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Paul Archbold

Commentary on works

Folio of compositions:

1. **Fragments after Chiyo**
2. **Elements of Iridescence**
3. **...and the unseen eyebeam crossed...**
4. **Of crossed destinies**
5. **Chiaroscuro**
6. **Études en mouvement**
7. **Pas de deux**
8. **The Land Solos**

Submitted as part of a portfolio for the degree of PhD in Music Composition, University of Durham

July 10 1998

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24 FEB 1999

Paul Archbold

Submission for the degree of PhD in Music Composition

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List of Works

Fragments after Chiyo 1991	mezzo soprano, flute (doubling alto flute), cello and piano duration 6 minutes
Elements of Iridescence 1991	flute (doubling piccolo), violin, viola, cello duration 5 minutes
...and the unseen eyebeam crossed... 1992	chamber orchestra flute (doubling piccolo), oboe, cor anglais, clarinet (in A) doubling bass clarinet in B♭, 2 bassoons 2 trumpets (in C), 2 horns (in F) 1 percussion = marimba, vibraphone, 2 suspended cymbals, claves strings - at least 6.5.3.3.2 players duration 8 minutes
Of crossed destinies 1993	harp duration 12 minutes
Chiaroscuro 1996	solo double bass and strings 3.3.2.2.0 players duration 10 minutes
études en mouvement 1992-7	piano duration 13 minutes
Pas de deux 1997	viola and piano duration 10 minutes
The Land Solos 1997	clarinet in B♭ doubling bass clarinet in B♭ clarinet in A doubling bass clarinet in B♭ 2 tenor trombones (in B♭/F) percussion = Thai Gongs (D_3-$F\sharp_4$), vibraphone, glockenspiel, Japanese Temple Bell (in C) duration 23 minutes

Preface

The attached portfolio is a selection of works that I have composed since October 1990. The selection includes most of the concert music written in this period but excludes the incidental music that I wrote for three productions of Astra Theatre (*Woyzeck, Macbeth* and *The White Scourge*), and incidental music to *The Beggar's Opera* (written for the St Magnus Festival, Orkney). Two chamber works, with which I was never satisfied, are also omitted: *Catch for Three* for three oboes, composed for a project for children with special needs and *Chimaeric Visions* for free bass accordion and percussion.

The group of works submitted display several common characteristics; a fascination with instrumental colour and the variety of blends and hues available within an ensemble, a concern for shaping gesture at a motivic and a dramatic level, an interest in metaphor and metonymy in language and music and the possibility of drawing a connection between both art forms, the role of composition processes and structures in determining the perception and comprehension of a work and finally the engagement of the performer in the realisation of the 'virtual' music of the score. This commentary is intended to explore these issues in relation to my work but cannot, for reasons of scope and space, be an authoritative dissertation on each subject. I am aware of the dangers of appropriating terms and concepts from disciplines outside music and have attempted to outline the points of contact in my introductory chapter.

For each work, I will outline the literary and musical influences that I consider most significant. I will then proceed to give a description of the character of the work and offer a partial analysis discussing some of the work's characteristic features. The commentary does not attempt to 'translate' the music into prose and all analysis can remain only partial; music is a temporal art whose structures are not identical with those of language. In some respects music is less precise than languuage as it lacks any concept of a 'dictionary', yet our experience of music is so allusive, coercing visual, tactile and sonaesthesic experiences in addition to distinct aural impressions into our memory, that it can be as rich. The score must stand as a 'virtual' work, a text that suggests and controls its interpretation.

Preamble : the Reader in music

> A text is not a text unless it hides from the first comer, from the first glance, the law of its composition and the rules of its game. A text remains, moreover, forever imperceptible. Its law and its rules are not, however, harbored in the inaccessibility of a secret; it is simply that they can never be booked, in the *present* into anything that could be rigorously be called a perception. (Derrida, 1981: 61)

The opening paragraph of Derrida's extended essay 'Pharmakon' could equally apply to any work of art, be it a painting, a building, a play or a musical work. Artists generally talk about an 'essence' which is present in a 'work' which can only be revealed with careful and patient study. Whether such study takes place in the privacy of a study or the immediacy of a public performance is irrelevant to Derrida. Neither the spoken word (or by extension any spontaneous act e.g. an improvisation) nor the written text (as a book or as a score) are closer to the 'authentic' self of the creator and neither are they free from a rigorous mis-reading which can always reveal a 'counter-work'.

Plato considers writing a drug (*pharmakon*), which in the dialogue between Socrates and Phaedrus, is revealed as both a cure (preserves memory) and as a poison (promotes 'false' knowledge, knowledge that has not been revealed). Derrida argues that the *pharmakon* is equally present in a spoken or written text and questions the possibility of achieving an 'essential' meaning. Each interpretation introduces terms which need further interpretation, and since these interpretations can be multiple, meaning is continually 'deferred'. Interpretation reveals the text as an unending labyrinth, a structure without 'centre'.

Umberto Eco, by contrast, is unwilling to allow a work to expand and vanish in an infinite play of signifiers. He posits a 'Model Reader', created by the text, with which the 'Empirical Reader' engages and that limits the text's field of interpretation.

> A text is a device conceived in order to produce its model reader. I repeat that this reader is not the one who makes the 'only right' conjecture. A text can forsee a model reader entitled to try infinite conjectures. The empirical reader is only an actor who makes conjectures about the kind of model reader postulated by the text. Since the intention of the text is basically to produce a model reader able to make conjectures about it, the initiative of the model reader consists in figuring out a model author that is not the empirical one and that, in the end, coincides with the intentions of the text. (Eco 1995: 64)

A similar strategy is advanced by Wolfgang Iser, but here it is the interaction between the written text and the empirical reader that engenders a dynamic process, a process that produces a work richer by virtue of its implications.

> ...the written text imposes certain limits on its unwritten implications in order to prevent these from becoming too blurred and hazy, but at the same time these implications, worked out by the reader's imagination, set the given situation against a background which endows it with far greater significance than it might have seemed to possess on its own.
> (Iser in ed. Lodge, 1988: 213)

These arguments applied to the act of reading can equally applied to poetic origination. The author can be seen as a convenient term for the accumulation of fragments torn from other cultural products.

> ... the author is not an indefinite source of significations which fill a work; the author does not precede the work, he is a functional principle by which, in our culture, one limits, excludes, and chooses; in short, by which one impedes the free circulation, the free manipulation, the free composition, decomposition and recomposition of fiction...The author is therefore the ideological figure by which one marks the manner in which we fear the proliferation of meaning.
> (Foucault in ed. Lodge, 1988: 209)

At its most generous, this line of enquiry investigates the author as an active misinterpreter of other works.

> ...poems, I am saying, are neither about 'subjects' nor about 'themselves'. They are necessarily about *other poems*; a poem is a response to a poem, as a poet is a response to a poet or a person to his parent. Trying to write a poem takes the poet back to the origins of what a poem *first was for him*, and so takes the poet beyond the pleasure principle to the decisive initial encounter and response that began him...To live, the poet must *misinterpret* the father, by the crucial act of misprision, which is the re-writing of the father.
> (Bloom in ed. Lodge, 1988: 247)

This, however leads to a problem of mimesis: to what extent is the 'meaning' of a work predicated on that of its predecessors. Can there be an 'intrinsic' meaning to a work? If there can be no intrinsic meaning, can later works accrue meaning? The 'essence' of a work is revealed as an absence.

> Literature involves the voiding, rather than the affirmation, of aesthetic categories. One of the consequences of this is that, whereas we have traditionally been accustomed to reading literature by analogy with the plastic arts and with music, we now have to recognise the necessity of a non-perceptual, linguistic moment in painting and in music, and learn to *read* pictures rather than to *imagine* meaning...
> (De Man in ed. Lodge, 1988: 362)

A text can also exploit an 'absence' in the foreground: by employing invented words which allude to other words but elude definition or, as in Mallarmé's *Livre*[1], (Mallarmé, 1957) by using the blank space of a page to disrupt and postpone 'meaning'. It is with such qualities of absence that Ferneyhough plays in his *Second String Quartet.* (Ferneyhough, 1982)

> This piece is about silence - not so much the literal silence (although this, too, is an obvious feature of the opening section) but rather that deliberate *absence* at the center of musical experience which exists in order that the listening subject may encounter itself there.
>
> Since all forms of silence can only be approached via their own proper negatives, the organisation of this quartet concentrates on the definition of several, ever-tighter concentric paths focused upon this core of stillness.
> (Ferneyhough, 1996:117)

Derrida is uncomfortable with such a 'centre' to a work. As 'structure' and its attendant concepts 'surface' and 'skeleton' are borrowed from another field, that of architecture, a 'centre' is a simplifying concept, a point of orientation around which forces are in balance.

> ...structure- or rather the structurality of structure- although it has always been at work, has always been neutralised or reduced, and this by a process of giving it a center or referring it to a point of presence, a fixed origin. The function of this center was not only to orient, balance and organize the structure - one cannot in fact conceive of an unorganized structure - but above all to make sure that the organizing principle of the structure would limit what we might call the *play* of the structure. By orientating and organizing the coherence of the system, the center of a structure permits the play of its elements inside the total form. And even today the notion of a structure lacking any center represents the unthinkable itself.
> (Derrida in ed. Lodge, 1988: 109)

Derrida has shifted the metaphor of 'structure' to another domain, say that of mathematics or chemistry. A chemical structure such as a crystal lattice is held together by forces acting between the component atoms. No centre is required - the lattice is identical at all equivalent points[2].

---

[1] (Mallarmé, 1957). *Livre* was written in but not published until 1957.

[2] There are however difficulties in calculating forces at the edge of a crystal lattice.

It is therefore possible to distinguish a 'structure', a set of relationships between objects which may not be complete, from a 'form', the overall appearance of the composite.

> First, the term 'structure' suggests details, connections in a small space; the word 'form' on the other hand...[suggests] ... relations over wide stretches. Form is a relative concept; a motif is the form of its notes, a theme the form of its motifs...Secondly the expression 'structure' can be related to abstract components, to pitches or time values separated from the remaining sound qualities...What is meant by the term 'form' on the other hand, is a concrete musical shape in which pitch, duration, dynamics and timbre interact...a row is a structure but not a form.
> (Dahlhaus in ed. Katz and Dahlhaus,1992: 810)

Ligeti draws attention to the spatial origin of the term 'form' and produces a general concept of morphology.

> Form is originally an abstraction from spatial configurations, from the proportions of objects being extended in space. Applied to nonspatial areas - the form of poetry or music - 'form' is an abstraction of an abstraction. Corresponding to the provenance or the concept, spatial aspects cling to forms that unfold in time...The syntactic relations of the musical aspects are ...transposed by our imagination into an implied space, whereby the individual aspects - elements, shapes, segments, parts etc. - have the effect of places or objects, the complete progression of musical events thus appearing as it were architecture in space...It is the interaction of association, abstraction, remembrance and prognosis which elicits in the first place the nexus of relations that make the conception of musical form possible.
> (Ligeti in ed. Katz and Dahlhaus,1992: 782-3)

In so doing, Ligeti distinguishes 'music' from'musical form'.

> 'music' would thus be the purely temporal process, 'musical form', conversely the abstraction of the same temporal process, in which the relation within the process are no longer temporal but present themselves as spatial; musical form arises only when one retrospectively views music's course in time as 'space'.
> (Ligeti in ed. Katz and Dahlhaus,1992: 783)

Ferneyhough is aware of a further abstraction where one perceives a 'tactility' of form.

> Even though when talking about 'tactility' in musico-temporal terms, one is speaking with connotational rather than denotational intent, I still feel that the term serves to identify an experience most of us have occasionally had. When we listen intensively to a piece of music there are moments when our consciousness detaches itself from the immediate flow of events and comes to stand apart, measuring, scanning, aware of itself operating in a 'speculative time-space' of dimensions different from those appropriate to musical discourse in and of itself. We become aware of the passing of time as something approaching a physical, objectivized *presence.*
> (Ferneyhough,1996: 43)

It is the interplay of such sensations with more immediate perceptions and more distant recollections that modify our experience of the flow of time. Elliott Carter quotes Charles Koechlin who categorises four kinds of time:

> 1. Pure duration, a fundamental of our deepest consciousness, and apparently independent of the external world : life flows by...
> 2. Psychological time. This is the impression we have of the above duration according to the events of our existence: minutes that seem centuries, hours that go by too quickly... That is, duration relative to the circumstances of life.
> 3. Time measured by mathematical means; all of which depend on visual methods-sand clocks, clocks, chronometers...
> 4. Finally, I would like to talk of 'musical time'...Auditory time is without doubt the kind that comes closest to pure duration. However, it appears to have the same connection with space in that it seems to us measurable (by ear) and divisible...Besides as concern the measure of this (musical) duration, the role of musical memory possess an importance that seems to escape many.
>
> (Carter, 1977: 343-65)

Carter adds as a commentary to'musical time' a passage from Suzanne Langer.

> But the existence of time is anything but simple. It involves more properties than 'length' or interval between selected moments; for its passages have also what I can only call, metaphorically, *volume*...But even its volume is not simple; for it is filled with its own characteristic forms, as space is filled with material forms, otherwise it could not be observed and appreciated...The primary illusion of music is the sonorous image of passage, abstracted from actuality to become free and plastic and entirely perceptible.
> (Carter,1977: 343-65)

In order to mould the passage of time, Ferneyhough proposes a definition of the term 'figure'

> as an element of musical signification composed entirely of details defined by their contextual disposition rather than their innate, stylistically defined referential capacity. The synchronic is replaced by diachronic succesivity as the central mode of 'reading' musical states, for the reason that a progressive, accretional definition of musical vocables is indispensable if a counterweight to the suffocating presence of historically concrete stylistic triggers is to be created.
> (Ferneyhough 1995: 34)

In contrast to the continually unfolding figure, he defines a gesture as

> 'frozen force' to the extent that it stands for the expressive sentiment, for an absent exchange of expressive energies. The gestural vocable is, in many ways, comparable to the individual word, in that it may be usefully recognised in radically diverse context and manifested through a vast variety of individual nuance.
> (Ferneyhough, 1995: 35)

It is perhaps with these concepts of unfolding figure and referential gesture that music comes closest to the concept of the metaphoric and metonymic poles elaborated by Jakobson for language.

> The development of a discourse may take place along two different semantic lines : one topic may lead to another either through their similarity or through their contiguity. The metaphoric way would be the most appropriate term for the first use and the metonymic for the second, since they find their most condensed expression in metaphor and metonymy respectively.
> (Jakobson in ed. Lodge, 1988: 57)

This interplay between unfolding figure, expanded and extended by exploiting a limited set of characteristics, and referential gesture, a dramatic contour which can connect diverse textures, is for me a rich resource. As in Ferneyhough's *Second String Quartet*, the structures by which the figure is defined can have differing degrees of perceptual permeability. However, I believe that it is important to distinguish between the transformational procedures which, when combined in an arbitrary fashion, create a musical idea and the idea's perceived characteristics. These approaches are not necessarily compatible and I will explore the issues raised by applying Nattiez's tripartition in my discussion of *Études en mouvement.*

To shape time, I adopt several approaches. The flexible notated rubato in, for example, Of *crossed destinies,* movement III, shapes psychological time by simulating the phrase rhythm of relaxed breathing. In other works a rigid time frame is used, allowing the music to proceed like a mechanism or functioning as a springboard for irregular accentuation.

The investigation of the characteristics of a limited number of pitch-class sets reveals a dense network of relationships which can be made audible by chord registration, pitch selection and orchestration. This limited domain allows for a subtle aural perspective, 'form' in Ligeti's abstracted spatial sense.

In creating music with such a set of limiting 'rules', I wish to encourage the listener to attend to details, to anticipate the future evolution of the work. Such is my intended 'Model Reader', a Reader not satisfied with surface morphology. However, as a composer, I cannot prevent diverse and diverging readings of my music. Neither do I wish to do so, as my works are frequently my reading of and my response to another work, a critical mimesis.

In exploiting these multiple associations and implications the composer is faced with a bewildering array of possibilities; a dense wood awaits exploration. Eco suggest two ways of walking through such a wood:

> The first is to try one of several routes (so as to get out of the wood as fast as possible, say, or to reach the house of grandmother, Tom Thumb, or Hansel and Gretel); the second is to walk so as to discover what the wood is like and find out why some paths are accessible and others are not.
> (Eco, 1995: 27)

Fragments after Chiyo

Context of the work

This was the first work to be written at the University of Durham for a workshop given by the London Sinfonietta. The work build on features of two works that I had completed in the preceding year; the *Piano Sonata* and *Disenchanted Voices* for flute, viola and harp.

The *Piano Sonata* was a reworking of an earlier work, *Toccata*, and had caused me considerable difficulties. In the *Piano Sonata*, I wanted to intensify the dramatic gesture of the earlier work and sharpen the juxtaposition to create a discourse where the audience is aware of its emotional charge but frequently forced to view 'objectively'; a musical equivalent to the theatre of Samuel Beckett. As was consistent with this intention, the 'narrative' is frequently interrupted. Flashbacks and flashforwards are impossible to achieve in music as music possess no signifiers to relative time frames; an idea happens at that instant and no other. Nonetheless, it is possible to mould the flow of time, creating textures that move too fast to be perceived completely or pauses which seem enormous in context. By keeping the 'material' in continuous transformation yet keeping its character elusive, I was able to shape the work as if time was plastic.

The architecture of the work was fixed with a detailed proportional plan, the 'material' composed from complex temporal canons and the gritty harmony characterised by chromatic saturation. The lines flow out of synchronisation, chords fragment or congeal. It is a violent work, where any attempt by the 'material' to gain harmonic or melodic character is vigorously suppressed.

Disenchanted Voices is a quieter work, building its harmonic 'material' from flute multiphonics which are re-interpreted by viola harmonics and harp pedal points before proliferating into a tapestry of interlinked lines. It was this attention to a clear yet somewhat exotic soundworld which became the starting point for *Fragments after Chiyo*.

Fragments after Chiyo

With *Fragments after Chiyo*, I wanted to write a work where each sound would be telling, with an orchestration so fragile it could almost 'tear'. The gestural characterisation and the use of juxtaposition however relates to the piano sonata.

In many works employing transformation procedures, the composer intends the change from one state to another to be as smooth as possible so that a precise moment of change is not noticeable. As a listener, I often find this approach unsatisfactory; either the 'material' has so little audible internal characterisation that the effect is one of aimless wandering or the process is so obvious that its execution is unnecessary and irritating. In this work the 'transformation' is not continual but presented in fragments which suggest states of a process, states which refer and allude to one another by exhibiting similarities and divergences.

The haiku

Harusame ya	**Spring rain**
Harusame ya	Spring rain:
utsukushiu naru	Everything just grows
mono bakari	More beautiful
Beni no tsuyu	**Simply water**
Koborete wa	The dew of the rouge-flower
tada no mizunari	When it is spilled
beni no tsuyu	Is simply water
Meigetsu	**The harvest moon**
Meigetsu ya	Autumn's bright moon
ittemo ittemo	However far I walked, still far off
yoso no sora	In an unknown sky

For this work I required texts which were very short and had very compact and clear imagery. The haiku were taken from (ed. Cosman, 1979). I had initially intended to set the poems in English and Japanese, but I was unable to find a copy of the original source with the Japanese text (Blyth,1967) until early last year (1996). Kaga no Chiyo (Nun Chiyo or Chiyo-Jo) is one of the best known Japanese woman poets who took up orders on her husbands death. Although her poems are often commonplace and tinged with a superficial logic, this simplicity was ideal for my purposes.

The first movement sets all three haiku employing mimetic techniques which connect to a long tradition of word painting in song. Specific images in the haiku correspond to precise textures in my music, in many cases approaching the onomatopoeic.

falling rain	e.g. instrumental texture; I b1(tutti) or II b1
growth	(i) harmonic reinterpretation, e.g. dyad becoming a multiphonic; I b3/4 (ii) phonetic transformation, e.g. the vowels; II b7-9
dew	(as water droplets sparkling in the morning light) e.g. piano, flute and cello; I b6
flowing water	e.g. piano; I b10
rain	(an erratic heavy shower) e.g. tutti; III b2-4
the moon	(cold clear piercing light) e.g. tutti; I b12
landscape	(the bleak and desolate landscape in which the poet walks) e.g. tutti; I b14-16

It is not important to me that these textures signify a word in an absolute sense, but only that an association is created in the mind of the listener.

The following three movements are commentaries on specific ideas in each haiku; growth (II), water as giver of life (III) and alienation (IV). As the haiku are associated with the seasons, I close the cycle by linking the fourth movement to the first.

As a word can be isolated from its context, probed in its phonological characteristics and put in relation with other words similar or disjunct in meaning, I wished to play with associations of musical textural types. There is a clear semantic relation between a droplet that adheres to a leaf having fallen as rain and a droplet of dew having condensed from a mist. In my mimetic texture for rain, I have adopted a convention of imitating a shower gently falling on an expanse of water. For dew, I have suggested a still droplet shimmering in light with a rocking arpeggiation of a static harmony. To transform between these states, I reduced the length of the rain fragment, gradually simplifying the harmony until a static chord could be revealed. In later arpeggiating this chord as an ascending figure, I could suggest water 'spilled'.

A second, diverse, reading is also possible of this text. The droplet on the rouge-flower will be red, the colour of blood, and the spilling of blood as simply water suggests the precariousness of all life. This (perhaps false) reading suggested the violent quasi-mechanical texture in II b5-7, where the 'rain' harmony is re-worked as block chords. The second movement becomes a commentary on life and death, summarised in the ironic re-interpretation of 'so beautiful' in II b14.

The third movement focuses on types of water - spring rain, rain water, dew. Most of the phonemes are extracted from "water" in several pronunciations. This is expanded with /ʃ/, /k/, and /tʃ/ to enable a closer connection between the voice, the flute ramtongue notes and the cello scratch tones. There are two main textures; the erratic rainfall of b2-4 and the contrary motion scales of 'spilled' in b5. The rainfall takes on a mechanical quality in b14-16 leading to a new setting of 'spilled' at b18. This new setting, connected with 'moon', is much more intense.

The third haiku is a search for spiritual fulfilment. In the first movement, 'moon' is set as a cold bright light. In the fourth movement, I suggest a dark unsettling landscape of a late Autumn night, a scene observed in half shadows. The slow unfolding lines are surrounded by chromatic embellishments while the cello ascends unsteadily with increasing clarity. The opening bars allude obliquely to other textures; the piano low clusters resemble the 'water' phonemes of the second movement, the repeated $D\sharp_4$ of 'Autumn' relates to the setting of 'Spring rain' in the first, a connection made clearer in b5/6 where the 'simply water' texture leads via 'dew' to the brightness of the 'moon'. Memories of 'blood' reappear as fragments in b8-11, but are brushed aside by 'spilled' in b12. The passage from b13-17 elaborates on b14-17 of the first movement, but here 'moon' changes phonetically (cf. 'grow' in II) and is brought into contrast with the water imagery.

The final texture encapsulates the work; the piano transforms 'rain' into 'blood', while the extremely high cello trill (now a note, not a harmonic) becomes increasingly 'bright' and insistent. Finally the voice, flute and cello merge 'in an unknown sky'.

Elements of Iridescence

This work was written while I was attending Peter Maxwell Davies' summer course for young composers on Hoy in 1991. The elements of the title are the Platonic elements of water, air, fire and earth. In the work I attempted to capture some of my impressions of the island; a boat passing through an imaginary storm, the gales that howl across the island, the magical play of light reflected in the bay, and the harsh bare rock of the hills.

The resulting work, composed and performed in sections over several days, became an investigation into some of the musical relationships possible within the ensemble . The first two sections are essentially orchestral in their approach; the musicians contribute to a texture but there is little opportunity for the individual shaping of a line or interactive dialogue. The third section offers more solo lines and the harmony is more resonant. Despite its angular quality the fourth movement requires an interactive approach where short accented notes are gradually sustained so that the work takes on a glutinous quality from which the piccolo finally breaks free.

The most prominent sonority in the work is the chord G_4, C_5, $A\flat_5$ which derives from a flute multiphonic, often with the addition of $E\flat_5$. In the first section, this chord is 'torn apart' as each component interval is expanded or contracted in string glissandi. Furthermore, the string instruments drift out of synchronisation so that the chord cycles are obscured. The flute flies erratically within the pitches of the chords as if trapped, until it is submerged in the final sonority.

In the second section, chromatic clusters govern both the harmonies and the fragmentary melodic line. The string clusters, at the extremity of the instrumental ranges move from perceptible pitch to noise but are far enough above the flute that the flute is audible. Towards the end of this section, the chords become clearer, more expansive as the instrumental sonorities merge. The chord G_4, C_5, $E\flat_5$, $A\flat_5$ is the dominant sonority of the third movement where it serves as a point of departure and repose. The pitches used in each melodic line are limited but the vertical sonorities follow no consistent pattern. Like the third section which uses only a few gestures elaborated by extension of a melodic pattern, the fourth section is composed of a limited repertoire of chords which are cycled in new combinations and juxtapositions with the addition of new variants.

Harmonic Interlude

The pitch organisation of works in the twentieth century has been described and investigated in several ways. In general, composers have focused on specific techniques for generating or transforming pitch material. Analysts, who sometimes are also composers, have attempted to devise coherent systems which can uncover connections hidden in works and produce a clear framework against which works can be assessed.

In the early 1950s, Milton Babbitt published several articles[3] that applied aspects of the mathematical discipline of set theory to the partioning of the chromatic scale. In contributing to the foundations of a more general 12-tone theory than that found in Schönberg's pronouncements published at that time, Babbitt was able to investigate the music of Berg, Webern and Schönberg in more detail than had previously been possible. Babbitt bases his theory on the following premises:

(i) The octave in which a pitch occurs can be considered irrelevant. Hence, notes doubled or replicated in different octaves can be ignored.

(ii) As a pitch collection can be expanded in range without limit, the most distinctive form of the collection is the permutation where the range from lowest to highest pitch is at a minimum.

(iii) The common characteristic of all permutations of a set is the distribution of intervals. As permutations of pitch collections sometimes replace an interval by its complement, it is appropriate to count all intervals but notate the complement when an interval is larger than 6 semitones.

(iv) As the resulting interval vector is preserved by the simple transformation function of Inversion, the prime and inverted forms of a set are considered equivalent.

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[3] See for example (Babbitt, 1955)

Babbitt's early publications concentrate on the stucture of several note rows, especially the hexachordal combinatorial rows of late Schönberg. But it is also possible to determine the intervallic properties of sets of any size and to investigate their similarities and differences. Such a classification of referential pitch-class structures was codified by Allen Forte[4] as pitch-class-set analysis and independently exploited by Elliott Carter[5] in much of his oeuvre. However the difference in approach between analyst and composer are revealing. Forte's early work starts from an investigation into how the early works of Berg, Schönberg and Webern achieve coherence before they adopt the stricture of serialism. Carter wishes to exploit the inherent properties of the non-tonal chords discovered and shaped in the early works of these composers.

The differences between Carter and Forte now emerge. Forte is most interested in the interval distribution of sets, so he orders his set numbering by (decreasing) interval vector (with the anomaly of Z-related sets). Carter is interested in the registral disposition of sets so he keeps the symmetrical and asymmetrical sets separate.

Most of Forte's relationships, R_H, K_H, etc. depend on the idea of the complementary set: that once a collection has been presented, the composer (and perhaps also the listener) expects the chromatic scale to be completed with the appearance of the missing pitches. Forte takes this concept one step further, considering this 'virtual' complement to be part of the same conceptual structure as the original collection and hence considering the complement relevant at any transposition.

Carter's music is concerned with exploiting similarities and contrasts. Pitch collections are presented in a limited number of permutations and registrations which emphasise a particular structure; e.g. a melodic pattern may abound in one interval. Chords are often related by a common subset or presented as components of a registrally fixed chromatic set. Carter is hence free to present simultaneously different musics which can be separated by their different harmonic characteristics.

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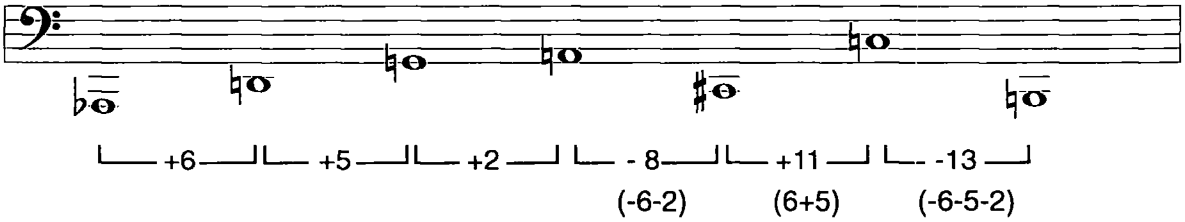
[4] see (Forte, 1973)
[5] see (Schiff, 1983)

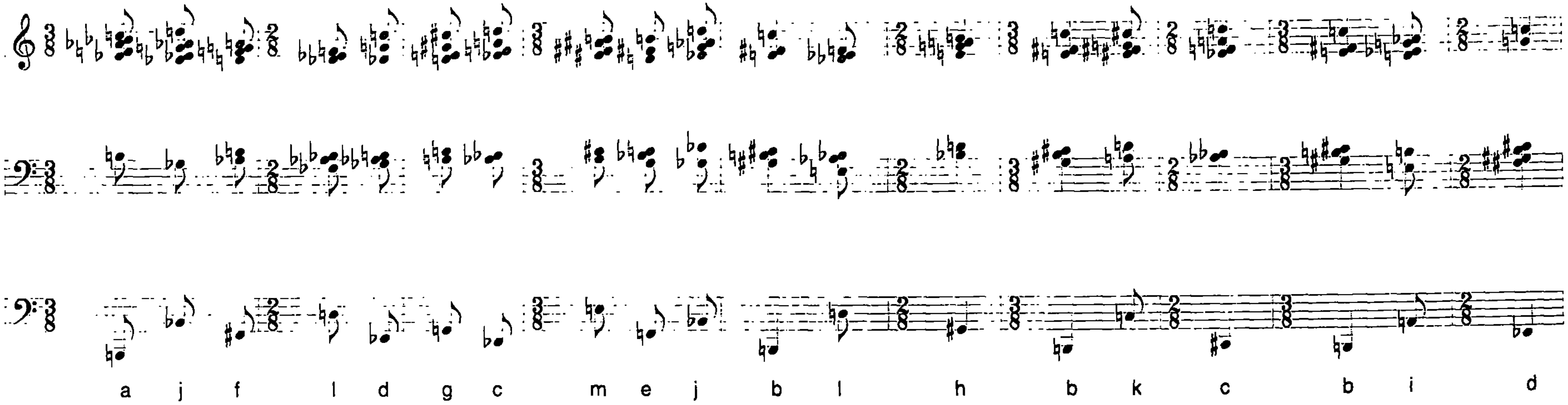
Many of the antecedents for this kind of thinking can be seen in the works of Alban Berg. Even in such an early work as the opus 3 quartet (Berg, 1910), Berg's motivic patterns are treated like pitch-class-sets. The opening motif is constructed with a knowledge of its intervallic properties. Berg's motivic working is essentially contrapuntal: the vertical sonorities are the result of the combination of distinct horizontal fragments, which are elongated and compressed but preserve their contour and intervallic content. This is unlike Schönberg's common practice where intervallic content is often rapidly and radically transformed, e.g. *Drei Klavierstücke* op11 no 1 (Schönberg, 1911).

Much interesting light can be shed on Forte's theory in analysing the first movement of Olivier Messiaen's *Et expecto resurectionem mortuorem* (Messiaen, 1964). Most of the harmonic and melodic material is based on three 7-note sets (7-5, 7-Z12, 7-20). Yet the harmonic material is more severely restricted: set 7-Z12 is used in only one registration but transposed on five different bass notes; set 7-20 is used in nine registrations, each on a different bass note (see examples 1 and 2). Only two bass pitches, A♮ and C♯, are coloured by both sets 7-Z12 and 7-20. Set 7-5 is used melodically. The three 7-sets are subsets of set 10-6, Messiaen's 'Mode 7'.

Only at the end of the first movement is complementation important; each six note chord is presented with its complement to produce a 12 note chord. However, the 6-sets are dissimilar in interval vector and are primarily connected by the important trichord subset, 3-11 (the minor triad).

However, there are features of this music which are not revealed with a pitch-class-set approach. The opening theme (set 7-5) is constructed from the sum of three source intervals: 6, 5, and 2 semitones. The absolute size of these intervals is important here; 5 semitones is not equivalent to 7 semitones by inversion.




a
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i
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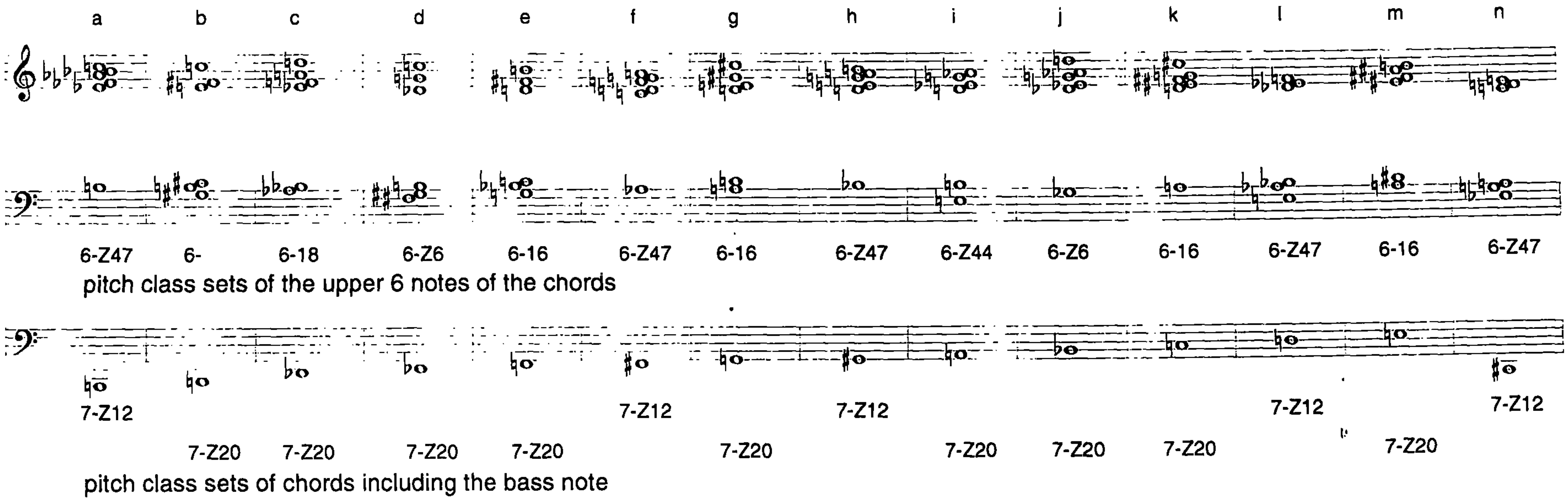
Example 1 Messiaen *Et exspecto Resurrectionem Mortuorum*, movement 1, bars26-35


a
b
c
d
e
f
g
h
i
j
k
l
m
n
6-Z47
6-
6-18
6-Z6
6-16
6-Z47
6-16
6-Z47
6-Z44
6-Z6
6-16
6-Z47
6-16
6-Z47
pitch class sets of the upper 6 notes of the chords
7-Z12
7-Z20
7-Z20
7-Z20
7-Z20
7-Z12
7-Z20
7-Z12
7-Z20
7-Z20
7-Z20
7-Z12
7-Z20
7-Z12
pitch class sets of chords including the bass note

Example 2 Pc-sets of the chords in the first movement of Messiaen *Et exspecto Resurrectionem Mortuorum*

Secondly, several commentators have likened the horn/clarinet chords to an organ mixture stop. A close examination of bar 26 of the first movement demonstrates that the chord is a 'chord of resonance' (fundamantal plus tempered harmonics 9,11,13,15,17 and 19) and all the chords in this passage can be regarded as tempered approximations to the upper partials of a bass note[6] (see example 3).

The importance of the registration of chords in Messiaen is even more striking in the bird-song episodes of the fourth movement. Several source pc-sets are used here, often closely related by a common subset. Frequently sets recur with the same spacing, or with one pitch transposed by an octave.

It is for these reasons that my use of Forte's theory in my composition differs from his text. The principle of complementation is rarely important to me, but I am concerned in making the structural properties of a chord audible. In several works, I create a network of chords by partioning a large set or by creating 'hybrid' sets from a number of smaller parent sets. For each chord in the network, I calculate the interval vector, index vector and trichordal vector[7] to determine the similarities between sonorities.The registration of chords is important to me, so I compare chords by their ambitus and intervallic realisation. As in some works of Carter, pitches are sometimes fixed in specific registers to create distinct harmonic fields.

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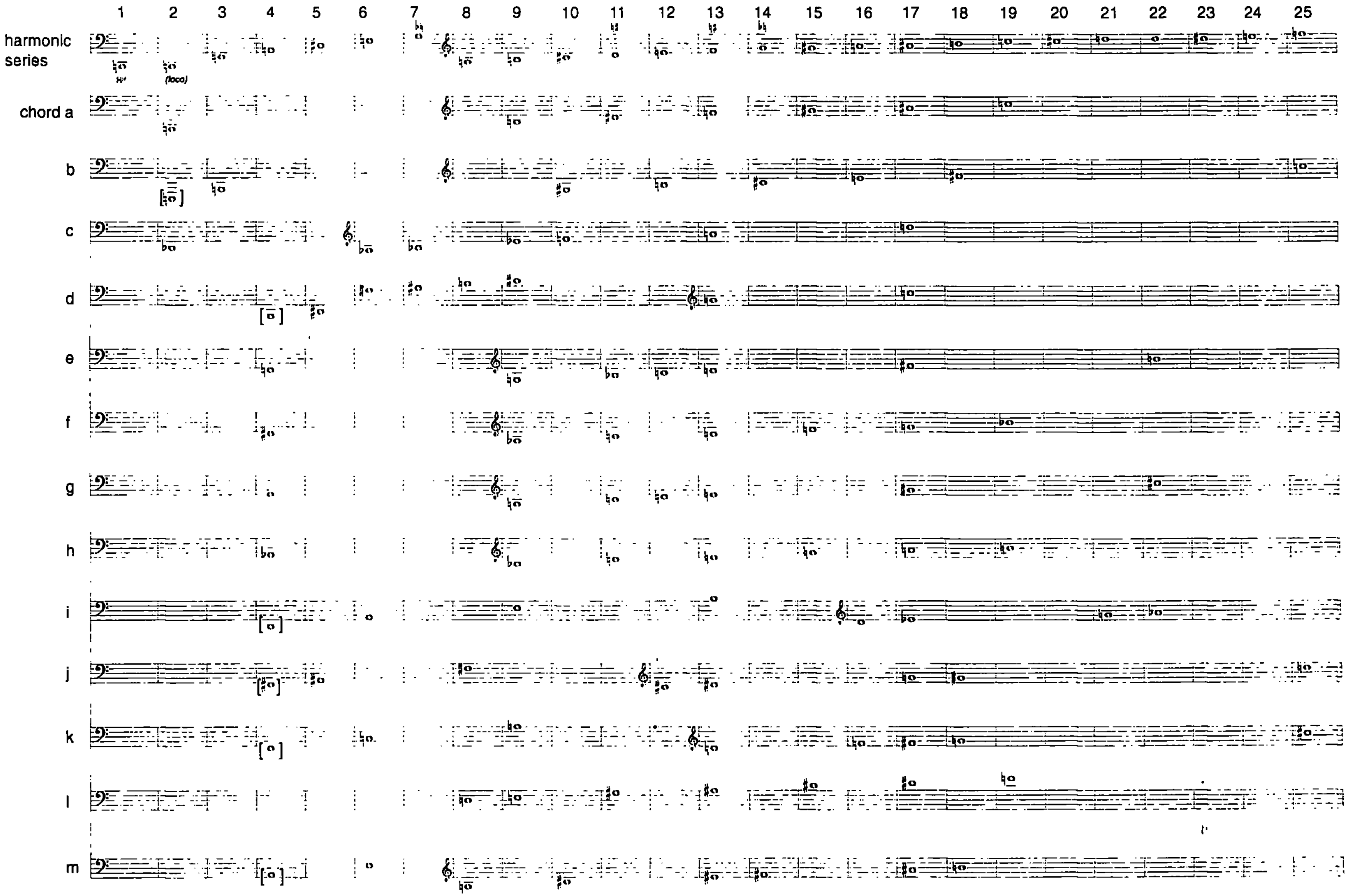
[6] The lowest note of the chord is usually, but not always, the fundamental of the harmonic series.

[7] See appendix 1 for a definition of interval vector, index vector and trichordal vector


1
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20
21
22
23
24
25
harmonic series
(loco)
chord a
b
c
d
e
f
g
h
i
j
k
l
m

Example 3 Registration of chords in the first movement of Messiaen *Et Exspecto Ressurectionem Mortuorum* compared with the harmonic series
(Implied fundamentals are in square brackets. Harmonics 7,11,13 and 14 are between two chromatic pitches - I have given alternatives)

...and the unseen eyebeam crossed...

...and the unseen eyebeam crossed... takes its title from a passage from T.S. Eliot's *Burnt Norton:*

> There they were, dignified, invisible,
> Moving without pressure, over the dead leaves,
> In the autumn heat, through the vibrant air,
> And the bird called, in response to
> The unheard music hidden in the shrubbery,
> And the unseen eyebeam crossed, for the roses
> Had the look of flowers that are looked at.
> (Eliot, 1963)

Eliot's poem contrasts a protected innocent world of child-like freedom with a strictly determinist universe in which all events are causally linked, all decisions trapped in a hermetic system. The wonder of flowers is lost when they are observed, classified, understood. The explication of all diachronic processes reduces our world to a single deadly synchronic system. Only in an appeal to a transcendental God can Eliot escape from this conclusion, a possibility that he explores in the later poems of the *Four Quartets*.

I was fascinated by how the way we look at the world transforms the world. We can never undo a perception; once an observation is embedded in our memory, we, and our world, are changed. Yet memory itself is fallible, and in its failing our self is altered.

In the first of *Six Memos for the Next Millennium*[8], 'Lightness', Italo Calvino discusses this objectification of perception in his discussion of Ovid's telling of the myth of Perseus slaying the Medusa. Here the gaze of the Medusa turns life to death, robs the living of its distinctive intrinsic qualities.

> At certain moments I felt that the entire world was turning into stone: a slow petrification, more or less advanced depending on people and places but one that spared no aspect of life. It was if no one could escape the inexorable stare of the Medusa. The only hero able to cut off the Medusa's head is Perseus, who flies with winged sandals; Perseus, who does not turn his gaze upon the Gorgon but only upon her image reflected in a bronze shield.
> (Calvino, 1992: 4)

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[8] (Calvino, 1992)

Calvino's essay is concerned with lightness and how this quality can be present within the prose itself; the poignant metaphor, the economy of image. He praises the virtue of lightness and discusses the skilful manipulation of 'weight', the weight of existence which oppresses the human condition and freezes the imagination.

> I am immediately tempted to see this myth as an allegory in the poet's relationship to the world, a lesson in the method to follow when writing.(p4)
>
> Perseus's strength always lies in a refusal to look directly, but not in a refusal of the reality in which he is fated to live; he carries the reality with him and accepts it as his particular burden.
> (Calvino, 1992: 5)

In his literature, for instance *Invisible Cities*[9], this lightness relies on the skilful use of artifice, the commonplace idea expanded into a web of fantasy; e.g. the plumbing system that ascends without floors or supporting walls to create the city inhabited by nymphs and mermaids.

The music

The halting opening presents a series of glimpses of a 'figure' in rapid change. All of the work is hidden in the first fragment; the simple chromatic circularity of the descant, the ambiguous accentuation which could suggest a pattern of 3+3+2 𝅘𝅥𝅯 or a regular ♪. pulse, the rapidly changing chords which could be functional or a mere homophonic colouring of the descant, the deeper structure implied by the accentuation and the framing silence. Each successive glimpse charts the development of the material; the expansion of the fragment into contorted arabesques, the increasing irregularity of the accentuation, the emphasis on the accented chords rather than the rapid pulsation, the change in speed of the pulsation itself and finally the emergence of a chord.

From this moment, the texture becomes increasingly complex with the pulsating line passed between different timbral groups. By the end of the section, these elaborative processes create a textural fission, firstly by revealing a slow sustained melodic line (b34) within frenetic activity and secondly by the juxtapostion of a slow pulsing chord with chaotic fragments. Convulsive transformation is the essence of this work and is emphasised by an orchestration that exploits extremes of register and timbral groupings of diverse 'weight' to suggest a dynamic 'perspective' where the linear unfolding of the narrative is distorted as ideas are thrust between foreground and background.

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[9] (Calvino, 1980)

The second section (b53), its rhetoric suggesting a first subject exposition of a sonata, features a dialogue between a fanfare and an ornamented pedal point. Its antithesis (b73) is a duo of melodic arabesques in clarinet and cor anglais above a repeated chord. The rhythm of the melody and bass figures has been interchanged. The conjunction of the arabesque and repeated figure in b95 precipitates a gradual return to the accented chords of the opening which are in turn elaborated into the homophonic texture.

The third section retraces the opening section, perhaps suggesting an exposition repeat or a development section. The contrast between activity and absence is emphasised by the tense sustained chords which fill the silences. Harmonies are now perceptible and salient, figures more clearly delineated, but the complexity has now been reduced; the music has lost some of its fluidity and the sustained chords threaten to remain immobile.

Stripped of its decoration, the opening idea begins the fourth section as a quirky dance. Despite attempts to break free from the constraining static chords, the arabesque figure is engulfed in immense dissonant chords which, from an opposition polarised by the use of extreme registers, gradually coalesce into a sustained hexachord which is the tonal resolution of the work.

The cor anglais lament ornaments the melodic core with yearning arabesques, but is extinguished by an orchestral shudder. The final fragment of the opening figure is petrified as a chord of harmonics.

General framework

The realisation of the poetic inspiration of this work determined several of the technical decisions. The opening fragments require a regulatory framework: a framework which can furnish elaborations and guarantee coherence. Such a framework must have different elements: metric, melodic and harmonic. Many of these elements are inter-related and may be composite.

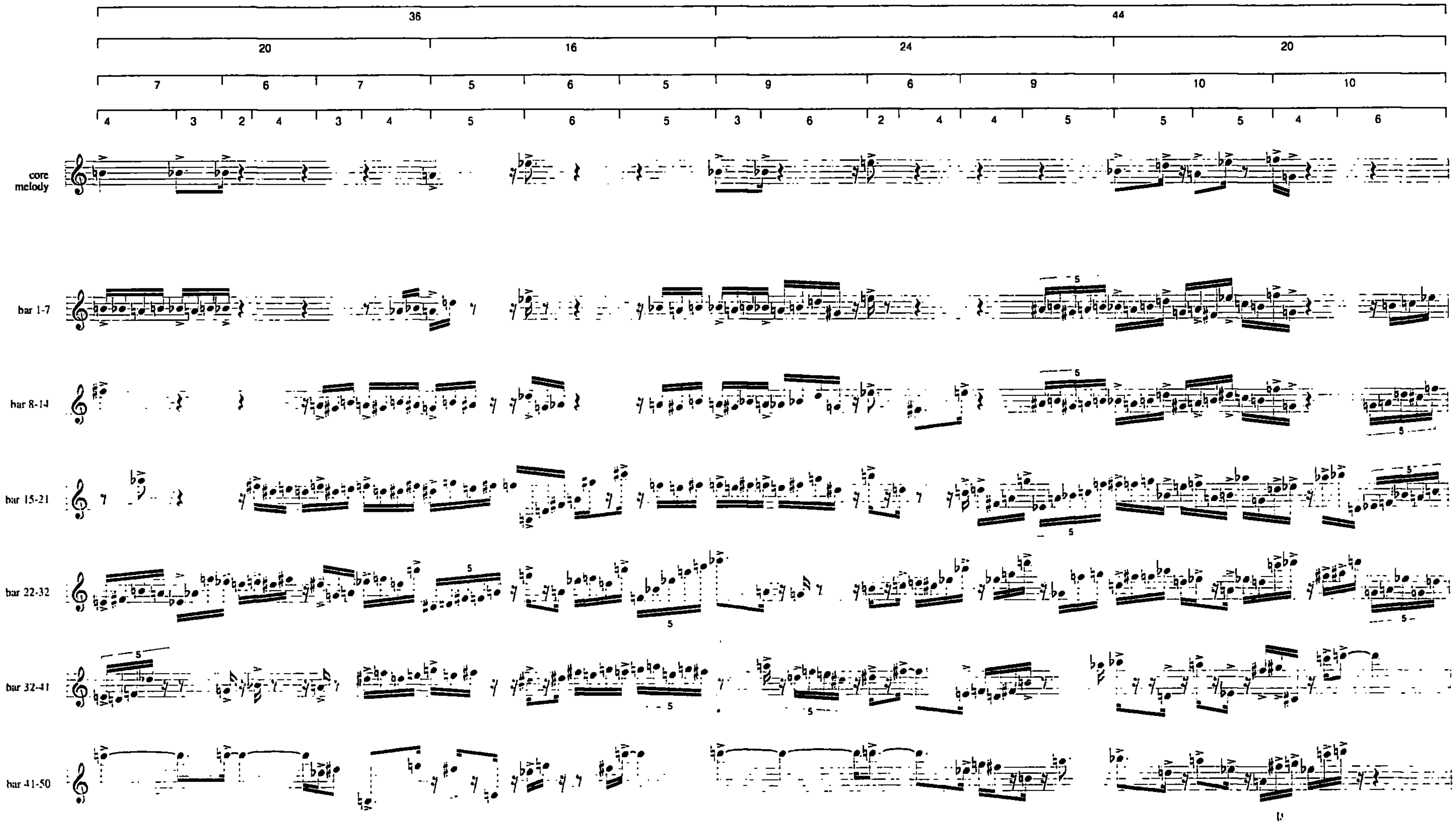
With Eliot's poem in mind, I wished to exploit the opening figure in two ways: by simplification, where a deep structure can be gradually revealed and by elaboration, where a skeleton is fleshed out.

Metre

A regular rhythmic cycle provides the essential structural backbone of the work. Unlike a mediaeval isorhythmic structure, this background is not consistently articulated on the surface by recurrent ideas, but serves as a point of reference.

I was particularly interested in Simra Arom's discussion of the rhythmic structure of the music which he researched in the Central African Republic (Arom, 1991: 229-306). Here, the long cycles would be of 8,16 or 24 units with recursive unequal binary division until a sequence of units lasting 2 or 3 units is reached. These rhythms are often executed at extremely fast tempi, e.g. unit=720. The music consists of several such rhythmic strands proceeding simulataneosly.

My work is similarly hierarchically constructed, so that the rapid pulsation can be absorbed into longer units. Each section is split into subsections of slightly unequal duration which are in turn subdivided unequally, but I often use a ternary rather than a binary division.. The proportions are chosen so that this inequality can be 'felt' at all levels of the structure. However, my rhythmic phrase is 80 units long, the tempo is slower and there is only one strand. The notated metre remains deliberately simple to aid precision of ensemble; the perceived metric structure is achieved by accentuation, density of chord and orchestration.


core melody
bar 1-7
bar 8-14
bar 15-21
bar 22-32
bar 32-41
bar 41-50

Example 4

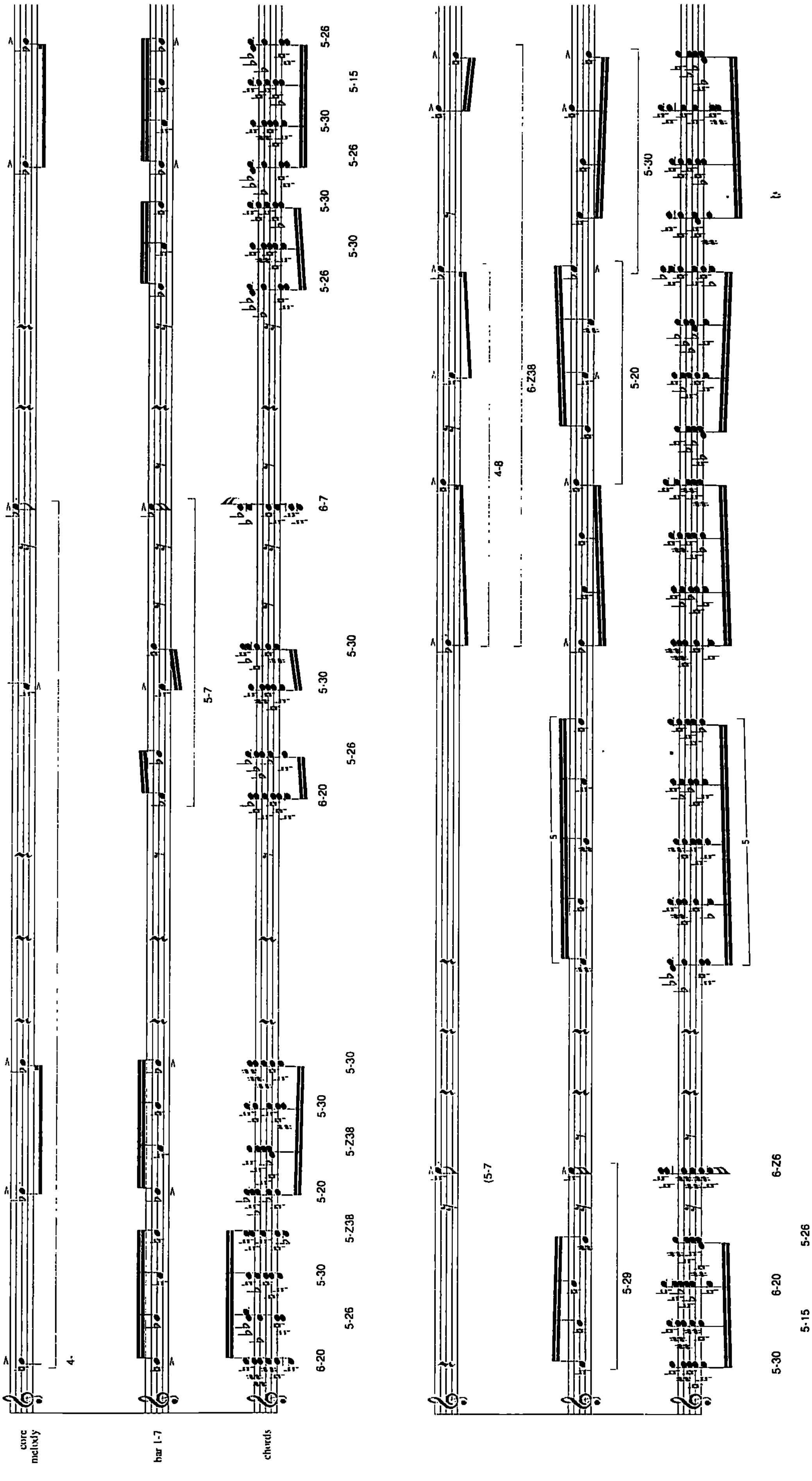
Rhythmic framework

Example 4 gives a melodic reduction of the first section of the work, bars 1-51. There are six phrases of twenty crotchets, each of which is composed of four subphrases with a principal accent at the semiquaver time points 0, 20, 36 and 60. These accents can be the at the beginning of a fragment (–∪), at the end (∪–), or at the middle (∪–∪). With each subsequent phrase the fragments are extended, gaining anticipations and prolongations, until, with the fifth phrase, the fragments coalesce into continuous semiquavers.

The accentuation pattern is articulated by timbre, (e.g. the opening pizzicato string chords in the first phrase), by scoring, (i.e. the principal accents are more heavily scored), and by dynamic intensity. The pattern is repeated incessantly, but is not always revealed in its entirety.

The melodic kernel is similarly composed of several layers, where each layer is elaborated by the use of a few regulatory pitch class sets. The pitch level of the background melodic line is not fixed however, so that it is possible to achieve melodic growth through several sections.

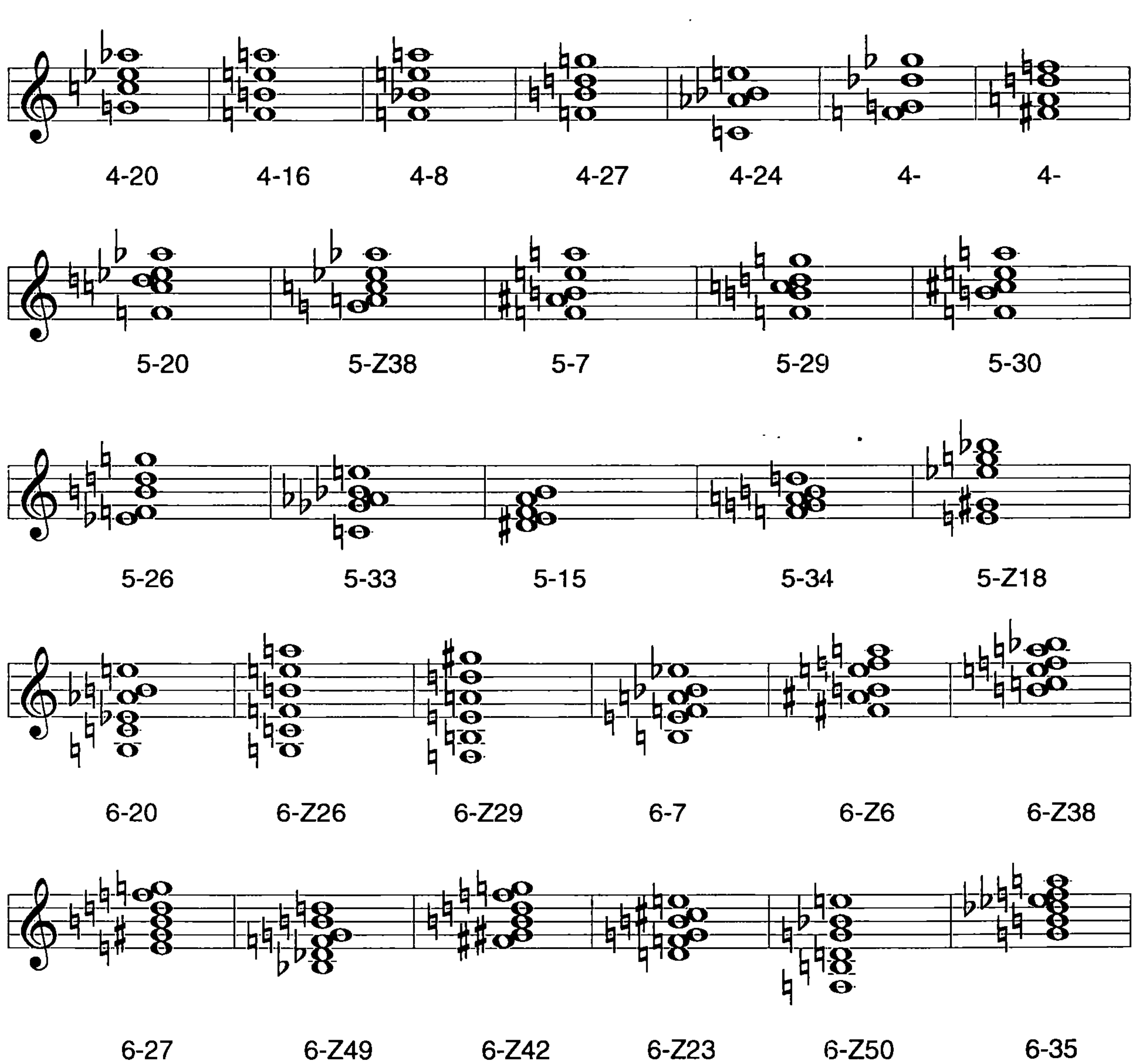
At the opening of the work, the figure is a 'complex' object where a proliferation of detail obscures a core. The core, here articulated by the pizzicato strings, is a slowly unfolding melodic line enriched by chromatic block harmonies with an irregular pulse. The woodwind ensemble decorate this line with a rapid chromatic melody in even semiquavers using a wider palette of block harmonies. At this tempo, the harmonies are not perceivable and act as a colouring of the melodic line stated by the trumpet and doubled an octave higher by the flute. These first seven bars are the essence of the work, consisting of a total statement of the framework.


core melody
har 1-7
chords
4-
5-7
6-20
5-26
5-30
5-Z38
5-20
5-Z38
5-30
5-30
6-20
5-26
5-30
5-30
6-7
5-26
5-30
5-26
5-30
5-15
5-26
(5-7
4-8
6-Z38
5-29
5-20
5
5-30
5-30
5-15
6-20
5-26
6-Z6

Example 5

Harmony

Ten pentachords and twelve hexachords form the basis of all the harmonic and melodic material of this work. These are all related to seven 4-chords which were extracted from the opening of *Elements of Iridescence*. Each 5 or 6 note chord is a combination of two 4-note chords. The differences are audible as varying degrees of dissonance, density or radiance. There is a strong sense of unity, as if a single chord is being examined under different light.


4-20
4-16
4-8
4-27
4-24
4-
4-
5-20
5-Z38
5-7
5-29
5-30
5-26
5-33
5-15
5-34
5-Z18
6-20
6-Z26
6-Z29
6-7
6-Z6
6-Z38
6-27
6-Z49
6-Z42
6-Z23
6-Z50
6-35

The following table gives the interval vector, trichordal vector and 4-chord derivation for the 5-note sets.

Forte name	pc-content	interval vector	trichordal vector	derivation
5-20	[0,1,3,7,8]	[2 1 1 2 3 1]	[0 1 0 3 2 0 : 0 1 1 0 2 0]	4-20 + 4-16 4-20 + 4-8 4-16 + 4-8
5-Z38	[0,1,2,5,8]	[2 1 2 2 2 1]	[1 0 1 2 1 1 : 1 0 0 1 2 0]	4-20 + 4-27
5-7	[0,1,2,6,7]	[3 1 0 1 3 2]	[1 0 0 2 5 0 : 0 1 1 0 0 0]	4-16 + 4-8
5-29	[0,1,3,6,8]	[1 2 2 1 3 1]	[0 1 0 1 1 0 : 2 1 2 1 1 0]	4-16 + 4-27
5-30	[0,1,4,6,8]	[1 2 1 3 2 1]	[0 0 1 1 1 1 : 1 2 1 0 1 1]	4-16 + 4-24
5-26	[0,2,4,5,8]	[1 2 2 3 1 1]	[0 1 1 1 0 1 : 1 2 0 0 2 1]	4-27 + 4-24
5-33	[0,2,4,6,8]	[0 4 0 4 0 2]	[0 0 0 0 0 3 : 0 6 0 0 0 1]	4-24 + 4-24
5-15	[0,1,2,6,8]	[2 2 0 2 2 2]	[1 0 0 2 2 0 : 0 4 1 0 0 0]	4-16 + 4-16
5-34	[0,2,4,6,9]	[0 3 2 2 2 1]	[0 0 0 0 0 2 : 2 2 1 1 2 0]	4-27 + 4-27
5-Z18	[0,1,4,5,7]	[2 1 2 2 2 1]	[0 1 2 2 1 0 : 0 1 1 1 1 0]	Z relation of 5-Z38

By employing such a limited kernel, which is omnipresent but elaborated and expressed in many different ways, the work resembles Eliot's lines:

> Time present and time future
> Are perhaps present in time future
> And time future contained in time past
> (Eliot, 1963)

Of crossed destinies

This work for solo harp takes its title from *The Castle of Crossed Destinies*[10] by Italo Calvino. In this novel, a group of travellers rest in a remote castle and discover that they have mysteriously lost the power of speech. Each traveller tells their tale using a sequence of appropriate tarot cards. As the tales are told, many of the cards are re-used and take on different meanings. In the final pattern of cards all tales are told, but this pattern also connects all the travellers imprisoning them in the castle.

My work consists of three 'tales' enclosed by a frame. All the tales share melodic figures and harmonic progressions, yet have different characters and directions. The whole work is constrained by a sombre mode.

As *...and the unseen eyebeam crossed...* built on *Elements of iridescence*, so *Of crossed destinies* builds on the orchestral work. In particular, the seven note mode which forms the basis of this work is an elaboration of the set 5-29 (the opening chord of the third movement) which has a prominent role in the orchestral work. The rate of harmonic change in *Of crossed destinies* however is slower and chords are drawn from the mode with frequent elaboration or re-interpretation. The mode is not fixed to a particular pitch level but can subtly shift.

The more obvious unifying principle is the use of motivic fragments; especially E♭, F♭, G♭, E♭ which connects the first and fourth movements and the motif E♭, F♭, C♮, D♭ which is shared by the first and second movements. Furthermore, the cells (0,1,3) and (0,1,4) pervade much of the music.

What distinguishes this work from my earlier works is a preoccupation with narrative; how to suggest that a 'story' is unfolding without requiring a single fixed meaning. As a solution, I developed long melodic lines which could continue through diverse textures. Movement I and V

[10] (Calvino, 1977)

are framing melodic statements and are almost identical; movements II, III, and IV are built from melodies that unfold.

Aspects of the Novel

Italo Calvino's novel is composed of two independent but related sets of tales - *The Castle of Crossed Destinies* and *The Tavern of Crossed Destinies*. It is the first of these which is the model of my work and is influential in several respects.

The narrative structure of Calvino's novel is multi-levelled. The opening chapter *Castle*, relates the journey of the narrator to the castle at a hectic pace. Very few hints are given concerning his past. The chapter also starts a series of re-interpretations whereby 'reality' and 'fiction' are confused; the narrator's breathlessness after his long journey becomes an inability to communicate by speech.

The dealing of the tarot cards by the host at the end of the first chapter and the re-shuffling of the cards in the last by the hostess act as a narrative frame. All the tales of the characters are told in the arrangement of the cards. But the narrative spills outside the frame: the opening chapter introduces the narrator before the cards are dealt and the hostess tells her story in the cards before re-shuffling them. The living of events and the abstracted telling of events are interpolated.

Furthermore, the narrator never relates his story directly:

> "The square is now entirely covered with cards and with stories. My story is also contained in it, though I can no longer say where it is, since their simultaneous interweaving has become so close." (Calvino, 1977: 41)

> "Surely my own story is also contained in this pattern of cards, my past, present and future, but I can no longer distinguish it from the others. The forest, the castle, the tarots have brought me to this point where I have lost my story, confused it in the dust of the tales, become free of it." (Calvino, 1977: 46)

The narrator is simultaneously the interpreter of tales, a participant in the action of tale telling, passing the Knight of Clubs to Astolpho (Calvino, 1977: 35), a character referred to in the tales of others (or so he tells us) and an enigma whose identity has to be constructed and discovered.

The artifice of the novel

Of the 78 cards of the tarot deck, Calvino's grid uses 73. All the court cards, the Major Arcana and the Fool are used. Only five numeral cards are omitted; the three of coins, the three and five of swords, the three of clubs and the four of cups. Each of the characters in the novel are identified by a court card giving twelve tales. These court cards are usually used only once in each tale, and the cards are positioned at one end of a row or column. There are however four court cards which are not directly ascribed to one character - these cards do not represent a person who tells their own tale but are found in the tales of others and are positioned within the grid.

(a) King of coins

He appears as Ingrate's dead father and as the hostess's (evil) father-in-law

(b) Knight of swords

He appears in several guises: as a messenger to Ingrate, a radiant archangel threatening the grave robber, as an unknown warrior who barters away the key to the City of Death and as the prince to whom the hostess is married

(c) Queen of Swords

She appears as an armed maiden, the temptress Angelica, the Queen of the Day and the Queen of Destruction.

(d) Page of Clubs

He appears as the unjustly tortured youth released by the Queen of the Night and as the young soldier whose love for Angelica drives Roland to insanity

I suspect that the Knight of Swords represents the narrator, an ambiguous figure who acts as a messenger who transcends earthly existence and whose arrival at the castle and imprisonment in the grid reunites him with the hostess.

The numeral cards take on several meanings associated with different implications (verbal and visual) of the suit. Coins signify money, as fortune or as moral emptiness, Swords, battles and arms, Clubs, dense forests or the Tree of Life, and Cups, banquets, fountains and amorous encounters.

Each of the cards of the Major Arcanum have a single interpretation. Most of these cards are used four times, except for the Hermit and the Empress which are used only twice.

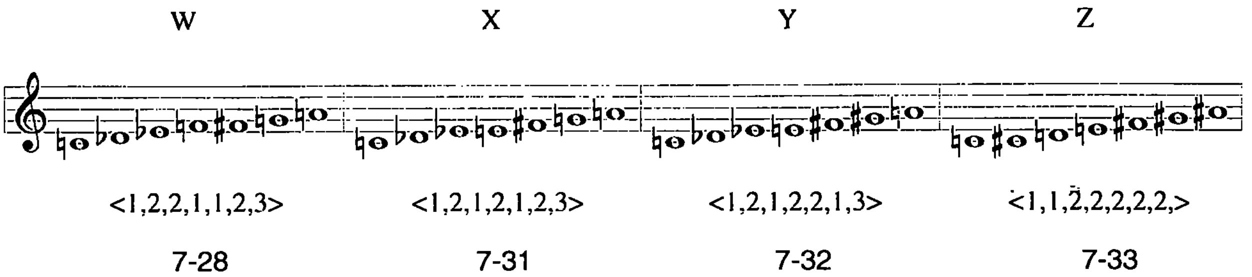
The final tale is told by the hostess, who significantly breaks the symmetry of the grid's design by placing the seventy third card (12 * 6 + 1), the seven of clubs next to her court card. This card alludes to the forest in which she

> ...awaits her husband's return and peering at every movement of the foliage of this wood, at every card drawn from this pack of tarots, every turn of events in this pattern of tales, until the end of the game is reached. Then the hands scatter the cards, shuffle the deck, and begin all over again.
> (Calvino, 1977: 48)

The music

> [A] wood is a garden of forked paths. Even when there are no well-trodden paths in a wood, everyone can trace his or her own path, deciding to go to the left or right of a certain tree and making a choice at every tree encountered.
> In a narrative text, the reader is forced to make choices all the time. Indeed, this obligation to choose is found even at the level of the individual sentence - at least, every time a transitive verb occurs. Whenever a speaker is about to end a sentence, we as readers or listeners make a bet (albeit unconciously): we predict his or her choice, or anxiously wonder what choice will be made...
> (Eco, 1995: 6)

Eco's description of the narrative text encompasses several issues that I wished to deal with in this work. For a listener to be able to make choices and anticipate possible continuations, I needed to establish a consistent harmonic framework for each movement. The work is therefore based on four related modes. These modes are frequently transposed, so it was necessary to choose transpositions that ensured that the rate of pitch change was slow. This modal structure enables the material to be in constant flux. It is however sometimes necessary to allow the material to be shaped into gestures. These gestures are defined by a recurrent rhythmic motifs and a limited number of pitch cells.



The following seven note modes form the harmonic basis for much of the work:

The prevalence of mode Y throughout the work and the omnipresent pitch Eb$_4$, to be found as a point of arrival or departure, gives the work a claustrophobic character. There are numerous correspondences between movements : the opening pitch cell of the movement I becomes one of the main cells of the movement IV and the interval of 1 and 3 semitones generate the melodies of movements I and II. The opening chord of III is the same as the final chord of IV, and is closely related to the final chord of II. Furthermore, there are a network of textural similarities; e.g. the arpeggios which can rush forward in breathless haste in II, entangle the melodic line in IV or serve as elaborate embellishments in III.

The movements are not a direct translation of Calvino's tale into a musical form; the relationship is more elusive, sometimes tangential, capturing elements of the text as Calvino encapsulates and elaborates the visual characteristics of his cards.

Movement I

To effect a frame, the first and last movements differ in rhetorical gesture from the other movements. I and V are bold emphatic statements whereas the enclosed movements are elusive and exploratory.

The principal melodic line of the first movement is characterised by an emphatic repeated pitch which is decorated by chromatic neighbour notes. The line gradually expands, initially using small intervals (minor seconds and minor thirds) and eventually reaching sixths and sevenths.

Initially, the subsidiary line doubles the melody in an organum at the major 9th, but as the melody pulls itself from the pedal E♭, the subsidiary line becomes more independent until the separation reaches two octaves in bar 11. After this apex, the lines gradually approach one another to coalesce in a shimmering arpeggio in b14.

Mode X is the starting point of this movement, from which it slides towards mode Z and W.

Movement II

Movement II can be seen as Roland's frantic pursuit of Angelica through the forest, the discovery of her unfaithfulness, his destructive anger and the loss of his reason. The pace of the movement is rapid with short stabbing chords cutting through elaborate arpeggios.

The second movement is almost exclusively based on modes X and Y. These modes transform smoothly into one another by changing only a few pitches. In the first section of the movement, the harmony keeps returning to the opening transposition of the melody.[11]

Bar	1	4	7	9	13	15	18-9	20	22-3	27	28	30	32	34-5	
mode	X_0	Y_0	Y_{i9}	X_0	Y_7	X_0	X_{i11}	X_0	Y_0	X_0	Y_0	X_0	Y_0	Y_{i9}	X_{i9}

The melody is largely composed of two pitch cells which recur at different transpositions and proceed at several tempi.

In the second section the harmonic change is more rapid.

bar	34-5	36-7	37-8	39-40	41	44	48	49-53	53	61	66	67	68	69	70	72	72-3	74
mode	X_{i9}	Y_{i9}	Y_0	X_0	Y_0	Y_{i9}	Y_3	Y_{i9}	Z	Y_3	Y_{i0}	Y_3	X_3	X_{i2}	X_9	Y_9	Y_{i6}	Y_9

---

[11] I have simplified the harmony here by ignoring the organum decoration of the melodic line.

In this section, the melody is initially absent; the harmonic motion is carried by slow arpeggios. Only after a disruptive glissando are fragments of the melody discovered.

Towards the end of the movement (b75-90) the motifs are severely distorted and the harmony moves rapidly through new modal areas. The final section rediscovers the opening motif and restores the mode Y_9.

The movement has turned full circle, ending on the opening pitch but in a darker harmonic landscape, the mode having been transposed down a minor third. This darkness is reinforced by the pedal tuning - the tight strings of a sharp tuning sound brighter than the darkness of the relaxed string.

Movement III

Movement III suggests Astolpho's visit to the desert of the moon.

> From this arid sphere every discourse and every poem sets forth: and every journey through forest, battles, treasures, banquets, bedchambers, brings us back here, to the centre of the empty horizon.
> (Calvino, 1977: 39)

A slow melodic line unfolding over a slow unsteady procession of chords forms the basis of this movement. This line is elaborated with arabesques which become increasingly contorted and enhanced by imitation.

Mode Y forms the basis of the third movement, initially presented as two chords, the first of which can be heard as F♯^{7} in first inversion (with the dissonant colouring of B♮) and the second as E♭ in first inversion.

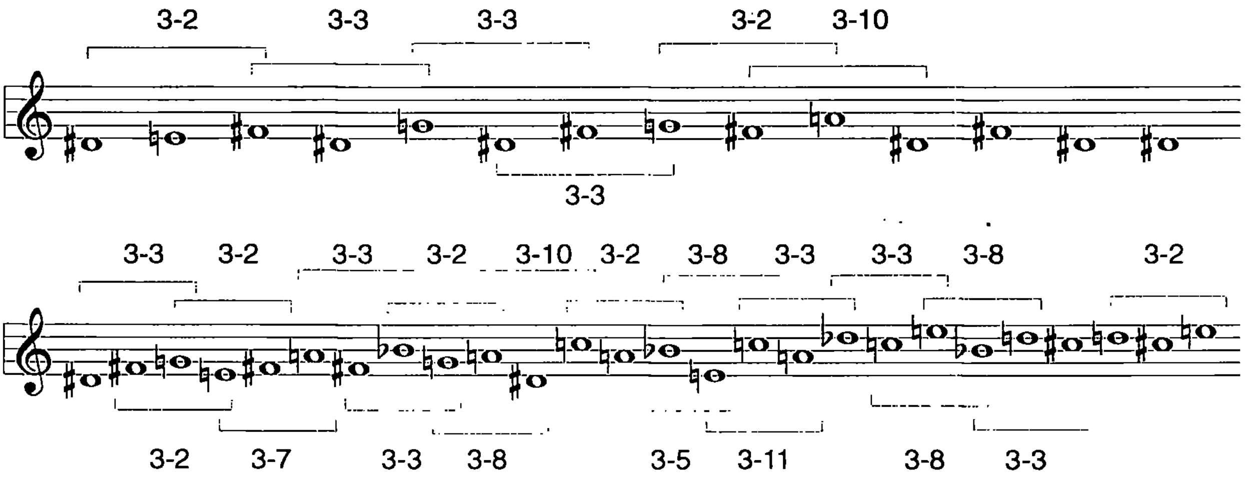
The interaction of melody and bass can best be appreciated by examining the voice leading. The principal 'consonant' intervals are 3 and 6 semitones; these intervals are not 'stable', but are the most common and occur frequently at the end of arabesques. In the central section, a greater variety of intervals are used, but 3 and 6 semitones became increasingly prominent towards the end of the movement. Both intervals are contained within the opening set 5-29.

The harmony is also integrated by a series of relationships between distinct sonorities - the spacing of several chords emphasise the interval of 8 semitones and others that of 6 semitones.

Movement IV

Movement IV alludes to the journey of the grave-robber, who descending via the abyss of death,

> climbs again the Tree of Life [and] arrives at the City of the Possible, from which the Whole is contemplated and Choices are decided.
> (Calvino, 1977: 27)



The fourth movement is a parallel to the second movement and uses the same modal forms

bar	1	3	8	9	11	12	14	15	16	17	18	21	23	27	30	36
mode	X_3	X_{i11}	X_3	X_{i2}	X_6	Y_3	X_6	X_{i8}	X_6	Y_{i0}	X_0	X_3	Y_{i3}	X_3	X_0	Y_0

The character of the movement however is very different. The melodic line unfolds slowly by overlapping a limited number of trichords : 3-2, 3-3, 3-5, 3-8, 3-10 and 3-11, thereby emphasising the intervals of 1, 2, 3, and 6 semitones.

The line is coloured by dark elusive arpeggios in the bass register of the harp, which ascend and become increasingly prominent as the movement unfolds. The line is imitated contrapuntally and becomes increasingly entangled until it unfurls into decorative flourishes. Only at the end of the movement is the mode used melodically in a quasi-canonic passage (b30-5) which descends from the highest register of the instrument to rest on 5-29, the opening chord of the third movement.

Movement V

The final movement is a re-working of the first movement, with thicker chords and some small changes to the dramtic shaping. The opening melodic flourish is re-enforced with parallel motion in the bass. As the hostess reshuffles the pack in Calvino's novel, this movement returns to the opening closing the work with a strong gesture which is final but not a resolution.

Chiaroscuro

In the visual arts, subtle and complex illusions of depth are achieved by the delicate use of shading and the juxtaposition of light and shade. Such chiaroscuro enhances the perceived brightness of an object and affects its prominence.

In *Chiaroscuro*, the two antiphonal string quintets 'shade' the delicate lyrical voice of the double bass. In the Andante both string groups add resonance to the double bass harmonics, whereas in the Presto they unfold a complementary line which varies in 'weight'. In the Lento the strings suggest rather than state, in much the same way as a few delicate brush strokes on an otherwise blank page can suggest a landscape shrouded in mist in Japanese ink-brush painting.

I was particularly interested in the nineteenth century painting *Yodo River*[12] by Shiokawa Bunnin. The artist uses black ink exclusively on untreated paper; the ink must be applied quickly and no errors can be erased. The painting can be seen as a balance of black marks on a white background or as a realistic depiction of a mountain scene relying on several conventions. The blank canvas is as important as the ink; it can be the sky, the moon, mist or a river depending upon the context. The delicate wash of the brush can suggest that some blank parts of the canvas are brighter than other parts, and the contrast of thick broad strokes and delicate detail carries the eye across the canvas or encourages it to linger.

A similar interest in oriental art, in particular calligraphy, was discussed by Siobhan Davies in a pre-performance talk on her dance work *And the glass blew in...*[13] She was interested in how the weight of the quill and the speed of drawing the pen left 'evidence' in the nature of the mark left on the page; certain marks could only be created with a particular gesture at a specific speed. She was interested in exploring the ways in which the perceived weight of the body could be altered by moving the centre of the movement and how this would affect the kind of motion the body could make. A dancer could begin a phrase heavily with their 'centre' between the hips and then remove the weight by moving the 'centre' higher in the body resulting in a more fluid movement.

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[12] Bunnin, Shiokawa: *Yodo River* (BM JP 2557)

[13] *And the glass blew in...* performed by the Siobhan Davies Dance Compsny in 1995

These ideas of adding and removing 'weight', and the attendant influence on the movement of line, became a guiding principle for much of the writing in the *Presto*. A particular example of such an attempt is e the removal of weight in bars 203-6 where the loud string clusters 'evaporate' into faint harmonics.

Context of the commission

When Paul Sherman commissioned this work, he was very clear in asking for a lyrical work for double bass which was not virtuosic but 'within the ability of most orchestral bass players.' He also indicated that he wanted a work that could be performed by several ensembles. As I was aware of the particular balance problems posed by the combination of bass and string ensemble, and since the premiere was to be given by Opus 20, I fixed the instrumentation to double bass and ten strings.

In writing for double bass with two antiphonal string groups I was able to project the fluidity of line spatially, with motifs moving from one group to the other, and to stratify the harmony, with one group sustaining a chord while the other group adds ornamentation. From the full ensemble I extracted several smaller units which could form a relationship with the soloist; two cellos, solo viola, two cellos and two violas, and four violins.

Writing for the double bass

In writing for the bass, I was aware of certain practical limitations. The voice of the bass is soft for much of its range; it was therefore essential that the textures were transparent. As Paul wanted a lyrical work, he recommended a relatively narrow range of about a twelfth where the bass is at its most expressive. As the bass is still quite low in this register, my solution was to allow the work to unfold as two complementary lines. The excursions of the bass into the high register are relatively few owing to the difficulties of intonation and projection; the passage from b203-7 is a notable exception, the climax of the work whose effect depends upon the bass being concealed in the string clusters. The extreme high register is principally employed with the use of harmonics, e.g. at the opening of the work.

A further limitation of the bass is its gruff quality when played at speed; the long strings take time to 'speak', so low fast passages will always sound 'muddy' (a specific use of this sound is in the fourth movement of the *Chamber Concerto*[14] of György Ligeti). In order to achieve the effect of speed in the Presto Scorrevole, the string ensemble establishes the frenetic activity while the bass unfolds a slow line where the fast notes are part of the articulation. When the bass imitates the scurrying motion of the other strings it plays in the tenor register with repeated notes or a slurred chromatic figuration of narrow range.

