivic and harmonic construction of the character Kashchei, as depicted by Rimsky-Korsakov and Stravinsky. The main theme of *Kashchei*, fully revealed in movement VI, is derived from a simple melody sung by the Tzarevna in Rimsky-Korsakov's opera. The preceding movements obscure and develop this material. A more detailed description is given in Section 4.3.

3.2.5 – Harmony

The harmonic system of *Kashchei* is derived using an analysis-resynthesis of recordings of the seventeen Russian Danilov Bells found at the Lowell House of Harvard University. A general upward harmonic motion (emphasized through a registral shift from low to high) assists in

creating a form that leads to movement VI. A more detailed description of the harmonic system occurs in Section 4.2.

3.2.6 - Electronics

The electronic component of *Kashchei*, diffused in nine channels, subtly supports the form. The electronics are most prominent in both volume and spatial dispersion at the beginning of the work and slowly dissipate into the ensemble as each layer surrounding Kashchei's essence is removed. The electronics die away at the end of movement VI, so that during movement VII (*The Death of Kashchei*), the electronics are absent and only the instrumental ensemble prevails. Poetically, this loss of electronics at the end represents the demise of Kashchei and his magical powers. A more detailed description of the electronics is discussed in Section 5.

4 – Pitch Material

4.1 – Introduction

In writing *Kashchei* I used a harmonic language and a selection of motives rooted in the Russian tradition. I did this to make my interpretation of the narrative more convincing and to give a fully organic approach to the concept and realization of this work.

4.2 – Harmony – borrowing from Russian traditions

The harmony of *Kashchei* comes from seventeen chords that I derived from an analysis of recordings of the Danilov Bells. I chose to use Russian bells as the foundation of my harmony because of their particular sonic qualities, ease in blending with electronics, and for their cultural and historic implications.

Bell ringing developed in Russia soon after the conversion to Christianity in 988 CE. From a religious standpoint, the bells were both functional and symbolic. Bell ringing was used to summon the congregation, underline important moments in the service, and to announce religious holidays and important events such as births, marriages, and deaths. Symbolically, bells were considered sonic icons and provided a soundscape that helped one better focus on the act of prayer. With church and state being nearly inseparable in pre-revolutionary Russia, bell ringing was not only used religiously, but also as a method of announcing community events, visits by royalty, or emergencies such as floods, fires, and wars.

Russian bells differ from Western bells in their construction, method of ringing, and sonic qualities. Russian bells are commonly cast from a

mixture of bronze and tin. Silver is added later to produce unique overtone characteristics. Unlike Western bells, Russian bells have walls made of varying thicknesses that allow for unpredictable partials to resonate above the fundamental tone and are tolled rather than pealed.[15] Traditionally, Russian bells were cast without even having a specific pitch in mind – a practice that resulted in bells that sound very different from those of Europe. There was a great city/village-wide unveiling ceremony when a new bell was to be rung for the first time. If the sound was beautiful the bell master was rewarded with wealth; if the bell did not resonate well, he was punished and sometimes sentenced to death.

During the Russian revolution, the persecution of Christianity led to the destruction of many bells; their metal was used for tank building and artillery. However, their cultural importance was not forgotten as they played an influential role in Russian concert music. Some prominent examples include the *Slava* scene in Mussorgsky's opera *Boris Godunov*, the end of Tchaikovsk'y *1812 Overture*, the "Great Gate of Kiev" from *Pictures at an Exhibition*, and many of Rachmaninov's works. After the fall of the Iron Curtain, Russian bell ringing came back into fashion.

4.2.1 – The Danilov Bells

The Danilov Bells are a set of seventeen bells that were cast over a span of more than one hundred years. The oldest of the bells was made in the late 18th century; the set was completed with bells made in the early 20th century. They originally hung in St. Danilov's Monastery in Moscow. However, with the melting down of many bells after the 1917 revolution, it was decided, in 1930, to sell the bells to American industrialist Charles

[15] When a bell is tolled, the clapper is moved and the body remains stationary. When a bell is pealed the body is moved back and forth.

Crane, a Russophile who promised to donate the bells to Harvard University. The bells hung in the Lowell House of Harvard for seventy-five years and were rung by a team of *Klappermeisters* every Sunday and on high holidays. In 2008 the bells were returned to the Danilov Monastery. A set of replicas was cast and now hang in the Lowell House. In October of 2009 I traveled to the Lowell House to make recordings of the new Danilov Bells.

4.2.2 – Analysis-resynthesis

The harmonic system of *Kashchei* is derived using a method of analysis-resynthesis that combines microtones with equal temperament. I have been pursuing this type of harmonic language in my recent compositions that feature live instruments with electronics.

A spectral analysis focusing on the fifteen most prominent partials was performed on each bell using Audiosculpt software. This yielded data on each partial that included the exact frequency, duration, and volume. Using the software OpenMusic I converted this data into seventeen harmonies, each with three different versions.

The first version is an exact resynthesis of the fifteen partials. It is used in the electronics as soundfile material and as a detuned piano and a detuned vibraphone that play through the speakers situated within the ensemble. A detailed description of the electronic processes can be found in Section 5.

The second version, used in the electronics and by the performers, constructs harmonies with each frequency quantized to the nearest quarter tone. Figure 8 displays the microtonal version of the harmonies.

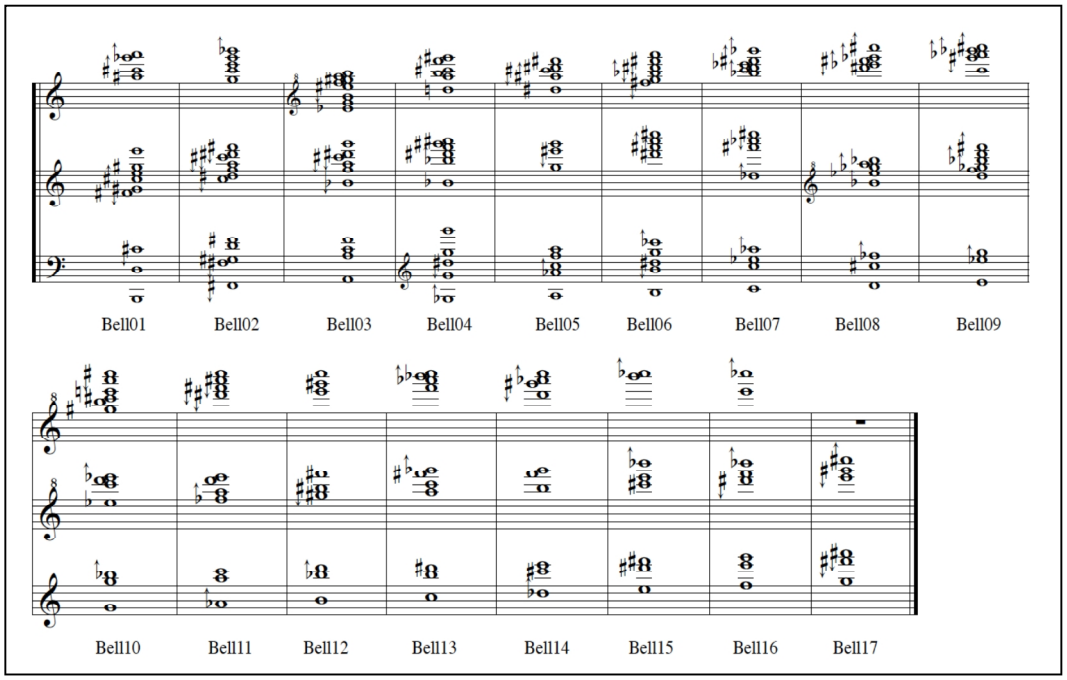

Figure 8: Analysis-Resynthesis of the 17 Danilov Bells (rounded to the nearest quarter-tone)

The third version, used by the performers throughout the work, constructs harmonies with each frequency rounded to the nearest semi-tone. Figure 9 displays the tempered version of the harmonies.

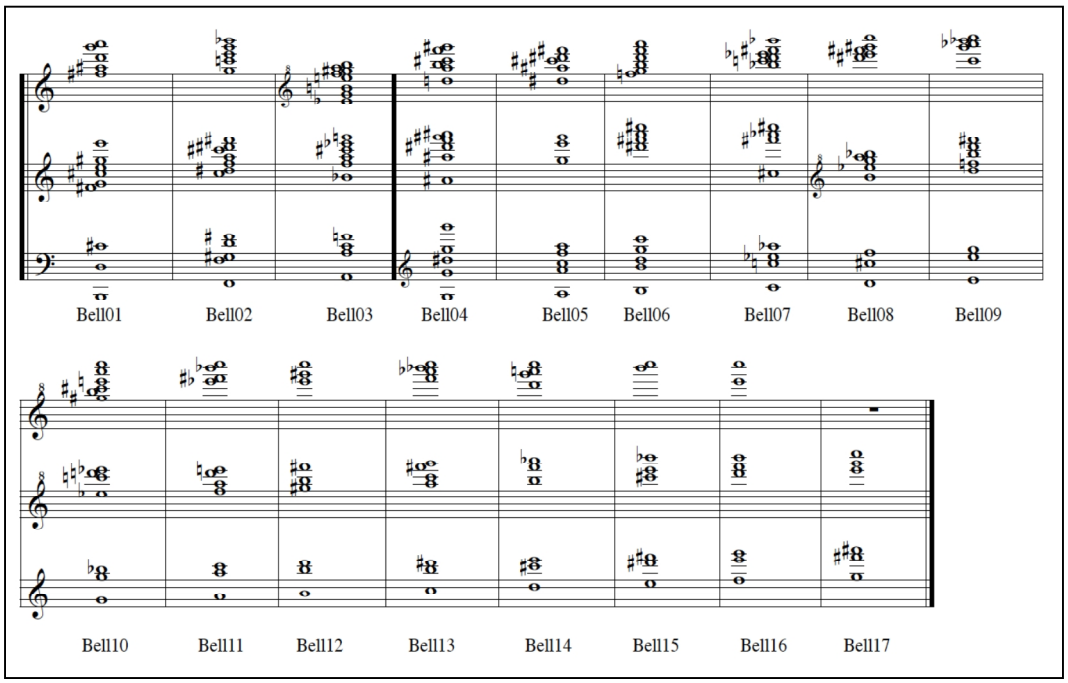

Figure 9: Analysis-Resynthesis of the 17 Danilov Bells (rounded to the nearest semi-tone)

Figure 10 shows the method of arriving at the three harmonic versions of Bell01, known as the *Mother Earth* bell. The same process was performed on each bell. Together, these three versions of the same harmony provide both tempered and microtonal possibilities; when used in combination they yield an effect with a rich and unique timbre.

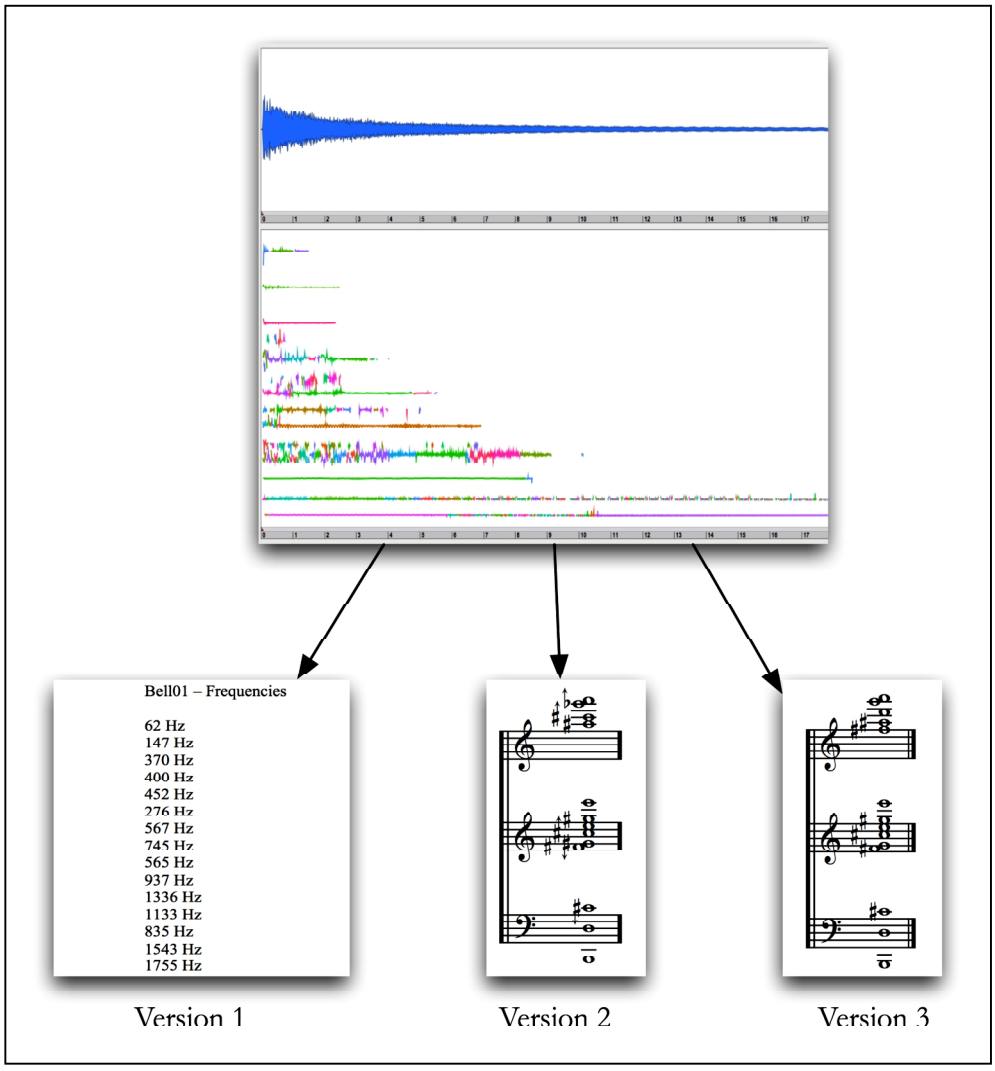

Figure 10: Analysis-resynthesis of Bell01

A further layer of harmonic variety was achieved using a process of harmonic simplification. Each harmony was thinned out based on its spectral volume and duration characteristics. The harmonies are quite dense in their raw form; however, just as the partials of a bell slowly thin out over the course of time after it is struck, the harmonies also have different levels of density to choose from. Figure 11 shows the harmonic simplification of Bell01 – it slowly loses its upper partials until only the fundamental remains.

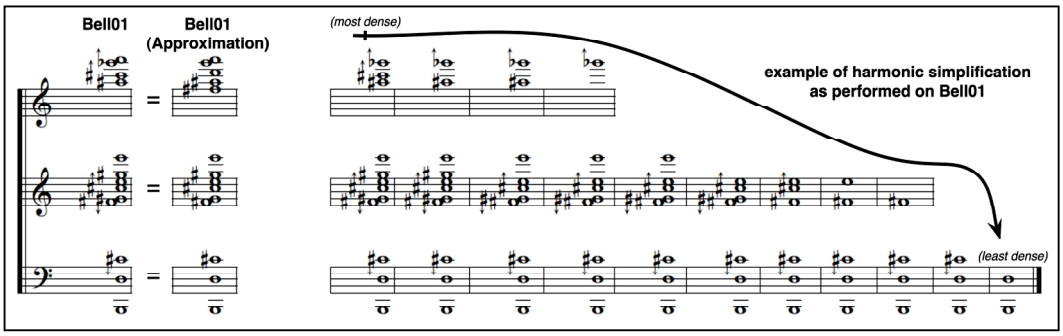

Figure 11: Full harmonic simplification of Bell01 from most to least dense.

4.2.3 – Danilov Bell harmonic trajectory

A large-scale rising harmonic trajectory, based on the progression of the ascending roots from Bell01 to Bell17, beings in movement II and continues through movement V. Movement V ends on the G-rooted chord represented by Bell17 in measures 218 and 219. However, the harmonic motion continues into the beginning of Movement VI with the G harmony resolving to an A-rooted one on measure 220. Since there is no eighteenth Danilov Bell, I created an "imaginary" bell that is actually heard in the electronics. This is the registral apex of the piece, and over the course of the movement the register slowly shifts downward, leading

into the beginning of movement VII. As a form of variation that supports the narrative, a harmonic reduction is used in which the harmony transitions from dense and microtonal, to thin and diatonic, and finally monophonic over the course of the piece.

Prior to composing, I created a harmonic map (see Figures 12, 13, 14), outlining the macro harmonic motion that would take place from movements I to V. I used this as the basis for my harmonic writing. However, I composed with many micro harmonic changes and adjustments that veered away from the original harmonic structure, in order to accommodate certain motivic choices. Movement VI is removed from the Danilov Bell harmonic structure, and is rather modal in character. Movement VII is also removed from the harmonic structure, featuring chromatic writing that is based on a chord whose fundamental is E, with close minor second relationships to F.

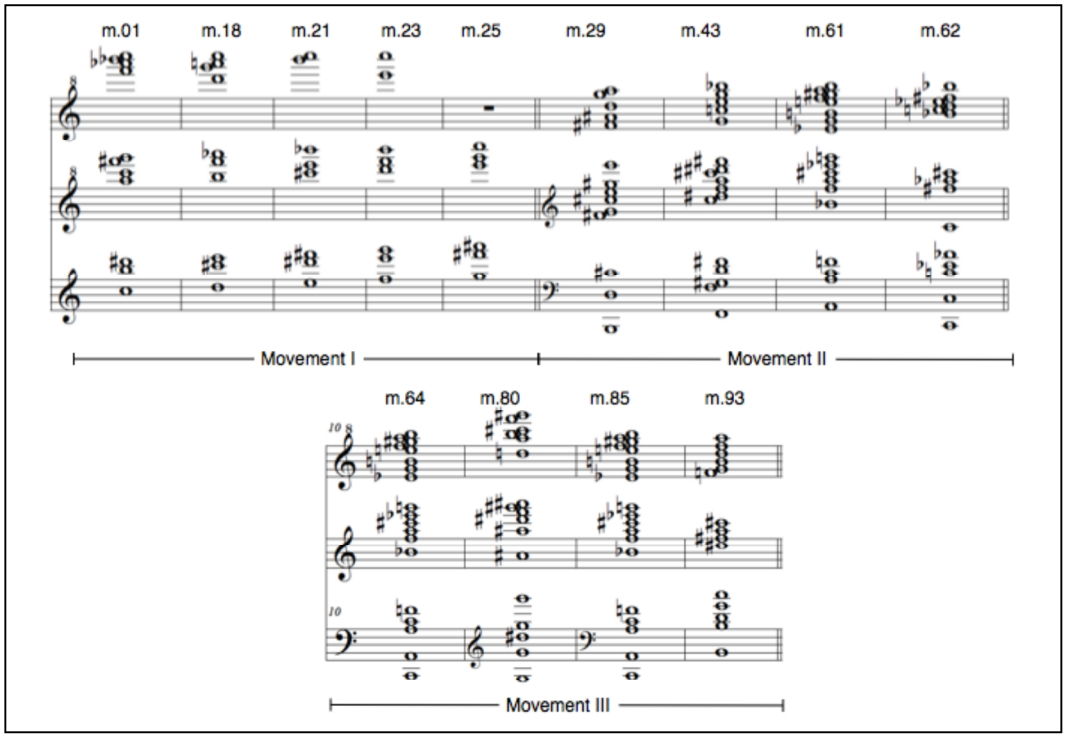

Figure 12: Harmonic map for movements I through III

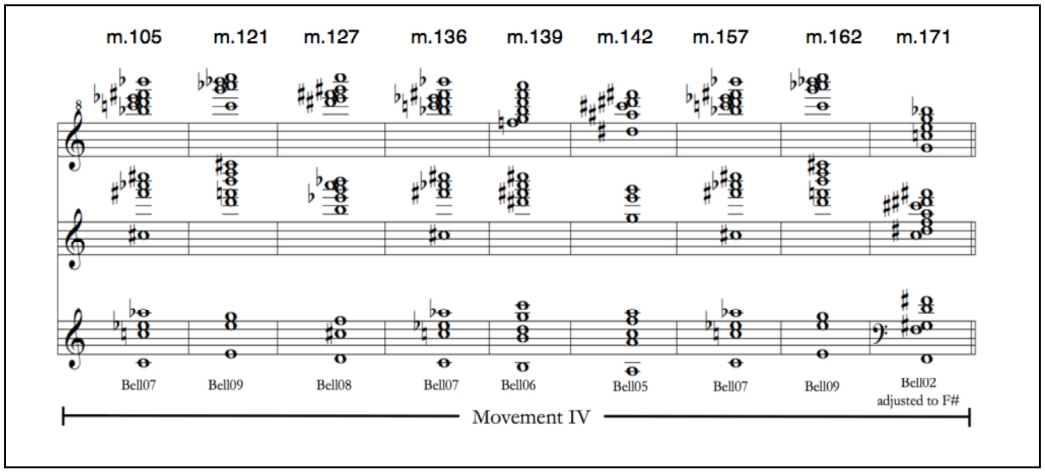

Figure 13: Harmonic map for movement IV

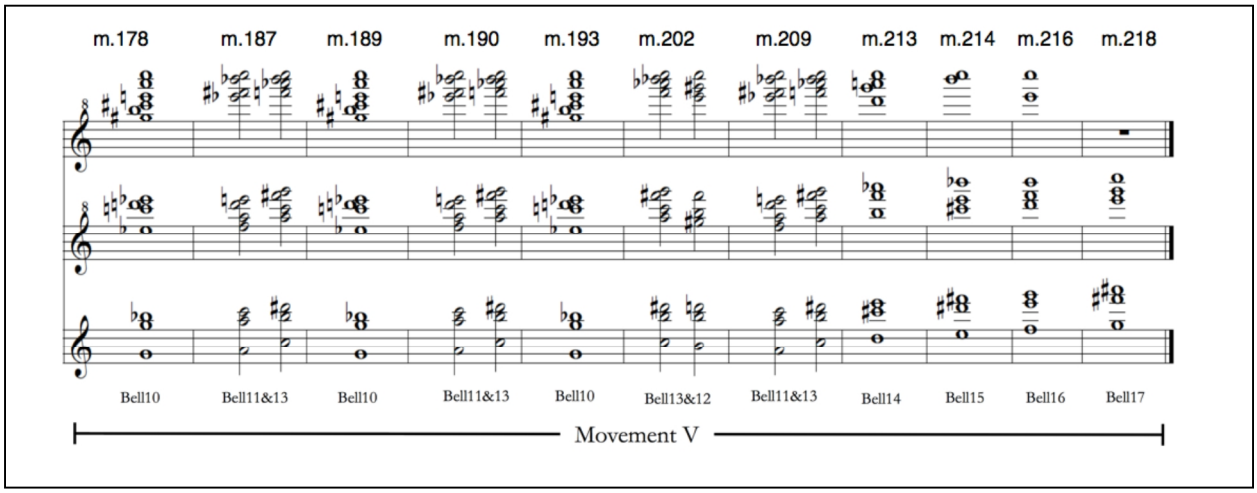

Figure 14: Harmonic map for movement V

The harmonic language also lends itself to the narrative of the work. For example, in Movement III, the harmonic foundation creates a "basket" that organizes the rest of the material present. The piano is responsible for outlining this foundation, with each chord functioning as a pillar in the weave. There are four main harmonies (whose fundaments are A – G – A – B

respectively); these harmonies representing the 4 sides of rectangular shaped basket. Figure 15 displays a visual representation of the "harmonic basket".

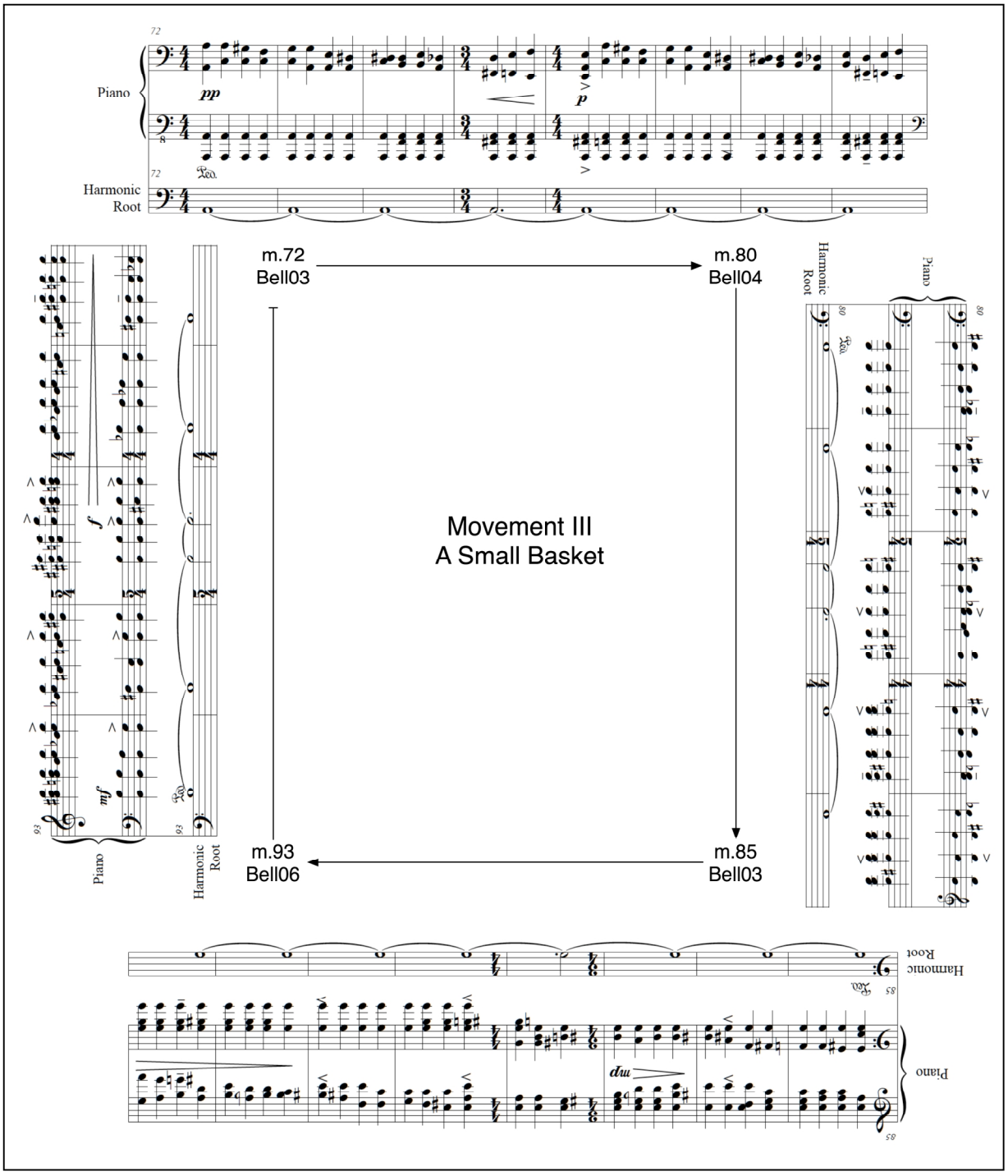

Figure 15: Visual representation of the "small harmonic basket" alluded to in movement III.

4.3 – Motivic material as quotation

The basis of the motivic material for *Kashchei* comes from segments of Rimsky-Korsakov's opera *Kashchei the Deathless* augmented with elements from Stravinsky's ballet *The Firebird*. These materials are obscured and expanded using variation techniques in the harmonic, rhythmic, orchestrational, and electronic domains.

4.3.1 – Rimsky-Korsakov's *Kashchei the Deathless* – Tzarevna's Theme

The core material of *Kashchei* pays homage to the motivic and harmonic construction of the character Kashchei from Rimsky-Korsakov's opera *Kashchei the Deathless*. The main theme and unifying thread of my *Kashchei*, revealed in movement VI – *Egg*, is derived from a quotation of a simple melody sung by the Tzarevna in Rimsky-Korsakov's opera:

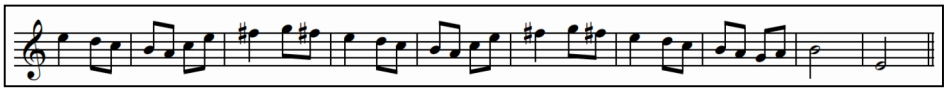

Figure 16: Tzarevna's theme from *Kashchei the Deathless*

In movement VI, the simplest exposure of the melody occurs from measure 257 to 264.

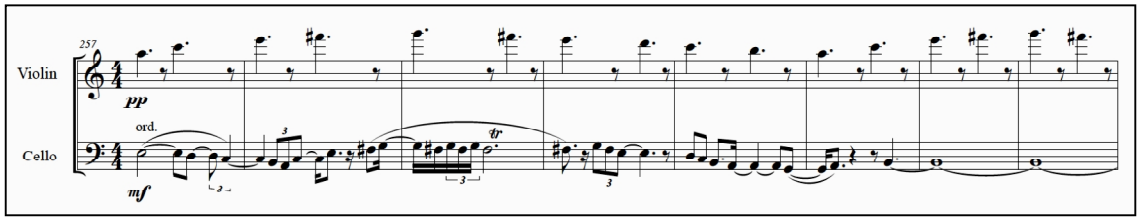

Figure 17: Movement VI – *Egg*, measures 257 - 264

From a narrative point of view, making this sweet and pining melody (originally sung by Kashchei's captive) the focal point of Kashchei's soul

allowed me to show a softer, gentler side of the character. Within all the entangled layers of evil rests a man, who in his essence, simply wants to love.