As the distance of a semitone is large on the bass, it was necessary to write melodic lines that moved principally by step, or with leaps restricted to adjacent strings, open strings or harmonics. I was very aware of the difficulties involved in rapid position changes. both in terms of performance impracticality and in the unfocussed acoustic result. As the melodic cell [0,1,4] could be articulated rapidly in several configurations (<1, 3>, <3, 2>, <4, -1>, <4, -3>, <-4, 1>, <-4, 3>) in most registers, I used this basic cell for constructing most of the bass's melodic line.

Furthermore, Paul had a dislike for those virtuoso works for the bass written since about 1950 which use 'extended' performance techniques, in particular scratch tones, circular bowing and extremes of the high register, which he considered an abuse of the instrument and a suppression of its individual voice.

With these considerations and preferences in mind, I chose to write a work which would be predominantly melodic. The dramatic tensions would be achieved by the interaction of two lines, one for the bass and one for the other strings; in the Andante the string line is composed of fragmentary echoes of the bass's melodic line which coalesce into chords; in the Presto scorrevole the string ensemble line is a complement to the bass line which can unfold in organum, be suffused by resonance or transform in timbre (e.g. arco→pizz.); in the Lento the bass line moves within a pulsating aura of string harmonics.

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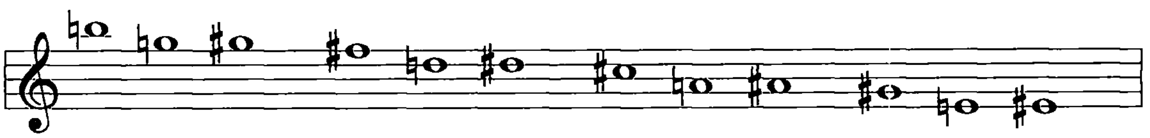
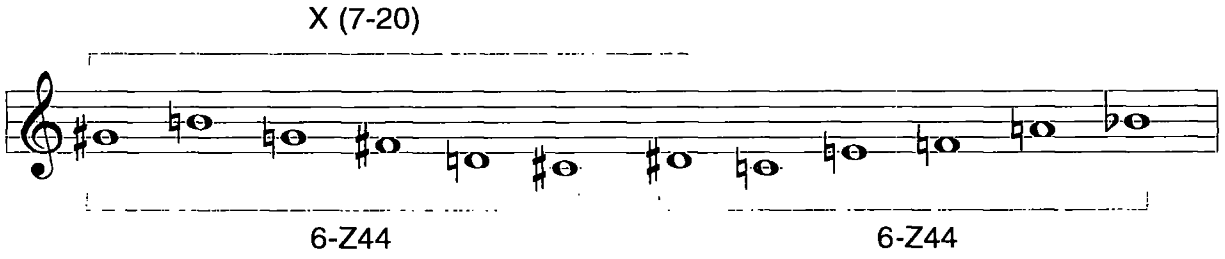
[14] (Ligeti, 1970)

Harmony

The early sketches of the harmonic material of the work involved exploring various chains of the cell [0,1,4]. One chain which held a particular interest was :

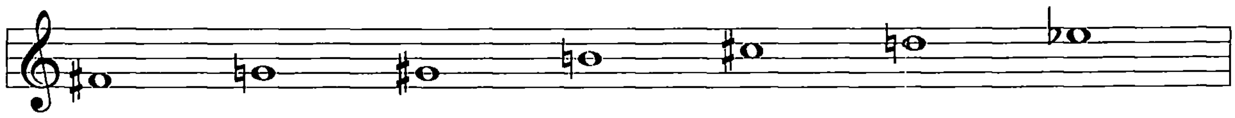


Although such a sequence does not continue to form a closed cycle which exhausts the chromatic scale without repetition of pitch-class, it does have several interesting properties. The opening seven notes form an asymmetrical set which can be permuted to reveal a hexachord which can be combined with its inversion to form a 12 note row. In addition, in this form the first six notes belong to the harmonic series of the open strings of the bass.



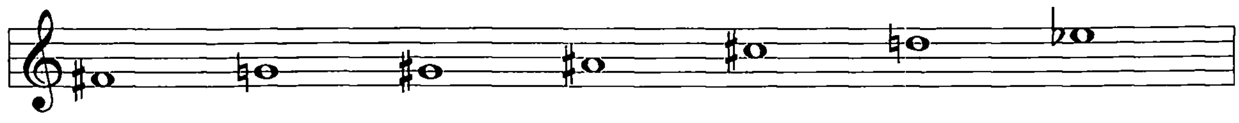
The seven note set can be condensed into the interval of a major sixth giving

I_0 (0,1,2,5,7,8,9)

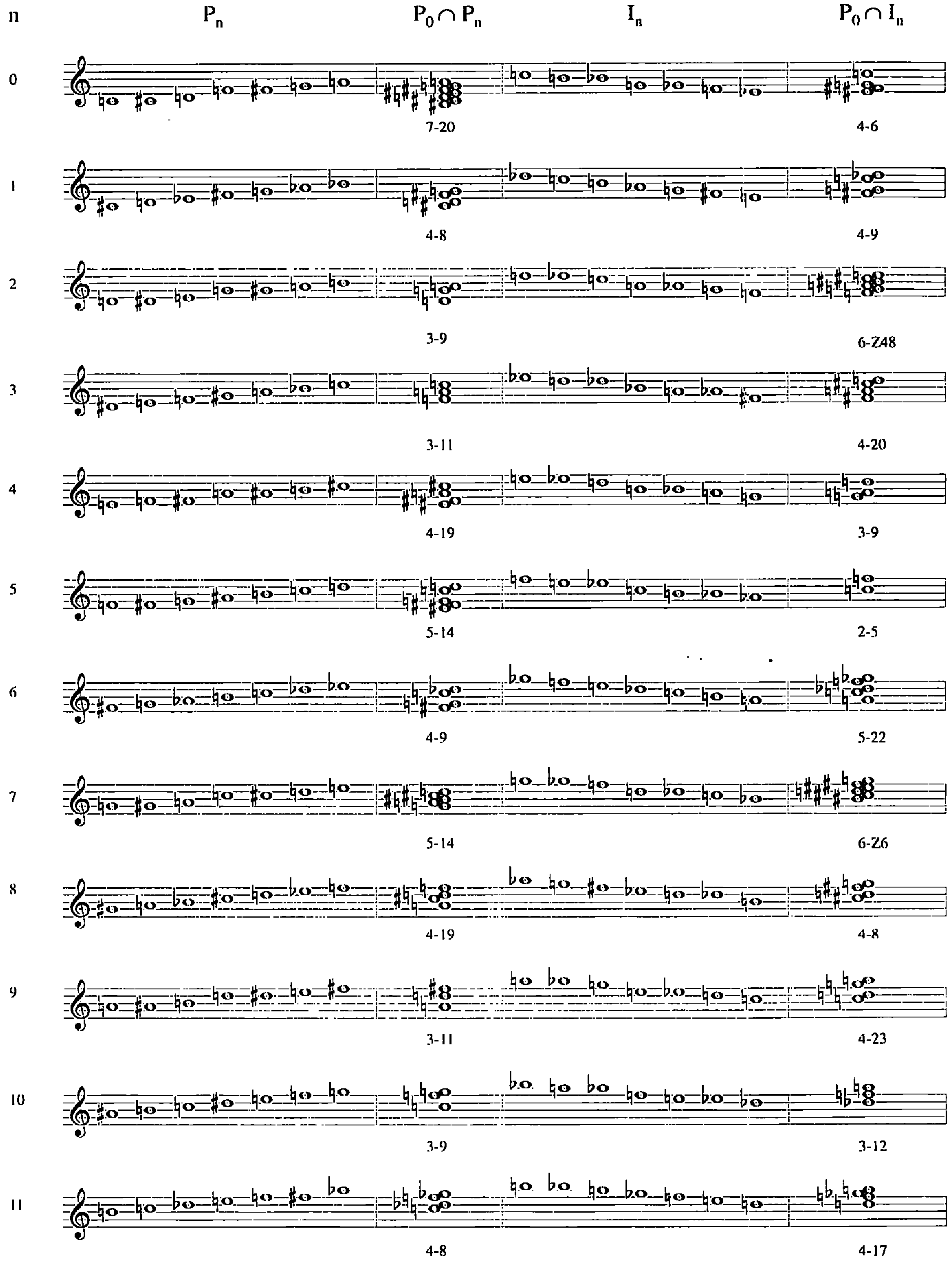


and inverted to give

P_0 [0,1,2,4,7,8,9] (the standard Forte form 7-20)



The intersections of P_0 with the various other prime forms and P_0 with all the inversion forms gives the following sets:


n
Pn
P0∩Pn
In
P0∩In
0
7-20
4-6
1
4-8
4-9
2
3-9
6-Z48
3
3-11
4-20
4
4-19
3-9
5
5-14
2-5
6
4-9
5-22
7
5-14
6-Z6
8
4-19
4-8
9
3-11
4-23
10
3-9
3-12
11
4-8
4-17

A full pc-set analysis of the set 7-20 yields the following:

2-sets (intervals)

[4 3 3 4 5 2]

3-sets (trichords)

[2 1 4 5 6 1 : 4 3 3 4 1 1]

4-sets

4-2	[0,1,2,4]	p	4-17	[0,3,4,7]	s
4-4	[0,1,2,5]	p+2i	4-18	[0,1,4,7]	p+i
4-5	[0,1,2,6]	p+i	4-19	[0,1,4,8]	2p+i
4-6	[0,1,2,7]	s	4-20	[0,1,5,8]	s
4-7	[0,1,4,5]	s	4-22	[0,2,4,7]	p+i
4-8	[0,1,5,6]	2s	4-23	[0,2,5,7]	2s
4-9	[0,1,6,7]	s	4-24	[0,2,4,8]	s
4-13	[0,1,3,6]	p	4-26	[0,3,5,8]	s
4-14	[0,2,3,7]	i	4-27	[0,2,5,8]	i
4-Z15	[0,1,4,6]	p+2i	4-Z29	[0,1,3,7]	p
4-16	[0,1,5,7]	p+2i			

5-sets

5-6	[0,1,2,5,6]	p+i	5-22	[0,1,4,7,8]	s
5-7	[0,1,2,6,7]	p+i	5-29	[0,1,3,6,8]	p
5-11	[0,2,3,4,7]	i	5-30	[0,1,4,6,8]	p+i
5-13	[0,1,2,4,8]	p	5-32	[0,1,4,6,9]	i
5-14	[0,1,2,5,7]	p+2i	5-35	[0,2,4,7,9]	i
5-19	[0,1,3,6,7]	p	5-Z36	[0,1,2,4,7]	p
5-20	[0,1,3,7,8]	p	5-Z37	[0,3,4,5,8]	s
5-21	[0,1,4,5,8]	p	5-Z38	[0,1,2,5,8]	i

6-sets

6-Z6	[0,1,2,5,6,7]	s	6-Z44	[0,1,2,5,6,9]	p
6-16	[0,1,4,5,6,8]	p	6-Z47	[0,1,2,4,7,9]	p
6-Z17	[0,1,2,4,7,8]	p	6-Z48	[0,1,2,5,7,9]	s
6-18	[0,1,2,5,7,8]	i			

The set 5-14 [0,1,2,5,7] is the most populous 5 subset of 7 and is formed in four of the intersections $P_0 \cap P_n$ and $P_0 \cap I_n$. This 5-set forms the harmonic basis of the Andante. The other two prominent 5 note sets, 5-6 [0,1,2,5,6] and 5-30 [0,1,4,6,8] form the basic material of the Presto. The Lento uses all the four and five note sets resulting from the intersections.

The complement of 7-20, 5-20 [0,1,3,7,8] is not of particular importance in this work despite the Kh relationship between these sets.

Andante

The Andante exploits the intersection between different forms of the set 7-20. The characteristics of this section can be clearly seen in an examination of the first ten bars of the score (example 6). There are four layers of activity :

(i) The arco melodic lines. These melodies are formed from the set 7-20 and occur in db, vla1, vln1b and vln1a etc. The transpositions are chosen so that there are a limited number of common pitch classes between adjacent sets.

(ii) The final note of each melodic line is sustained, and with the addition of the sustained G♯ in vcl 1, forms the set 5-14 [0,1,2,5,7]. This background layer of sustained chords uses this set exclusively.

(iii) The second string group adds sustained notes to keep the harmony rich :
b2 [0,2,3,4,7], b4 [0,1,2,5,6], b5/6 [0,1,2,5,7,8]

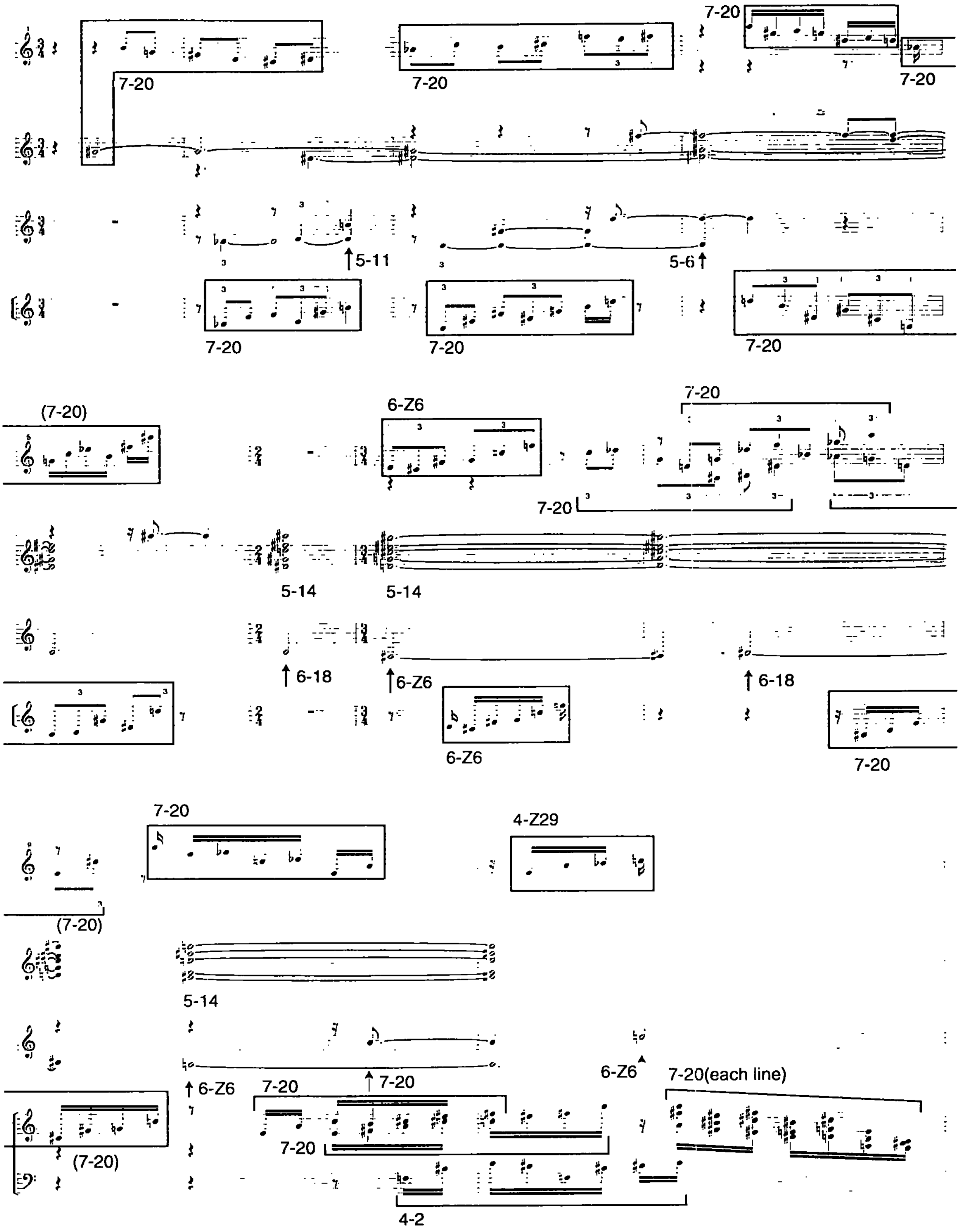
(iv) A final decorative layer with melodic fragments played pizzicato. These fragments are always based on the pc-set of layer (iii) but freely add ornamental notes.

From b7-15, the texture becomes more intricate but the four layers can still be discerned. The sustained chords or layer (ii) have at their core the set 5-14, but when considered with the bass line of vcl 2 follow the sequence:

6-18, 6-Z6, 6-18, 6-Z6, 6-Z6, 6-18, 6-18, [0,1,2,4,5,8]

In b14-15, the note E♮ in vcl 1 changes [0,1,4,5,8] to the alien [0,1,2,4,5,8]; i.e. a set which is not a subset of 7-20 This chord is important as it is the first time that a set has been spaced to emphasise its allusions to tonality; [0,1,4,5,8] as E♭ G B♭ D F♯ suggests an E♭$^{\sharp 9}$ chord. The E♮ slightly disturbs the equilibrium of this chord.

In b16-30, the texture simplifies to string chords and a bass melody. From high harmonics, the bass melody continues its descent through the tenor register using subsets of 7-20 until in b26 it repeats the opening phrase of the work two octaves lower.


7-20
7-20
7-20
7-20
5-11
5-6
7-20
7-20
7-20
(7-20)
6-Z6
7-20
7-20
5-14
5-14
6-18
6-Z6
6-18
6-Z6
7-20
7-20
4-Z29
(7-20)
5-14
6-Z6
7-20
7-20
6-Z6
7-20(each line)
7-20
(7-20)
4-2

Example 6

The string chords are based on the core set 5-14 and are enriched to form the set 7-20 in b24 and b34 and 8 note chords in b25. The highest note of the chords is often governed by a source pc-set. This passage demonstrates the first use of bass pedal points (b23).

Presto scorrevole

This movement can be seen as a scherzo with two trios:

A B A' C

Scherzo (A) b30-70

The bass line is constructed entirely from the cell [0,1,4]. These cells are linked with one or two pitches. The melody gradually rises over two octaves from (written) F_2 to $G\sharp_4$.

The string line uses six textural ideas:

(a) scurrying/buzzing motion

These rapid passages are based on the set 5-6 and are largely static in character. Vln2a & vln2b, and vln2c &vla2 form two pairs. The line of the first of each pair is based on the set 5-6 while the second plays in organum a major second lower. The pairs frequently overlap to create an 'active cluster'. As the organum is at the second, the 4 note pc-sets contain at least two major seconds and hence are often alien to the source set 7-20. This gives a harmonic 'colour' to this section which distinguishes it from the opening Andante. A third independent thread, also based on the set [0,1,2,5,6], is added by vcl 2 which thickens the texture e.g. b33

(b) descending/ascending chords in organum

The upper melodic line is constructed from overlapping 5 note sets, e.g. orchestra two b50-51 is based on 5-6 The lines fall mostly in parallel so that each chord is also 5-6 (in prime or inversion).

In many passages the horizontal and vertical sets used are different; e.g. in b40-1 the horizontal sets are 5-14 and 5-6 but the vertical sets are always 5-6. Note that in this passage the chords move from an expanded form of 5-6, (0,3,11;4,10) to a condensed form (0,1,2,5,6).

(c) ornamented sustained chords

A sustained 5-note chord is decorated by repeated scales employing 7-20 in 3-part canon e.g. b53.

(d) quasi-canonic motion

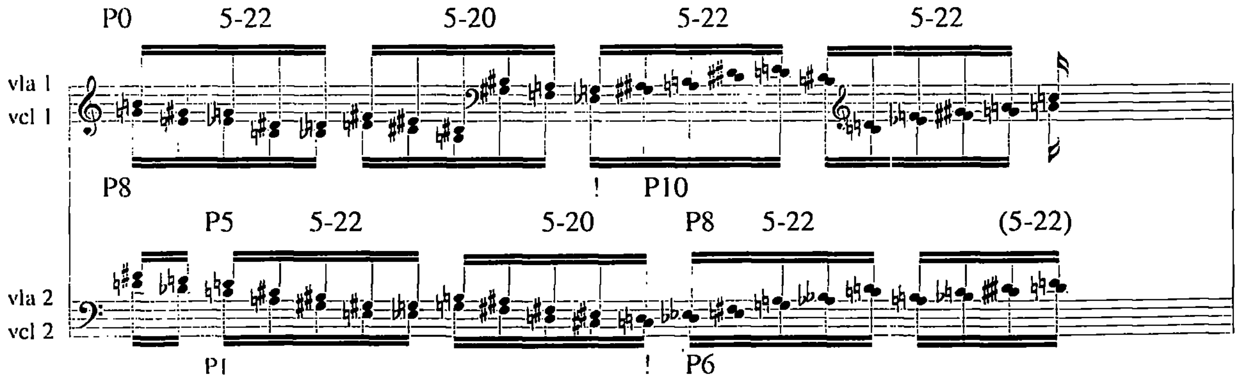
This texture is similar to (a) except that the melodic line is constructed from overlapping sets so that the texture ascends or descends. The overlapping sets may be small (e.g. [0,1,4] in b47, which resembles the construction of the bass's melodic line). A third thread thickens the texture by adding a fifth independent note to the chords ensuring that each vertical sonority is 5-6 or 5-14.

(e) static cluster

This is similar to the ornamented sustained chords (c). Four or five parts repeat a motivic pattern from the same set, so that the melodic figure is 'frozen' as a chord. Often the figure alternates between the prime and inverted forms of an asymmetrical set to achieve some variety, e.g. b66-8.

(f) swoops

As in (a), this texture features two pairs of instruments, this time without a third thread. The pairs are in canon, but the organum may use intervals other than a second. In b53-55, the pairs are vla1&vcl1 and vla2&vcl2:



The harmonic characteristics change here from major third based chords of the descent to major second based chords of the ascent (the exclamations marks indicate the change of transposition).

Of these textures, (a), (c) and (e) are essentially static and (b), (d), and (f) dynamic. By juxtaposing these types, and carefully controlling the ambitus of the chord/cluster, a subtly varying texture is shaped to complement the bass melodic line.

bar	30	40	41	47	49	50	51	53	55	56	60	61	64	66
type	a	b	a	d	e	b	d	c	f	e	f	c	b	e

Trio 1 (B) b70-136

The pace of this section is somewhat slower and one can feel the 'ghost' of a fast waltz.
It is in this section that the dialogue between bass and string ensemble becomes more intimate; both lines of argument share textural features.

(A) melodic chains

These melodic chains are formed less strictly than in the scherzo from the sets [0,1,4] and [0,1,3]. The melodic line has a free contour, e.g. b70 vln.1

(B) Ascending <-1,2,4> chains

These chains are formed by the juxtaposition of [0,1,4] sets with a precise intervallic structure. It is from such a chain that the set 7-20 was derived, e.g. b81 db

(C) Fragments based on X

The opening of such fragments take their contour from the bass phrase that opens the work. They vary in length up to the 12 notes of the chromatic scale and in this form can be divided into two sets of 6-Z44, prime followed by inversion or vice versa, e.g. b89 db

(D) Fragments of X in augmentation

These fragments loose their melodic identity but drive the harmony of the phrase, e.g. b92 vcl.1

(E) Ascending 5-note motifs

These string motifs are constructed from 5 note subsets of 7-20 and are played arco and slurred together. The texture consists of four lines moving in similar motion. The chords have an open spacing, e.g. b72 vln.1

(F) 'cadential' chords

These phrases consist of two chords, the first long with a crescendo from piano to forte and the second short and accented, e.g. b80 upper strings

(G) static cluster

The same texture as (e) in the scherzo, e.g. b136 tutti

The textures follow the following pattern:

bar	70	72	75	77	80	81	84	86	89	92	96	101	105	111
bass		F				C		F	A	F		C	F———	
strings A	B	A	B	D		A	B	A	B	A	C	D	E	
										E———				

Scherzo II (A') b137-190

The return of the scherzo is preceded by the 'static cluster' and signalled by the return of the scurrying motion, an octave lower, with the addition of a repeated note on the bass, (b). When the bass imitates this scurrying motion it is rudely interrupted by a sequence of contrary motion chords from the ensemble. As the scherzo proceeds, ideas from the first trio are incorporated. There are four new textural types:

(g) repeated note (bass)

(h) contrary motion chords

The highest and lowest melodic lines move by juxtaposed [0,1,4] sets in contrary motion. All of the chords are forms of the set 5-14, except for the final cluster. As a result of this motion, the chords funnel in from the open (0;2,9;8;7) to the compact (0,1,2).

(i) trills

The textures follow the following plan:

bar	137	146	148	150	151	152	154	158	164	168	171	177	181	183	188
bass	Ag	Aa			Aa		Bf		Ai	Ba	Bc	Ai	Ba	Bd	
strings Aa		Ah	Ah		Bb	Bb	Ab	Ai	Ah	Ba	Ad	Ba	Ac	Ad	
										Ba	Bc	Ai		Bd	

Trio II (C) **b191-209**

There are six types of material in this section:

(a) Melodic fragments from the set 7-20

These fragments have no fixed contour

(b) Descending/ascending pizzicato chords

These three or four part chords descend in similar motion with each line presenting the 7-20 set. The chords always contain a semitone.

(c) A short accented five note chord followed by a long decaying seven note chord.

The second chord 'folds in' on itself; as the high pitches fade out, they are replaced by the same pitch several octaves lower.

(d) glissandi harmonics

Five part chords moving in organum

(e) 'evaporating' clusters

a dense cluster transforms into high veiled harmonics.

(f) A long seven note chord crescendo/followed by a short accented five note chord.

In b191-197 (a) and (b) are in dialogue while (c) forms a background sonority. The first chord of (c) is a subset of (a) and the second chord of (c) is a subset of (b). (a) and (b) are related by two or three common pitches.

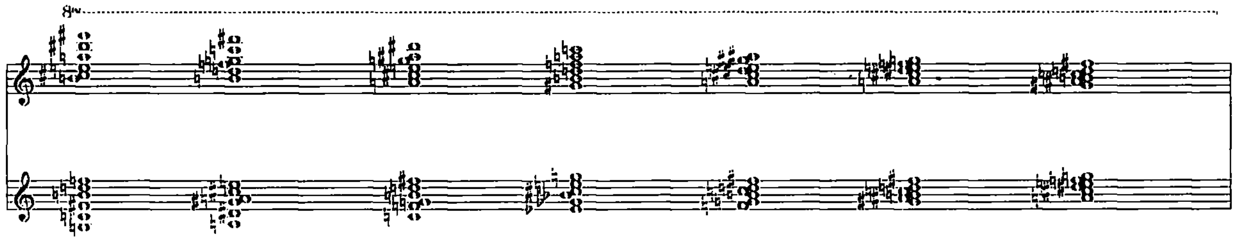
In b198-202, (a) is passed in dialogue between db and vla, the set being transposed up a semitone on each occasion. The chord of string harmonics (d) is a subset of (a).

In b203-6, the dense clusters 'evaporate' to faint harmonics revealing the bass figuration. The exact pitches of the cluster and high chord are not structurally relevant; the chord was determined by the harmonics available on the instruments at the position determined by the cluster.

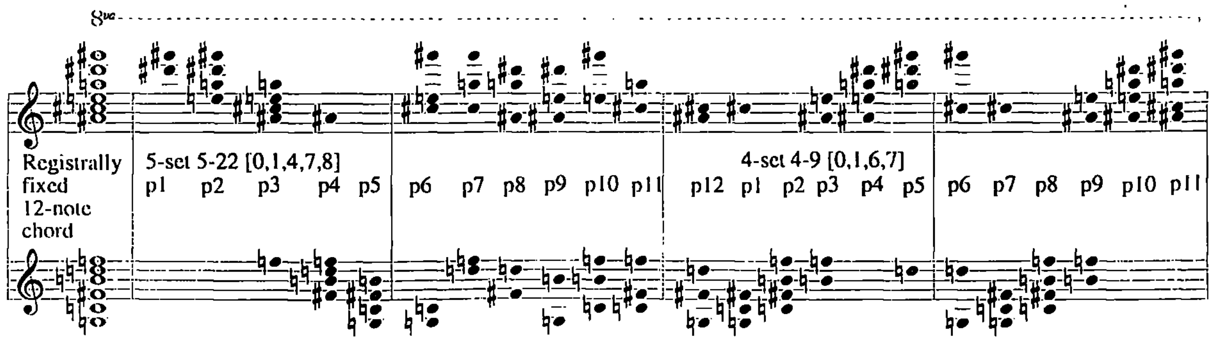
From b207-210, the bass melody is constructed from the fragments (a) which transforms into the opening fragment X. The strings accompany with (f) using related chords.

Lento b210-273

The final section features a slow-moving melodic bass line surrounded by an aura of high harmonics. These string harmonics rotate within registrally fixed 12-note chords. There are seven main 12-note chords which condense from a range of 4⅓ octaves to 1¾ octaves. The condensation is not linear; the range contracts and expands and the fundamental octave occasionally changes.



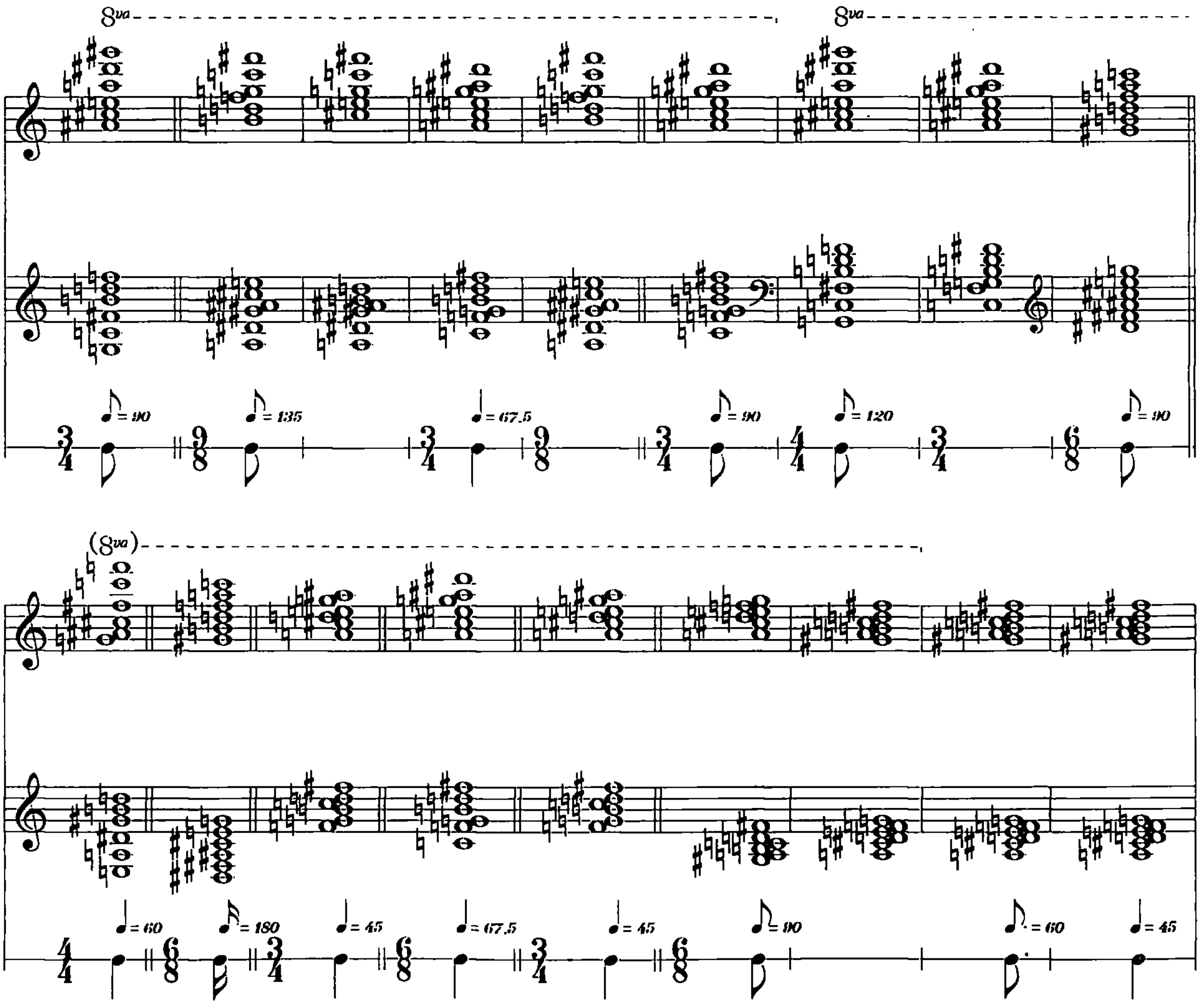
Within each 12-note chord there is a sequence of 4-note or 5-note chords which use the principal subsets of 7-20. The chords move in a closed sequence of transpositions so that the chromatic scale is exhausted. The transposition of succeeding sets is selected according to the number of pitches in common between adjacent chords; no notes in common produces rapid harmonic change whereas three notes in common creates a languid stasis.



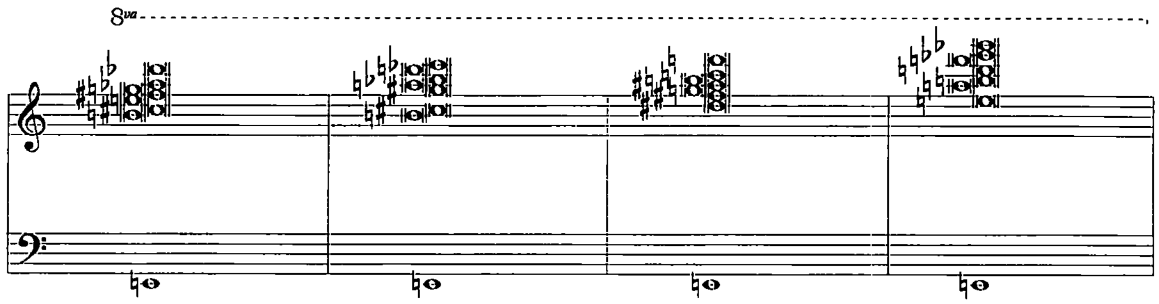
At the opening of this section the bass is foreign to the string harmonies; its melodic line is freely constructed from the sets [0,1,3] and [0,1,4] using the pitches excluded from the string chords. As the line evolves, it incorporates more pitches from the chords until at b238 the bass forms the lowest part of the 12-note registrally fixed chord. At b241 the bass recollects the melodic idea of b211 and then extends this with new melismas before descending via the motif X to the low E.

The pulse of the string harmonics change frequently, often in opposition to the pulse of the bass, as if the bass was a boat floating down a river with unpredictable currents. The string pulses are related by a simple pulse labyrinth centred on the basic pulse of ♪=90 using the proportions 2:3:4.

45		
67.5	60	
90	90	90
	120	135
		180



In the final bars of the work, the bass and strings are fused - the string chords are the set 7-20 arranged as the tempered overtone series of the bass. As the chords ascend, using more remote overtones, the bass tone becomes further sul ponticello. As the ensemble and soloist fuse, the bass's voice is disembodied.



Études en mouvement

This title is a fortuitous compromise. I started the work with the title 'Movements', as the work explores our perception of the flow of time and as a homage to Stravinsky[15]. On hearing a rehearsal of the work, Richard Steinitz expressed an interest in programming it in the Huddersfield Contemporary Music Festival but mistakenly christened them *études* in the advance publicity. I was unhappy with the title *études* as this suggests virtuosic exercises at the limit of contemporary technique, so I settled on the composite *études en mouvement*. This title suggests to me a study of how things move, how we perceive movement and how ideas can be expressed in movement.

Despite my initial reluctance to use the title *études*, the work makes conscious reference to a long tradition of fine works for the solo pianist, of which the most important to me are the sets of *études* by Debussy[16] and Ligeti[17]. For both these composers, *étude* refers not only to the study, mastery and display of virtuosic pianistic technique but also to the establishment, exploration and solution of specific compositional problems.

The *études* of Debussy are, for me, a set of symbols brilliantly executed in musical terms, a use of metaphor which is at the core of his work and which orientates his individual use of variation, elaboration and re-interpretation.

On a surface reading, Ligeti's études are modernist works which define themselves in the execution of a process limited by a set of rules, a mechanism which once started continues until the point of exhaustion. These processes are articulated with a notable lucidity and each *étude* has a consistency and rigour of rhetoric which is reminiscent of the aesthetic of the baroque. Yet, despite the exhilaration of a performance, they are profoundly pessimistic works; the only conclusion possible is an escape from the limit of the range of the keyboard, a heavenly rise off the top register or a race into the depths.

[15] (Stravinsky, 1960)
[16] (Debussy, 1915)
[17] (Ligeti, 1986)

Désordre (György Ligeti : Études pour piano, premier livre, 1)

Désordre exhibits this disjunction at several levels. The overall shape is an expansion from the centre of the keyboard to the extremes followed by a sudden return to the centre and a confused ascent. In his recent article[18], Richard Steinitz discusses the process by which the hands stagger out of synchronisation and the second process by which the motifs are transformed by a process of irregular diminution. He points to the contradiction between the rigour of these systems and the perceived disorder, encapsulated in the title.

But there are traps laid for the unwary analyst. These processes are themselves controlled by higher level processes, but these processes can be extrapolated before the opening of the work. Is such an observation justifiable or meaningful? The opening sonority is almost as dense as is possible on the keyboard, given the terms imposed by Ligeti's system, so preceding bars can not be imagined. Also the work begins in such an emphatic manner that the listener is not invited to suspect an 'earlier' origin - the work just begins. It is as if Ligeti has composed a musical work equivalent to the 'Big Bang theory' of cosmology; the universe begins but there is no evidence to suggest a 'why' and defining the 'moment' of creation becomes enmeshed in the difficulties of conceiving the absence of time.

There are further contradictions in the work; the right hand is exclusively white-note diatonic, each phrase repeated transposed (diatonically) up a tone; the left hand is exclusively black-note pentatonic, transposing down by a (usually perfect) fourth but contained within the pentatonic set. Here are two exclusive modes in opposition, sets which have no pitch-classes in common. A conflict of 'white-note' and 'black-note' musics has other cultural associations, perhaps a conflict between West and East. At the opening the intervals between the left and right hand melodic notes are to be found in a whole-tone scale, but the context is one of claustrophobic interpenetration. As the hands diverge, the structural properties of each set becomes more audible but the intervals between the hands become more dissonant and their resolutions more gauche and incongruous. When the rhythmic cycles almost coincide , the intervals are once again mostly multiples of the whole tone. However at the extremes of the keyboard, the intervals are so enormous that the right hand notes are heard as distant consonant overtones of the extremely rapid bass melody. In the second half of the work, the melodic lines accrete extra pitches, producing chords which make conflicting claims for precedence. The end of the étude does not result from the exhaustion of a process but by a deliberate extinction of a system which has become locked in a confused circular argument.

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[18] (Steinitz,1996)

Ligeti is playing a sophisticated intellectual game, inviting us by the title and musical rhetoric to believe that we are safely observing the actions of an autonomous musical agent constrained by precisely defined rules. Yet a closer examination reveals that there are incongruities to which he wishes us to attend which rely on the conflict between his system and our tonal preconceptions. In positioning the work in dialogue with systems outside its own boundaries he questions the validity of justifying a work by its process and internal logic.

Music and Discourse

Études en mouvement partakes in game playing, adopting the techniques of several composers but encapsulating them in hermetic processes. The techniques are at the core of the composition but are evident to different degrees; the surface exhibits differing degrees of permeability[19] to the structure. The rules are often arbitrary, especially in the 'links' between rhythmic and harmonic structure.

In 'Music and Discourse', (Nattiez, 1990), Jean-Jacques Nattiez adopts a communication model from Molino which distinguishes three different levels; the *poietic*, the *neutral* and the *esthesic*.

The poietic encompasses all aspects of creation and the creative process, from the biography of the artist, the affects of the cultural environment on the artist, the artist's creative commentary on other works and the artist's own personal and public codes.

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[19] Ferneyhough refers to the concept of 'permeability' in his article on his *Second String Quartet* (Ferneyhough, 1995: 117). If a structure is perceptibly apparent so that the listener can accurately predict the next event, the surface can be said to be permeable.

The esthesic level centres on the listener; the process of perception, the abstraction of higher 'meaning' and the extrapolation of potentialities, the sonaesthesic and affective responses, but also the listener's repertoire of known works and known musical behaviours.

The neutral level[20] is that which is intrinsic to the 'text'. For Nattiez, the text can be a graphic inscription on a page (a score, a 'virtual' sounding work), or the work in sound. I believe however that these 'texts' are more different than Nattiez is prepared to acknowledge.

For Nattiez, direct communication is impossible; an individual creates a text, a set of data with intrinsic properties, which a second individual interprets. The creative and interpretative procedures can be different; it is possible for an interpreter to discover a totally different 'meaning' from that intended by the author. The only check on a hermeneutic free-for-all is the requirement of truth to the text; that both processes should be consistent and congruous with the structure and integrity of the data.

A similar discussion is rehearsed by Derrida[21]. An author cannot prevent a second interpretation of his text; ambiguities are intrinsic to the nature of language. Furthermore, it may be impossible to distinguish which of several different interpretations is most valid. Derrida is even more severe in that he sees this dilemma as central to the text itself and its system of signs, i.e. the neutral level, and not just to the poietic and esthesic levels.

Even so, Nattiez's approach simplifies the complex encounter between the creator and the work and the listener and the work. It is possible for the creator to discover in the analysis of his/her work features which are essential to its nature which were not consciously pre-meditated. This, if discovered in the composition process, can change the later course of the work. Furthermore, composers can often 'hear' a technique operating in the work in circumstances where this is (objectively) unlikely. Or, a composer who regularly transforms material in a particular way

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20 I am aware of the criticisms of Nattiez's neutral level. Nattiez makes it clear that he does not propose that analysis can be 'neutral' but that the term 'neutral level' encompases those elements of a text which could be seen as separable from the producer and recipient. Such a 'neutral level' would encompass Eco's 'Model Author' and 'Model Reader'.

21 See for example (Derrida, 1981: 95-117)

becomes extremely proficient at recognising this when hearing a new work. Conversely, it can be very difficult to demonstrate the existence of an aurally perceived coherence in the written form of the music.

In the following discussion of *études en mouvement* I will give one of many possible interpretations, my own. I will begin with an description of how I hear the étude, followed by an analysis of the text and a discussion of my intentions using Nattiez's terms for convenience. I hope to indicate something of the interplay between many different approaches which I consider a part of this work.

Étude 1: 'éclat'

Esthesic level

The defining character of this étude is its halting motion where rapid gestures are arrested by more reflective material. The angularity of line, alternation of percussive chord and resonant chime and the abrupt change of dynamics all emphasise the fervered proliferation of motifs. The lilting figure which opens the work recurs as a point of rhythmic repose, returning in altered form at the end of the work. This corresponds with the stable harmonic axis D♯/E♮ at the centre of the keyboard. This centre remains a point of attraction throughout the work; motifs spiral towards this point or chords explode from it.

Neutral level

The work is constructed from the juxtaposition of three motivic cells which constitute two independent layers which are superposed. The method of working is similar to that proposed by Boulez (Boulez, 1991) , except that the motif forms are rarely visible in their 'natural' form but only in combination.

There are three cells with the following rhythmic proportions:

a	b	c
3 : 3 : 1	2 : 3 : 2	1 : 3 : 3

Each cell can occur at three levels of augmentation, with the unit taking the value:

unit value	^{3}𝅘𝅥𝅰	^{3}𝅘𝅥𝅯	𝅘𝅥𝅯
augmentation	1	2	3

I will indicate cells by letter with the subscript indicating the level of augmentation.

Example 7 indicates the interplay of cell types throughout the étude. Note that the unit shown here is the ^{3}𝅘𝅥𝅰 to avoid distorting the appearence of a cell through a metric modulation.

The first 6 bars result from the cells :

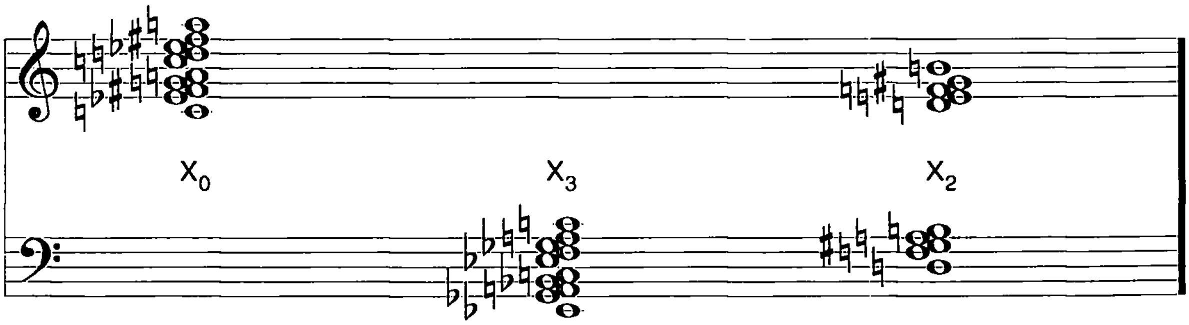
I	a_3	a_3	a_1	b_2	b_3	b_2	c_1	c_3	c_3
II			a_2	b_2	c_2	a_1	b_1	c_1	

As can be seen, the cell order chosen creates macro-cells. These are not necessarily an audible structure in the music, but are used to predict the coincidence points between phrases[22].

The pitch structure is based on a mode which appears in three transpositions. The intervallic structure of the mode is :

<3, 3, 1, 2, 3, 2, 1, 3, 3>

and the transposed forms are based on C♮ (X_0), E♭ (X_3), and D♮ (X_2). The following registration makes the connection clear.



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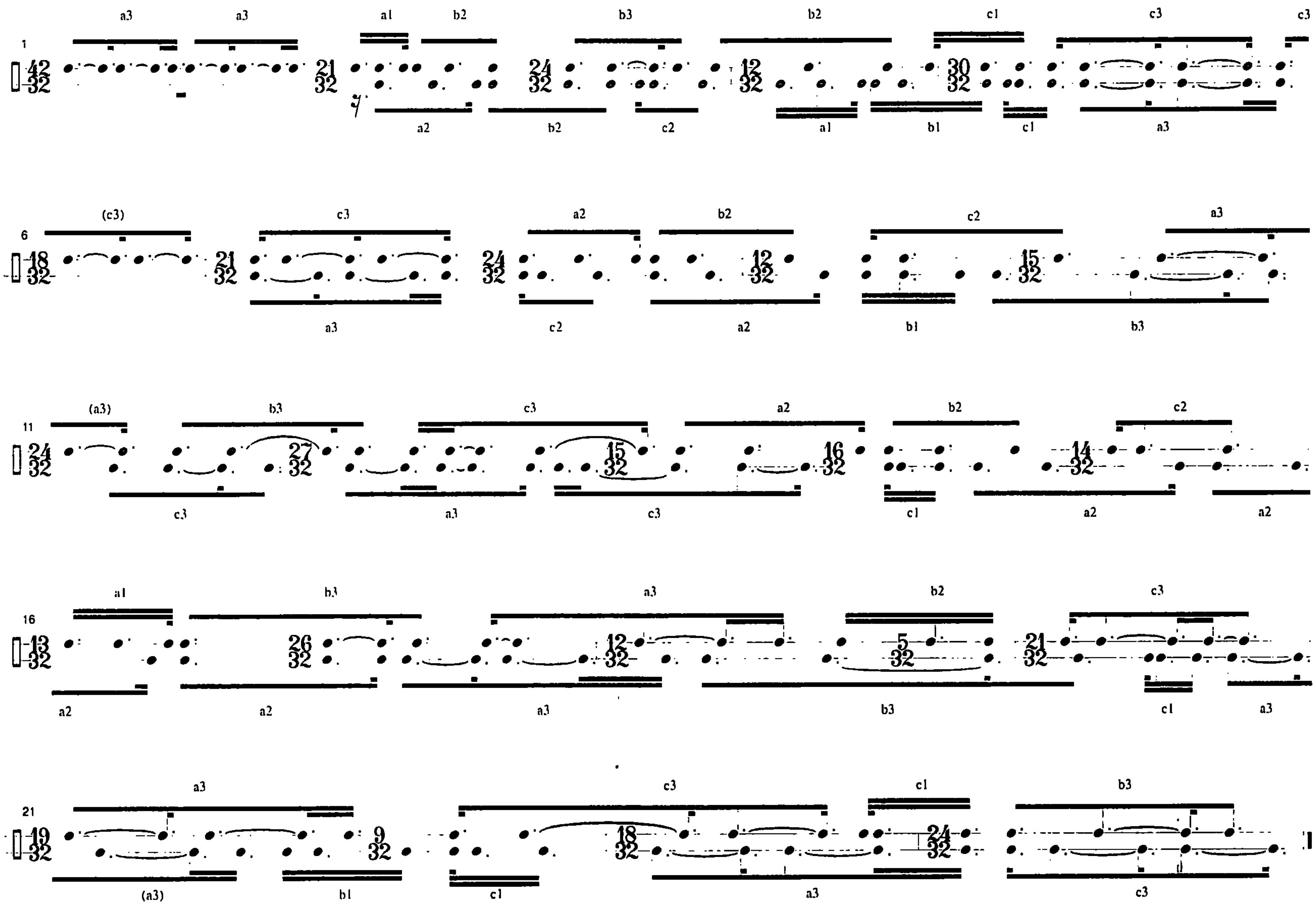
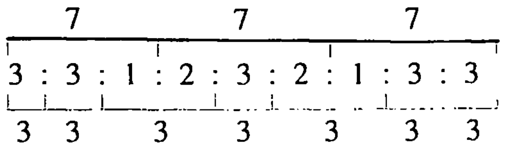
[22] $a_3 + a_3 + a_1 = b_2 + b_3 + b_2 = c_1 + c_3 + c_3 = 49$ ^{3}𝅘𝅥𝅯

$a_1 + b_1 + c_1 = 21$ ^{3}𝅘𝅥𝅰, $a_2 + b_2 + c_2 = 42$ ^{3}𝅘𝅥𝅰, $a_3 + b_3 + c_3 = 63$ ^{3}𝅘𝅥𝅰


1
a3
a3
a1
b2
b3
b2
c1
c3
c3
a2
b2
c2
a1
b1
c1
a3
6
(c3)
c3
a2
b2
c2
a3
a3
c2
a2
b1
b3
11
(a3)
b3
c3
a2
b2
c2
c3
a3
c3
c1
a2
a2
16
a1
b3
a3
b2
c3
a2
a2
a3
b3
c1
a3
21
a3
c3
c1
b3
(a3)
b1
c1
a3
c3

Example 7

This set of interval numbers is identical to the proportions of the rhythmic cells - both derive from a 7 : 3 polyrhythm.



The first transposition[23] of the mode X_0 is the source for the pitches of the first bar. From bar 2-6, two transpositions of the mode are combined: $X_0 + X_3$. In b7, the third modal transposition is introduced in the form $X_0 + X_2$.

The pitch-class C♯ is alien to all three modal transpositions and is used rarely. In b11, b18 and b19 it merely enriches the chords with additional dissonance, but it appears more pertinently as the highest note in b15, b18, b21 and in the final chord, b24.

Poesis

The method of construction was employed to create an intricate rhythmic structure and a simple but flexible referential harmonic structure. The dynamic contrasts do not necessarily articulate the beginning of a new cell or the closure of a larger unit; I was interested in capturing and moulding the tensions apparent in the rhythm of the figure. The mode is similarly used flexibly; the pitch classes are not fixed in specific registers. Pitches alien to the mode are occasionally added to enrich the resonance or dissonance of a chord.

The pitch and rhythmic structures derive from a 7 : 3 polyrhythm; the work was written for a friend's twenty-first birthday.

In this work, the artifice by which the rhythmic phrases is generated is not made salient on the surface of the work. The composition interprets this material as gestures which can be used in a simple rhetoric by contrast.

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[23] The subscripts here indicate transposition by semitones. X_0 commences on the pitch-class C♮.

Étude 2: 'Mirrors'

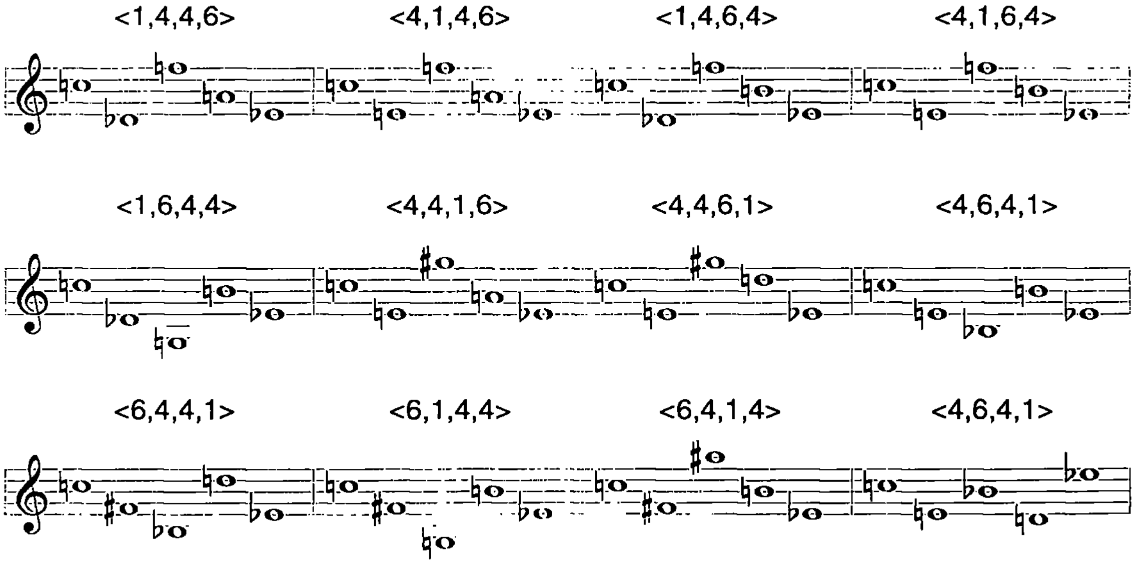
Esthesic

This étude falls into two unequal parts. The first part draws resonant harmonies form delicate intertwining melodies. These melodies are elusive with a simple open and close gesture where the precise rhythm is uncertain. The harmonies appear static but change subtly.

The second part expands the range of the harmonies away from the centre of the keyboard in a succession of textures each distinct and employing a different style of elaboration. The resonance of the chords is modified by the pedal to leave only one or two notes sounding. The procession of textures is cumulative, building to a violent eruption which stimulates the piano into a vivid resonance. Three short sections reduce the tension and return the music to an arabesque similar to the opening, a gesture which is both a question and a resolution.

Neutral

The first part is composed from a melodic line which intersects with its inversion. The notated rubato and polyrhythms ensure that the attacks of the two lines are unpredictable and rarely coincide. The use of the sustain-pedal blurs the lines to create an elusive texture. The prime melodic line is composed from five note melodic cells which are usually combined in pairs. Each of the twelve[24] 5-note cells are distinct in pitch-class content yet are intimately related. Each cell is formed from a permutation of the intervals <1,4,4,6>.



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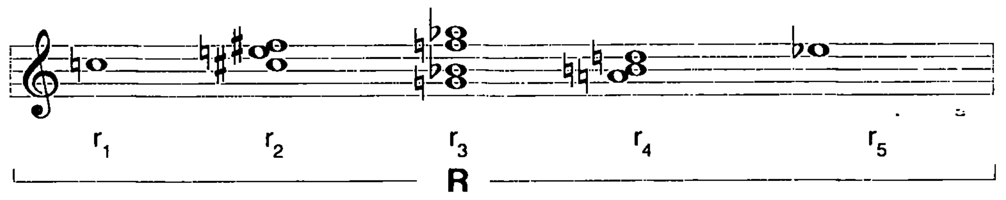
[24] As there are two idntical intervals in this set, there are 4!/2 = 12 distinct cells.

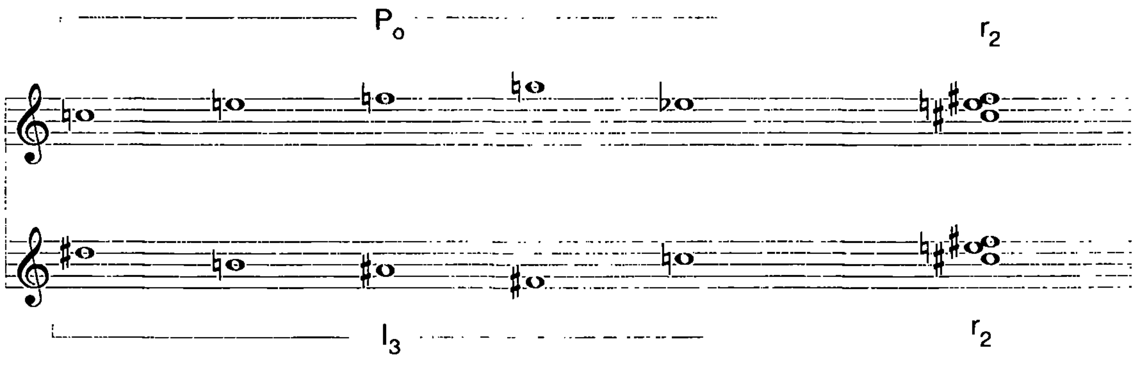
The first note of each cell is fixed to C♮. The succeeding pitch-classes can be viewed as a route through the following set of chords (R), ending with an E♭.

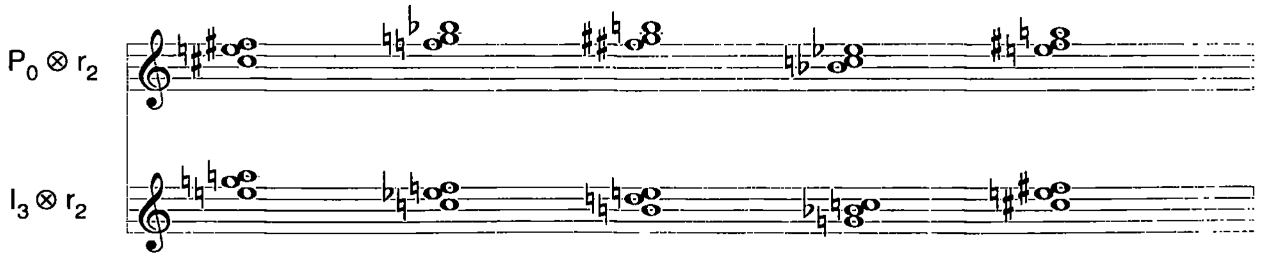


The inverted line (I_3) begins with E♭ and ends with C♮. The combined harmonies are hence symmetrical, although the registral disposition of pitch-classes often disguises this. For reasons of practicality, the prime form is not exclusively assigned to the right hand and the note order is sometimes changed.

In b3, the right hand note F♮$_5$ is replaced by G♯$_5$ to ensure a smooth ascent to the A♯$_5$ and avoid the stasis of too many repetitions of the same pitch class.

The second part of the étude features richer harmonies. Each note of the 5-note cell is elaborated by multiplication with one of the chords from R.





This process is applied to both the prime and inverted forms. The 'complexes' vary in density from five to twenty notes (doubled with the inversion). Each hand tends to read through each complexes in order, although in some bars some of the chords are combined and there are occasional interchanges of pitch between the left and right hand. However, the order in which the complexes are used is not the same as the first section of the work; the order chosen allows for a better dramatic shaping. The originating sets are frequently presented in the complexes to reinforce the harmonic basis of the work.

Poesis

The number 25 is again related to a birthday.

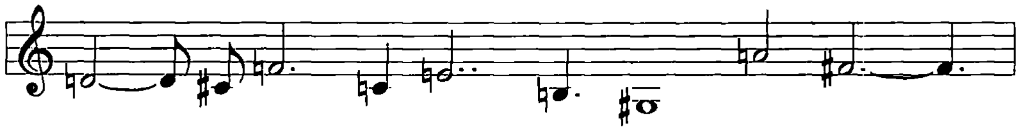
Étude 3: 'Canon a 60'

Esthesic

The opening of this work builds by a process of accumulation: the three note motif is expanded by extension, the addition of an anacrusis and elaboration from within. In b7 this process is further complicated by the interactions between this figure and a version transposed a semitone lower. At the rapid tempo of this work, the pitches of the quavers are difficult to discern and tend to be perceived as a buzzing around the accented sustained note. The ear is hence drawn to the dialogue between the accented sustained notes as each attempts to assert priority, shifting position to wrestle control of the 'tonality'. At the peak of activity the texture covers a range of just over two octaves before thinning to a single note.

Neutral

The work is a six part canon at the unison. The cantus is based on a nine note row (R).



This row is repeated transposed to begin on each of its pitches in turn, i.e.

R_0, R_{11}, R_3, R_{10}, R_2, R_9, R_6, R_7, R_4.

All six voices complete this pattern. Some voices continue with further transpositions producing 62 repetitions of the row in total.

The points at which the six voices enter are, in quavers:

0, 11, 23, (45 + 17), (45 + 28), (45 + 39)

These time points[25] ensure that there is the greatest density of attacks possible with six voices with the duration sequence (5, 1, 6, 2, 7, 3, 8, 4, 9).

Poesis

This work is a 60th birthday present for Peter Maxwell Davies. It is a 6 part canon with 62 repetitions of the row in 60 bars. The row is derived from the magic square for *Ave Maris Stella*[26] with the final note of his row moved to the beginning.

Peter Maxwell Davies principally uses his squares to generate long melodic lines. By using a pointillist texture, I intended to emphasise the mechanistic level on the surface but reveal the concealed voice-leading framework in the sustained notes. This use of a formalism to buttress and re-evaluate traditional tonal procedures is a feature which I admire in Maxwell Davies's work.

Étude 4: 'Riffs'

Esthesic

The basic premise of this work is the opposition of chord and line, one of the simplest textural opposition possible on the piano. The work opens with irregular short stabbing chords which are harmonically similar but always different. The erratic stabbing becomes more frequent and regular but never steady and predictable. Only with the introduction of the melody does the rapid defining semiquaver tactus become clear.

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[25] The duration of the row is 45 quavers. As all the staggered duration rows cycle continuosly, the attacks will always occur at the same point in the cycle. It is therefore convienient to consider the basic cyle as 45 time points, numbered 0-44 for mathematical convenience. See the discussion of the delay function in appendix 1

[26] (Davies, 1975)

The chromatic melodic line wanders widely across the lower half of the keyboard pausing occasionally to emphasise a particular pitch. This melody is repeated with the addition of a complementary line.

In the second half of the work, the melodic lines are synchronised, moving in the upper part of the keyboard in an irregularly spaced organum. The chords, in dialogue with the melody, articulate the beginning of phrases or answer with double attacks. Later, the chords are sustained as a background to the melody.

At the end of the work, chords and melody separate; the repeated chords expand out to the extremes of the keyboard to climax in a rapid scalic melodic line which plunges from B_7 to the bottom note A_0.

Neutral

The rhythmic material is constructed from 31 repetitions of a duration cycle 31 semiquavers long. The basic form, heard at the opening of the work, has the proportions:

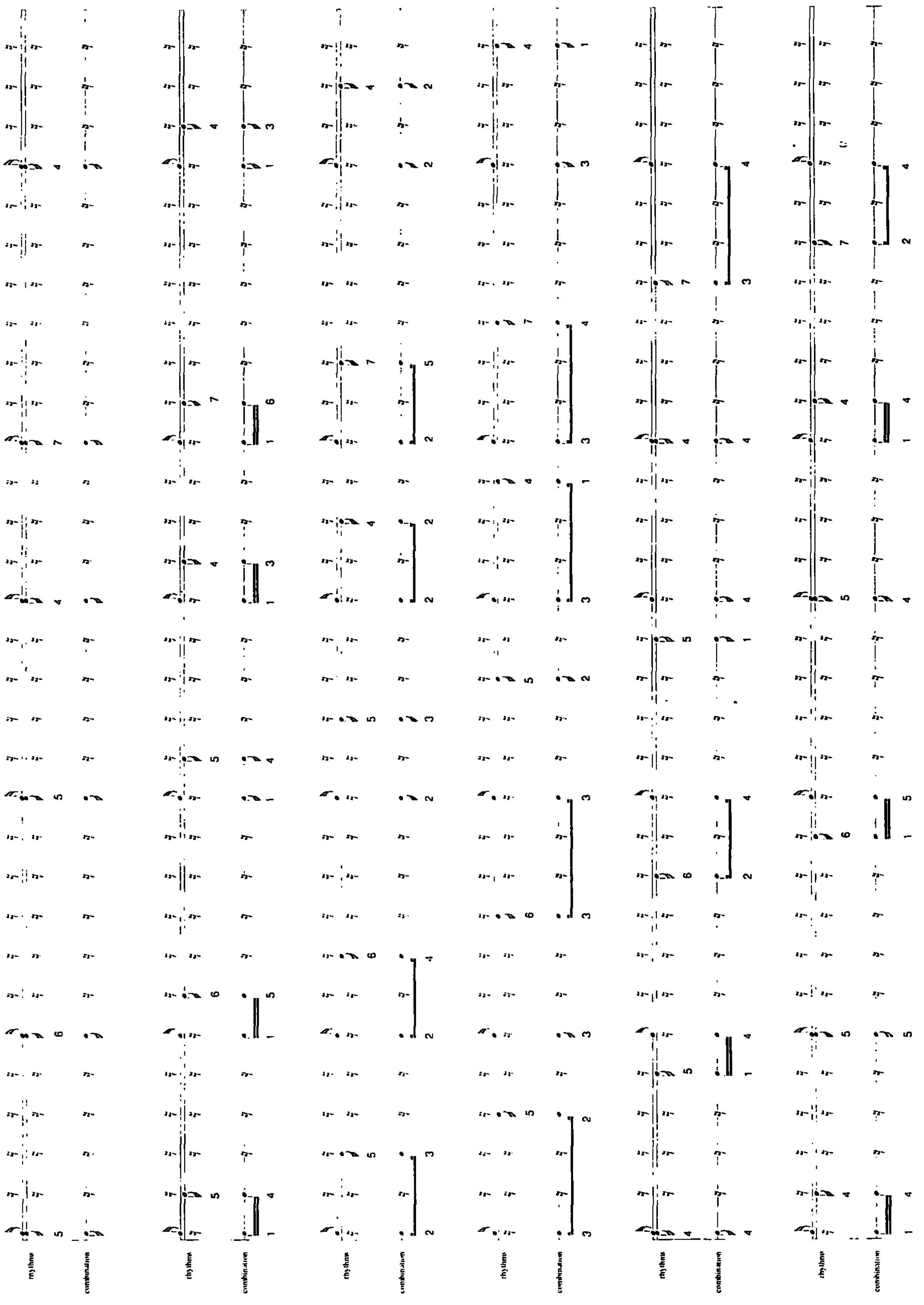
$<5, 6, 5, 4, 7, 4>$

corresponding to the set of time points

$P = (0, 5, 11, 16, 20, 27)$

If this pattern is played in canon with itself in such a manner that those time points greater than 30 are 'wrapped round' to their corresponding points at the beginning of the cycle, one obtains the following cycles (example 8). These patterns differ in the number of attacks present and the distance between attacks.

The work does not simply follow a process of regularly increasing the delay, as for example in Steve Reich *Clapping Music* (Reich, 1972). Rather, the order of patterns is chosen according to the properties of the patterns; patterns with double attacks, e.g. $(P + \Gamma_{31}(P,1))$, are withheld until the end of the work, whereas the opening begins with patterns of a few irregular attacks and gradually increasing in density.


rhythms
combination
rhythms
combination
rhythms
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rhythms
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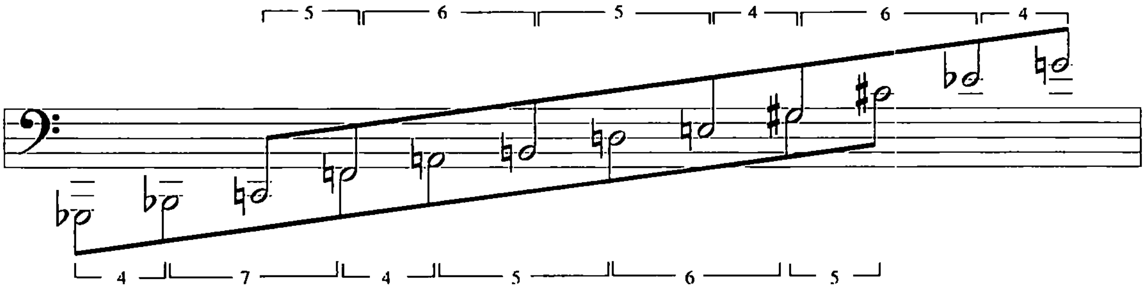
rhythms
combination

Example 8

The pitch scale is based on the same proportions, but the prime form of the cell (7-22) is interlinked with its inversion to form a 12-note registrally fixed chord. This 12-note chord can be linked with itself to form a chain which spreads across the keyboard.[26] In the second half of the work, this chain is transposed down two octaves. All the notes in this work are constrained by these chains. The pitch-class-sets of the four-note chords are subsets of the 7-note set.



Poesis

The number 31 is again related to a birthday. The division of 31 into two unequal halves, further subdivided in an irregular ternary division was again modelled on Simra Arom's description of the rhythmic procedures in the music of the Central African Republic (Arom, 1991). The slight perturbations from a regular beat gives a sense of syncopation although there is no constant slow beat present - i.e. any perceived regular beat is 'virtual', constructed by the listener. The time signature of 4/4 is simply for convenience - the true metre is 31/16.

Behind the work lies two further works:

(i) The opposition of chords and melodic lines has a kinship to Conlon Nancarrow's *Study for Player Piano no. 1*, (Nancarrow, 1988) a work that I admire for its subtle unpredictability and wit.

(ii) The two part organum resembles the 'artificial' birdsong in the sixth movement, "L'alouette des champs" of Messiaen's *Petites esquisses d'oiseaux*. (Messiaen, 1985)

In referring to these works, I wished to capture the rhapsodic improvisatory character of the Messiaen and contrast it with the constructivist framework of the Nancarrow.

Unlike many of the études of Ligeti, the final gesture is not an escape from the defining process but marks the extent of the constraining frame.

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[26] As the 12-note chord is symmetrical, the lowest and highest interval are identical. A chord transposed up by 33 semitones will overlap with the original with two pitches in common.

Étude 5: 'So'

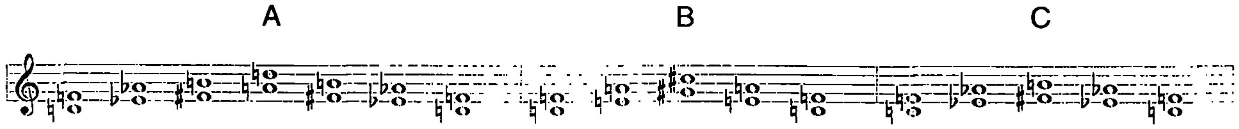
Esthesic

The étude exclusively employs the intervals of the perfect fourth and the fifth to create fragments which are interspersed with long silences. The opening fragment delineates the shape of the whole étude, a rapid irregular alternation of short quiet dyads expanding out to an 'interrupted cadence'. The second fragment traverses the same outline, but expands more rapidly and sustains the dyads so that the harmony is exposed and more salient. As the succeeding fragments increase in length the silences become shorter. The chords explore a wider range of the piano although remaining quiet and reveal a binding pedal point at the centre of the keyboard. The final fragment returns to the opening texture, expanding rapidly and appearing to decelerate into a long resonant chime.

The quality of the silences vary in the work. The opening silence is 'theatrical', too long to be a pianist's anticipatory pause, so the precise beginning of the work is obscure. The second pause interrupts the musical argument, almost before it has started, whereas the next few silences articulate phrases. The penultimate pause suggests that this is the end of the work, but it is interupted by the final fragment. The final 'rest' allows the chime to fade into silence.

neutral

There are three melodic patterns at the core of this work. Pattern A is an arc which ascends and descends through a major sixth in seven steps of a minor third. Pattern B is also an arc, but it ascends and descends through a minor 6th in five steps of a major third. Pattern C combines features from A and B with an arc ascending and descending through a tritone in five steps of a minor third. All the patterns are doubled at the interval of the perfect fourth. The subscript letter 'u' states that the first interval goes up, and 'd' that the first interval goes down.



These patterns proceed at various rates with pulses of 5 𝅘𝅥𝅯, 7 𝅘𝅥𝅯, 10 𝅘𝅥𝅯 or 14 𝅘𝅥𝅯. There are two layers of activity, I and II, which normally correspond to the left and right hands. Each layer is composed from the interaction of two pulses. In the tables below, the first number refers to the number of pulsations and the second to the duration of the pulse in semiquavers. Numbers in square brackets indicate a rest of several semiquavers; numbers in round brackets indicate that a cycle is continuing.

bar	*b11*	*b11*	*b13*	*b14*	*b23*	*b24*
layer Ia	$\underset{d}{A}$ 7*5		$\underset{u}{A}$ 7*7			$\underset{u}{A}$ 7*5
layer Ib	$\underset{u}{C}$ 5*7		$\underset{u}{C}$ 5*10 see note[27]			$\underset{u}{C}$ 5*7
layer IIa	[7]	$\underset{u}{A}$ 7*5		$\underset{u}{A}$ 7*5	$\underset{u}{A}$ 7*5	
layer IIb	[7]	$\underset{d}{B}$ 5*7		$\underset{d}{B}$ 5*7	$\underset{d}{B}$ 5*7	

bar	*b26*	*b26*	*b31*	*b32*	*b34*	*b37*	*b38*	*b40*
layer Ia	(3)	$\underset{d}{A}$ 7*7		$\underset{u}{A}$ 7*10			$\underset{d}{A}$ 7*7	
layer Ib	(3)	$\underset{u}{B}$ 5*10 see note[27]		$\underset{u}{C}$	5*14		$\underset{u}{B}$	5*10see note[27]
layer IIa	$\underset{u}{A}$ 7*5		$\underset{d}{A}$ 7*5		$\underset{u}{A}$ 7*5	$\underset{d}{A}$ 7*5		$\underset{u}{A}$ 7*5
layer IIb	$\underset{d}{B}$ 5*7		$\underset{d}{C}$ 5*7		$\underset{d}{B}$ 5*7	$\underset{u}{B}$ 5*7		$\underset{d}{B}$ 5*7

bar	*b44*	*b45*	*b47*	*b49*	*b58*	
layer Ia	$\underset{d}{A}$ 7*5		$\underset{u}{A}$ 7*7		$\underset{d}{A}$ 7*5	
layer Ib	$\underset{u}{B}$ 5*7		$\underset{d}{B}$ 5*10 see note[27]		$\underset{u}{B}$	5*7
layer IIa	(10)	$\underset{u}{A}$ 7*7		$\underset{u}{A}$ 7*7		
layer IIb	(10)	$\underset{d}{B}$ 5*10 see note[27]		$\underset{d}{B}$	5*10 see note[27]	

---

[27] As (7*7) and (5*10) are not equal, and it is important that the structural polyrhythm should align, I have consistently subtracted a semiquaver from the (5*10) phrase, i.e. 10+10+10+10+9.

The propotions of the étude can be seen from layer 1

phrases 35 49 35 49 70 49 35 49 35 𝅘𝅥𝅯

proportion 5 : 7 : 5 : 7 : 10 : 7 : 5 : 7 : 5

sections 5 : 7 : 5

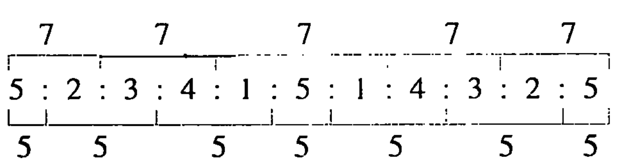
The whole work is divided into the propotions

2 : 4 : 5 : 4 : 2, i.e. 48 : 96 : 120 : 96 : 48 𝅘𝅥𝅯

and silences interspersed in the ratio

5 : 3 : 1 : 1 : 3 : 5, i.e. 120 : 72 : 24 : 24 : 72 : 120 𝅘𝅥𝅯

The combination of silence and sound divides the work into the proportions that result from a 5 : 7 polyrhythm, i.e.



Poesis

The 'problem' that I posed for this étude was to combine the two component phrases so that no four consecutive dyads in any single layer or in both layers would have any pitch-classes in common. Solving such a problem is by turn intriguing and frustrating, much like assembling a jigsaw puzzle, and often appearing equally pointless. As the component phrases are of different lengths, the layers overlap and the encounters between these phrases becomes increasingly unpredictable. After several re-writes, I began to question whether a 'solution' existed to my 'problem' and eventually I gave up! I suddenly realised that if I allowed a more frequent repetition of pitch classes, I could elicit a denser network of correspondences from my material. An ABA structure was born, where the B section has a more static background harmony than the A section.

At this stage, the music still lacked character and I was concerned that it may be no more than a tedious exercise. In a tutorial with Sohrab Uduman, I improvised on these sketches, freely choosing the registration of the dyads and exploring dry and sustained textures. In this improvisation, I recognised what I had to do; the final realisation merely required decisions as to when to open up the texture, where to dispose the dyads, when the dyads should be sustained and the discovery that an interesting sustained line could be drawn at the middle of the keyboard.

The interspersion of silences into this structure was the final inspiration. The silences were inspired by a work that Kunihiko Goto wrote while he was my student at the University of Sheffield. His programme note focused on the moment when an instrument releases its sound into the air. 'So', the title of the work, means 'A gust of wind' in Japanese and is the name of Kuni's son.

Pas de deux

In *Pas de Deux*, I wished to investigate several of the issues and problems associated with ensemble playing. An often discussed role for a keyboard instrument is as an 'accompaniment' to a sustaining melody instrument, a role whereby the keyboard supplies harmonic support and resonance. In most good duo sonatas, the relationship is much more sophisticated with both instruments employing 'thematic' and 'accompanimental' material. A 'legato' melodic line, where each note is of constant dynamic is strictly impossible on a piano. The term 'legato' is used here to suggest an ideal where the player has control of the internal dynamic profile of each note; in practice, a series of performance conventions are employed including considerations of timing, dynamic shading of successive notes, pedalling and careful balancing.

Another solution to the 'problem' of the duo of keyboard and sustaining solo instrument is to acknowledge the inherent timbral differences of the instruments and to write music that manifests these characteristics and exploits the conflicts and convergences possible by juxtaposing and superposing such material - a fine example of this is Elliott Carter's *Duo for violin and piano*. *Pas de deux* proposes another solution to the duo; what are the consequences of two distinct instruments playing exactly the same material? In exploiting this situation, I sought to challenge the listener to hear the instruments afresh.

The viola and piano do not use identical tuning systems. A piano is tuned approximately to 12-tone equal temperament, with some expansion of interval in the topmost octave. In 12-tone equal temperament certain intervals, in particular thirds, are not in tune with the harmonic series of the piano strings and will produce beats. These beats can clearly be heard by playing a major third at the centre of the keyboard, using the *una corda* pedal. For much of its range, the piano has two or three strings to each key; these strings are not tuned precisely to the same pitch and also produce beats, a 'quasi-vibrato'. By playing the same major third without the *una corda* pedal, the additional beats produced by the interference of the pitch variations of adjacent strings create a complex 'quasi-vibrato' which makes an 'out-of-tune' interval seem more acceptable to the ear.

In isolation, a string player will tune individual intervals so that the interval conforms with the harmonic series; i.e. the note frequencies are in an integer ratio. Such tuning minimises beats thereby giving a purer sound, and stimulates the instrument into sympathetic resonance. *Pas de deux* requires a slightly unconventional stage layout. The grand piano must have the lid high, and be tilted so that the pianinst's back is 45 degrees to the audience. The viola player should face the pianist so that the viola sound is directed partially to the audience and partially into the piano. This enables the sound of both instruments to blend and merge.

In the fourth movement of *Pas de Deux*, the viola and piano play exactly the same notated pitches in a phrase which includes all the intervals less than an octave. The viola is muted, attenuating the upper partials of each note. The piano is marked *una corda* and *tre corde* so that the beats produced from the piano intervals are audible and mixed with the viola sound. The ***fp*** attacks in the piano stimulate the instrument into resonance, yet rapidly reduce the dynamic level so that the interaction of the sustained viola dyads and the piano dyads can be perceived. The result is a composite sound, where the piano simulates the *pizzicato* attack of an enormous resonant viola. This composite sound is further probed when the viola ascends into harmonics, revealing the fading resonance.

Later in the movement, the dyads are recontextualised as upper partials of a low pseudo-fundamental, $\mathrm{B}\flat_0$ or $\mathrm{B}\natural_0$. Both instruments merge in the single sonority of the final chord; the F𝄳 viola harmonic is 'out-of-tune' with the implied B♭ minor of the proximate B♭, D♭ dyad in the piano, but all the pitches are consonant with the low $\mathrm{B}\natural_0$ of the piano - $\mathrm{F}\sharp_1$ is in the ratio 3:2, D♭ 9:8, B♭ 15:9 and F𝄳 11:8.

In the first movement, the intervals chosen are simple ratios in the harmonic series; 3:2 (perfect fifth), 4:3 (perfect fourth), 9:8 (major second) and 9:4 (major 9th). These intervals are 'in-tune' in the 12-tone equal temperament of the piano and produce chords that are pure and resonant. The pedalling is specified to shape the decay of the resonance.

The double-stopped harmonics in the viola are resonant within the instrument, but not all of them can be produced on open strings. Hence each dyad has a different colour depending how each note is produced. The viola follows the decay of the piano and as the chord decays the beats between the two instruments become more apparent.

These two movements are very slow and the pulse is approximately even: in both cases the ear is led into the unfolding sound. The pitches chosen cover the whole chromatic scale although not all pitches are accorded equal preference.

The fifth movement exploits the pitches available as harmonics on the piano. In the octave C_2-C_3 on a small Yamaha grand, nodes of the third, fifth and seventh harmonics are close together, and are within the comfortable stretch of either hand. By resting each finger on the strings of adjacent keys, a five note chromatic cluster will produce a chord of harmonics. By moving each finger in turn, an interesting evolving figure is created. In piano harmonics, the sound is not pure - a residual pitch of the fundamental of the string is also present, colouring the sound. The five-note figure is reordered several times and gradually transposed by two successive semitones upwards, employing ten tones of the chromatic scale before returning via its starting point to introduce E♮ and finally settling on C♮. The viola part is derived canonically from the piano line, starting four quavers after the piano, then progressively skipping notes until it catches up with the piano. At the highest pitch of the work, the viola overtakes the piano, continuing to skip notes until it stops four quavers ahead. The irregular accentuation of each part, preserved in the canon, draws attention to specific pitches, highlights the transformation of the figure, and shapes the tension of the movement - the accents are more frequent and closer together in the centre of the movement.

A similar concentration on accentuation occurs in the third movement where the viola line unfolds erratically in notes of irregular duration. The melodic line emphasises specific intervals, of 1, 3, 4, and occasionally 5 semitones. Here the piano is subsidiary, doubling the viola an octave below or above the principal pitch. The movement requires precise ensemble at a rapid tempo in order to exploit the unity of attack and emphasise the drama of performance.

In the two remaining movements, the two instruments exhibit different facets of the same material. In the second movement, the viola's melodic line is constructed exclusively from the intervals of 1, 2 and 3 semitones, and soars in a long arc employing all the pitches of the chromatic scale. The succession of intervals is irregular, so that the phrase structure of the viola line cuts across the regular four-bar structure established by the piano. The piano material is constructed from the same intervals, but presented as four arpeggiated hexachords emphasising the pc set [0, 1, 3]. The piano chords support and contextualise the viola melodic line so that the rising or falling semitones are perceived as accented or unaccented appogiaturas. As the line descends towards the opening pitch, the harmonic context has changed so the viola cadences on a lower pitch, D♯$_5$.

The pitch material of the final movement partitions the chromatic note into a ten-note set composed of the pitches available as the first seven natural harmonics on the four open strings of the viola (C♮, C♯, D♮, E♮, F(𝄳), F♯, G♮, A♮, B♭(𝄳♭) and B♮) and a complementary dyad (E♭ and A♭). In the first half of the movement, the piano presents rapid arabesques through these pitches. The first arabesque is high above the viola dyad, clearly registrally separated and alien. Each new arabesque employs a lower pitch range until the viola dyad is enveloped by the piano sonority. The second half of the movement exchanges the roles of the instruments, presenting the same material as though under magnification. The piano slowly tolls the dyad on the lowest possible pitches E♭$_1$ and A♭$_1$, and the viola reveals the pitches of the arabesques in slow arpeggios. In the final gesture of simultaneous lines of ascending and descending fifths, the instruments exchange roles once more.

Each movement of *Pas de Deux* has a simple and clear structural premise which constrains the material and determines the referential framework. Each movement also focuses on a different aspect of the duo, exploiting a different facet of the acoustic properties of an instrument or addressing an issue of ensemble playing. The work demands an intense mode of listening, one that is sensitive to the nuances of sonority and tensions of performance. It is through the concentration of material and the expansiveness of slow tempi that one is able to apprehend a new relationship between the viola and piano, where one is aware simultaneously of the differences in sonorities and of a composite unity.

The Land Solos

Background

In 1995, I attended 'The Exchange', a course for choreographers and composers organised by 'The Dance Place' and led by Philip Flood and Gill Clarke. I had been interesting in writing a work for dance for several years and wished to gain experience of collaborating with a choreographer. As the format of 'The Exchange' included lectures, discussion sessions and short sessions working with individual choreographers, I had an ideal opportunity to experiment with ideas, learn elements of another artform and discuss the collaborative process.

During this intensive course I worked with ten choreographers and was particularly interested in the work of Catherine Seymour. We discussed a large scale collaboration and Catherine was able to raise funds to commission a work from me and mount three productions in the autumn of 1997. The première at the Purcell Room, South Bank Centre, London, was the culmination of Catherine's one year post as the first Choreographer in Residence at the South Bank Centre.

The Project

The Catherine Seymour Dance Company was formed in 1990 as a vehicle for the choreographic work of Catherine Seymour. Like many young contemporary dance companies, it does not employ dancers on a full-time basis and is variable in size with a maximum of six dancers. In her works preceding 'The Land Solos' Catherine had used a wide variety of pre-recorded musics and had commissioned two specially composed tape works. For 'The Land Solos', she was keen to employ musicians for the performances and to exploit the interaction between musicians and dancers. It was decided that the musicians would be on stage and surround the dance area.

As a working concept, Catherine wished to explore man's relationship to hostile environments, in particular deserts. I was immediately drawn to the ambiguity of 'air' sounds, which could be human breath or sand scattered by the wind, and unstable sonorities which could be formed by the resonance of air in a cave or produced by the human voice. Such sounds were for me a link between the human and the inanimate landscape. To explore these sounds, I selected an ensemble of two clarinets and two trombones. The pitched metallic percussion was added to add resonance to the ensemble and the cabassa to provide dry brittle articulation.

Catherine chose an ensemble of four dancers, two male and two female, who could present solos or create a 'landscape' where one dancer shadows another. As two pairs, the ensemble can present a polyphony where two styles of material coexist.

The collaborative process

For the ensemble, I chose specific players with whom I had worked on previous occasions: Roger Heaton (clarinet), Barrie Webb (trombone) and Christopher Brannick (percussion). All three gave generously of their time to discuss their instruments and advise me on practical issues.

With some nebulous musical ideas, I spent a ten-day research trip with Catherine Seymour to New Mexico in July 1997, observing the rich diversity of fauna and flora and the stunning variety of landscape. Through frequent discussion, we gained a clear view of the work and decided that it was unnecessary to adopt a rigid scenario or structural plan.

On completing half of the score, we discussed the work in Durham and made a number of changes. I recorded the completed score on piano and orchestrated the work while Catherine began the choreography. No changes to the structure of the music were made in the rehearsal, although there were revisions to the articulation and the tempi of sections.

Following the performance, I have had the opportunity to discuss further the clarinet parts with Ian Mitchell and his suggestions have been incorporated into the revised score.

The structure of the music

In observing dance works I have been intrigued by how the perceived rate of musical change is altered by the pace of the dance movement; an example is Siobhan Davies' choreography to Steve Reich's *'Different Trains'* where an obsessive, static section of music appears energetic and brief as a result of the kinetic complexity of the dance. Dance movement phrases have their own internal dynamic and unfold according to their own logic, so it is inappropriate to insist that the dance and music phrases must correspond. Catherine Seymour and I wished to explore this tension further, to create a counterpoint between the dance and the music where the phrase dynamics could collaborate or conflict. To ensure that the musical structure was clear, I composed a work that is essentially monophonic, alternating sections of stasis with sections that concentrate on a specific rhythmic figure or type of movement.

'The Land Solos' begins in silence with a solo for male dancer. The music emerges from the silence with a duo for two clarinets in multiphonics. The multiphonics chosen here are quiet, develop slowly and are pure with only two pitches separated by less than an octave. I combine six multiphonics for the B♭ clarinet with nine for the A clarinet to create thirteen four-note chords which form the harmonic basis of much of the work. These chords are introduced in short phrases that gradually expand. The phrases are built from simple duration patterns; symmetrical structures (e.g. 5:4:5 ♩), arithmetic expansion (e.g. 3:4:5) and iambic rhythms (e.g. 2:3 or 2:4). The Thai gongs add a more regular pulse which complements the chordal patterns in the clarinets.

The second section, Lento (b73), is more luminous; the spacing of the opening multiphonic chords is expanded and the vibraphone arabesques enrich this harmony to form chords of seven or eight notes. The slow regular pulse defines a section of stasis that is one extreme of the work.

The third section, Allegro (b92), is rhythmically irregular. The duo for two trombones is constructed from the combination of two rotated rhythmic cells articulated by the open and closed positions of the harmon mute. These patterns sometimes establish, sometimes destabilise the $\frac{3}{4}$ metre and create erratic syncopations that are reinforced by the cabassa. The trombones proceed in rhythmical unison separated by the intervals of 3, 5, 8 or 10 semitones. The introduction of the clarinet duo in b141 is a continuation of the same rhythmic and harmonic principles, but here the line is separated into two complementary melodic threads.

The fourth section, Allegro (b163), returns to the harmonic material presented in the second section; the clarinet arabesques use the same seven- and eight- note harmonic fields that were presented by the vibraphone.

The fifth section, Lento (b223), is the stark centre the work with bell-like attacks, high clarinets, mid-register trombones and the bare intervals of 2, 5, 7 and 10 semitones.

The sixth section, Andante (b247), is scored for solo trombone with a slow and expansive melody. This line is a magnification of the clarinet solo of section four.

By contrast the seventh section, Vivace (b286), is characterised by the expansion and contraction of a trochaic rhythmic figure, the second note of which is always accented (4:1, 3:1, 2:1 ♪ or 2:1 𝅘𝅥𝅯). These phrases are interrupted by articulated glissandi where the ensemble threatens to disintegrate. The combination of the trombone slide with the lip glissandi expand or contract the harmonic series to suggest the overblowing of a bizarre wind instrument. The close position chords of this section are related to the muliphonic sonorities of section one.

The eighth section, Lento (b374), is characterised by calm descending phrases for bass clarinet, trombone and gongs; the bass clarinet and trombones proceed in rhythmic unison separated by the intervals or 8 or 10 semitones whereas the gongs feature the intervals or 2, 3, 4 or 10 semitones.

The ninth section, Presto (b382), is again based on pairs of notes of unequal duration, but here the pattern can be iambic or trochaic. The glockenspiel plays in organum with the second clarinet and second trombone predominantly at the interval of 8 or 9 semitones.

The melodic line of the tenth section, (b451), is related to the melodic line of the eighth section with a similar shape and interval content. The clarinets are separated by the intervals of 6, 7, 8, 9 or 10 semitones. In the first phrase they are doubled by the trombones 11 semitones lower, in the third phrase 14 semitones lower.

In this context, the eleventh section is an expansion of the preceding material and a reworking of section eight; here the trombones imitate the slow melodic descent of the gongs.

The twelfth section is related to section five, but the instrumental colours are less vivid. The clarinet 1 melody of section five becomes the upper part of the vibraphone, doubled 6, 8, or 10 semitones lower. In this section the clarinet 1 plays the summation tones of the vibraphone part while the bass clarinet 2 is allocated the difference tones to give a shimmering homophonic texture where quasi-tonal chords are presented in a non-tonal context.

The final section features a duet between the two clarinets which remains harmonically fixed while the accompanying harmony in the trombones and gongs shifts downwards. The clarinet arabesques are constructed from segments of several harmonic series and allude to both the trombone lip glissandi in section seven and the ‘tonal’ chords of section twelve. The final clarinet arabesque is supported by the trombone glissandi; the harmony evaporates to leave the toll of the temple bell.

Although no scenario was specified, I envisaged the work as a single day with the static sections denoting changes of light; section one night, section two dawn, section five noon, and section twelve dusk. Sections eight, ten and eleven are transitional and the remaining six sections (3, 4, 6, 7, 9, 13) suggest the movement of figures in a landscape.

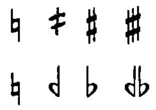
Appendix 1

Conventions employed in the composition portfolio and commentary.

Music notation

The notation of the music conforms to the principles defined in *The Essentials of Music Copying* (Homewood and Matthews, 1990). Accidentals carry throughout the bar, but cautionary accidentals with or without parentheses are employed liberally to avoid ambiguity. The notation of 'irrational' rhythms owes much to the discussion in (Read, 1978).

The notation of quarter tones, microtonal inflections and several special instrumental sounds derive from a study of scores by Brian Ferneyhough and others. For tempered quarter tones I employ the symbols :



Accidentals with attached arrows are non-tempered microtonal inflections.

An arrow indicates a transition from one state to another e.g.

sul pont.→ sul tasto

The fingering for flute multiphonics are taken from *The Other Flute* (Dick, 1989), a volume recommended to me by several professional flautists.

For metric modulations, I have followed the logical conventions of Elliott Carter i.e.

←³𝅘𝅥𝅯 = 𝅘𝅥𝅯→

All dynamics are relative to the instrument, i.e. *ff* for a double bass is not expected to equal *ff* on a trombone!

Analytical notation

In the commentary, I have employed the following pitch convention: C_1 is the first C on the piano keyboard and the octave number changes at each subsequent C. (A_4 = 440Hz)

Notation of pitch sets

As in much American analytical literature, I number the ascending chromatic scale with twelve integers 0-11 where 0 is an arbitrary reference pitch, not necessarily C♮.

Following (Forte,1964), an ordered pitch-class set in its most compact form is notated by the integers 0-11 separated by commas and enclosed in square brackets e.g. [0,1,4]. An interval vector is an ordered set of 6 integers separated by spaces enclosed by square brackets e.g. [1 0 1 1 0 0]. The order of this set refers to the number of intervals of size 1 to 6 semitones present in a pc-set.

I have notated sets which are not in the Forte form in round brackets e.g. (0,3,4). Where it has been important to compare the registration of chords, I have used a semicolon to indicate a change of octave. In such cases, the integer 0 refers to the bass note e.g. G_3 $B♮_3$ $B♭_4$ →(0, 4; 3).

I have notated interval sets in angled brackets separated by commas.
Hence the set (0,3,4) corresponds to the interval set <3,1> and is an instance of the pitch class set [0,1,4] with interval vector [1 0 1 1 0 0].

I have adopted Forte's numbering of pitch-class-sets, with the addition of the following letters: p (prime), i (inverted) for isomorphic sets and s (symmetrical) for non-isomorphic sets. These letters are for my convenience only and do not reflect any hierachical precedence.

I have expanded Forte's system by the use of a trichord vector, an ordered set of twelve elements which correspond to the number of trichords present in a set e.g.

[0,2,3,5,7] has the trichordal vector [0 1 0 1 0 1 :3 0 1 0 1 0]

corresponding to the trichords

0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	2	2	2	2	3	3	4
2	3	4	5	6	4	5	6	7	6	7	8

(The colon in the vector is simply for reading convenience as it separates the vector into two halves)

Many sets with identical interval vectors (Forte's Z relation) are distinct with regard to trichordal vector. As I composer, I find the trichordal vector a better indicator of set similarity and a more useful compositional tool than the interval vector.

Notation of sets

A single capital letter can refer to any set, be it a pitch-class-set, a chord or a melodic line. The subscript integer, 0-11, indicates the transposition level from an arbitrary reference level. Following Forte, an inversion of a set uses the first element of a pitch-class-set as its axis, i.e.

$B = I(A)$ such that

$b_{k-m} = | 12 - a_m |_{12}$, $1 < m < k$, $a_m \in A$, $b_m \in B$

where $k = \text{size}(A)$

If the inversion has a transposition subscript, it is assumed that invesion preceds transposition.

Calculation of interval and index vectors

For any set, A, a grid, G, of intervals can be calculated according to the formula :

$g_{n,m} = |a_n - a_m|_{12}$

where $a_n \in A$ and $a_m \in A$, $1<n<\text{size}(A)$, $1<m<\text{size}(A)$

and $g_{n,m} \in G$

If it is assumed that intervals greater than 6 semitones can be considered equivalent to their complements, this grid is symmetrical about a diagonal axis from top left to bottom right, each element of the diagonal being 0. A simplified triangular grid can therefore be constructed following (Forte,1964)

$g_{n,m} = | a_n - a_m |_{12}$

if $g_{n,m} > 6$, $g_{n,m} \rightarrow g_{n,m} - 6$

where $a_n \in A$ and $a_m \in A$, $1 < n < \text{size}(A) - 1$, $2 < m < \text{size}(A)$

and $g_{n,m} \in G$

Forte uses this grid to calculate an interval vector, V, of six elements, where the ordered set refers to interval of size one to six semitones.

$a_n \in A$ and $a_m \in A$, $1 < n < \text{size}(A) - 1$, $2 < m < \text{size}(A)$

$i = | a_n - a_m |_{12}$

if $i > 6$, $i \rightarrow i - 6$

$V_i \rightarrow V_i + 1$

The resulting vector can be used to discover how many pitch class elements of a set will be repeated in the new set after transposition by an interval *i*, up or down. If the transposition is by 6 semitones, V_6 must be doubled owing to symmetry (a transposition of 6 semitones up and 6 semitones down are both possible and both should be considered.)

Similarly a grid of indexes can be calculated, where the index determines the number of pitch classes which stay constant between a set and its transposed inversion.

$g_{n,m} = |a_n - (12 - a_m)|_{12} = | a_n + a_m |_{12}$

where $a_n \in A$ and $a_m \in A$, $1 < n < \text{size}(A)$, $1 < m < \text{size}(A)$

and $g_{n,m} \in G$

In this case the grid is not symmetrical, so an index vector, W, of twelve elements (0-11) must be used.

$a_n \in A$ and $a_m \in A$, $1 < n < \text{size}(A)$, $1 < m < \text{size}(A)$

$j = | a_n + a_m |_{12}$

$V_j \rightarrow V_j + 1$

These procedures can further be extended to calculate the number of pitch class sets in common between two arbitrary sets at a given transposition interval or following inversion of the second set followed by transposition. However, an interval vector of twelve elements must be used as the grid will not be symmetrical around the major axis.

Chord multiplication

In (Boulez, 1991: 128-130), Boulez describes his method of producing chord complexes by multiplying two simpler chords together.

If A and B are two sets and T(X,y) is a transposition function such that

$Z = T(X,y)$

$z = | x+y |_{12}$, where $x \in X, z \in Z$

Boulez's multiplication can be defined as:

$$A \otimes B = T(A, b_1) + T(A, b_2)...T(A, b_m),\ 1 < m < n,\ b_m \in B$$

where the operation '+' adds elements to a set and *n* is the number of elements in set *B*.

e.g.

$(0,1,6) \otimes (1,4,8) = (1,2,7) + (4,5,10) + (8,9,2)$

The set can be written in ascending order, omitting repetitions, (1,2,4,5,7,8,9,10), if required. Boulez tends to omit note repetitions in his earlier work[28], especially if the complex is to be used as a chord. I have included note repetitions in *études en mouvement II* to produce a rich harmnic field.

Delay function

By analogy with a transposition function, a delay function $\Gamma_z(X,y)$ can be defined which takes a set of time points X and increments each element with the value y. The modulus, z, ensures that time points beyond the end of the rhythmic cycle are rotated to the beginning.

$D = \Gamma_z(X,y)$

$d_m = | x_m + y |_z,\ 1 < m < k,\ x_m \in X,\ d_m \in D$

where $k = size(X)$

---

[28] See for example the discussion in (Boulez, 1971: 37-42)

Appendix 2: Notes on recordings

Fragments after Chiyo

Recording 1 (workshop)
London Sinfonietta workshop at the University of Durham
  Phillippa Davies (flute)
  Christopher van Kampen (cello)
  Ian Brown (piano)
  Susan Bickley (mezzo soprano)
  Anthony Pay (conductor)

Recording 2 (workshop performance)
Jane's Minstrels : SPNM workshop at the Guildhall School of Music and Drama, London
  Jane Manning (mezzo soprano), Roger Montgomery (conductor)

This is a SPNM recording - I do not have the master.

Elements of Iridescence

Recording of first performance, The Kirk, Hoy
Scottish Chamber Ensemble

The original recording was made on a Sony Walkman and is not of good quality.

...and the unseeen eyebeam crossed..

Rehearsal recording
Royal Scottish National Orchestra, conductor David Davies
City Hall, Glasgow, RSNO/IBM composers' competition

This is a distant recording on a portable DAT - I have only a cassette copy. The clarinet is using a B flat instrument in error.

Of crossed destinies

Recording made and edited by Paul Archbold at the University of Huddersfield
Hugh Webb, harp

Chiaroscuro

Recording of first performance, St. Giles, Cripplegate, London
March 1996

Paul Sherman (double bass) and Opus 20, conductor Scott Stroman

Christopher Tombling (violin 1a)	Ann Morphee (violin 2a)
Cleo Gould (violin 1b)	Greg Warren Wilson (violin 2b)
Abigail Brown (violin 1c)	Sonia Slany (violin 2c)
Bridget Carey (viola 1)	Rachel Stott (viola 2)
Jo Knight (cello 1)	Emma Black (cello 2)

Minor inaccuracy at the opening of the Lento section

Études en mouvement

Recordings on several occasions

études 1 and 2	Concert performance, University of Huddersfield
étude 4	Concert performance, University of Durham,
étude 5	Concert performance, University of Durham, February 1998
Paul Archbold, piano	
étude 3	synthesised version

Pas de deux

Bridget Carey (viola), Paul Archbold (piano)
Recording of first performance, University of Durham, February 1998

Occasional minor inacurracies, e.g. the opening tempo of movement 4.

The Land Solos

Roger Heaton, Ian Mitchell (clarinets)
Barrie Webb, David Whitson (trombones)
Christopher Brannick (percussion), Paul Archbold (conductor)
Catherine Seymour Dance Company
Recording of first performance: Purcell Room, London, September 1997

There are several problems with this recording - I had to position the microphones on the stage, so the dancers are audible. Furtherore I was unable to check recording levels, so there is some distortion in sections five and six.
The score is revised; the clarinet duo in section four was originally for solo clarinet.

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(BM YP 2557)

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Paul Archbold

Fragments after Chiyo
(1990)

for mezzo soprano, flute,
piano and 'cello

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24 FEB 1999

Fragments after Chiyo

flute (doubling alto flute)
cello
piano

mezzo soprano

Duration 6 minutes

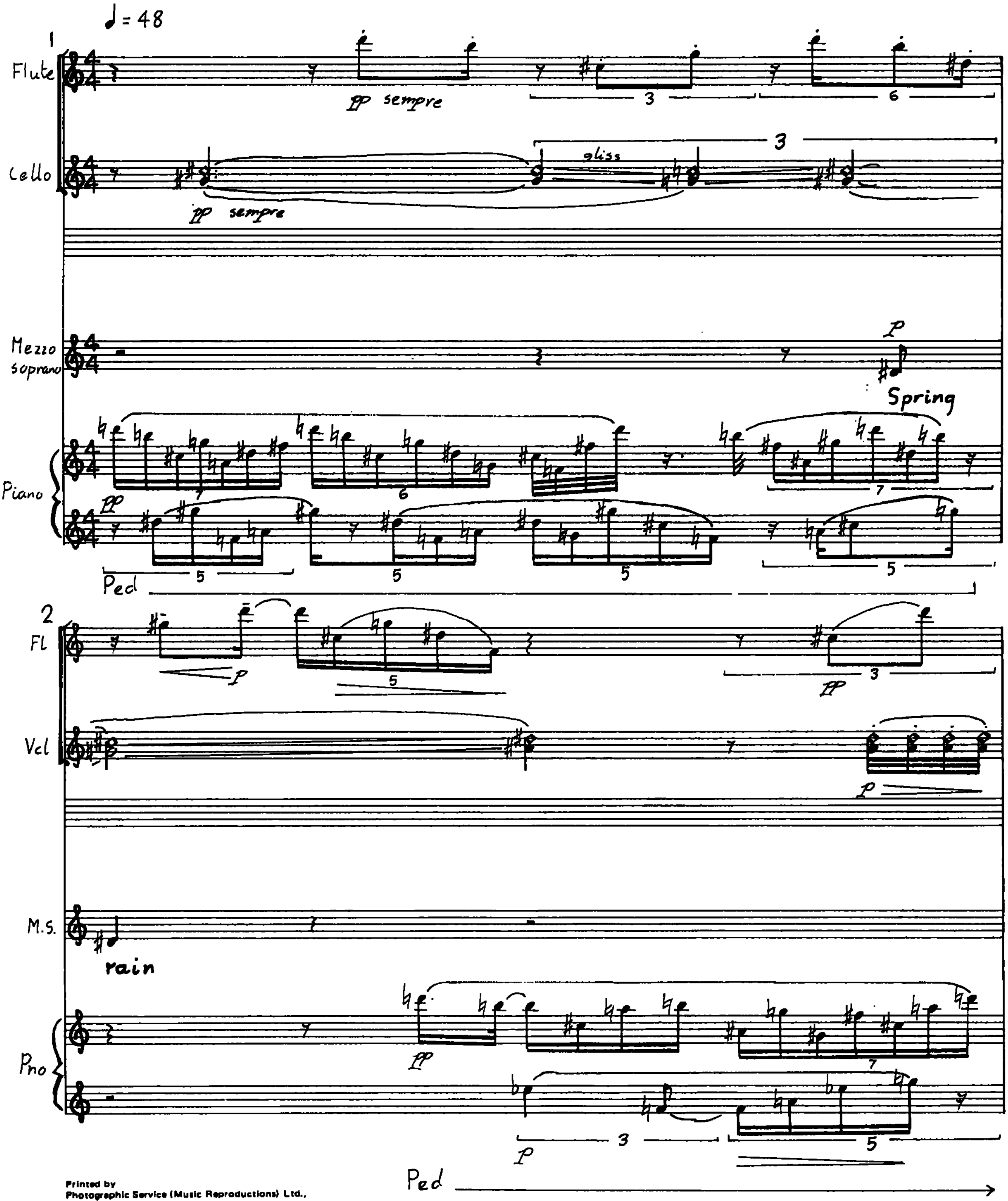
Thesis ++
1998/
ARC

FRAGMENTS AFTER CHIYO

I

words : Kago no Chiyo
translated from the Japanese
by R. H. Blyth

Paul Archbold (1990)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3
6
Cello
pp sempre
gliss
3
Mezzo soprano
p
Spring
Piano
pp
7
6
7
5
5
5
5
Ped
2
Fl
p
5
pp
3
Vcl
p
M.S.
rain
Pno
pp
7
p
3
5
Ped

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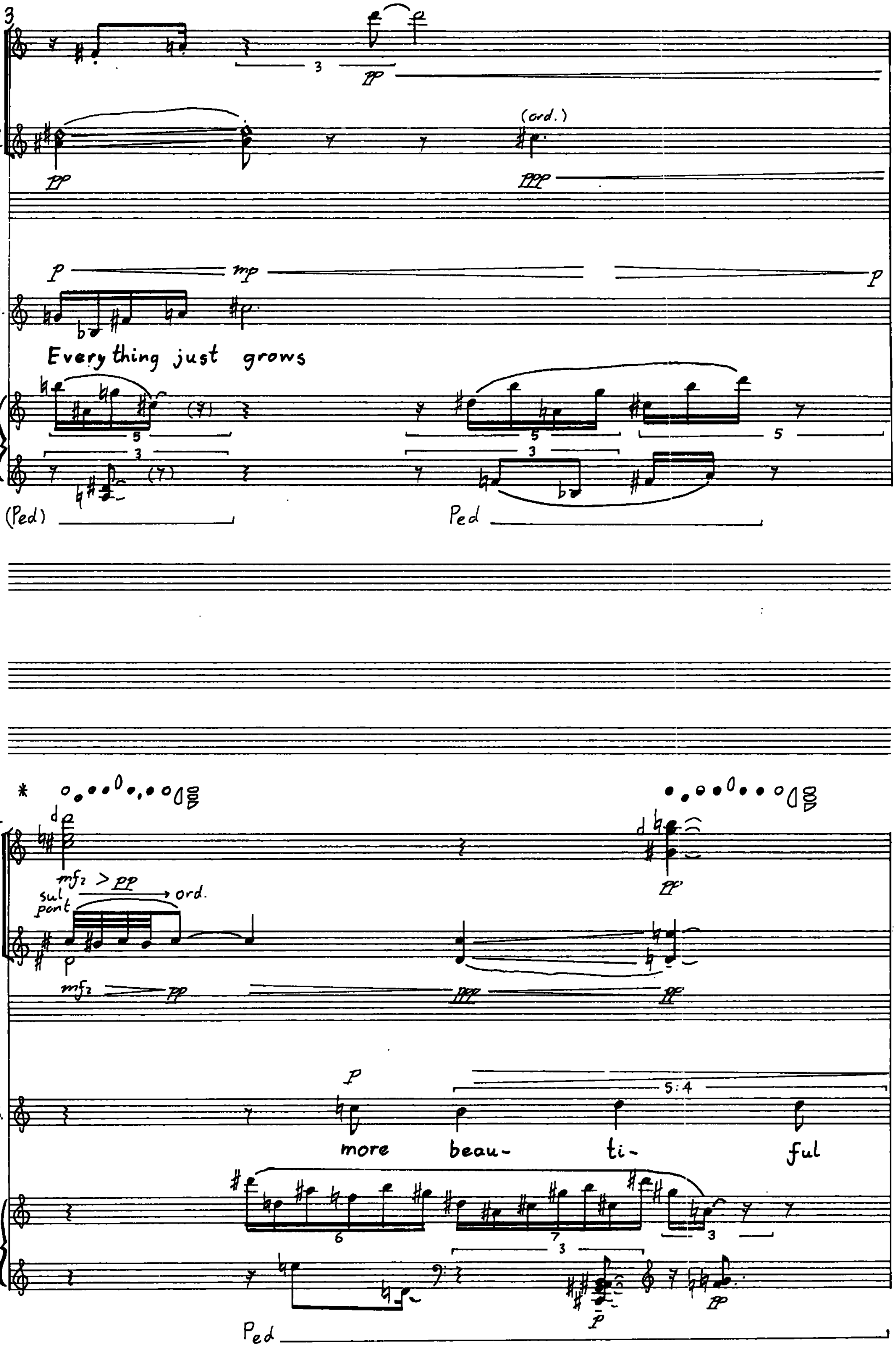
3
Fl
Vcl
pp
(ord.)
ppp
p
mp
p
M.S.
Everything just grows
Pno
(Ped)
Ped
*
4
Fl
mf
pp
sul pont
ord.
Vcl
mf
pp
ppp
pp
p
5:4
M.S.
more beau- ti- ful
Pno
p
pp
Ped

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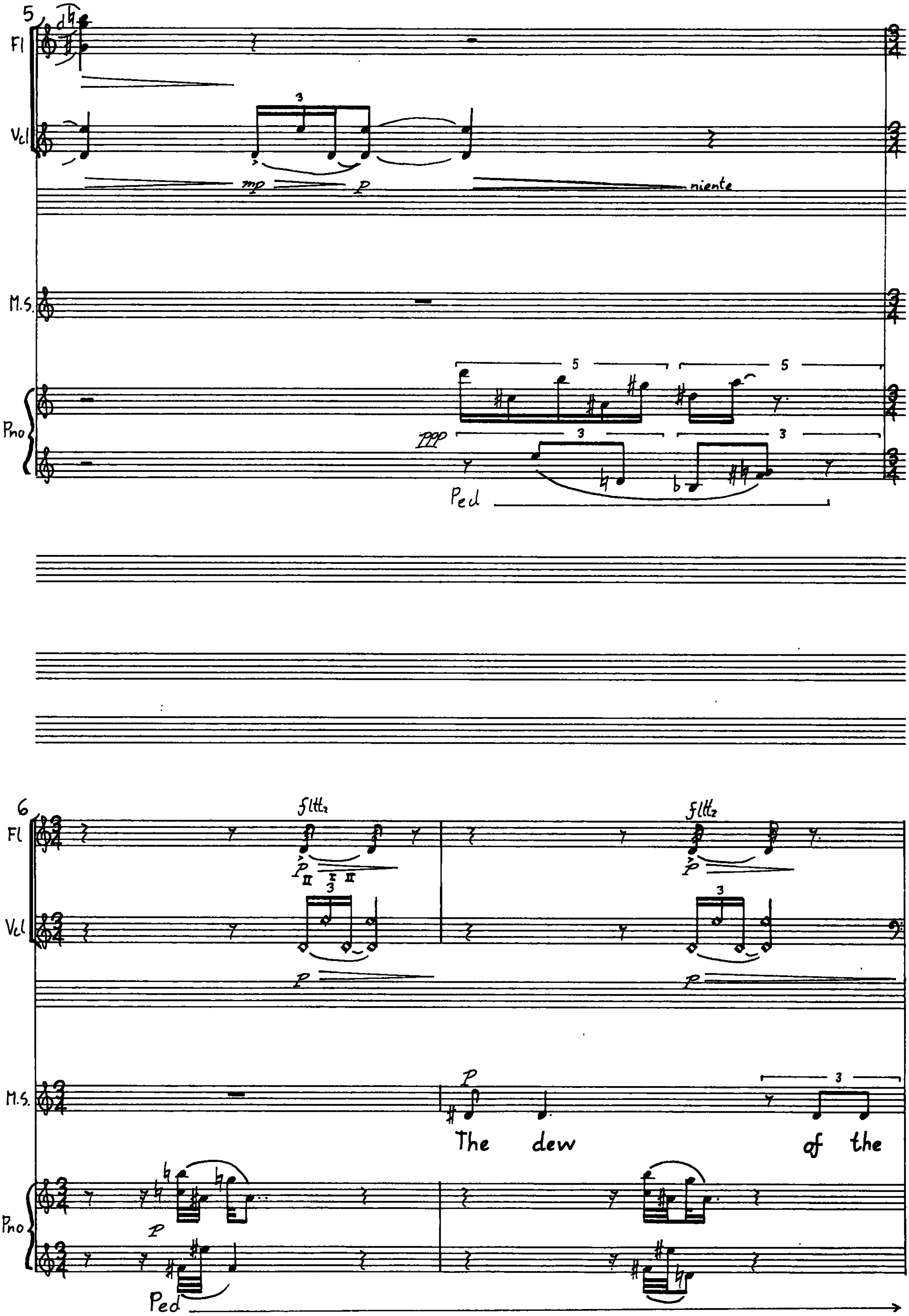
* The pitches of multiphonics are important. A sustained 3 note chord is not however expected.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Fl
Vcl
mp
p
niente
M.S.
Pno
5
5
3
3
ppp
Ped
6
flt2
II
I
II
p
p
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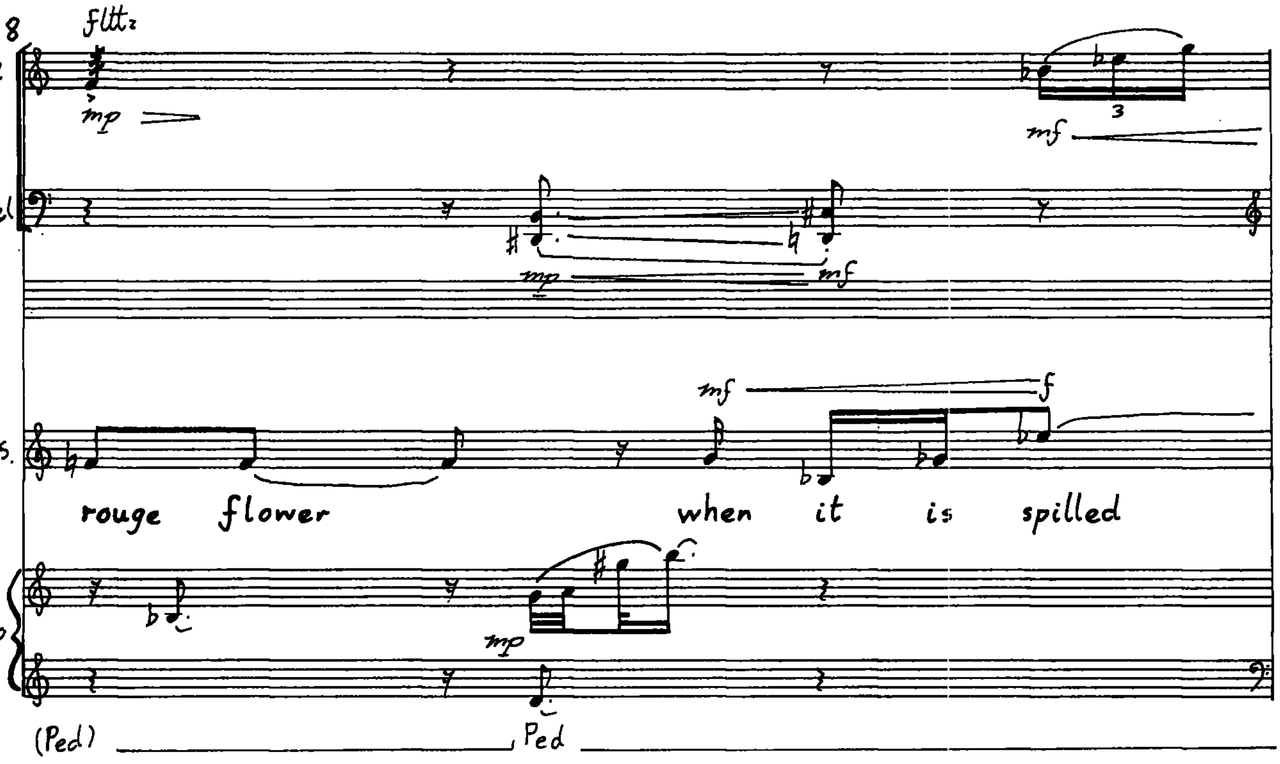
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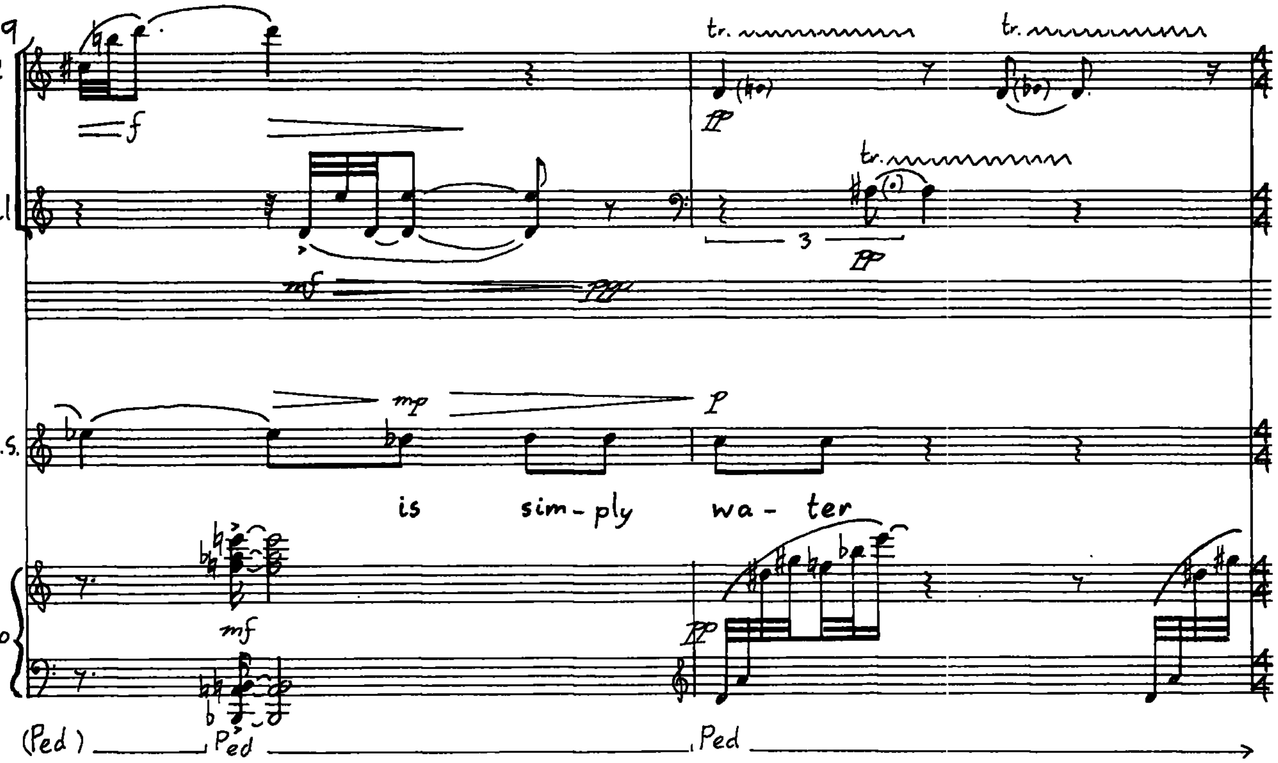
Fltt₂
Fl
mp
mf
3
Vcl
mp
mf
mf
f
M.S.
rouge flower when it is spilled
Pno
mp
(Ped)
Ped


9
Fl
f
tr.
tr.
pp
Vcl
mf
ppp
tr.
3
pp
mp
p
M.S.
is sim - ply wa - ter
Pno
mf
pp
(Ped)
Ped
Ped
4
4

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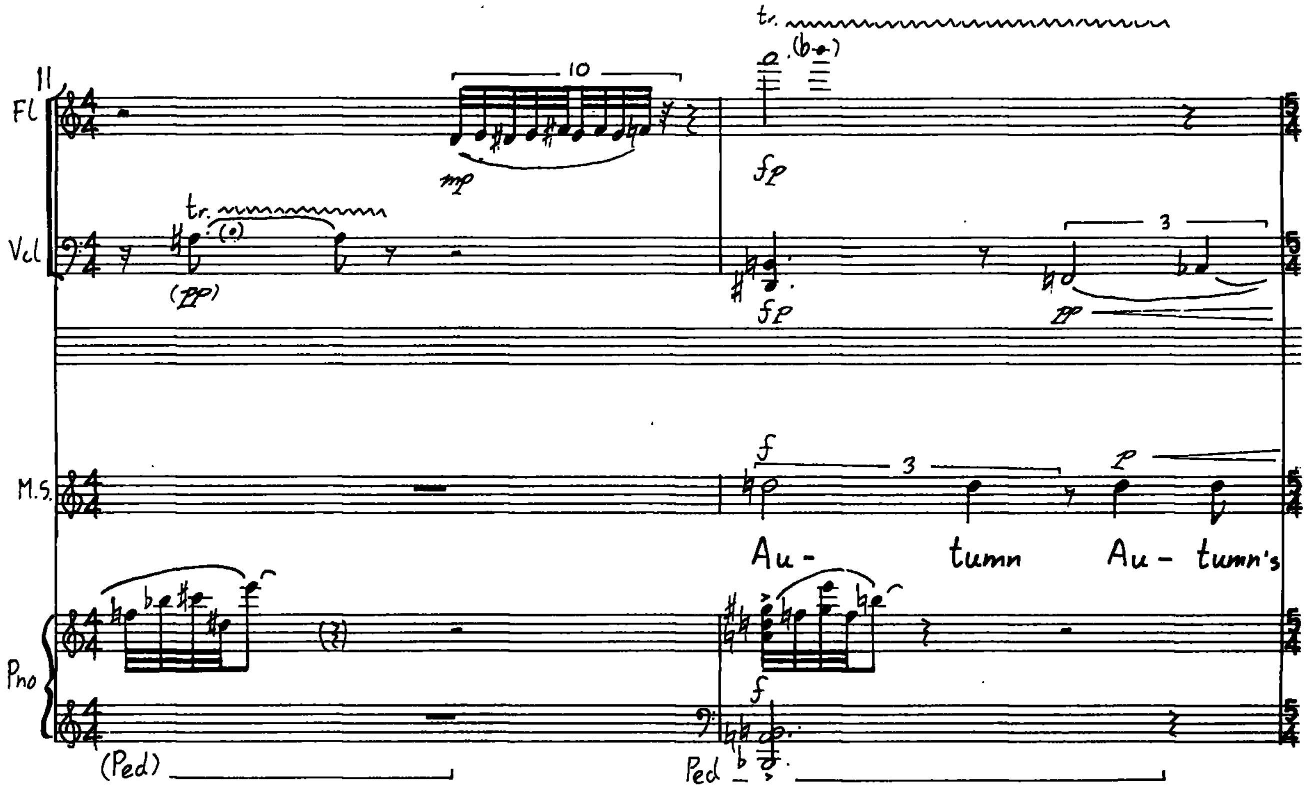
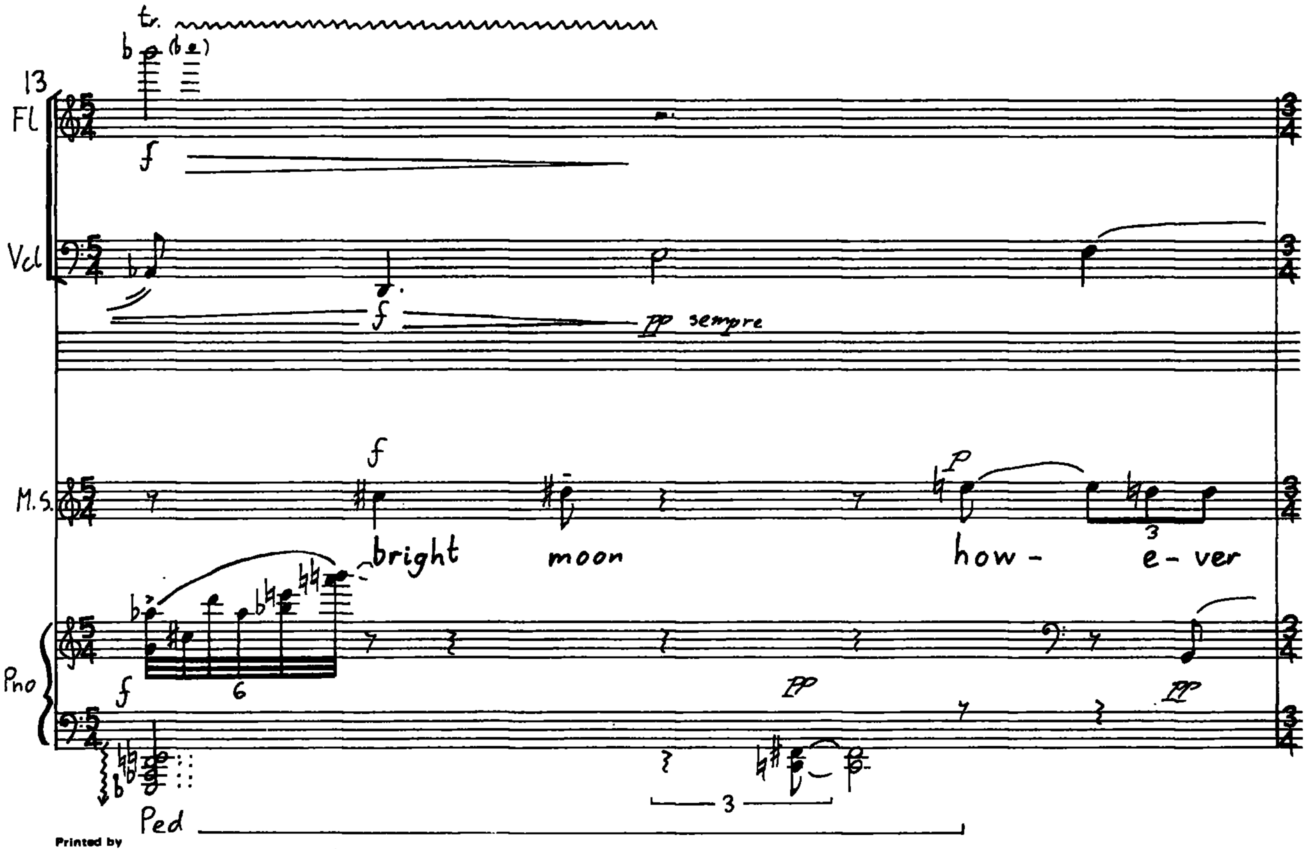

11
Fl
Vcl
M.S.
Pno
tr.
10
mp
fp
(pp)
pp
3
f
p
Au- tumn Au- tumn's
(Ped)
Ped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Fl
Vcl
M.S.
Pno
tr.
f
pp sempre
p
bright moon how- e- ver
6
3
pp
Ped

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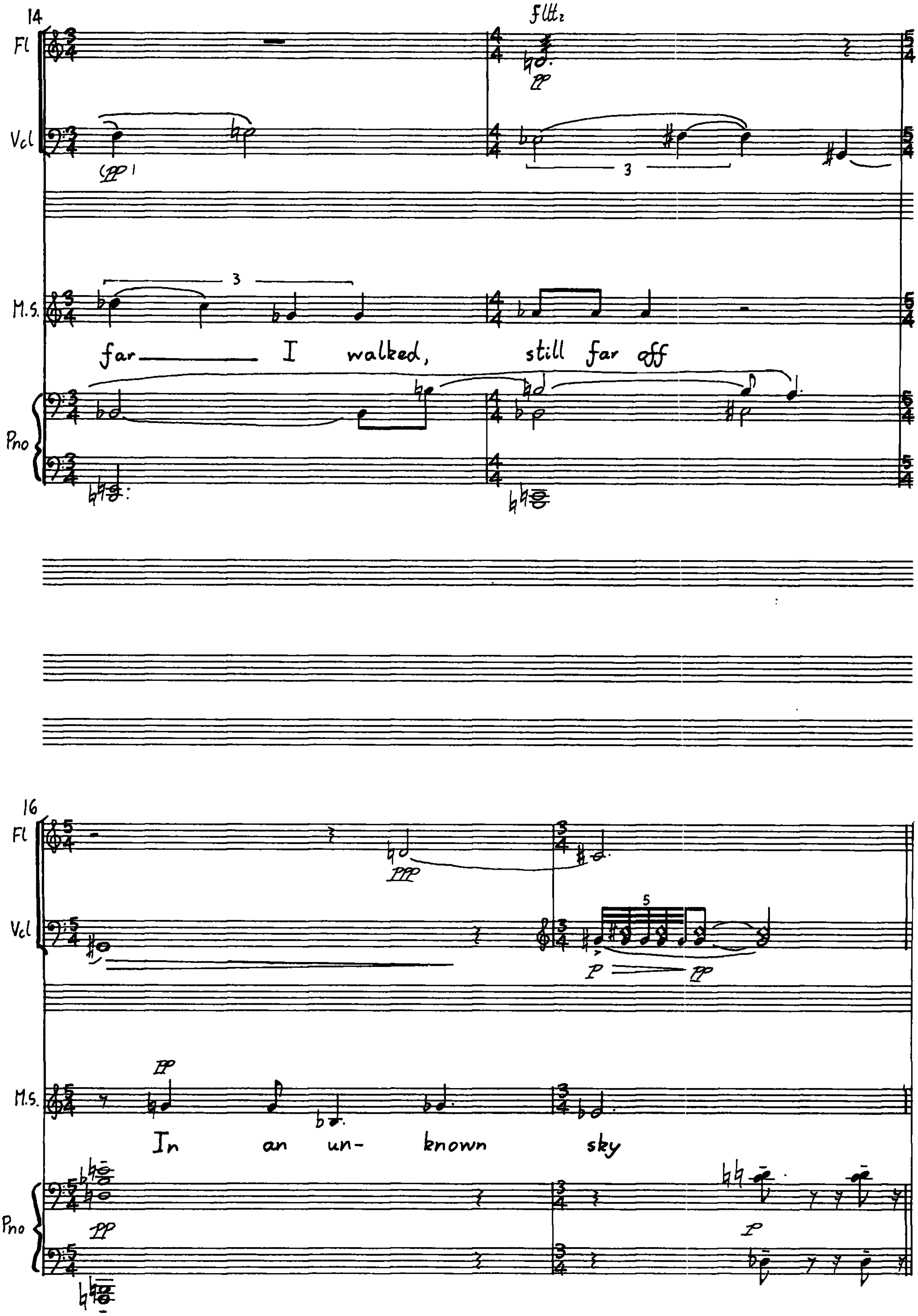
14
Fl
Vcl
M.S.
Pno
Fltz
pp
(pp)
3
far —— I walked, still far off
16
ppp
p
pp
5
In an un- known sky

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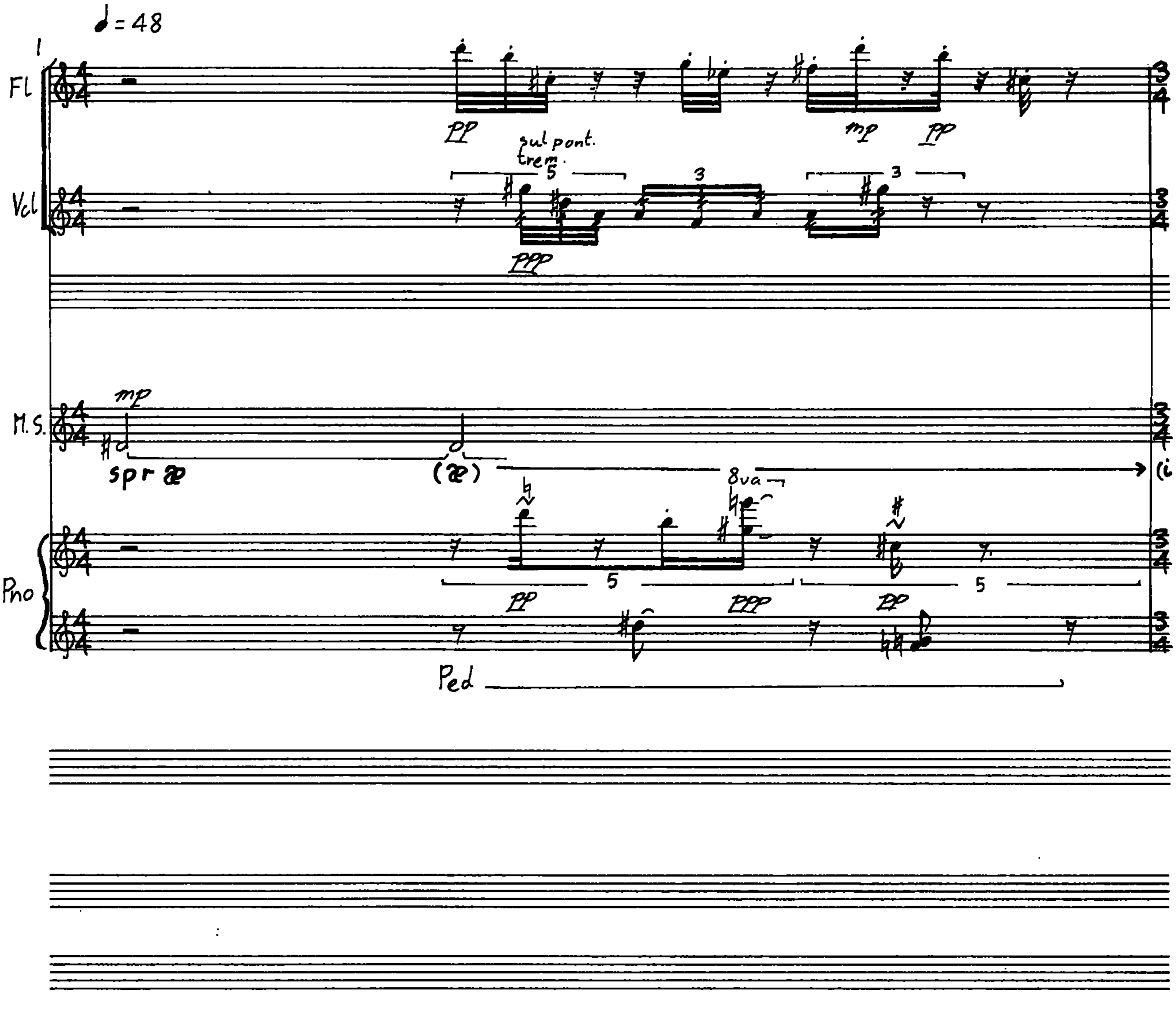
II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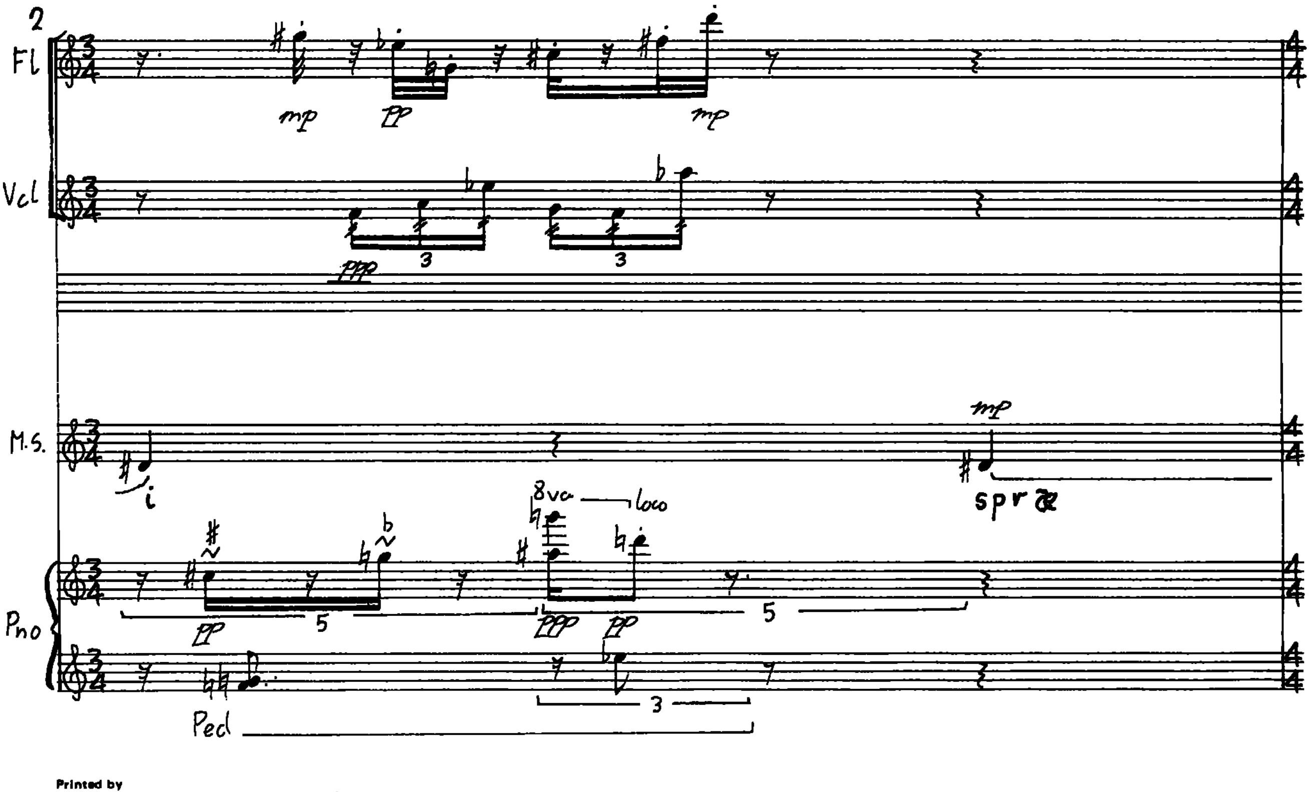
1
Fl
pp
mp
pp
sul pont.
trem.
5
3
3
Vcl
ppp
M.S.
mp
spr æ
(æ)
(i)
8va
Pno
5
5
pp
ppp
pp
Ped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Fl
mp
pp
mp
Vcl
ppp
3
3
M.S.
i
mp
spr æ
8va
loco
Pno
pp
5
ppp
pp
5
3
Ped

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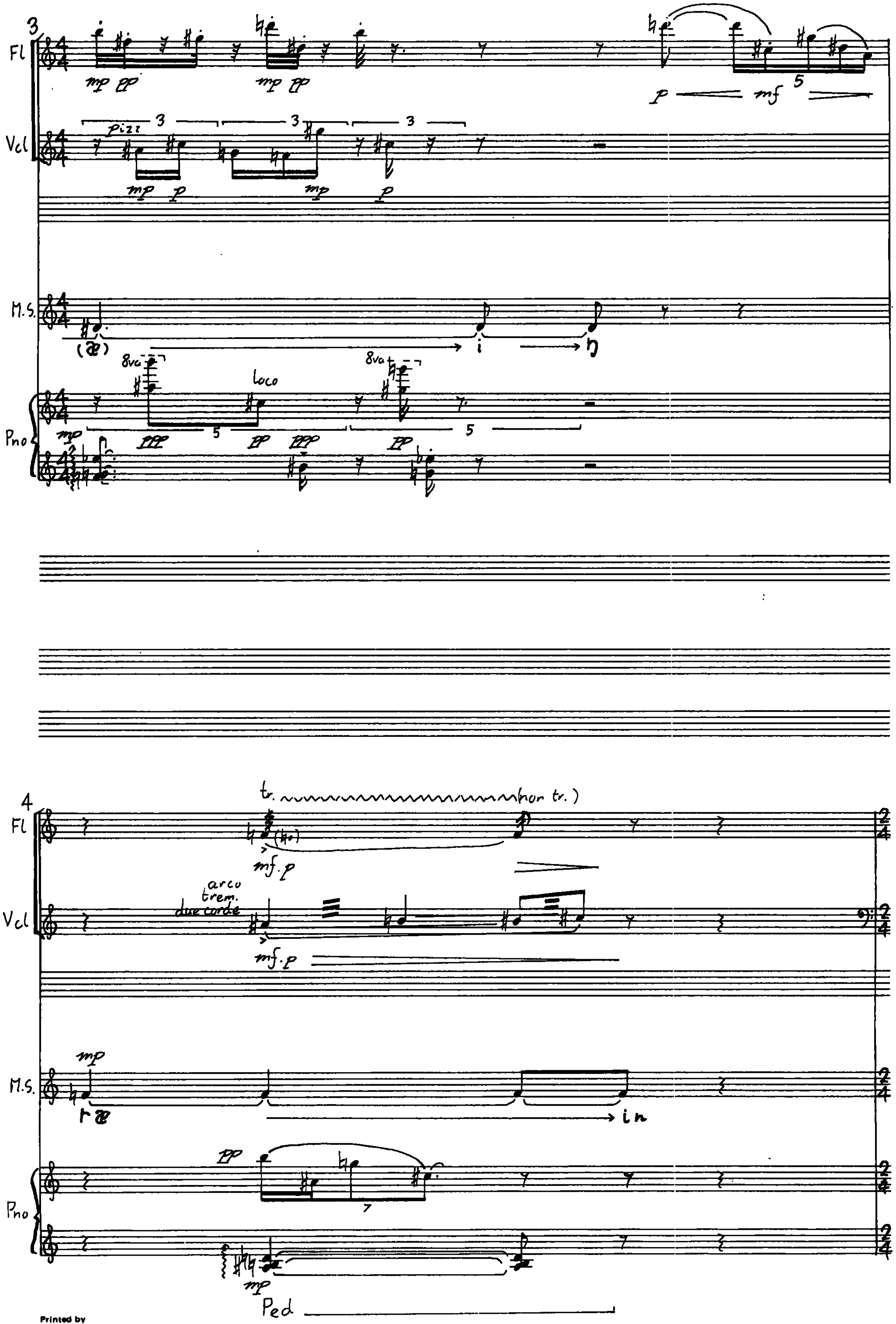
3
Fl
Vcl
M.S.
Pno
mp pp
mp pp
p
mf
5
pizz
3
mp
p
mp
p
(æ)
i
ŋ
8va
loco
8va
mp
ppp
pp
ppp
pp
5
4
tr.
(non tr.)
mf.p
arco
trem.
due corde
mf.p
mp
r æ
in
pp
7
mp
Ped

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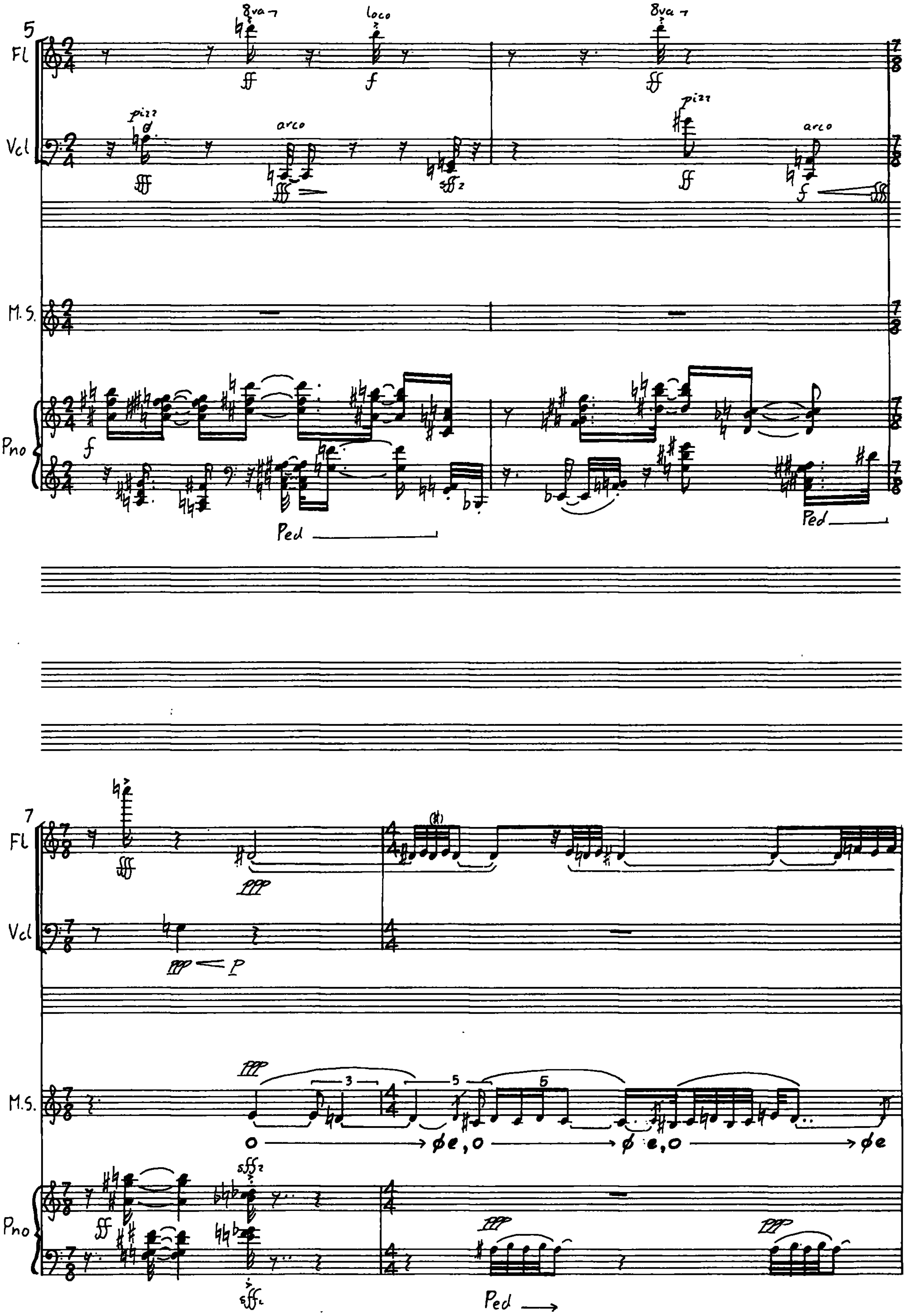
5
Fl
Vcl
M.S.
Pno
8va
loco
pizz
arco
fff
ff
f
sffz
Ped
7
ppp
p
sffz
o → øe,o → ø e,o → øe

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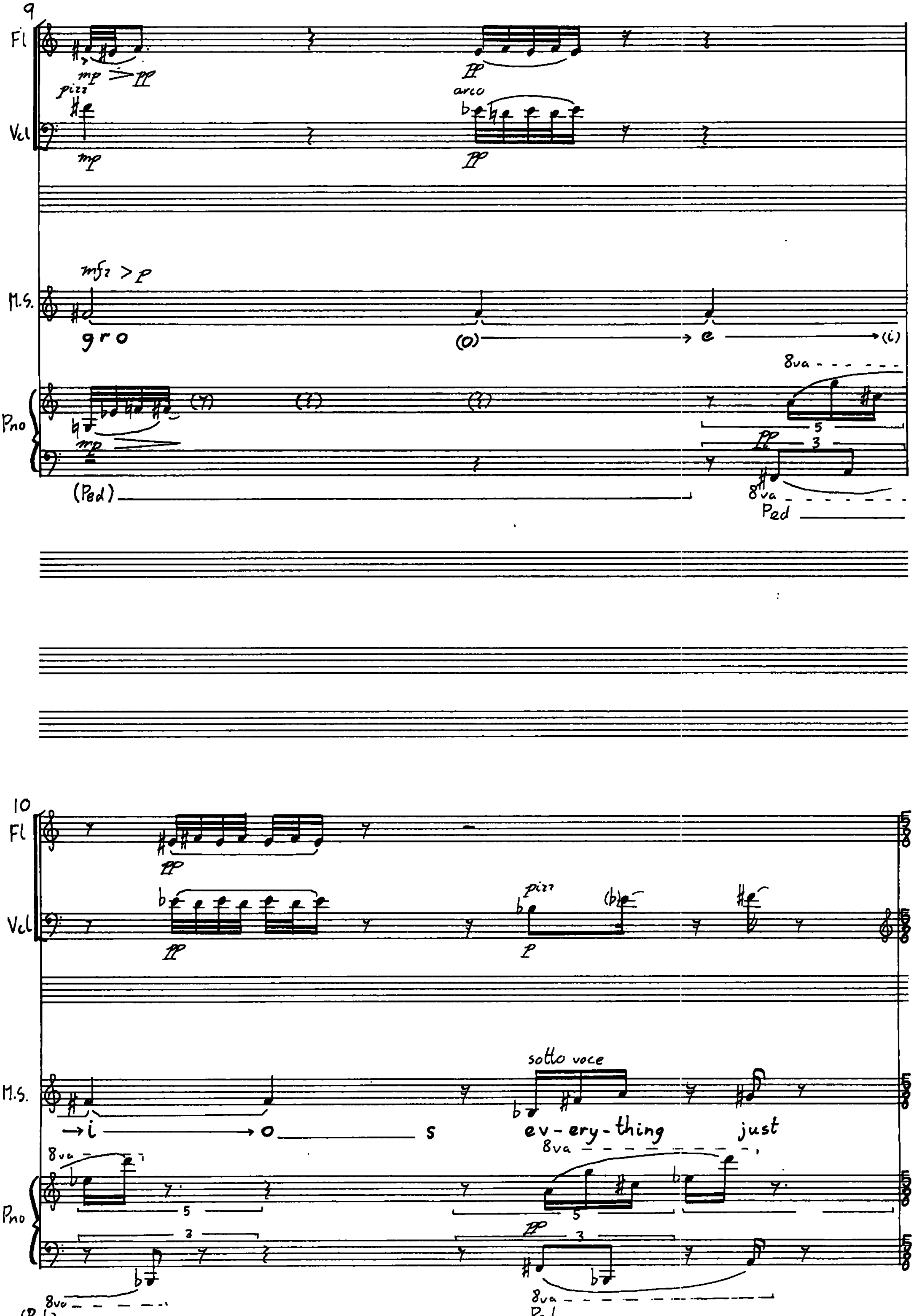
9
Fl
mp > pp
pp
pizz
Vcl
mp
arco
pp
M.S.
mfz > p
gro
(o)
e
(i)
Pno
mp
(Ped)
8va
pp
5
3
8va
Ped
10
Fl
pp
Vcl
pp
pizz
p
(b)
M.S.
→i
o
s
sotto voce
ev-ery-thing
just
8va
Pno
5
3
pp
8va
(Ped)
Ped

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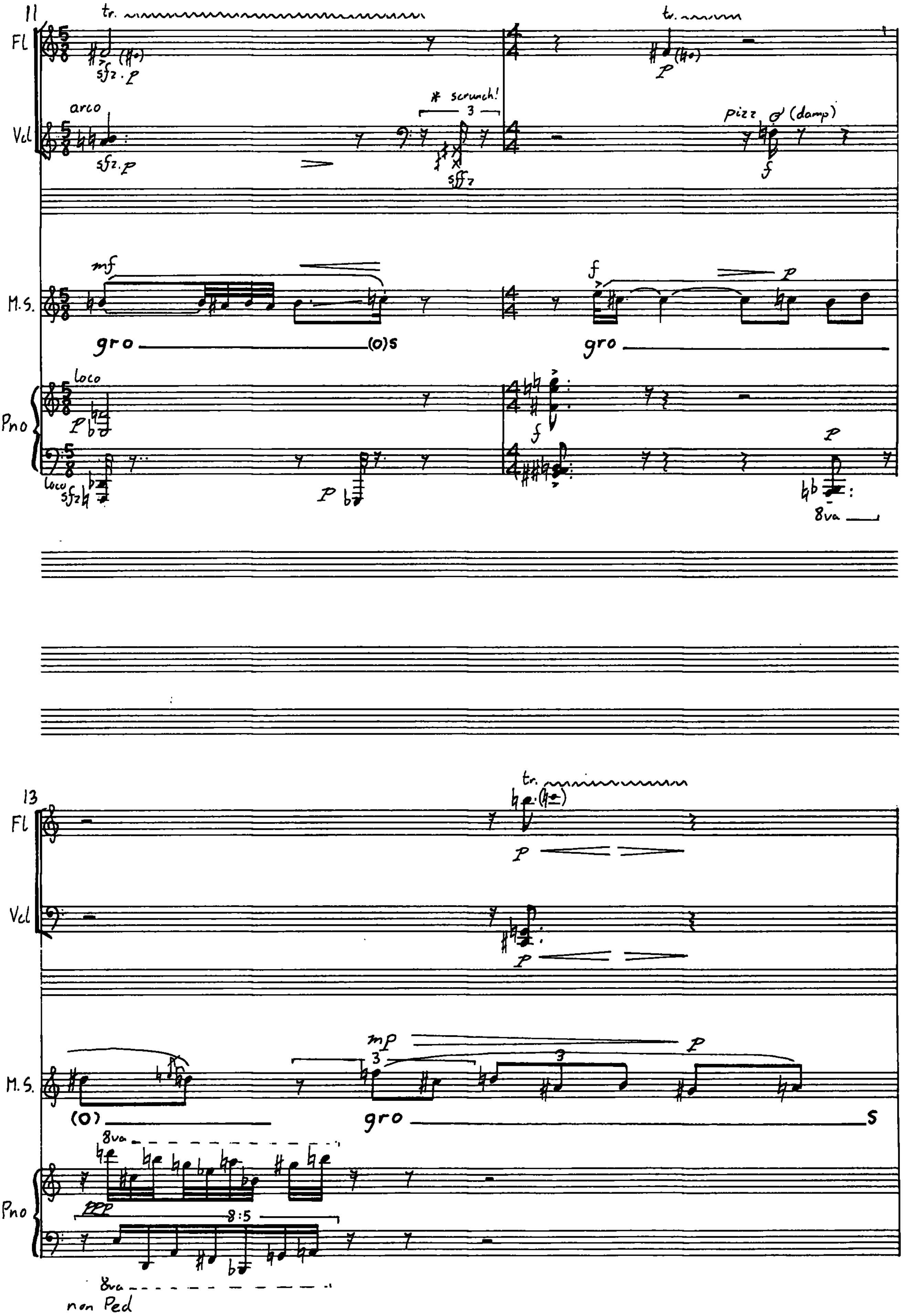
11
Fl
Vcl
M.S.
Pno
tr.
sfz. p
arco
sfz. p
* scrunch!
3
sffz
pizz
(damp)
f
mf
gro
(o)s
f
p
gro
loco
p
loco
sfz
p
f
p
8va
13
tr.
p
p
mp
3
3
p
(o)
gro
S
8va
ppp
8:5
8va
non Ped

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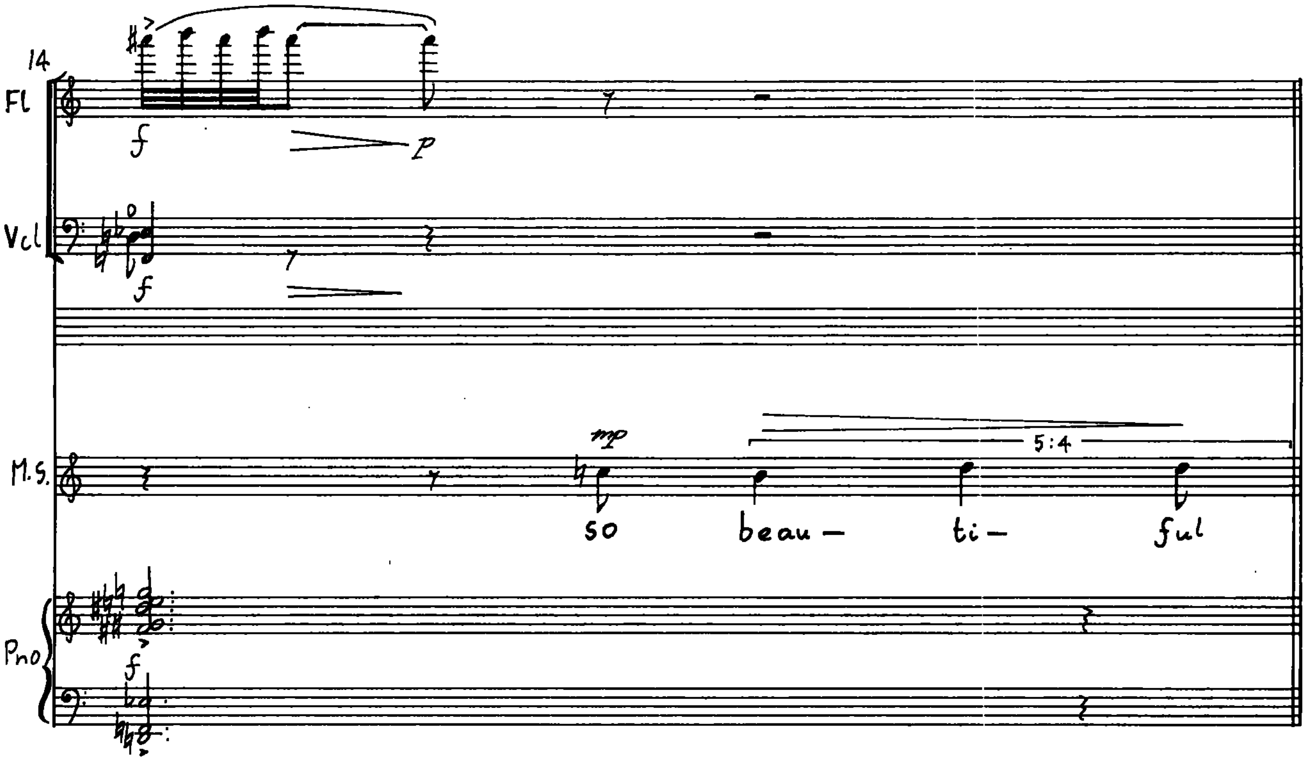
* scrunch! :- short unpitched scraping noise; intense bow pressure near bridge at the heel
damp immediately


14
Fl
f
p
Vcl
f
M.S.
mp
5:4
so beau – ti – ful
Pno
f

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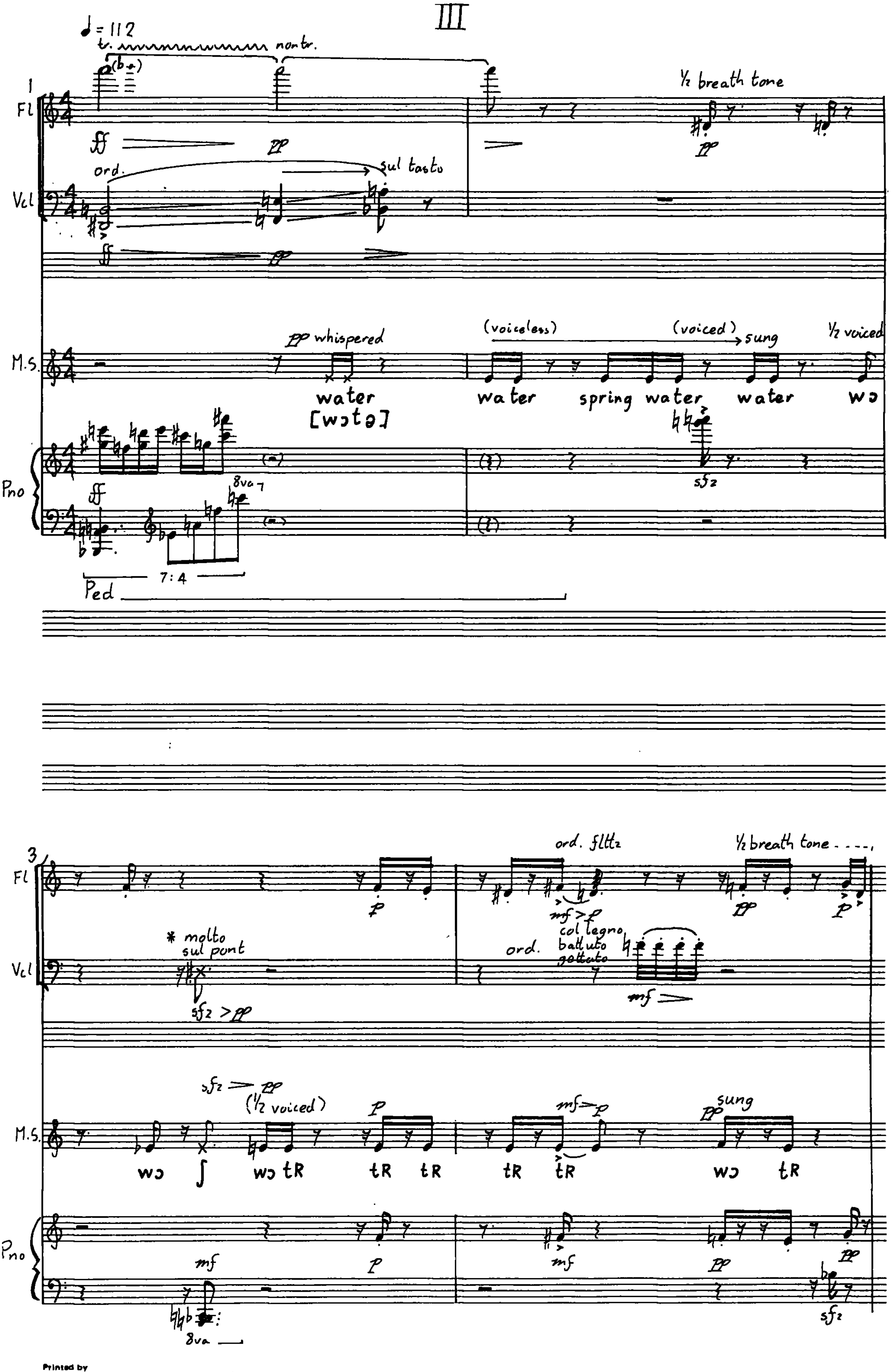
III


♩= 112
tr. non tr.
(b+)
Fl
Vcl
M.S.
Pno
ff
pp
ord.
sul tasto
½ breath tone
pp whispered
water
[wɔtə]
(voiceless)
(voiced)
sung
½ voiced
water spring water water wɔ
sfz
8va
7:4
Ped
3
p
* molto sul pont
sfz > pp
ord. flttz
mf > p
col legno battuto gettato
ord.
mf
½ breath tone
sfz > pp
(½ voiced)
wɔ ʃ wɔ tR tR tR
tR tR wɔ tR
mf > p
sung
pp
mf
p
8va