The above melody is woven throughout the work. For example, the melodic line played by the winds in movement I is derived from it. Similarly, in movement III, the melody is hidden within the atmospheric texture that slowly floats around the piano chorale. The melody is played in transposition by the vibraphone (with xylophone mallets) as depicted in Figure 18. The notes are then extended by the other instrumental players.

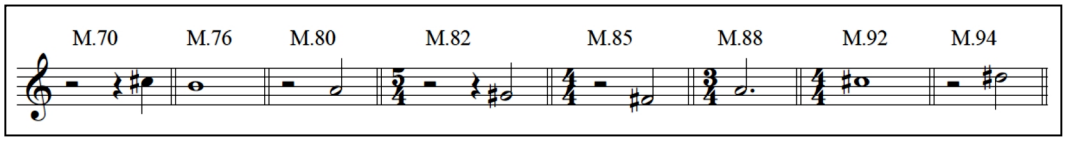

Figure 18: Tzarevna's theme hidden in the vibraphone part (movement III, reduction)

The melody functions as a foundation for the harmonic progression present in movement IV.

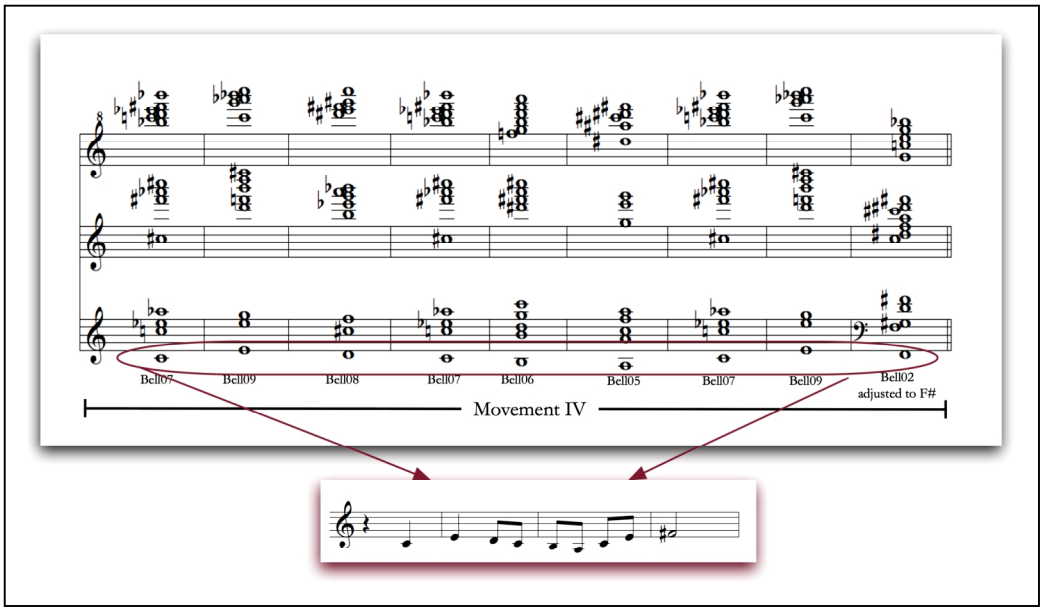

Figure 19: Harmonic contour of movement IV (reduction) with Tzarevna's theme as the foundation.

4.3.2 – Motivic quotations from Stravinsky and Rimsky-Korsakov

Other materials from Rimsky-Korsakov and Stravinsky also show up in my piece. Within his opera, Rimsky-Korsakov uses a *leitmotif* for Kashchei that outlines major thirds, minor thirds, and tritones. These are then filled in with chromaticism. I took two examples of this, shown in Figures 20 and 21, to use within my own work. The listener is introduced to the *leitmotiv* shown in Figure 20 in the first few seconds of the Rimsky-Korsakov's opera. It can be found in measure 3, with transposed versions occurring in measures 9, 14, 16, and 22 of the introduction. The *leitmotiv* is sprinkled throughout the opera.

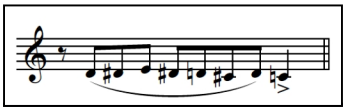

Figure 20: Kashchei *leitmotif* used by Rimsky-Korsakov

The second Rimsky-Korsakov *leitmotif* I employ is shown in Figure 21 and can be first seen in the last 35 measures of Part I of the opera.

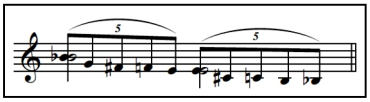

Figure 21: Kashchei *leitmotif* used by Rimsky-Korsakov

Similarly, I use some representative Kashchei material from Stravinsky's *The Firebird* (1910 version). In fact, this quotation from the opening measures (Figure 22) shows emphasis placed on the minor third, major third, and tritone.

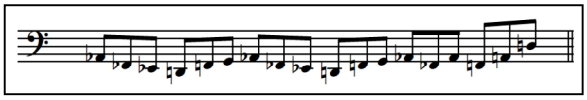

Figure 22: Quotation from Stravinsky's *The Firebrid*

Movement II – *The Iron Chest* uses these three motives to create a dense texture. An excerpt from the second movement (measures 39 to 43) is shown in Figure 23, highlighting the three aforementioned motives.

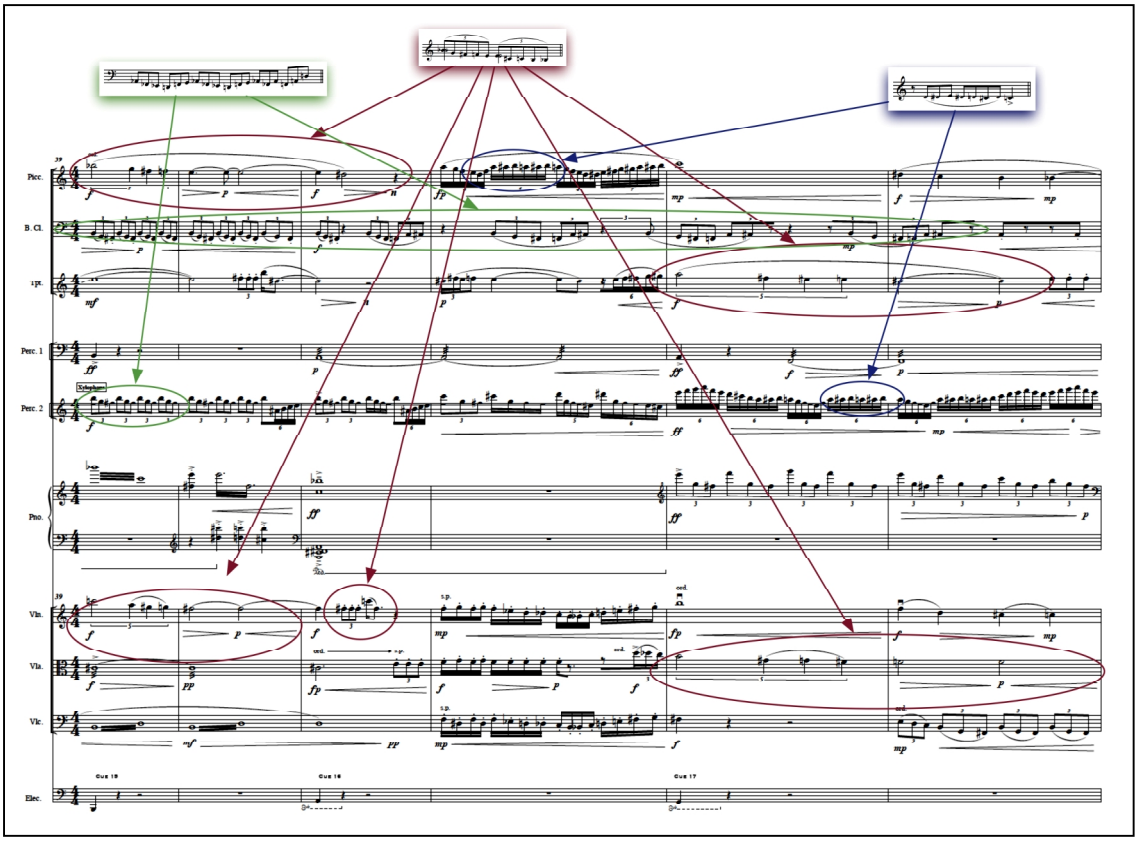

Figure 23: Motivic ideas in an excerpt from Movement II

5 – Electronics

5.1 – Introduction

The electronic component of *Kashchei* consists of events containing pre-recorded soundfiles and live audio processing. The electronics assist in portraying the magical nature of the piece by providing an otherworldly realm of enchantment and illusion that is naturally written into fairytales. The electronics function as an expansion of the instrumental ensemble, providing an immersive, microtonal environment that masks and expands the sounds of the acoustic instruments.

5.1.1 – Technical component

The electronic events (both soundfiles and real-time processing) are triggered in Max/MSP by an onstage performer with a MIDI keyboard. An additional technical assistant or sound engineer can be present to adjust levels, but is not necessary. The user interface, shown in Figure 24, is very simple and all levels can be stored as presets triggered by reinitializing the patch. This allows the onstage performer complete control without the necessity of other computer assistants.

The piece is designed for playback through nine-speakers: a standard seven-channel surround set-up (7.1 ITU without subwoofer) with two additional on-stage speakers situated within the ensemble. To achieve maximum flexibility, I have also designed a version for five-channel playback. The technical set-up diagram is shown in Figure 25 and the stage layout in Figure 26.

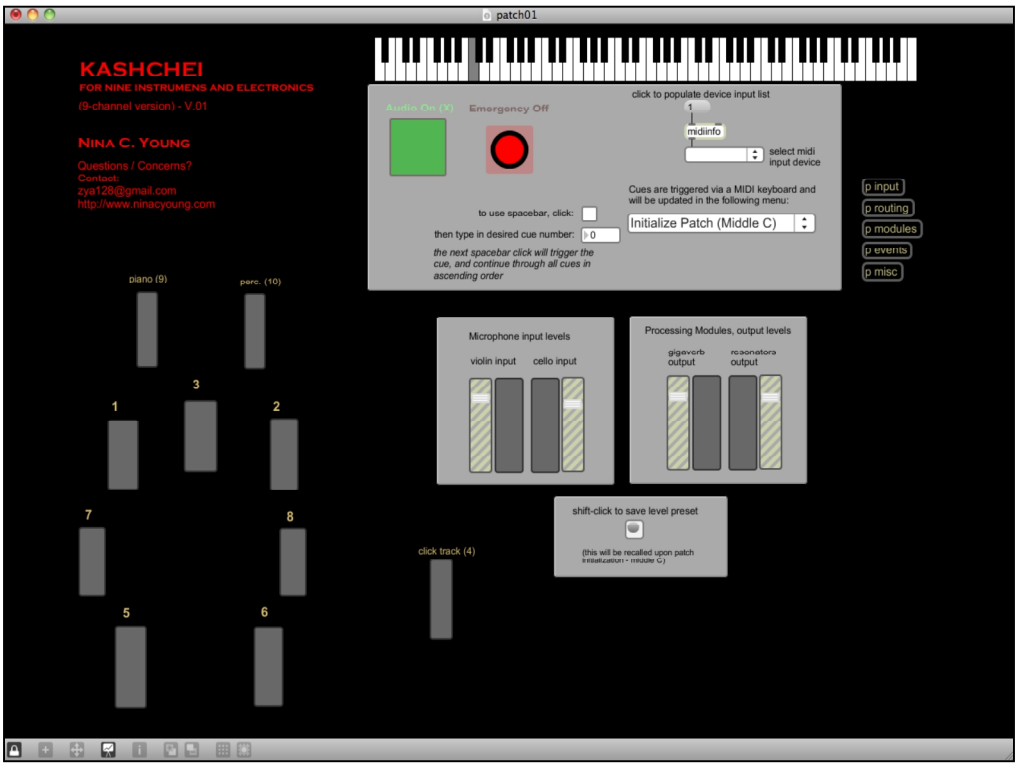

Figure 24: *Kashchei* user-interface – Max/MSP patch

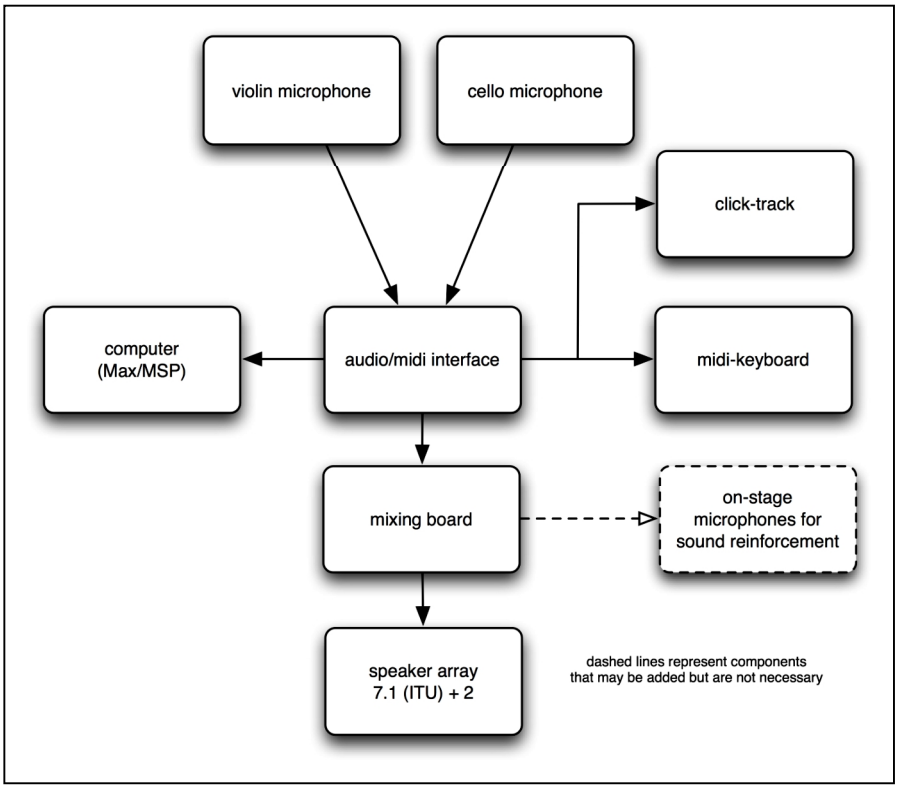

Figure 25: Technical set-up diagram

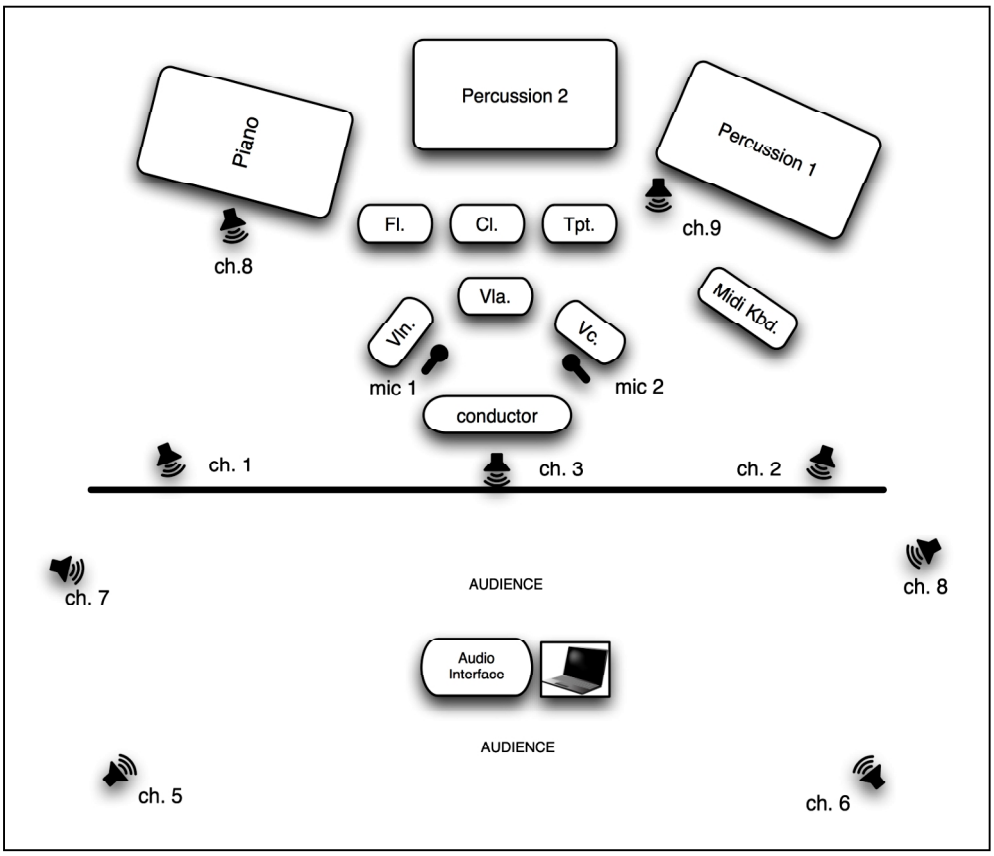

Figure 26: Stage set-up diagram

In preparing the electronic component of Kashchei, I chose to focus on triggered, pre-composed soundfiles and to keep live processing to a minimum. I made this decision in hopes of creating a simple, stream-lined set-up that eliminated as many technical risks as possible. Despite this decision, it is still possible to create the illusion of live-processing. For certain sections, I created simulations of the acoustic instruments and then ran those through processing modules in the studio. I recorded this material and used it as soundfiles. Movement IV is laden with examples of this method – the electronics consist of recordings of the flute and clarinet passages passed through filters and delay lines, then spatialized.

During the first rehearsals of the work I further reduced the live processing to only occur during movement VI, thus only two onstage microphones are now necessary in the final version. The instrumental writing of the piece is already so harmonically and texturally dense that more live processing proved superfluous.

5.2 – Spatialization as a method of delineating form

The narrative of Kashchei, particularly the concept of removing layers and transitioning from density to clarity over the course of the piece, played a large role in the spatialization of the electronics. The electronics are most prominent in amplitude, gestural activity, and spatial dispersion at the beginning of the piece. They slowly dissipate into the ensemble as each layer surrounding Kashchei's soul is removed.

Movement I begins with electronics coming out of onstage speakers 8 and 9. During the course of the movement the electronic environment expands as the nine channels become saturated with electronic sound. Movement II features full saturation. During movement III the full nine-channel surround set-up is utilized, however, the listener can now localize distinct point sources that move through the speaker array. During Movement IV the rear speakers are silenced and speakers 6 and 7 grow less prominent. Movement V uses only the front three speakers and the two on-stage ones. The spatialization is further reduced in movement VI where only the stereo speakers (channels 1 and 2) are heard and eventually fade away into silence. This process of spatialization reduction is depicted in Figure 27.

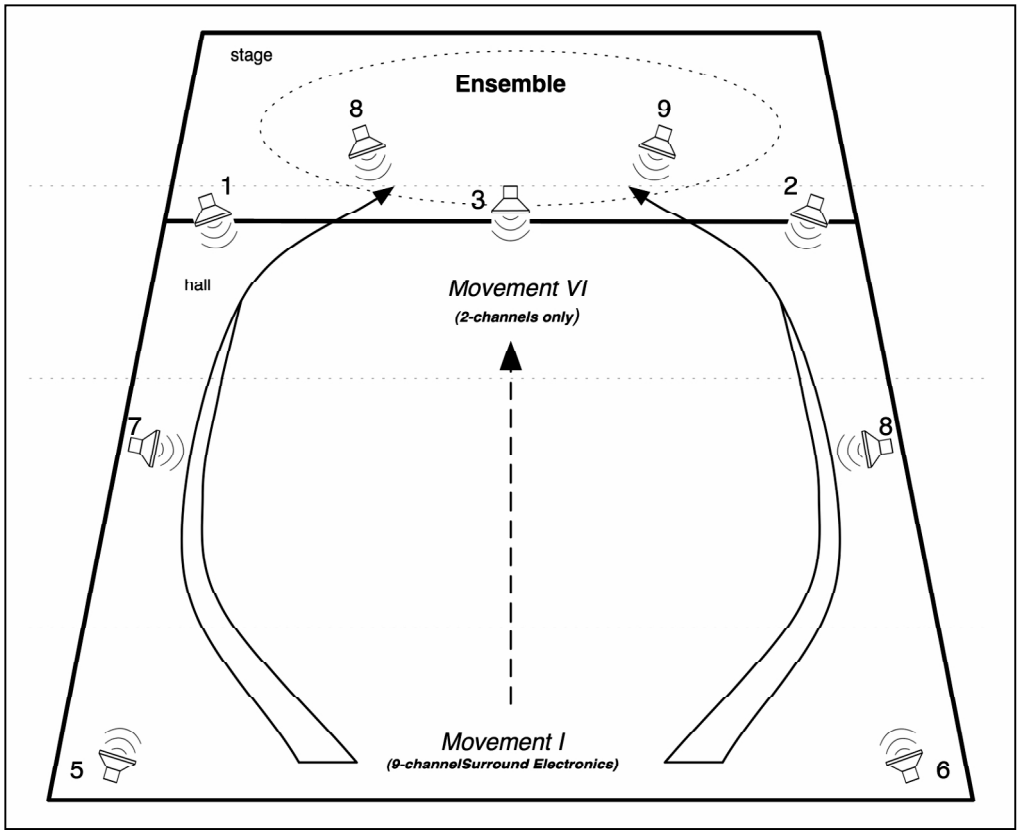

Figure 27: Spatialization as a method of delineating form

5.3 – Electronics as a method of expanding harmonic richness

As mentioned in Section 4.2.2, the electronics play an integral role in the harmonic structure of the piece. When working with instruments and electronics it is often difficult to find a way of blending the two together. By creating a harmonic language directly derived from recordings that are used in the electronics, an organic relationship is immediately established between the instrumental and electronic sound worlds. In this way, I am able to orchestrate the instruments of the ensemble as timbres adding to the electronics, and at the same time the recorded sounds can function as additional instrumental performers.

5.3.1 – Expanding the piano and vibraphone

In addition to blending sounds together, I also added to the harmonic richness of the ensemble with electronics by emphasizing microtones at the same time that instruments are playing in equal temperament. This is an idea that I first used in my piece *Kolokol* for two pianos and electronics.

When composing *Kashchei* I created seventeen virtual pianos and seventeen virtual vibraphones, each with a full range keyboard tuned to the harmonic characteristics of the seventeen Danilov bells. This was accomplished by converting the spectral data of each individual bell into *Scala* tuning files. I placed these *Scala* tuning files into the physical modeling program *Pianoteq* and created virtual instruments. I recorded different passages of my piece with these instruments, applying the correct tuning system from the seventeen Danilov Bells depending on the harmony of the section. When I desired an instrumental timbre that emphasized the clash between microtones and equal temperament in the harmony, I created soundfiles that would be diffused through the two on-stage speakers. In essence, I had a method of creating different pianos and vibraphones within the fixed ensemble. One example of this process can be found in movement III. While the piano is playing the chorale, a virtual piano (tuned to the particular bell harmony being used) plays simultaneously, giving the piano a microtonal harmony for each of the four harmonic sections. Measures 72 to 79 feature the live pianist playing along with a virtual piano tuned to Bell03; measures 80 to 84 feature the live pianist playing along with a virtual piano tuned to Bell04; measures 85 to 92 feature the live pianist playing with a virtual piano tuned to Bell03; and measures 93 to 102 feature the pianist playing with a virtual piano tuned to Bell06.

To further embellish the samples of these virtual instruments, I created processed electronics using the virtual instrument audio recordings as

source material. I passed the desired recordings through processing units to create soundfiles I could later use for playback. An example of this can be found in the electronic component of movement IV. The transient of each event contains a detuned piano and vibraphone sample (speakers 8 and 9), but also contains filtered granular synthesis of the virtual instrumental sounds, creating high-frequency, shimmering material.

5.3.2 – Speaker placement and spatialization as a method of fusing electronic and acoustic sounds.

Despite *Kashchei* being for a nine-channel surround set-up, the spatialization generally focuses on electronic sounds generated from within the ensemble. This is achieved by utilizing the front three speakers of seven-channel set-up as a source of direct sound and using the rear four speakers as means of portraying the reverberation characteristics.

More fundamental to this, however, is the use of speakers placed directly within the ensemble. I chose to create a nine-channel speaker system, with two speakers amongst the performers. These speakers are mostly responsible for diffusing the piano and vibraphone material discussed in Section 5.3.1. By doing so I was hoping to mask the listener's ability to easily decipher the electronic from the instrumental point sources. Poetically, I found this concept to coincide with the duality of fantasy and reality of the Russian lacquer art tradition mentioned in Section 3.2.2. During a performance of *Kashchei*, the listener is immersed into a sonic fairytale where the line between reality (acoustic instruments) and fantasy (electronics) is blurred. Ideally the listener would at times ask, "was that an electronic or an instrumental sound?"

6 – Observations and Further Directions

6.1 – Programmatic composition

Most of my compositional ideas develop from some sort of narrative. I find this a useful means of developing form and inspiring the musical gestures of a piece. However, I often refrain from directly referring to the narratives (by use of suggestive titles, program notes, etc.) for instrumental works as I somewhat fear repercussions from the battle of absolute versus program music. This composition is the first time I created a work directly inspired by a narrative and whose function is to create an auditory "film" that tells the listener a story.

Upon hearing the premier of the work and receiving some feedback, I find the depiction of the narrative in this composition to be effective. However, I question whether or not the work is too cautious in carefully refraining from making the story too obvious. Are the program notes enough to guide the listener? What happens if the listener does not have time to read the program notes prior to being exposed to the work? I wonder if the work could benefit from having a secondary element built in to assist in telling the tale, for example, a narrator, visual or text imagery, dance, creative lighting, etc. Perhaps by doing so I could more directly state the narrative and allow the project to fully take on the role of story telling rather than just imply it.

I thoroughly enjoyed the working method that the narrative provided in *Kashchei*. Music directly inspired by program is a method I plan to pursue in future compositions, but perhaps more directly by means of ballet/dance or opera.

6.2 – The concept of *reverse variations*

When I first decided to write *Kashchei*, I chose to use the concept of *reverse variations* to unveil the different layers of Kashchei's soul. However, when it came to composing the piece, I only loosely used this concept. My compositional method relied on layering motivic material to create a particular texture and musical gesture for each movement rather than sticking to variation, in the stricter sense. I would be interested in further pursuing this concept, but perhaps in a work with more limited instrumentation.

6.3 – Unique speaker placement in works with electronics

In my view, the most challenging element of mixed electro-acoustic performances occurs at the moment of sound diffusion. Composers are blessed with ever faster computers, advanced processing modules, and good performers enthusiastic about the genre. Nevertheless, despite working in facilities with excellent speakers, the concert hall experience is hardly similar to that of the studio, leaving performances too often falling short of the listener's expectations. A great deal of current spatialization research addresses this: the construction of speaker domes, new software, innovative recording techniques, etc. However, all of these solutions require arrays of speakers that recreate the sound characteristics of one space within a hall that already has its own unique properties. When live performers are added, their natural sound diffusion clashes with the characteristics established by the electronics. While there may be artistic occasions for such disparity, it need not be the default.

I am very interested in finding ways to deal with this issue. When working with mixed electro-acoustic music, I am trying to identify methods of speaker placement and electronic sound projection that mask

the listener's ability to distinguish "real" (instrumental) sounds from electronic ones. I believe that by placing the point sources of electronic sounds directly within the performing ensemble (rather than speaker arrays throughout the hall), all sound will naturally diffuse through the space, creating a more realistic sound environment using the hall's inherent reverberation characteristics. This concept tries to solve the aforementioned "hall within a hall" problem while helping to suspend the audience's disbelief when listening to works that use both live performers and electronics.

Within *Kashchei* I attempted to reduce the "hall within a hall" effect by localizing most electronic sounds to the front (stage side) of the speaker array and by placing additional speakers within the ensemble. After witnessing the premier, I found the speakers within the ensemble to be particularly effective and would consider making an arch around the ensemble to accommodate the other seven channels in a more similar fashion. In future projects I plan to continue to use unique (and more extreme) speaker configurations to better achieve an organically mixed acoustic and electronic sonic environment.

6 – Bibliography

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KASHCHEI

For Nine Instruments and Electronics

Nina C. Young

November 2010

KASHCHEI
for nine instruments and electronics
November 2010
Approximate duration: 19:00
Premiered February 8, 2011, Live@CIRMMT – Montreal, Canada

Instrumentation:

flute (+ piccolo)

clarinet in B♭ (+ bass clarinet)

trumpet in C (+ piccolo trumpet in A; straight and harmon mutes)

2 percussion:
- I – vibraphone
- I – almglocken (F4, G#4, A4, C5, D#5, E5, F5, G5, A5, B5, C#6)
- I – crotales (E6, F6)
- I – triangle
- I – wind chime
- I – splash cymbal
- I – suspended cymbal (medium)
- I – sand paper blocks
- I – snare drum
- I – 2 timpani (31" & 28")
- II – crotales (G#6, A6, A#6, B6, C7, D7, D#7, E7, F#7, G7, G#7, A7, A#7, B7, C8)
- II - glockenspiel
- II – xylophone
- II – triangle
- II – suspended cymbal (small to medium)
- II – wind gong
- II – medium tam-tam
- II – large tam-tam
- II – thundersheet
- II – snare drum
- II – bass drum

piano

violin
viola
cello

MIDI keyboard (88 keys) – additional player required
electronics (see performance instructions for details)

Score in C (piccolo, glockenspiel, crotales, xylophone retain their octave transpositions.)