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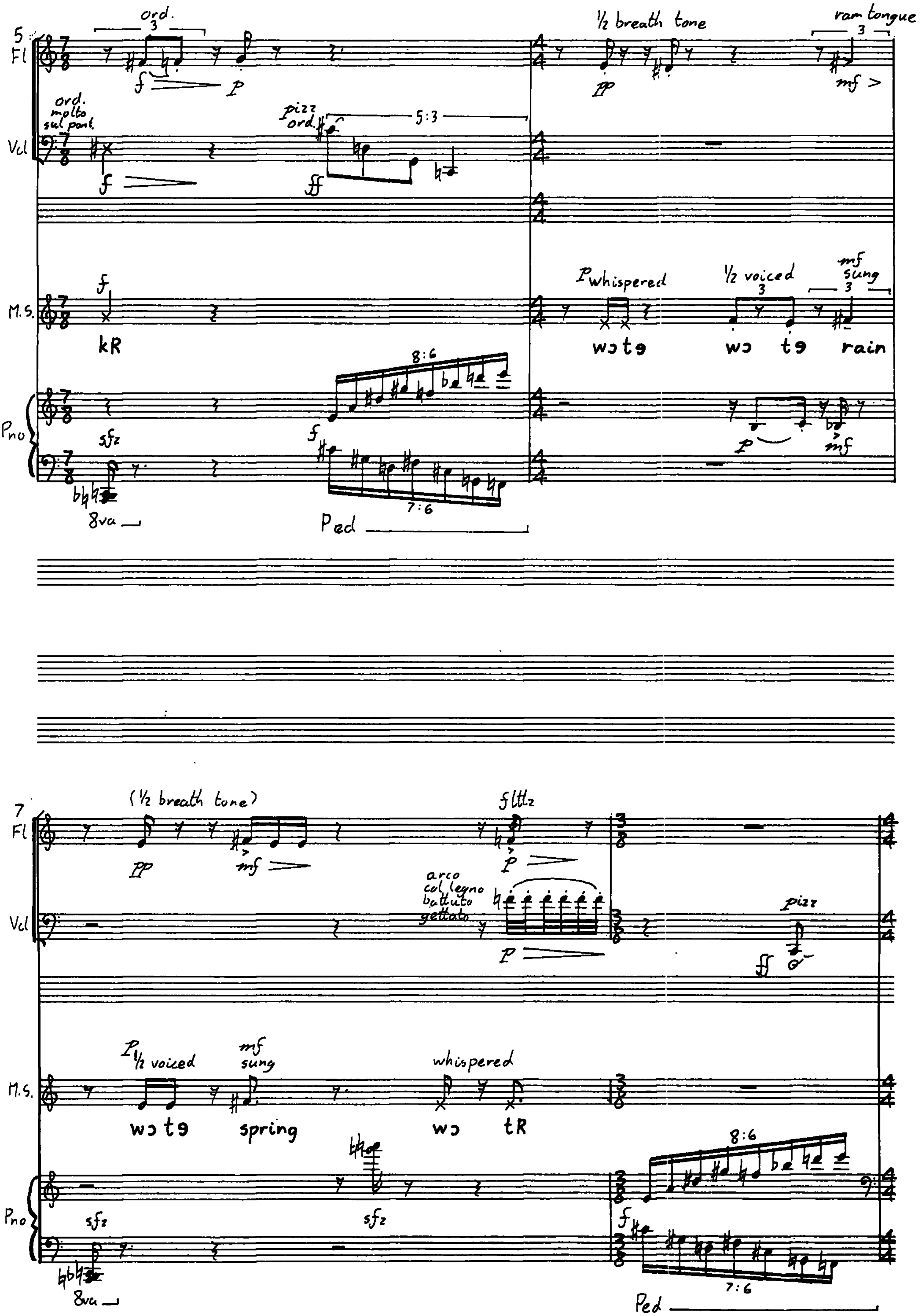
* sustained unpitched scraping noise : intense bow pressure, near bridge


5
Fl
Vcl
M.S.
Pno
ord.
3
ord.
molto
sul pont.
pizz
ord.
5:3
1/2 breath tone
ram tongue
3
P whispered
1/2 voiced
3
mf
sung
3
kR
wɔ tə
wɔ tə
rain
8:6
7:6
sfz
8va
Ped
7
(1/2 breath tone)
fltz
arco
col legno
battuto
gettato
pizz
P 1/2 voiced
mf
sung
whispered
wɔ tə
spring
wɔ
tR
sfz
sfz
8va
8:6
7:6
Ped

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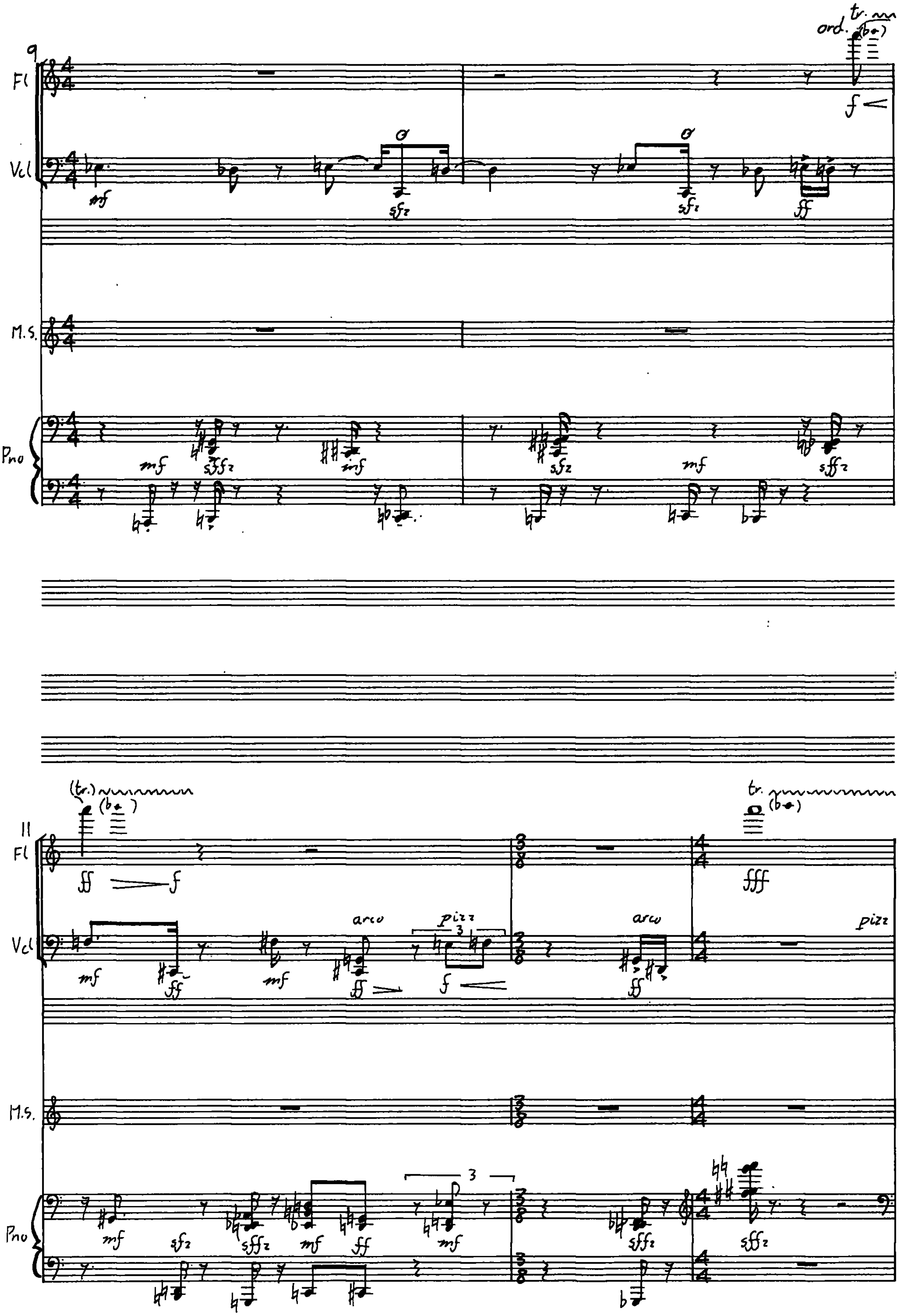
9
Fl
Vcl
M.S.
Pno
ord.
tr.
(b●)
f
mf
sfz
ff
sffz
11
(tr.)
ff
f
mf
arco
pizz
3
fff
sffz

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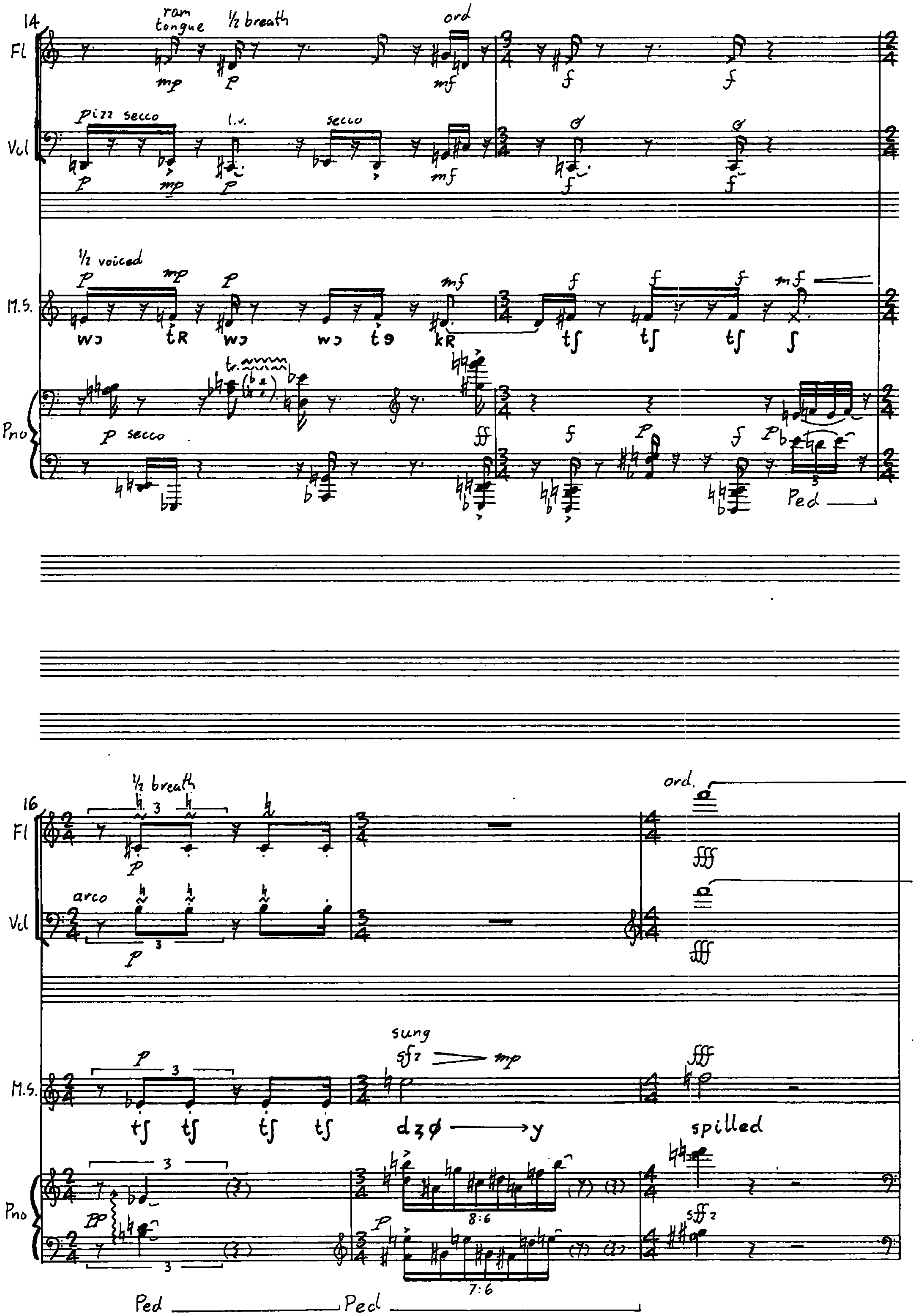
14
Fl
Vcl
M.S.
Pno
ram tongue
½ breath
ord
mp
p
mf
f
f
pizz secco
l.v.
secco
p
mp
p
mf
f
f
½ voiced
p
mp
p
mf
f
f
f
mf
wɔ
tR
wɔ
wɔ
tə
kR
tʃ
tʃ
tʃ
ʃ
tr.
p secco
fff
f
p
f
p
3
Ped
16
½ breath
3
p
arco
p
3
ord.
fff
fff
sung
sfz
mp
p
3
tʃ
tʃ
tʃ
tʃ
dʒø
y
fff
spilled
3
8:6
pp
3
p
7:6
sffz
Ped
Ped

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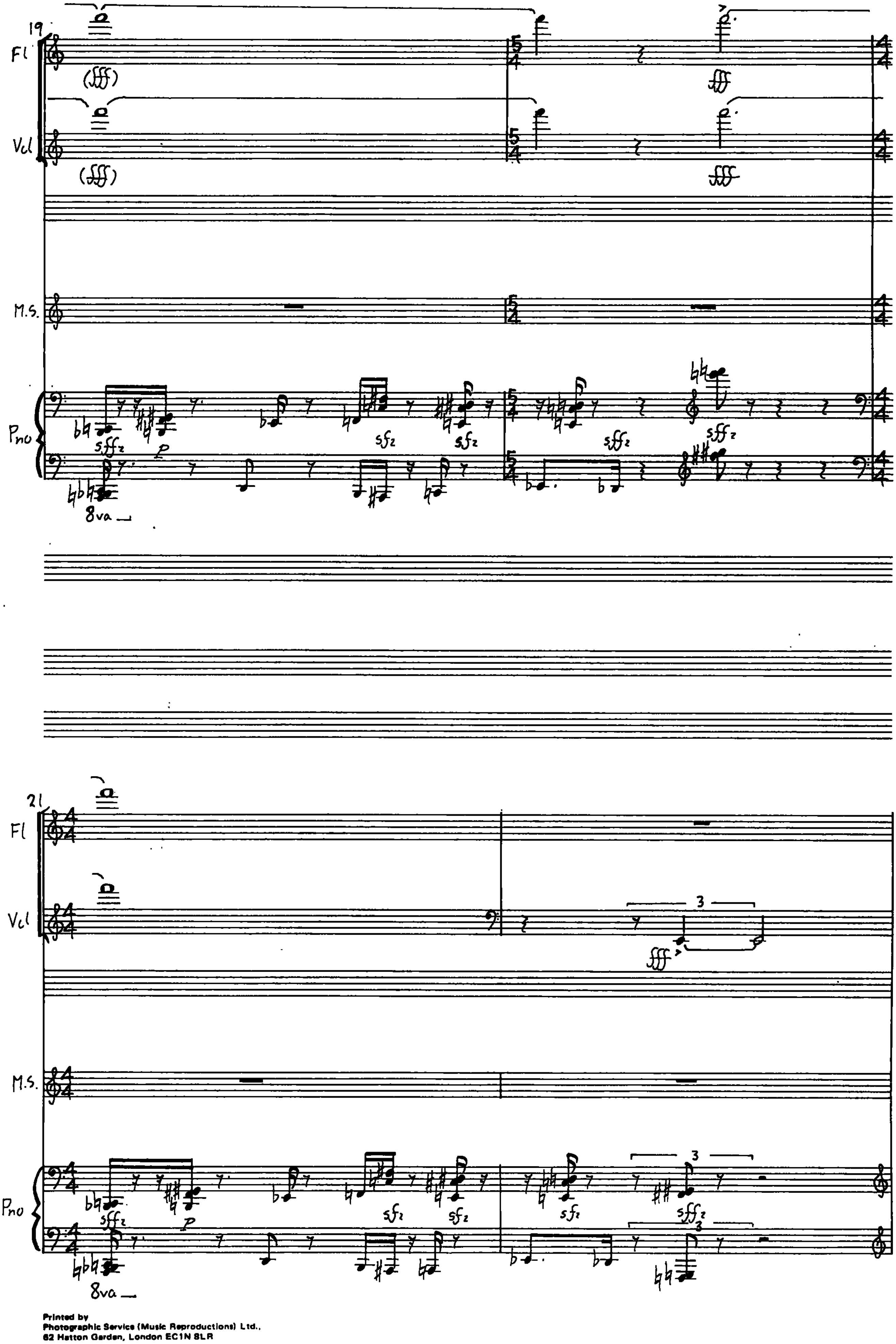
19
Fl
(fff)
Vcl
(fff)
fff
fff
M.S.
Pno
sffz
p
sfz
sfz
sffz
sffz
8va
21
Fl
Vcl
3
fff
M.S.
Pno
sffz
p
sfz
sfz
sfz
3
sffz
3
8va

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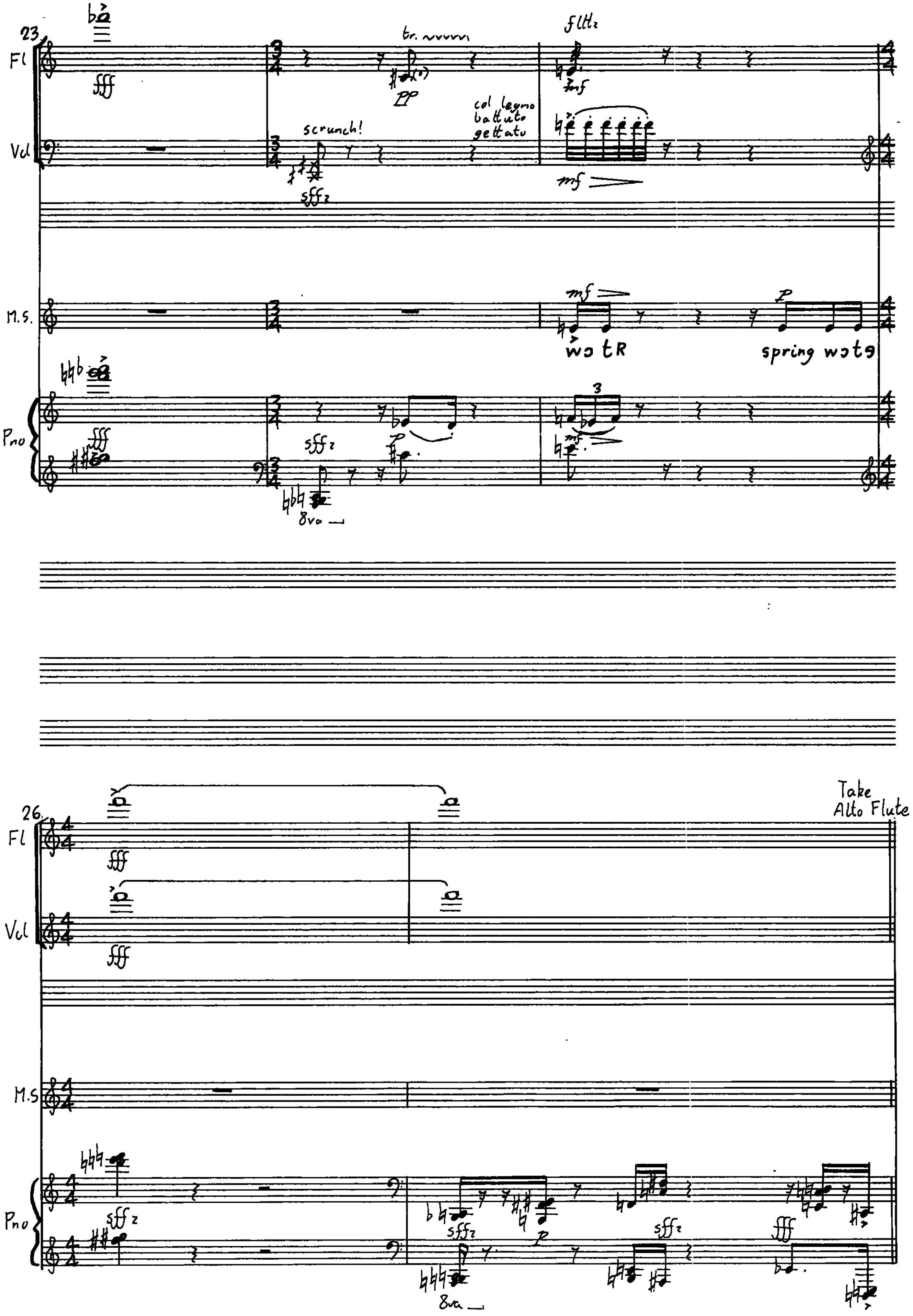
23
Fl
Vcl
M.S.
Pno
sfff
tr.
pp
scrunch!
sffz
col legno
battuto
gettato
flttz
mf
mf
wɔ tR
p
spring wɔtə
sfff
3
sffz
p
8va
26
Fl
Vcl
M.S
Pno
Take
Alto Flute
fff
fff
sffz
sffz
p
sffz
fff
8va

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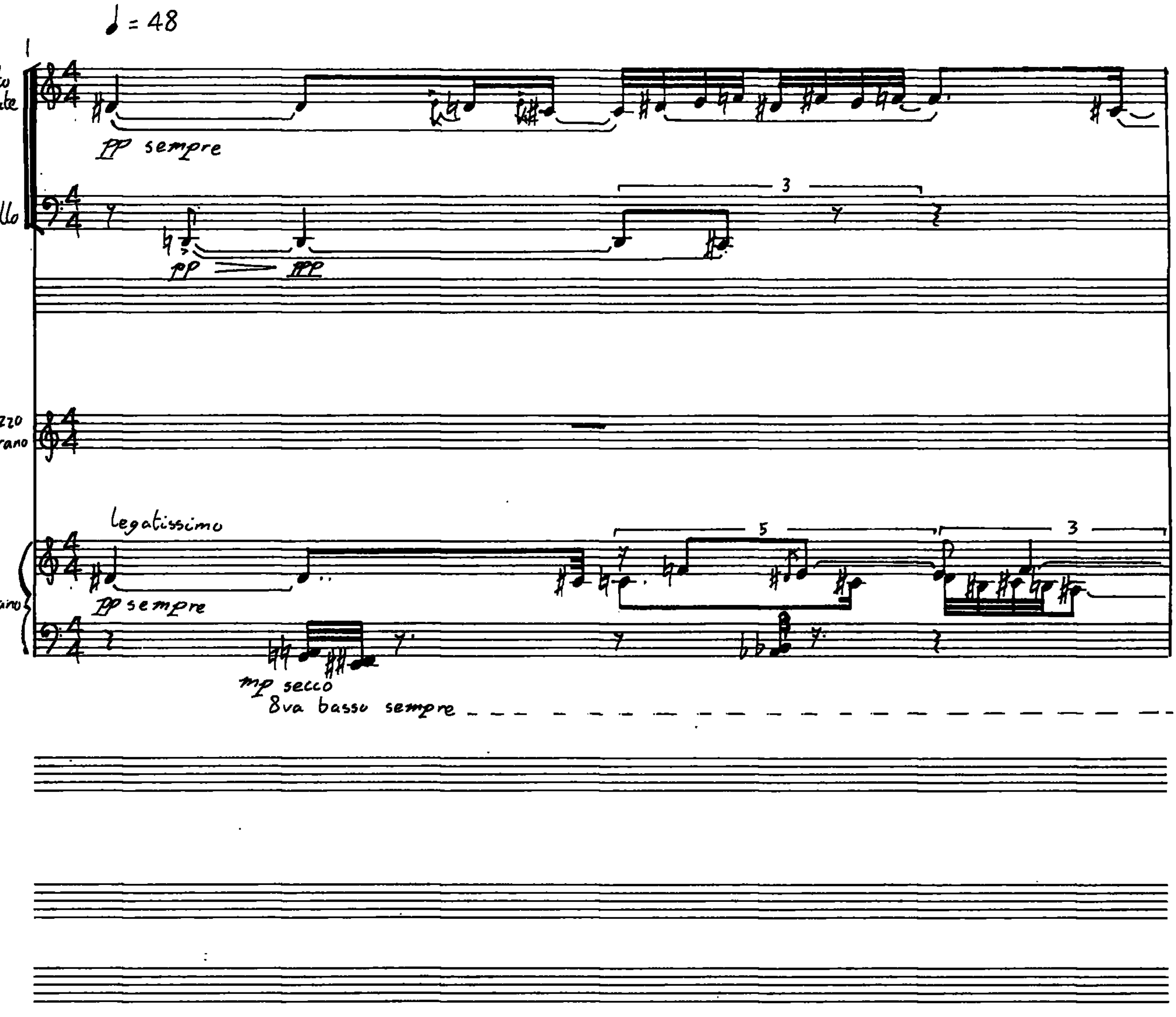
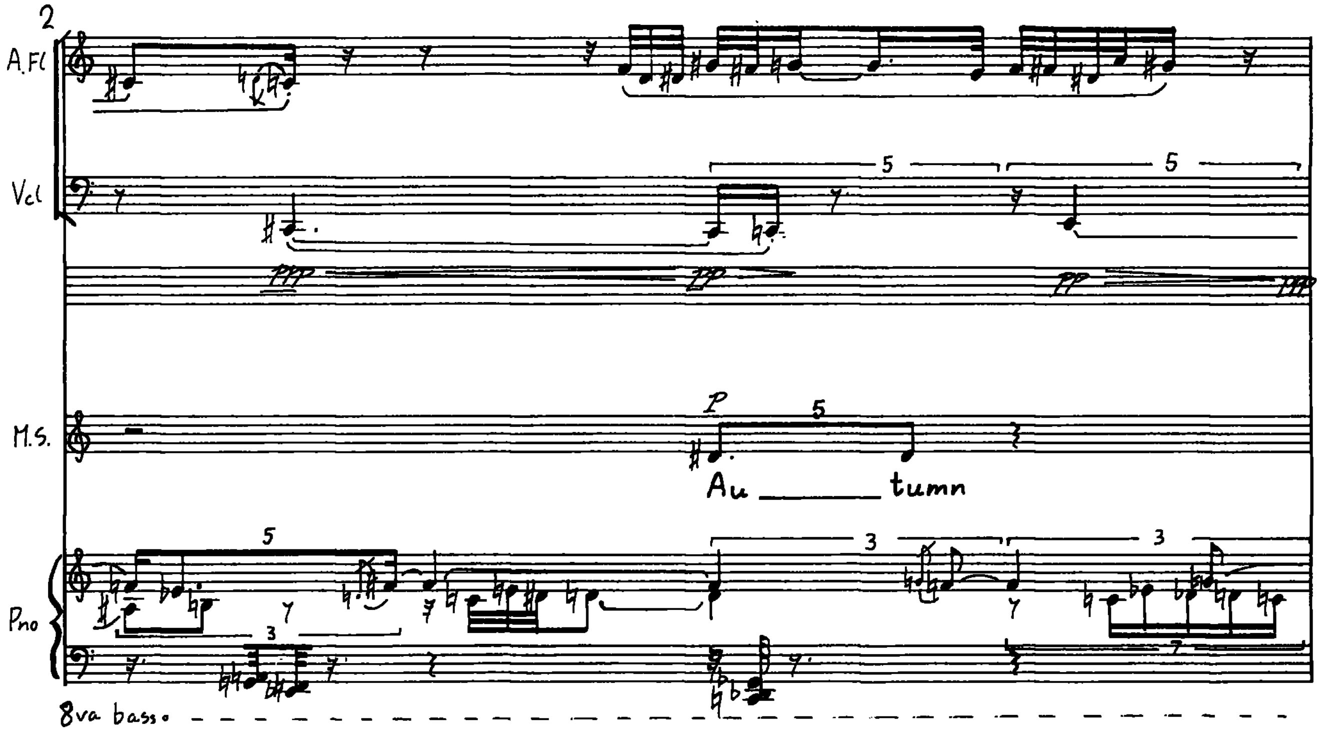
IV


♩= 48
1
Alto Flute
Cello
Mezzo Soprano
Piano
pp sempre
pp
ppp
Legatissimo
pp sempre
mp secco
8va basso sempre
3
5
3


2
A.Fl
Vcl
M.S.
Pno
ppp
pp
pp
ppp
p
5
Au
tumn
5
3
3
3
7
5
5
8va basso

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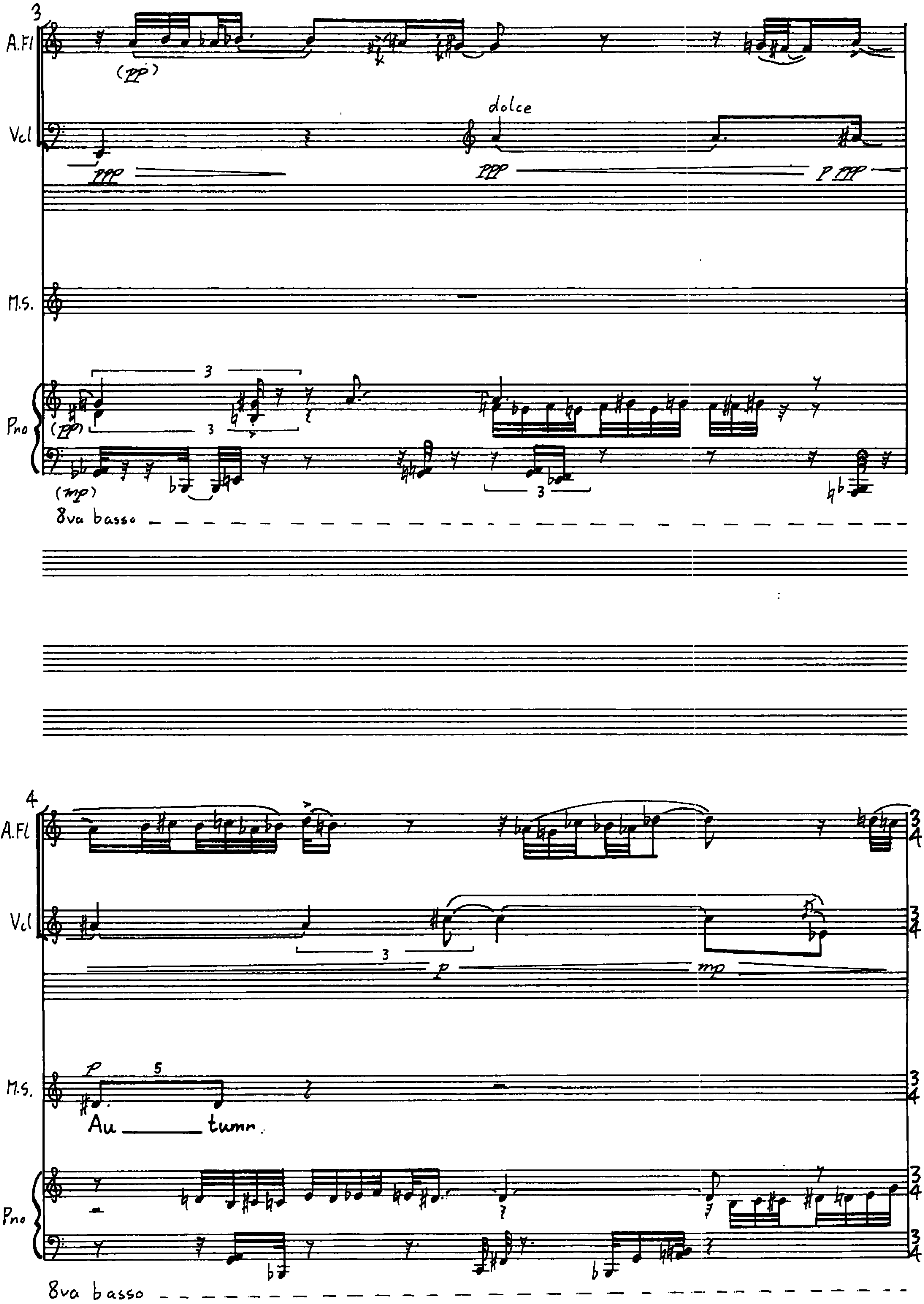
3
A.Fl
(pp)
Vcl
dolce
ppp
ppp
p ppp
M.S.
3
3
Pno
(pp)
(mp)
3
8va basso
4
A.Fl
Vcl
3
p
mp
3
4
M.S.
p
5
Au
tumn
Pno
8va basso

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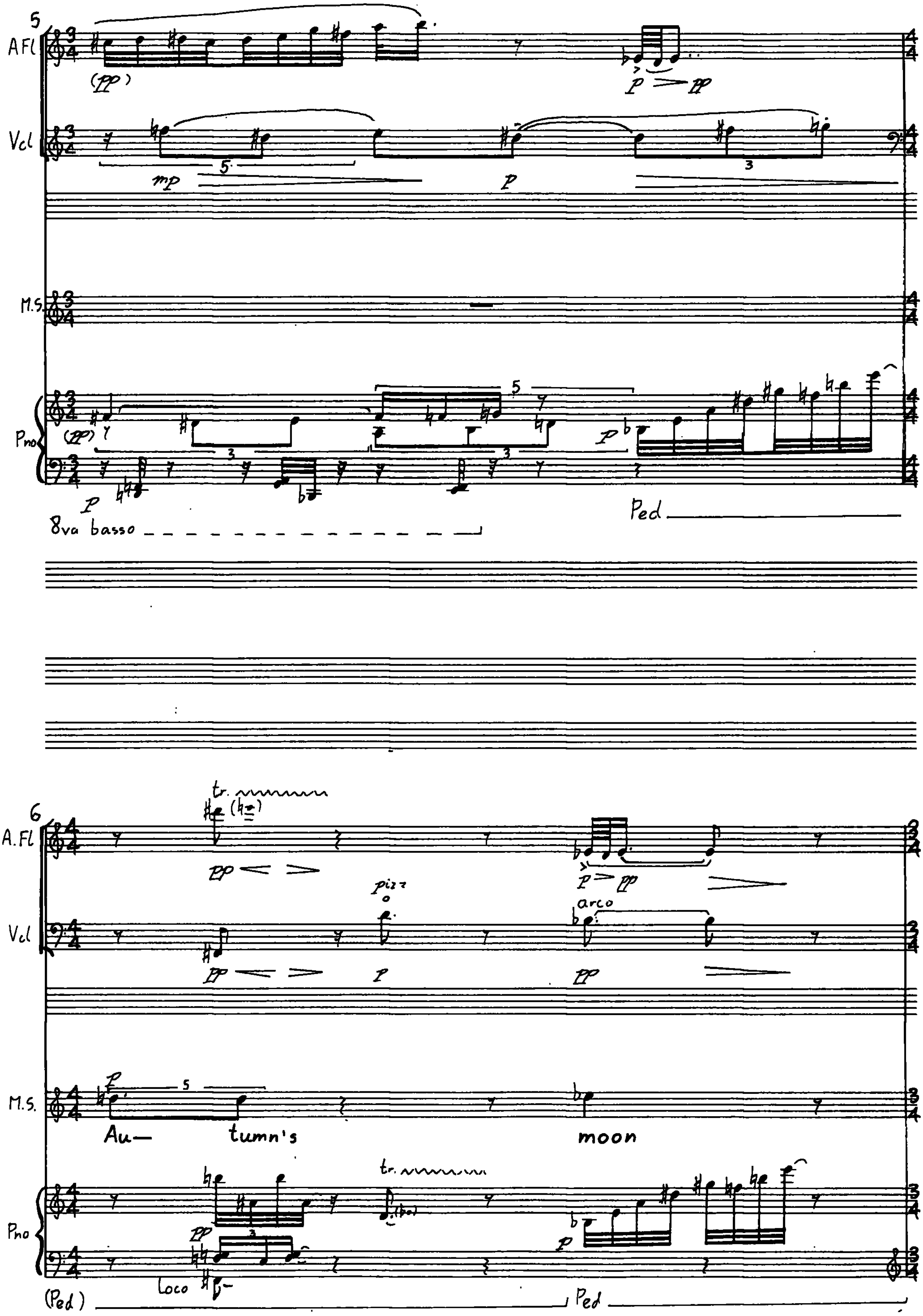
5
A Fl
(pp)
p > pp
Vcl
mp
5
p
3
M.S.
Pno
(pp)
p
3
5
3
Ped
8va basso
6
A. Fl
tr.
pp < >
p > pp
pizz
arco
Vcl
pp < >
p
pp
M.S.
p
5
Au—
tumn's
moon
tr.
Pno
pp
3
p
Loco
(Ped)
Ped

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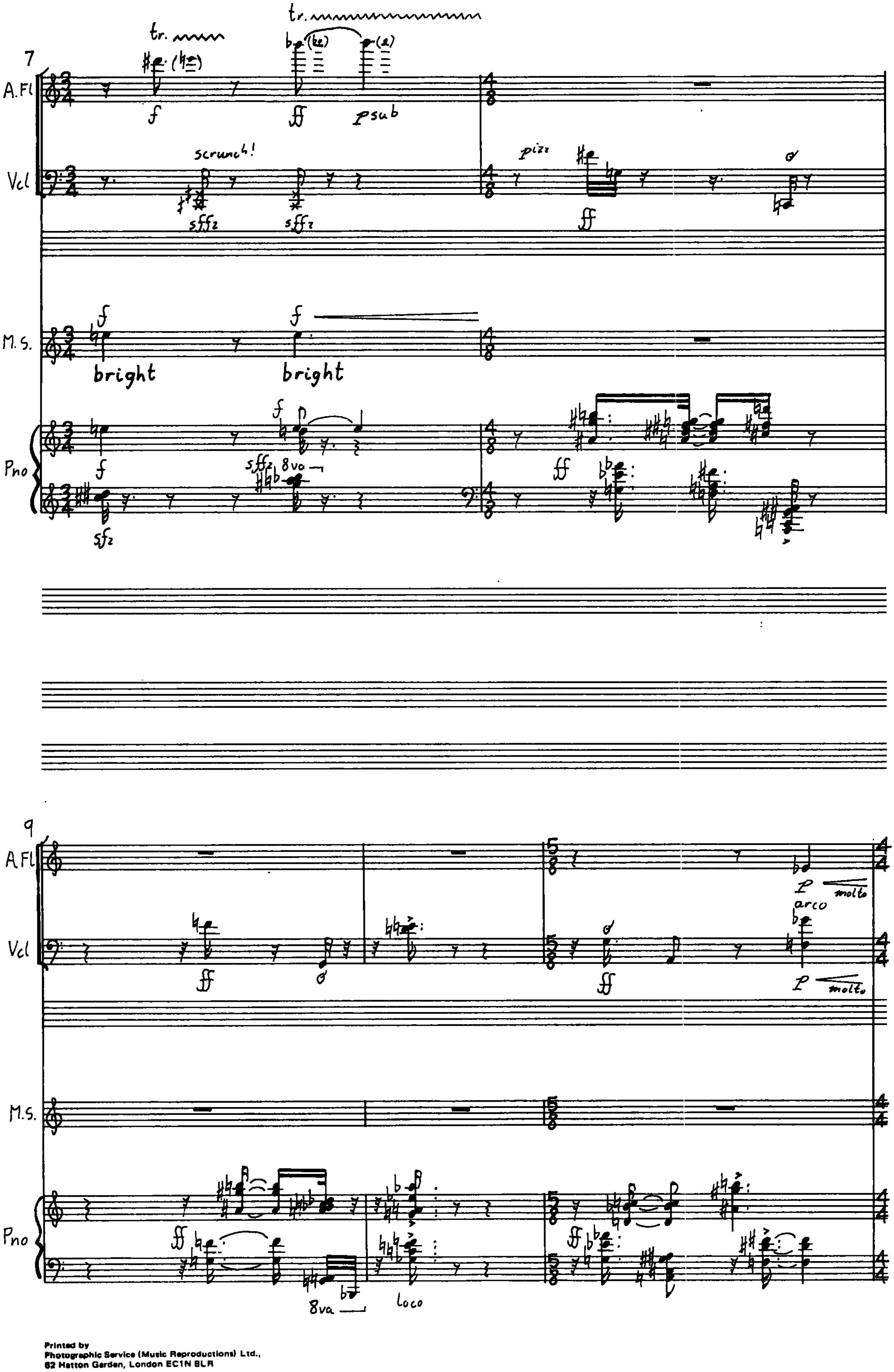
7
A.Fl
Vcl
M.S.
Pno
tr.
tr.
f
ff
p sub
scrunch!
sffz
sffz
pizz
ff
f
f
bright
bright
f
f
sffz
8va
sfz
ff
9
A.Fl
Vcl
M.S.
Pno
p
molto
arco
ff
ff
p
molto
ff
ff
8va
loco

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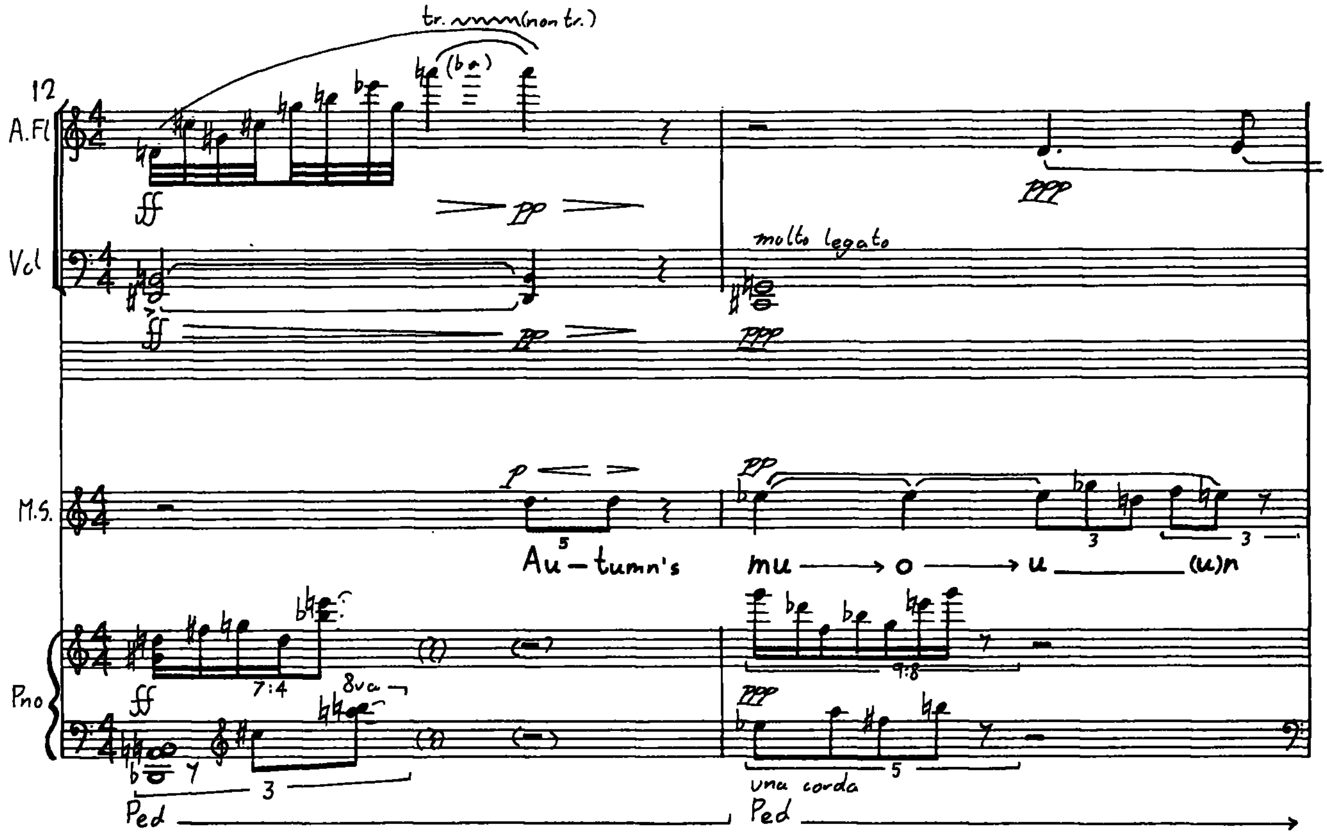
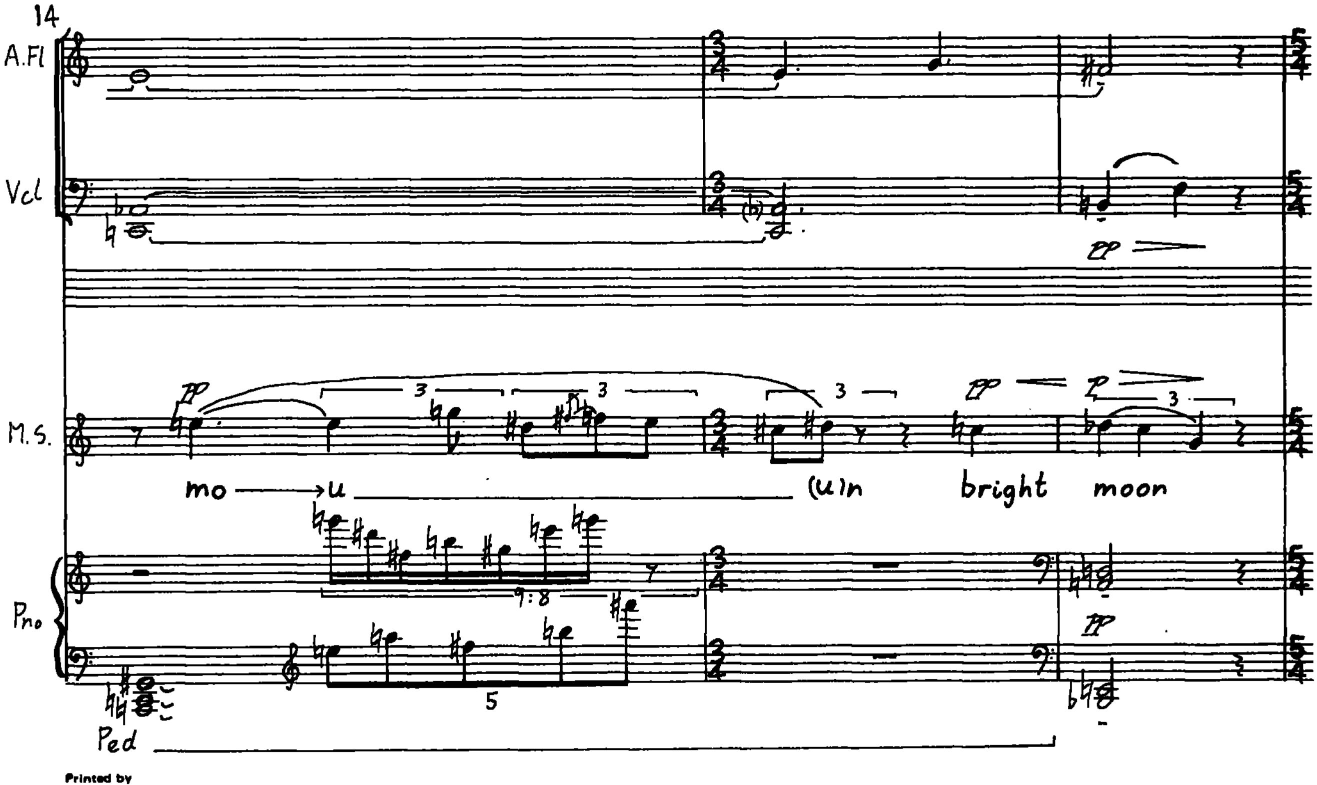

12
A.Fl
Vcl
M.S.
Pno
tr. (non tr.)
ff
pp
ppp
molto legato
p
Au – tumn's
mu ⟶ o ⟶ u (u)n
7:4
8va
3
5
9:8
una corda
Ped
Ped


14
A.Fl
Vcl
M.S.
Pno
pp
mo ⟶ u (u)n bright moon
3
9:8
5
Ped

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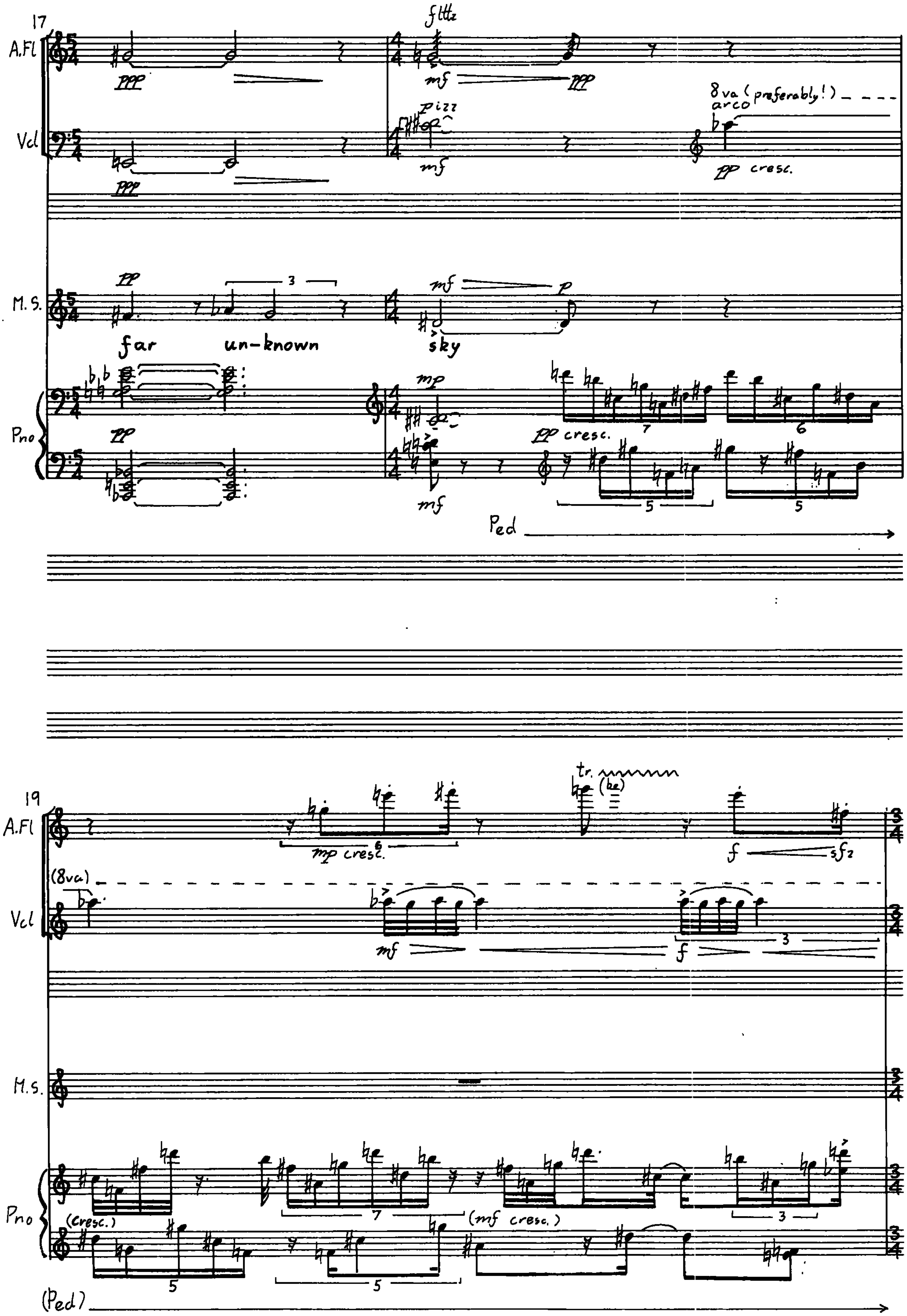
17
A.Fl
Vcl
M.S.
Pno
ppp
fltt
mf
pizz
8va (preferably!)
arco
pp cresc.
pp
3
far un-known sky
mf
p
mp
pp cresc.
7
6
5
Ped
19
tr.
mp cresc.
f
sfz
(8va)
mf
f
(cresc.)
(mf cresc.)
3
(Ped)

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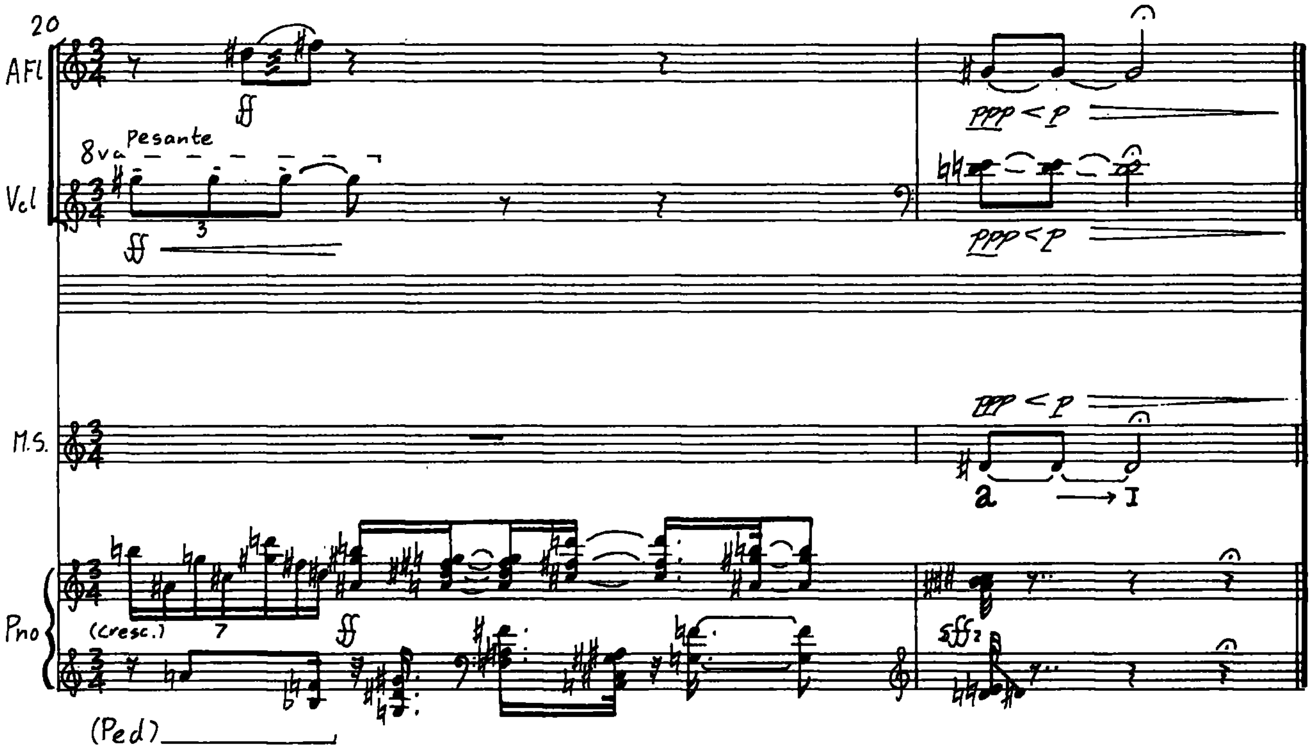
20
AFl
Vcl
M.S.
Pno
8va
Pesante
ff
3
ppp < p
(cresc.)
7
ff
sffz
(Ped)
a → I

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Paul Archbold

Elements of Iridescence
(1991)

for flute, violin, viola, cello

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24 FEB 1999

Elements of Iridescence

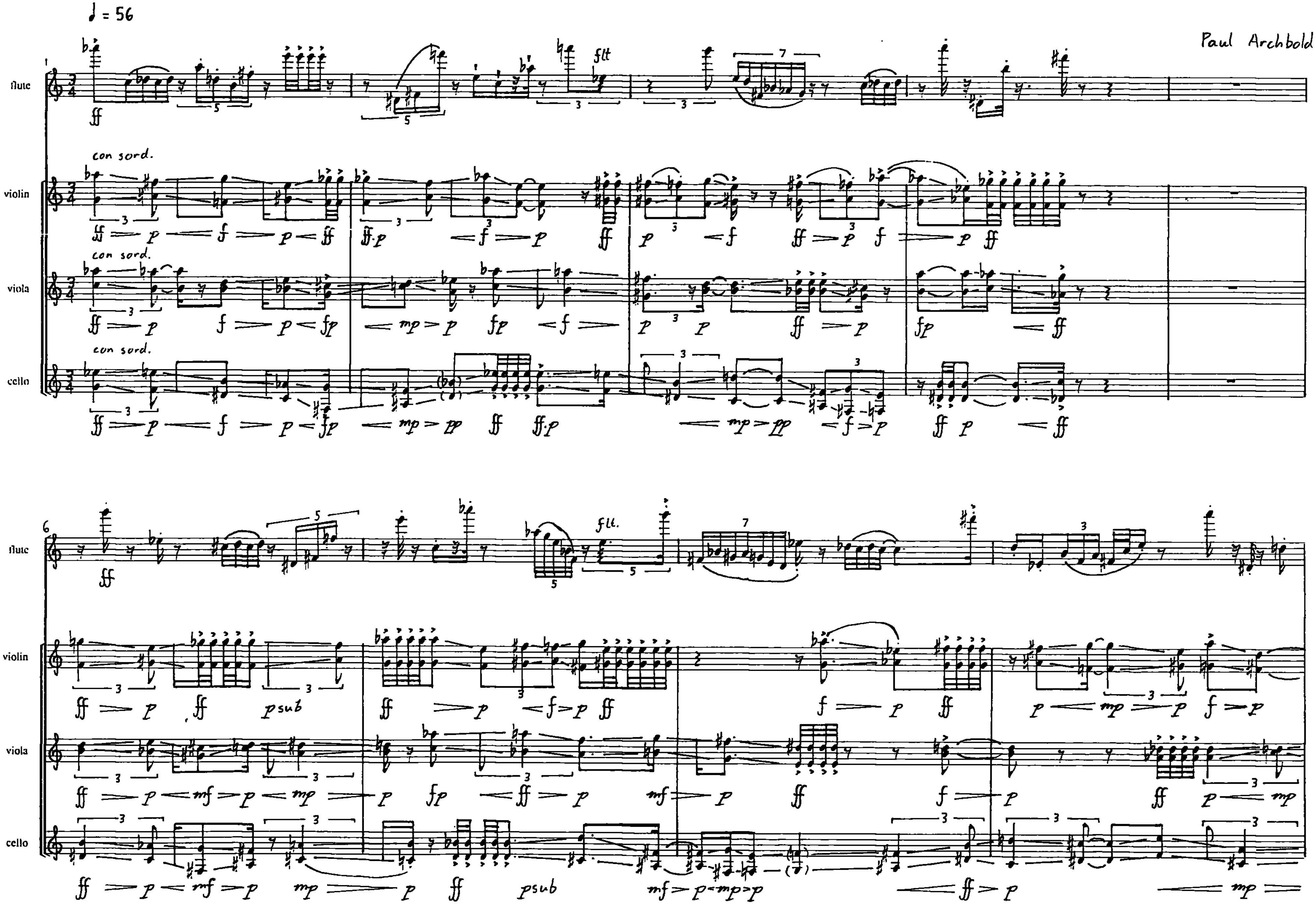
flute (doubling piccolo)
violin
viola
cello

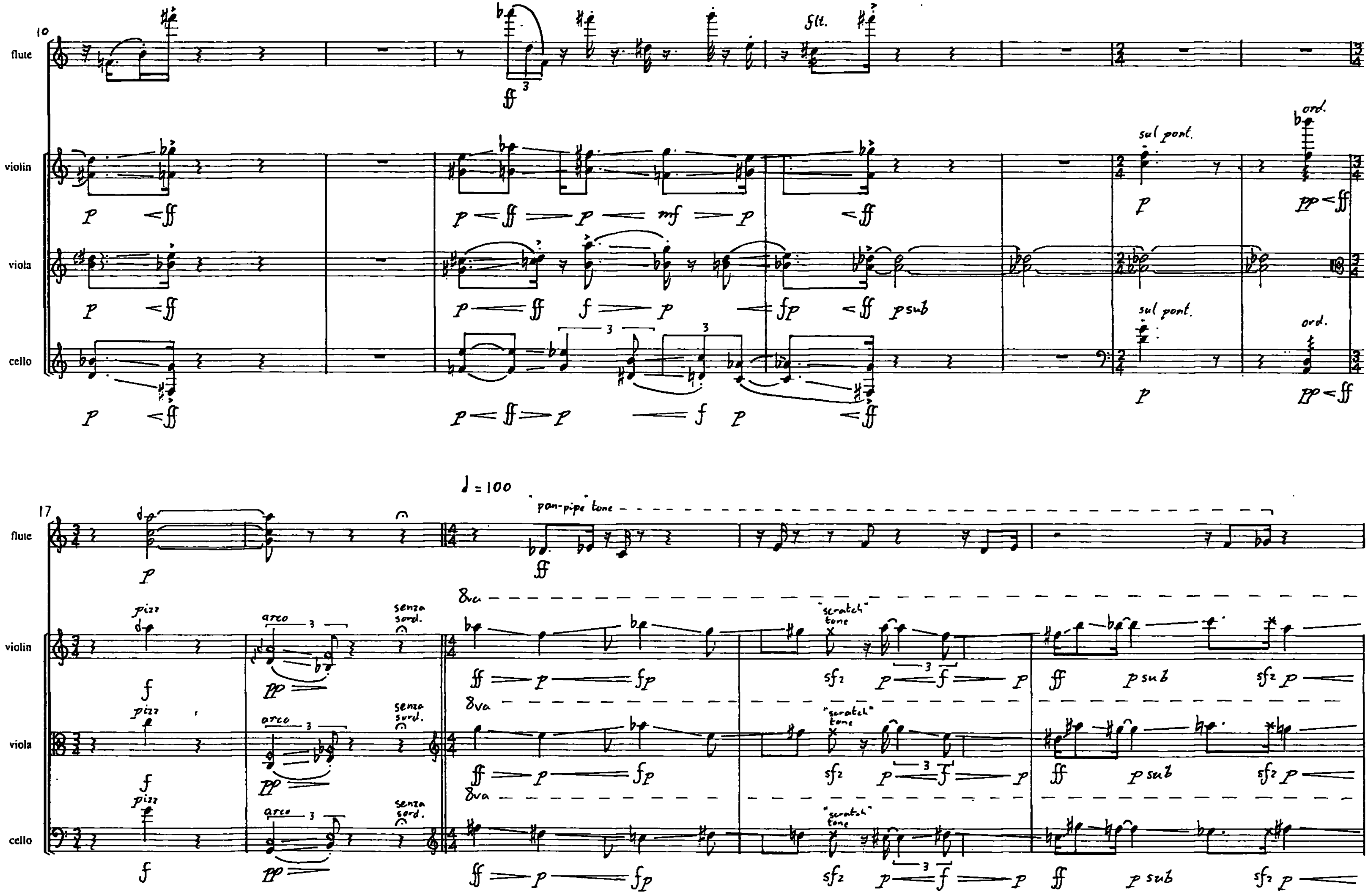
Duration 5 minutes

Thesis ++
1998/
ARC

Elements of Iridescence

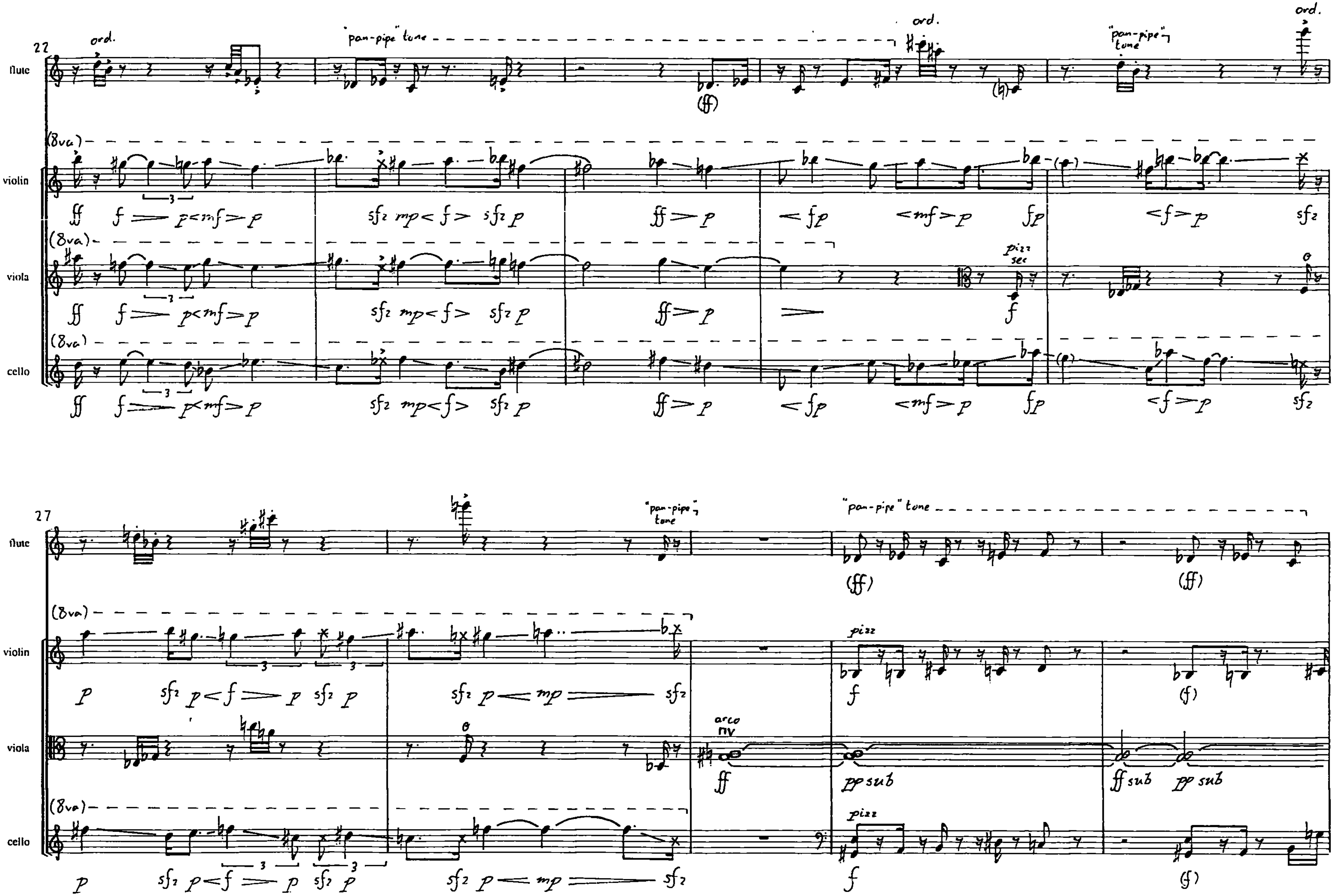
Paul Archbold

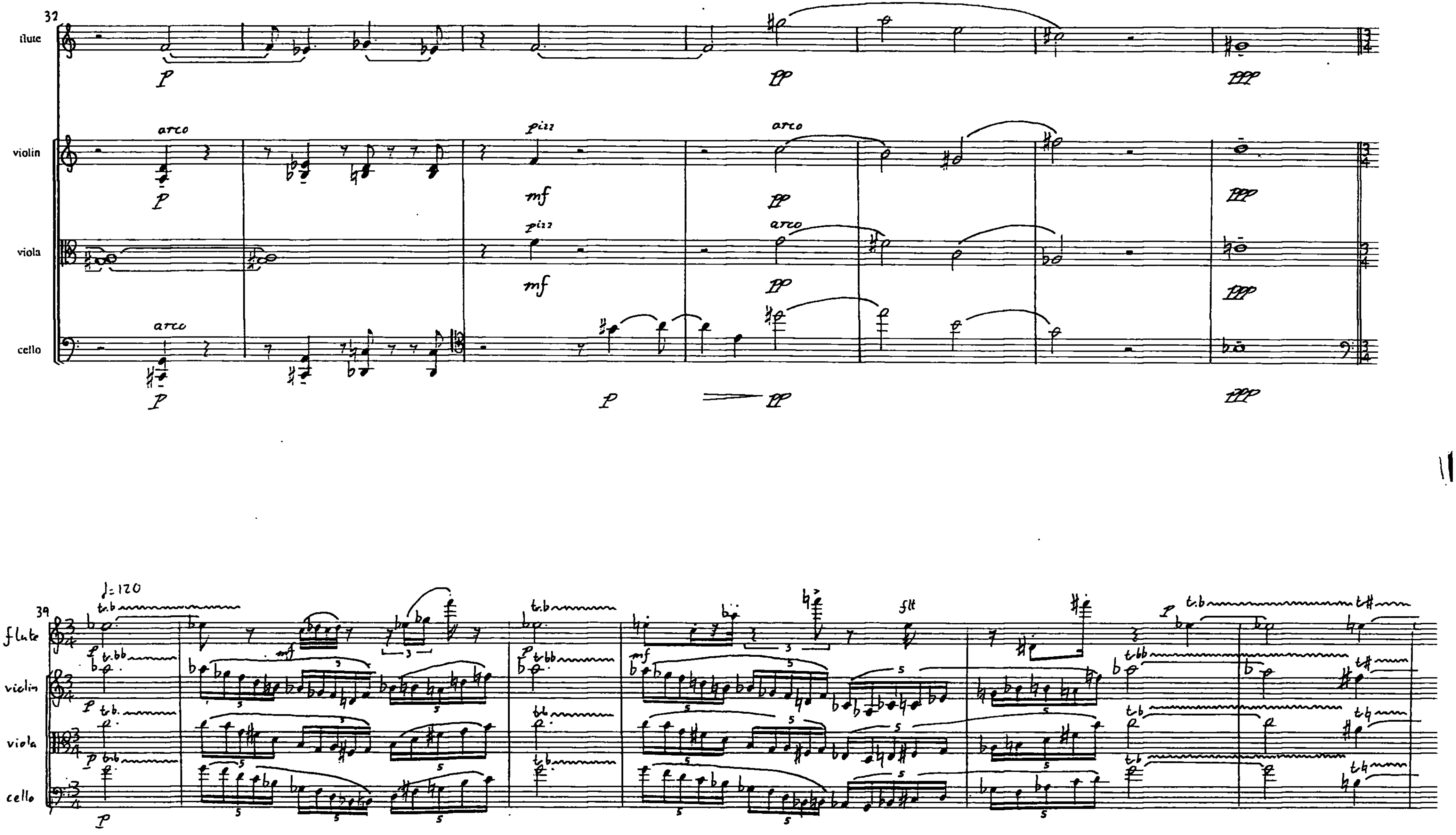

♩ = 56
1
flute
violin
viola
cello
con sord.
con sord.
con sord.
flt
6
flt.
psub
psub

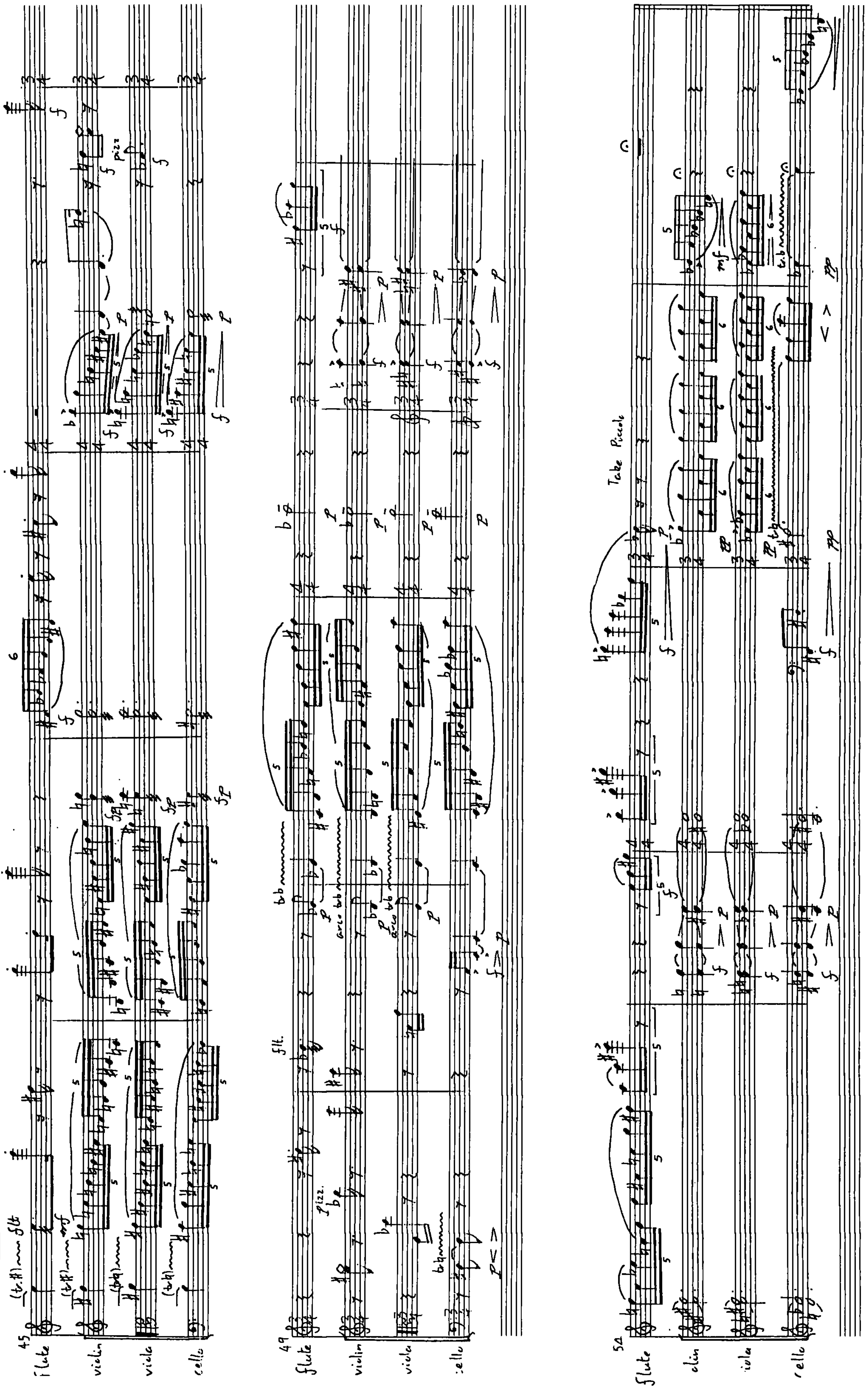


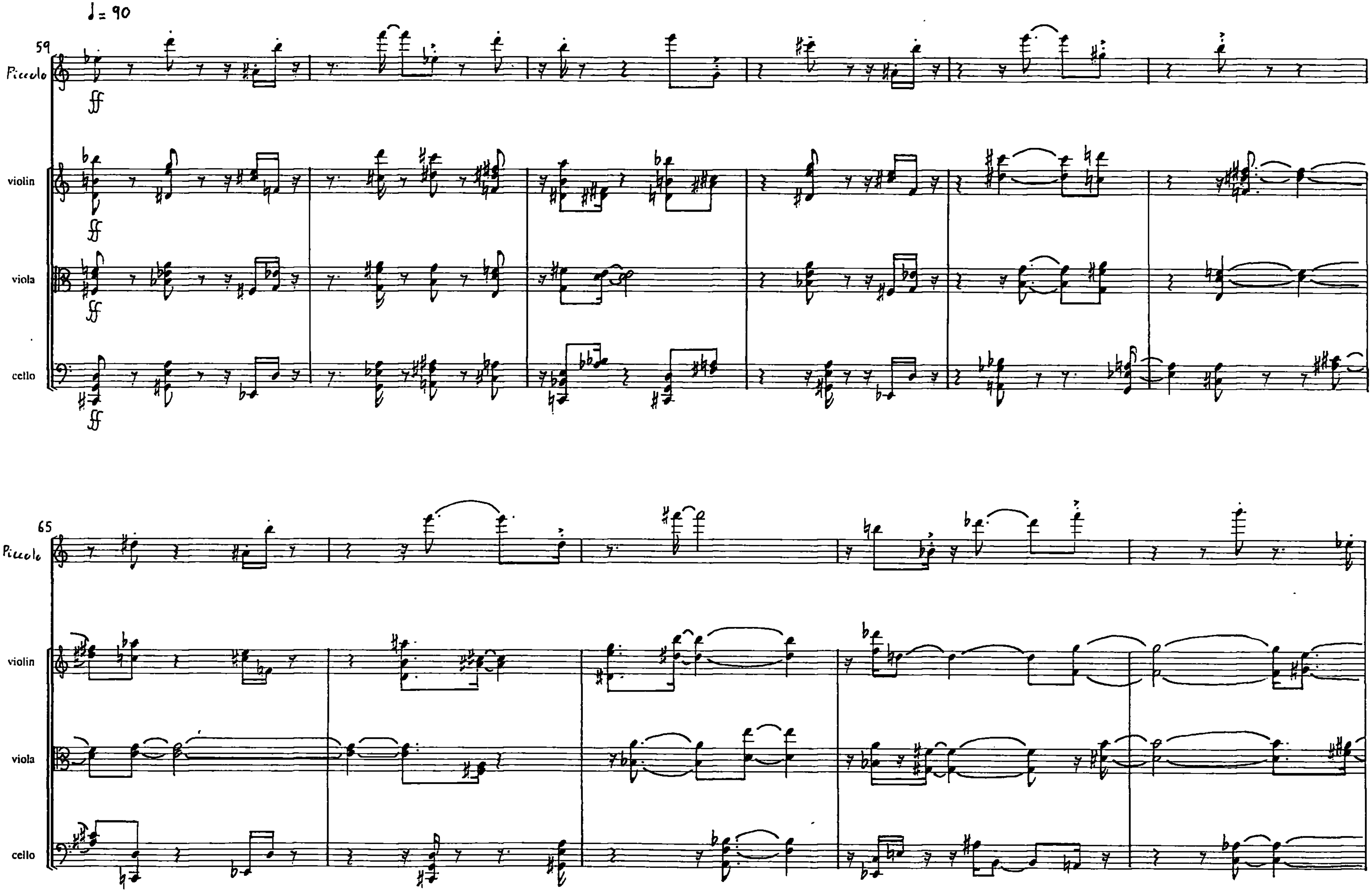
10
flute
violin
viola
cello
flz.
sul pont.
ord.
p sub
17
♩ = 100
"pan-pipe" tone
pizz
arco
senza sord.
8va
"scratch" tone
p sub
sf₂

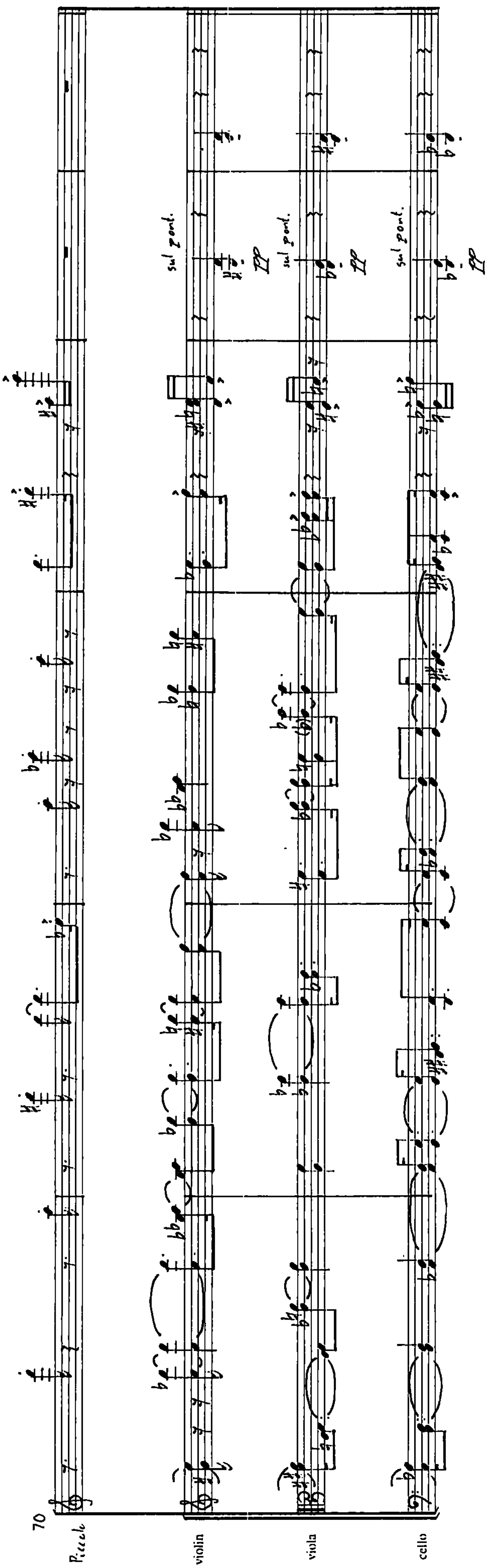
X = "scratch" tone: sul ponticello, intense bow pressure


22
flute
violin
viola
cello
ord.
"pan-pipe" tone
(ff)
ord.
"pan-pipe" tone
ord.
(8va)
ff f > p < mf > p
sf2 mp < f > sf2 p
ff > p
< fp
< mf > p
fp
< f > p
sf2
pizz sec
f
27
"pan-pipe" tone
"pan-pipe" tone
(ff)
(ff)
p
sf2 p < f > p sf2 p
sf2 p < mp > sf2
pizz
f
(f)
arco
ff
pp sub
ff sub
pp sub


32
flute
violin
viola
cello
arco
pizz
p
mf
pp
ppp
II
39
♩=120
flute
violin
viola
cello
tr.b
tr.bb
tr.♮
tr.♯
mf
flt
3
5


45
flute
violin
viola
cello
(tr.♯) flt
mf
pizz
49
flute
violin
viola
cello
flt.
pizz.
arco
54
flute
vln
viola
cello
Take Piccolo
f
p
pp
mf


♩= 90
59
Piccolo
violin
viola
cello
ff
ff
ff
ff
65
Piccolo
violin
viola
cello


70
Piccolo
violin
viola
cello
sul pont.
pp
sul pont.
pp
sul pont.
pp

Paul Archbold

Pas de deux
(1997)

for viola and piano

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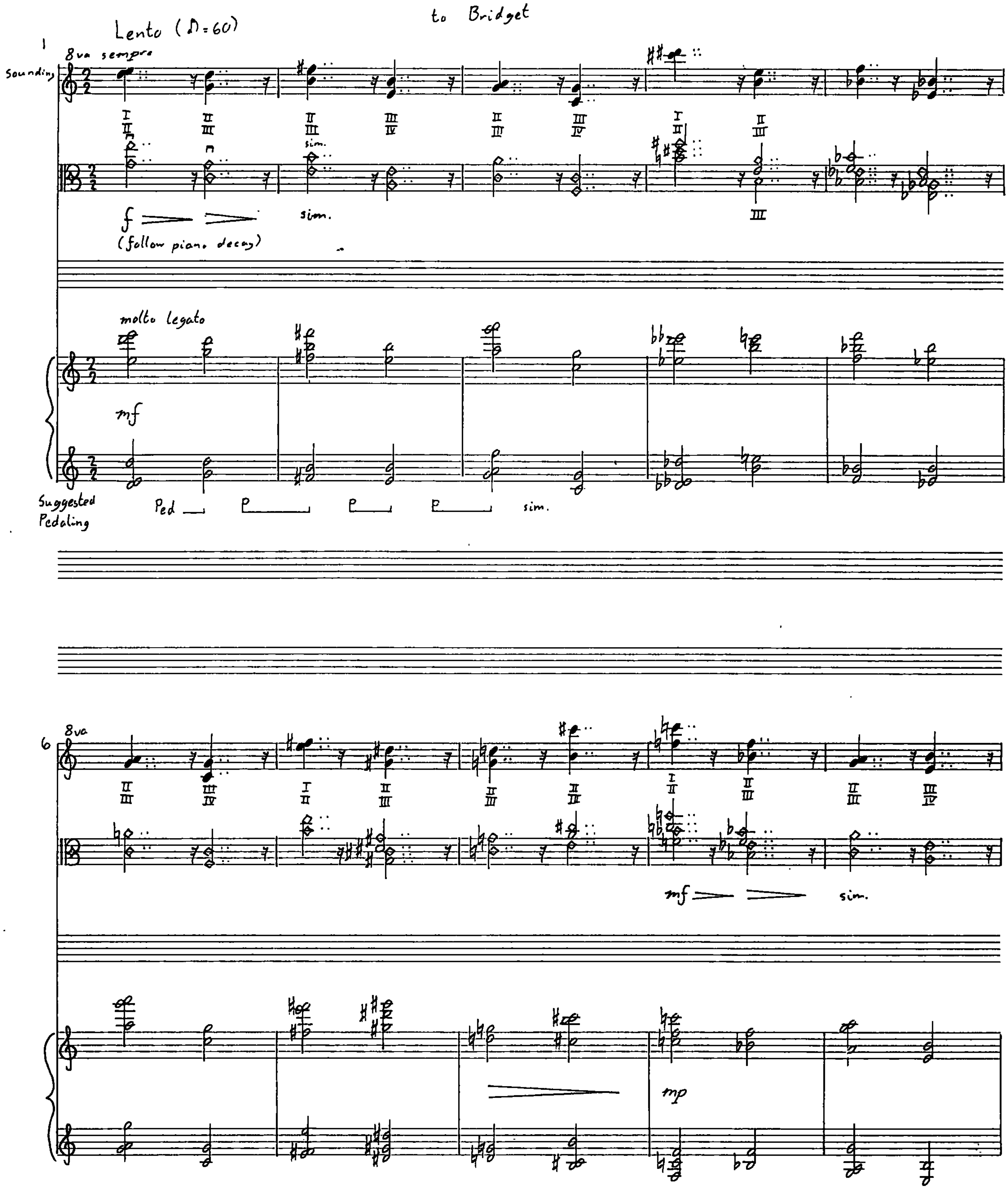
1998/
ARC

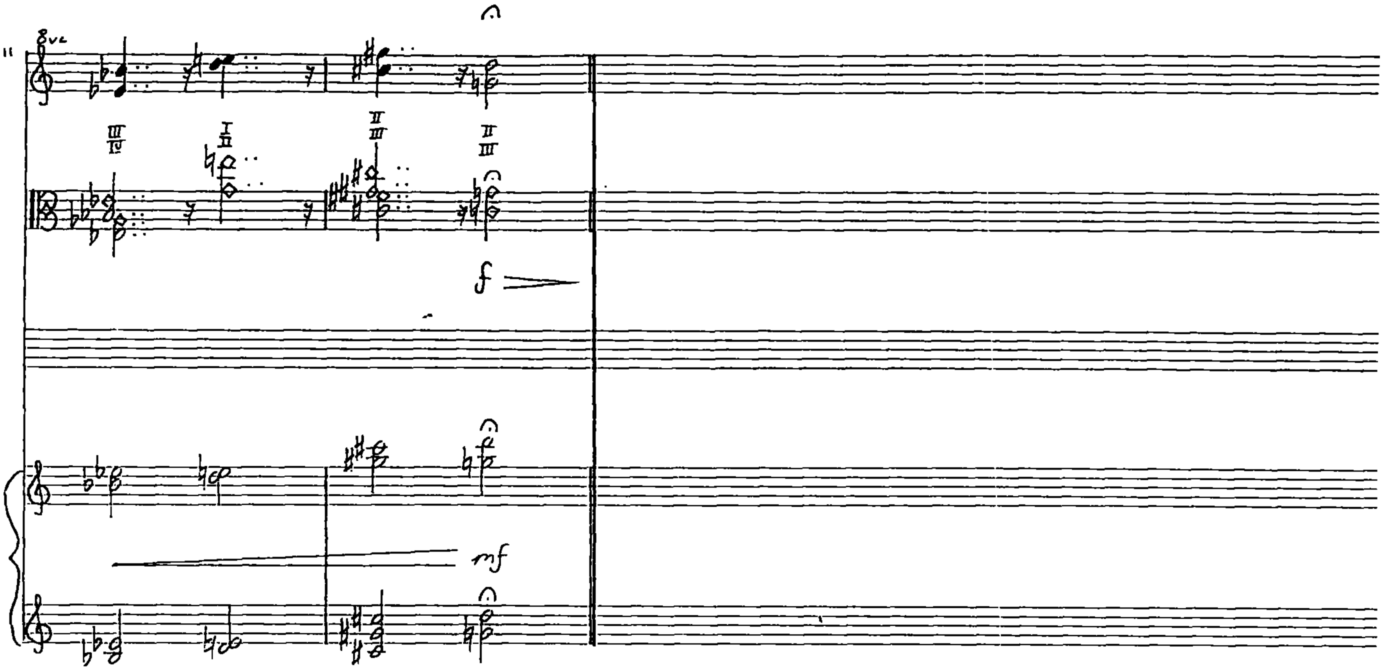
Pas de deux

I

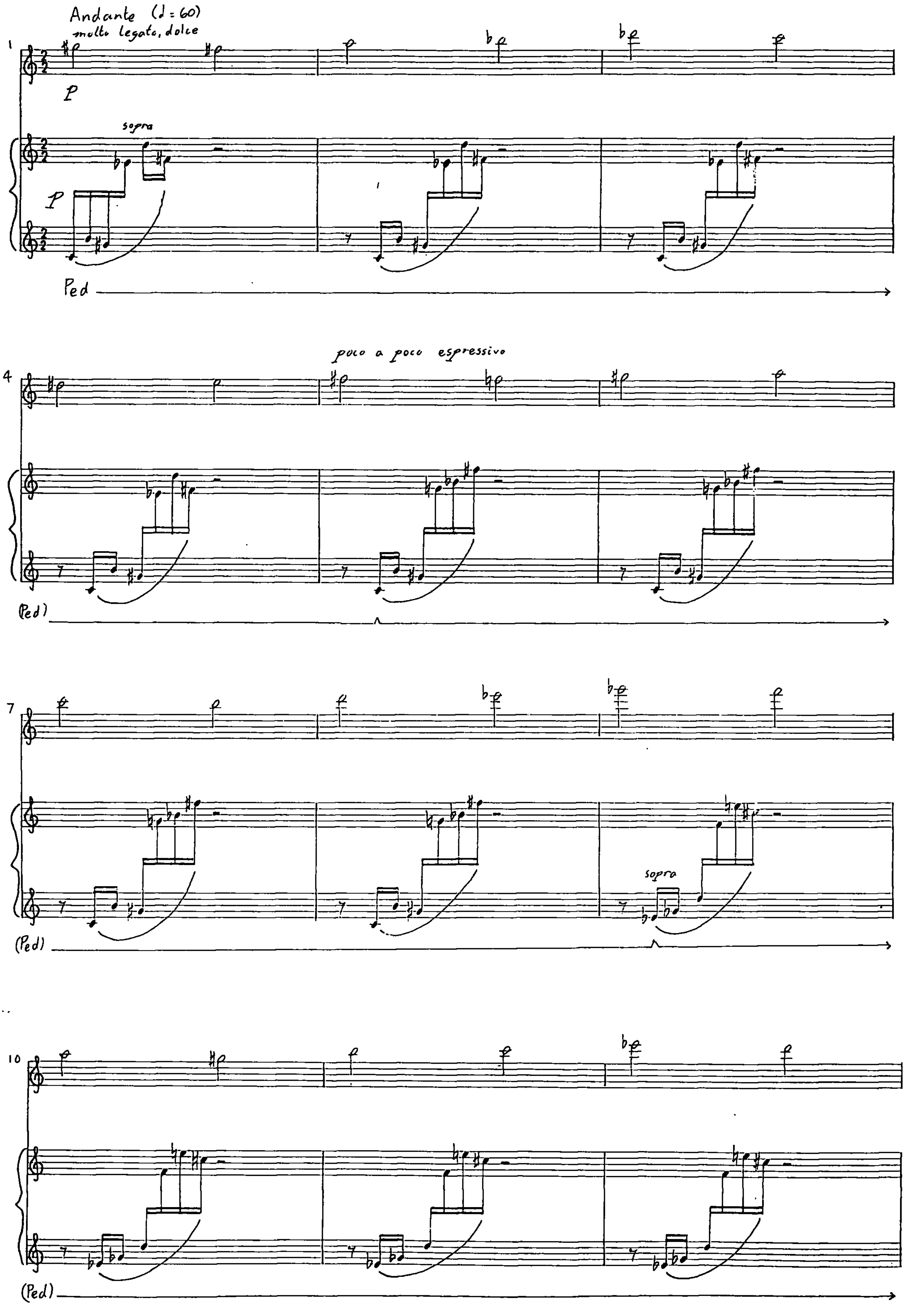
to Bridget

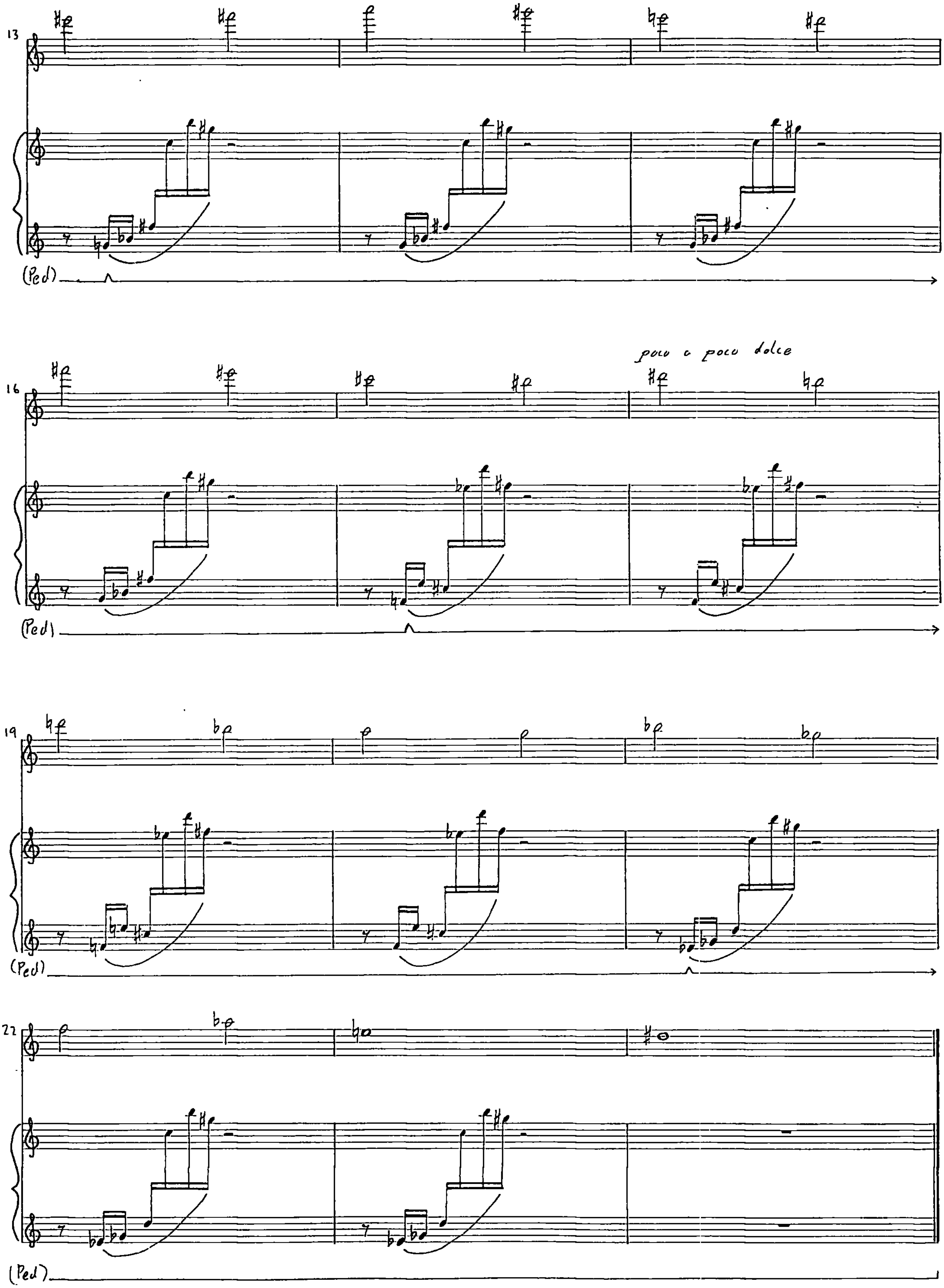

Lento (♪=60)
1
8va sempre
Sounding
I II
II III
III IV
sim.
III
f
sim.
(follow piano decay)
molto legato
mf
Suggested Pedaling
Ped
P
P
P
sim.
6
8va
mf
sim.
mp

PANOPUS SCORE-SYSTEM


11
8va
III
IV
I
II
II
III
II
III
f
mf

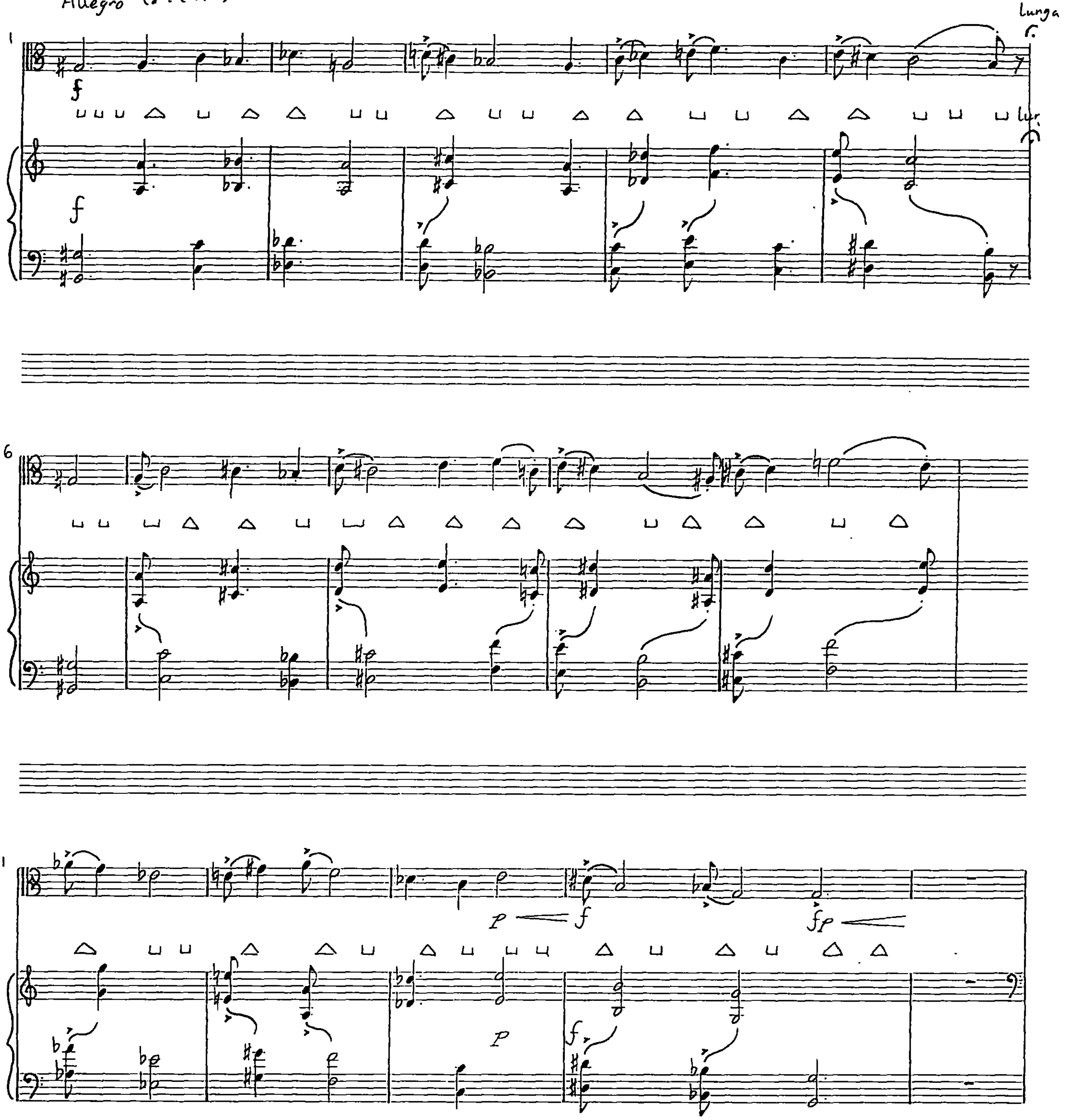
II

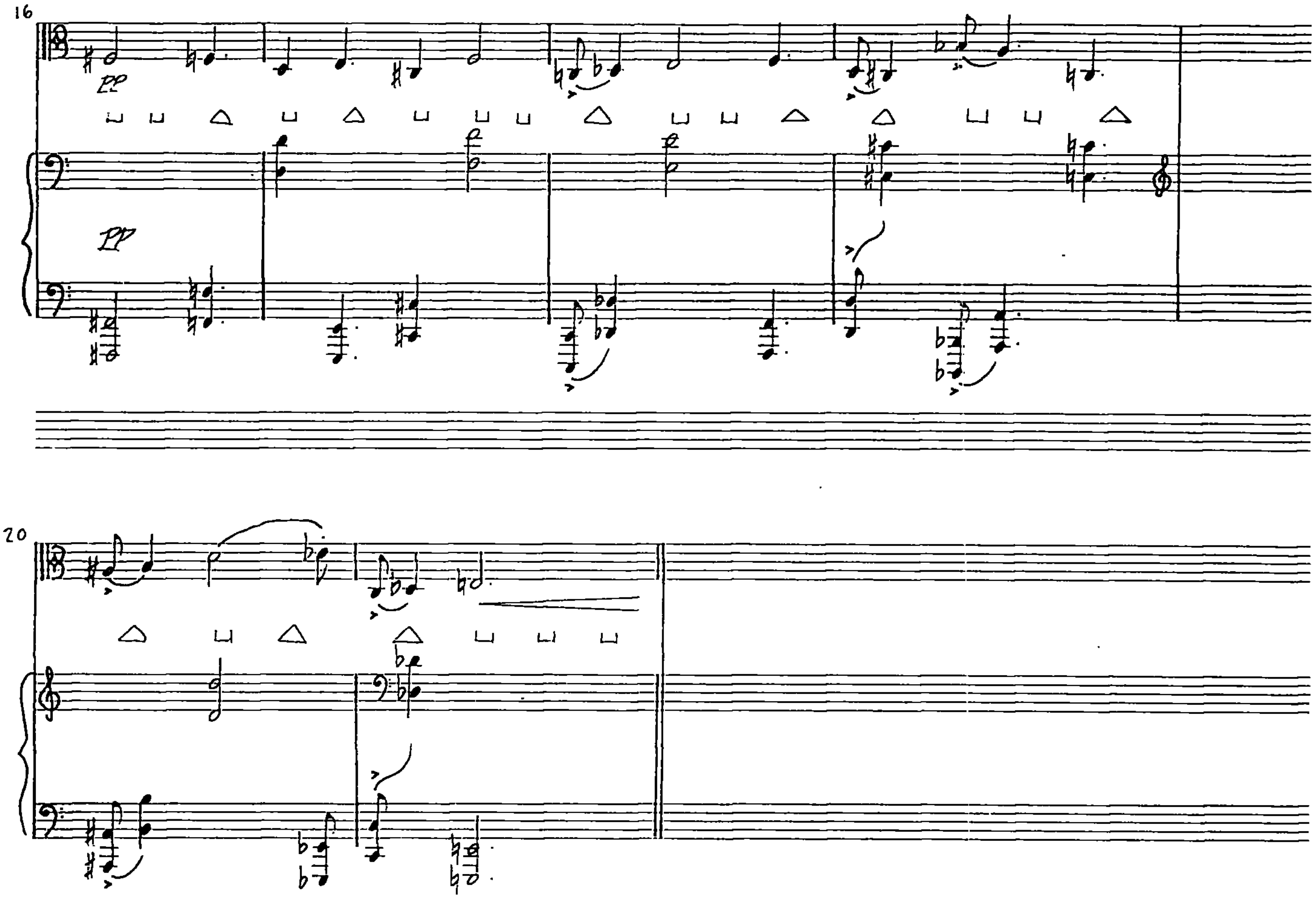

Andante (♩= 60)
molto legato, dolce
1
p
sopra
p
Ped
4
poco a poco espressivo
(Ped)
7
sopra
(Ped)
10
(Ped)


13
(Ped)
16
poco a poco dolce
(Ped)
19
(Ped)
22
(Ped)

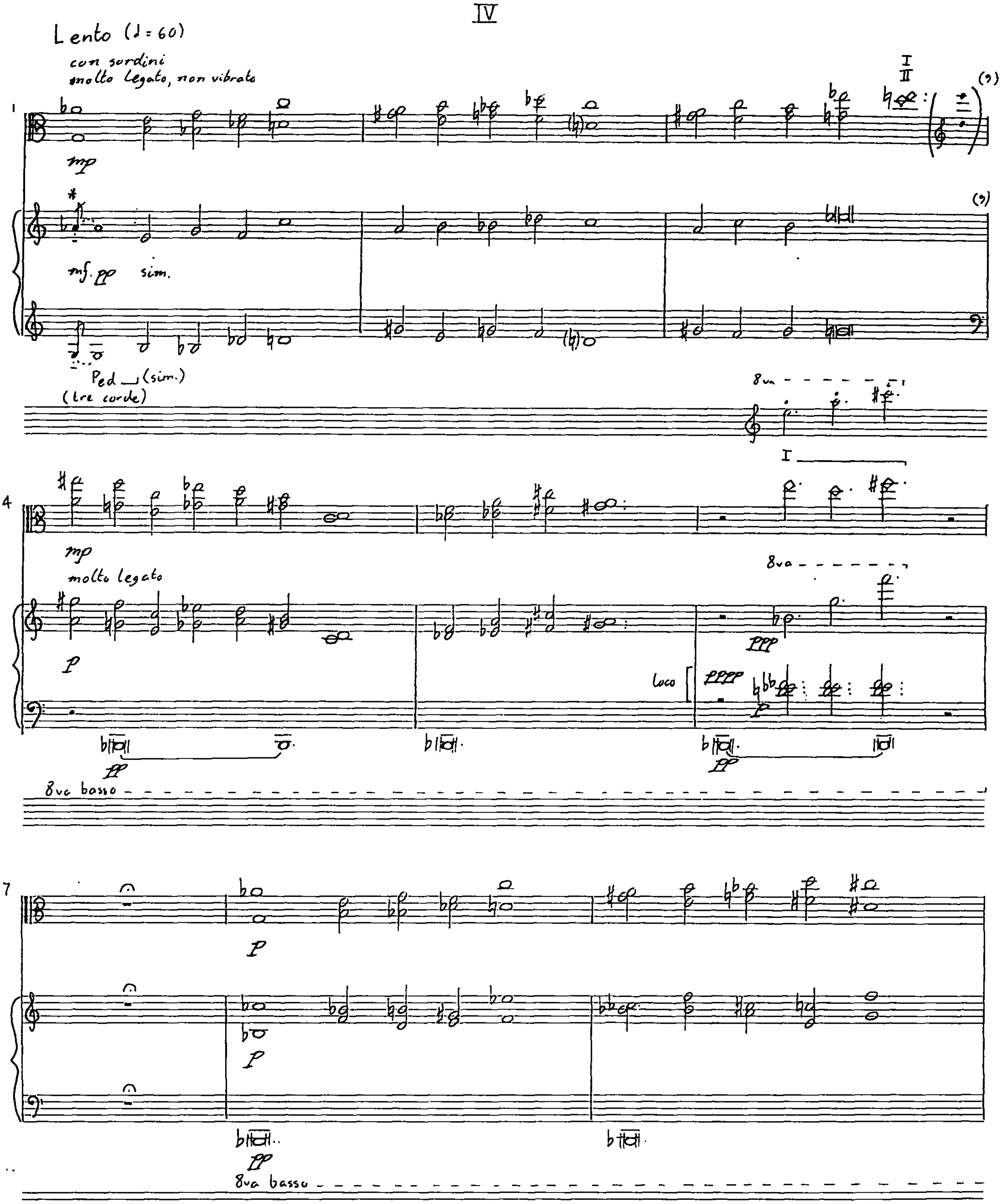
III

Allegro (♩ = c 144)


Lunga
1
f
lunga
f
6
11
p
f
fp
p
f

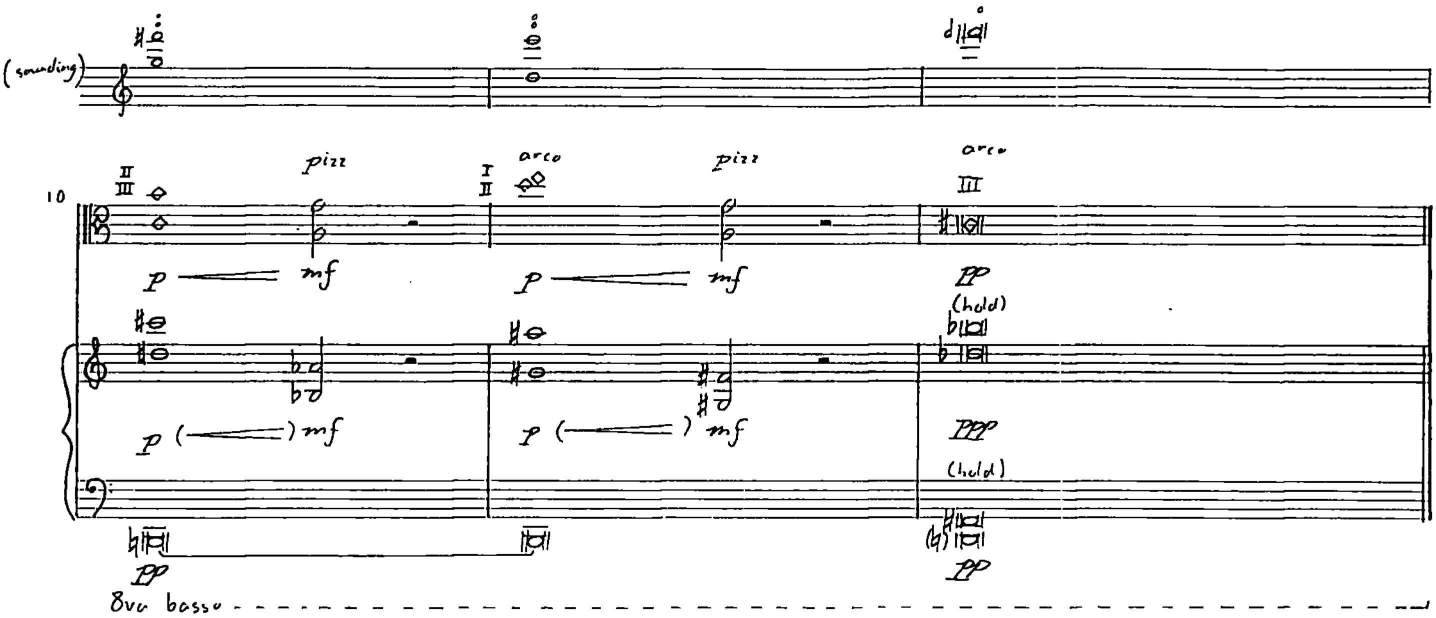

16
pp
pp
20

IV

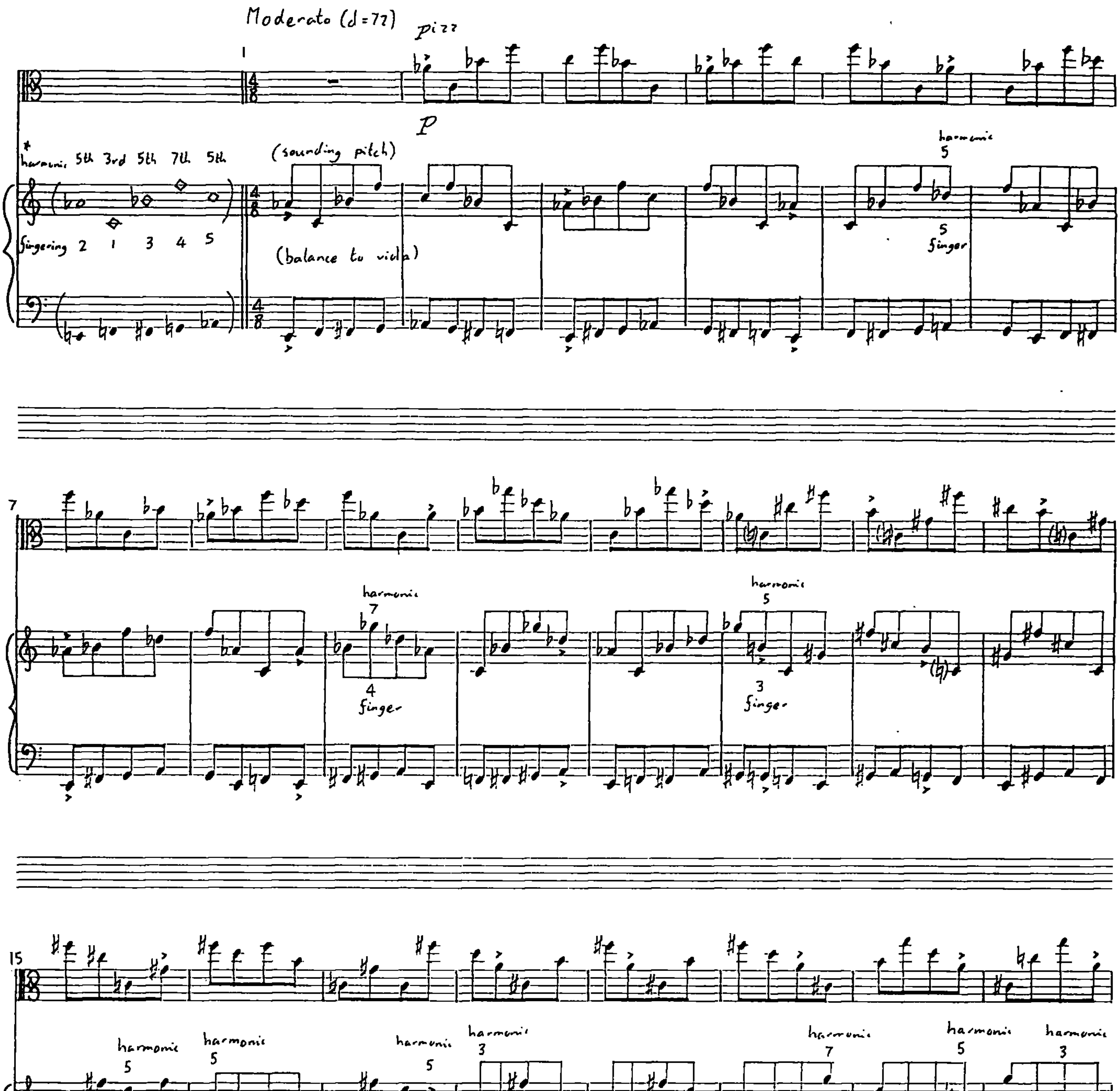

Lento (♩ = 60)
con sordini
molto Legato, non vibrato
1
I
II
(?)
mp
*
mf.pp
sim.
(?)
Ped (sim.)
(tre corde)
8va
I
4
mp
molto legato
p
8va
ppp
Loco
pppp
p
pp
8va basso
7
p
p
pp
8va basso

---

* To achieve the mf.pp, the acciaciatura should be long enough to give a resonant attach. The resonance should be captured by the pedal. The piano here is immitating a resonant string pizzicato.

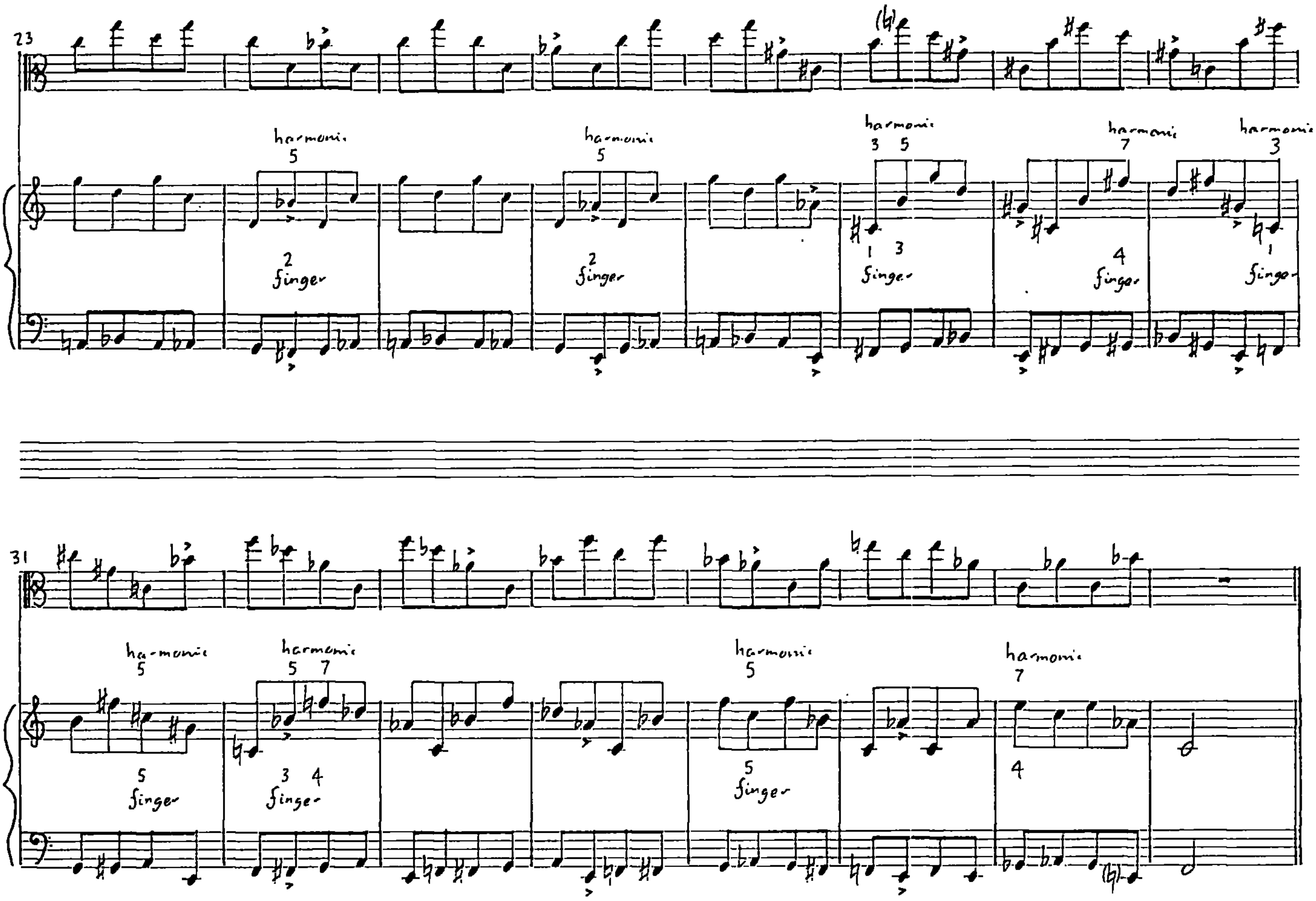

(sounding)
10
II
III
pizz
I
II
arco
pizz
arco
III
p
mf
p
mf
pp
(hold)
p (
) mf
p (
) mf
ppp
(hold)
pp
pp
8va basso

V

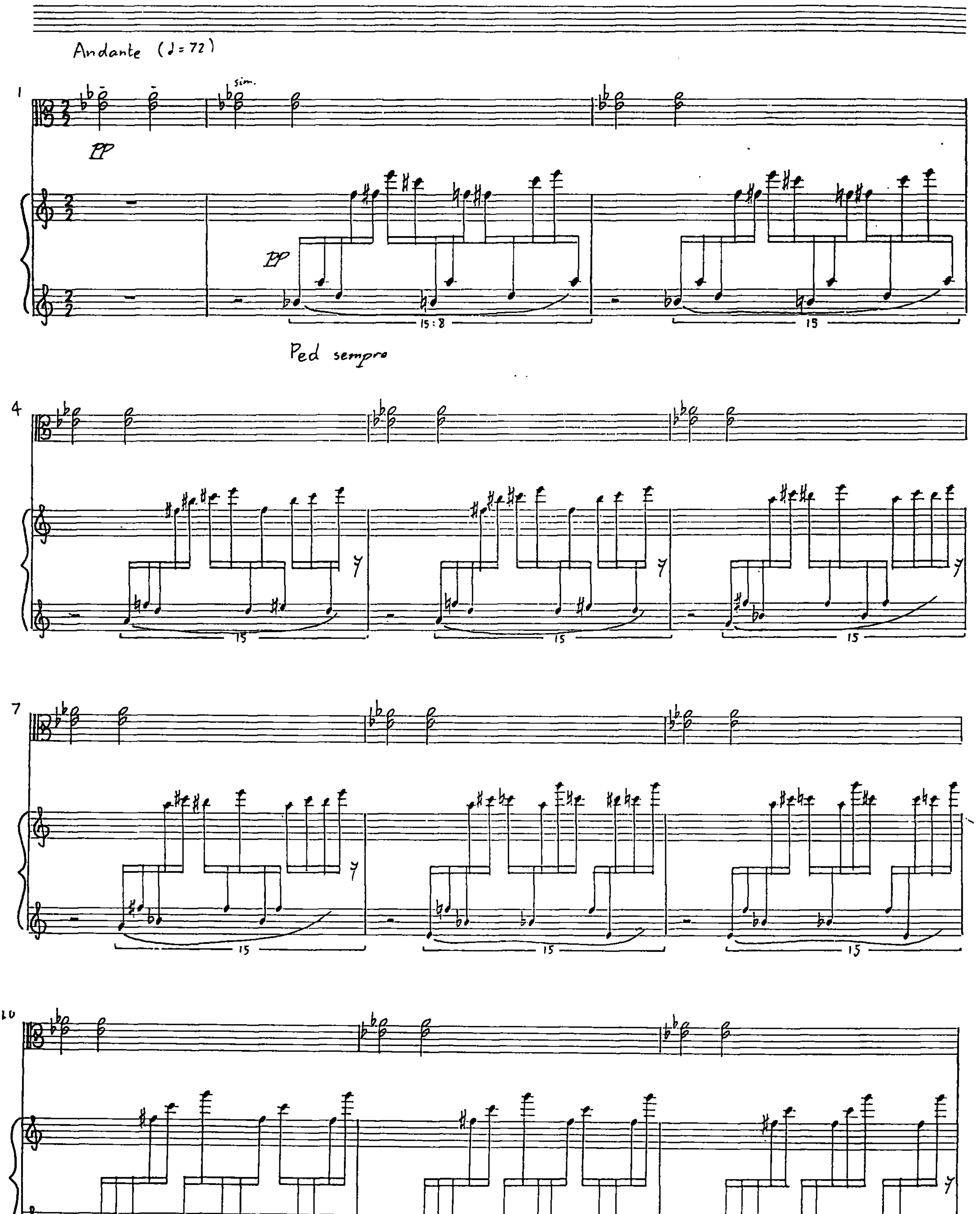

Moderato (♩=72)
pizz
p
*
harmonic 5th 3rd 5th 7th 5th
fingering 2 1 3 4 5
(sounding pitch)
(balance to viola)
harmonic
5
5
finger
7
harmonic
7
4
finger
harmonic
5
3
finger
15
harmonic
5
5
finger
harmonic
5
3
finger
harmonic
5
2
finger
harmonic
3
1
finger
harmonic
7
4
finger
harmonic
5
3
finger
harmonic
3
1
finger

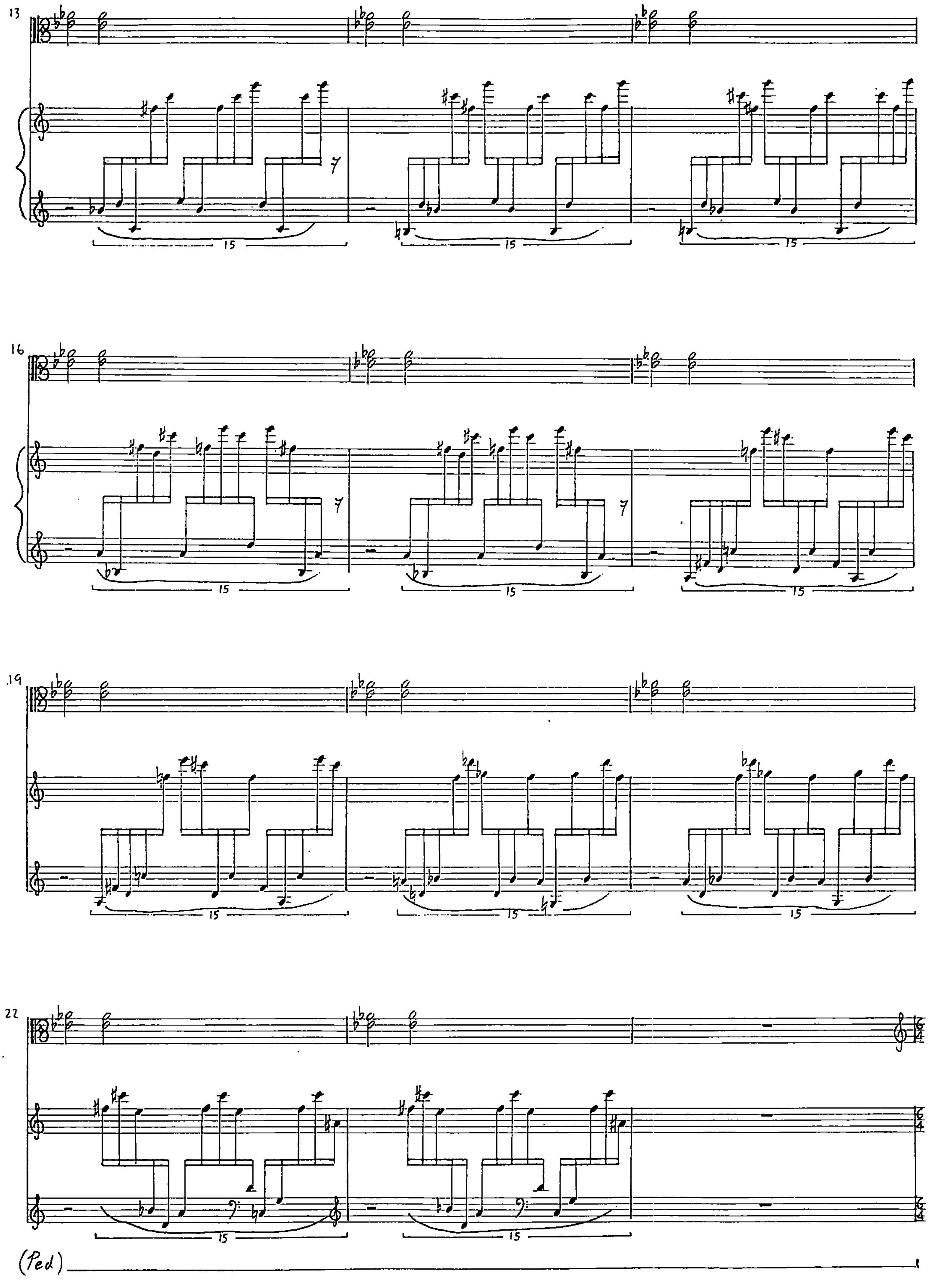
* This movement is not possible on all pianos due to the positioning of strengthening bars and cross-stringing. In such a case, it is acceptable to perform the sounding pitches on the keys as normal – mezzo staccato.

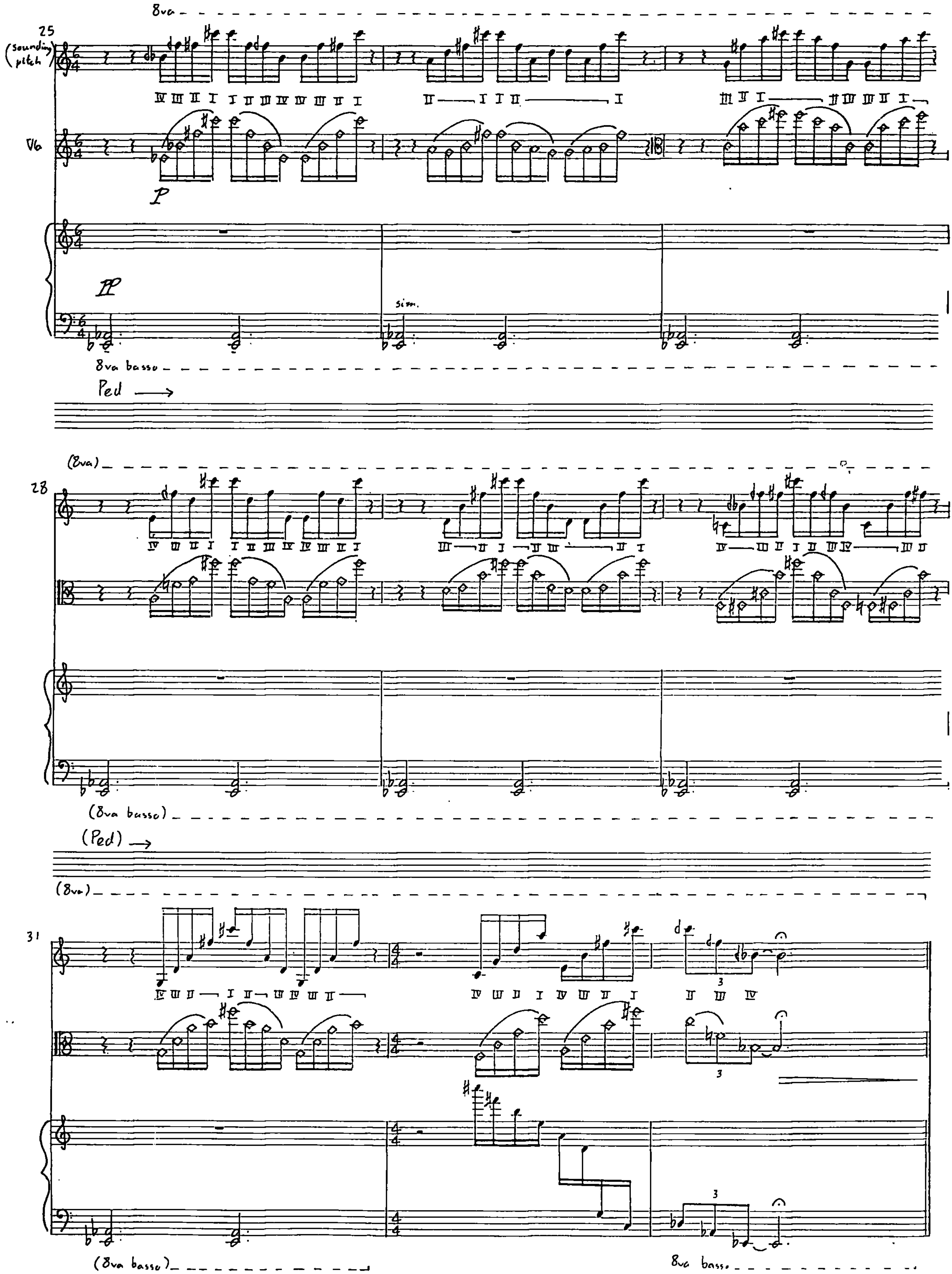
* By scientific convention, the first harmonic is the fundamental:
the second harmonic is produced by touching a node at 1/2 the length of the string
Here, the third harmonic is found at 1/3 the string length, fifth at 2/5 of the string length
and the seventh at 3/7 of the string length. These nodes, on adjacent strings, can
be touched by the fingers of the right hand.


23
harmonic
5
2
finger
harmonic
5
2
finger
harmonic
3 5
1 3
finger
harmonic
7
4
finger
harmonic
3
1
finger
31
harmonic
5
5
finger
harmonic
5 7
3 4
finger
harmonic
5
5
finger
harmonic
7
4

VI


Andante (♩= 72)
sim.
pp
pp
15:8
Ped sempre


(Ped)


8va
25
(sounding pitch)
Vb
P
PP
sim.
8va basso
Ped →
(8va)
28
(8va basso)
(Ped) →
(8va)
31
3
(8va basso)
8va basso
(Ped)
Ped

Paul Archbold

The Land Solos
(1997)

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24 FEB 1999

The Land Solos (1997)

Clarinet 1 in B♭ doubling bass clarinet in B♭
Clarinet 2 in A doubling bass clarinet in B♭
2 Tenor trombones (B♭/F) with harmon and straight mutes
Percussion:
Thai Gongs (D_3 - $F\sharp_4$), Vibraphone, Glockenspiel, Cabassa
Japanese Temple Bell

Commissioned by the Catherine Seymour Dance Company with funds from the Arts Council of England.

First Performance

Purcell Room, South Bank Centre, London, September 29 1997.
Performers:
Roger Heaton, Ian Mitchell (clarinets)
Barrie Webb, Dave Whitson (trombones)
Christopher Brannick (percussion)
Paul Archbold (conductor)

Acknowledgement

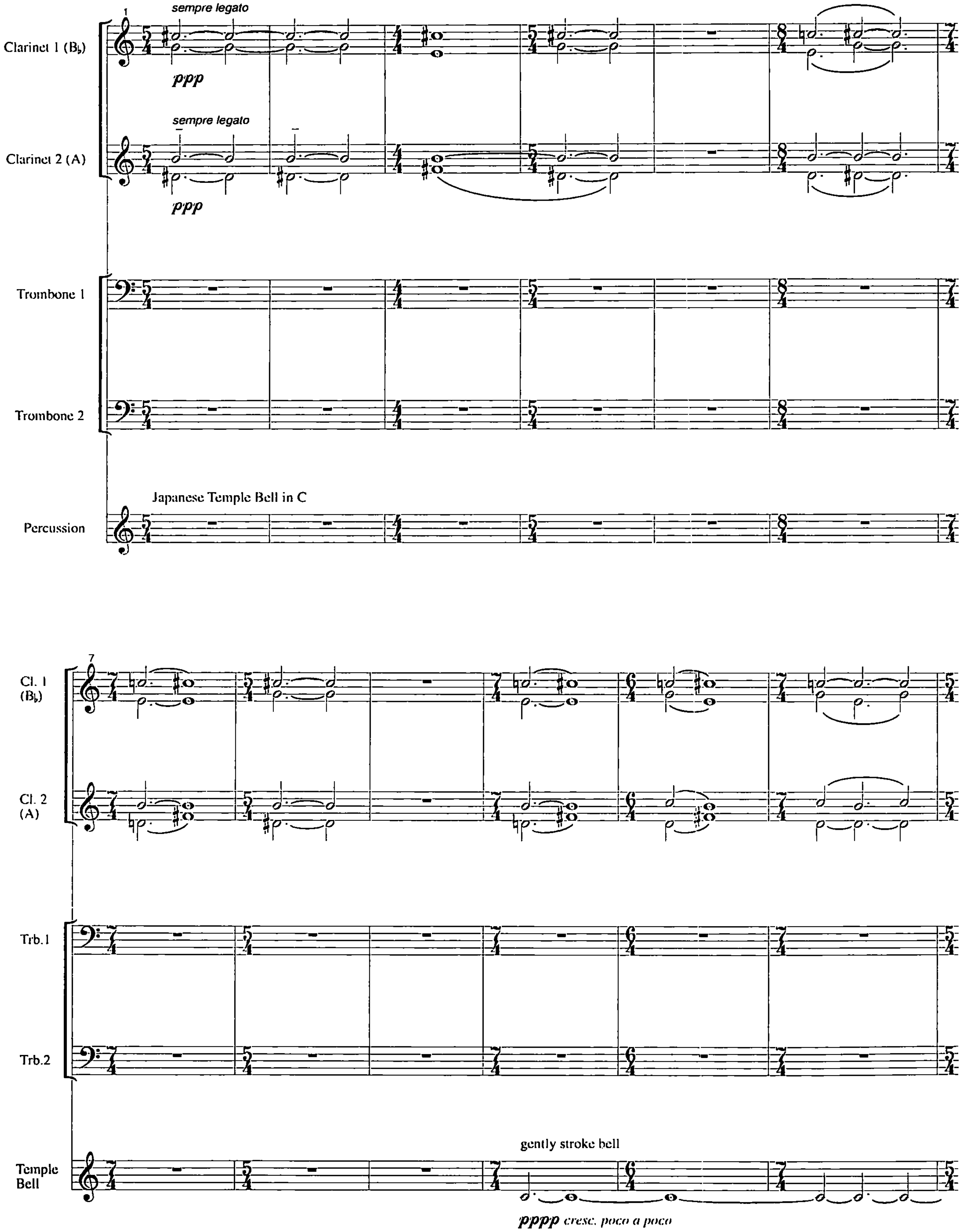
I would like to thank the performers for their generosity in giving advice during the composition and rehearsals of this work. The work was written for the dance work *The Land Solos* choreographed by Catherine Seymour.

Thesis ++
1998/
ARC

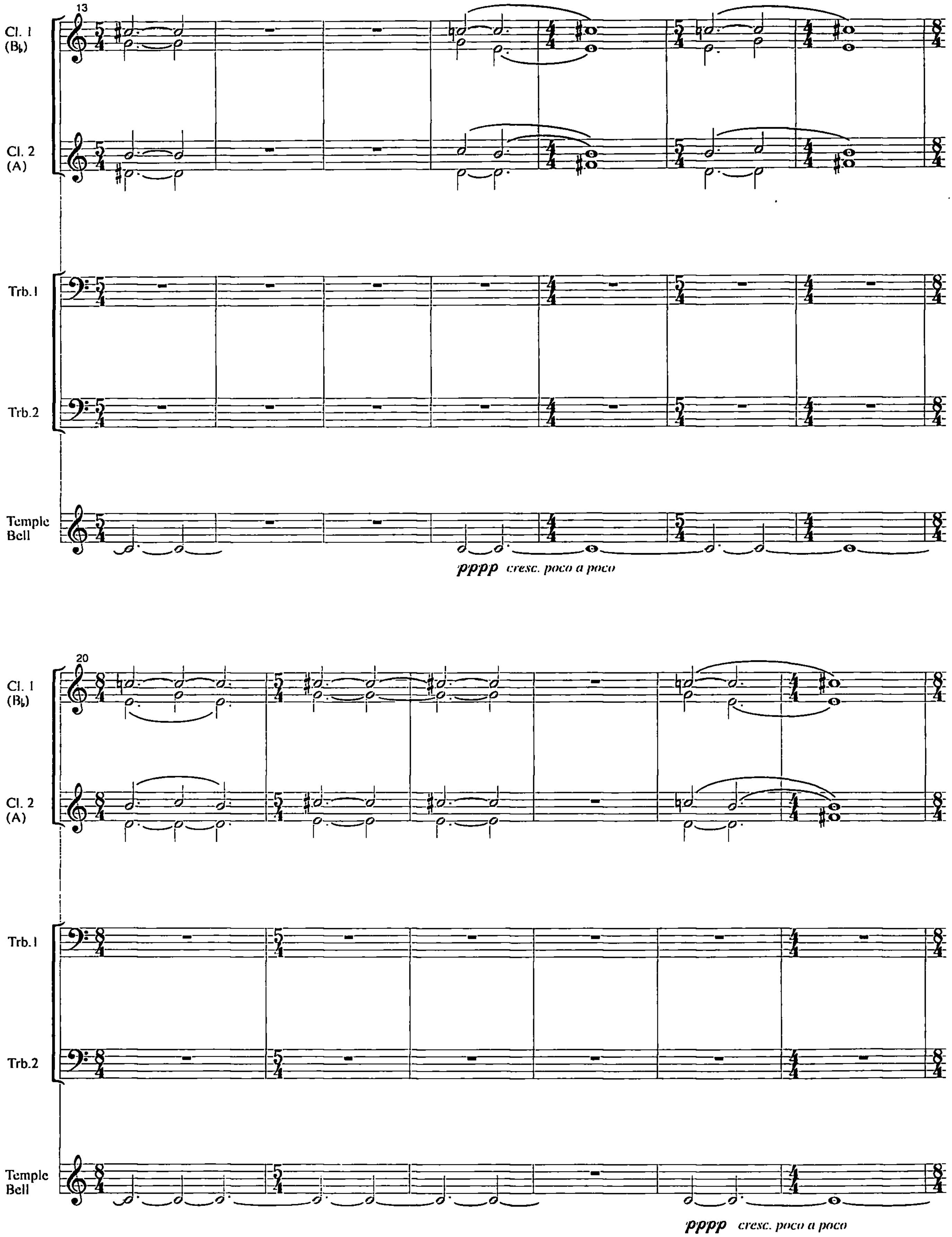
The Land Solos

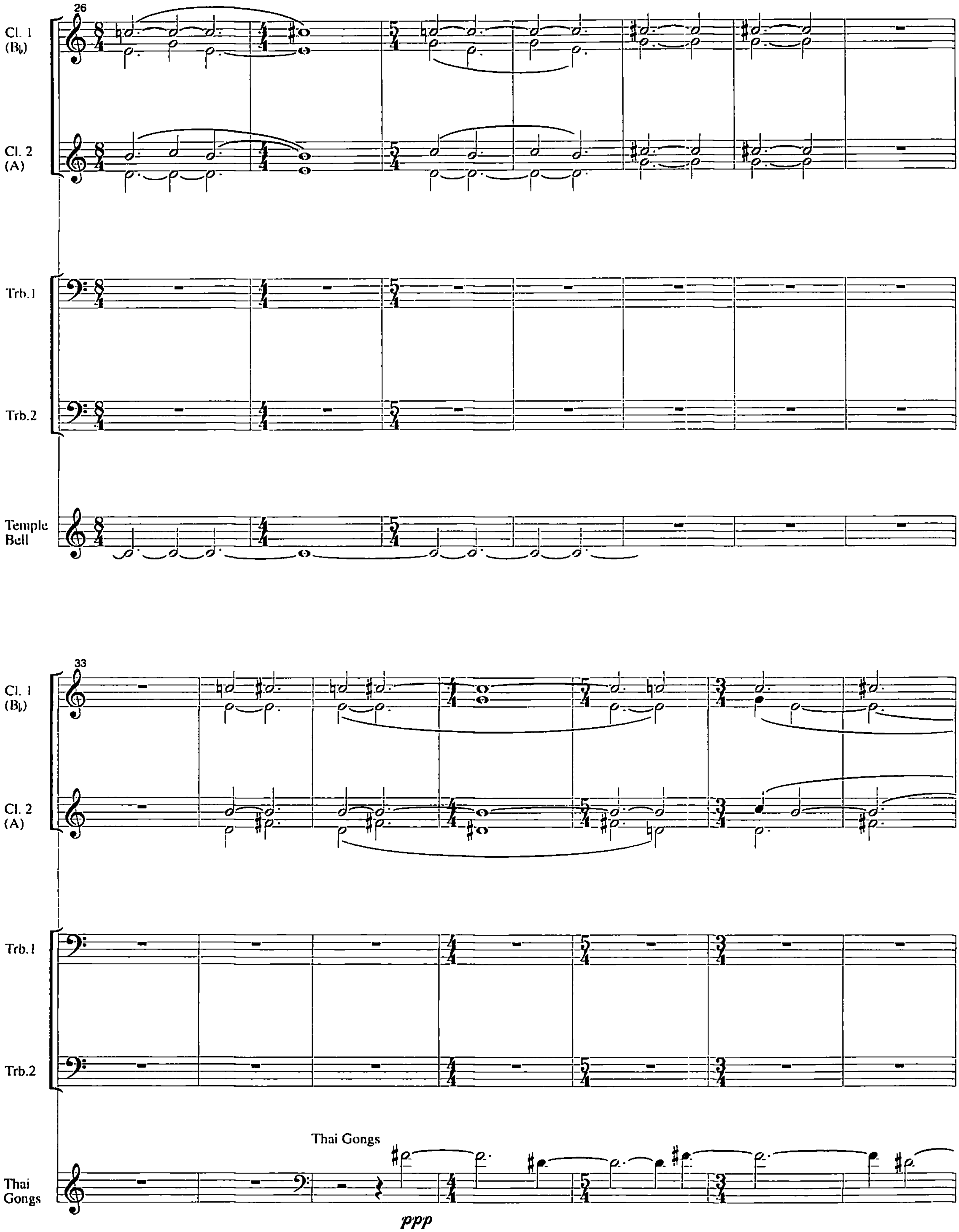
Paul Archbold 1997

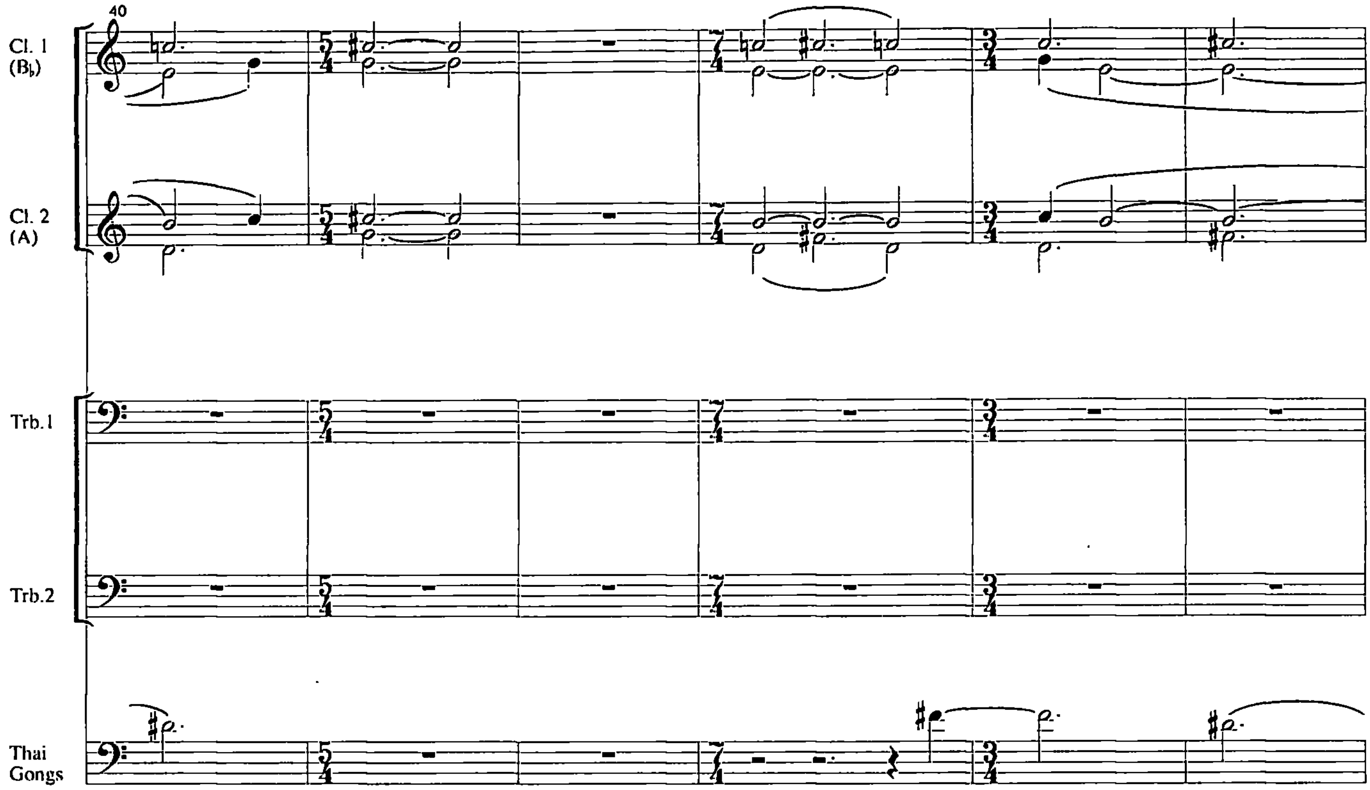
Andante (♩ = 80)

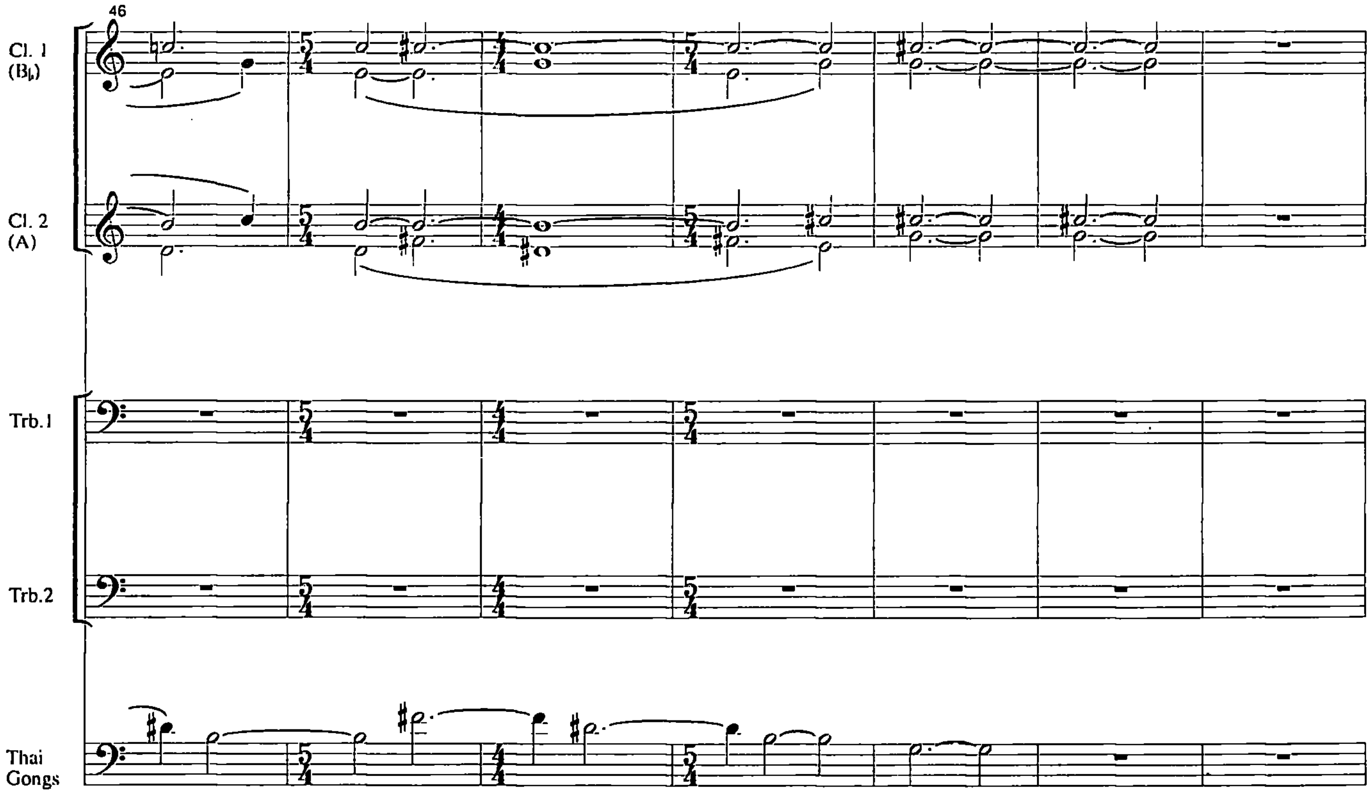


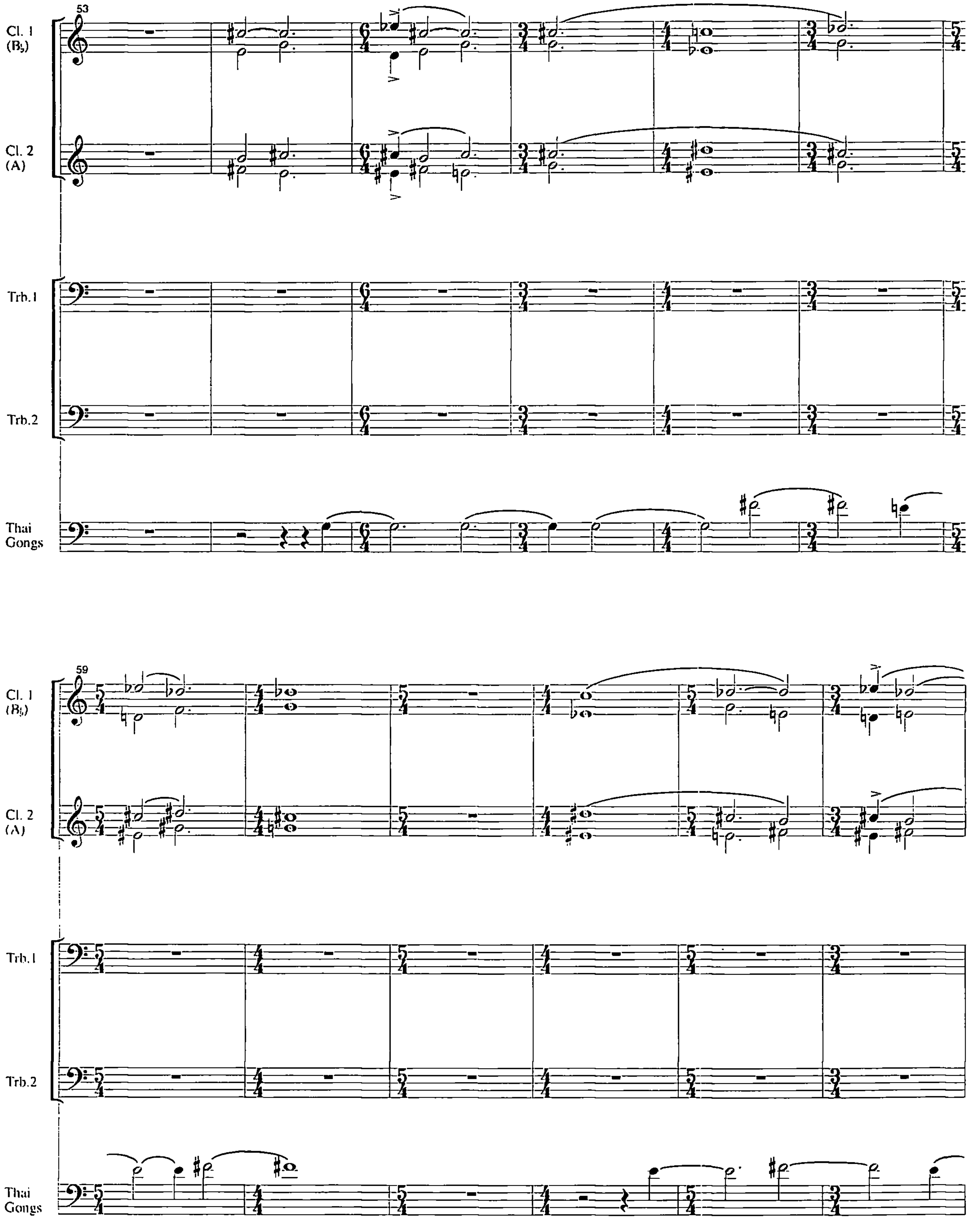
1
sempre legato
Clarinet 1 (B♭)
ppp
sempre legato
Clarinet 2 (A)
ppp
Trombone 1
Trombone 2
Japanese Temple Bell in C
Percussion
7
Cl. 1 (B♭)
Cl. 2 (A)
Trb.1
Trb.2
Temple Bell
gently stroke bell
pppp cresc. poco a poco

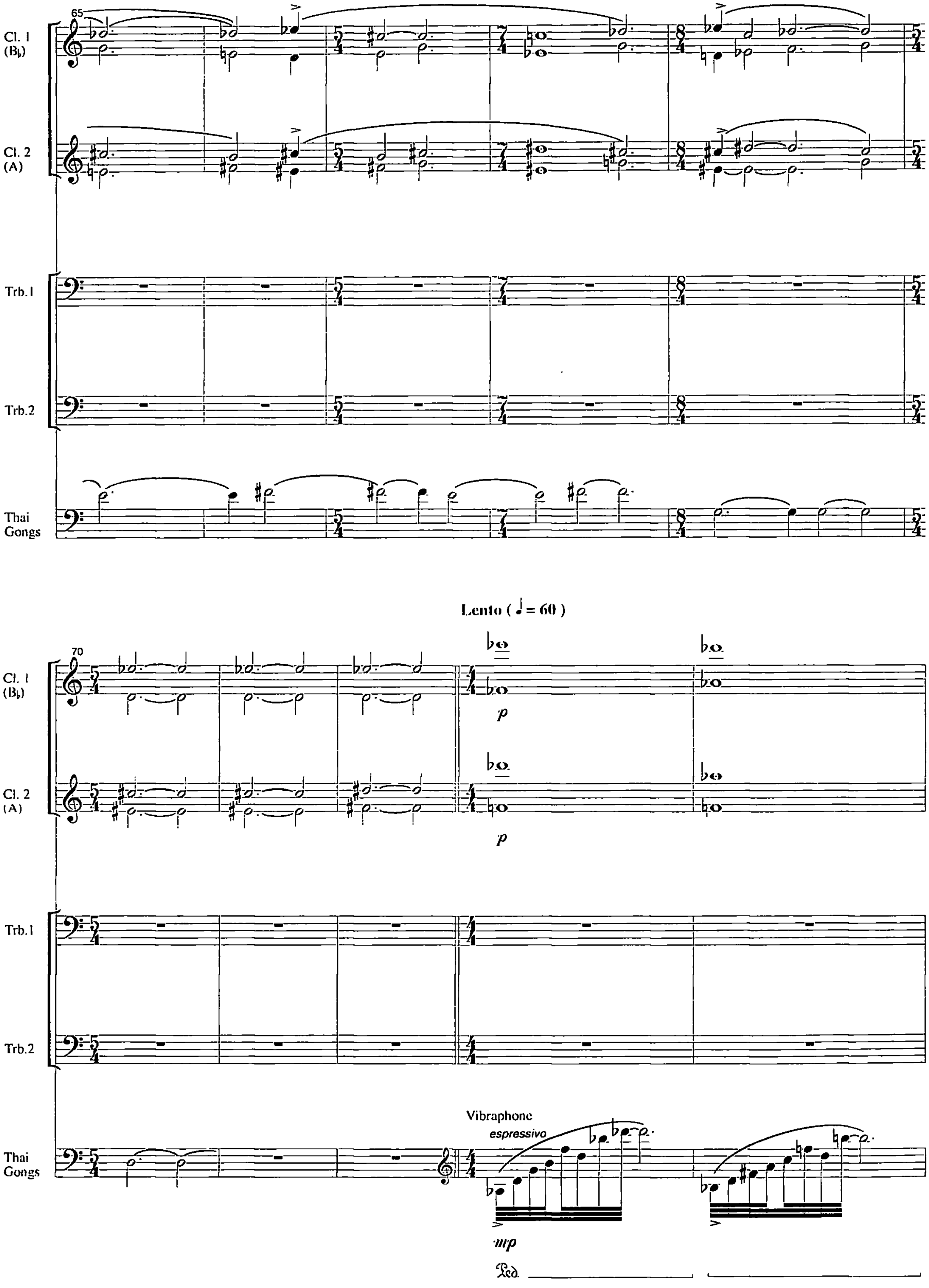

13
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Temple Bell
pppp cresc. poco a poco
20
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Temple Bell
pppp cresc. poco a poco

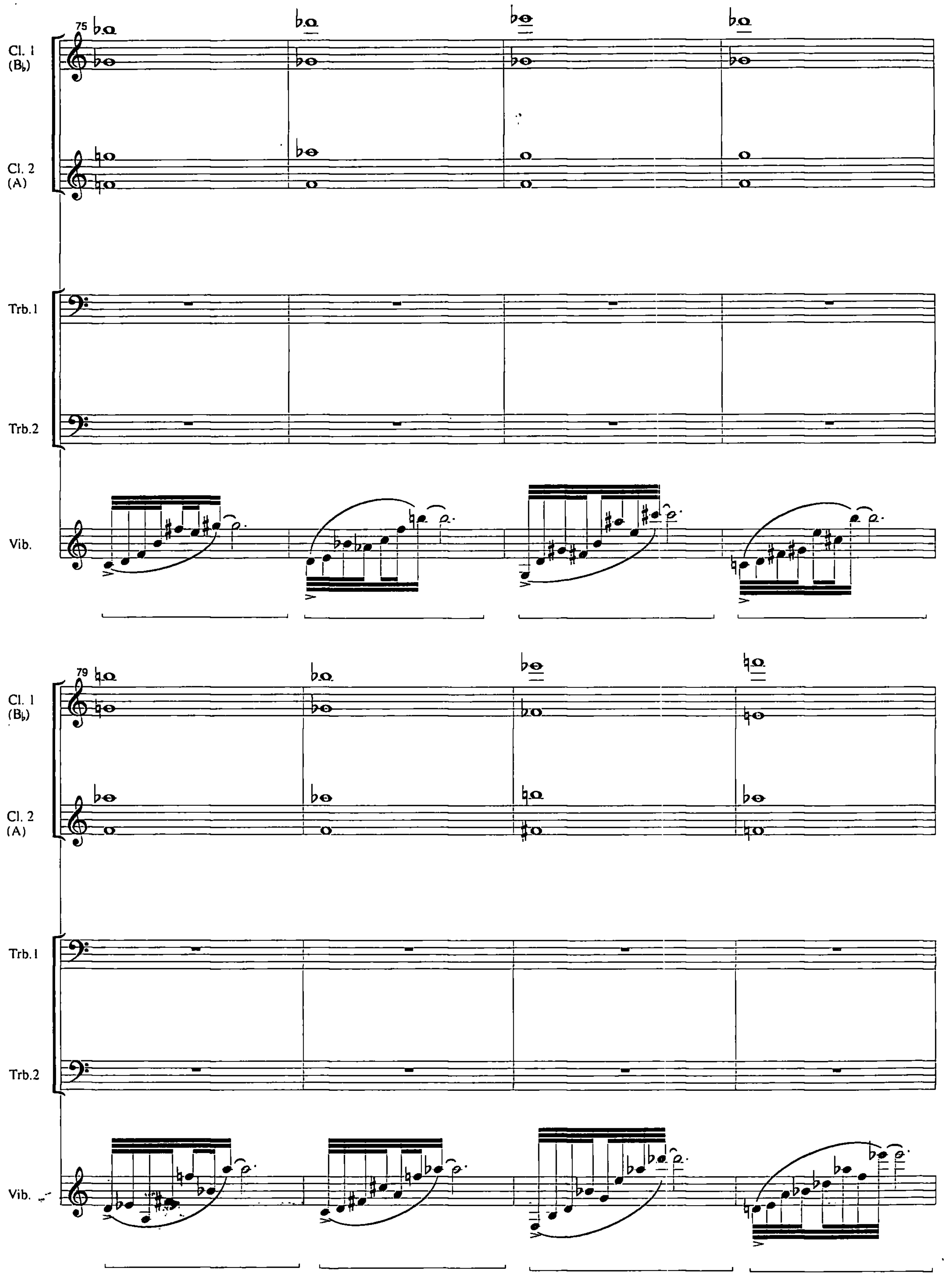

26
Cl. 1 (B♭)
Cl. 2 (A)
Trb.1
Trb.2
Temple Bell
33
Cl. 1 (B♭)
Cl. 2 (A)
Trb.1
Trb.2
Thai Gongs
Thai Gongs
ppp

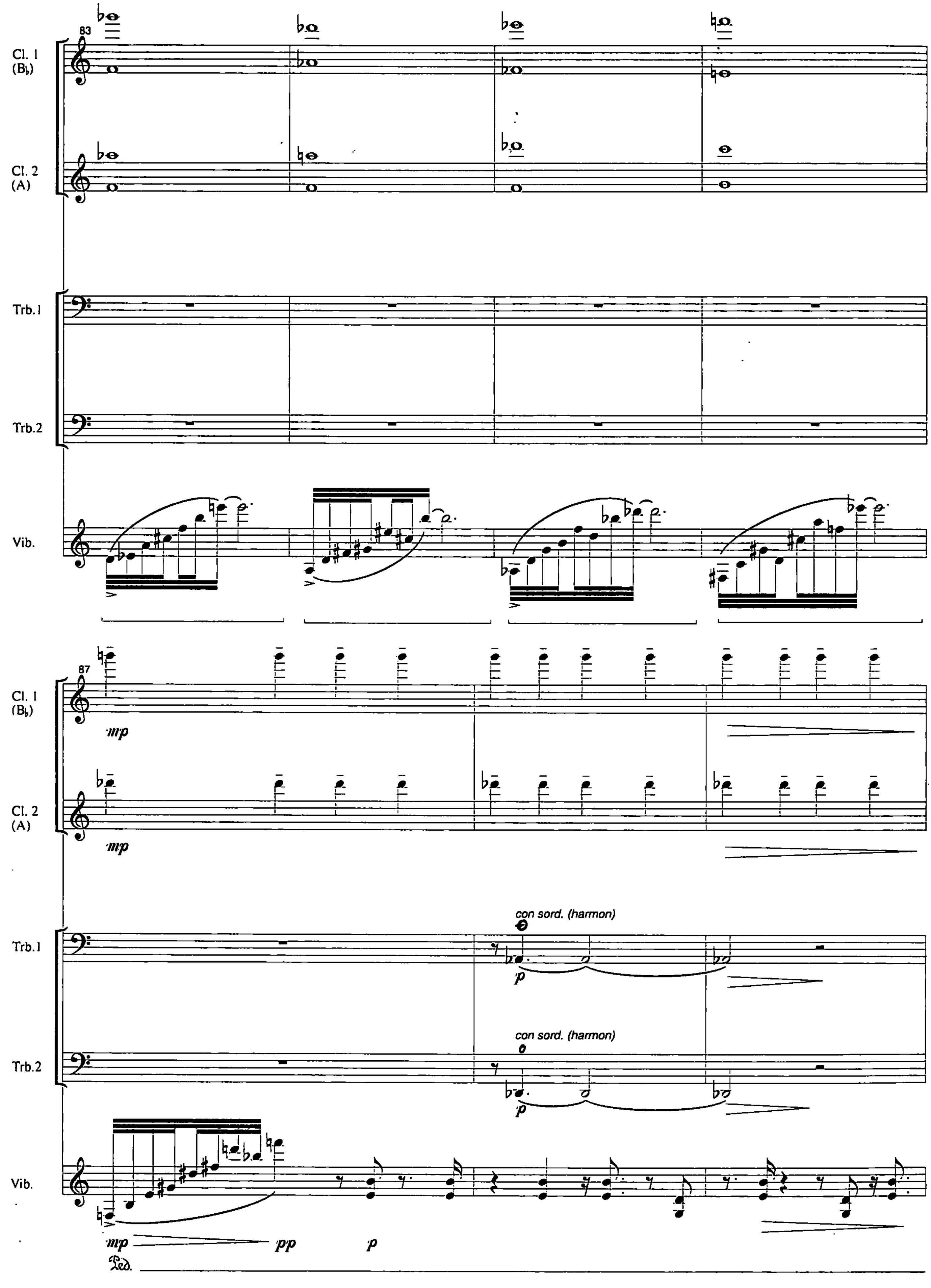

40
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Thai Gongs

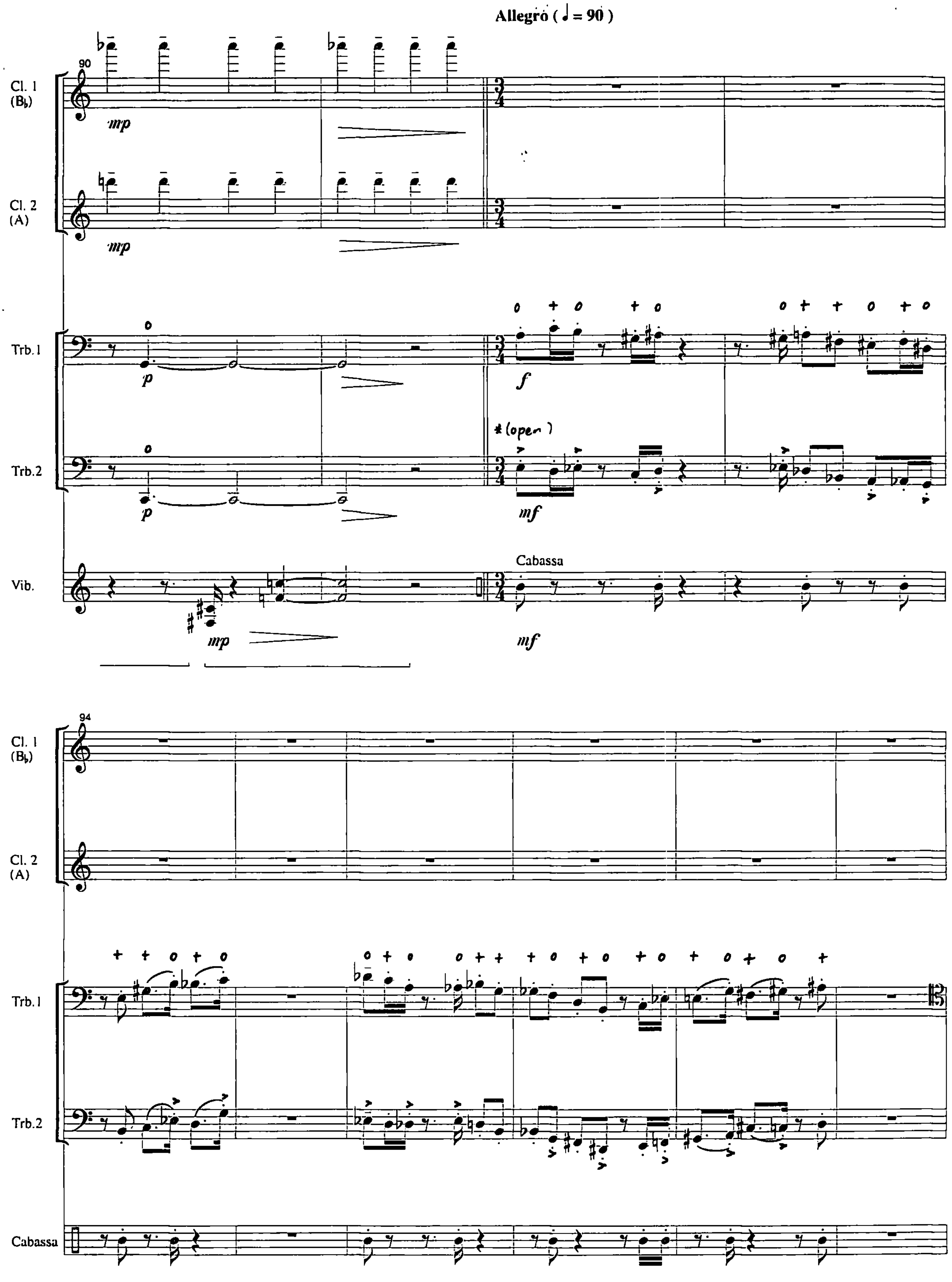

46
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Thai Gongs


53
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Thai Gongs
59
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Thai Gongs


65
Cl. 1 (B♭)
Cl. 2 (A)
Trb.1
Trb.2
Thai Gongs
Lento (♩ = 60)
70
p
p
Vibraphone
espressivo
mp
Ped.

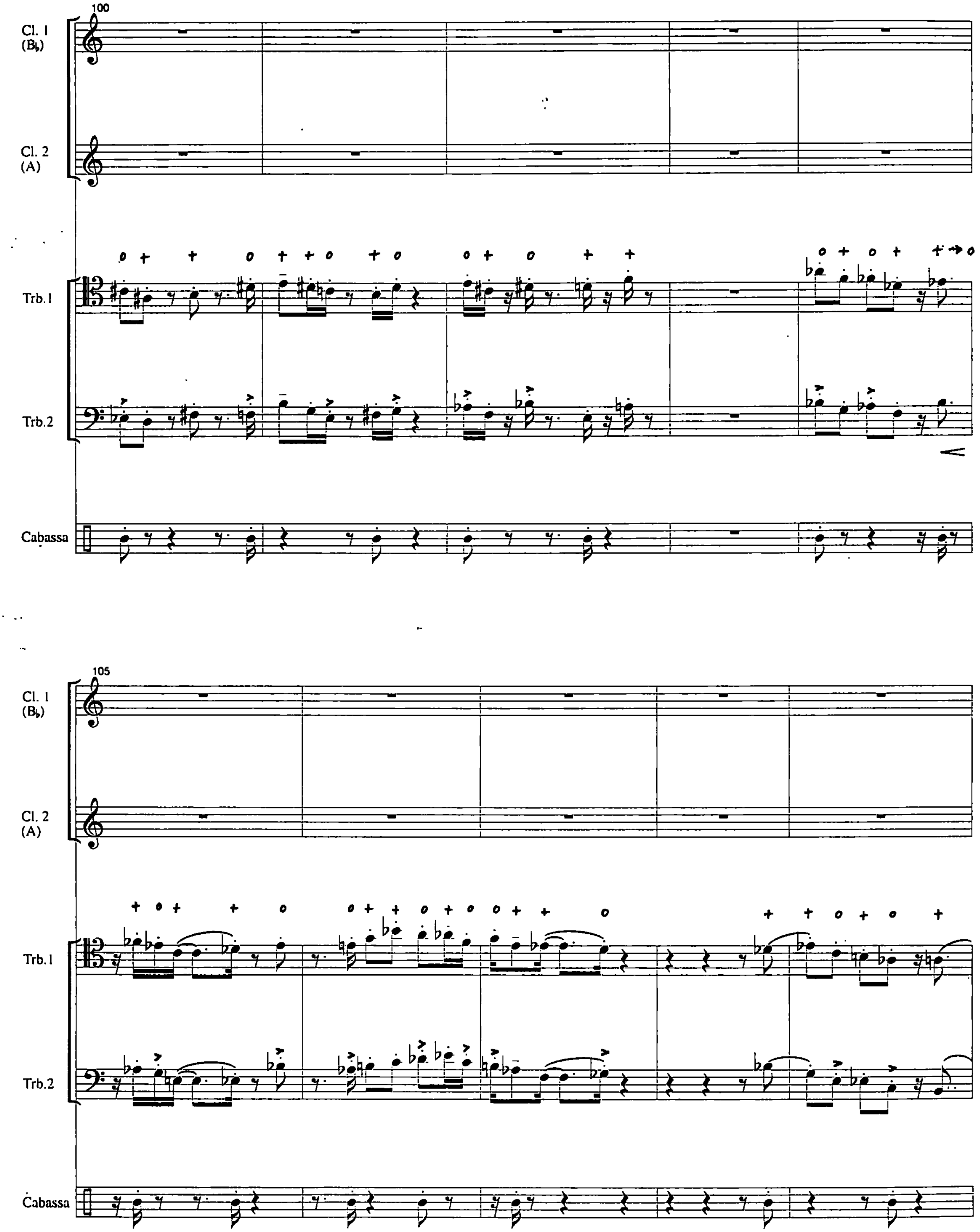

75
Cl. 1
(B♭)
Cl. 2
(A)
Trb. 1
Trb. 2
Vib.
79
Cl. 1
(B♭)
Cl. 2
(A)
Trb. 1
Trb. 2
Vib.

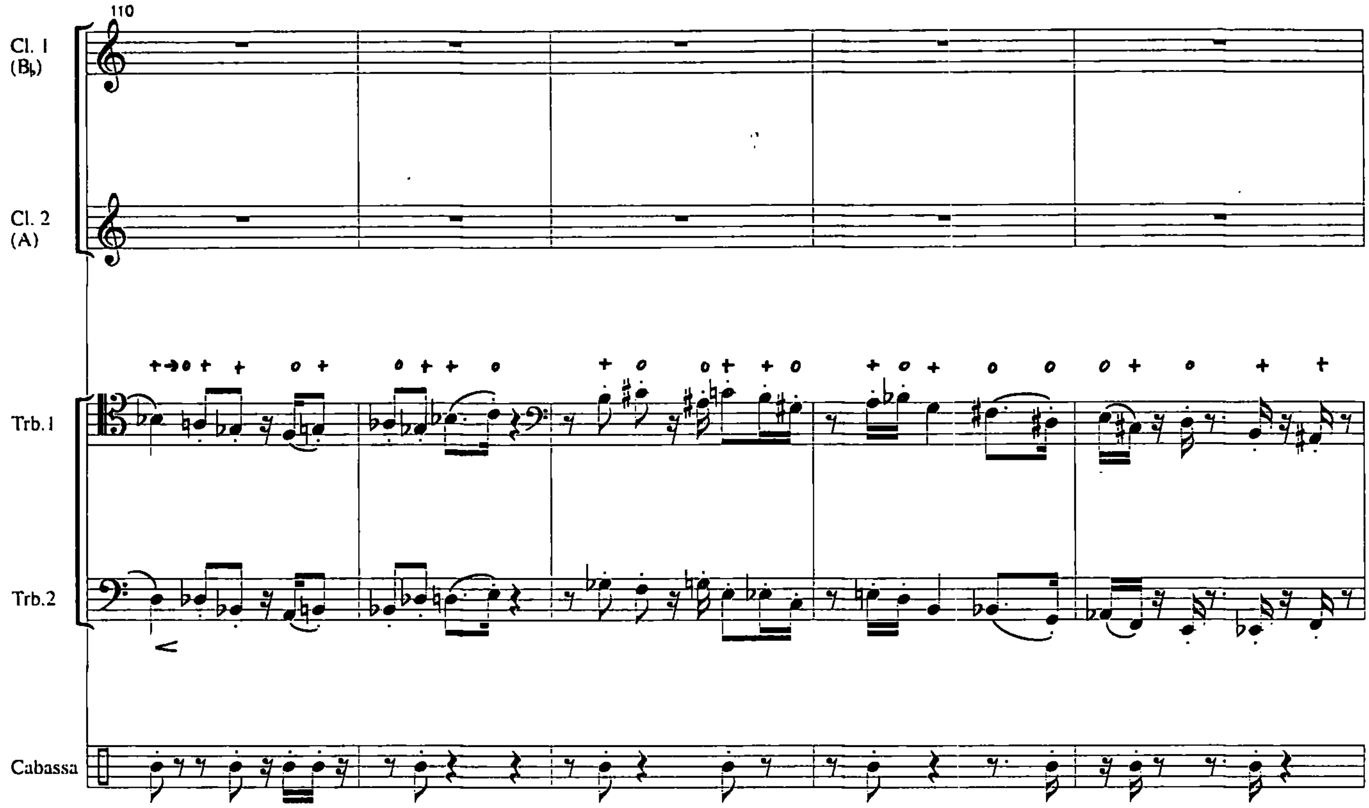

83
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Vib.
87
Cl. 1 (B♭)
mp
Cl. 2 (A)
mp
Trb. 1
con sord. (harmon)
p
Trb. 2
con sord. (harmon)
p
Vib.
mp
pp
p
Ped.