Program Notes:

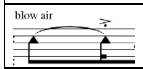
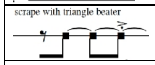
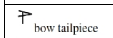
Kashchei, for nine instruments and electronics, was written by Nina C. Young in 2010 in partial fulfillment of the Master's of Music degree at McGill University under the supervision of Professor Sean Ferguson. The piece is a representation of Kashchei – a character from Russian folklore who makes an appearance in many popular fairytales or *skazki*. He is a dark, evil person of ugly, senile appearance who principally menaces young women. Kashchei cannot be killed by conventional means targeting his body. Rather, the essence of his life is hidden outside of his flesh in a needle within an egg. Only by finding this egg and breaking the needle can one overcome Kashchei's powers. In one *skazka*, the princess Tzarevna Darisa asks Kashchei where his death lies. Infatuated with her beauty, he lets down his guard and eventually explains, "*My death is far from hence, and hard to find, on the ocean wide: in that sea is the island of Buyan, and upon this island there grows a green oak, and beneath this oak is an iron chest, and in this chest is a small basket, and in this basket is a hare, and in this hare is a duck, and in this duck is an egg; and he who finds this egg and breaks it, at the same instant causes my death.*" My own piece explores the seven layers and death of Kashchei. *Kashchei* is thus organized into seven continuous movements:

I. An Oak Tree on the Island of Buyan
II. The Iron Chest
III. A Small Basket
IV. The Hare
V. A Duck
VI. Egg
VII. The Death of Kashchei

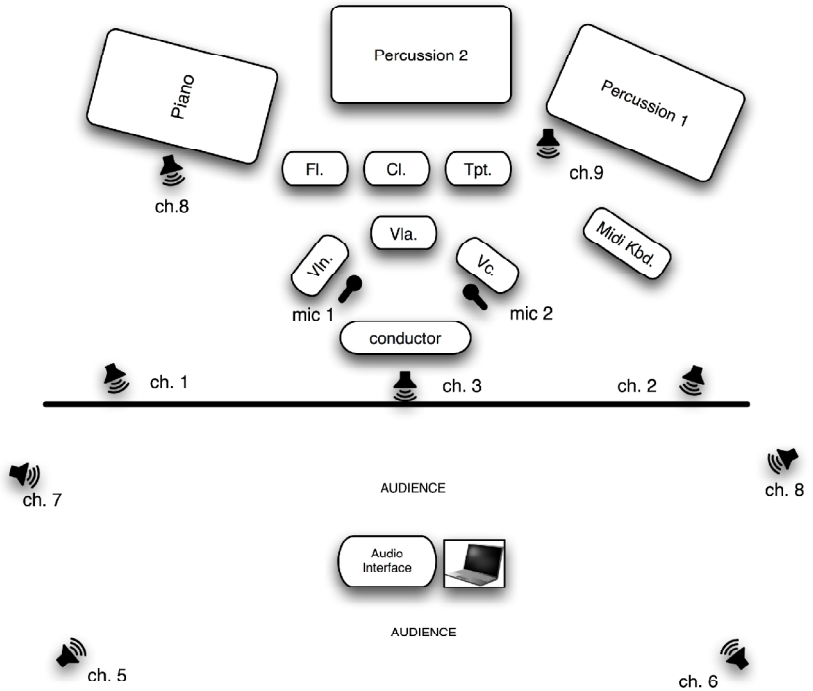
The character of Kashchei has been used musically by Rimsky-Korsakov in his opera *Kashchei the Deathless* and by Stravinsky in *The Firebird*. Stravinsky, a pupil of Rimsky-Korsakov, would have been aware of the musical motives associated with Kashchei in Rimsky-Korsakov's opera, and thus many similarities exist in the motivic construction and harmonic character of both compositions.

Kashchei pays homage to the Kashchei of Stravinsky and Rimsky-Korsakov by incorporating small thematic quotations from both works. The main theme, a quotation from the Rismsky-Korsakov opera of material sung by the Tzarevna trapped in Kashchei's castle, is gradually revealed in its simplest form using a loose interpretation of the concept of reverse variations. This process can be related to the wooden Russian doll, the *matryoshka*, where a simple, small doll is concealed within the shells of many larger, more elaborate ones. Similarly, one must unfold many layers to reach the essence of Kashchei's life: as each movement (variation) is peeled away the listener gets closer to the core musical material that defines Kashchei's soul. Poetically, this musical material with its simple beauty and lyricism, shows us that although Kashchei is evil, his soul, in it's purest form (*VI. Egg)* yearns for love and beauty like all mankind.

Notation Legend:

	Sharped note plus one quarter-tone	
	Sharped note	
	Sharped note minus one quarter-tone	
	Natural note	
	Flatted note plus one quarter-tone	
	Flatted note	
	Flatted note minus one quarter-tone	
n	*niente*	
senza vib.	without vibrato	
ord. vib	normal vibrato	
l.v.	*lascia vibrare*	
ord.	*ordinario*	
	tongue ram	(flute)
flz. above 	flutter tongue	(flute)
w.t.	whistle tone	(flute)
K tr	key trill	(flute, clarinet)
	breath tone, souffle	(flute, clarinet)
	Blow air through the instrument (no distinct pitch)	(trumpet)
	When playing the wind-gong, scrape with a triangle beater	(percussion)
	roll	(percussion)
s.p.	*sul ponticello*	(strings)
	place bow on tail piece and bow as indicated	(strings)
	tremolo	(strings)

Stage Set-up:



Electronics:

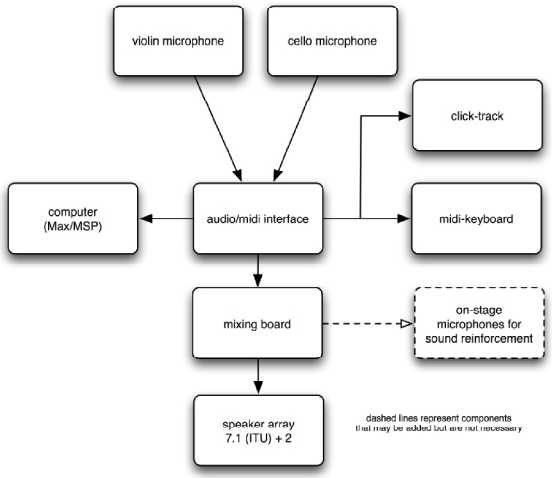
To fully realize the electronics of this piece, please refer to the exact technical details, Max/MSP patch, and necessary sound files. These are available with the accompanying DVD or by contacting ***zya128@gmail.com***

The electronics consist of a Max/MSP patch triggered by the onstage MIDI Keyboard player. The patch performs live processing (resonators, reverberation) and triggers pre-recorded soundfiles. In movement 3 the patch triggers a click-track that is sent to the conductor to help align the live ensemble with the soundfiles. This click track ceases at the beginning of movement 4.

Technical Equipment:

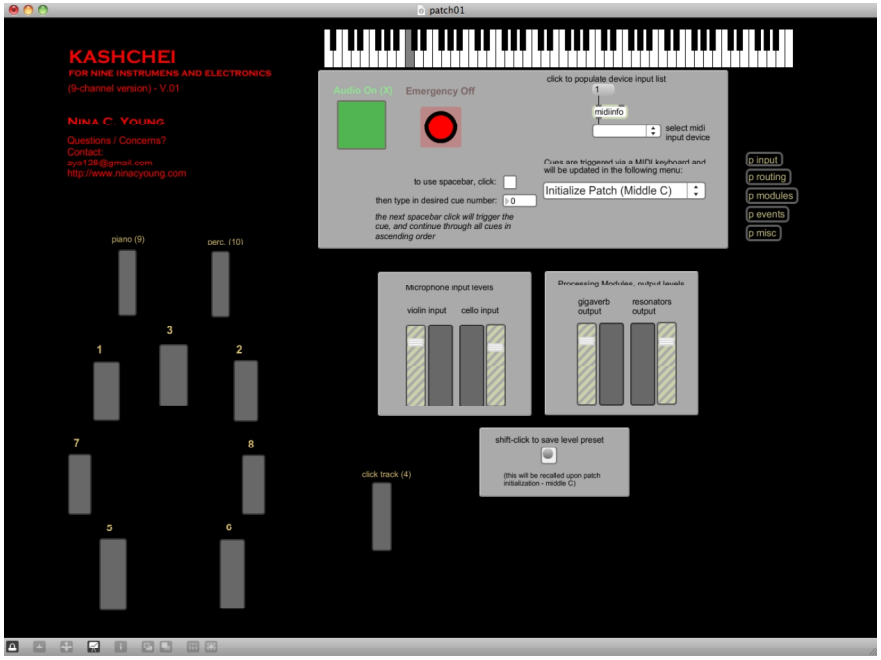
- Computer running Mac OSX (10.6 or higher)
- Max/MSP 5
- Midi Keyboard (88 keys)
- Audio Interface - 2 inputs, 10 outputs (ex: Yamaha DM1000)*
- 2 cardioid microphones
- headphones for the conductor (a click track is triggered in movement 3)
- 9 speakers (2 and 5 channel versions are available)

Tech Set-Up:



Max/MSP Patch:

Below is an image of the user interface. To access this patch, open Max5, set the file-path preferences to the patch folder, quit max, and restart by opening the patch. Please refer to the documentation in the patch folder for detailed usage instructions.



Electronic Cues:

There are 77 cues triggered by the onstage MIDI Keyboard player. Below is a description of each cue.

Movement 1

Cue01	sample01.aif	stereo01.aif
Cue02	sample02.aif	stereo02.aif
Cue03	sample03.aif	
Cue04	sample04.aif	stereo03.aif
Cue05	sample05.aif	stereo04.aif
Cue06	sample06.aif	stereo05.aif
Cue07	sample07.aif	
Cue08	sample08.aif	
Cue09	sample09.aif	stereo06.aif
Cue10	sample10.aif	stereo07.aif
Cue11	sample11.aif	

Movement 2

Cue12	sample12.aif	
Cue13	sample13.aif	stereo08.aif
Cue14	sample14.aif	stereo09.aif
Cue15	sample15.aif	
Cue16	sample16.aif	stereo10.aif
Cue17	sample17.aif	
Cue18	sample18.aif	
Cue19	sample19.aif	
Cue20	sample20.aif	stereo11.aif
Cue21	sample21.aif	stereo12.aif
Cue22	sample22.aif	stereo13.aif
Cue23	sample23.aif	stereo14.aif
Cue24	sample24.aif	stereo15.aif
Cue25	sample25.aif	stereo16.aif
Cue26	sample26.aif	stereo17.aif
Cue27	sample27.aif	
Cue28	sample28.aif	
Cue29	sample29.aif	
Cue30	sample30.aif	
Cue31	sample31.aif	

Movement 3

Cue32	sample32.aif	stereo18.aif
Cue33	sample33.aif	stereo19.aif

Movement 4

Cue34	sample34.aif	stereo20.aif
Cue35	sample35.aif	stereo21.aif
Cue36	sample36.aif	stereo22.aif
Cue37	sample37.aif	stereo23.aif
Cue38	sample38.aif	stereo24.aif
Cue39	sample39.aif	stereo25.aif
Cue40	sample40.aif	stereo26.aif
Cue41	sample41.aif	stereo27.aif
Cue42	sample42.aif	stereo28.aif
Cue43	sample43.aif	stereo29.aif
Cue44	sample44.aif	stereo30.aif
Cue45	sample45.aif	stereo31.aif
Cue46	sample46.aif	stereo32.aif
Cue47	sample47.aif	
Cue48		stereo33.aif
Cue49		stereo34.aif
Cue50		stereo35.aif
Cue51		stereo36.aif
Cue52		stereo37.aif
Cue53		stereo38.aif

Movement 5

Cue54	sample48.aif	stereo39.aif
Cue55	sample49.aif	
Cue56	sample50.aif	
Cue57	sample51.aif	
Cue58	sample52.aif	stereo40.aif
Cue59	sample53.aif	
Cue60	sample54.aif	
Cue61	sample55.aif	
Cue62	sample56.aif	
Cue63	sample57.aif	
Cue64	sample58.aif	
Cue65	sample59.aif	
Cue66	sample60.aif	
Cue67	sample61.aif	
Cue68	sample62.aif	
Cue69	sample63.aif	
Cue70	sample64.aif	

Movement 6

Cue71	sample65.aif
Cue72	live processing: resonators & gigaverb
Cue73	live processing: resonators & gigaverb
Cue74	live processing: resonators & gigaverb
Cue75	live processing: resonators & gigaverb
Cue76	live processing: resonators & gigaverb
Cue77	live processing fade out

Movement 7

No electronics

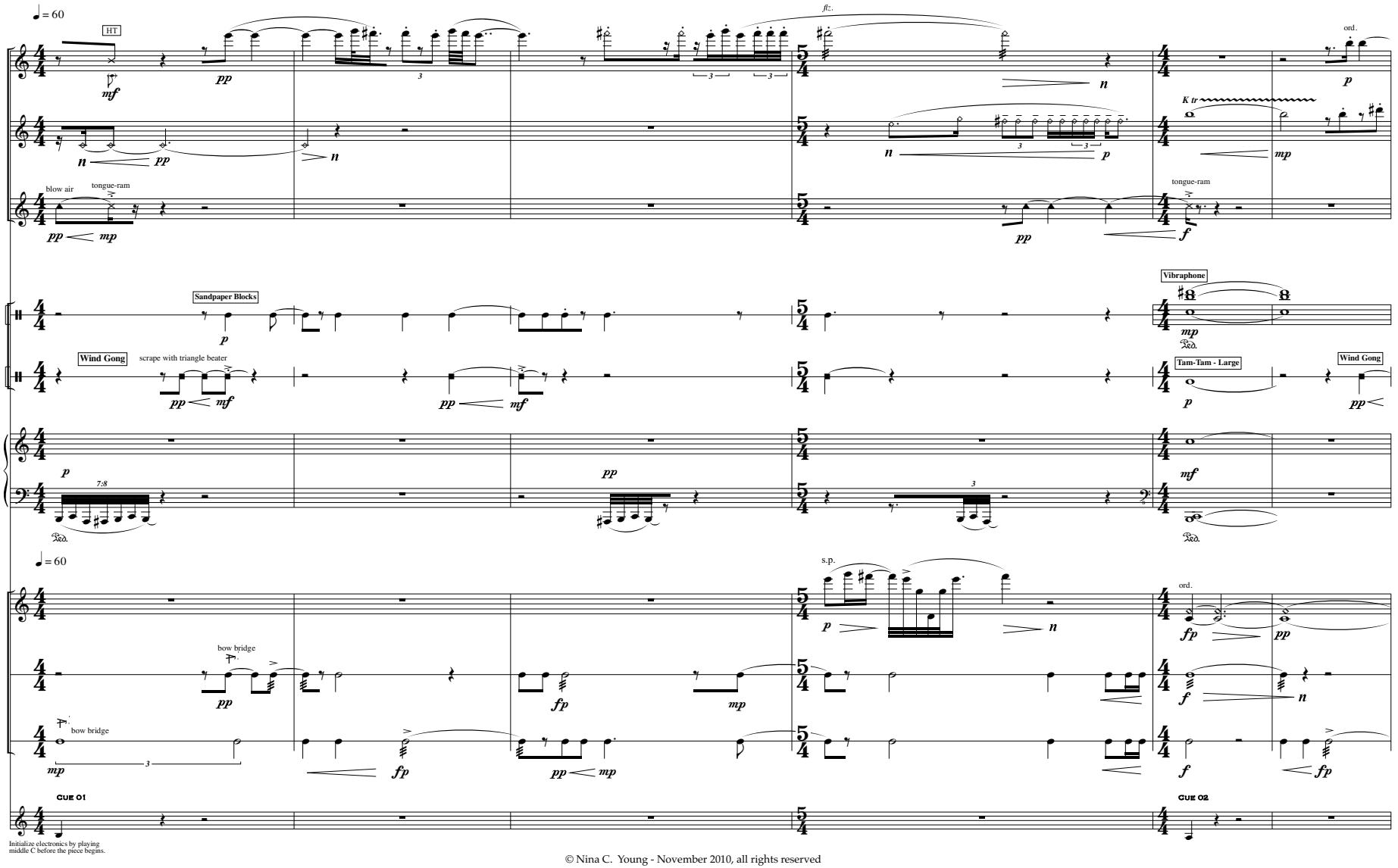
Score in C
(Piccolo, Glockenspiel, Crotales, Xylophone retain their octave transpositions)

Kashchei

FOR NINE INSTRUMENTS AND ELECTRONICS

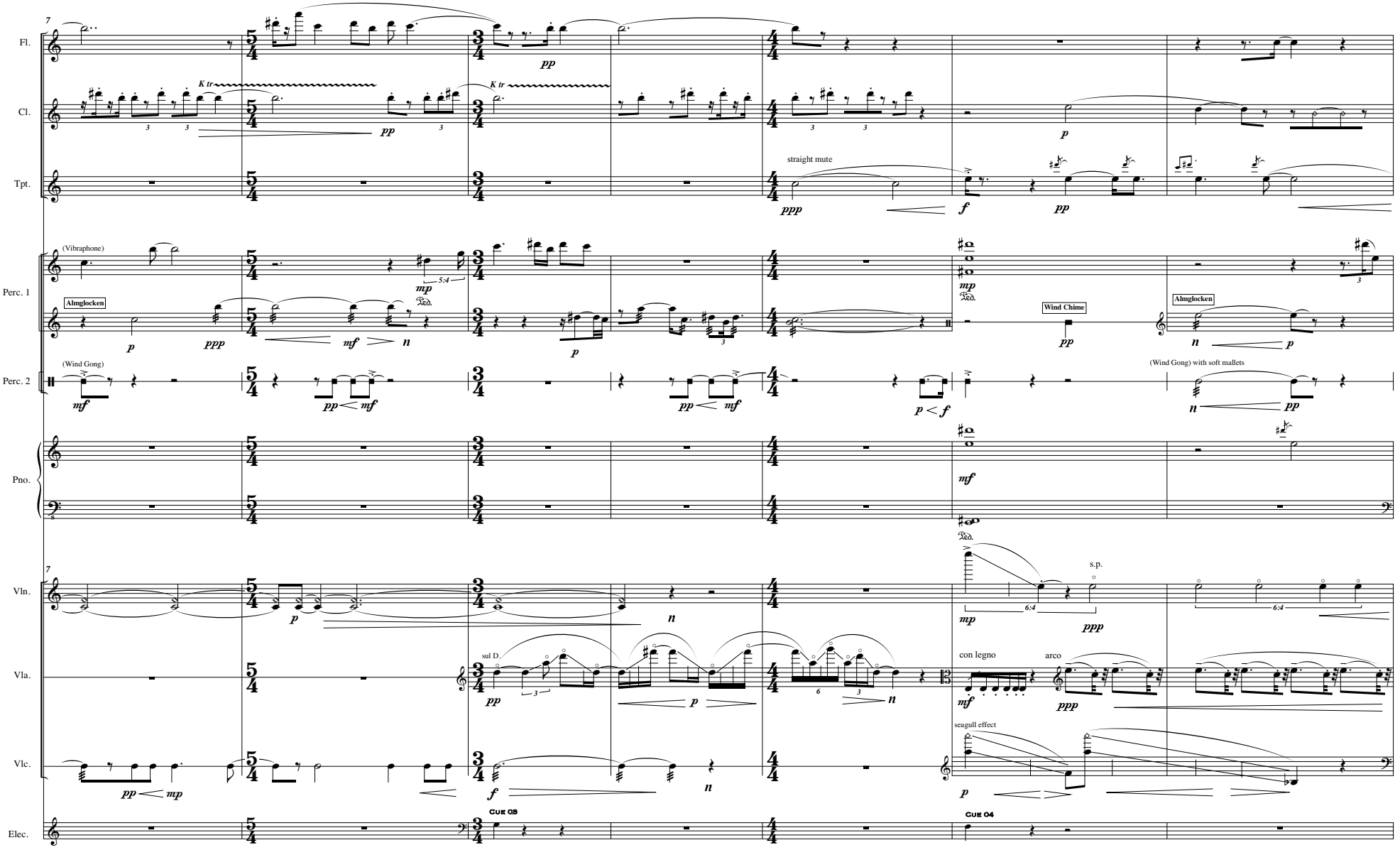
Nina C. Young

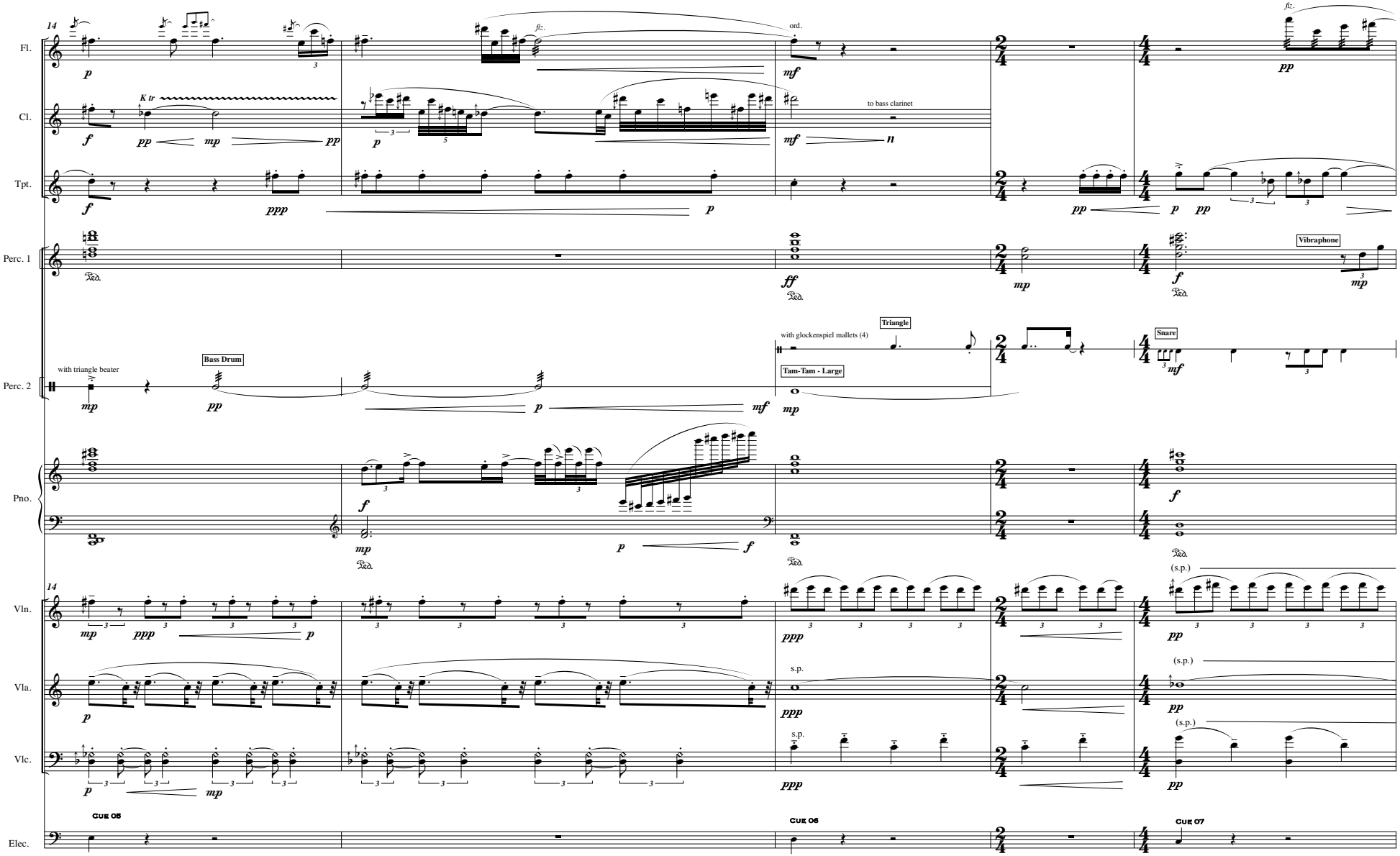
I - An Oak Tree on the Island of Buyan

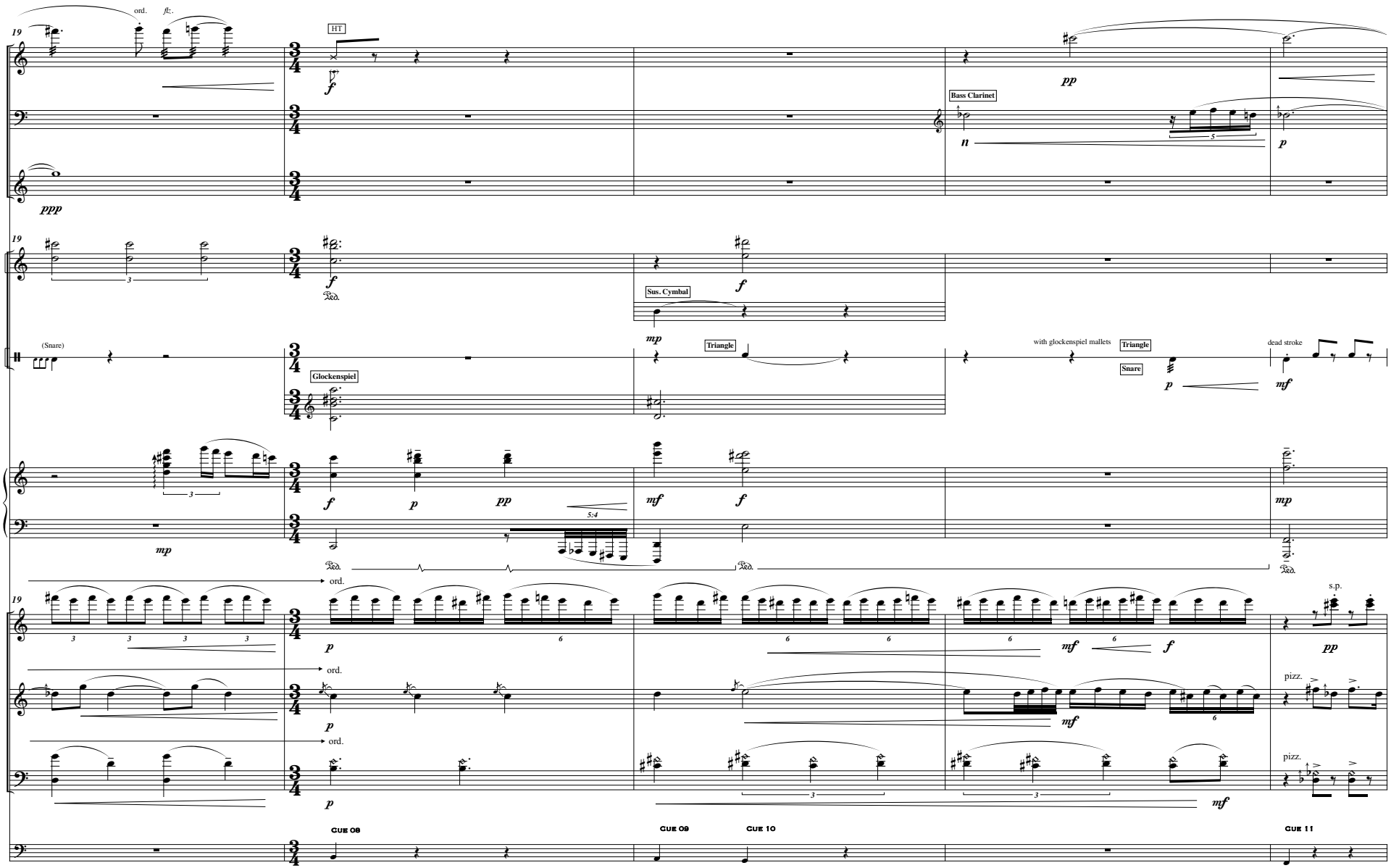


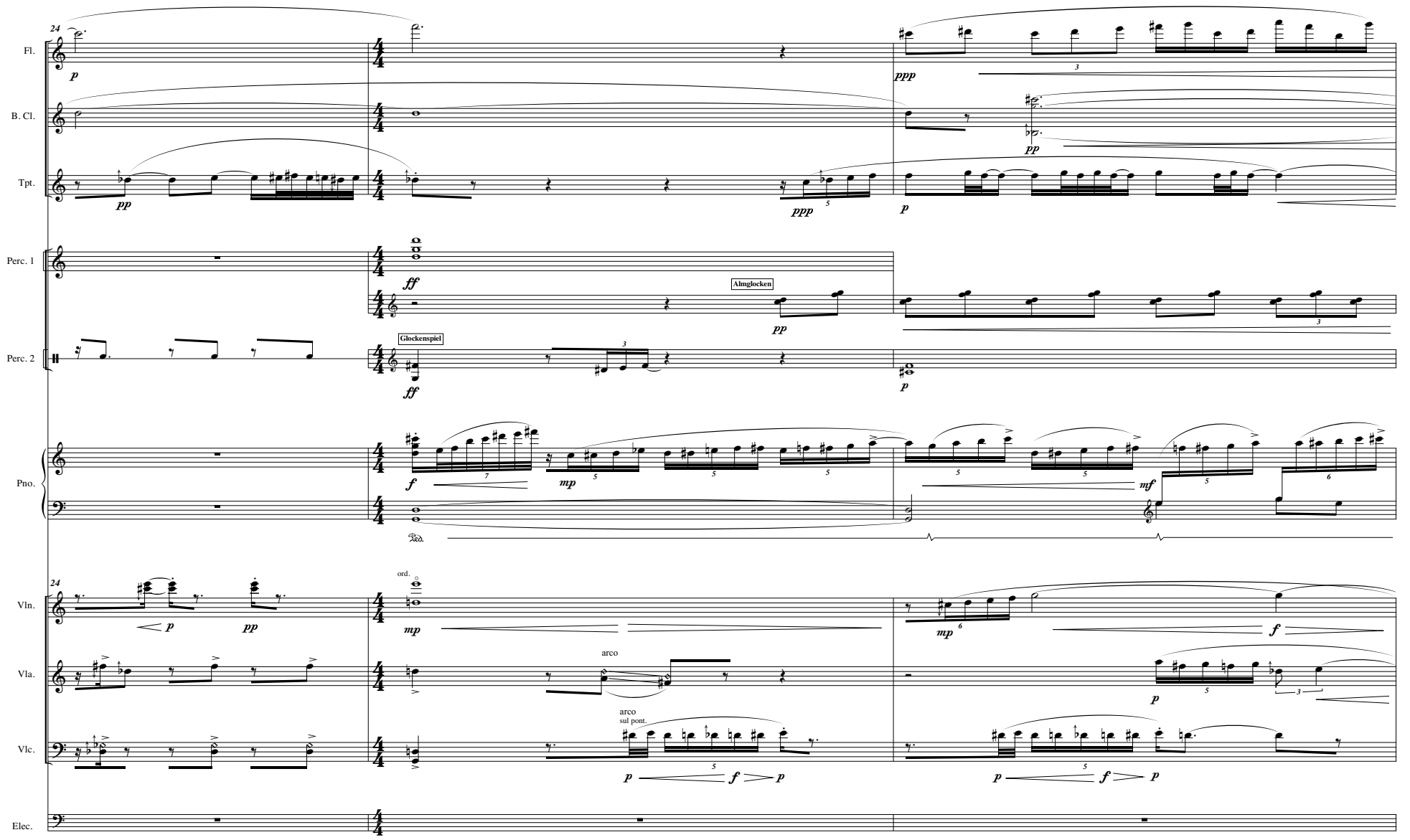
Initialize electronics by playing middle C before the piece begins.

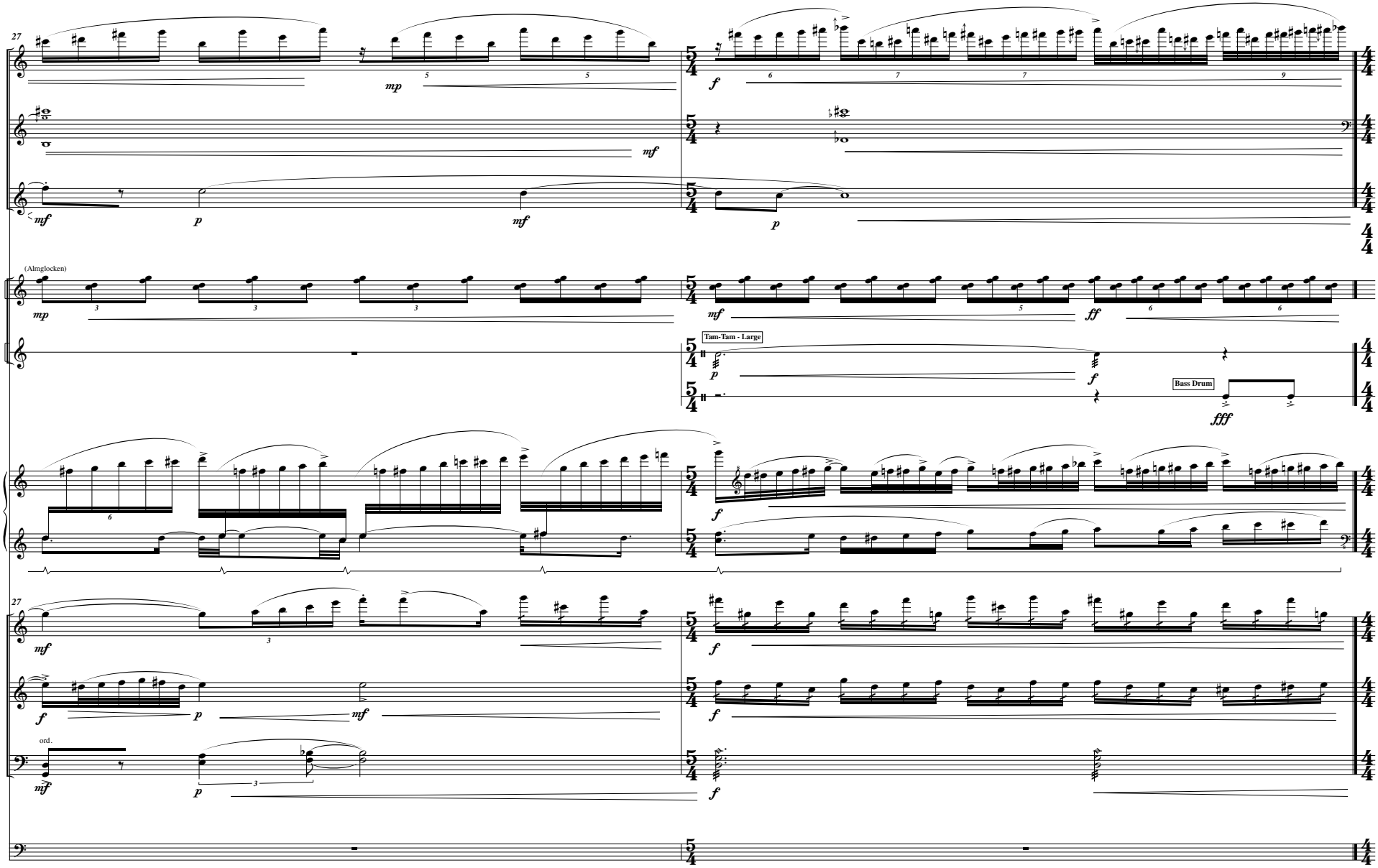
Kashchei


Fl.
Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
K tr
K tr
straight mute
(Vibraphone)
Almglocken
Wind Chime
Almglocken
(Wind Gong)
(Wind Gong) with soft mallets
sul D.
con legno
arco
s.p.
seagull effect
CUE 03
CUE 04

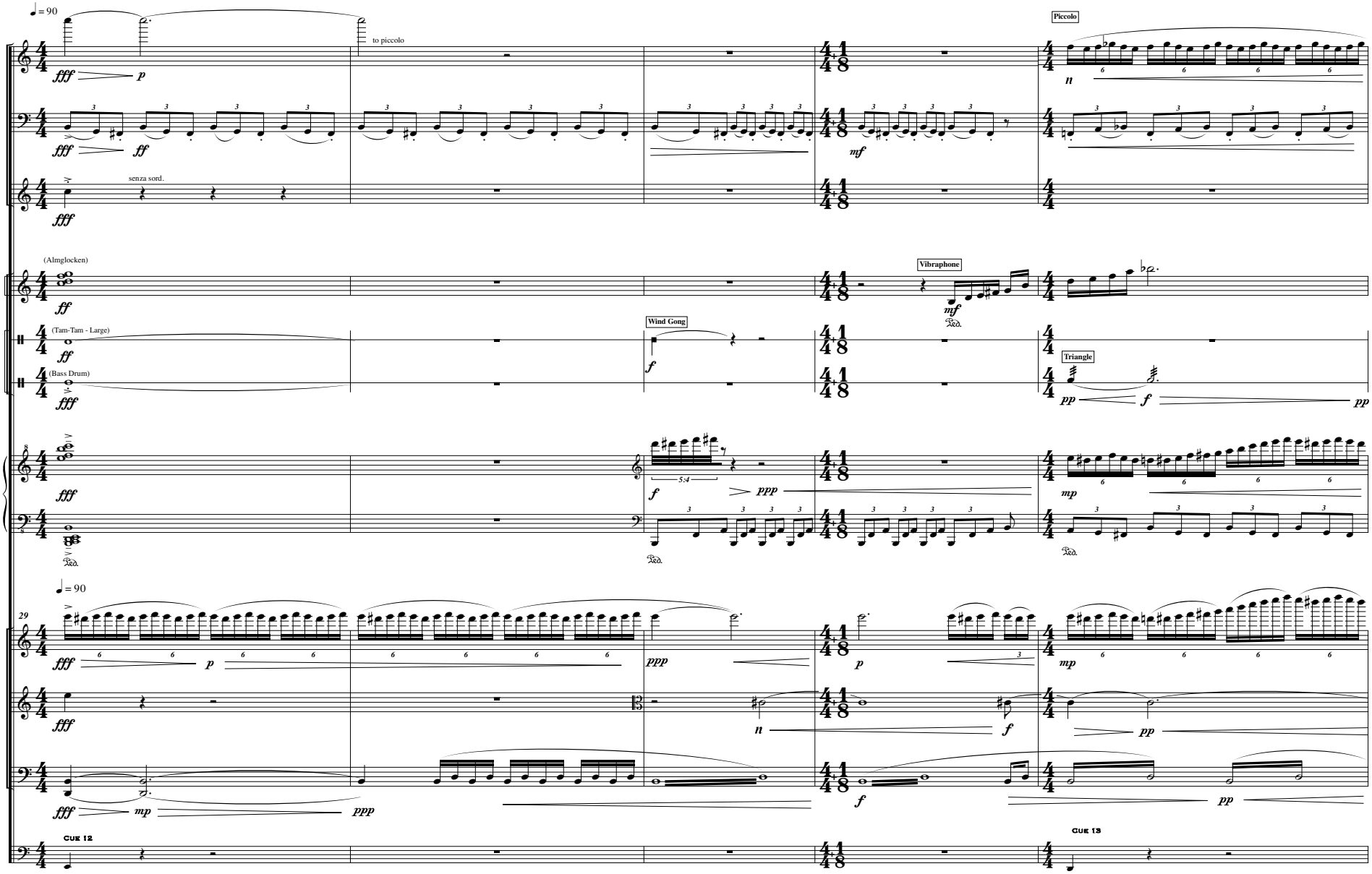

14
Fl.
flz.
ord.
flz.
Cl.
K tr
to bass clarinet
Tpt.
Perc. 1
Vibraphone
Perc. 2
with triangle beater
Bass Drum
with glockenspiel mallets (4)
Triangle
Tam-Tam - Large
Snare
Pno.
14
Vln.
(s.p.)
Vla.
s.p.
(s.p.)
Vlc.
s.p.
(s.p.)
CUE 05
CUE 06
CUE 07
Elec.

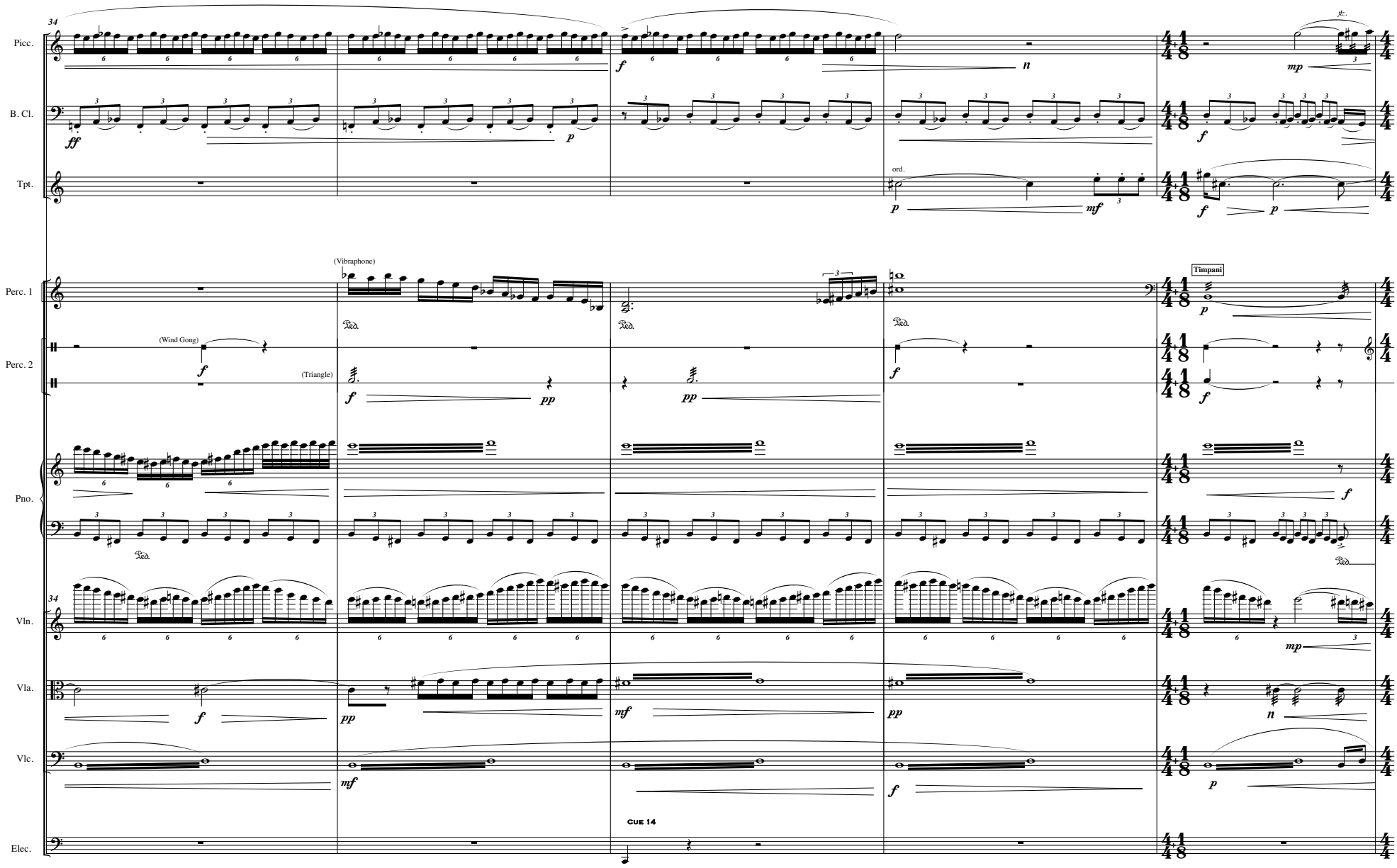

Fl.
B. Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
ord.
flt.
HT
Bass Clinet
Sus. Cymbal
(Snare)
Glockenspiel
Triangle
with glockenspiel mallets
Snare
dead stroke
s.p.
pizz.
CUE 08
CUE 09
CUE 10
CUE 11