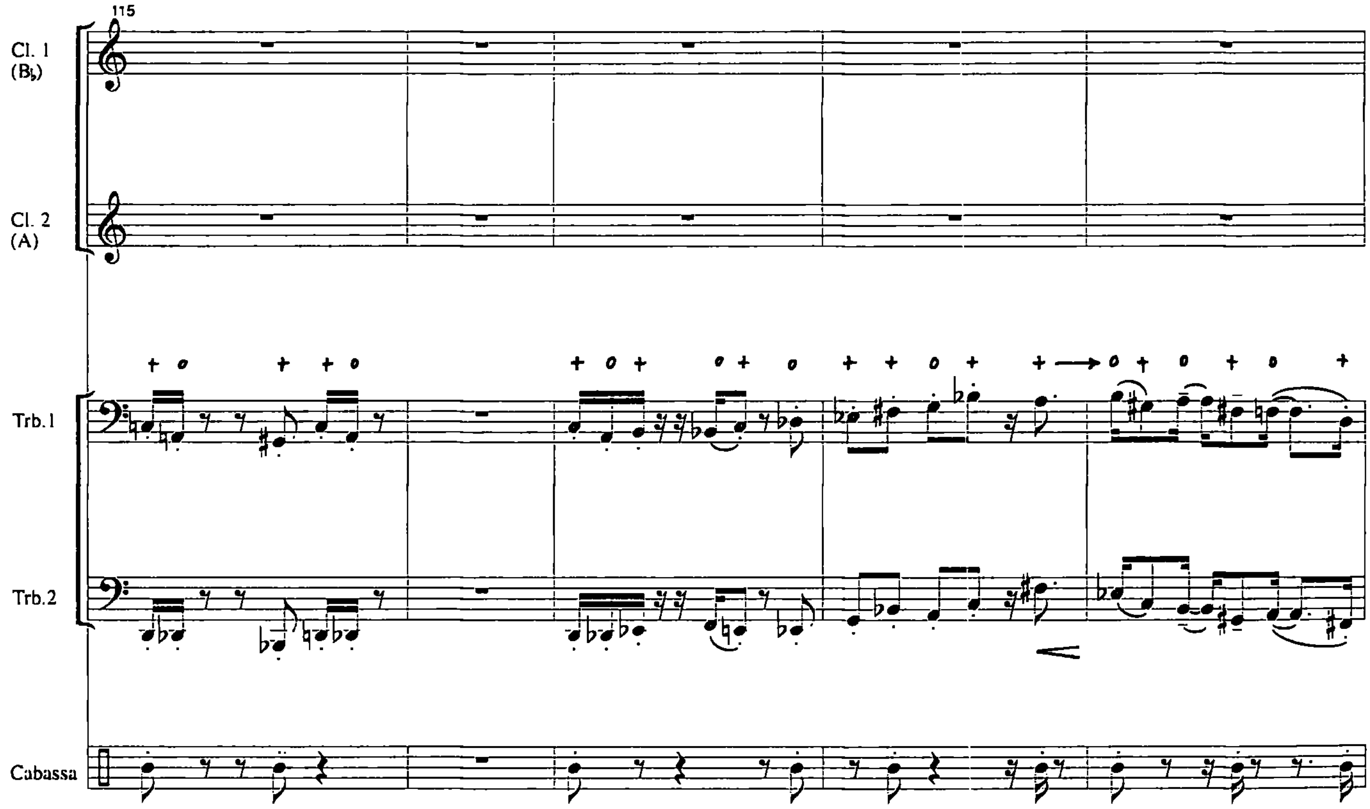

Allegro (♩ = 90)
90
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Vib.
mp
mp
p
p
f
mf
mp
mf
* (open)
Cabassa
94
Cabassa

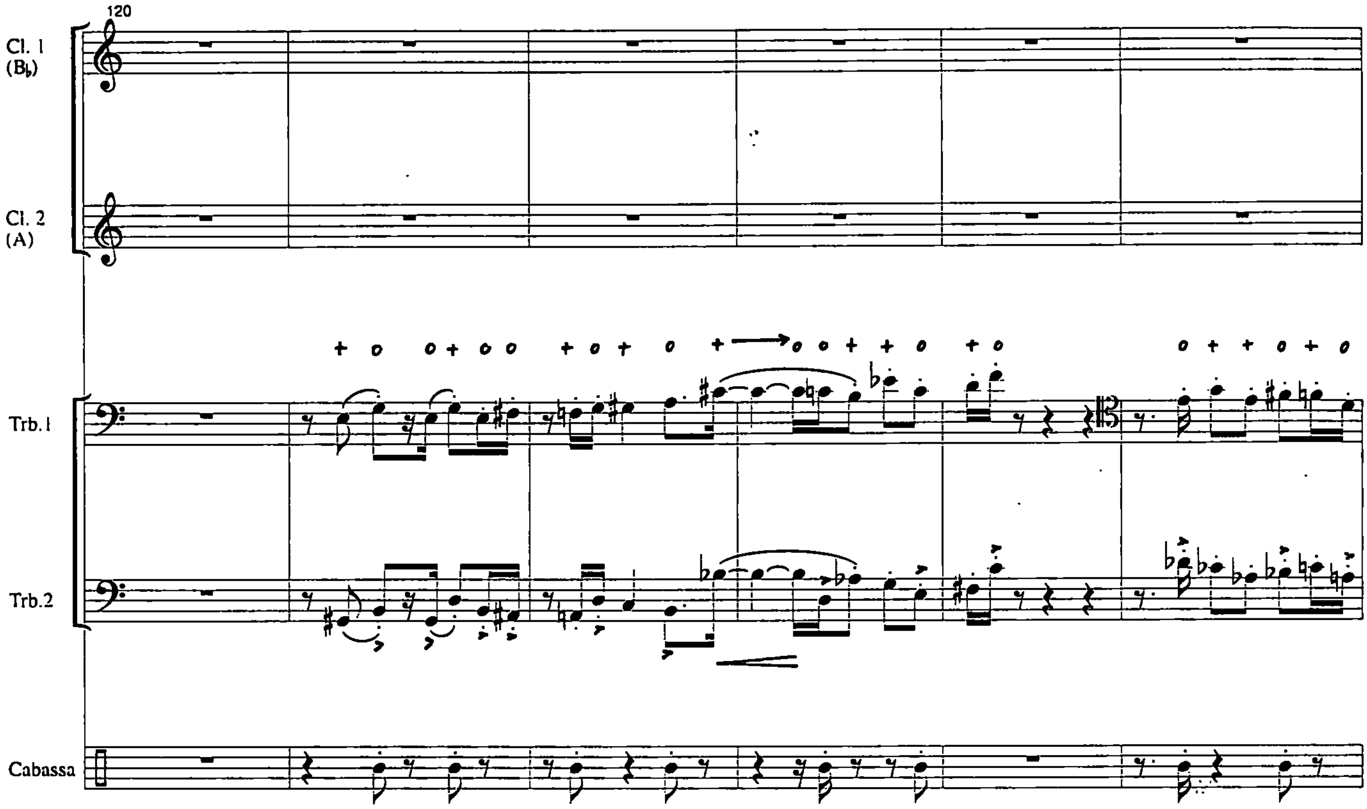
---

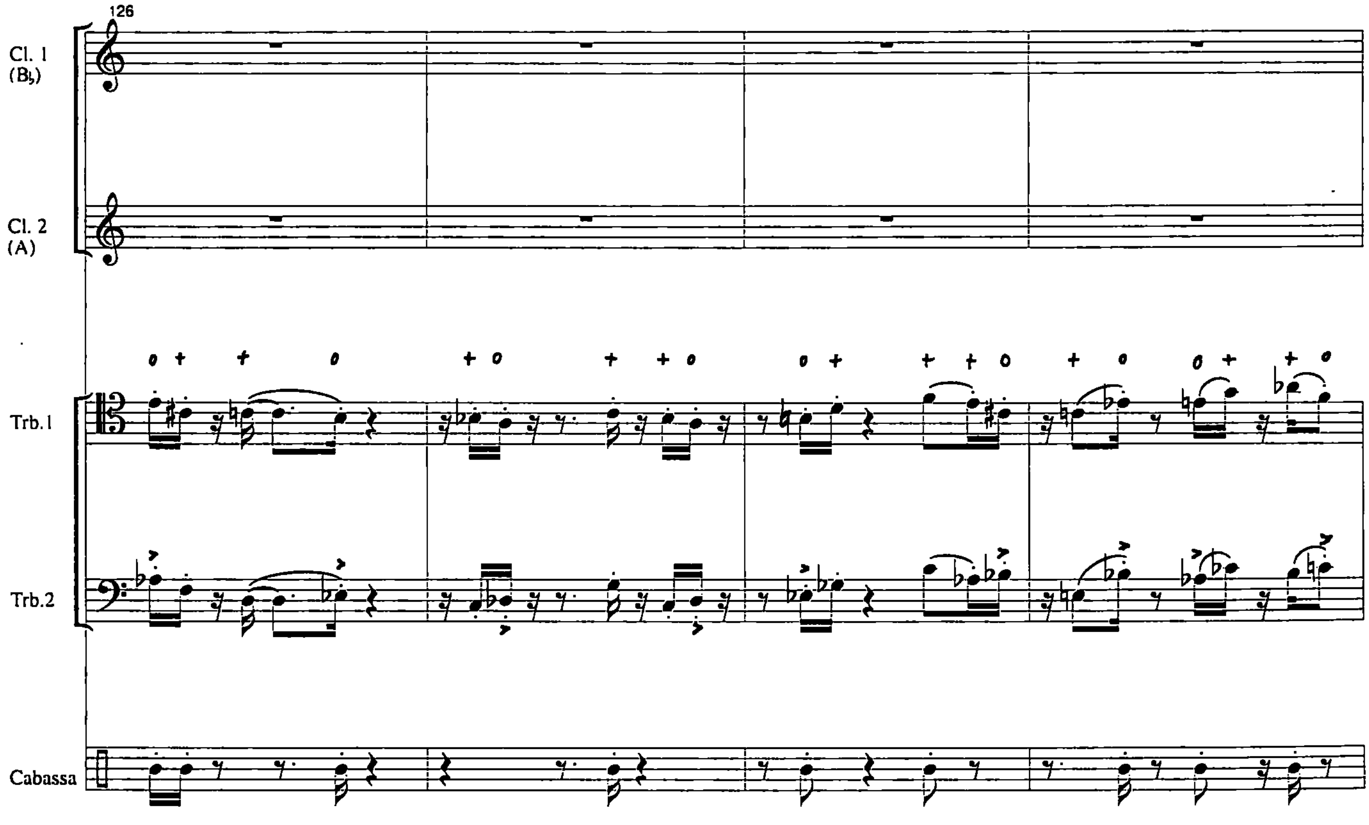
* Trbn. 2 to match dynamic of Trbn. 1

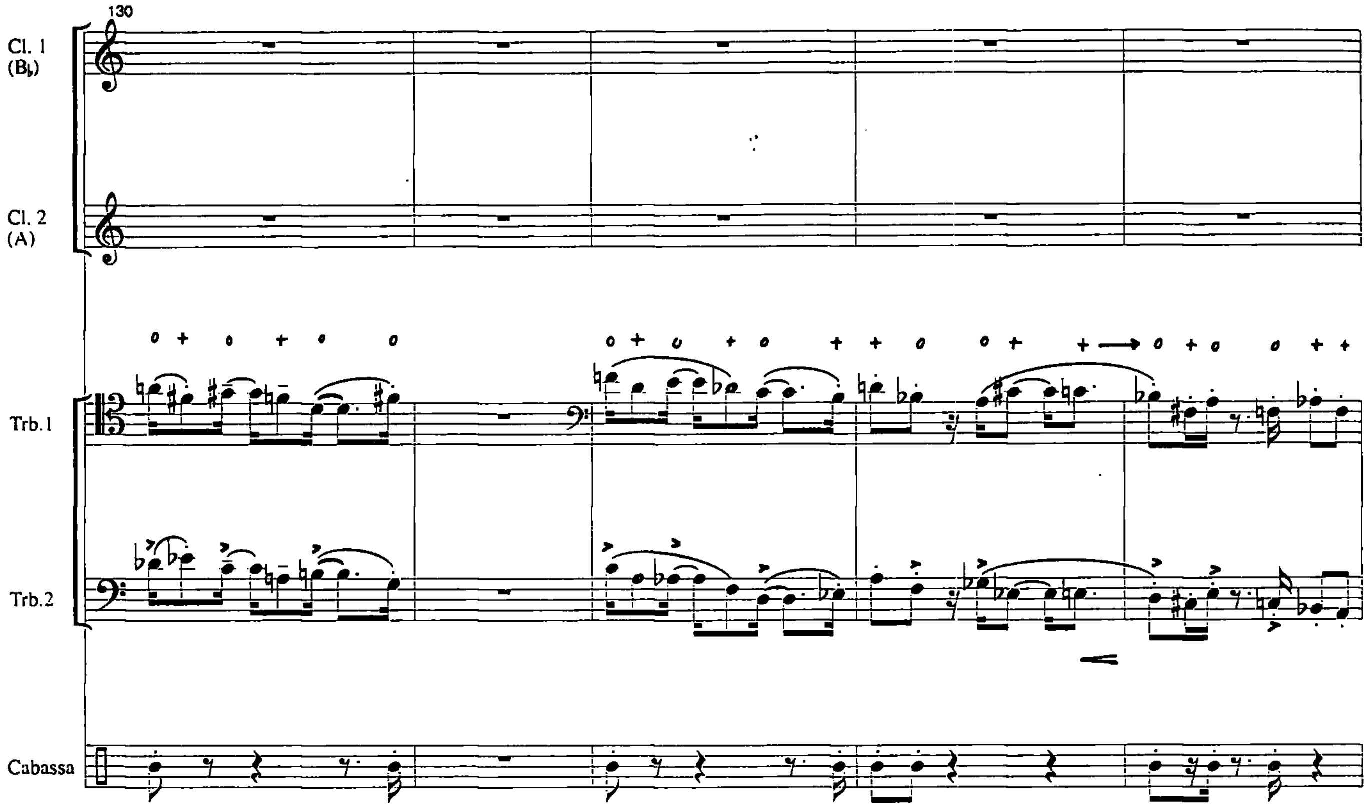

100
Cl. 1
(B♭)
Cl. 2
(A)
Trb. 1
Trb. 2
Cabassa
105
Cl. 1
(B♭)
Cl. 2
(A)
Trb. 1
Trb. 2
Cabassa

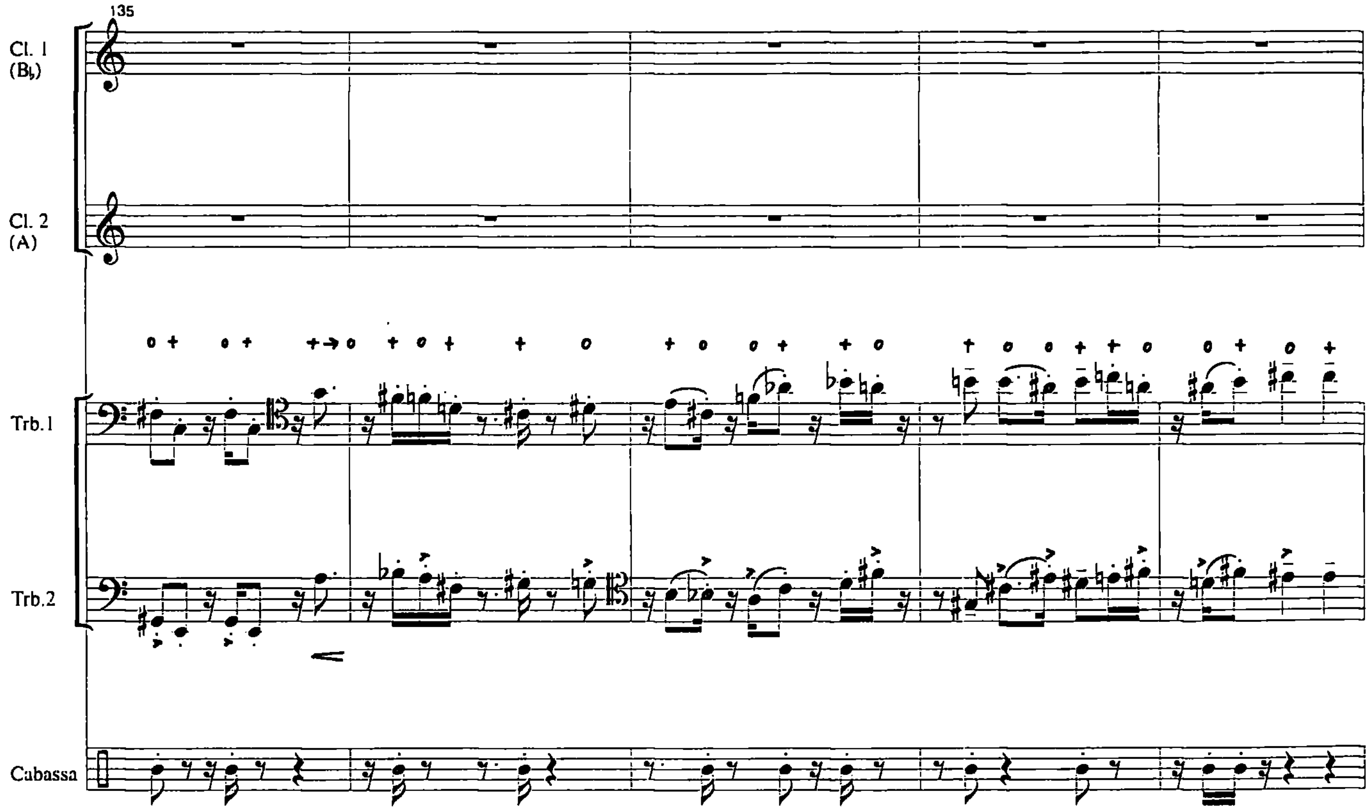

110
Cl. 1
(B♭)
Cl. 2
(A)
Trb. 1
Trb. 2
Cabassa

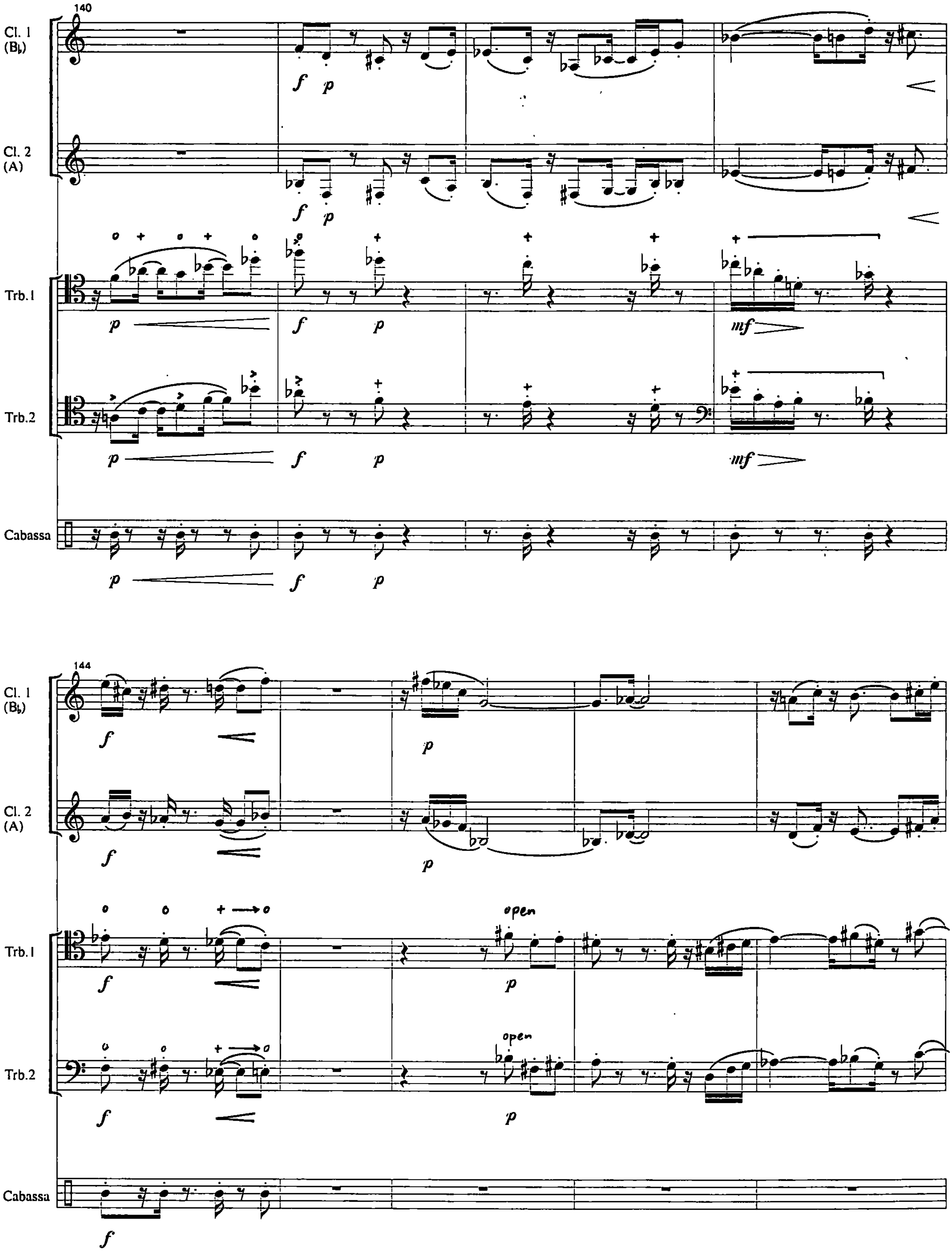

115
Cl. 1
(B♭)
Cl. 2
(A)
Trb. 1
Trb. 2
Cabassa

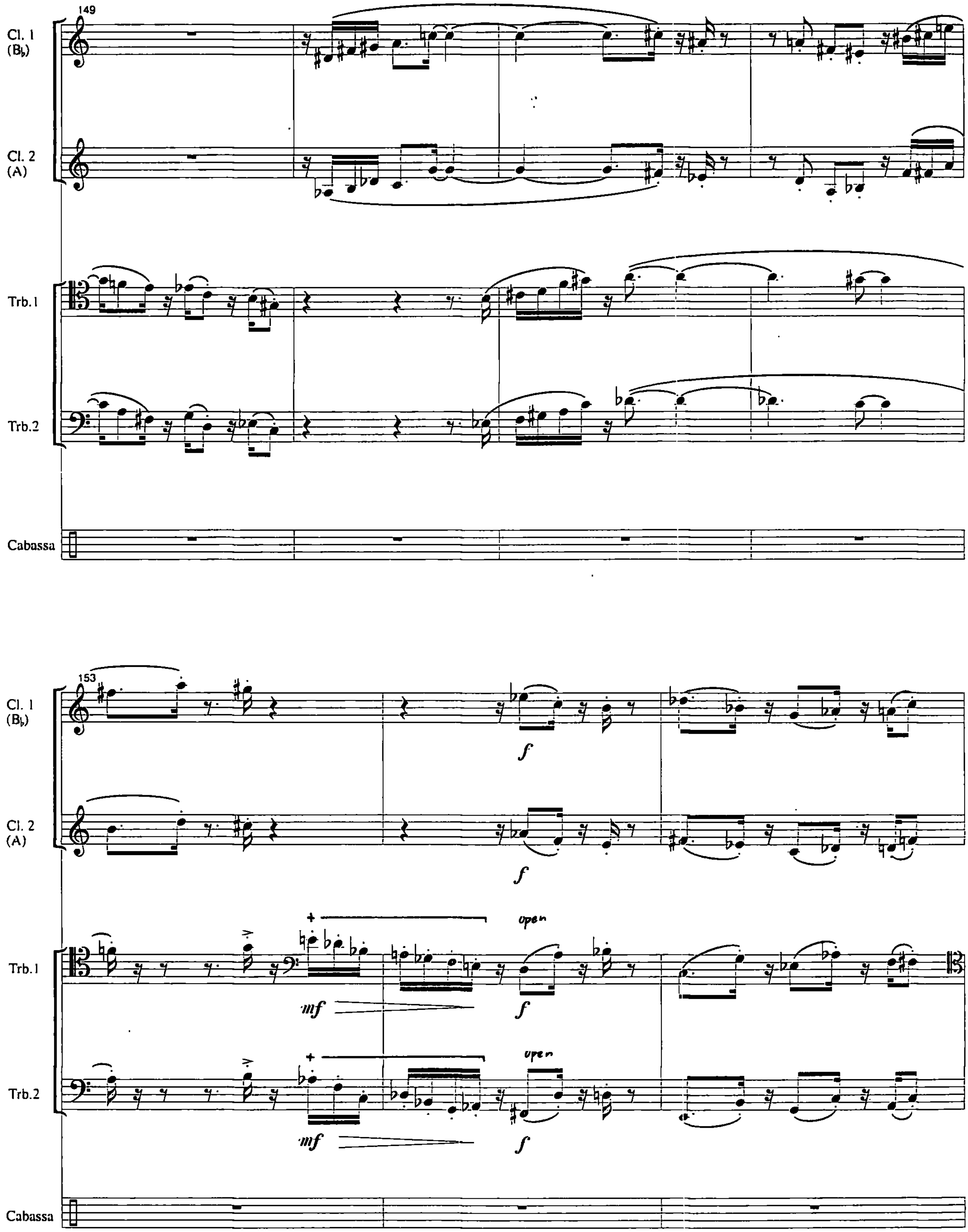

120
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Cabassa

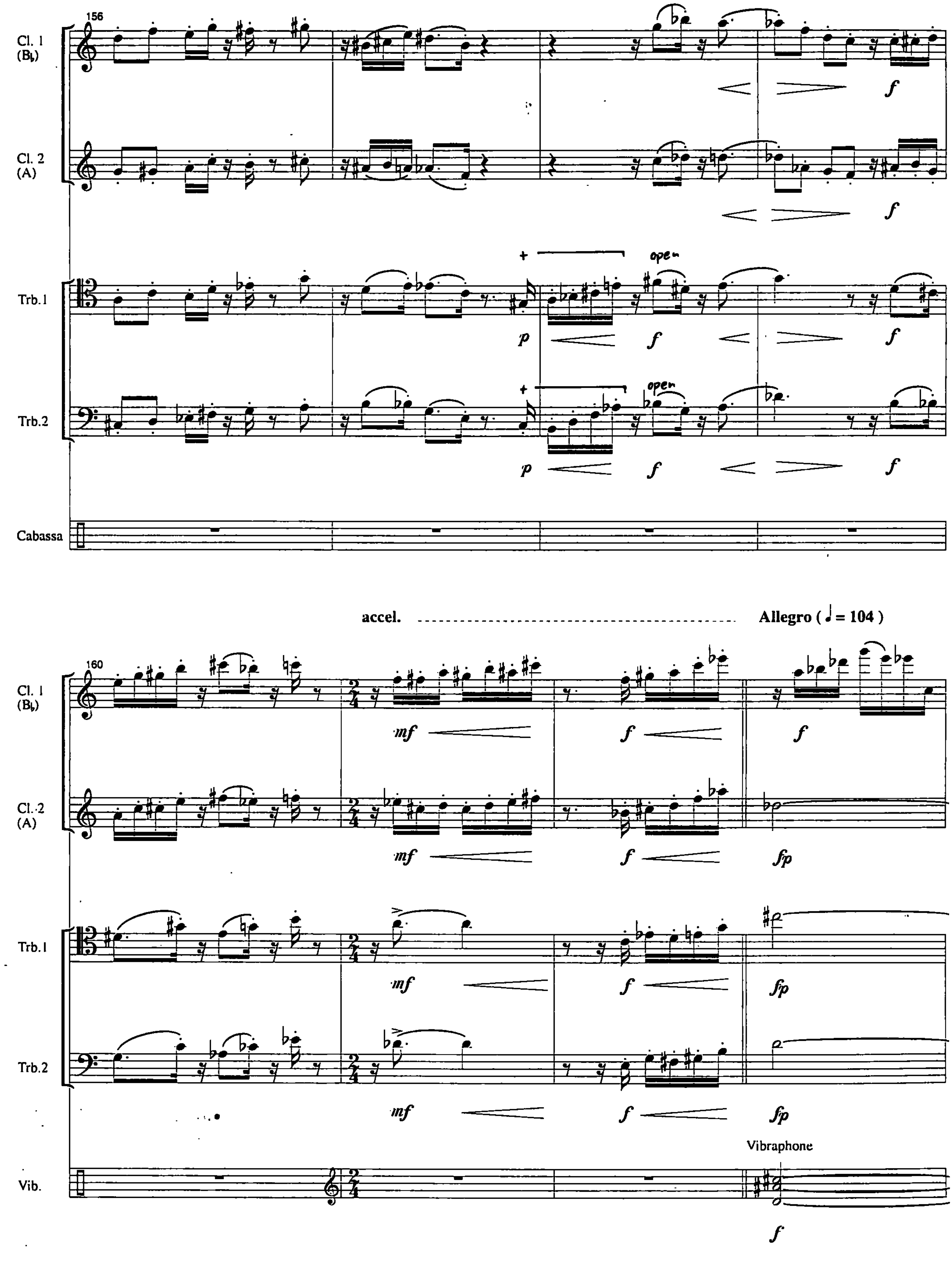

126
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Cabassa

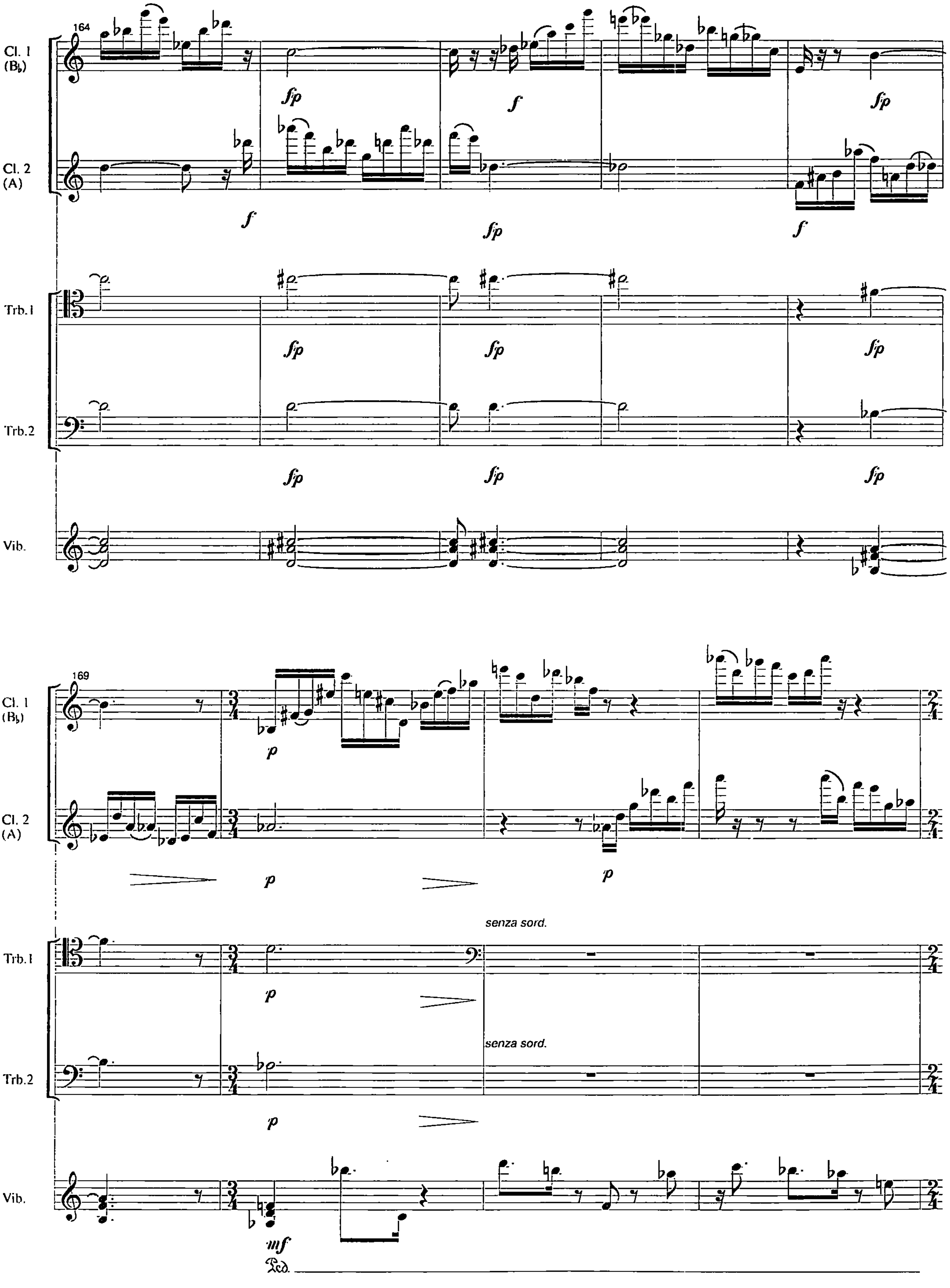

130
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Cabassa

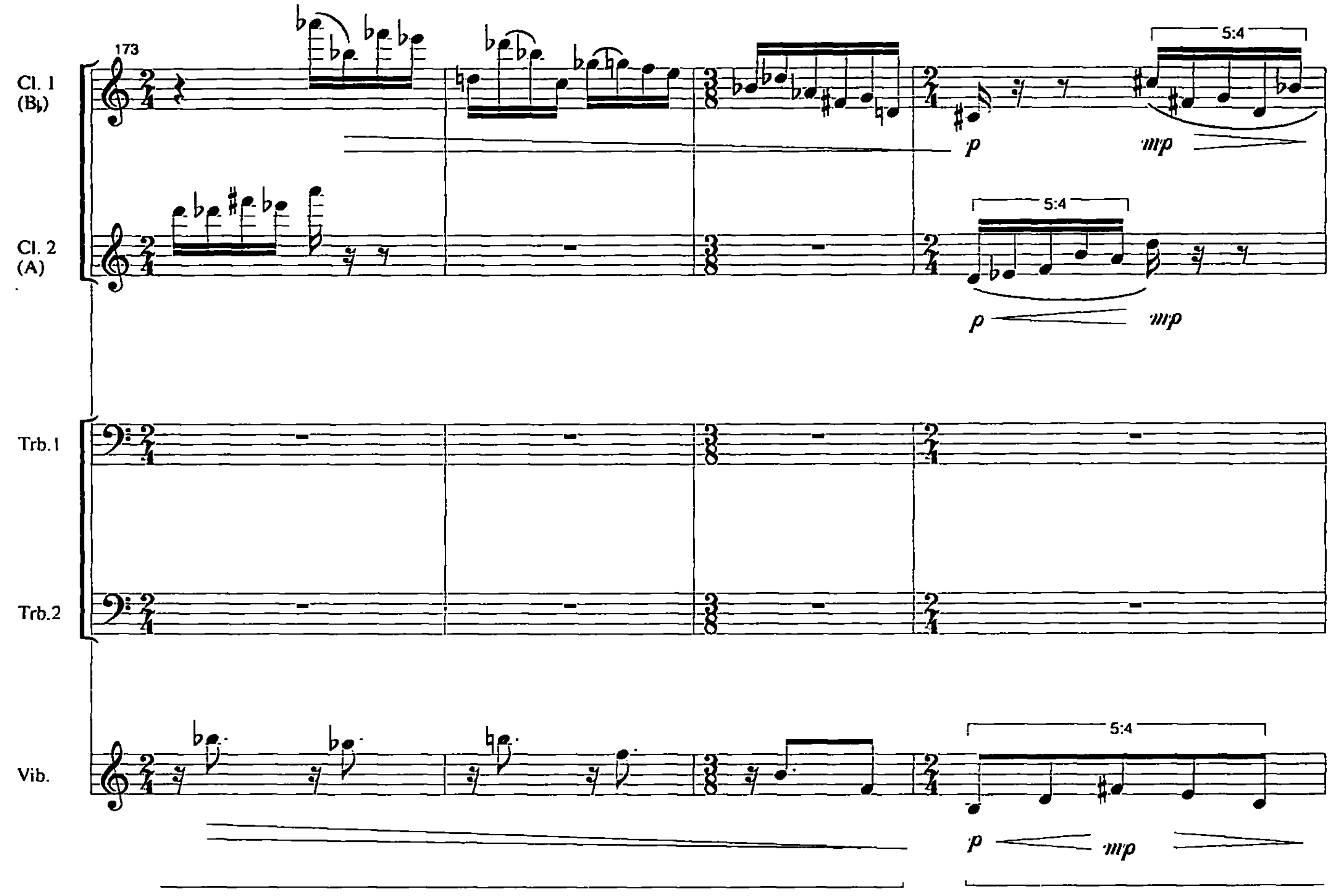

135
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Cabassa

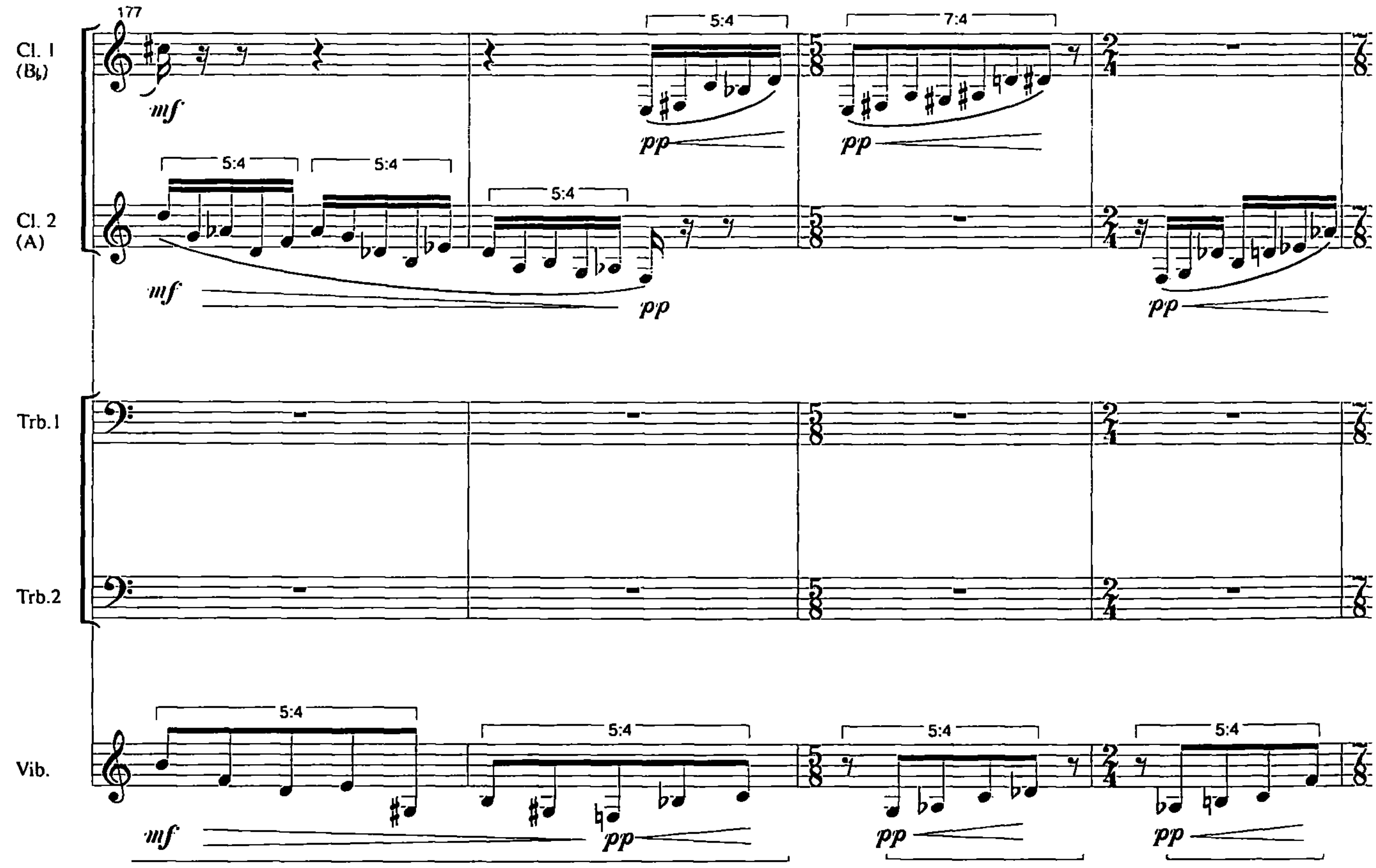

140
Cl. 1 (B♭)
Cl. 2 (A)
Trb. I
Trb. 2
Cabassa
f p
p f p
mf
144
f
p
open
open
p

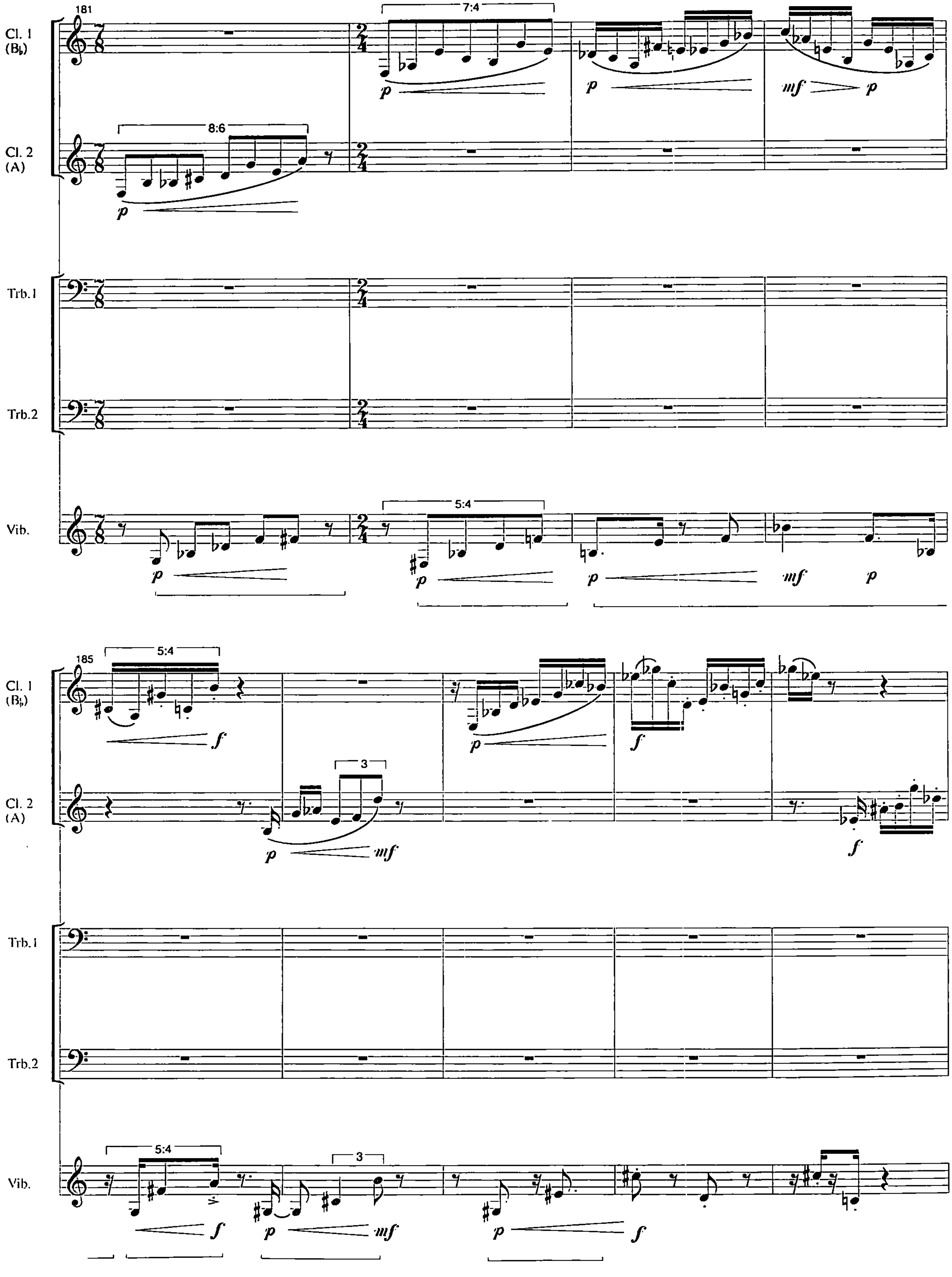

149
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Cabassa
153
f
f
+
open
mf
f
+
open
mf
f

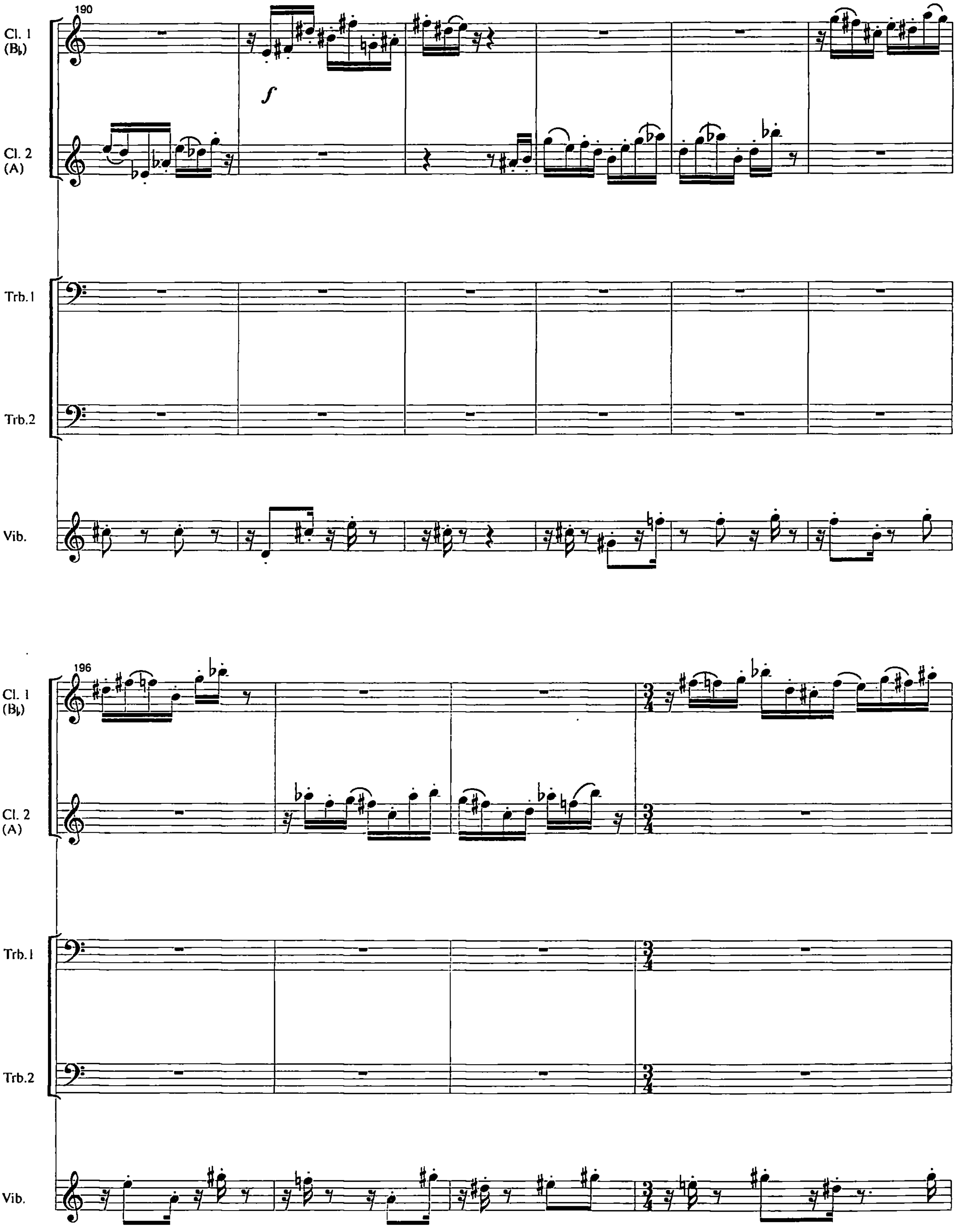

156
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Cabassa
+
open
p
f
160
accel.
Allegro (♩ = 104)
mf
fp
Vibraphone
Vib.

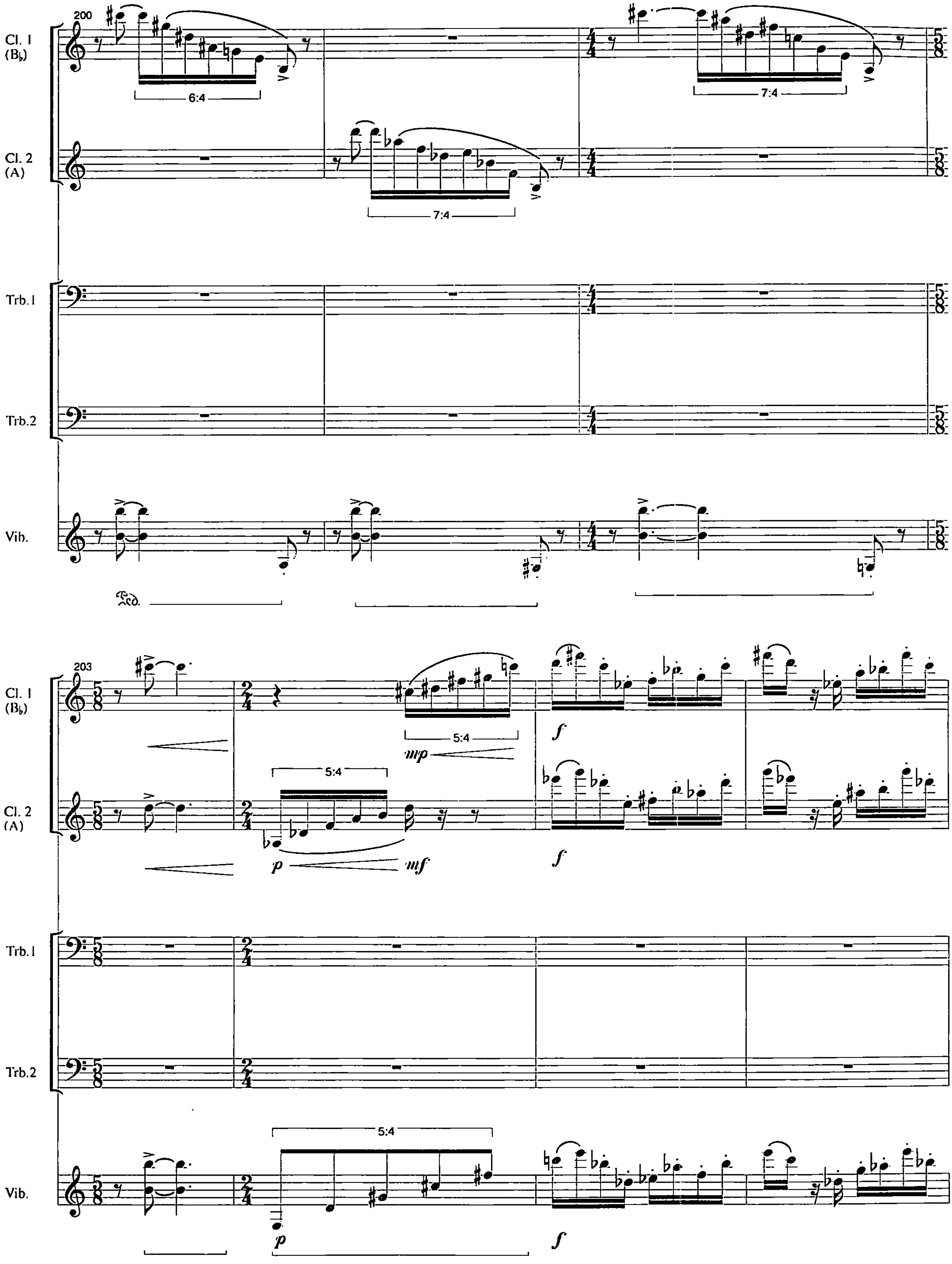

164
Cl. 1 (B♭)
Cl. 2 (A)
Trb.1
Trb.2
Vib.
fp
f
fp
f
fp
fp
fp
fp
fp
fp
fp
169
p
p
p
senza sord.
senza sord.
p
p
mf
Ped.

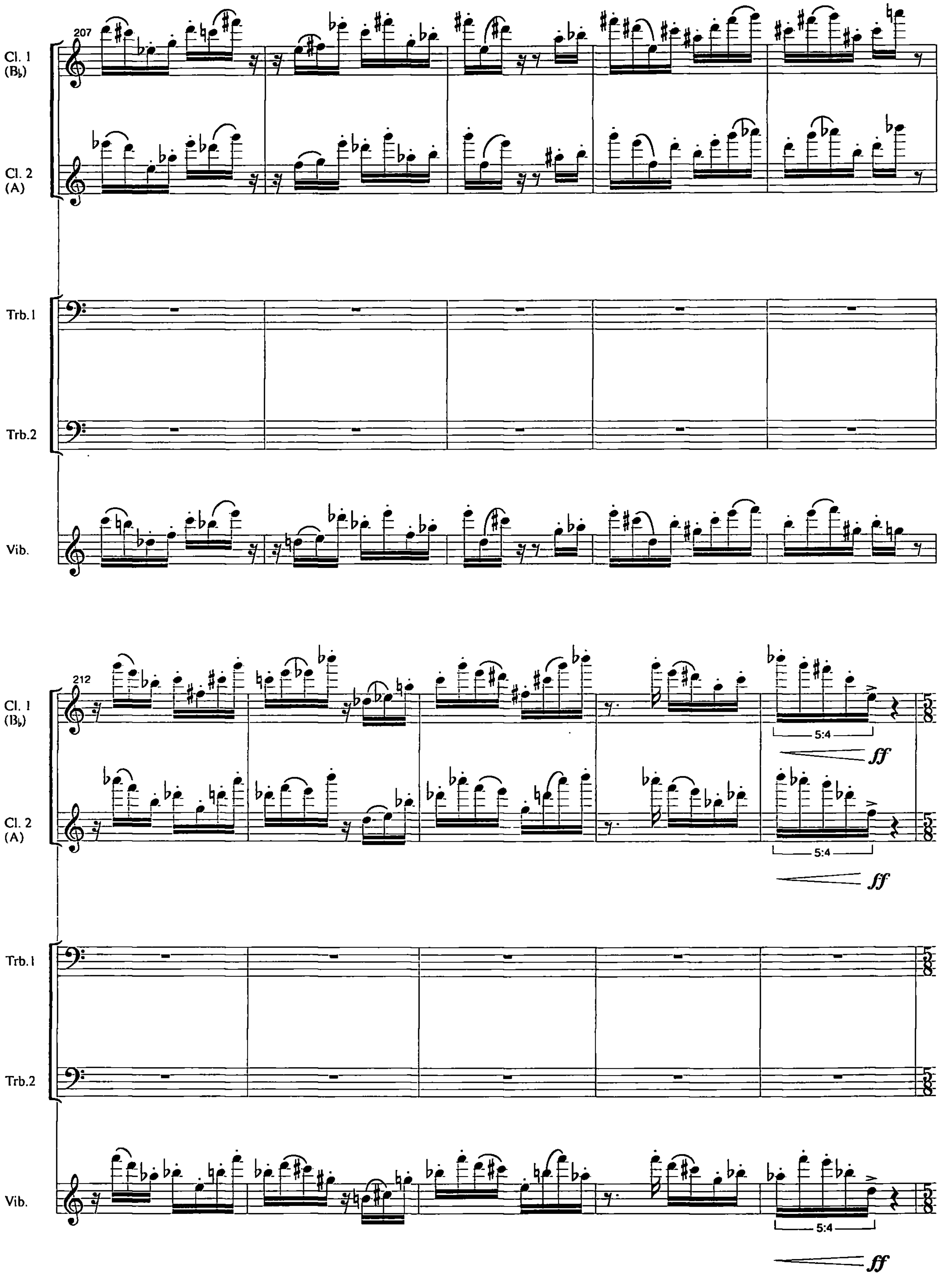

173
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Vib.
5:4
5:4
5:4
p
mp
p
mp
p
mp

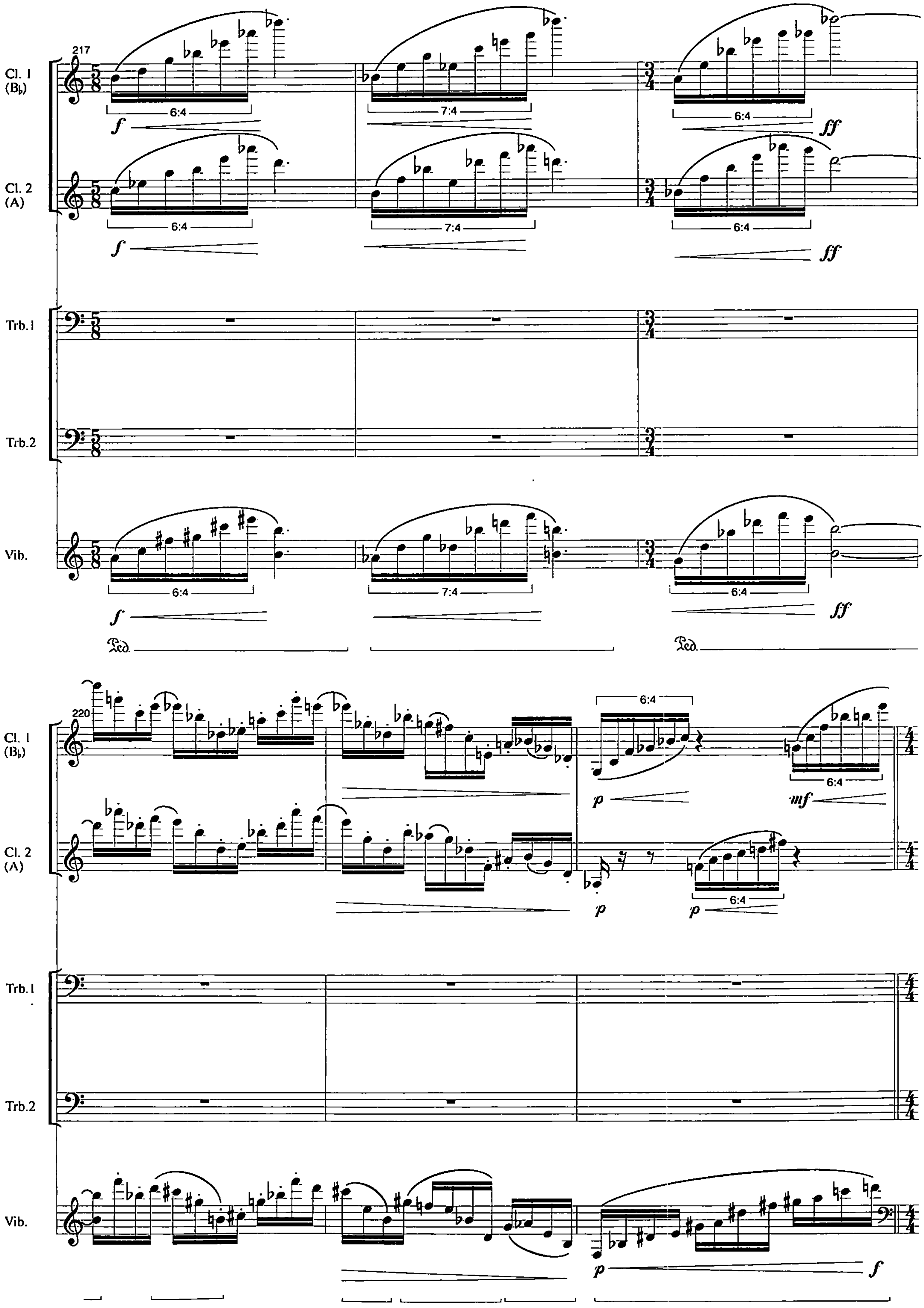

177
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Vib.
5:4
7:4
5:4
5:4
5:4
5:4
5:4
5:4
5:4
mf
pp
pp
mf
pp
pp
mf
pp
pp
pp

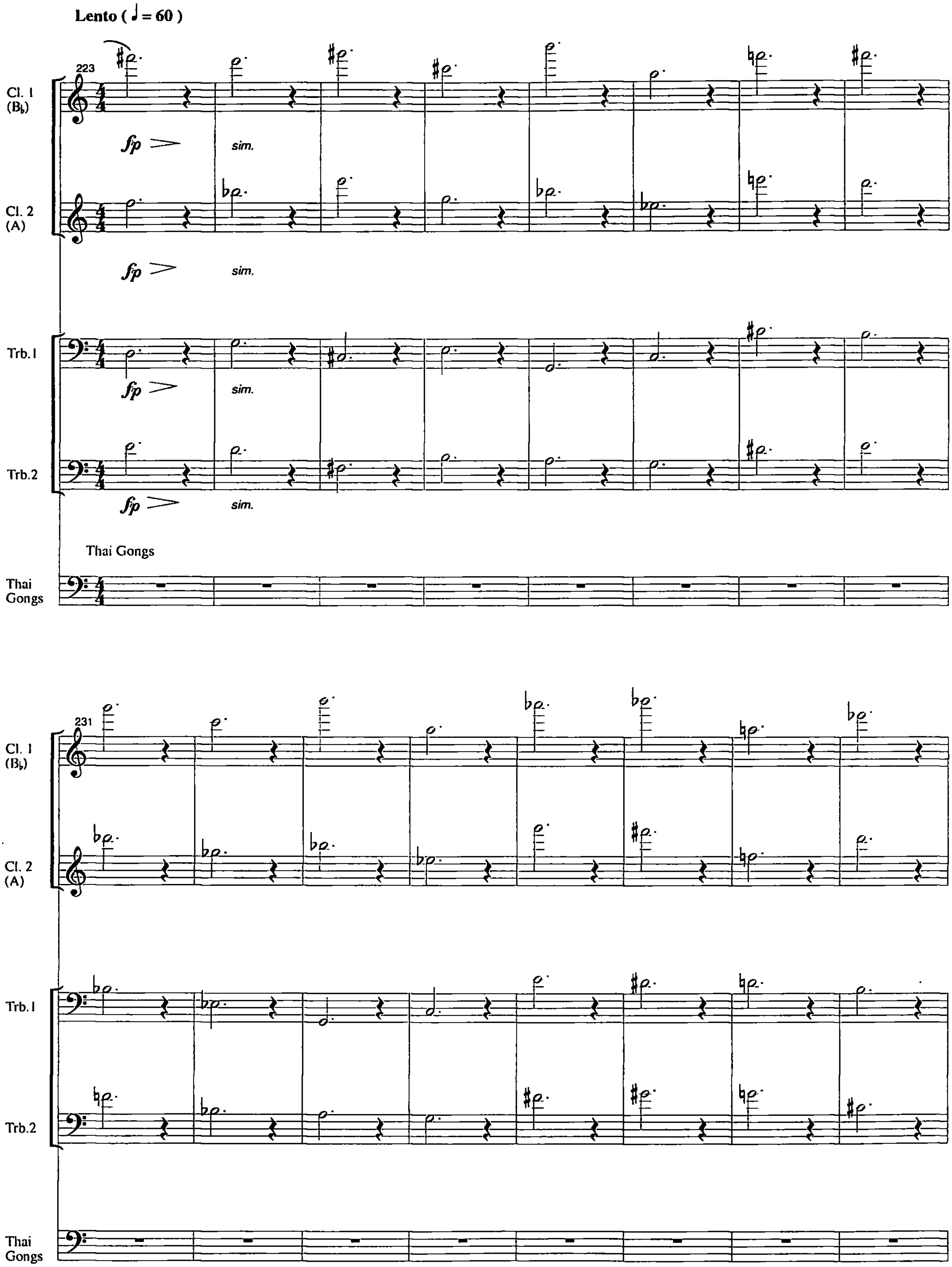

181
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Vib.
7:4
8:6
5:4
p
mf
185
5:4
3
f

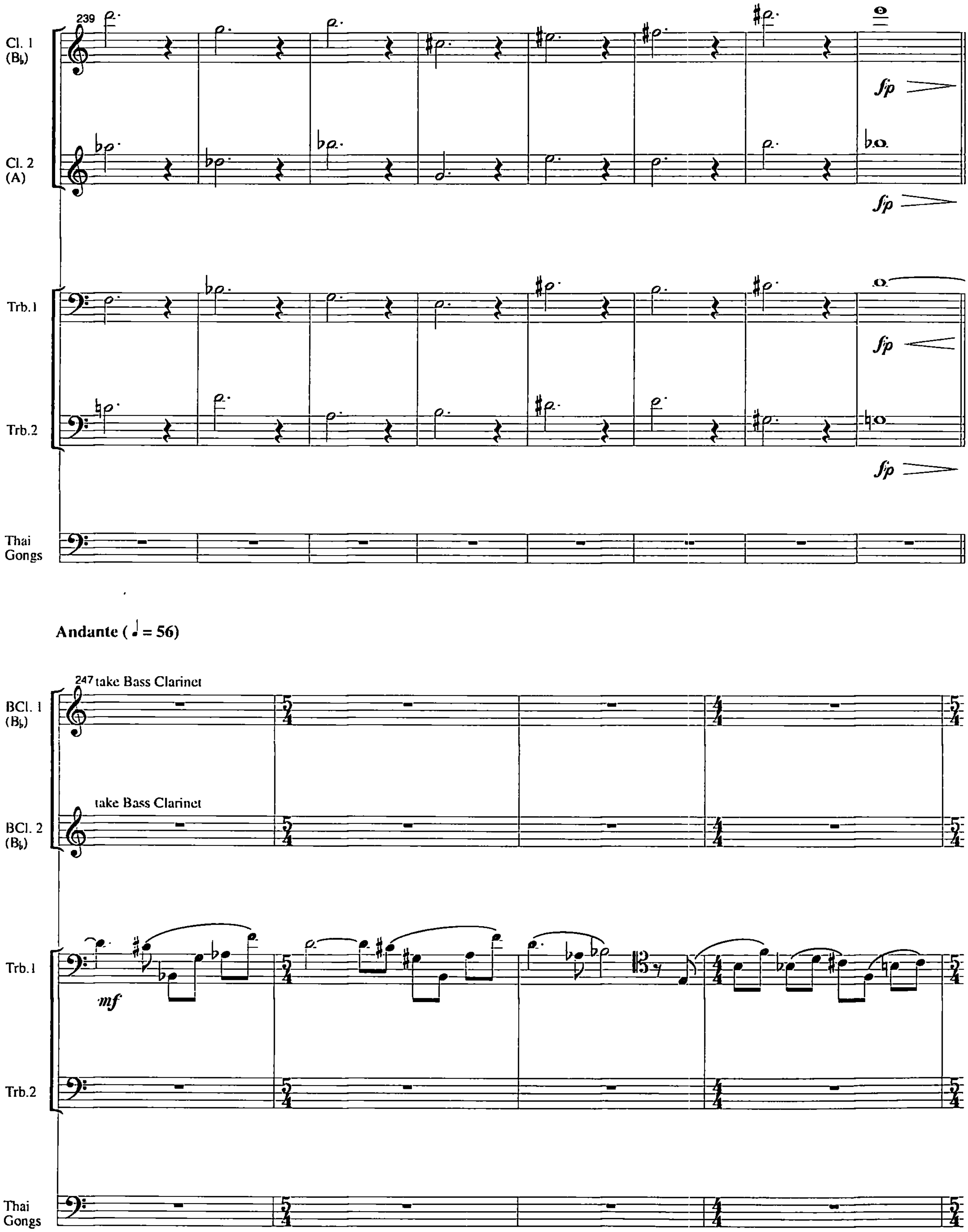

190
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Vib.
f
196
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Vib.
3/4

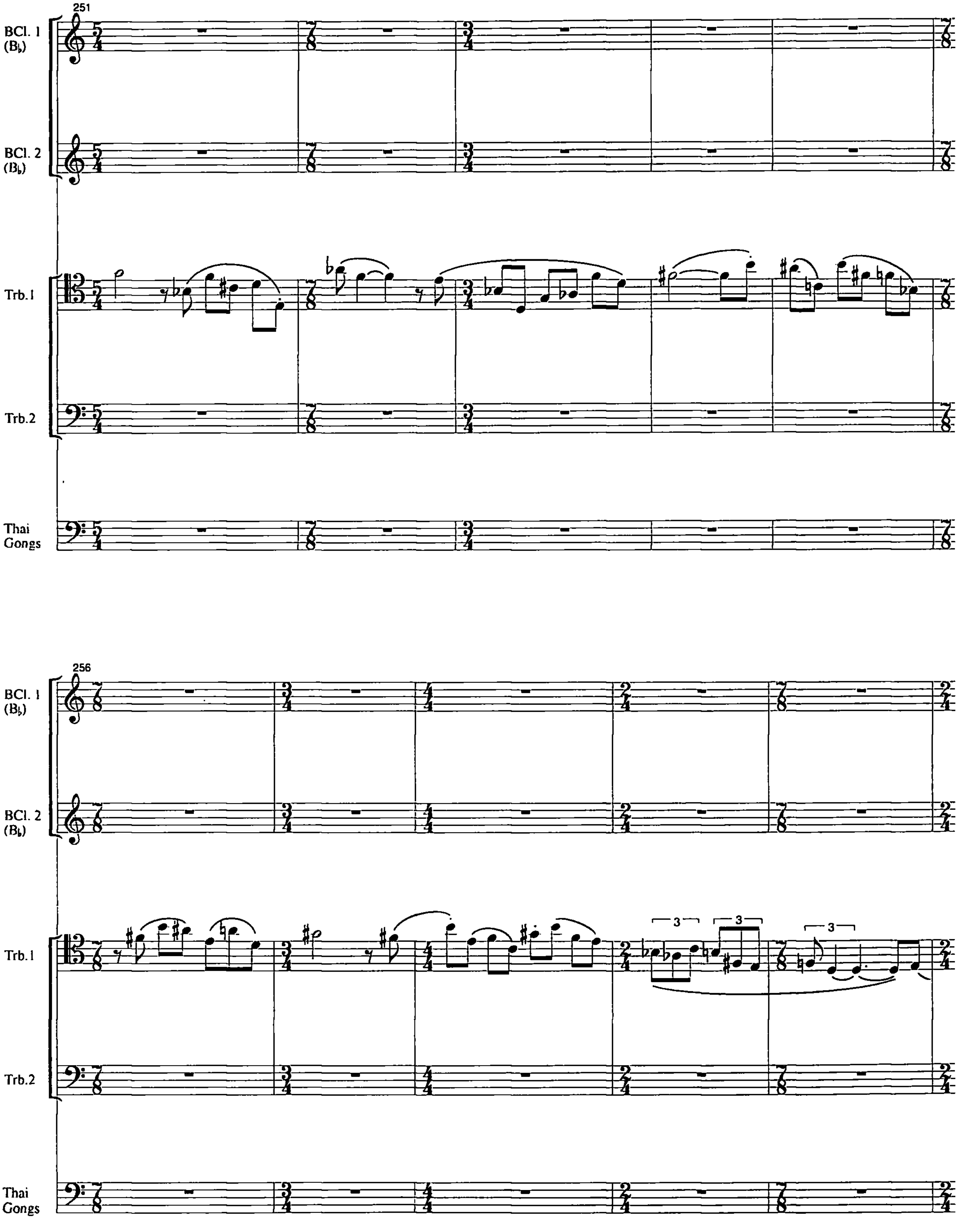

200
Cl. 1
(B♭)
Cl. 2
(A)
Trb. 1
Trb. 2
Vib.
6:4
7:4
7:4
Ped.
203
5:4
5:4
5:4
mp
p
mf
f
f
p
f

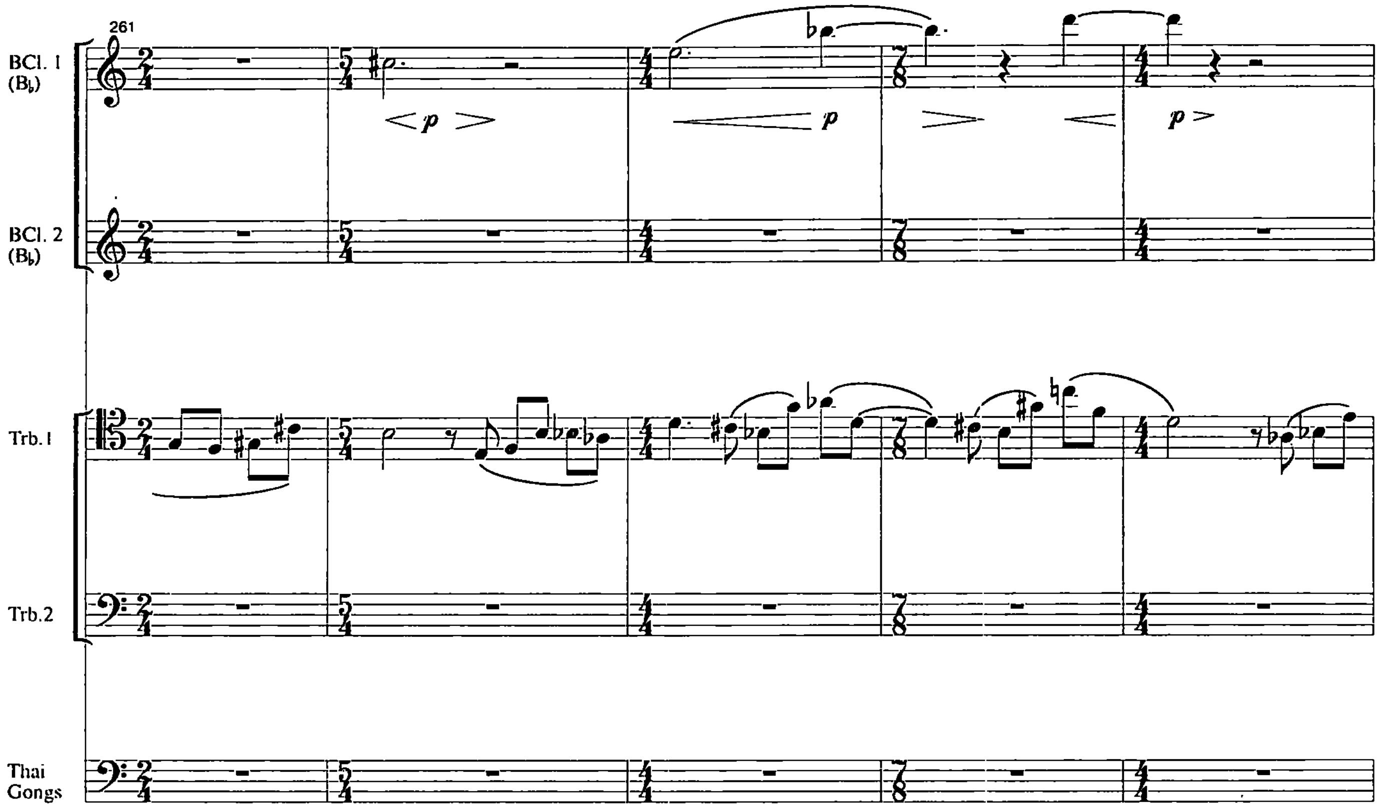

207
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Vib.
212
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Vib.
5:4
ff
5/8

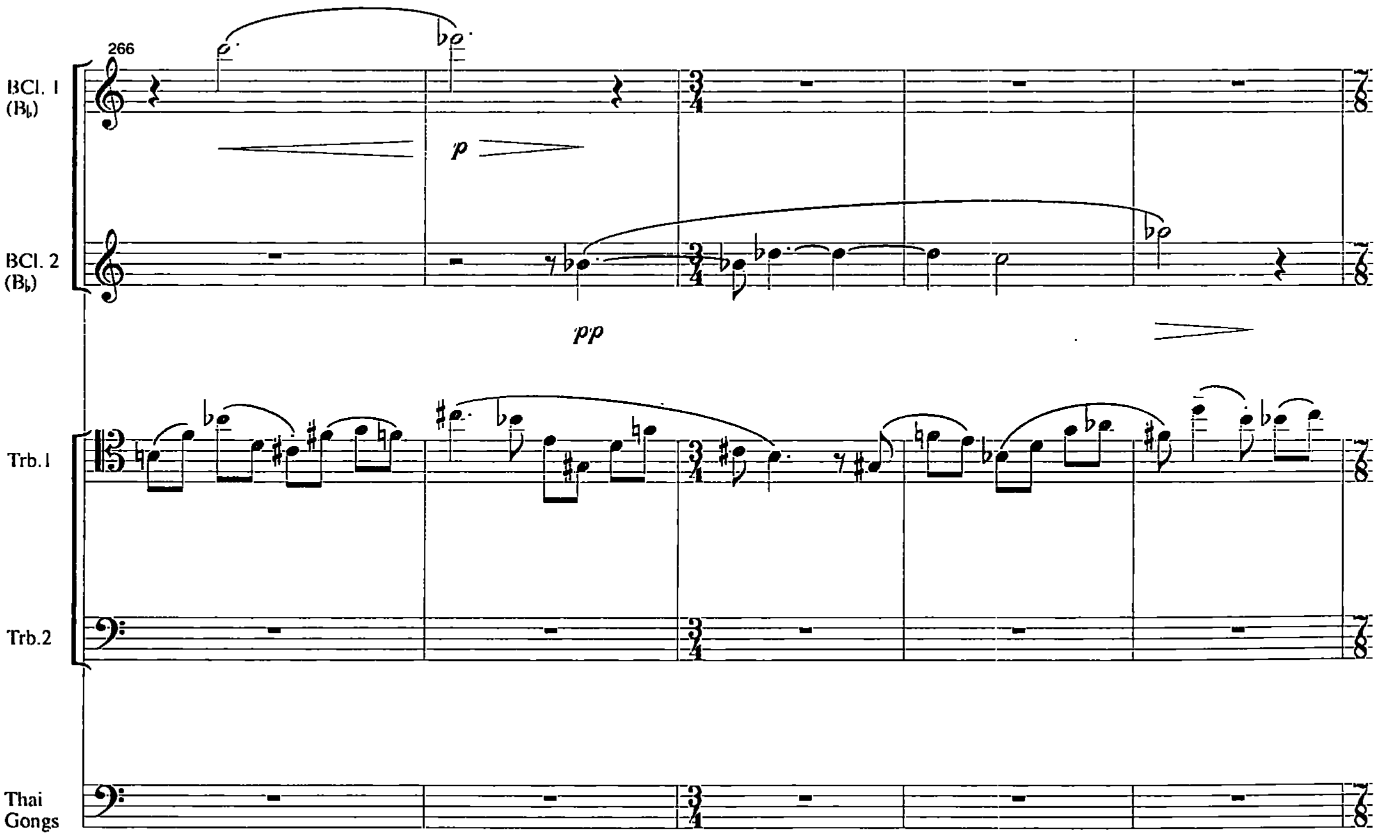

217
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Vib.
6:4
7:4
f
ff
Ped.
220
p
mf

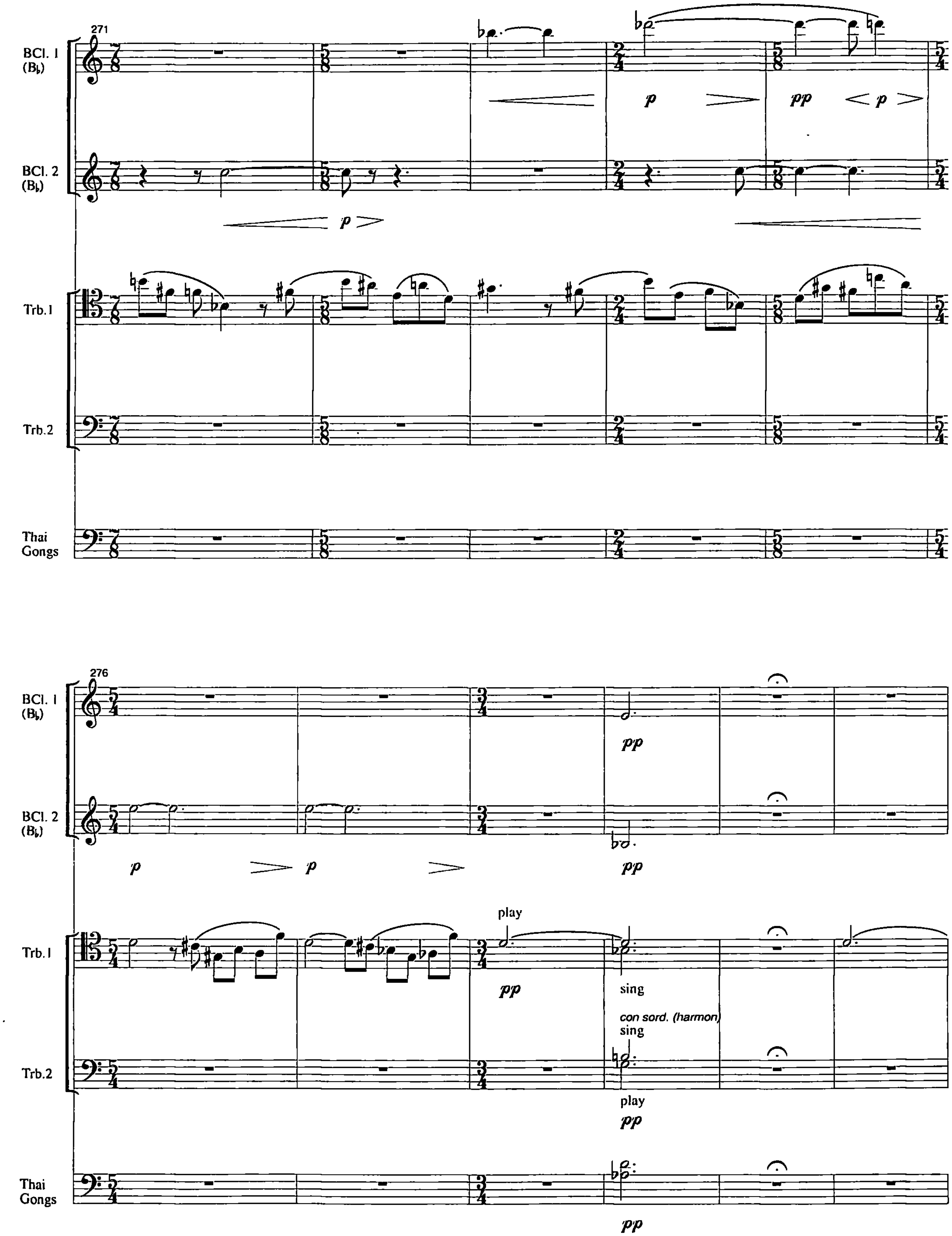

Lento (♩ = 60)
223
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Thai Gongs
fp
sim.
Thai Gongs
231

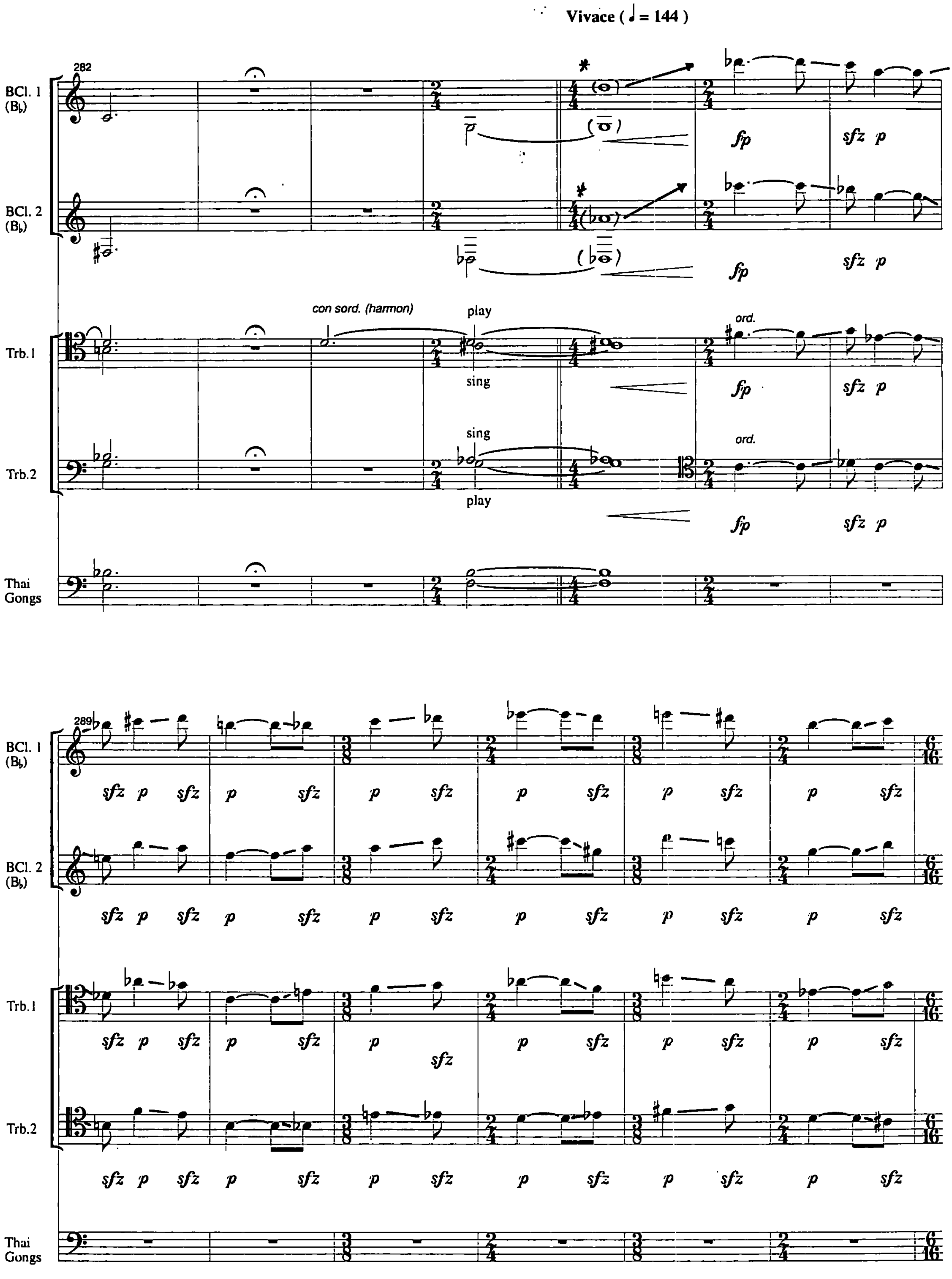

239
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Thai Gongs
fp
fp
fp
fp
Andante (♩ = 56)
247 take Bass Clarinet
BCl. 1 (B♭)
take Bass Clarinet
BCl. 2 (B♭)
Trb. 1
mf
Trb. 2
Thai Gongs


251
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb.1
Trb.2
Thai Gongs
256
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb.1
Trb.2
Thai Gongs
3
3
3

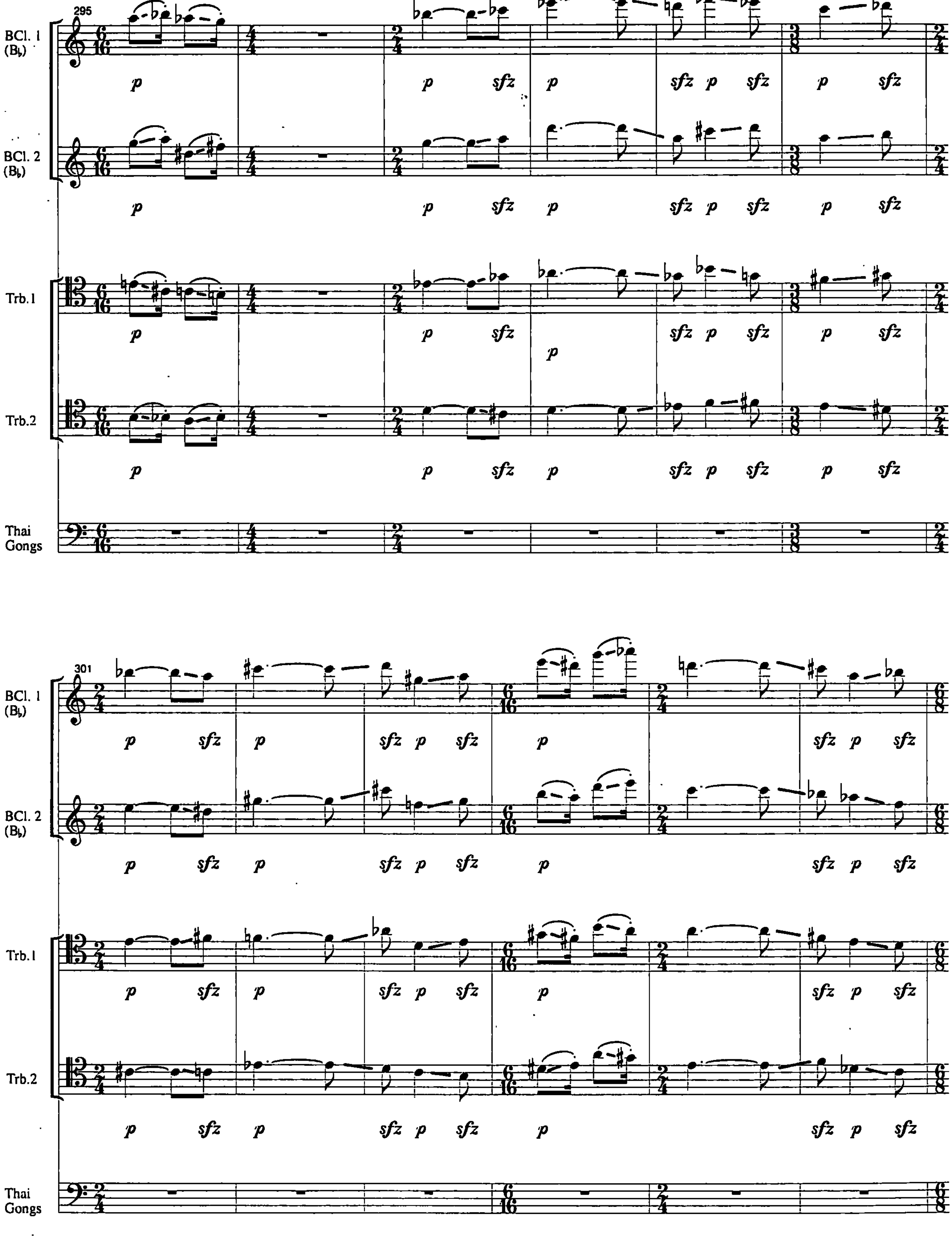

261
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
p
p
p

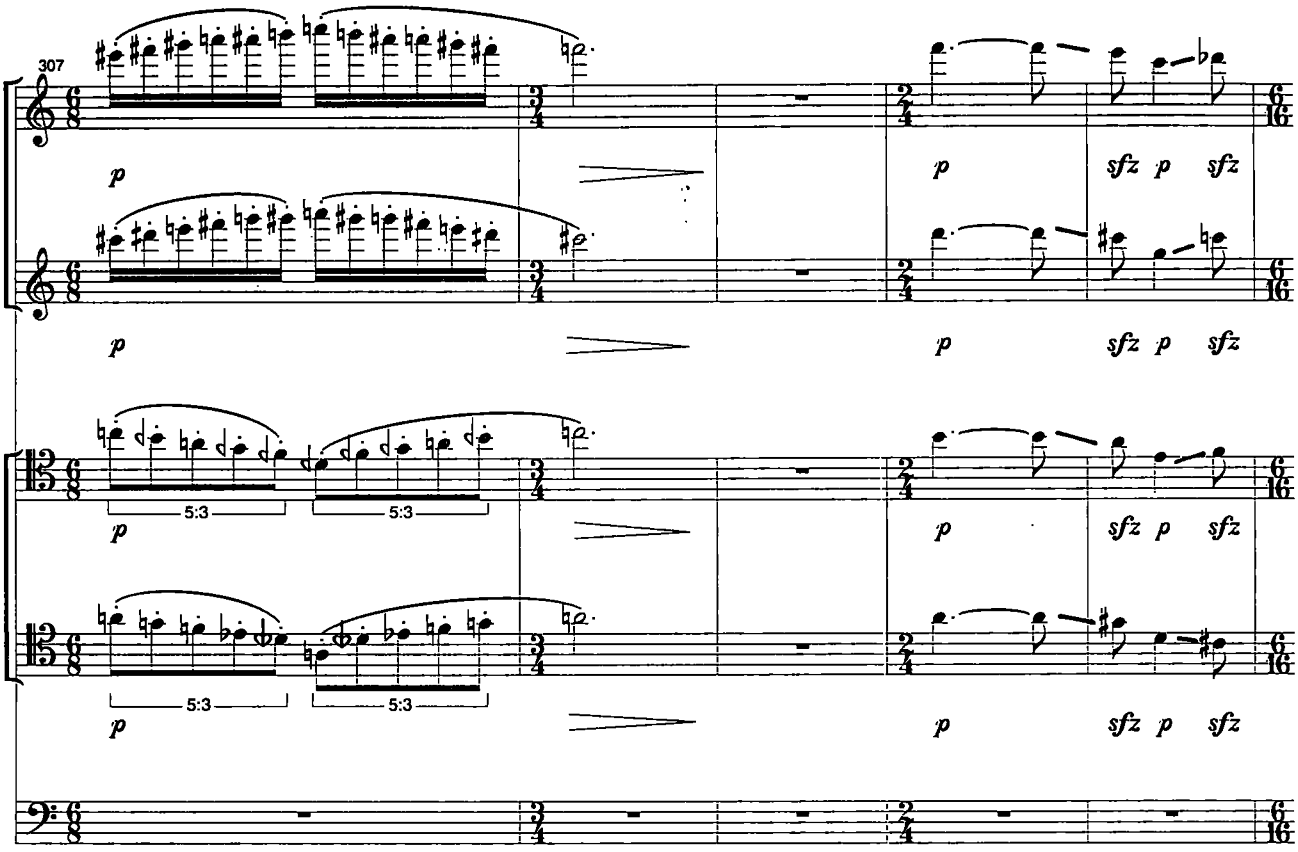

266
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
p
pp

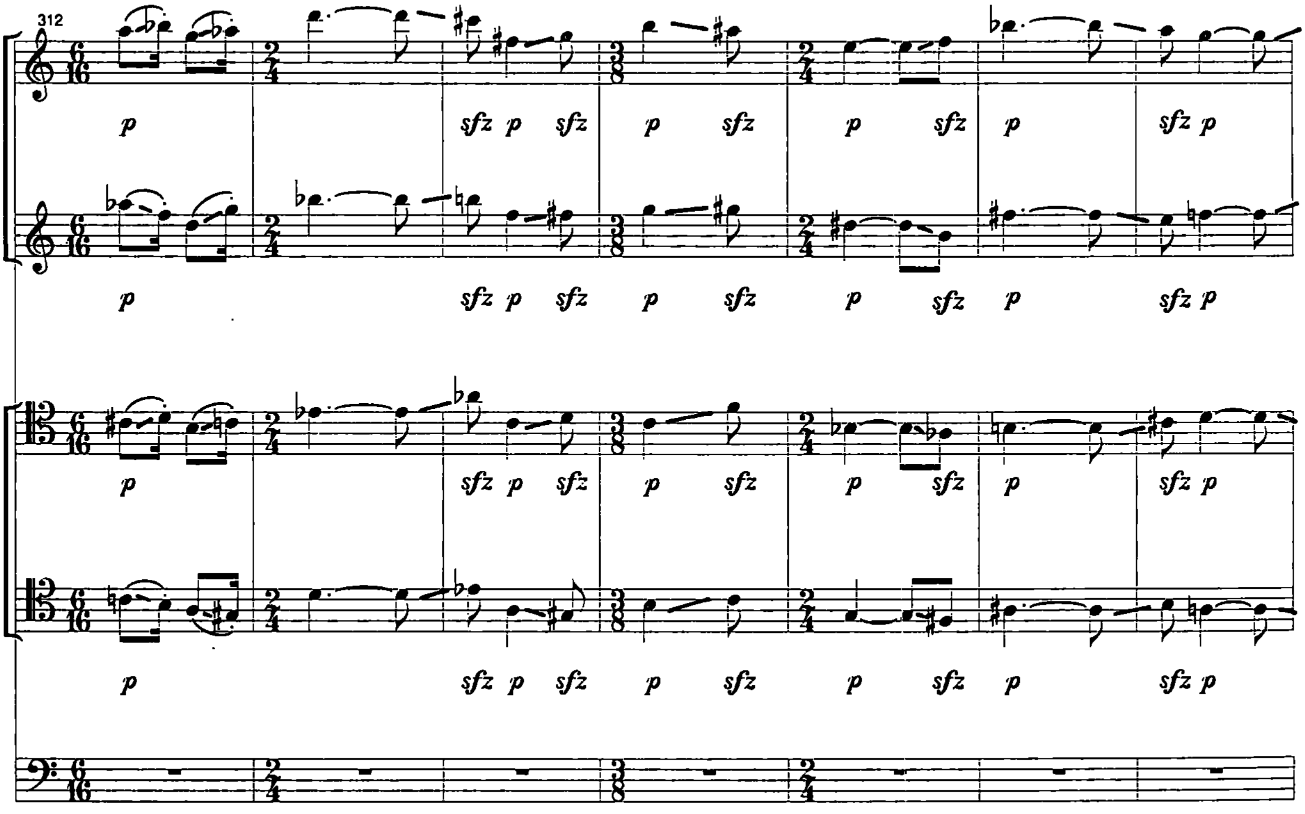

271
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
p
pp
p
p
276
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
pp
p
p
pp
play
pp
sing
con sord. (harmon)
sing
play
pp
pp

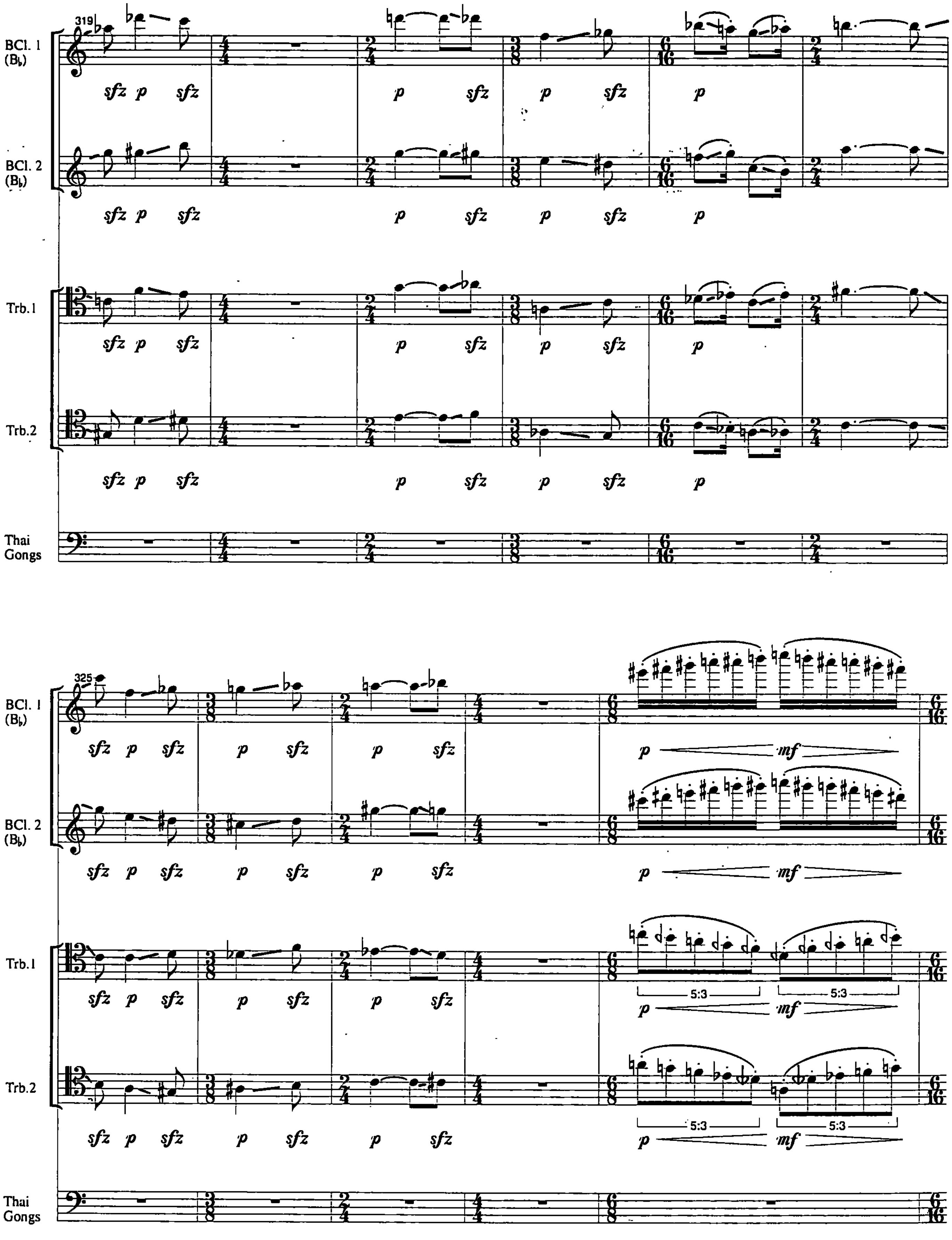

Vivace (♩ = 144)
282
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
con sord. (harmon)
play
sing
sing
play
ord.
ord.
fp
sfz
p
289

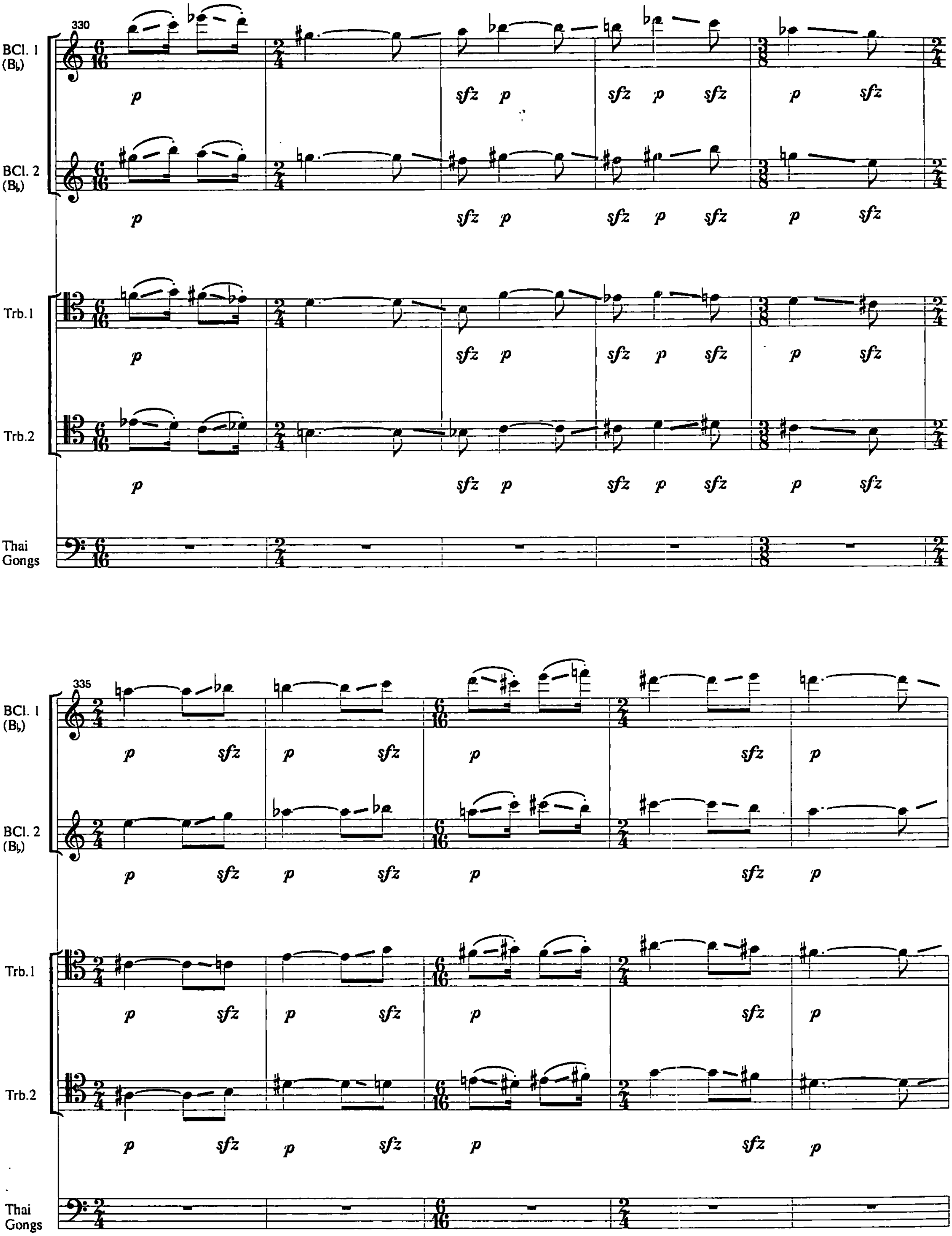
* Force note to form a multiphonic, gradually increasing the number of overtones

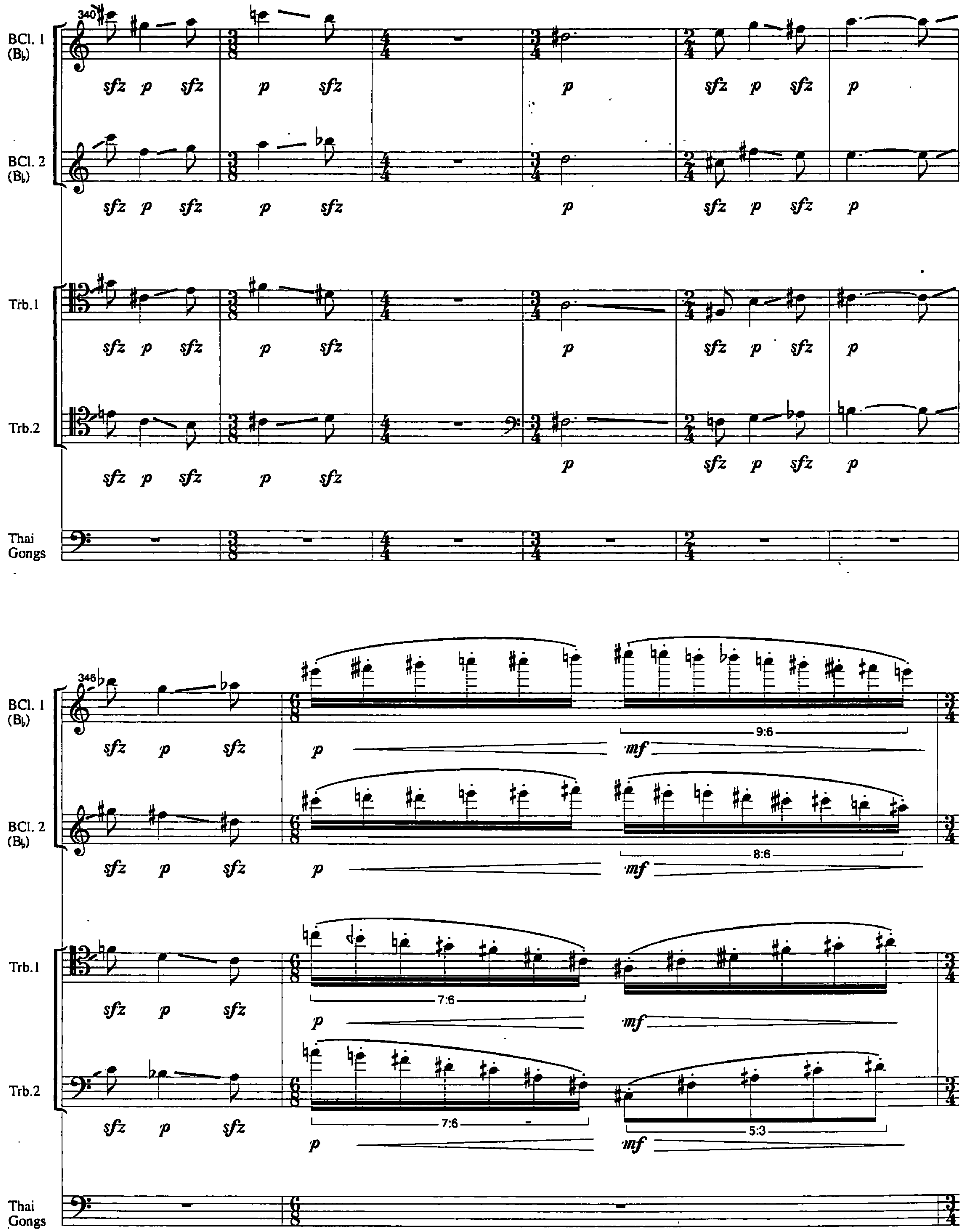

295
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
p
sfz
301

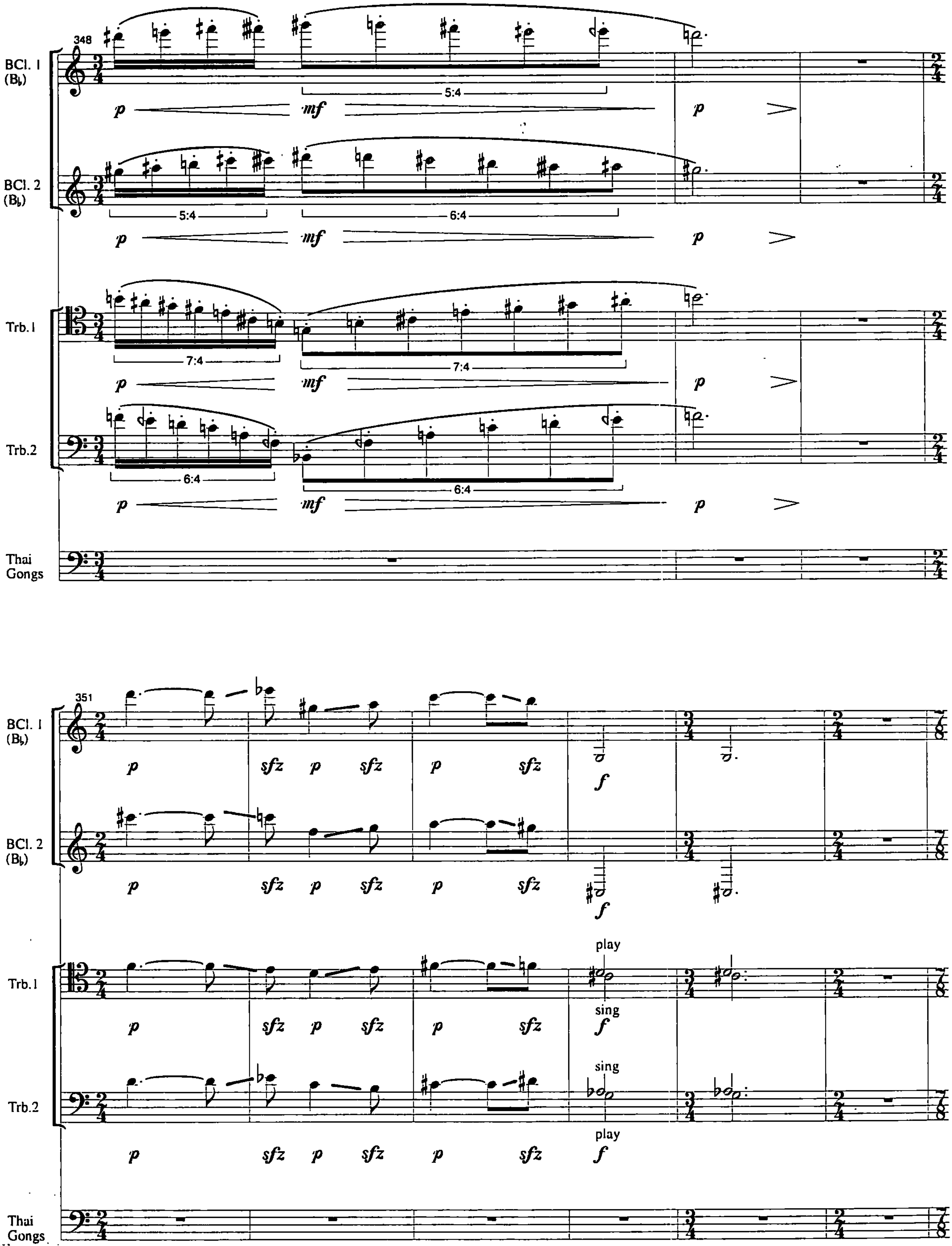

307
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
p
sfz
5:3

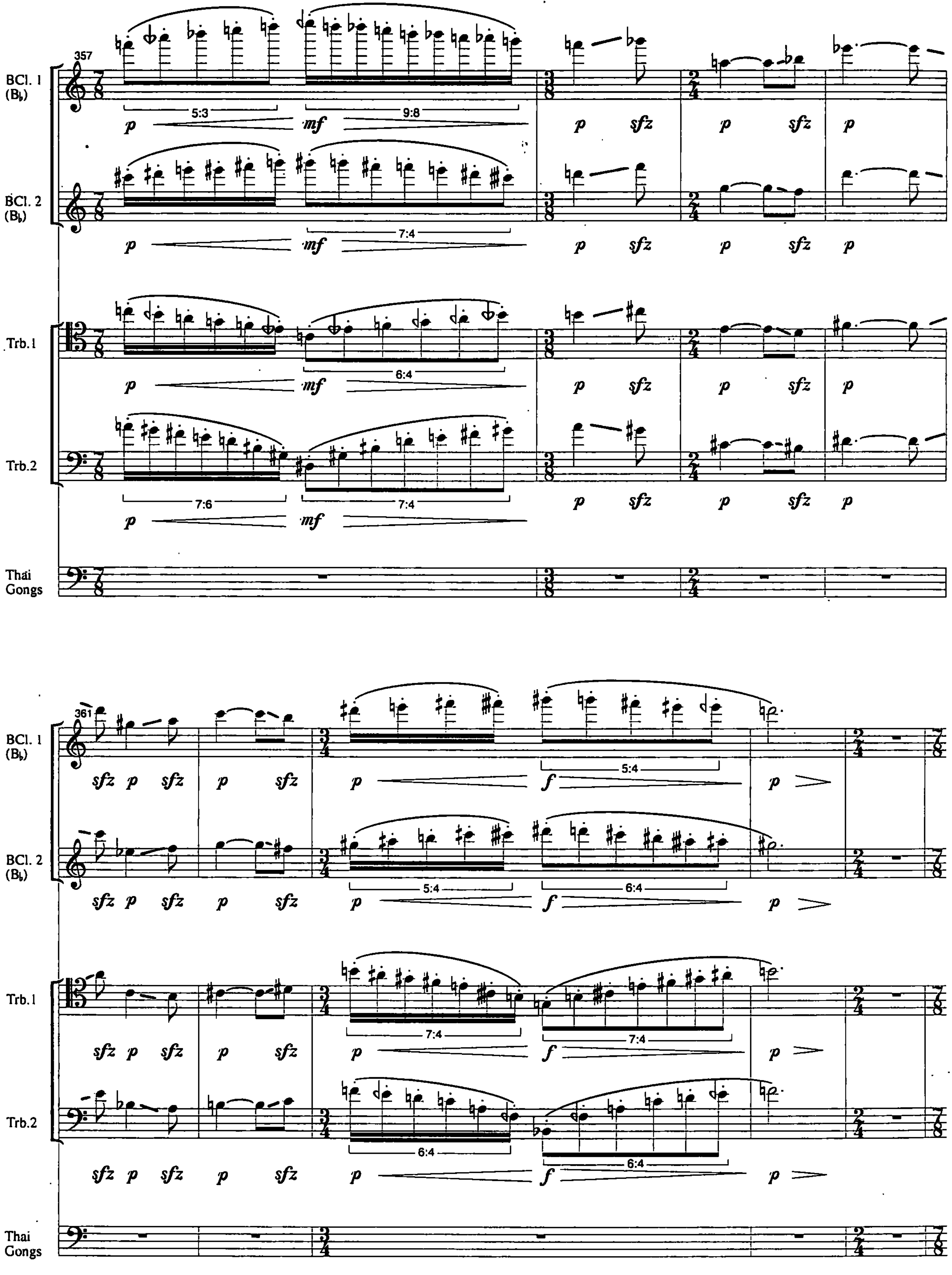

312
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
p
sfz

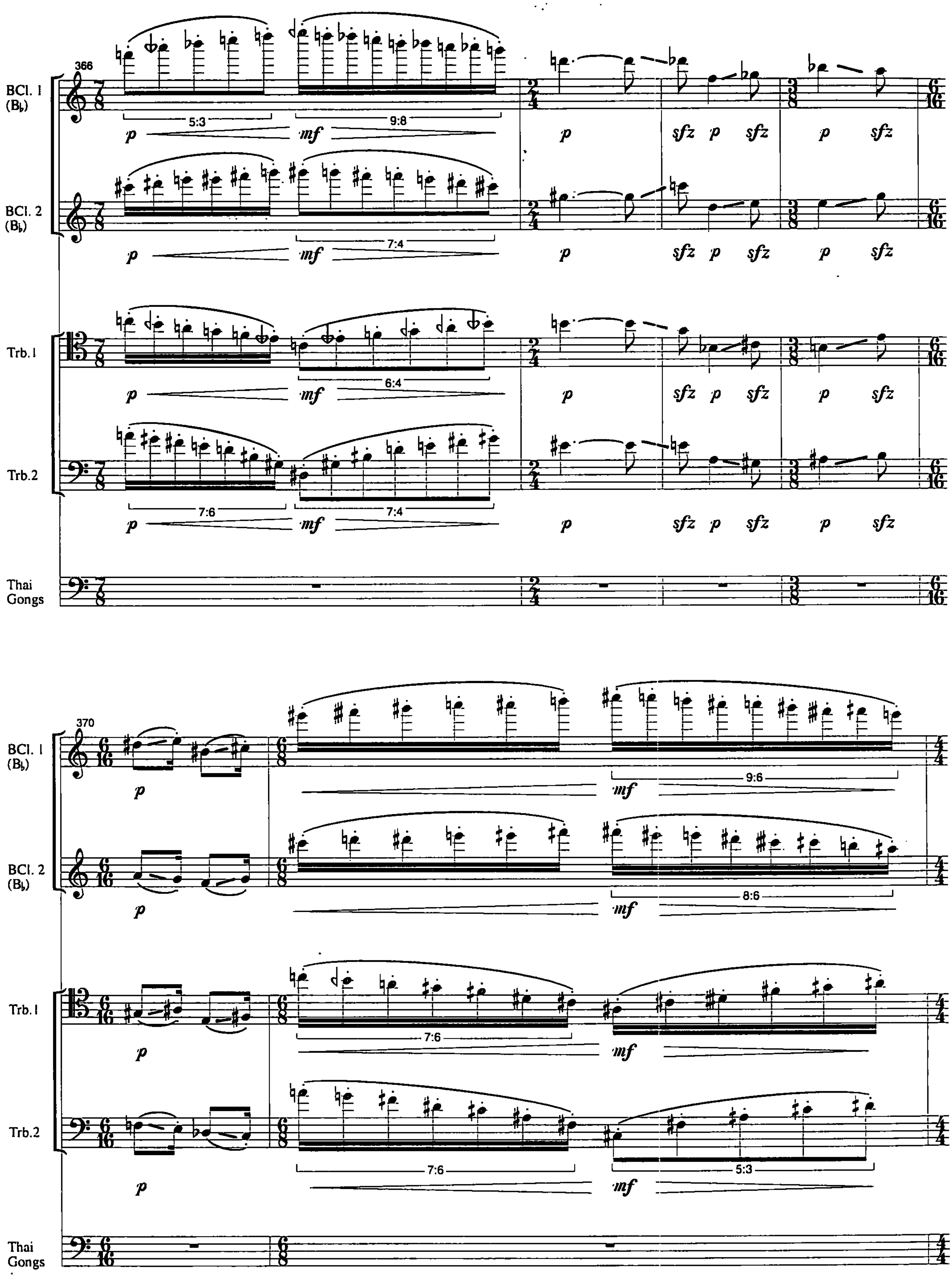

319
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb.1
Trb.2
Thai Gongs
sfz p sfz
p sfz
p
325
p mf
5:3

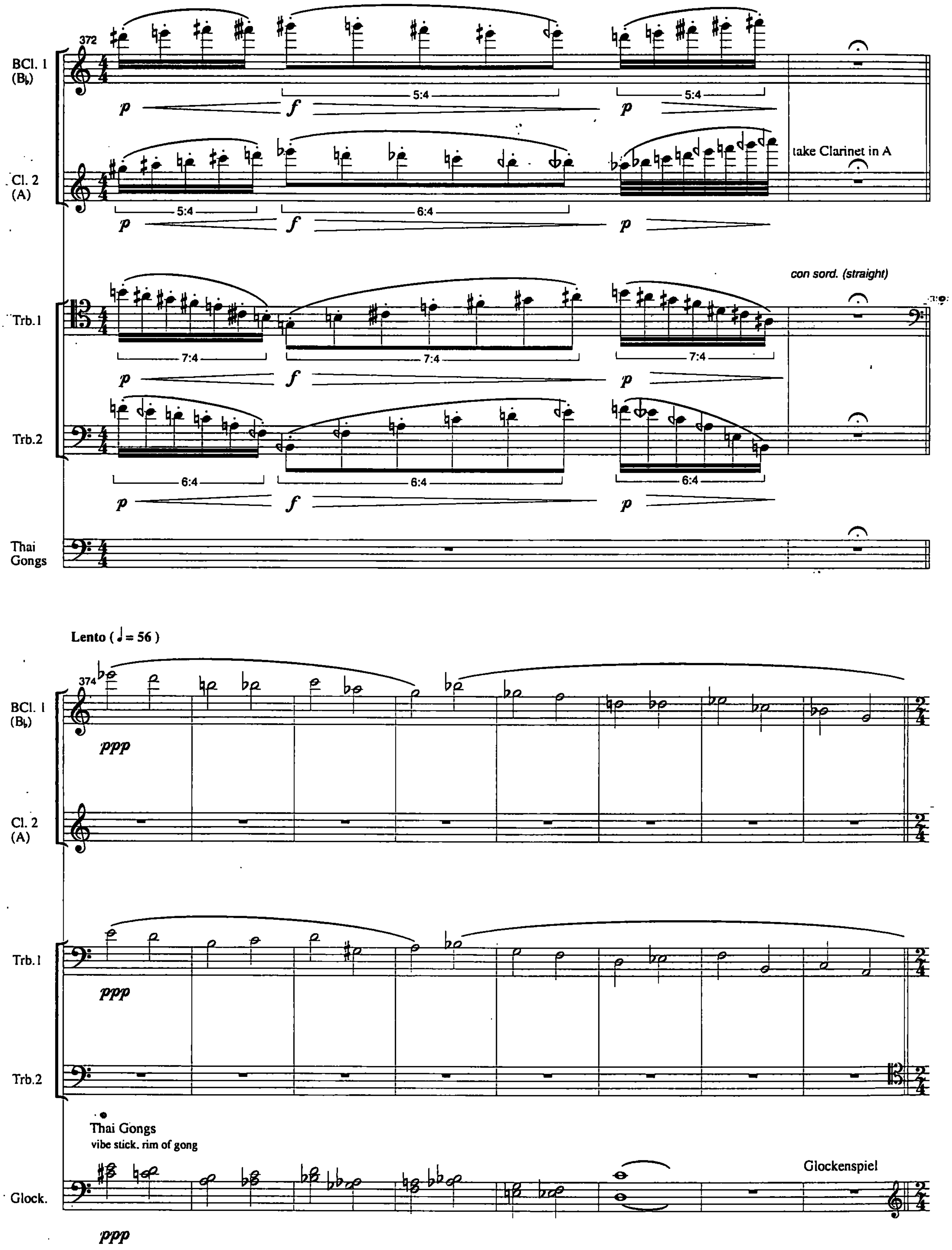

330
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
p
sfz
335
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
p
sfz

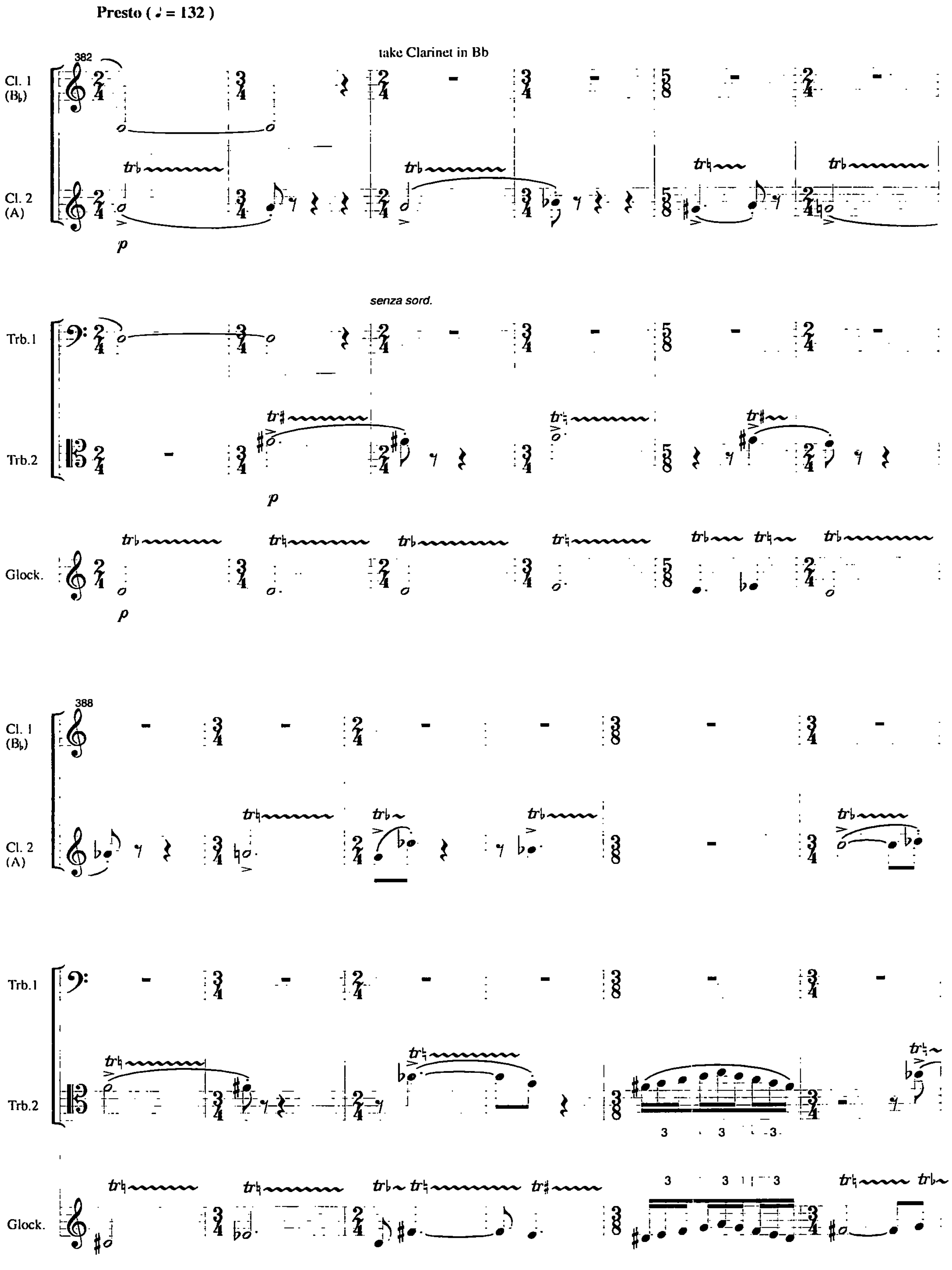

340
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb.1
Trb.2
Thai Gongs
sfz p sfz p sfz p sfz p sfz p
346
p mf
9:6
8:6
7:6
5:3

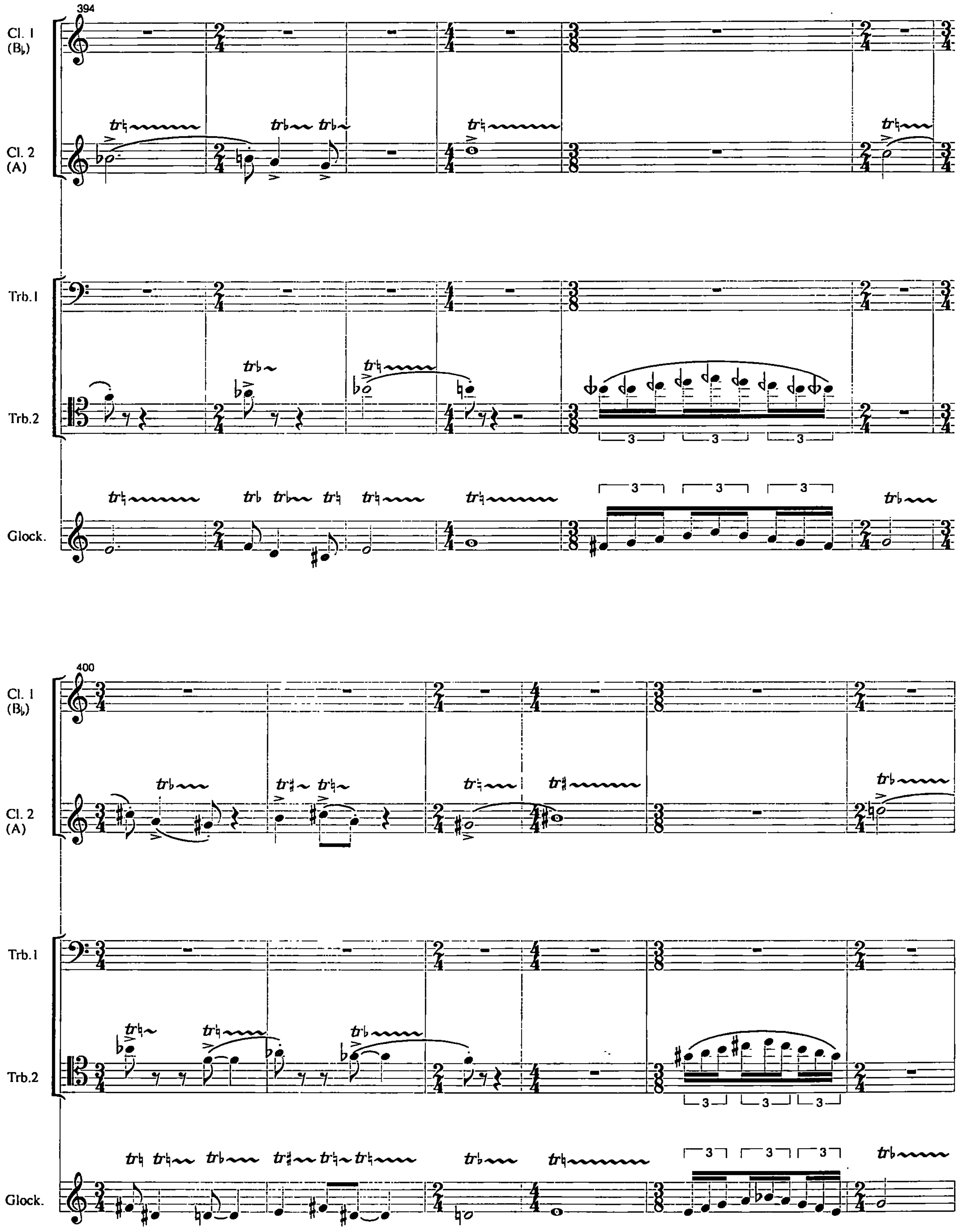

348
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
5:4
6:4
7:4
p
mf
p
351
sfz
f
play
sing

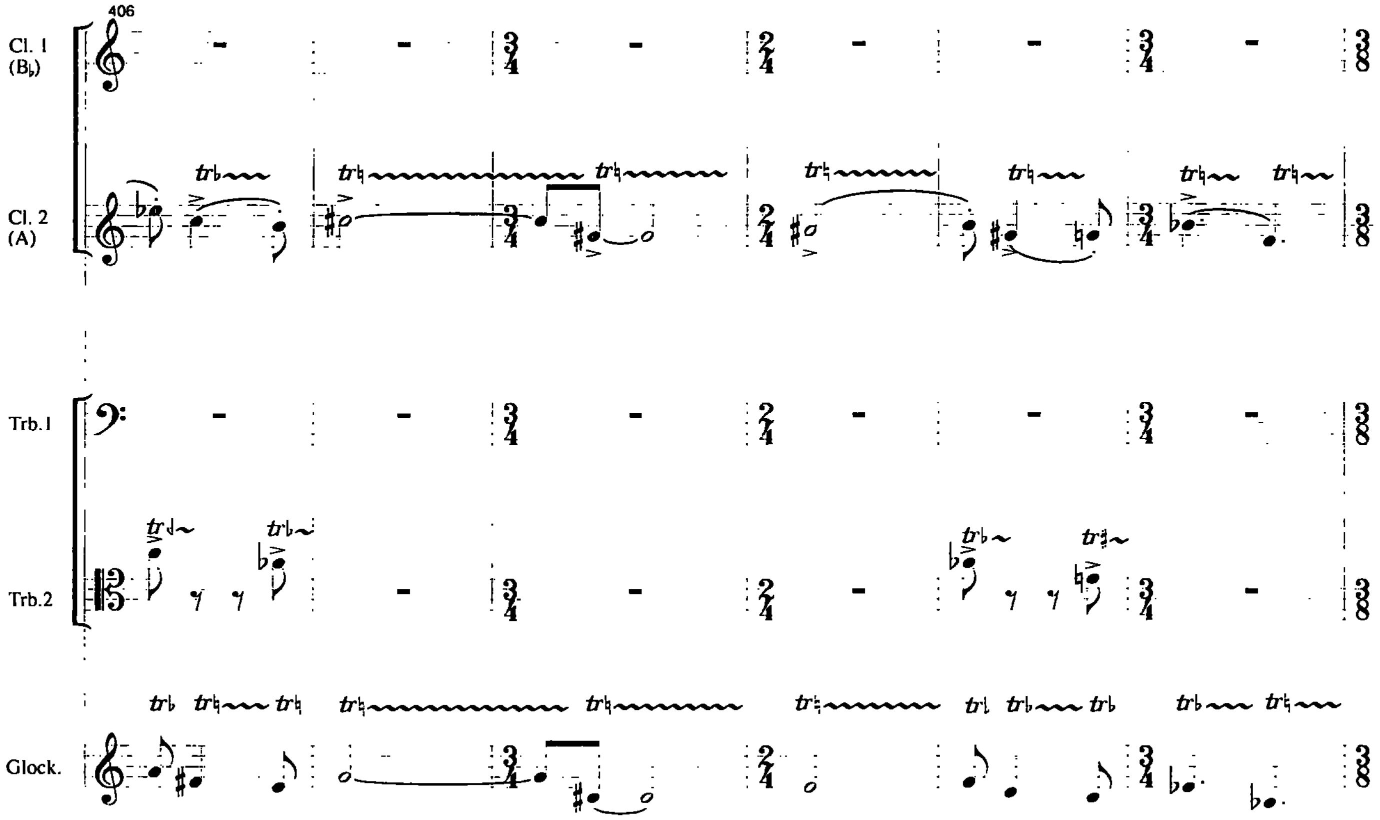

357
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
5:3
9:8
7:4
6:4
7:6
7:4
p
mf
sfz
361
5:4
5:4
6:4
7:4
7:4
6:4
6:4
f
p

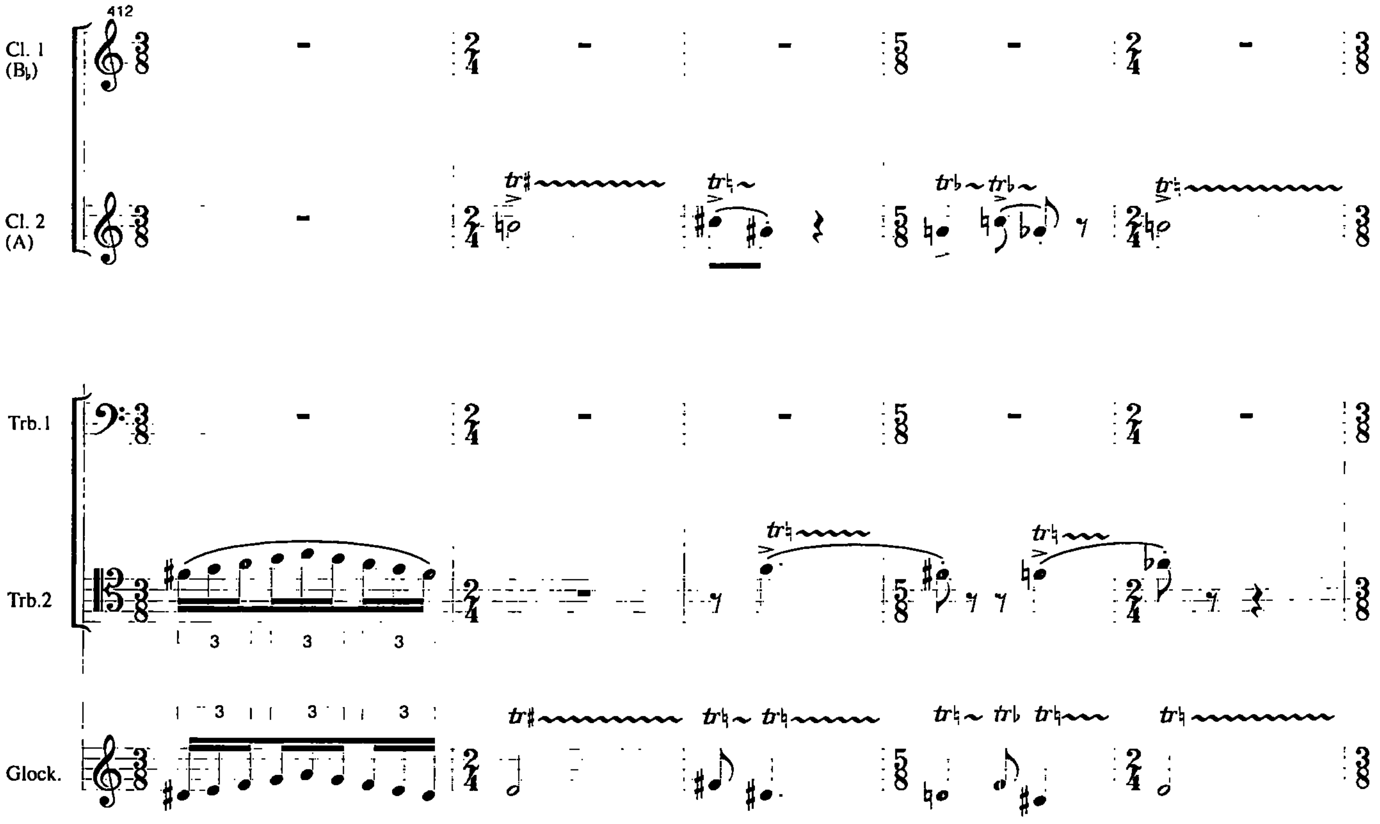

366
BCl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
5:3
9:8
7:4
6:4
7:6
7:4
p
mf
p
sfz
p
sfz
p
sfz
370
9:6
8:6
7:6
7:6
5:3
p
mf

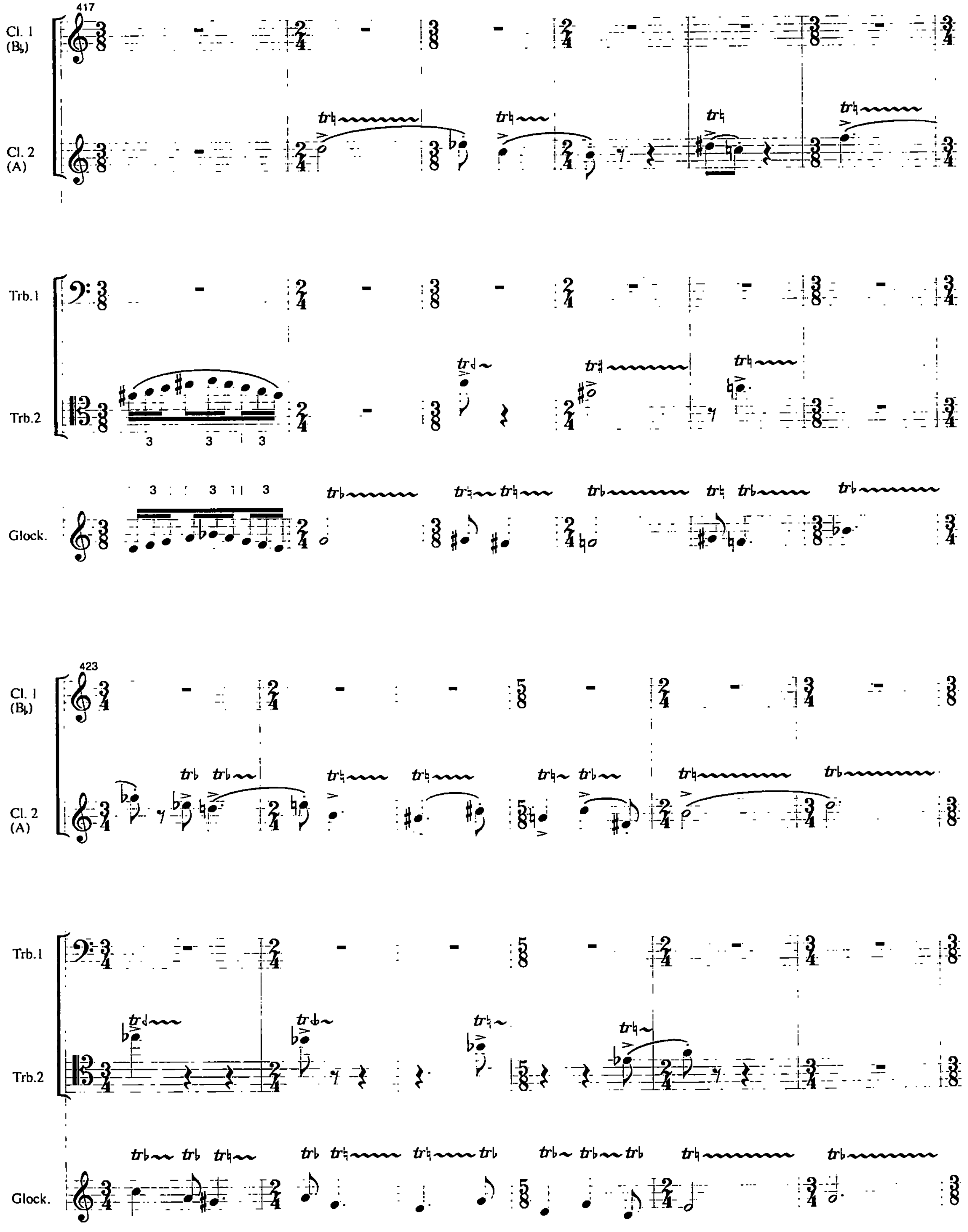

372
BCl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Thai Gongs
5:4
6:4
7:4
p
f
take Clarinet in A
con sord. (straight)
Lento (♩ = 56)
374
ppp
Thai Gongs
vibe stick. rim of gong
Glockenspiel
Glock.

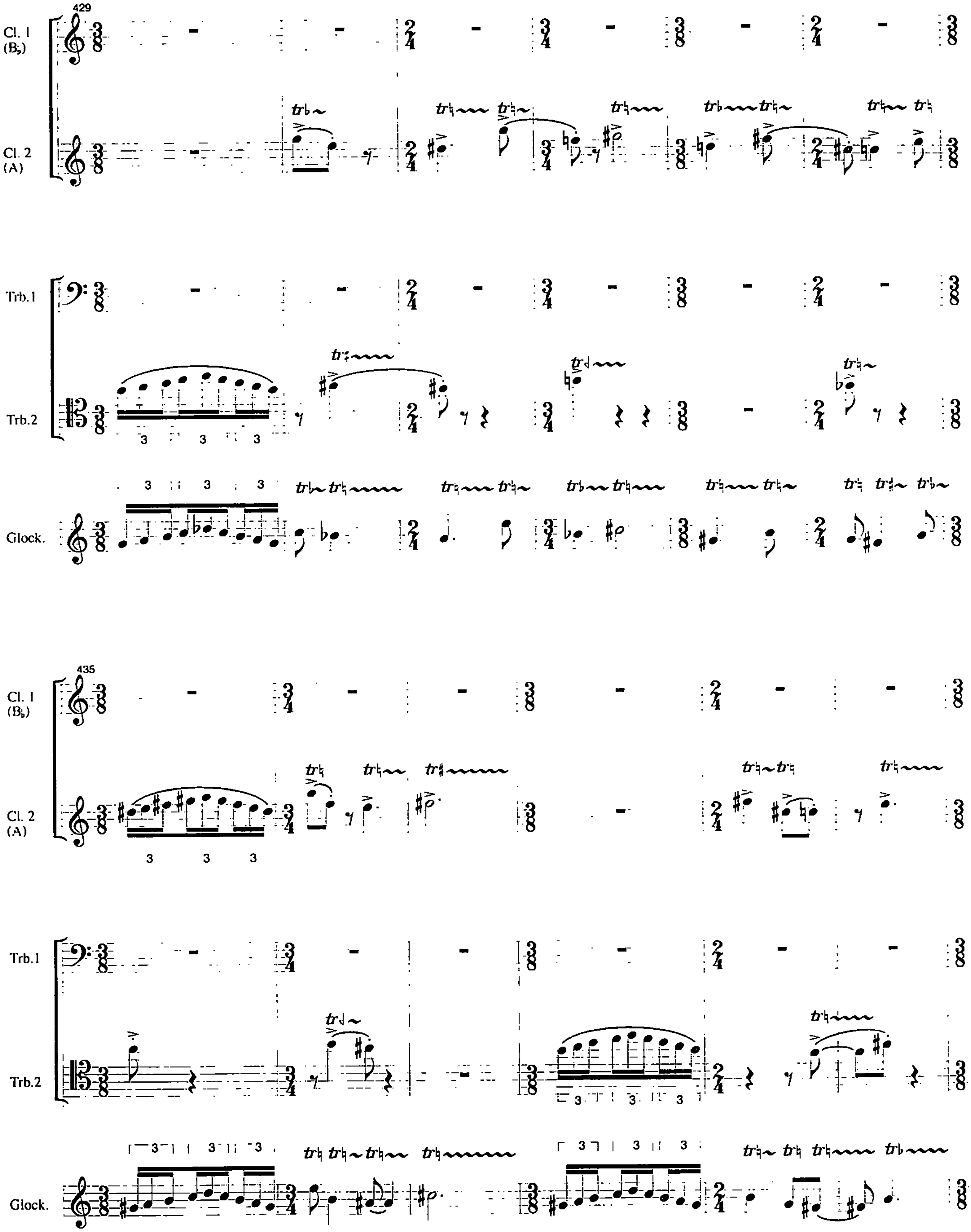

Presto (♩ = 132)
382
take Clarinet in Bb
Cl. 1
(B♭)
Cl. 2
(A)
p
senza sord.
Trb.1
Trb.2
p
Glock.
p
388
Cl. 1
(B♭)
Cl. 2
(A)
Trb.1
Trb.2
3
3
3
Glock.
3
3
3

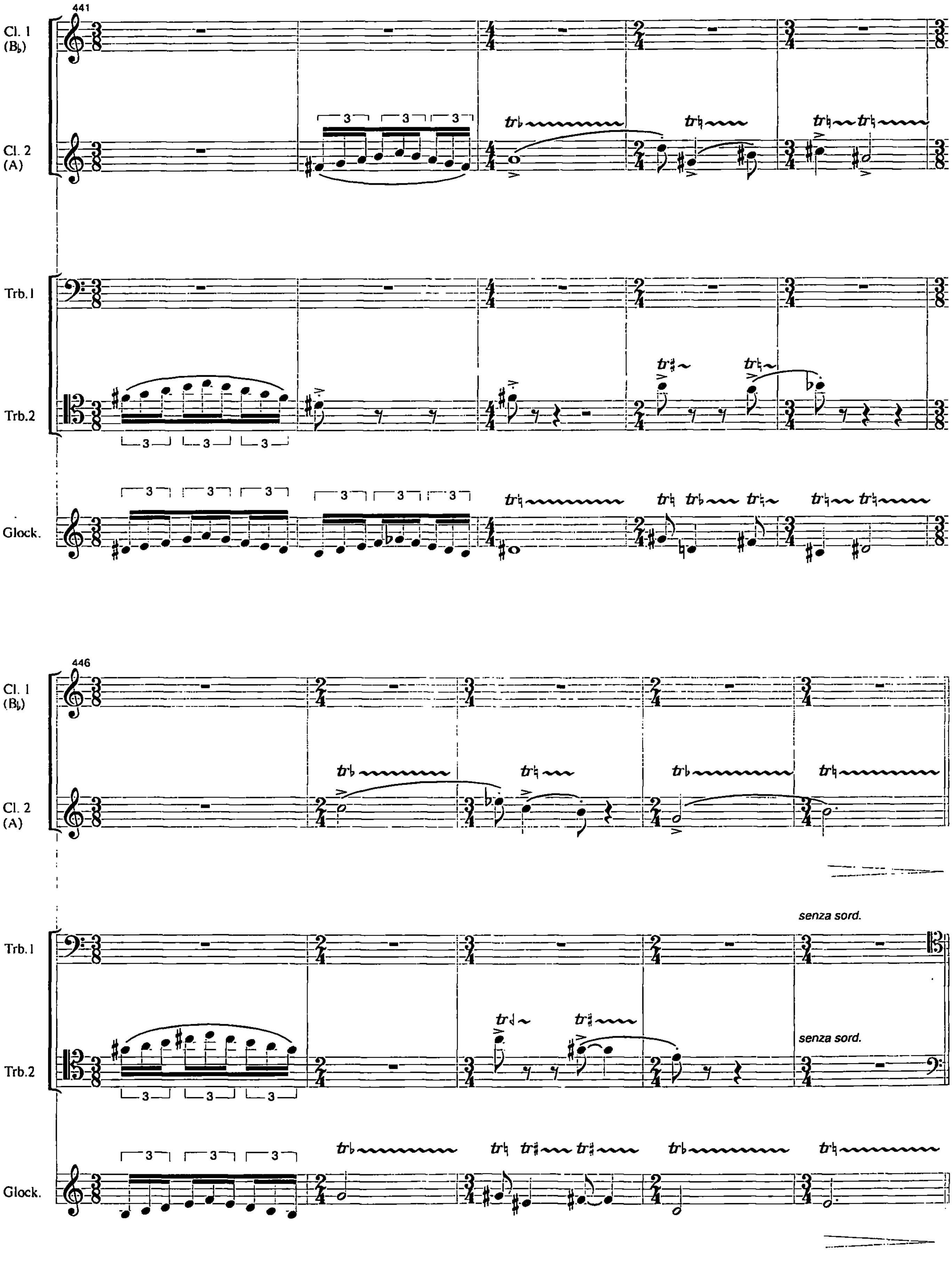

394
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Glock.
400
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Glock.