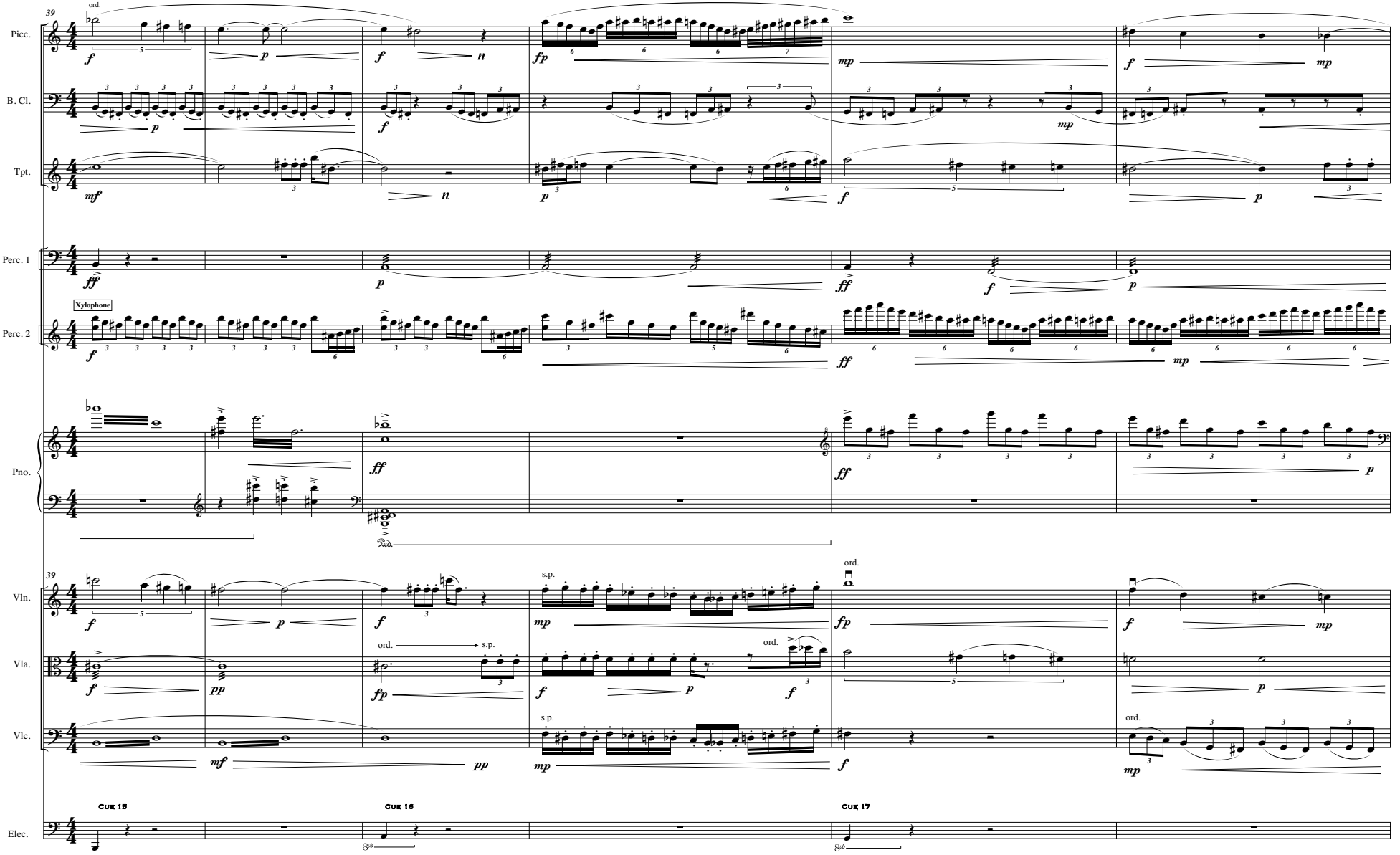

24
Fl.
B. Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
Almglocken
Glockenspiel
ord.
arco
arco
sul pont.

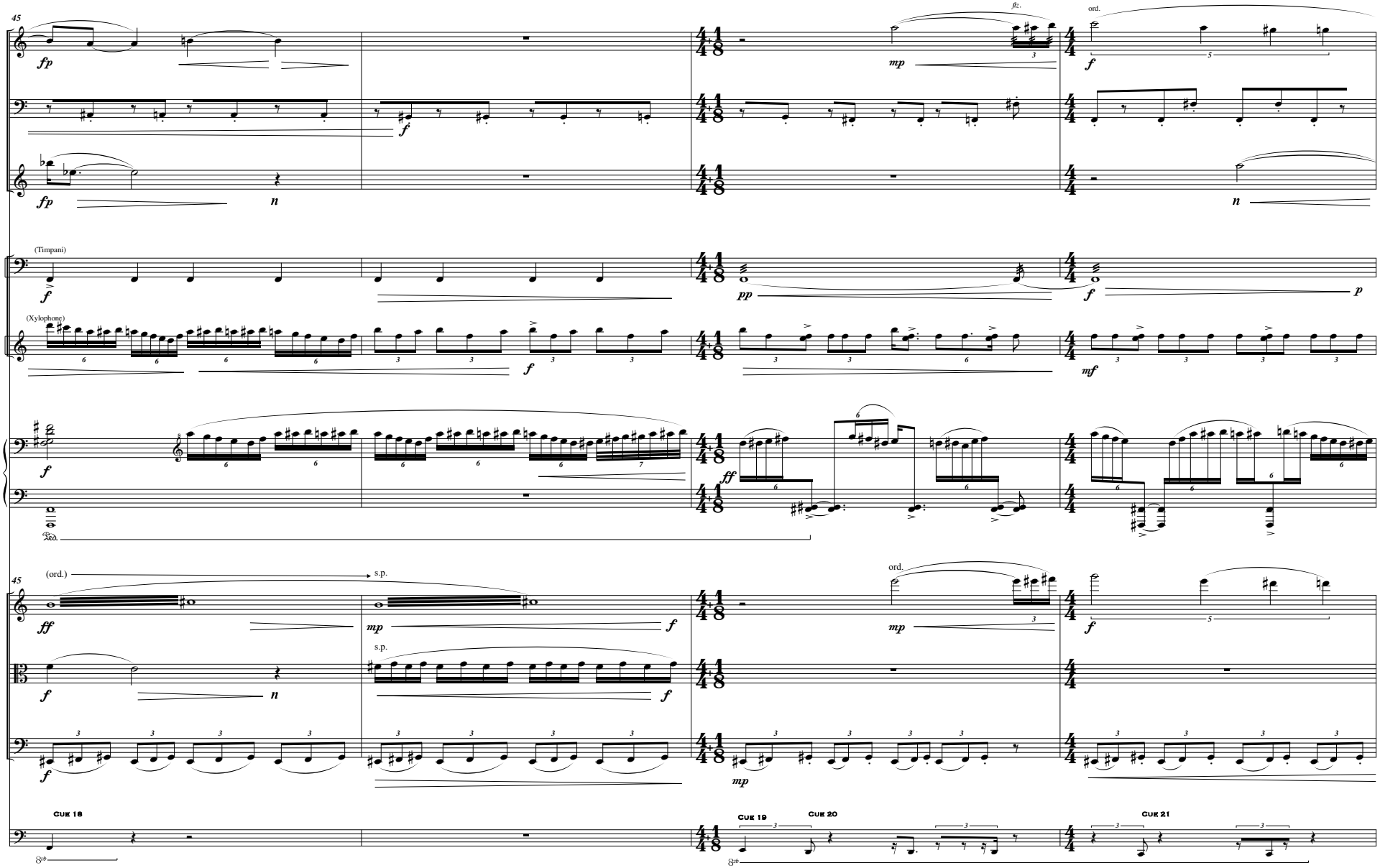

27
Fl.
B. Cl.
Tpt.
(Almglocken)
Perc. 1
Perc. 2
Tam-Tam - Large
Bass Drum
Pno.
27
Vln.
Vla.
ord.
Vlc.
Elec.

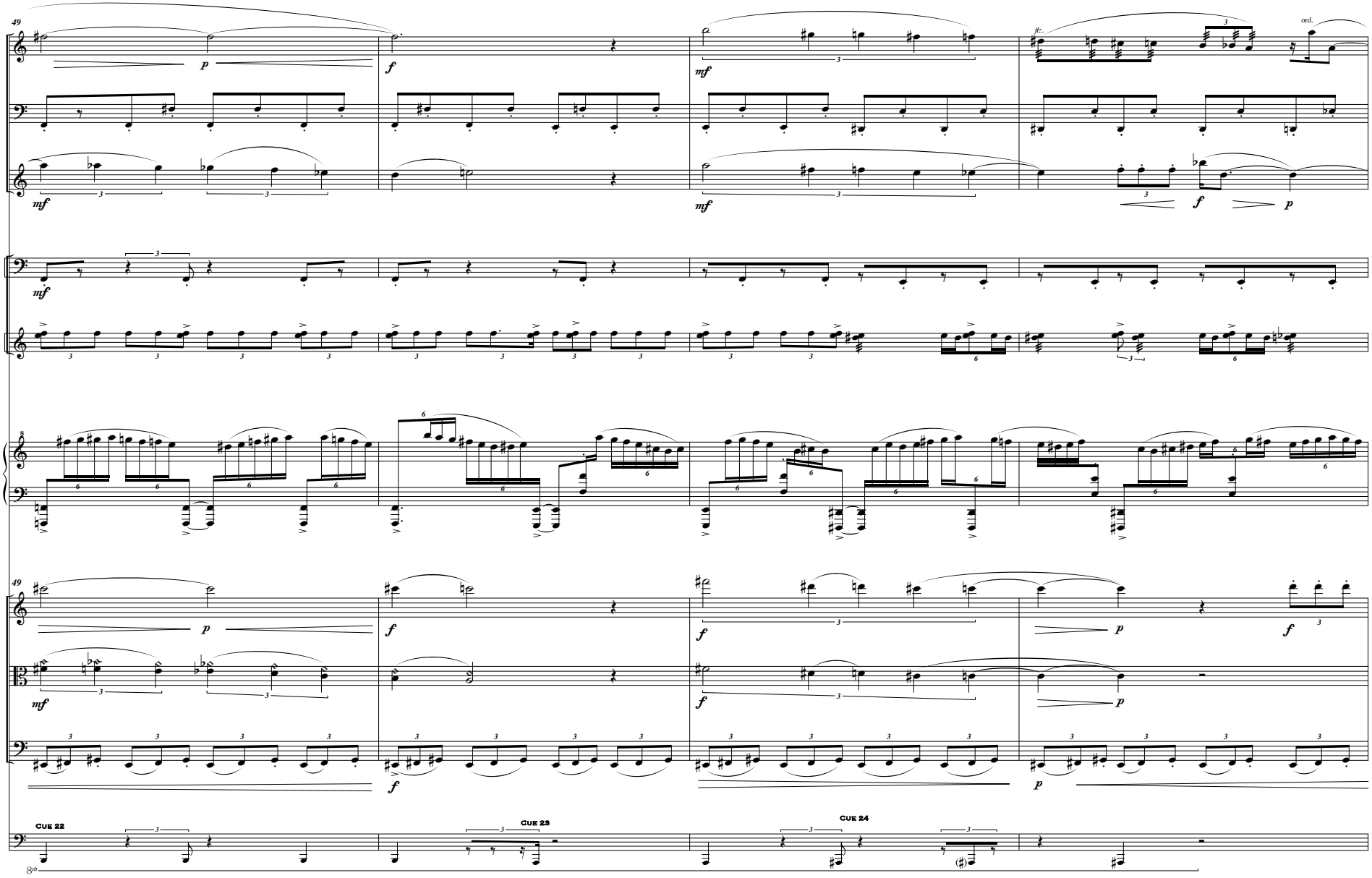
II - The Iron Chest

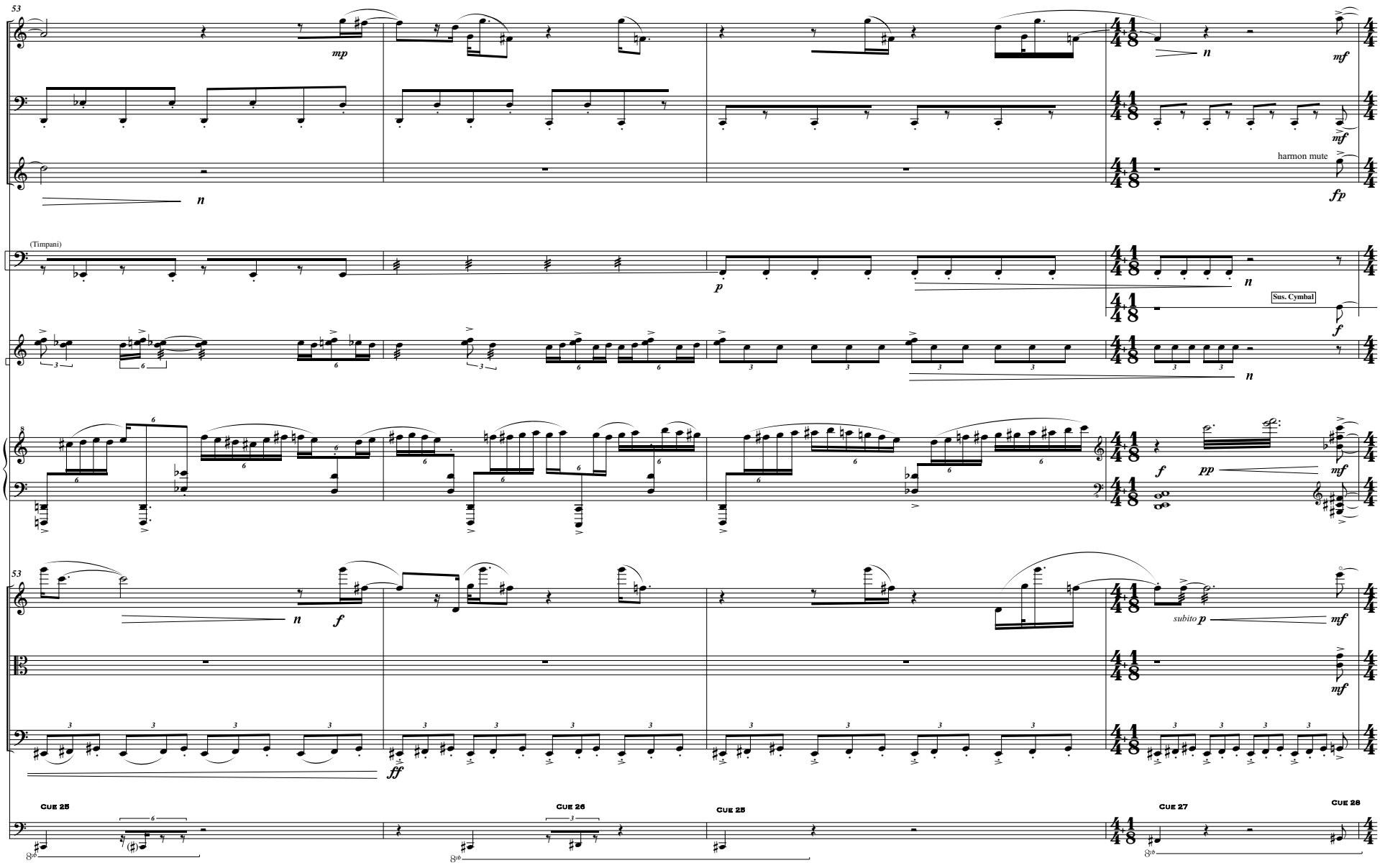


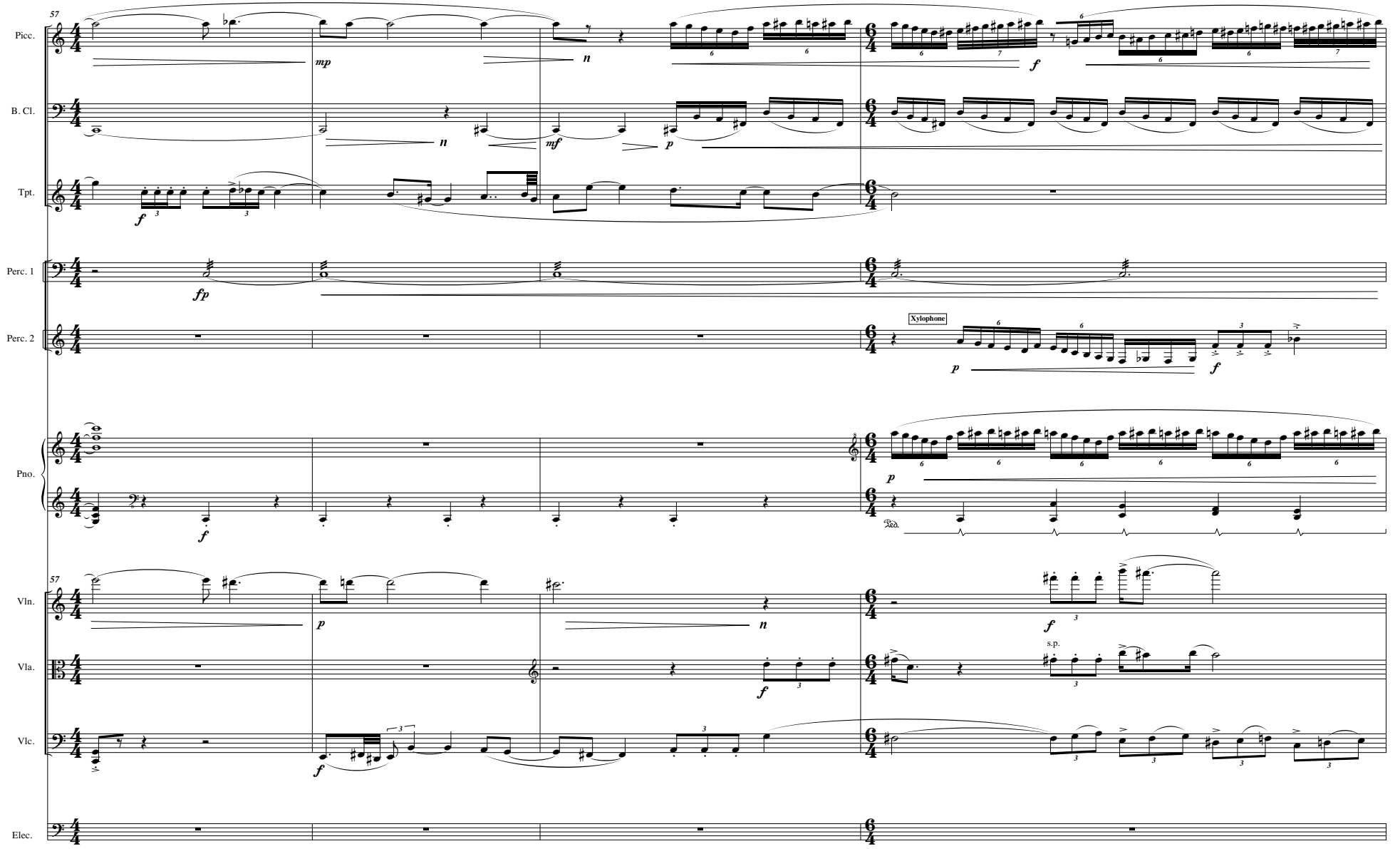

34
Picc.
B. Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
(Vibraphone)
(Wind Gong)
(Triangle)
Timpani
ord.
flt.
CUE 14

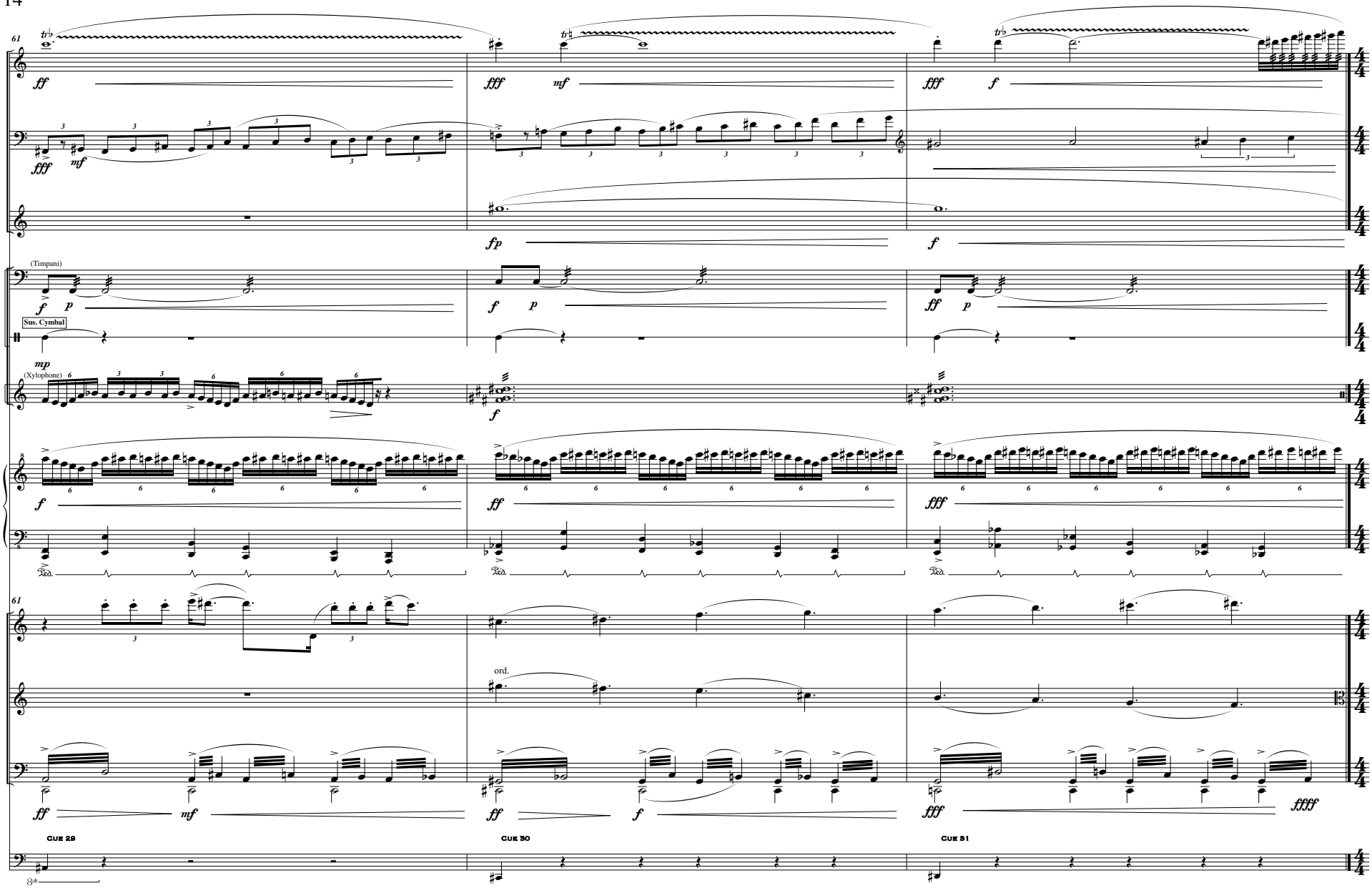

39
Picc.
B. Cl.
Tpt.
Perc. 1
Xylophone
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
CUE 15
CUE 16
CUE 17
ord.
s.p.
ord. → s.p.

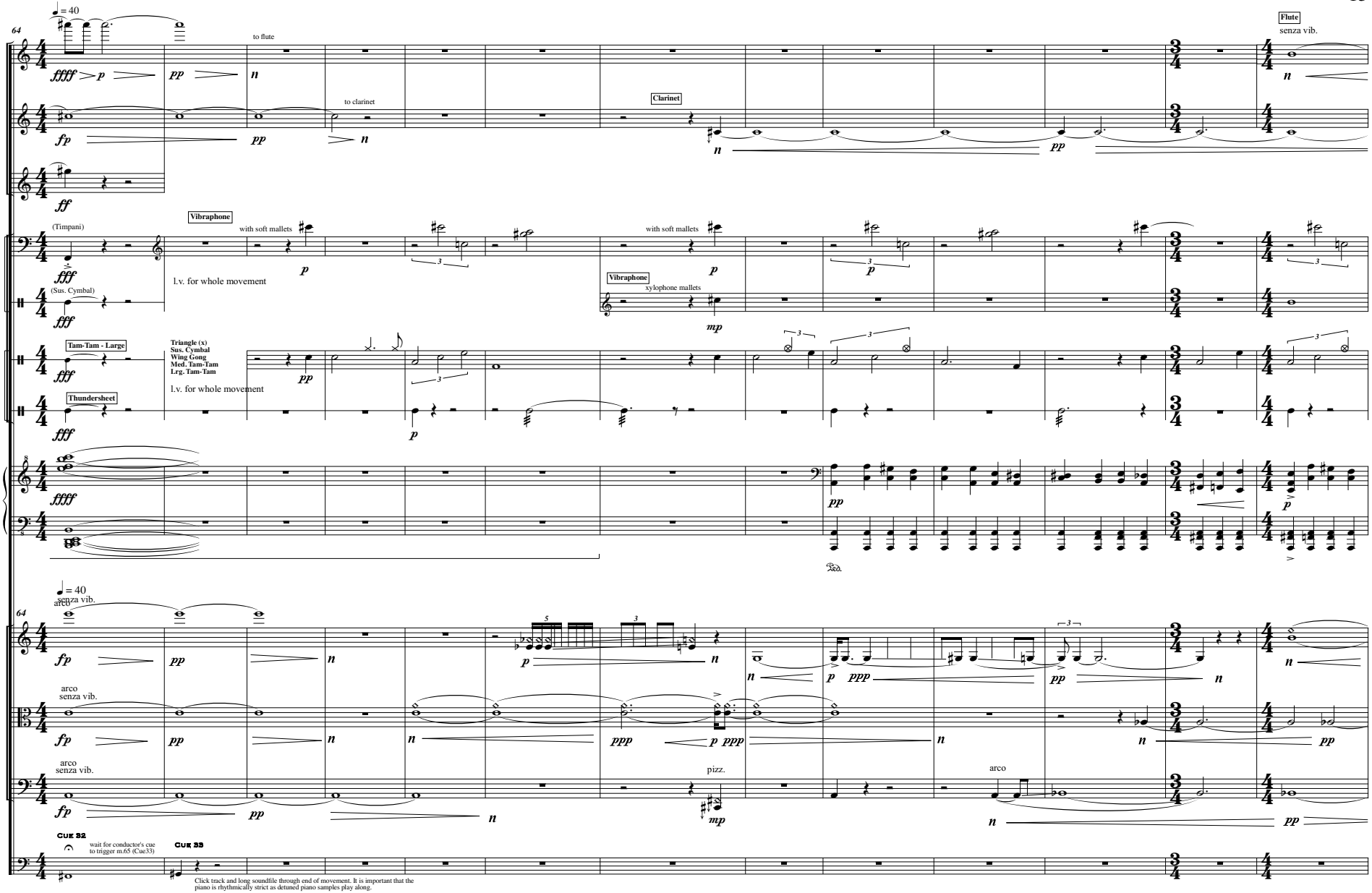

45
Picc.
B. Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
(Timpani)
(Xylophone)
(ord.)
s.p.
ord.
flz.
CUE 18
CUE 19
CUE 20
CUE 21

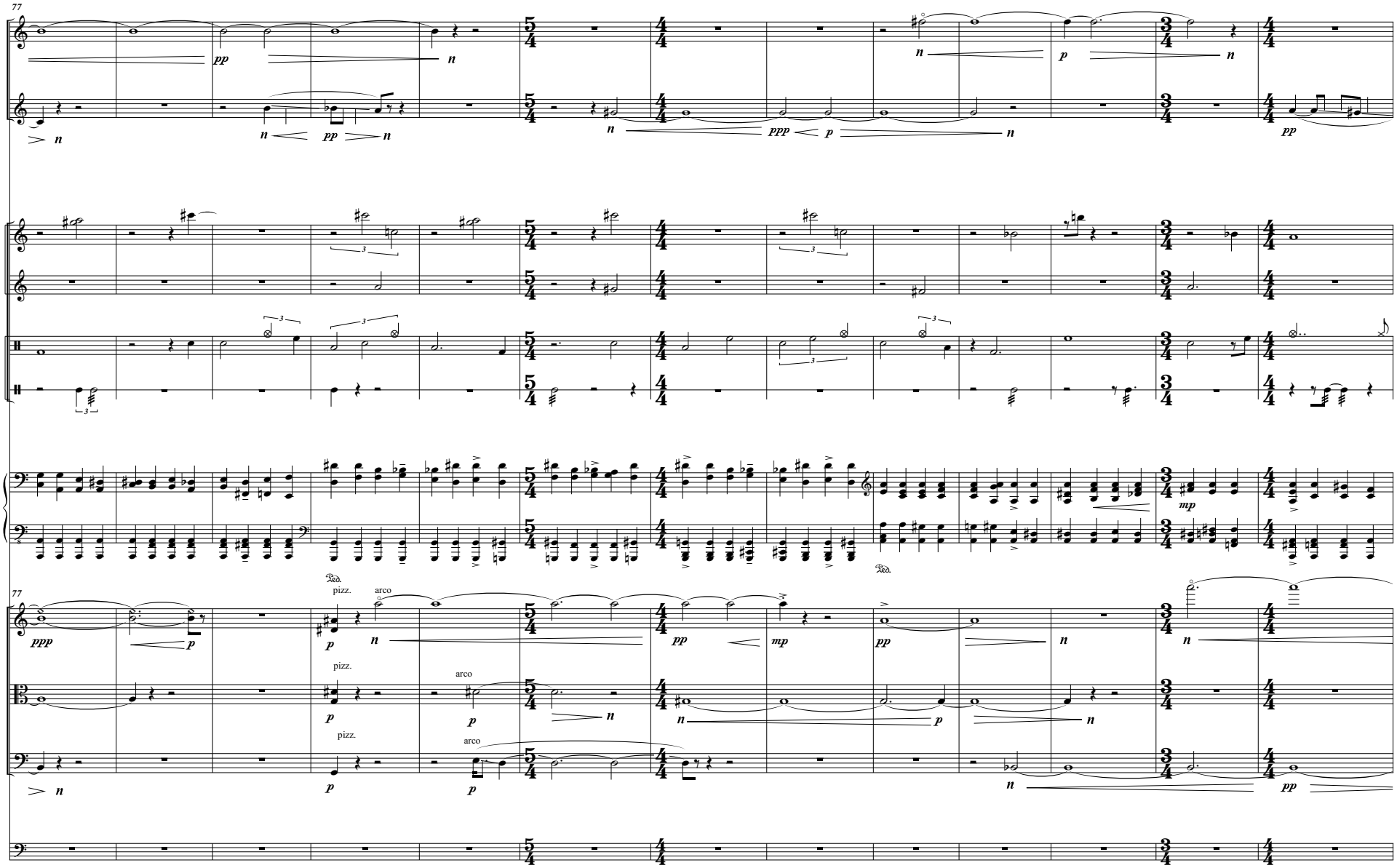

49
Picc.
B. Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
flt.
ord.
CUE 22
CUE 23
CUE 24

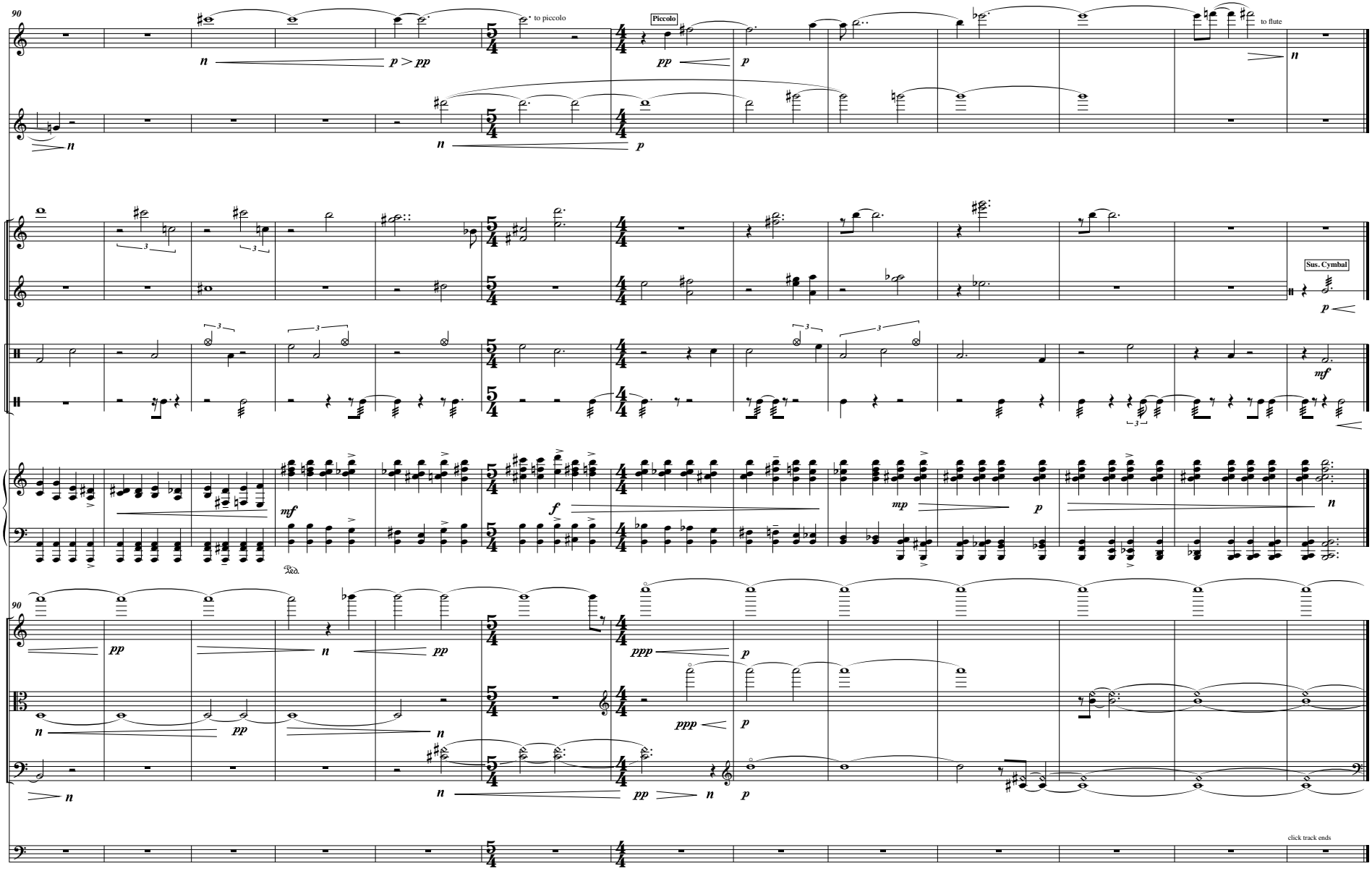

53
Picc.
B. Cl.
Tpt.
harmon mute
(Timpani)
Perc. 1
Sus. Cymbal
Perc. 2
Pno.
53
Vln.
subito p
Vla.
Vlc.
CUE 25
CUE 26
CUE 25
CUE 27
CUE 28
Elec.

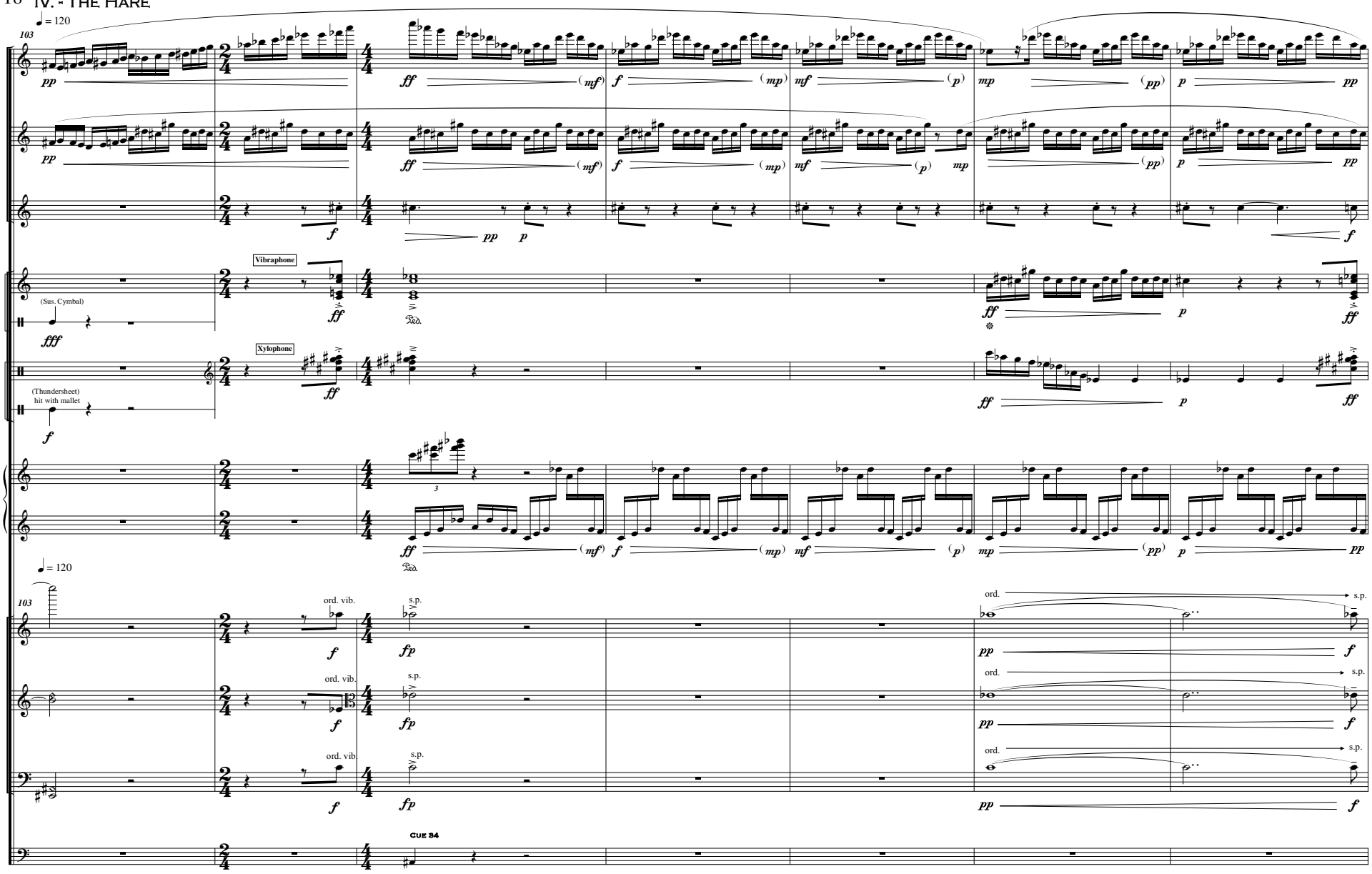

57
Picc.
B. Cl.
Tpt.
Perc. 1
Perc. 2
Xylophone
Pno.
57
Vln.
Vla.
Vlc.
s.p.
Elec.

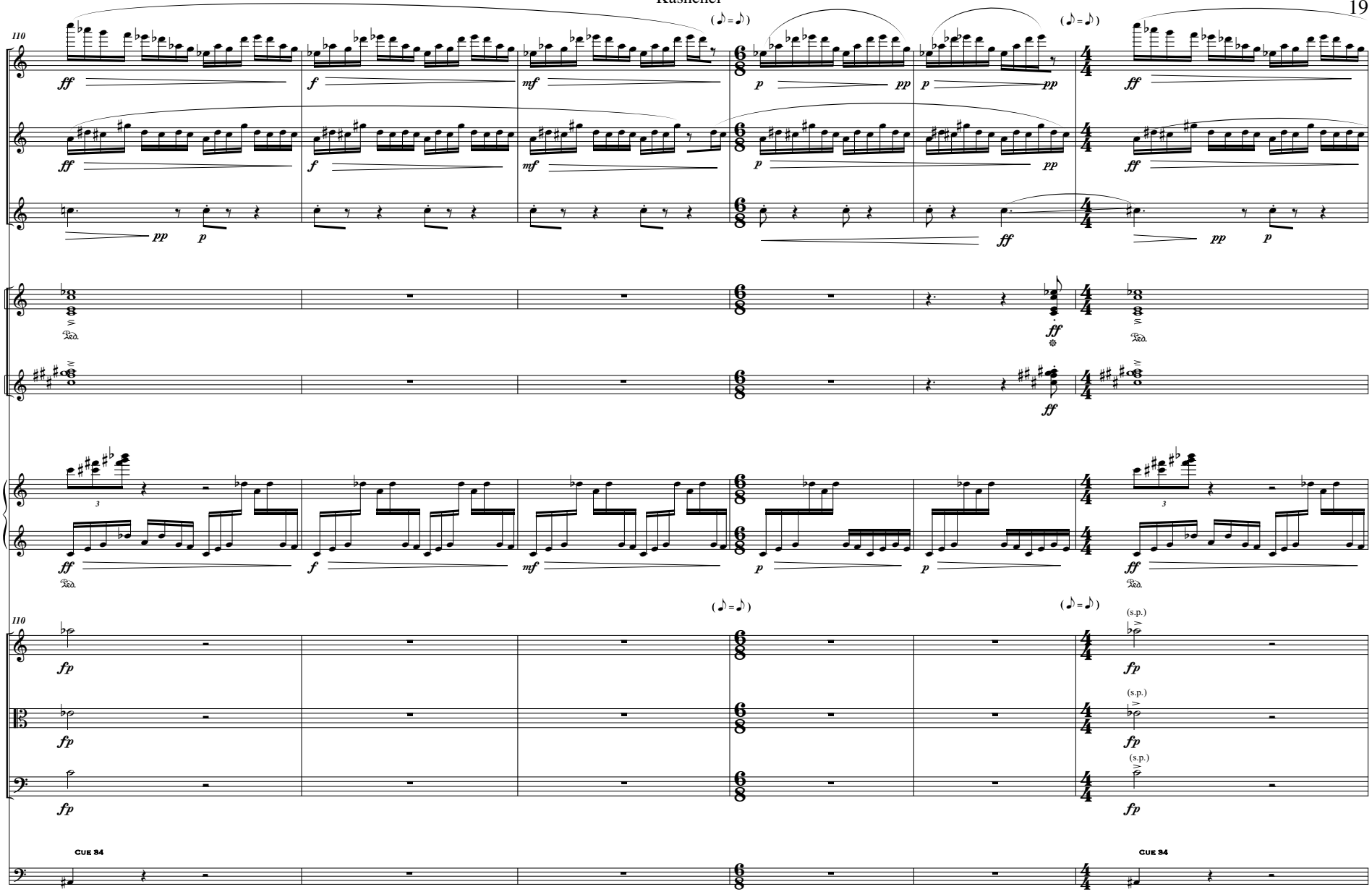

61
Picc.
B. Cl.
Tpt.
(Timpani)
Perc. 1
Sus. Cymbal
(Xylophone)
Perc. 2
Pno.
61
Vln.
ord.
Vla.
Vlc.
Elec.
CUE 29
CUE 30
CUE 31

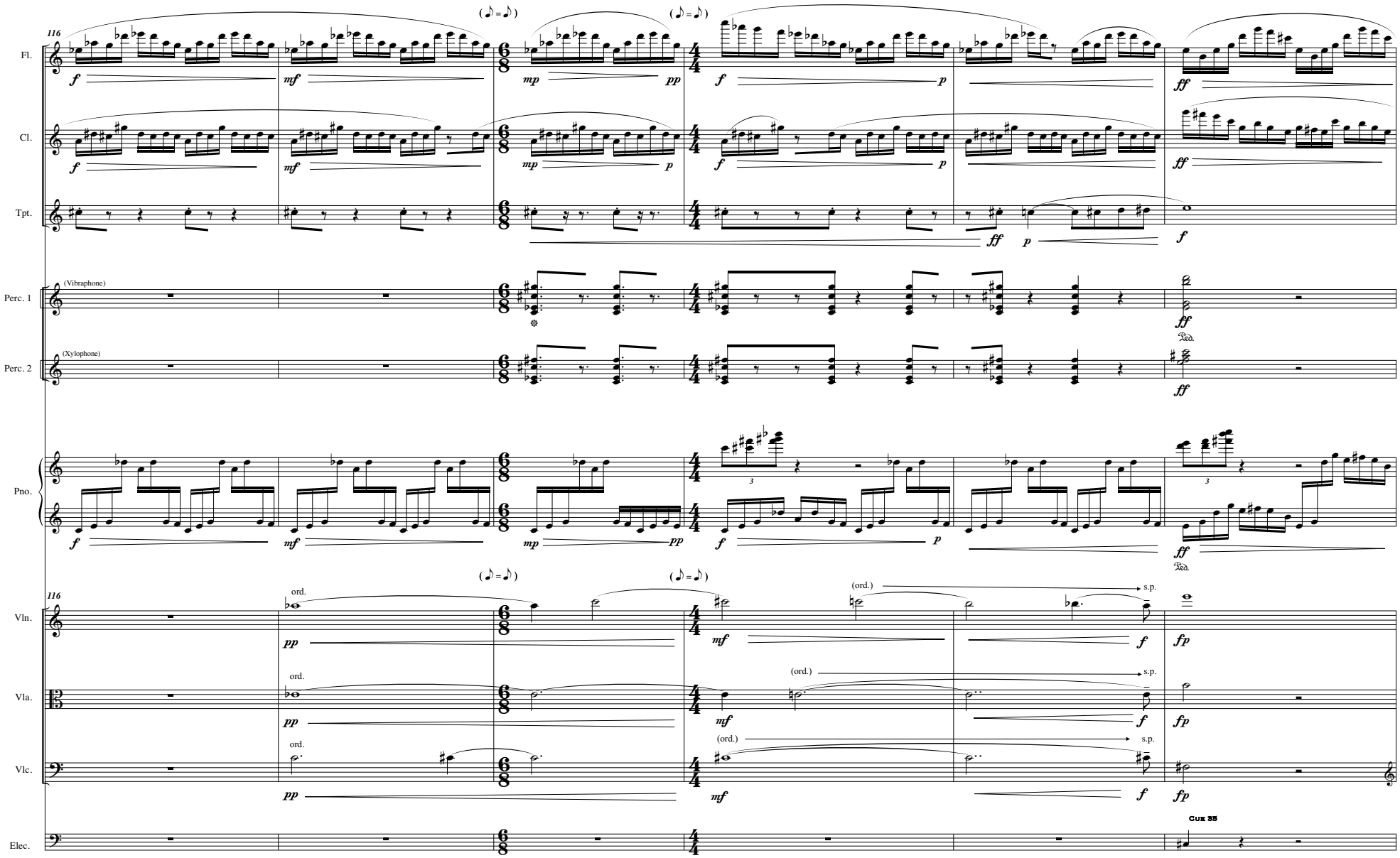

♩ = 40
64
Picc.
B. Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
to flute
to clarinet
Clarinet
Flute
senza vib.
(Timpani)
(Sus. Cymbal)
Vibraphone
with soft mallets
l.v. for whole movement
xylophone mallets
Tam-Tam - Large
Thundersheet
Triangle (x)
Sus. Cymbal
Wing Gong
Med. Tam-Tam
Lrg. Tam-Tam
arco
senza vib.
pizz.
Cue 32
wait for conductor's cue
to trigger m.65 (Cue33)
Cue 33
Click track and long soundfile through end of movement. It is important that the
piano is rhythmically strict as detuned piano samples play along.

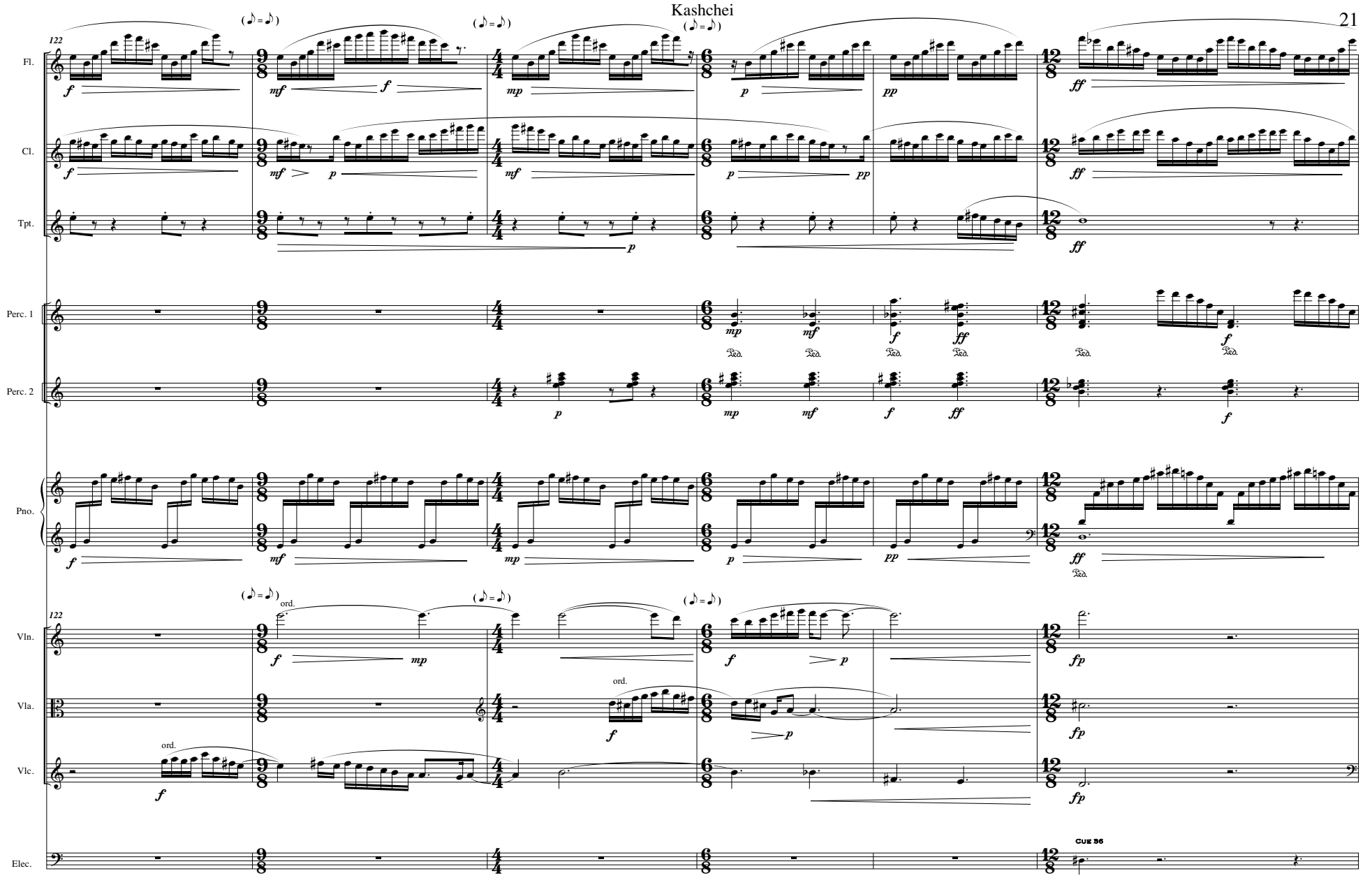

77
Fl.
Cl.
Perc. 1
Perc. 2
Pno.
77
Vln.
Vla.
Vlc.
Elec.
pizz.
arco

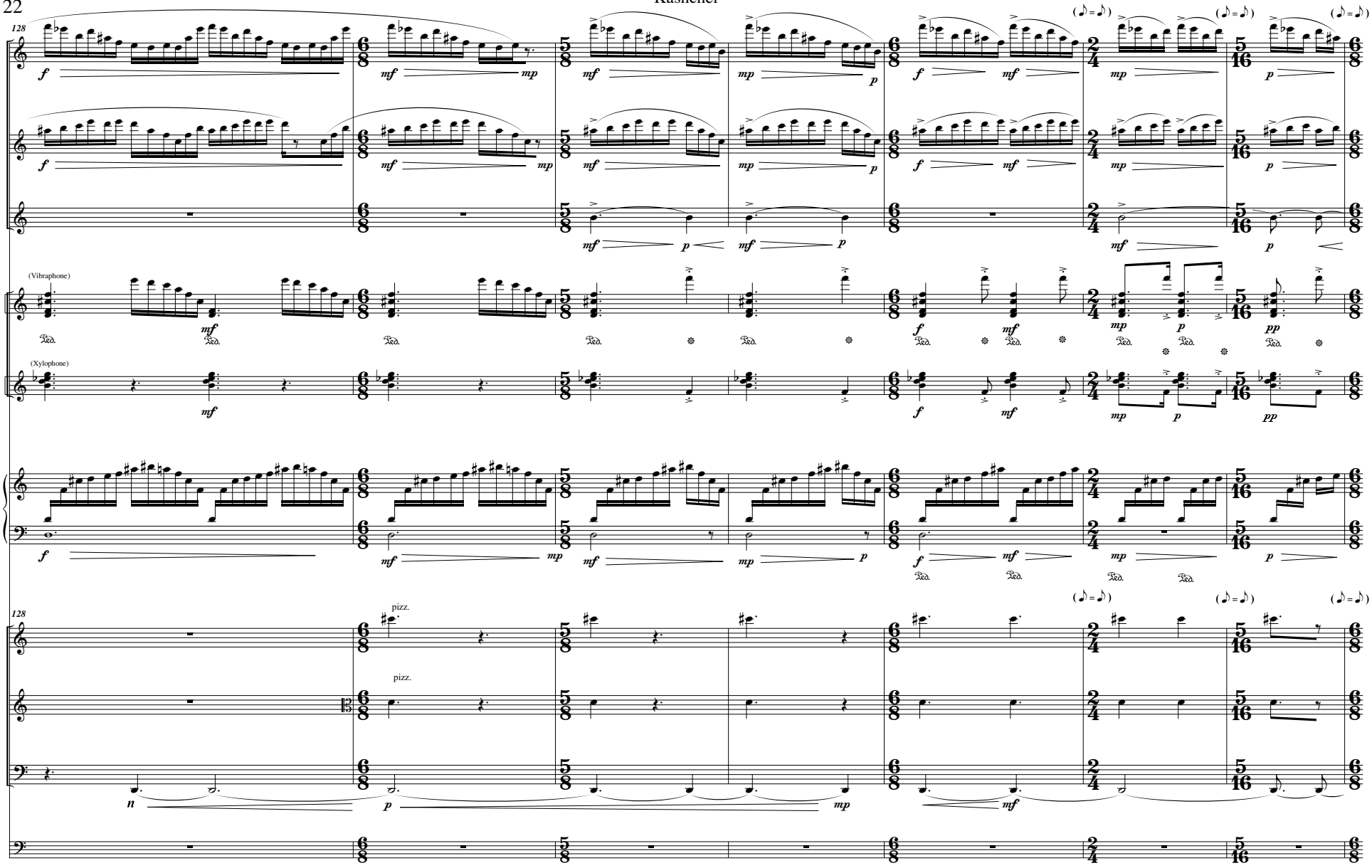

90
Fl.
to piccolo
Piccolo
to flute
Cl.
Perc. 1
Sus. Cymbal
Perc. 2
Pno.
Ped.
90
Vln.
Vla.
Vlc.
Elec.
click track ends

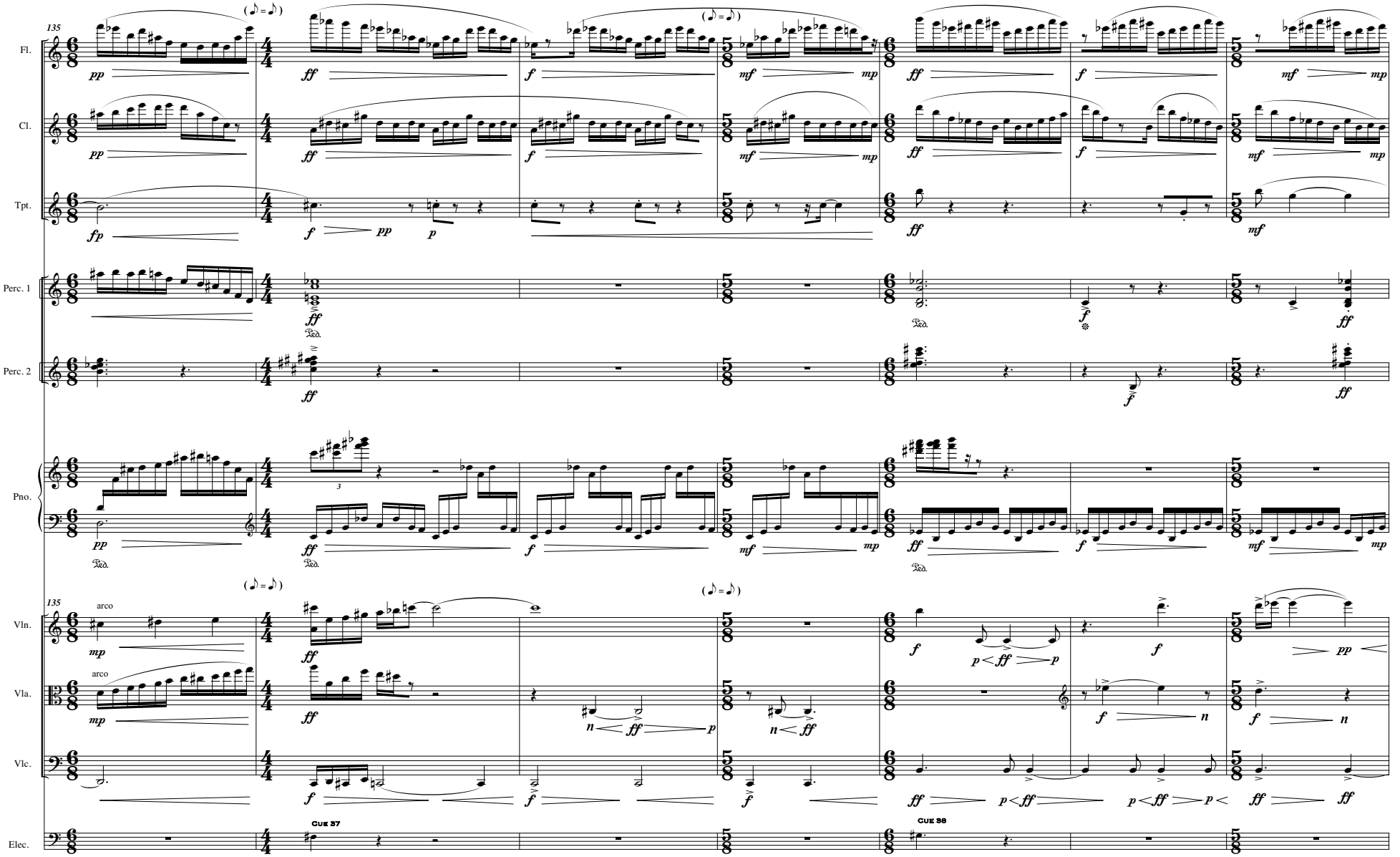

♩ = 120
103
Fl.
Cl.
Tpt.
Vibraphone
Perc. 1
(Sus. Cymbal)
Xylophone
Perc. 2
(Thundersheet)
hit with mallet
Pno.
♩ = 120
103
Vln.
Vla.
Vlc.
ord. vib.
s.p.
ord.
Elec.
Cue 24

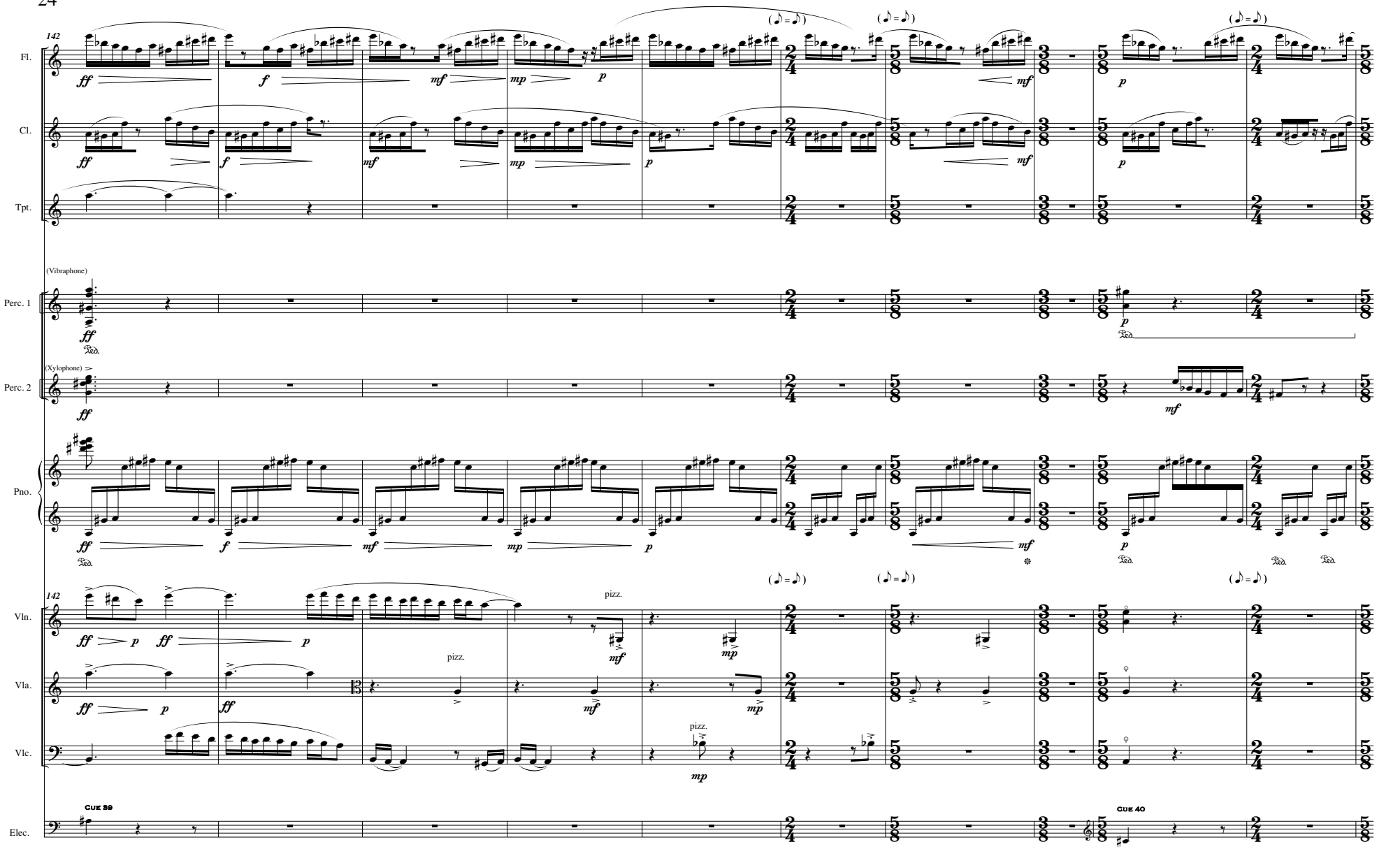

110
Fl.
Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
CUE 34
(s.p.)

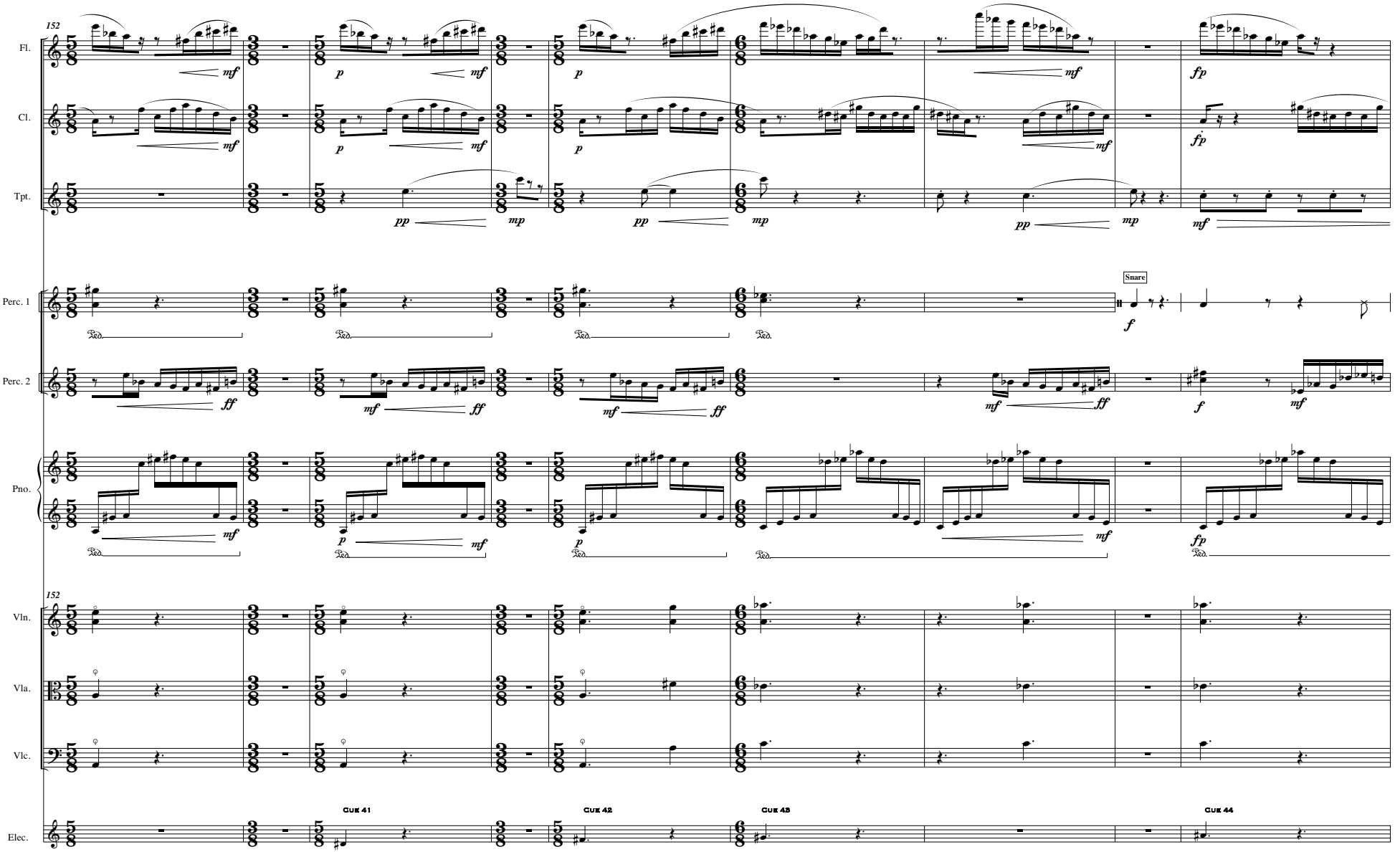

116
Fl.
Cl.
Tpt.
Perc. 1
(Vibraphone)
Perc. 2
(Xylophone)
Pno.
Vln.
Vla.
Vlc.
Elec.
ord.
(ord.)
s.p.
Cue 35

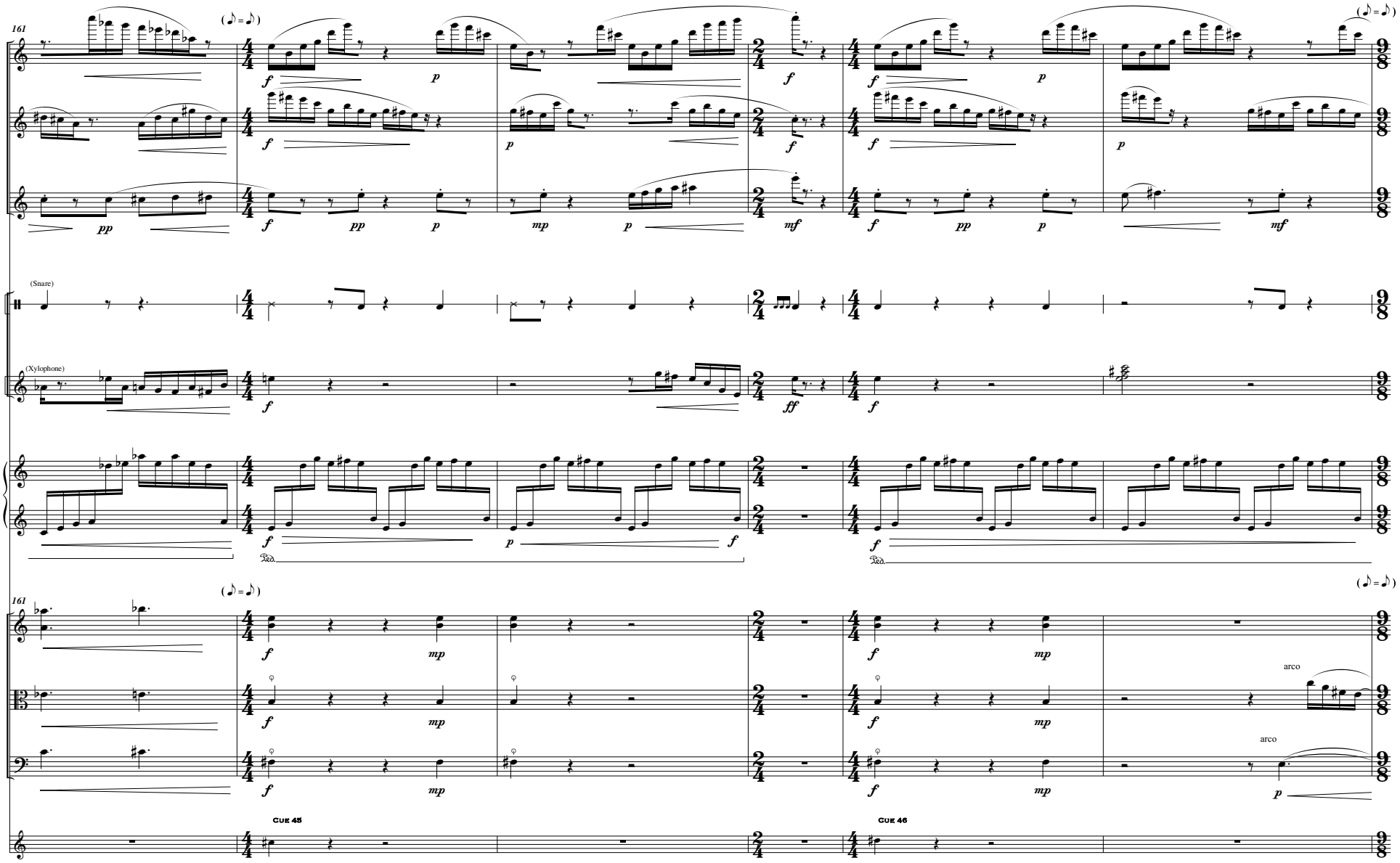

122
Fl.
Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
ord.
CUE S6

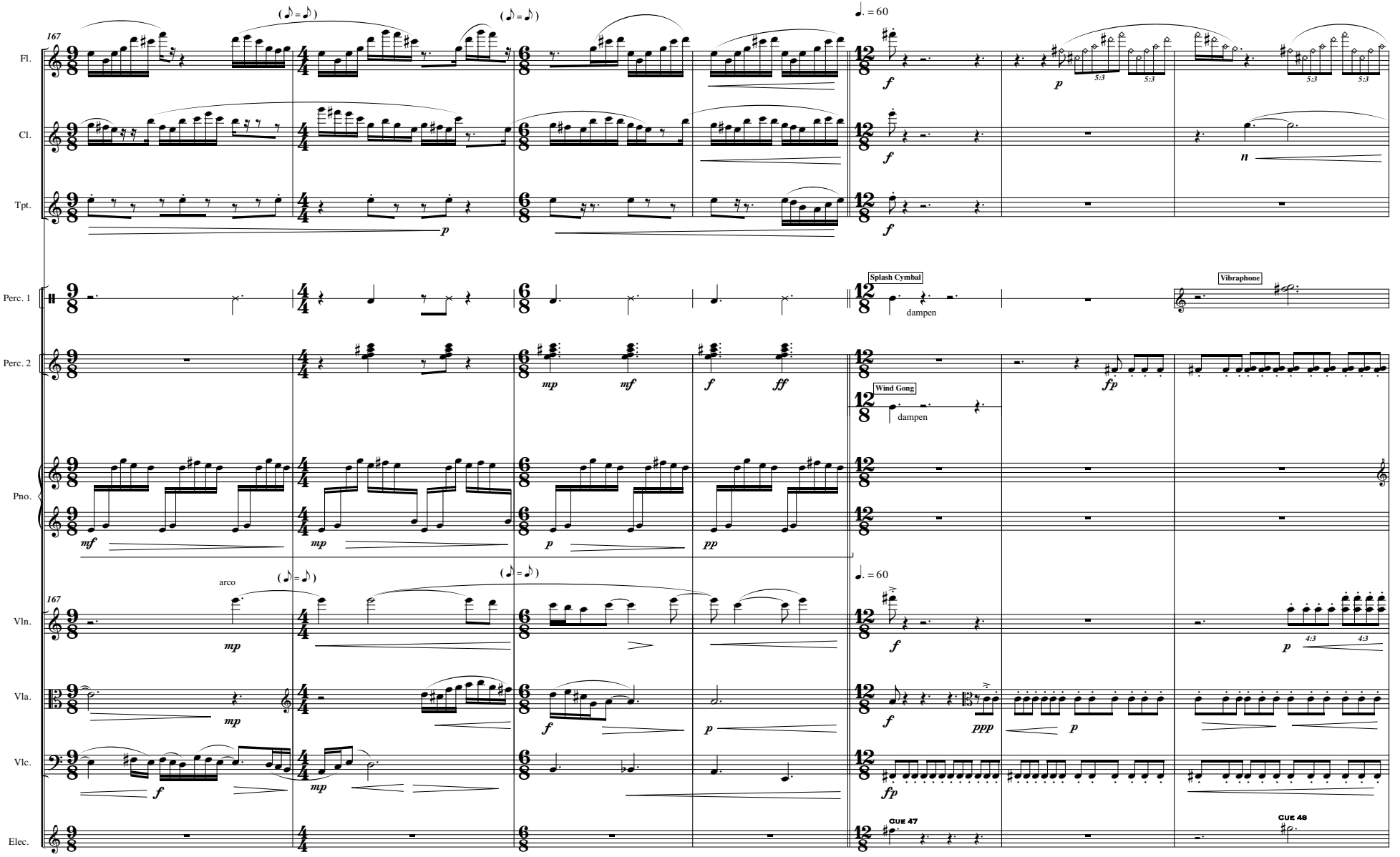

128
Fl.
Cl.
Tpt.
(Vibraphone)
Perc. 1
(Xylophone)
Perc. 2
Pno.
128
pizz.
Vln.
pizz.
Vla.
Vlc.
Elec.

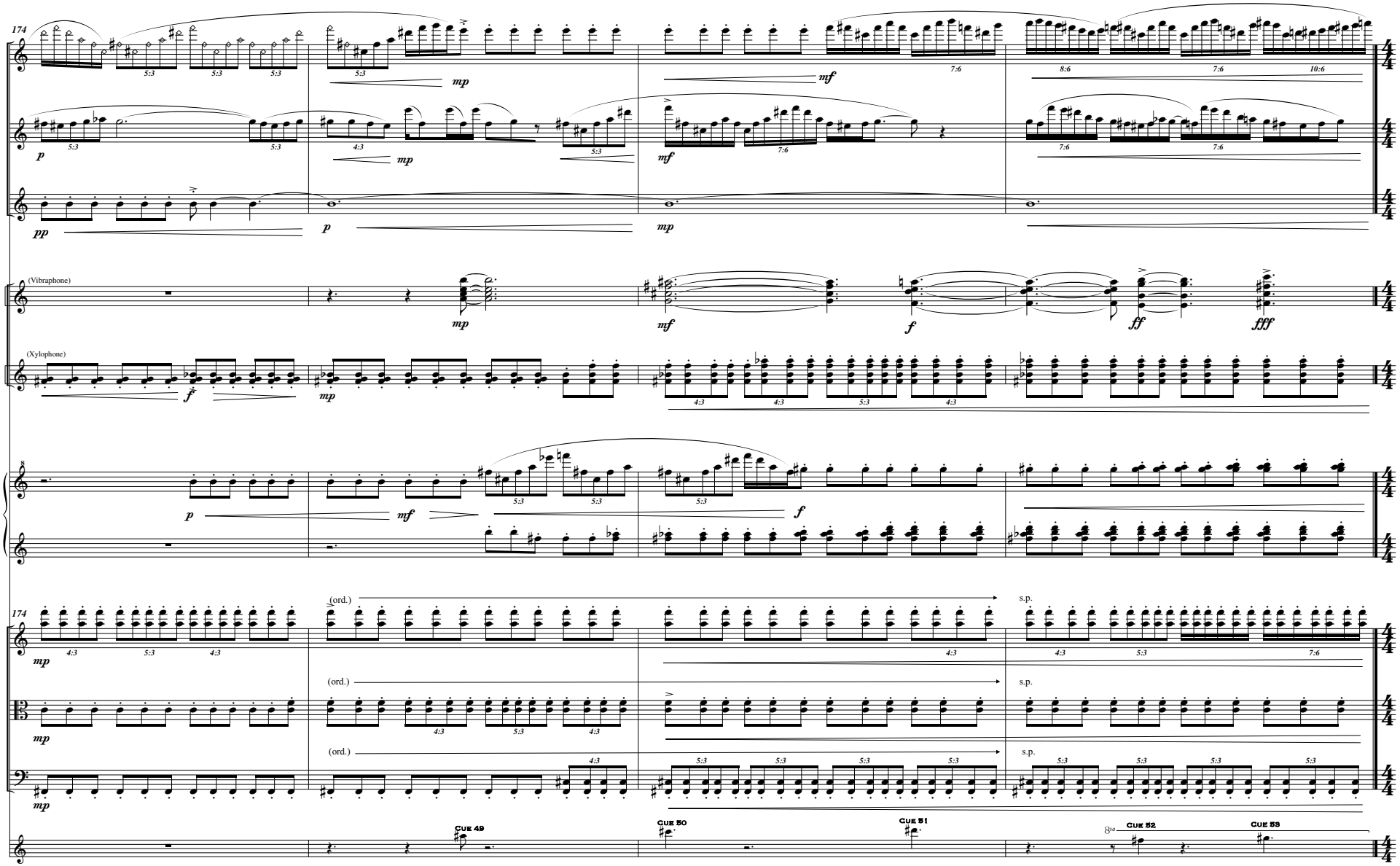

135
Fl.
Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
arco
CUE 37
CUE 38

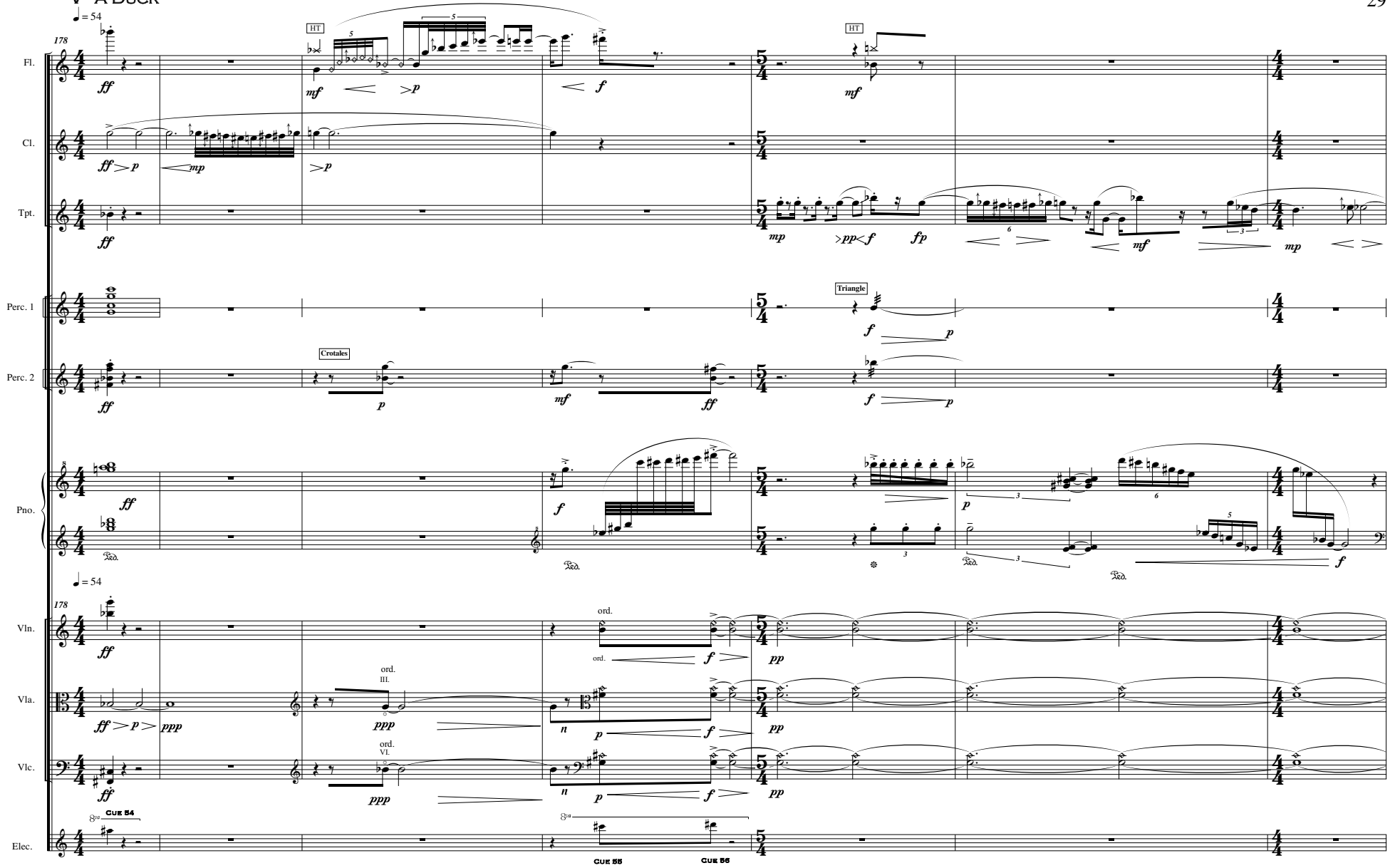

142
Fl.
Cl.
Tpt.
(Vibraphone)
Perc. 1
(Xylophone)
Perc. 2
Pno.
142
Vln.
Vla.
Vlc.
pizz.
CUE 39
CUE 40
Elec.

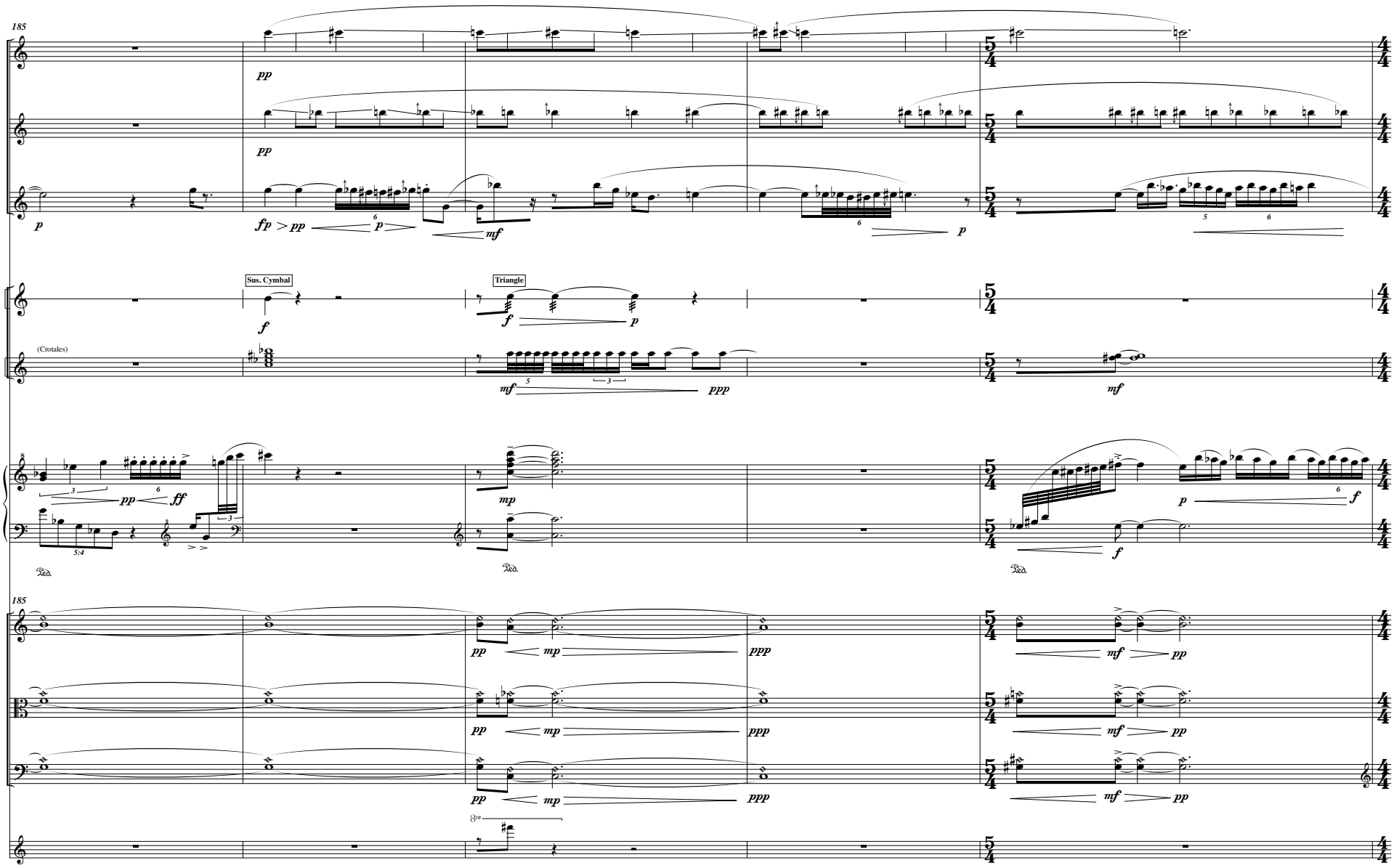

152
Fl.
Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
152
Vln.
Vla.
Vlc.
Elec.
Snare
Cue 41
Cue 42
Cue 43
Cue 44

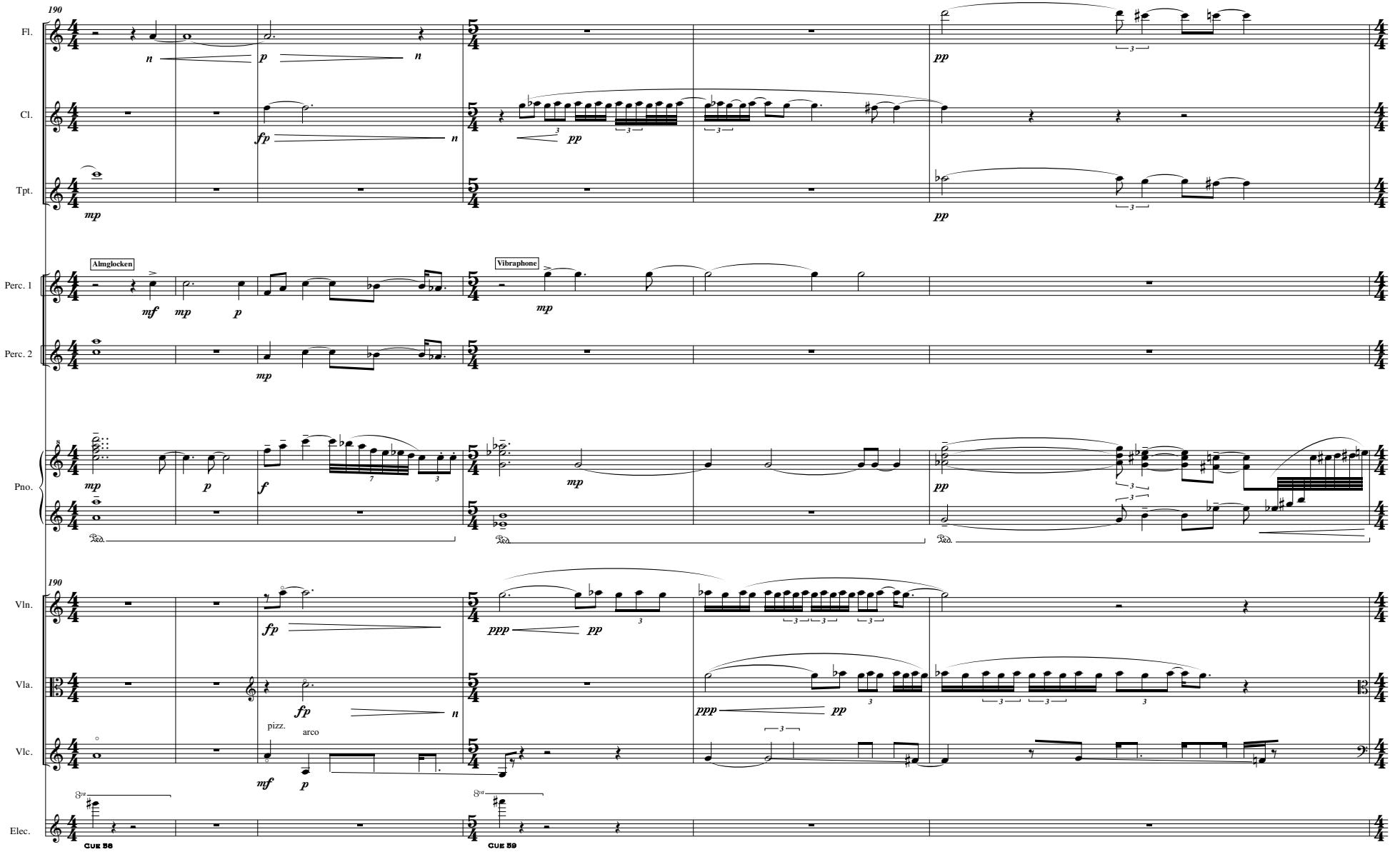

161
(♪ = ♪)
Fl.
Cl.
Tpt.
(Snare)
Perc. 1
(Xylophone)
Perc. 2
Pno.
Vln.
Vla.
Vlc.
arco
Elec.
Cue 45
Cue 46

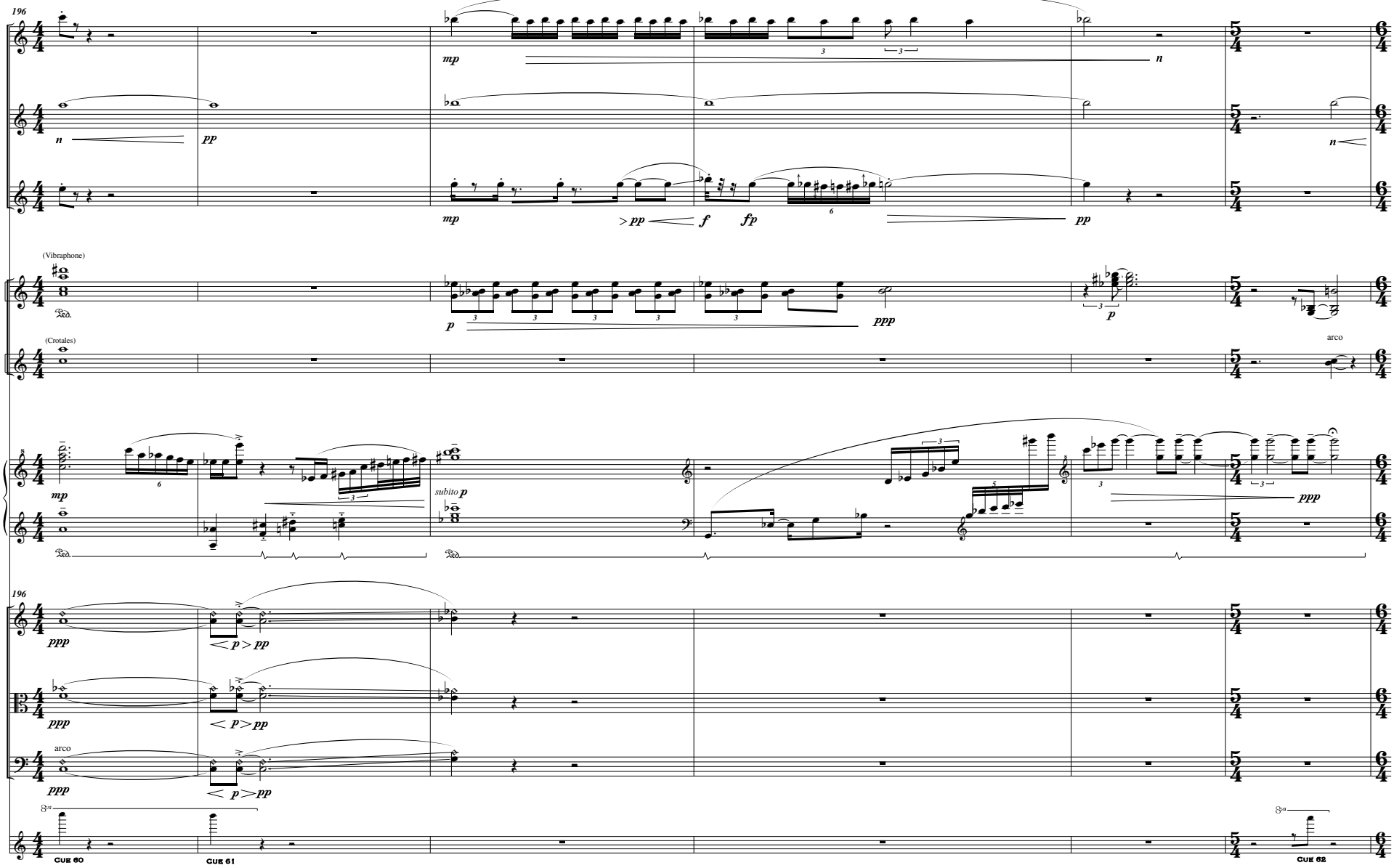

167
Fl.
Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
arco
Splash Cymbal
dampen
Vibraphone
Wind Gong
dampen
CUE 47
CUE 48

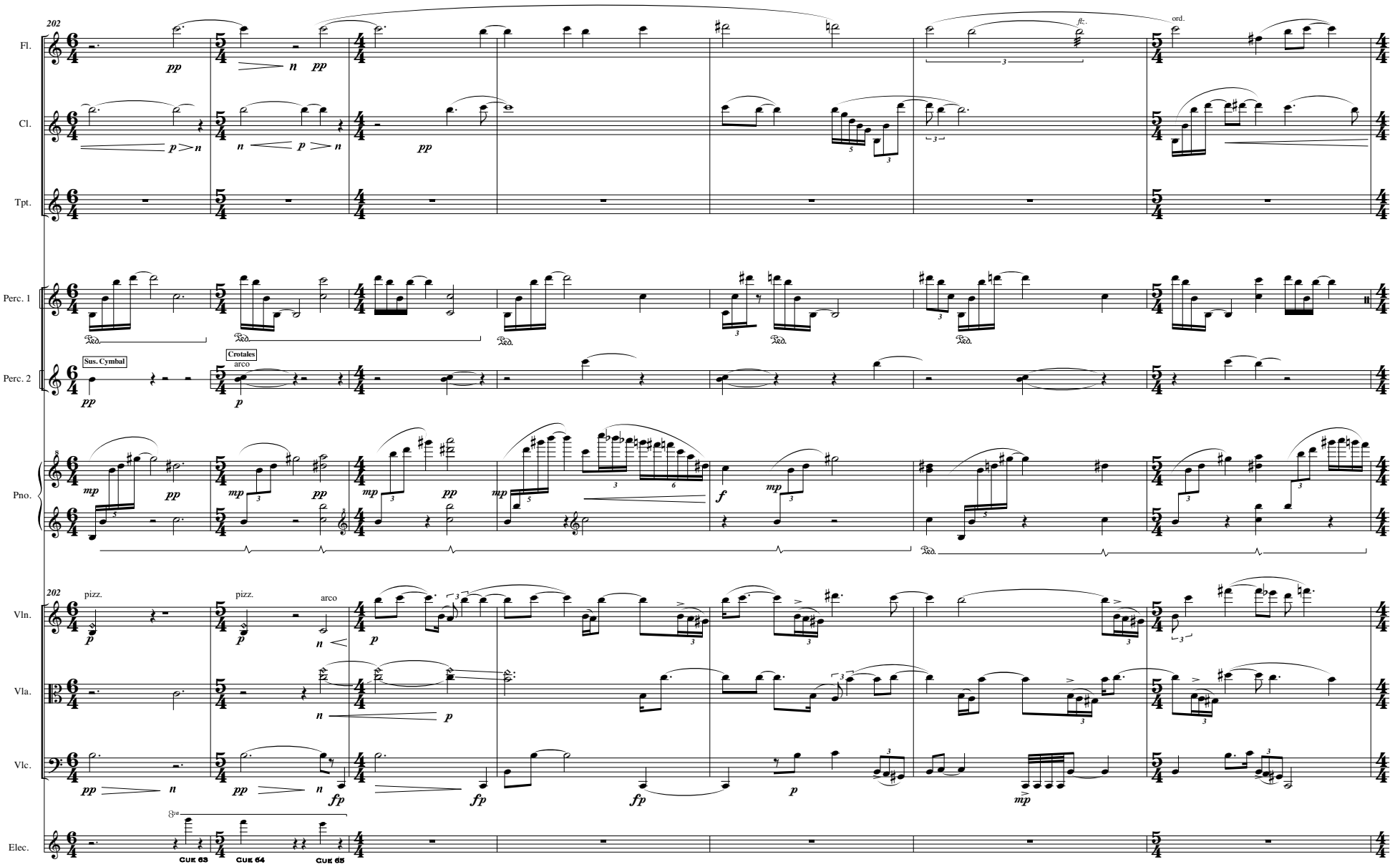

174
Fl.
Cl.
Tpt.
(Vibraphone)
Perc. 1
(Xylophone)
Perc. 2
Pno.
174
Vln.
Vla.
Vlc.
Elec.
(ord.)
s.p.
Cue 49
Cue 50
Cue 51
Cue 52
Cue 53

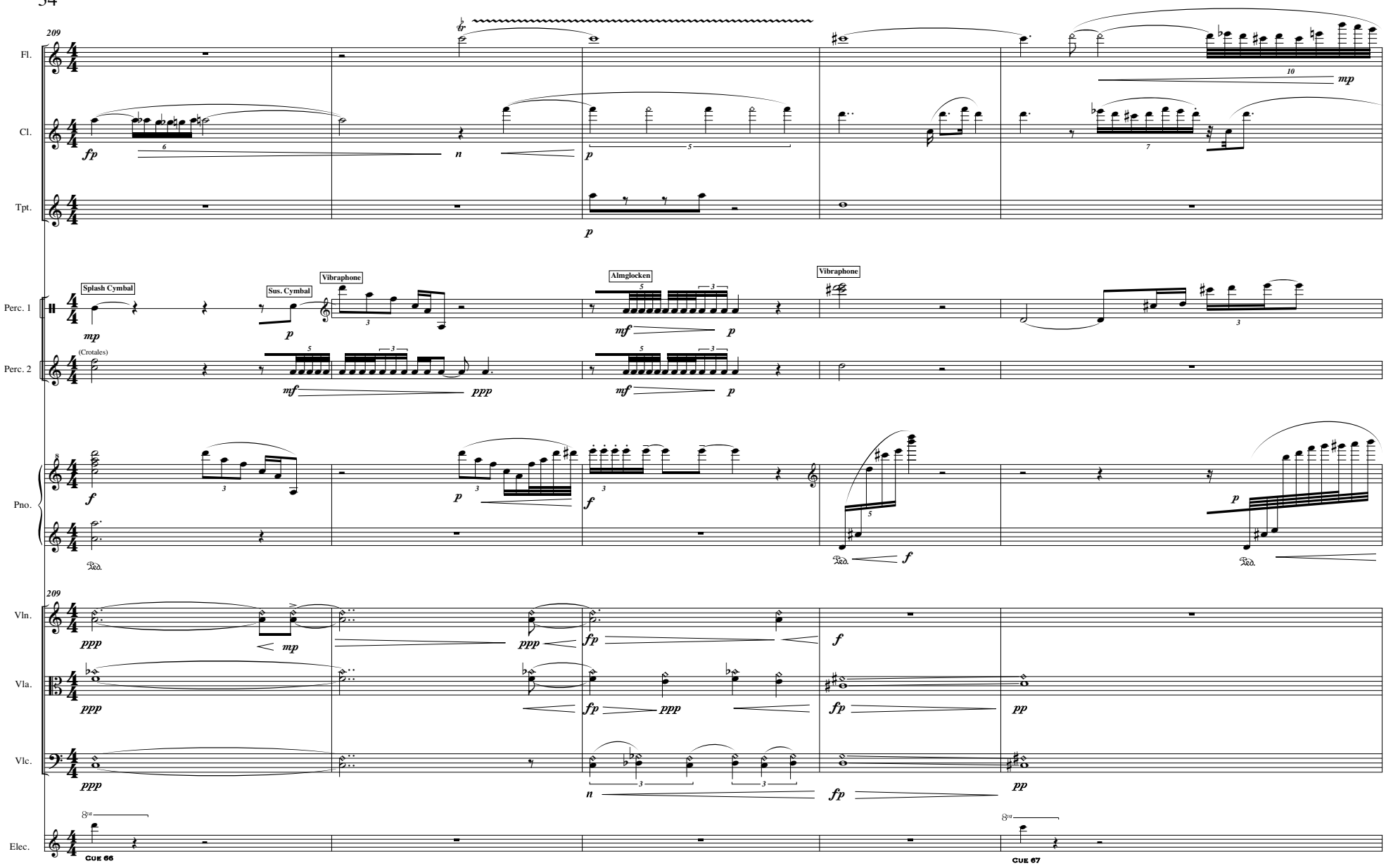

♩ = 54
178
Fl.
Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
HT
Triangle
Crotales
ord.
III.
VI.
Cue 54
Cue 55
Cue 56

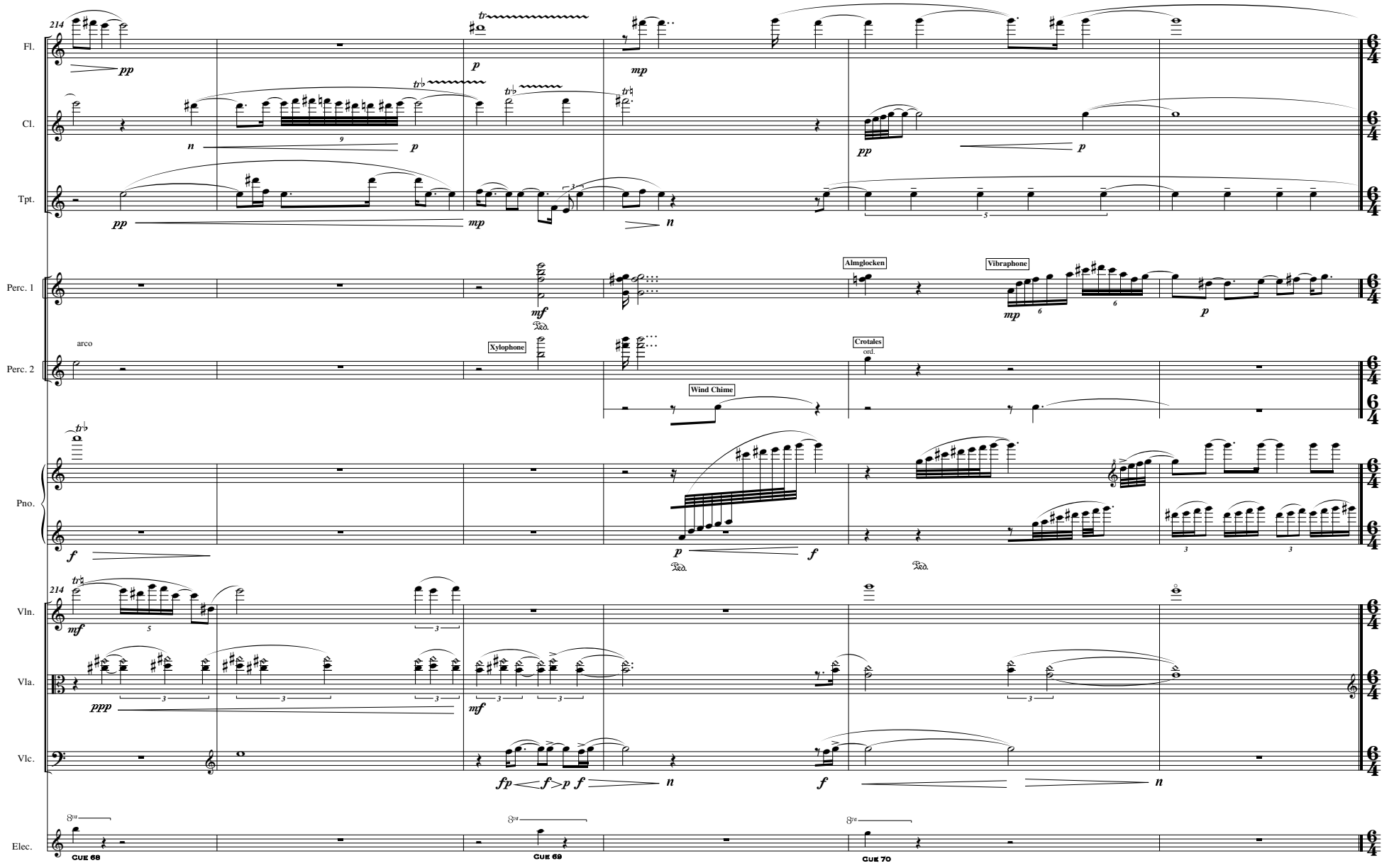

185
Fl.
Cl.
Tpt.
Perc. 1
Sus. Cymbal
Triangle
Perc. 2
(Crotales)
Pno.
185
Vln.
Vla.
Vlc.
Elec.
Cue 57


190
Fl.
Cl.
Tpt.
Almglocken
Vibraphone
Perc. 1
Perc. 2
Pno.
190
Vln.
Vla.
Vlc.
pizz.
arco
Elec.
CUE 58
CUE 59

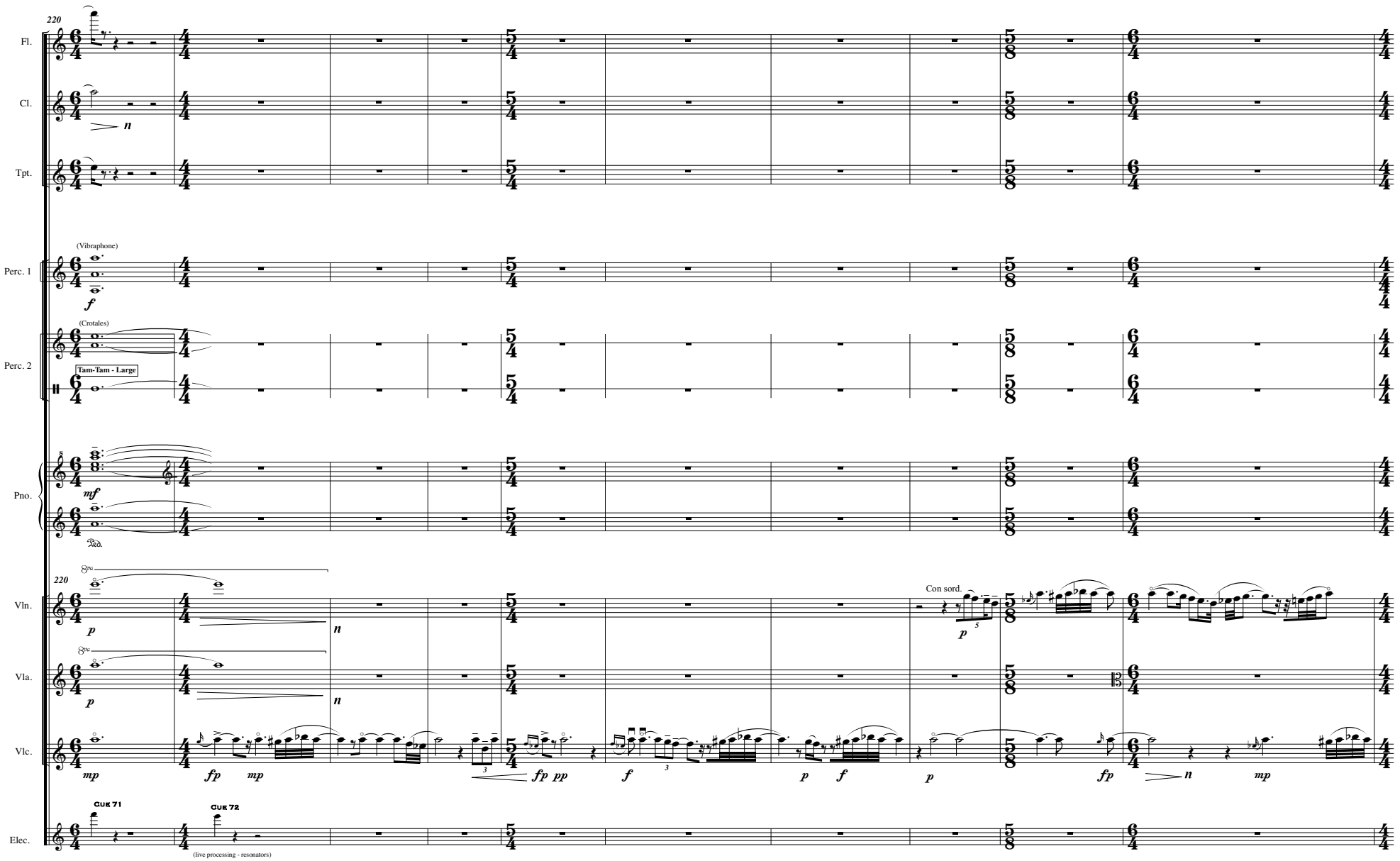

196
Fl.
Cl.
Tpt.
(Vibraphone)
Perc. 1
(Crotales)
Perc. 2
Pno.
196
Vln.
Vla.
arco
Vlc.
arco
Elec.
CUE 60
CUE 61
CUE 62

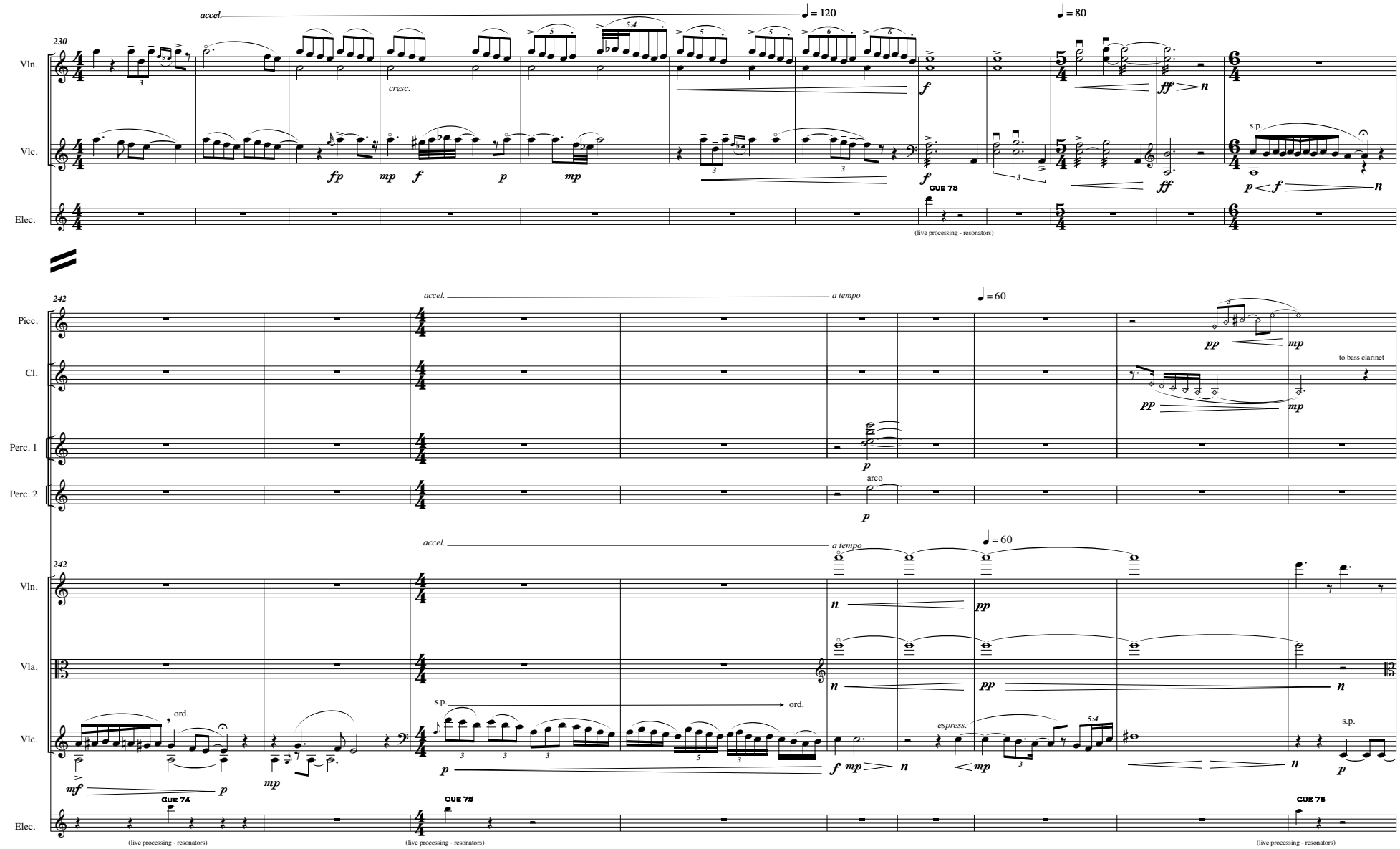

202
Fl.
Cl.
Tpt.
Perc. 1
Perc. 2
Sus. Cymbal
Crotales
arco
Pno.
202
Vln.
pizz.
arco
Vla.
Vlc.
Elec.
ord.
CUE 63
CUE 64
CUE 65

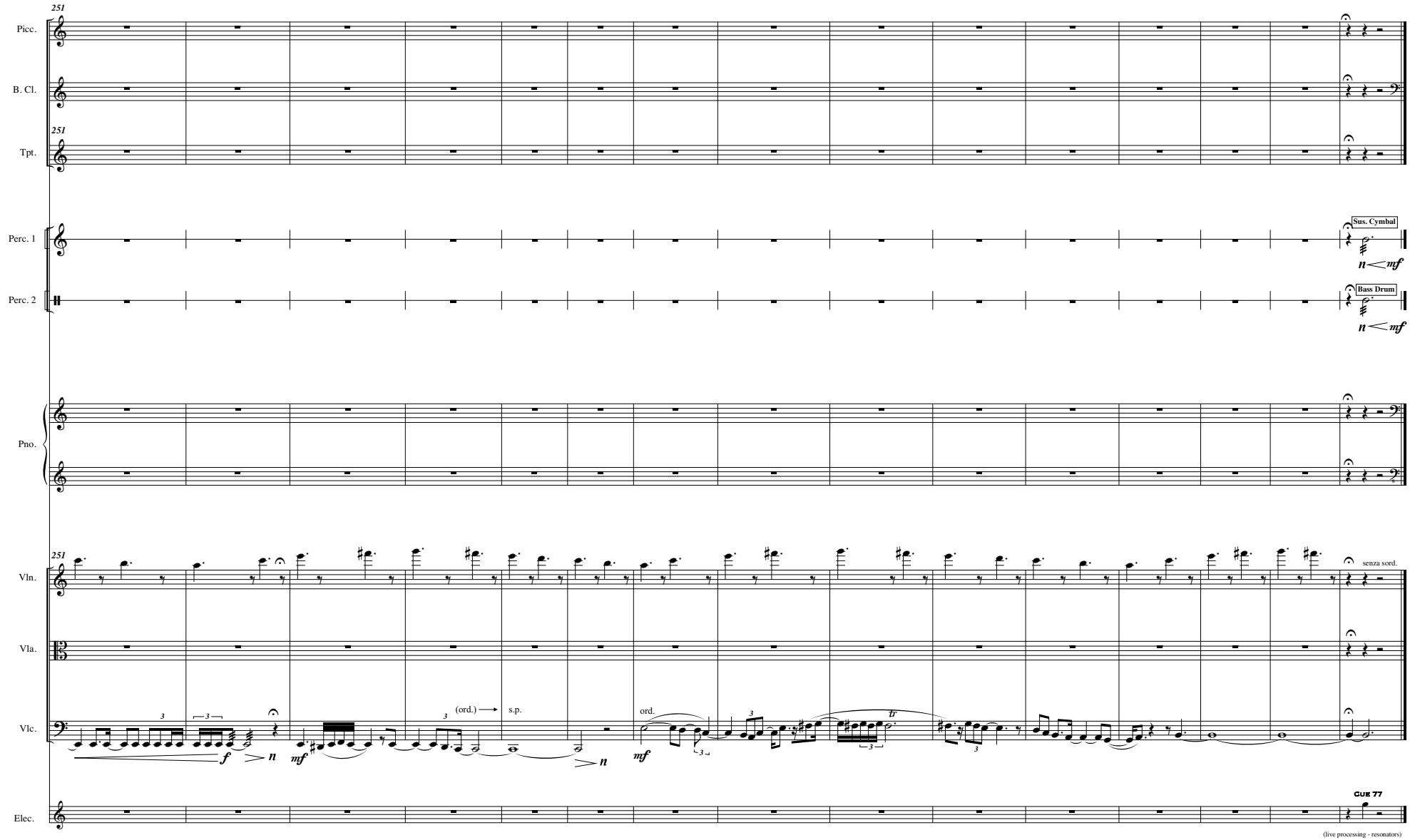

209
Fl.
Cl.
Tpt.
Splash Cymbal
Sus. Cymbal
Vibraphone
Almglocken
Vibraphone
Perc. 1
(Crotales)
Perc. 2
Pno.
209
Vln.
Vla.
Vlc.
Elec.
CUE 66
CUE 67


214
Fl.
Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
Vln.
Vla.
Vlc.
Elec.
Almglocken
Vibraphone
Xylophone
Crotales
ord.
Wind Chime
arco
CUE 68
CUE 69
CUE 70

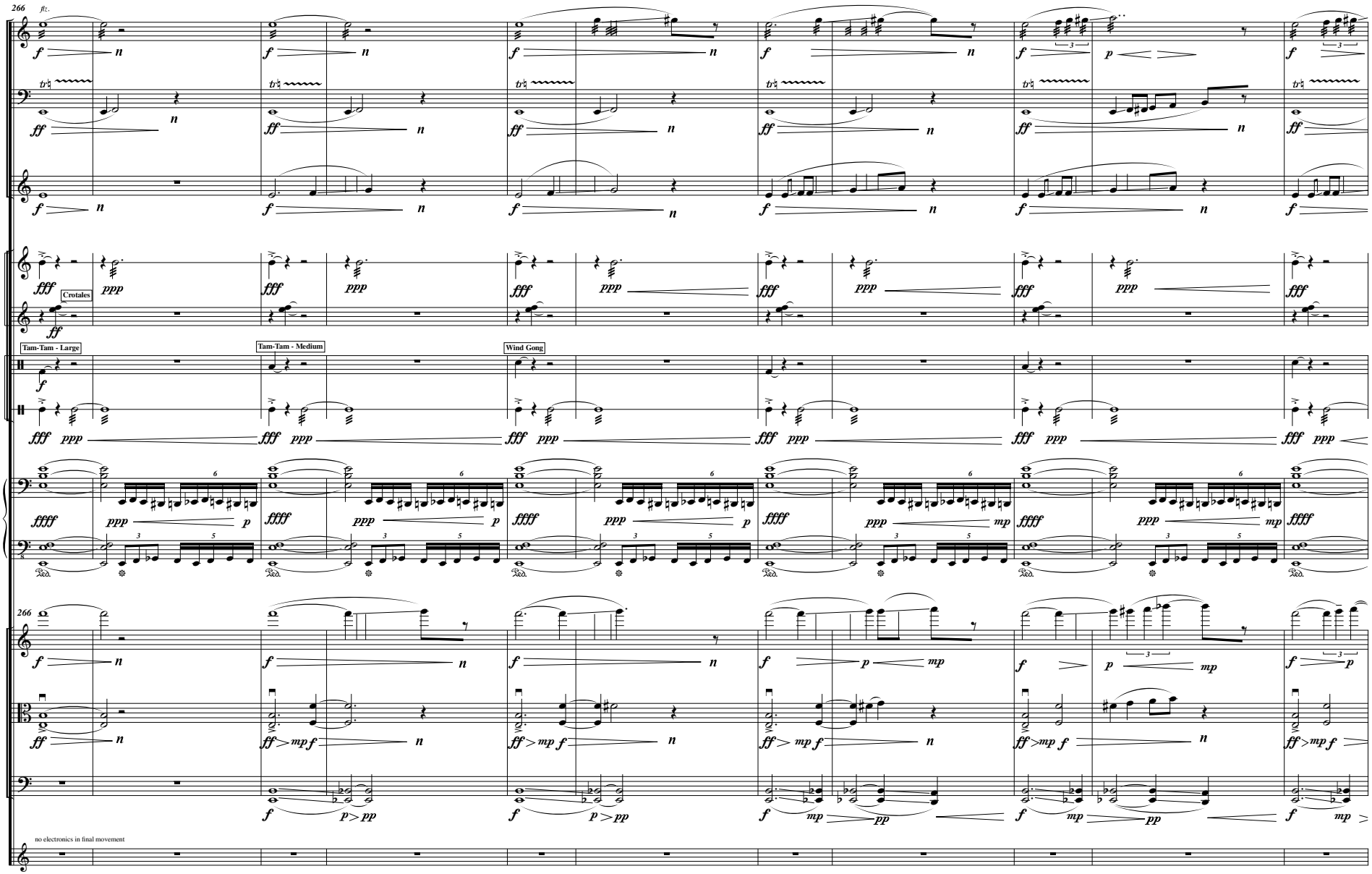
36 VI - EGG (♩ = 54)

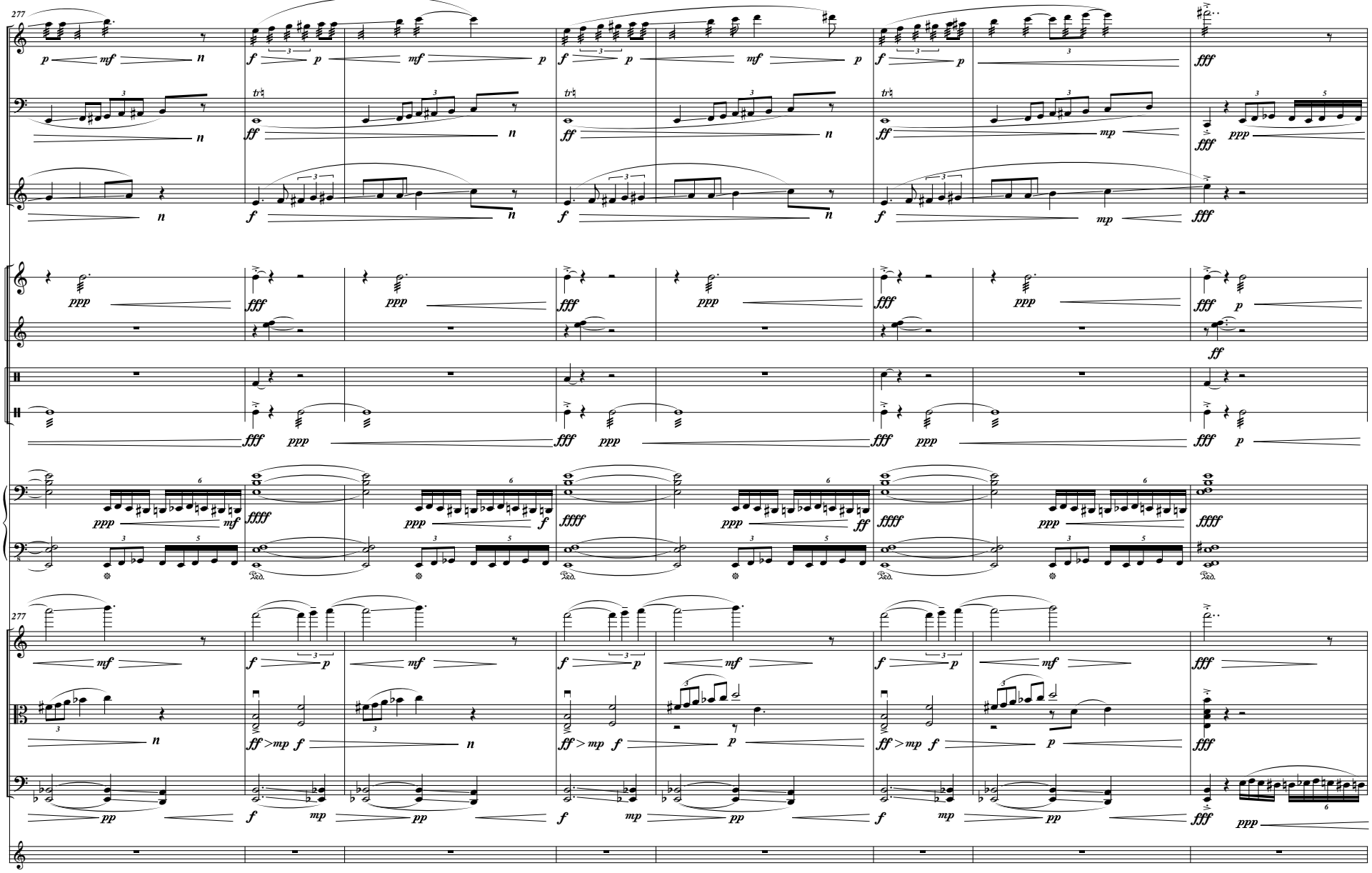

220
Fl.
Cl.
Tpt.
(Vibraphone)
Perc. 1
(Crotales)
Perc. 2
Tam-Tam - Large
Pno.
220
Vln.
Vla.
Vlc.
Elec.
Con sord.
CUE 71
CUE 72
(live processing - resonators)

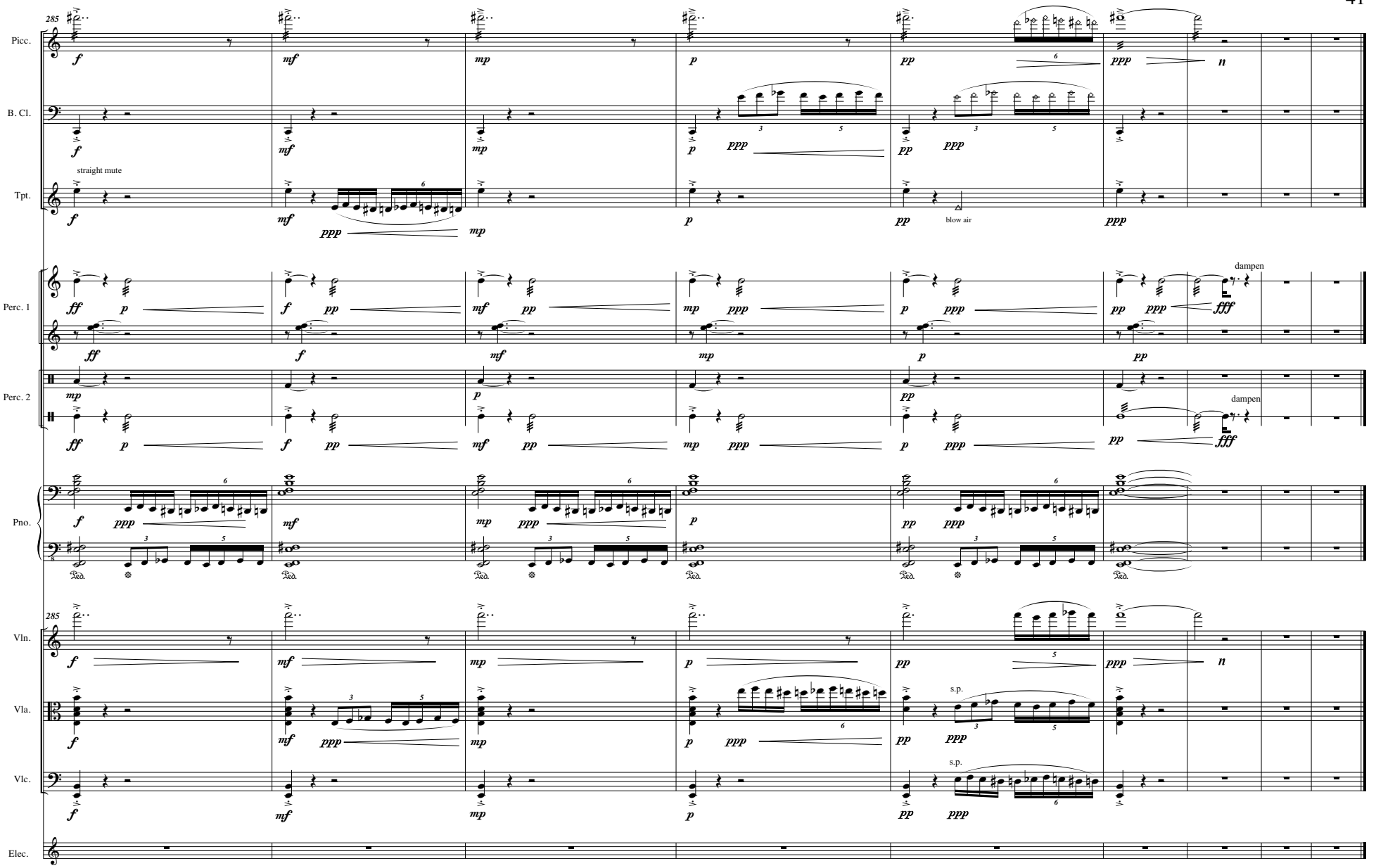

230
accel.
♩ = 120
♩ = 80
Vln.
Vlc.
Elec.
cresc.
fp
mp
f
p
mp
f
CUE 73
(live processing - resonators)
ff
n
s.p.
p
f
n
242
accel.
a tempo
♩ = 60
Picc.
Cl.
Perc. 1
Perc. 2
pp
mp
to bass clarinet
arco
Vln.
Vla.
Vlc.
ord.
s.p.
mf
p
mp
CUE 74
CUE 75
CUE 76
espress.
(live processing - resonators)
(live processing - resonators)
(live processing - resonators)


251
Picc.
B. Cl.
251
Tpt.
Perc. 1
Sus. Cymbal
n<mf
Perc. 2
Bass Drum
n<mf
Pno.
251
Vln.
senza sord.
Vla.
Vlc.
3
3
3
(ord.)
s.p.
ord.
3
tr
3
f
n
mf
n
mf
Elec.
Cue 77
(live processing - resonators)

VII - The Death of Kashchei the Immortal




277
Picc.
B. Cl.
Tpt.
Perc. 1
Perc. 2
Pno.
277
Vln.
Vla.
Vlc.
Elec.


285
Picc.
B. Cl.
straight mute
Tpt.
blow air
Perc. 1
dampen
Perc. 2
dampen
Pno.
285
Vln.
Vla.
s.p.
Vlc.
s.p.
Elec.