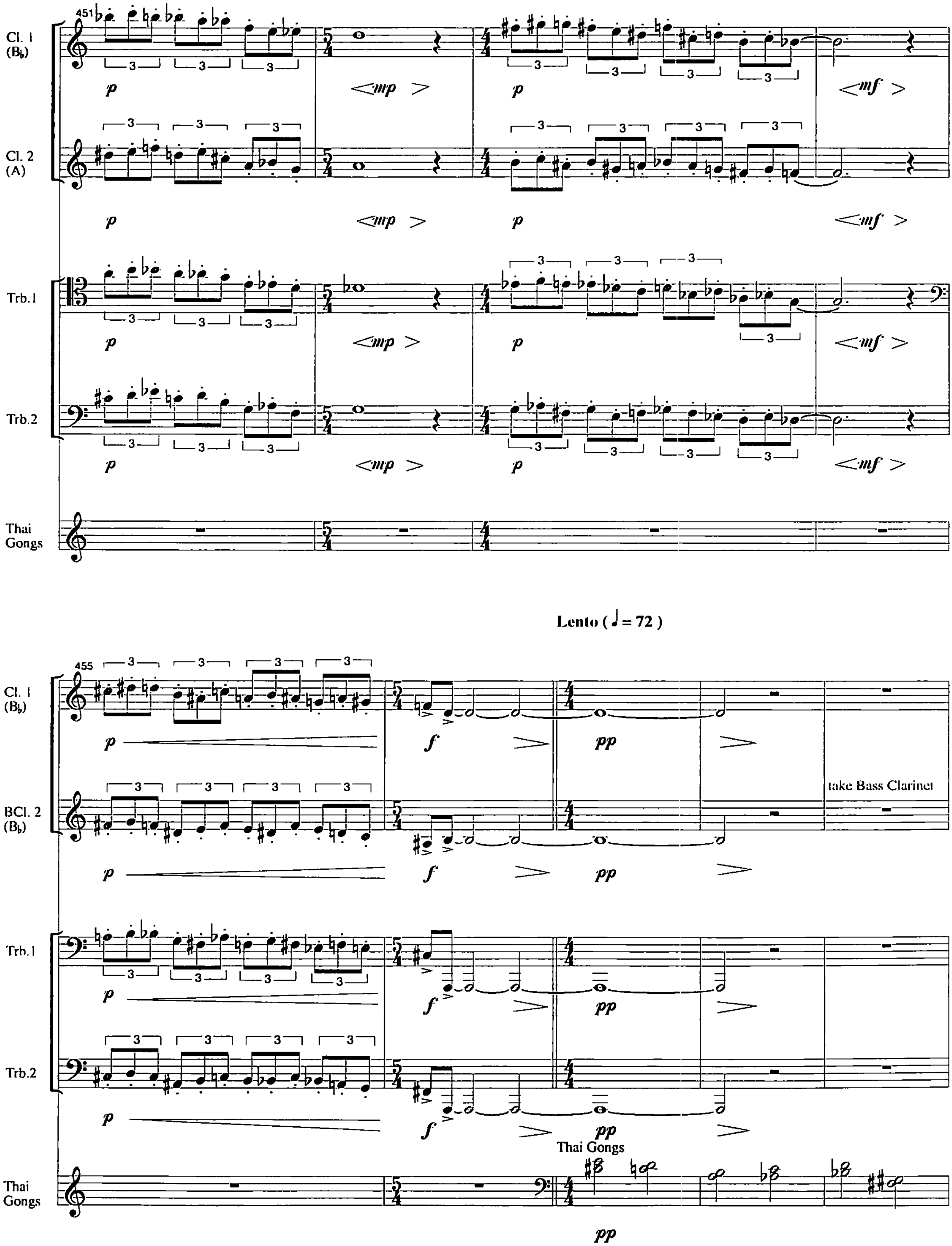

406
Cl. 1 (B♭)
Cl. 2 (A)
Trb. I
Trb. 2
Glock.

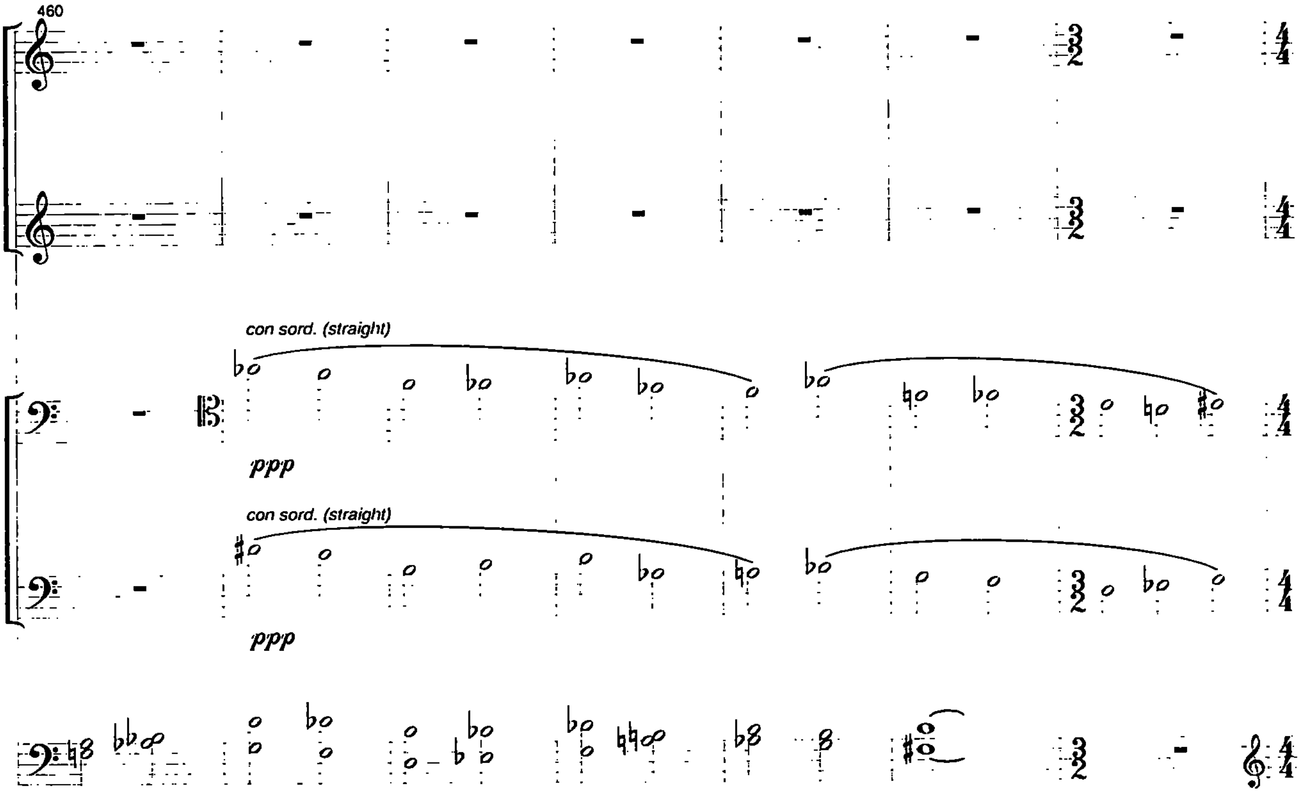

412
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Glock.


417
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Glock.
3
tr
423
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Glock.

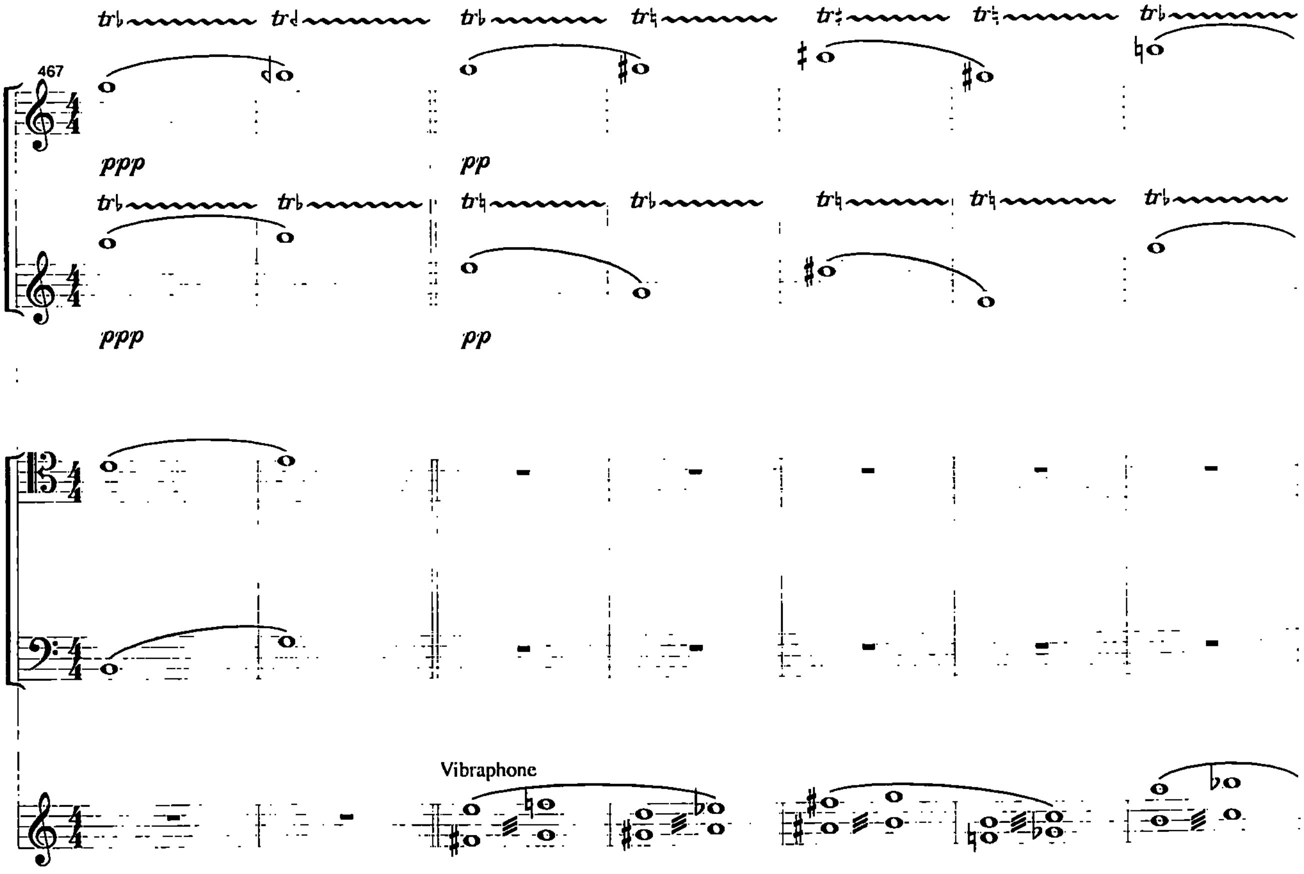

429
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Glock.
435
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Glock.

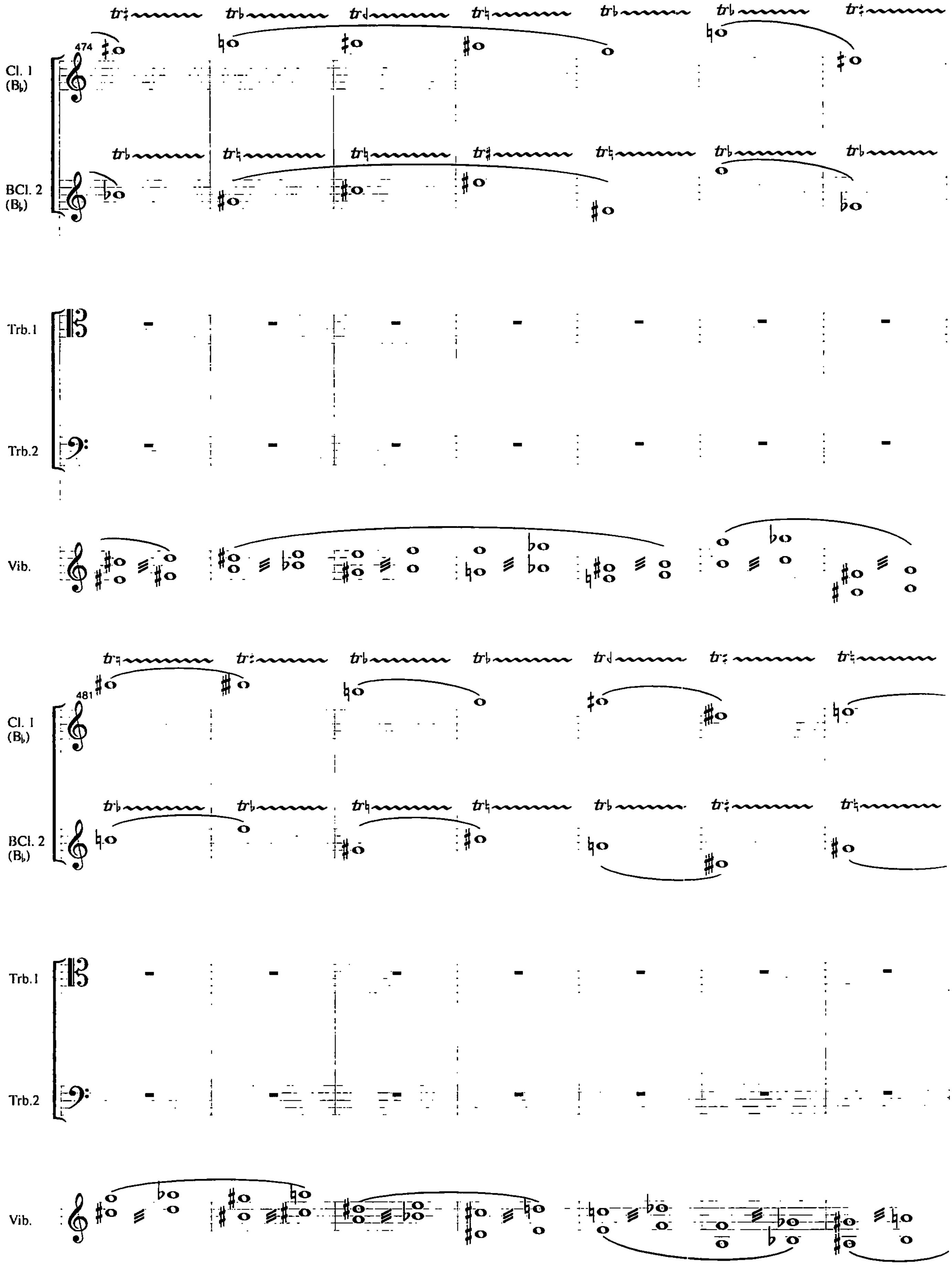

441
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Glock.
446
senza sord.
senza sord.

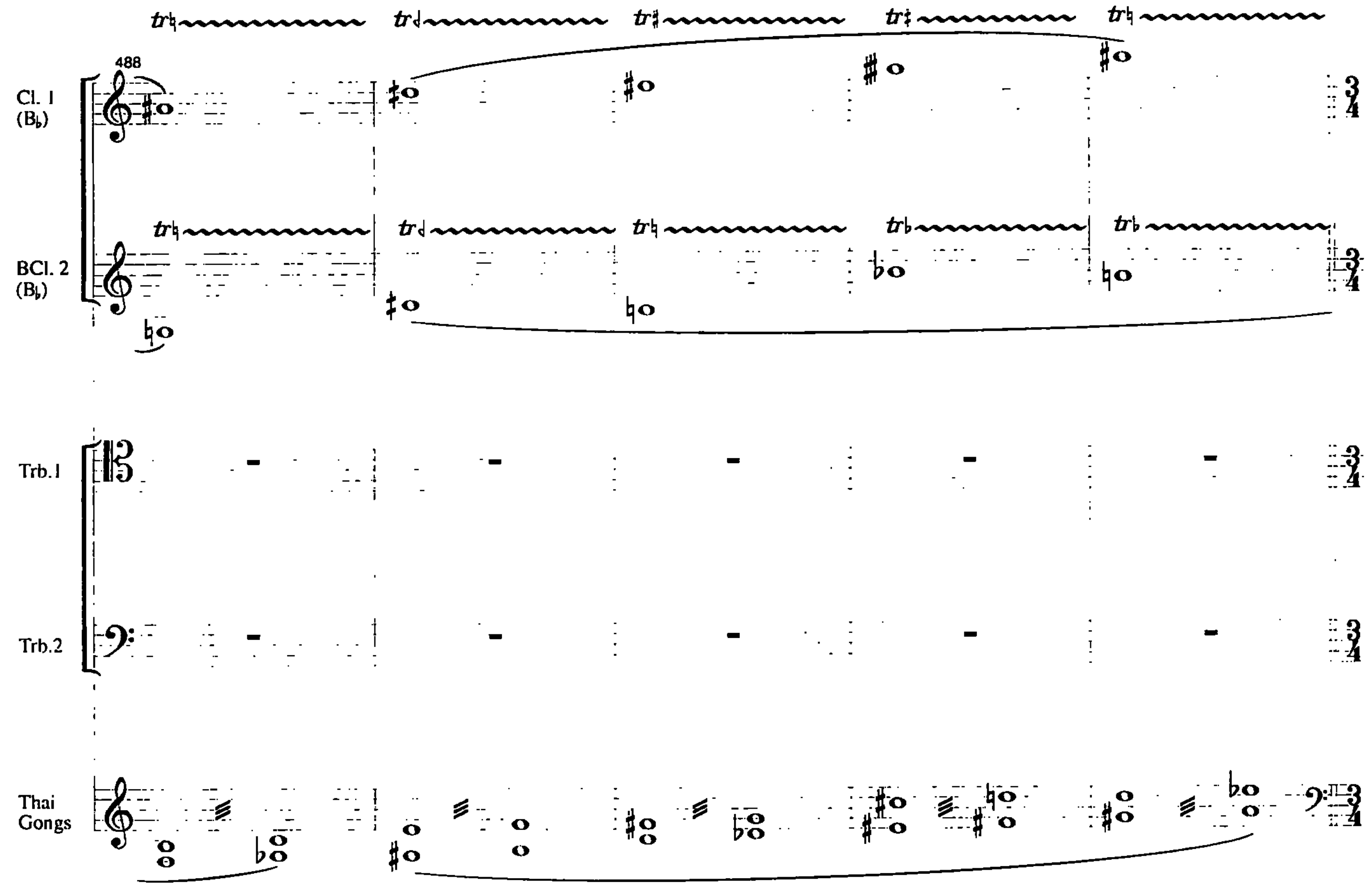

451
Cl. 1 (B♭)
Cl. 2 (A)
Trb. 1
Trb. 2
Thai Gongs
p
<mp >
p
<mf >
Lento (♩ = 72)
455
Cl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Thai Gongs
f
pp
take Bass Clarinet
Thai Gongs
pp

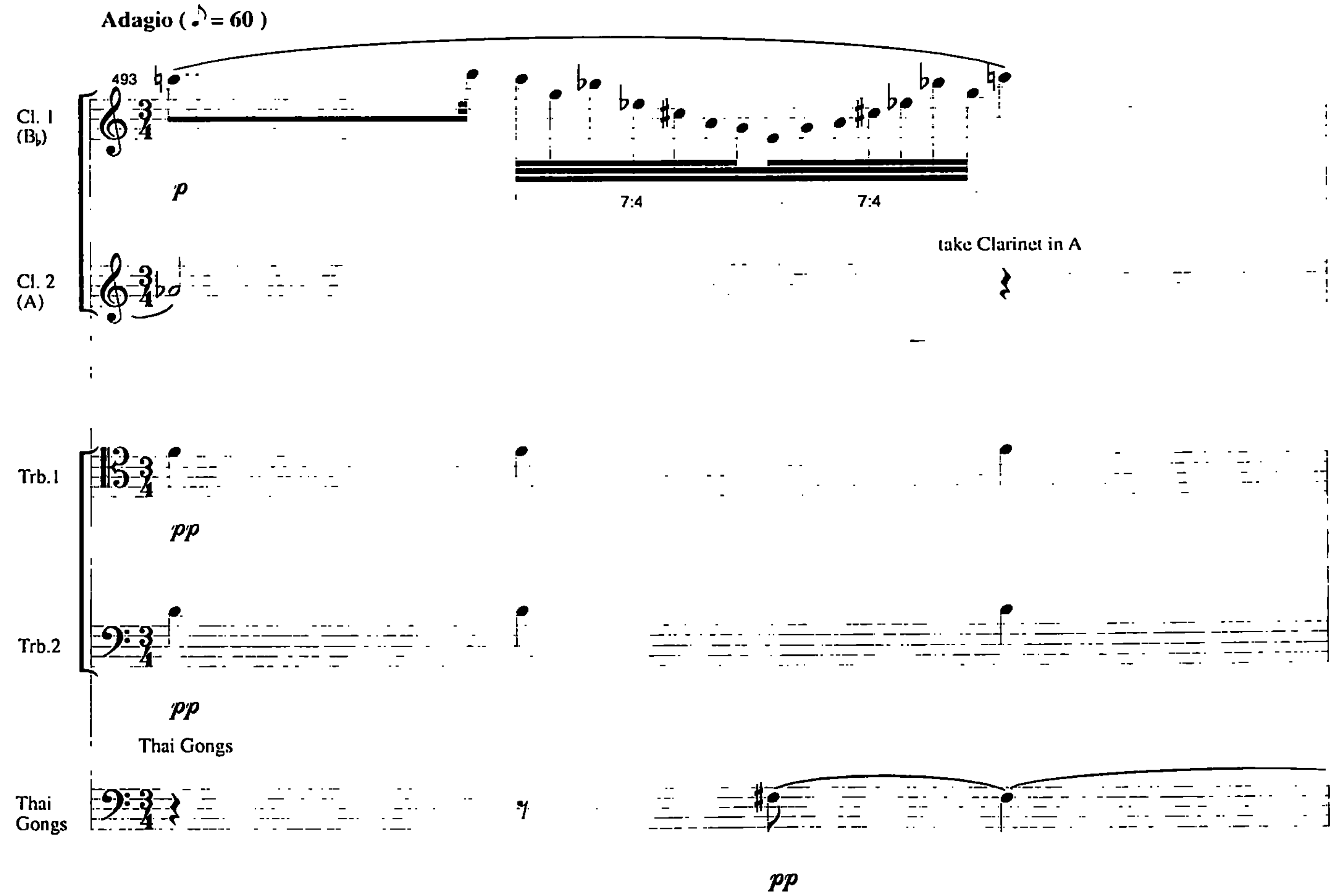

460
Cl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Vib.
con sord. (straight)
ppp
con sord. (straight)
ppp

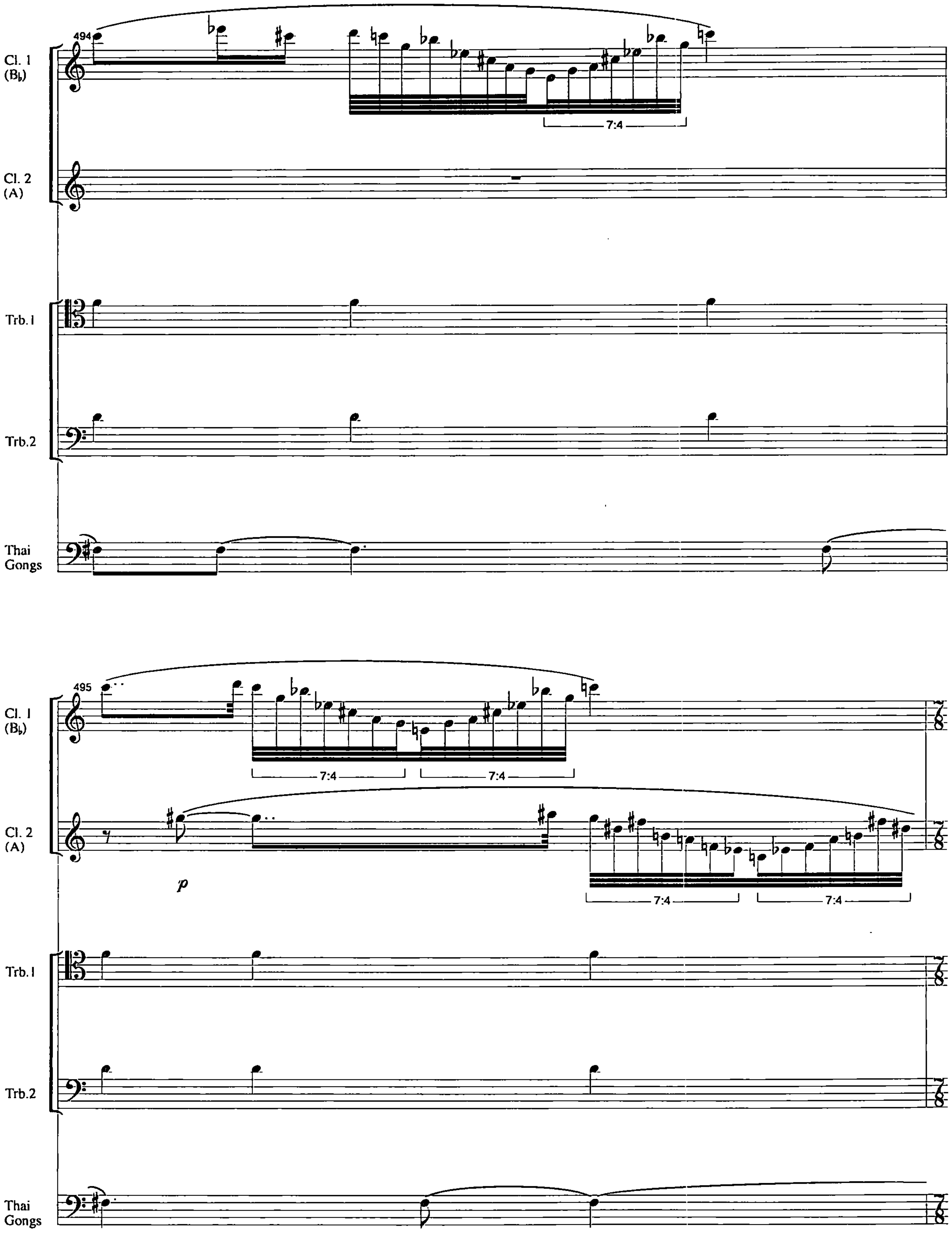
Molto Lento (𝅝 = 48)

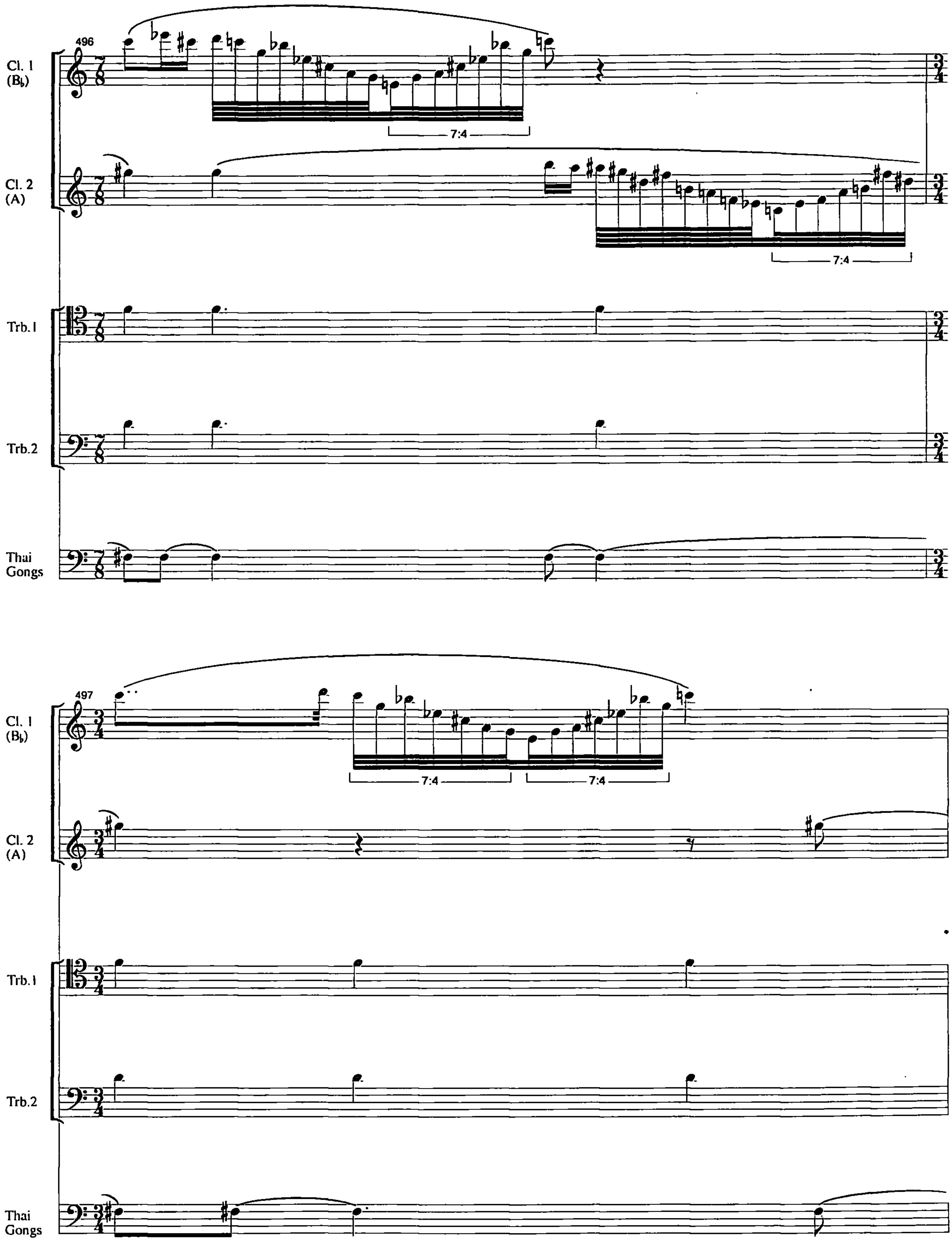

467
Cl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Vib
tr
ppp
pp
ppp
pp
Vibraphone
pp

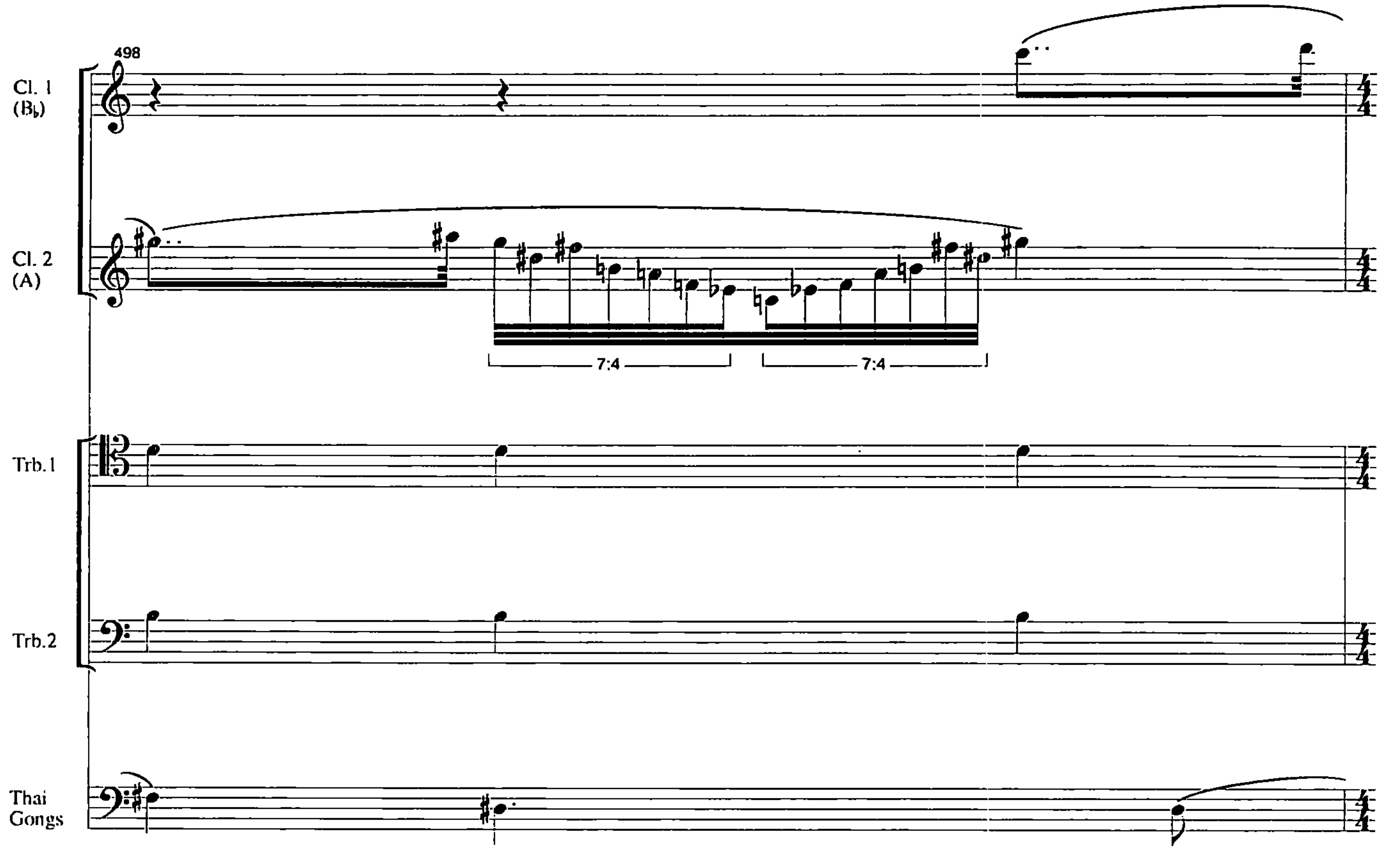

474
Cl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Vib.
481
Cl. 1 (B♭)
BCl. 2 (B♭)
Trb. 1
Trb. 2
Vib.

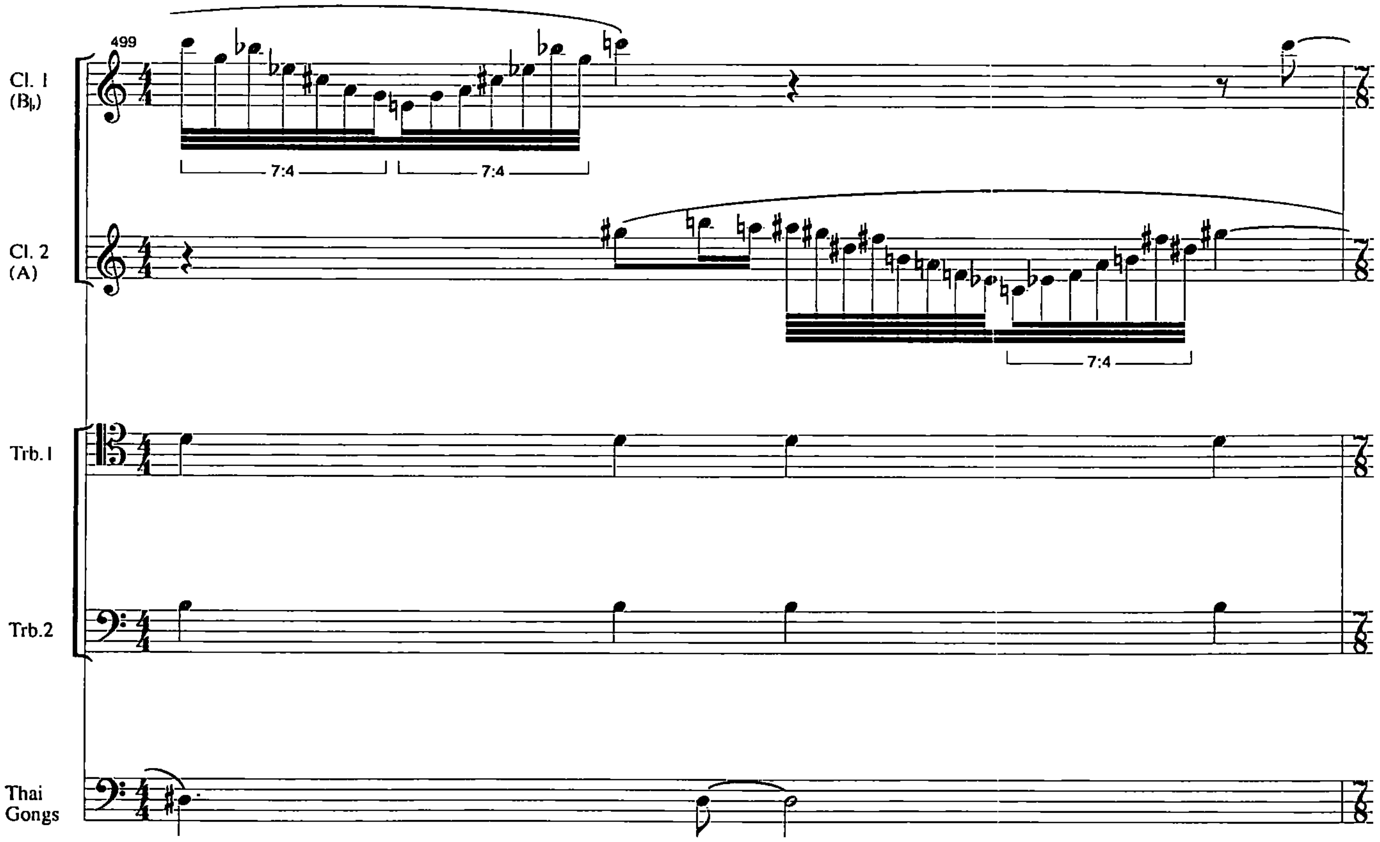

tr♮
tr
tr
tr
tr♮
488
Cl. 1
(B♭)
BCl. 2
(B♭)
Trb. 1
Trb. 2
Thai
Gongs
3
4

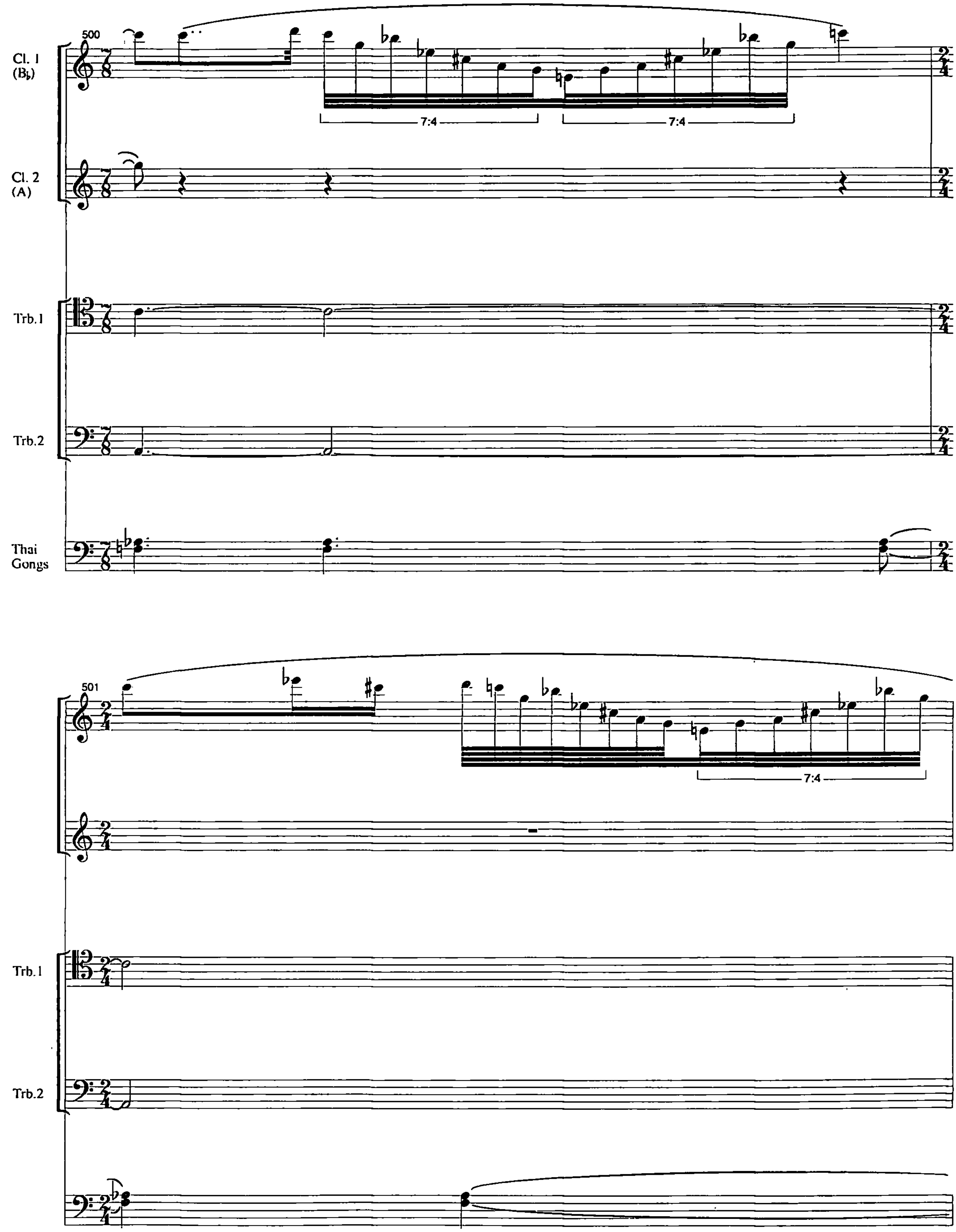

Adagio (♪ = 60)
493
Cl. 1
(B♭)
p
7:4
7:4
take Clarinet in A
Cl. 2
(A)
Trb. 1
pp
Trb. 2
pp
Thai Gongs
Thai
Gongs
pp
3
4

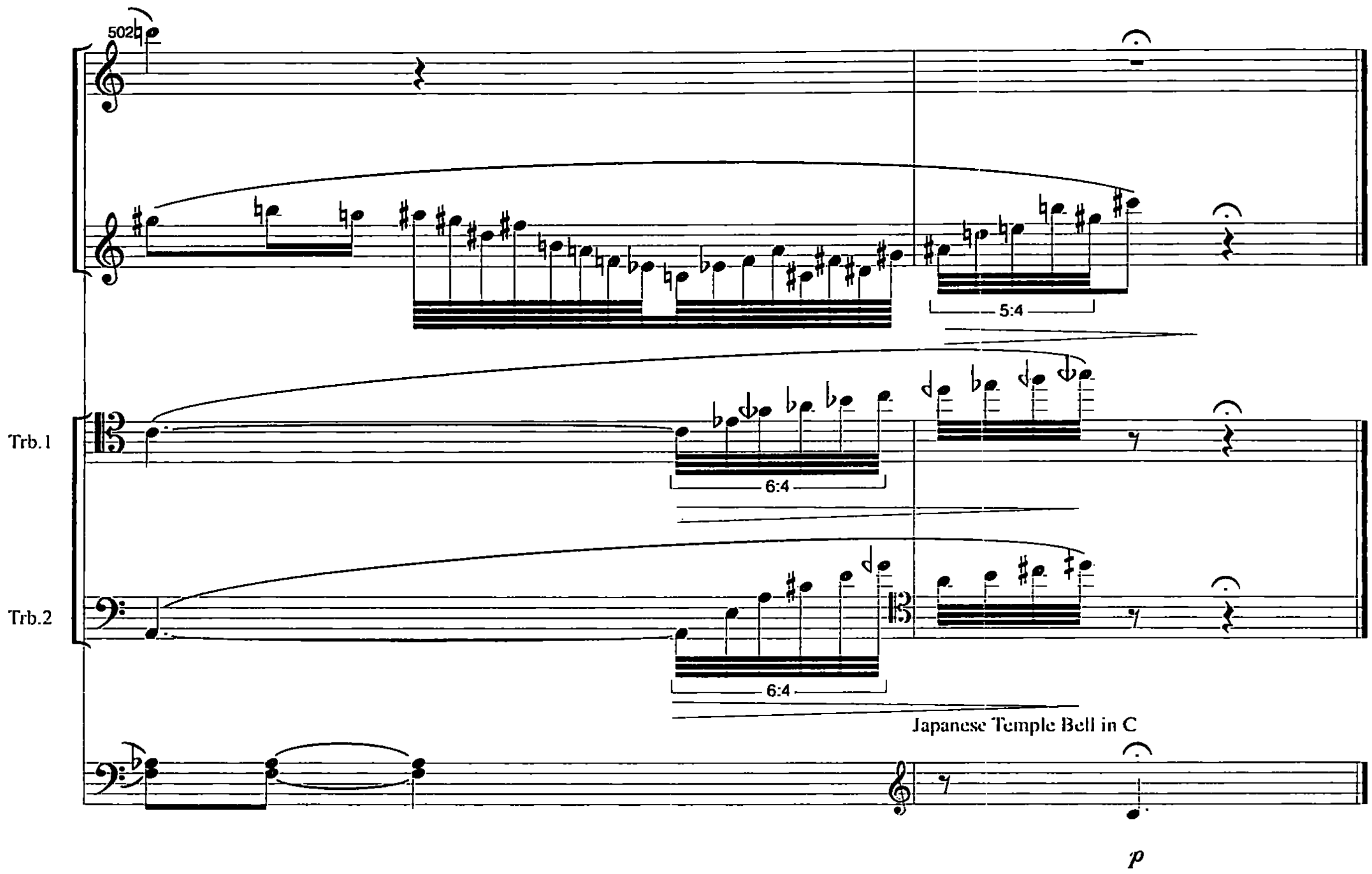

494
Cl. 1
(B♭)
7:4
Cl. 2
(A)
Trb. 1
Trb. 2
Thai
Gongs
495
Cl. 1
(B♭)
7:4
7:4
Cl. 2
(A)
p
7:4
7:4
Trb. 1
Trb. 2
Thai
Gongs
7
8


496
Cl. 1 (B♭)
7:4
Cl. 2 (A)
7:4
Trb. 1
Trb. 2
Thai Gongs
497
Cl. 1 (B♭)
7:4
7:4
Cl. 2 (A)
Trb. 1
Trb. 2
Thai Gongs


498
Cl. 1
(B♭)
Cl. 2
(A)
7:4
7:4
Trb. 1
Trb. 2
Thai
Gongs


499
Cl. 1
(B♭)
7:4
7:4
Cl. 2
(A)
7:4
Trb. 1
Trb. 2
Thai
Gongs


500
Cl. 1
(B♭)
7:4
7:4
Cl. 2
(A)
Trb.1
Trb.2
Thai
Gongs
501
7:4
Trb.1
Trb.2


502
Trb.1
Trb.2
6:4
6:4
5:4
Japanese Temple Bell in C
p

Paul Archbold

...and the unseen eyebeam crossed...

for chamber orchestra
(1992)

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24 FEB 1999

... and the unseen eyebeam crossed...

Instrumentation

Flute (doubling piccolo)
Oboe
Cor Anglais

Clarinet in A (doubling bass clarinet in B♭)

2 Bassoons

2 Trumpets (in C)
2 Horns (in F)

Percussion :-
    marimba, vibraphone, 2 suspended cymbals, wood block

Strings
    at least 6.6.3.3.2 players

The score is written in C with the usual octave transpositions.

Duration 8 minutes

Programme Note

"...and the unseen eyebeam crossed..." takes its title from the first movement of T. S. Eliot's poem Burnt Norton. The reader is led into a magical garden of childhood innocence where the roses are subtly changed by the presence of the onlooker. This work is a composed act of perception - fast complex fragments are examined, dissected and frozen until a hidden melodic line is revealed. In this process of objectification, there is also another transition, from life to death.

First Performance

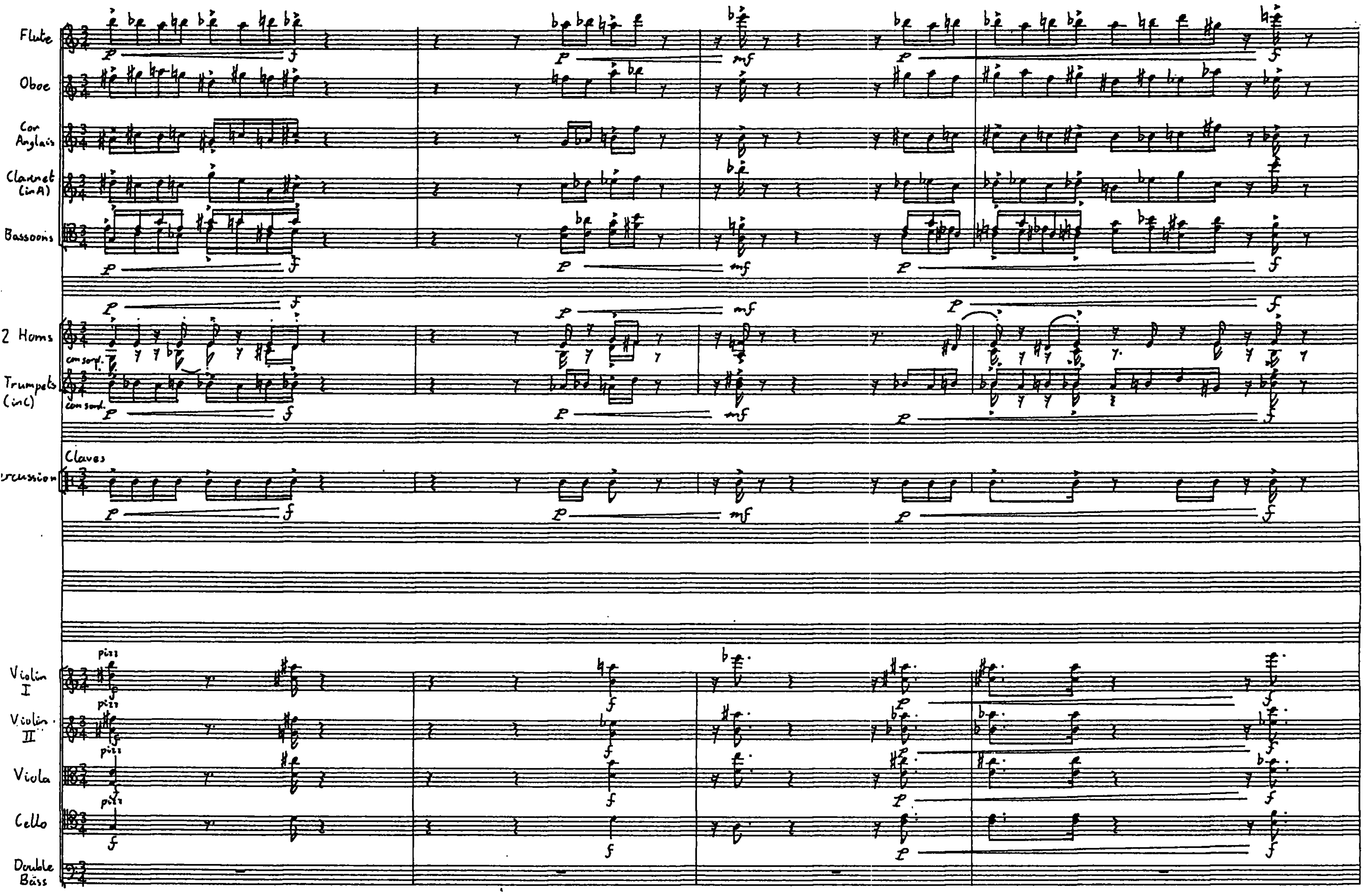
First performed in public by the Royal Scottish National Orchestra in the City Hall, Glasgow in the final concert of the RSNO/IBM composers' competition, September 1993.

Thesis ++
1998/
ARC

"... and the unseen eyebeam crossed..."

Presto ♩ = 120

P. Archbold


Flute
Oboe
Cor Anglais
Clarinet (in A)
2 Bassoons
2 Horns
con sord.
2 Trumpets (in C)
con sord.
Claves
rcussion
pizz
Violin I
Violin II
Viola
Cello
Double Bass
p
f
mf

SPAN-A3 18 STAVE

All instruments written in C, with usual octave transpositions

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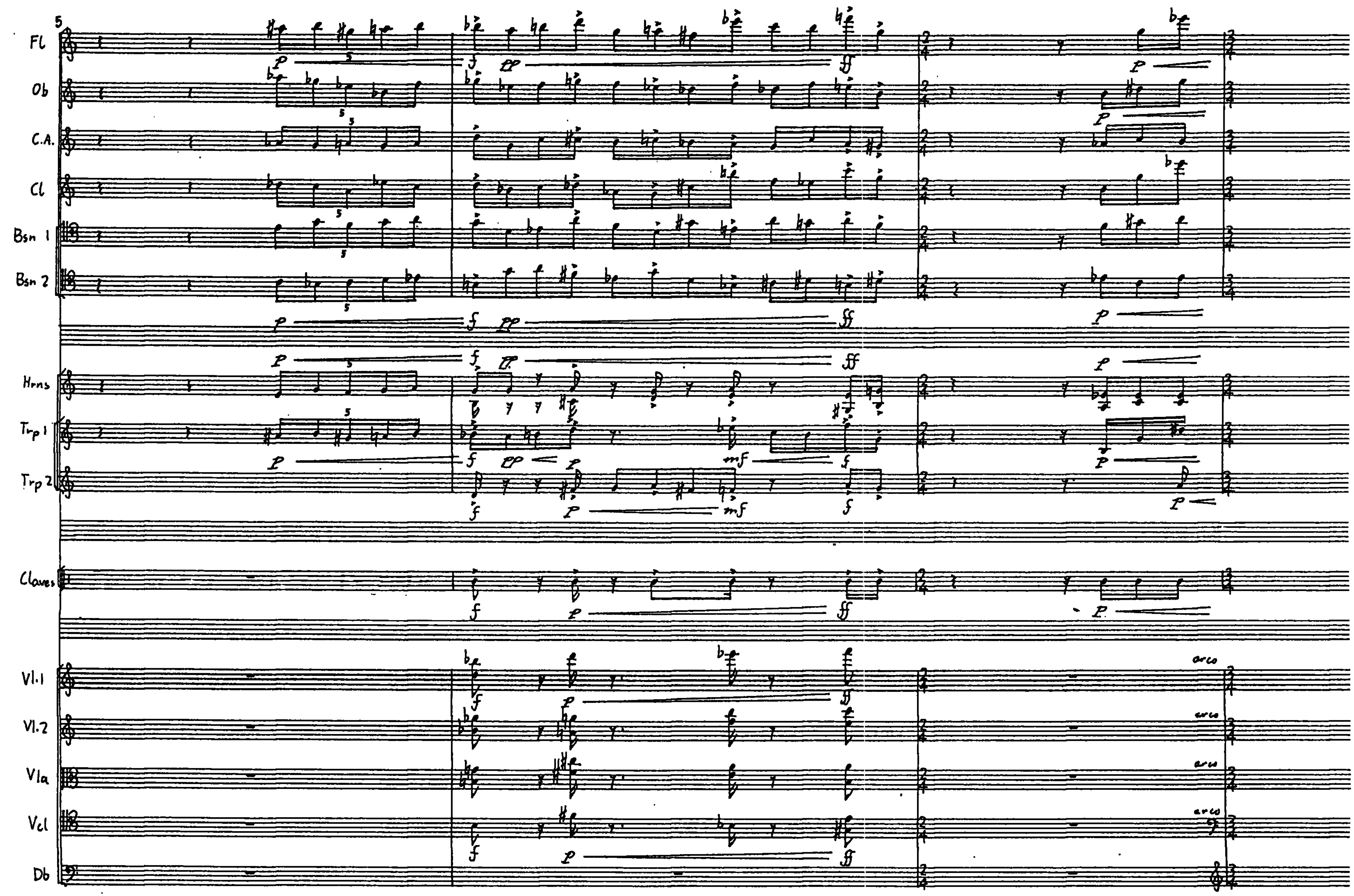
5
Fl
Ob
C.A.
Cl
Bsn 1
Bsn 2
Hrns
Trp 1
Trp 2
Claves
Vl. 1
Vl. 2
Vla
Vcl
Db
arco
p
pp
f
ff
mf

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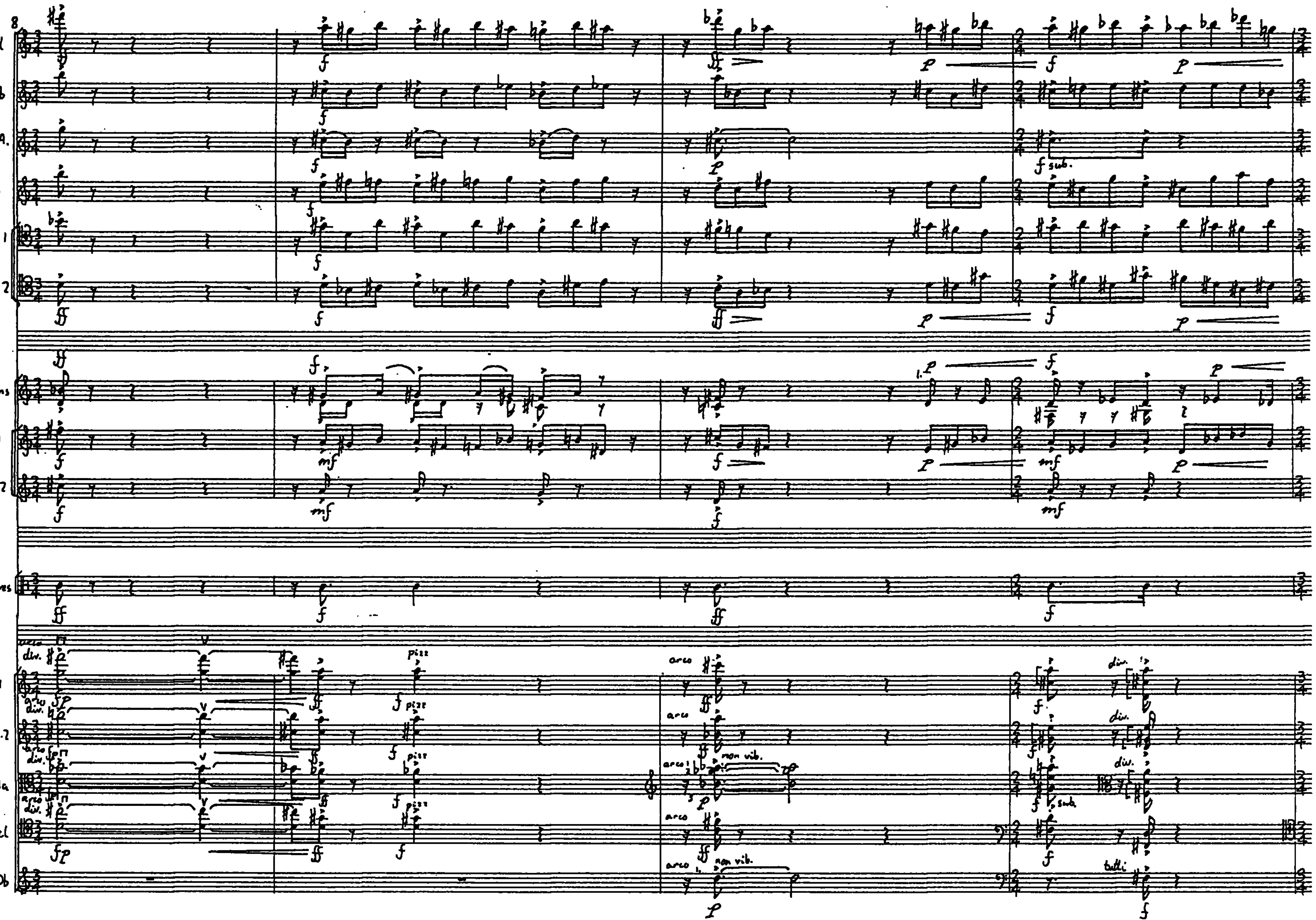
8
Fl
Ob
C.A.
Cl
Bsn 1
Bsn 2
Hrns
Trp 1
Trp 2
Claves
Vl.1
Vl.2
Vla
Vcl
Db
arco
div.
pizz
non vib.
sub.
tutti

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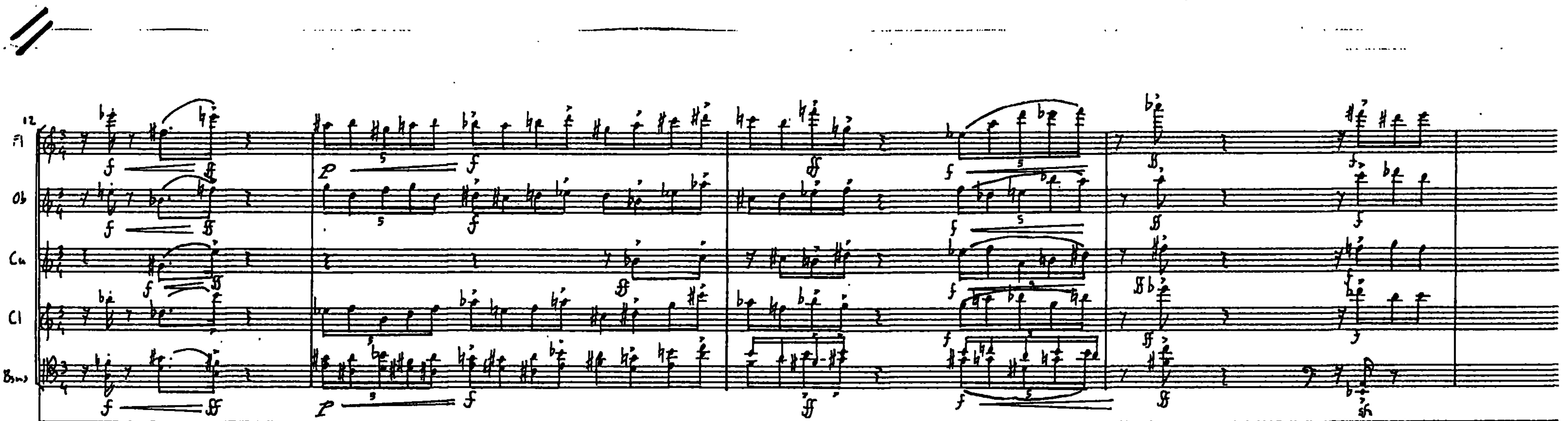
12
Fl
Ob
Ca
Cl
Bsns
Hrns
Trps
Perc (Claves)
Take Marimba (hard sticks)
Vl.1
Vl.2
Vla
Vcl
Db
pizz
arco
div
div (arco)
(arco)
unis (arco)
unis
Vla 1 (sub)
Vla 2,3

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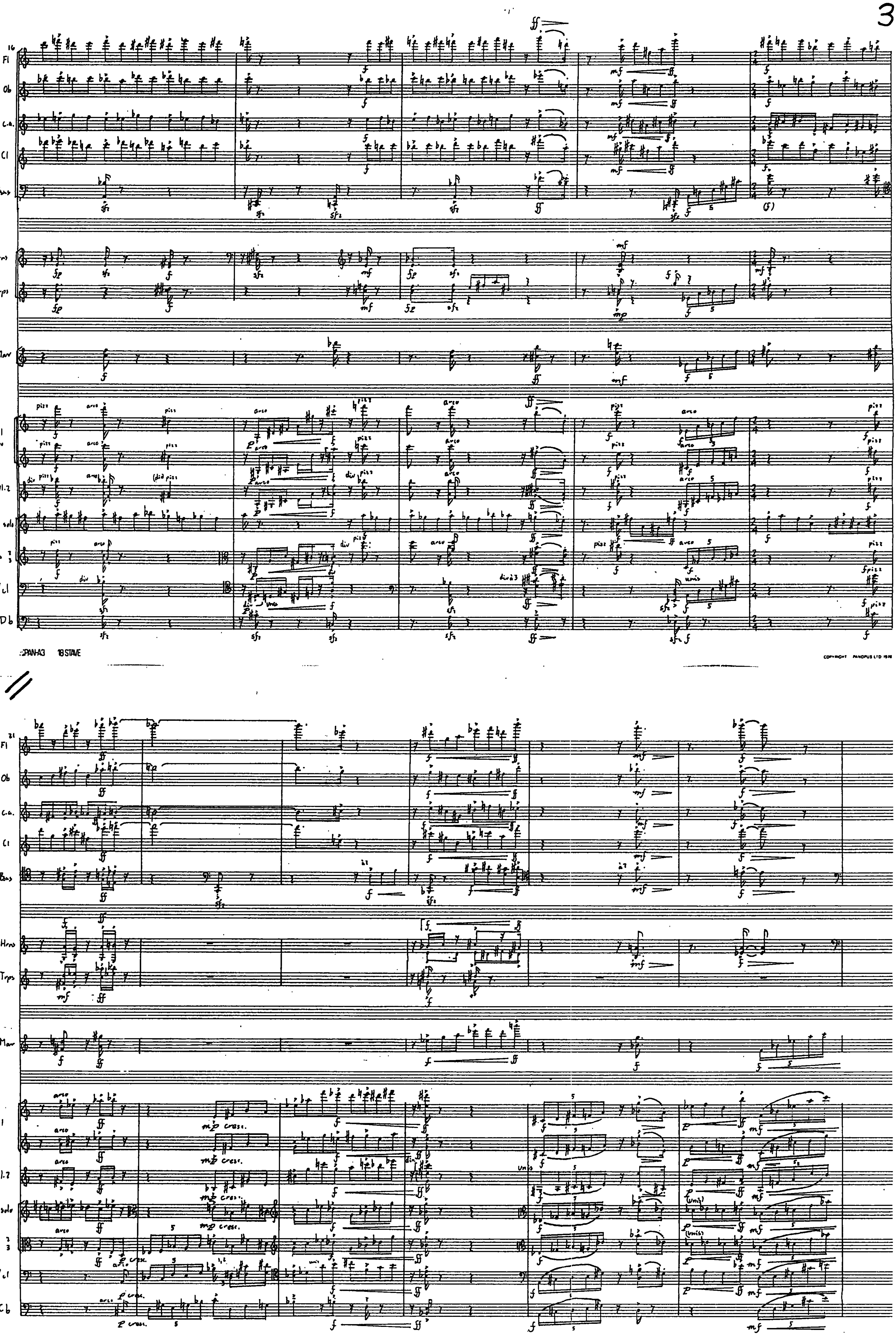
16
Fl
Ob
C.a.
Cl
Bns
Hns
Trps
Harp
Vl.1 div
Vl.2
Vla solo
Vlas 2 3
Vcl
Db
pizz
arco
div
unis
ff
sfz
mf
mp
mp cresc.
p cresc.
21
Fl
Ob
C.a.
Cl
Bns
Hns
Trps
Harp
Vl.1
Vl.2
Vla solo
Vlas 2 3
Vcl
Cb

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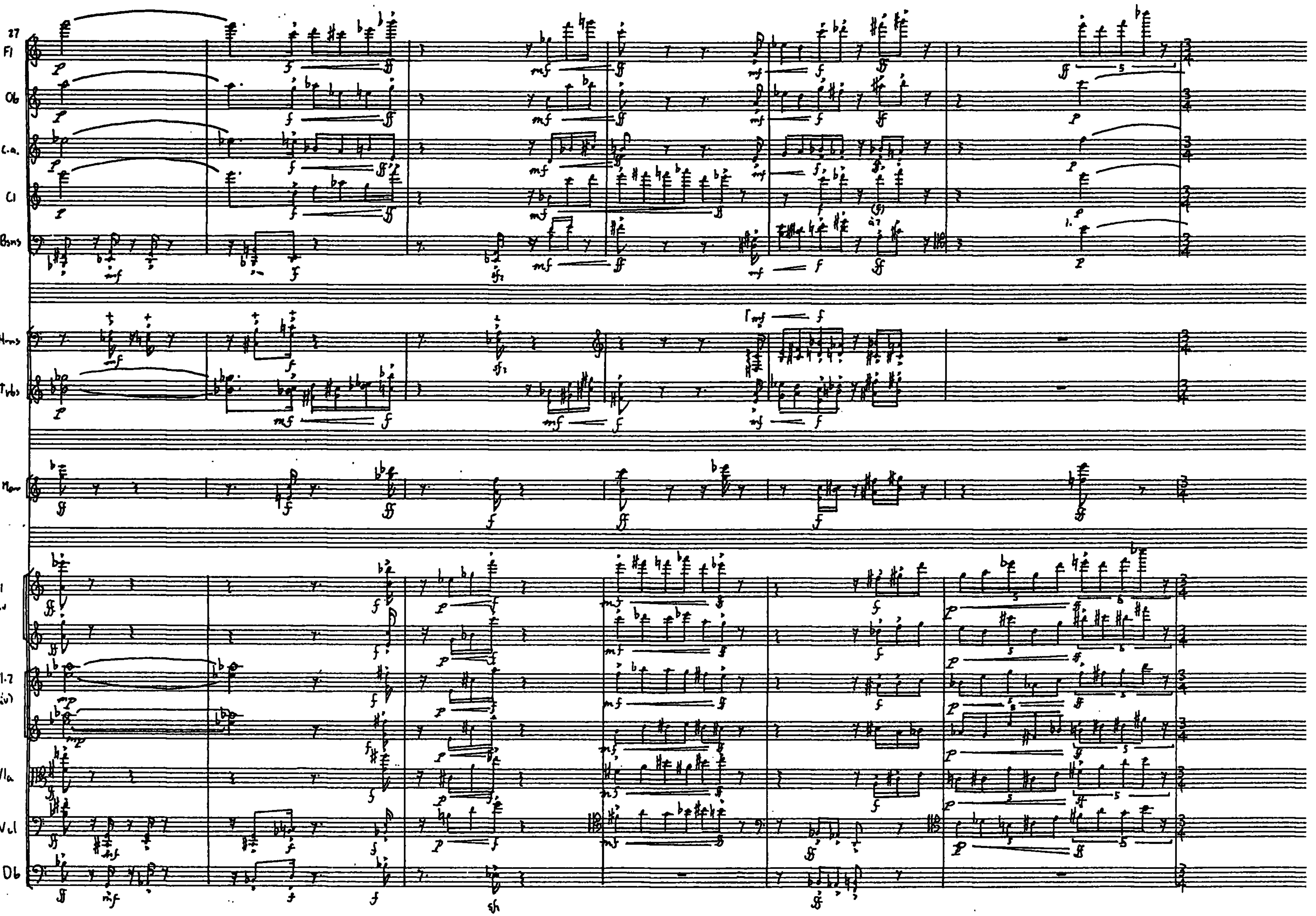
27
Fl
Ob
C.a.
Cl
Bsns
Hrns
Tbns
Mar
Vl.1 div
Vl.2 (div)
Vla
Vcl
Db
p
mf
f
ff
sfz

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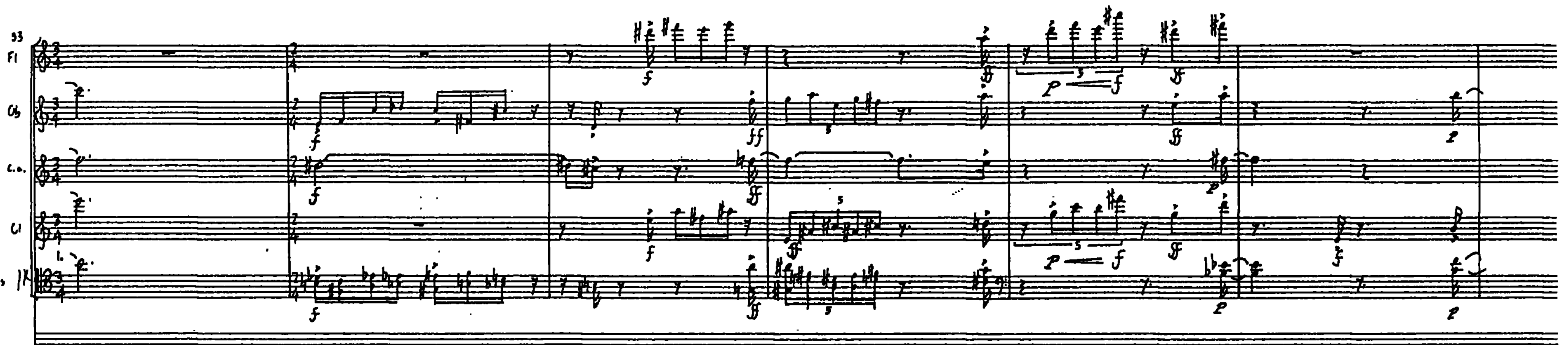
33
Fl
Ob
C.a.
Cl
Bsns
Hrns
Tbns
Mar
trem.
Vl.1 (div)
Vl.2 (div)
Vla
Vcl
Db
pizz
arco
div
unis
p
mf
f
ff

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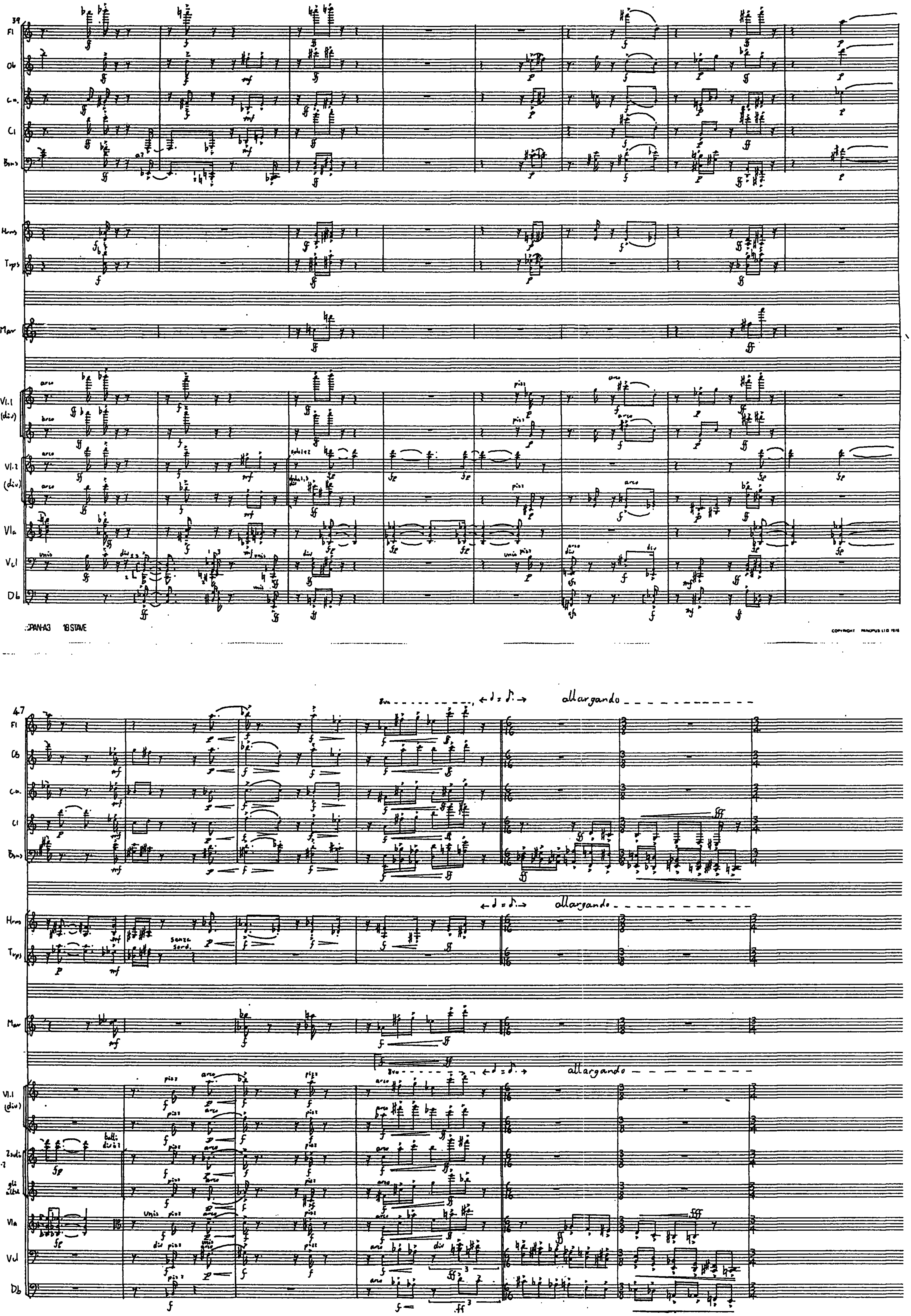
39
Fl
Ob
C.a.
Cl
Bsns
a2
Hrns
Tpts
Mar
Vl.1 (div)
Vl.2 (div)
Vla
Vcl
Db
arco
pizz
unis
div
47
8va
← ♩ = ♪. →
allargando
senza sord.
tutti div à 2
2 soli Vl.2
gli altri

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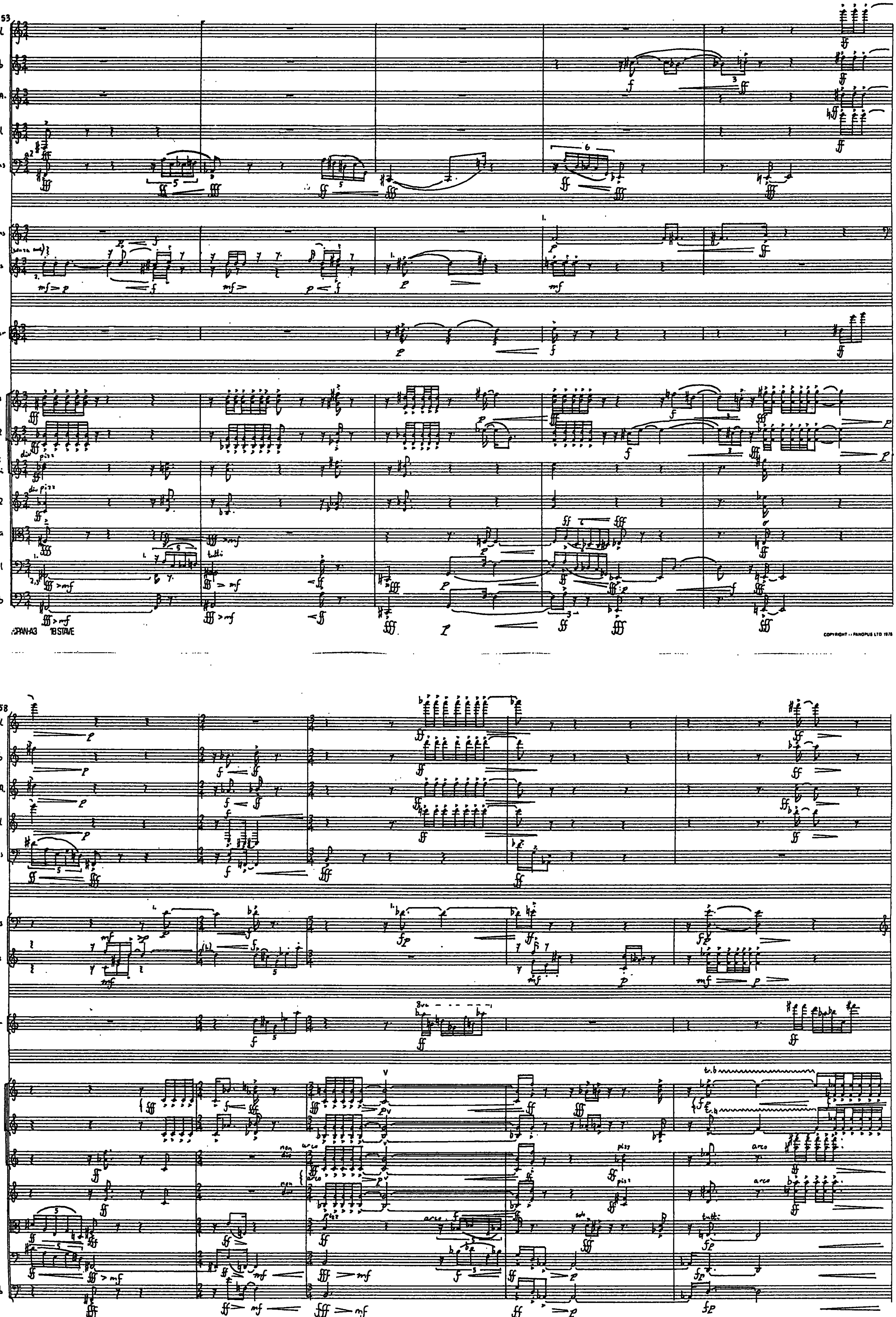
53
Fl
Ob
C.A.
Cl
Bsns
a2
Hrns
Trps
senza sord
Mar
Vl.1
soli
1
2
gli altri
div pizz
Vl.2
div pizz
Vla
Vcl
tutti
Db
58
8va
non div
arco
pizz
solo
tr.b
tutti

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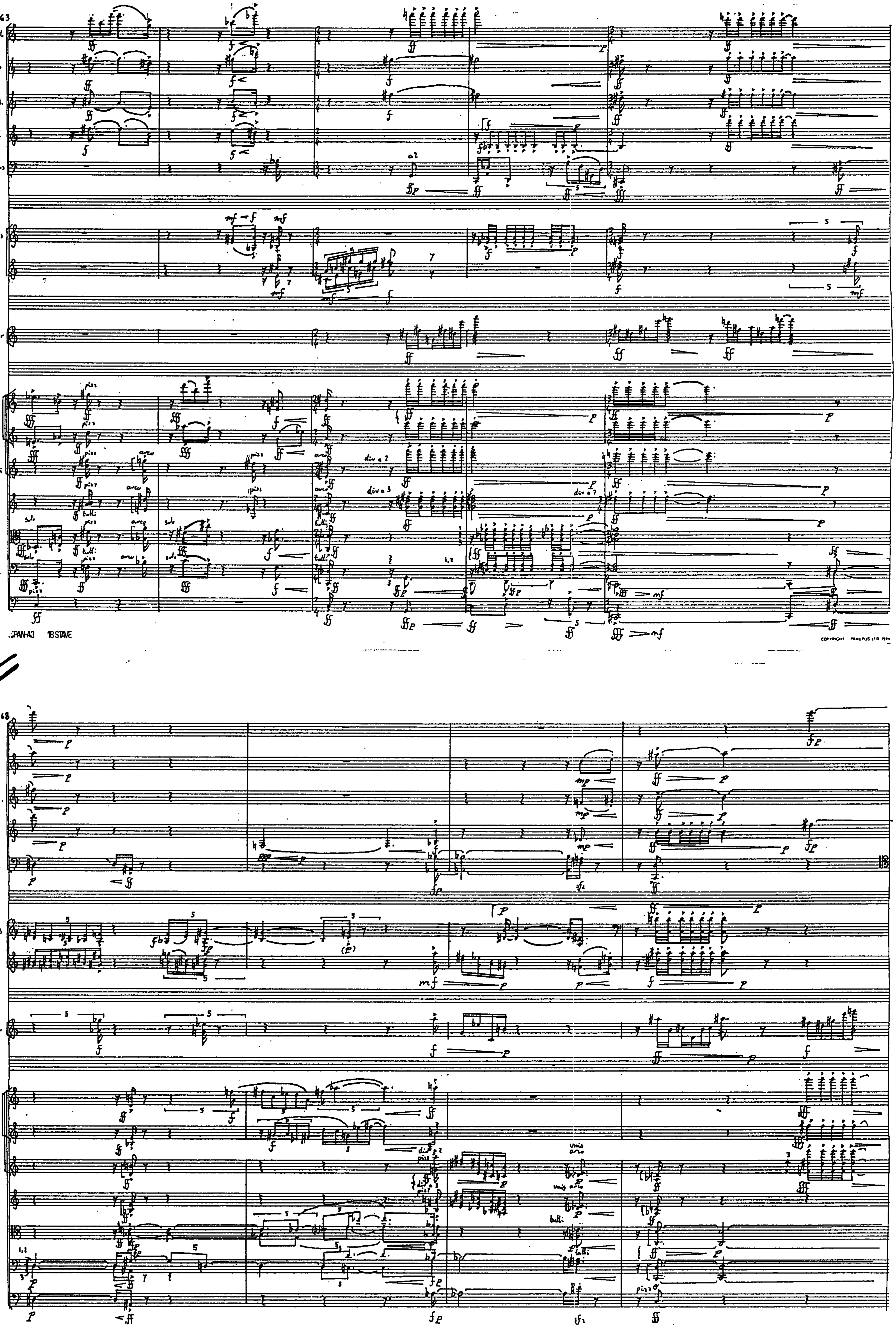
63
Fl
Ob
C.A.
Cl
Bsns
Hrns
Trps
Mar
Vl. 1 2 soli
gli altri
Vl. 2
Vla
Vcl
Db
pizz
arco
solo
tutti
div a 2
div a 3
a2
1,2
ff
f
mf
p
fp
68
Vl
unis arco
pizz
sfz

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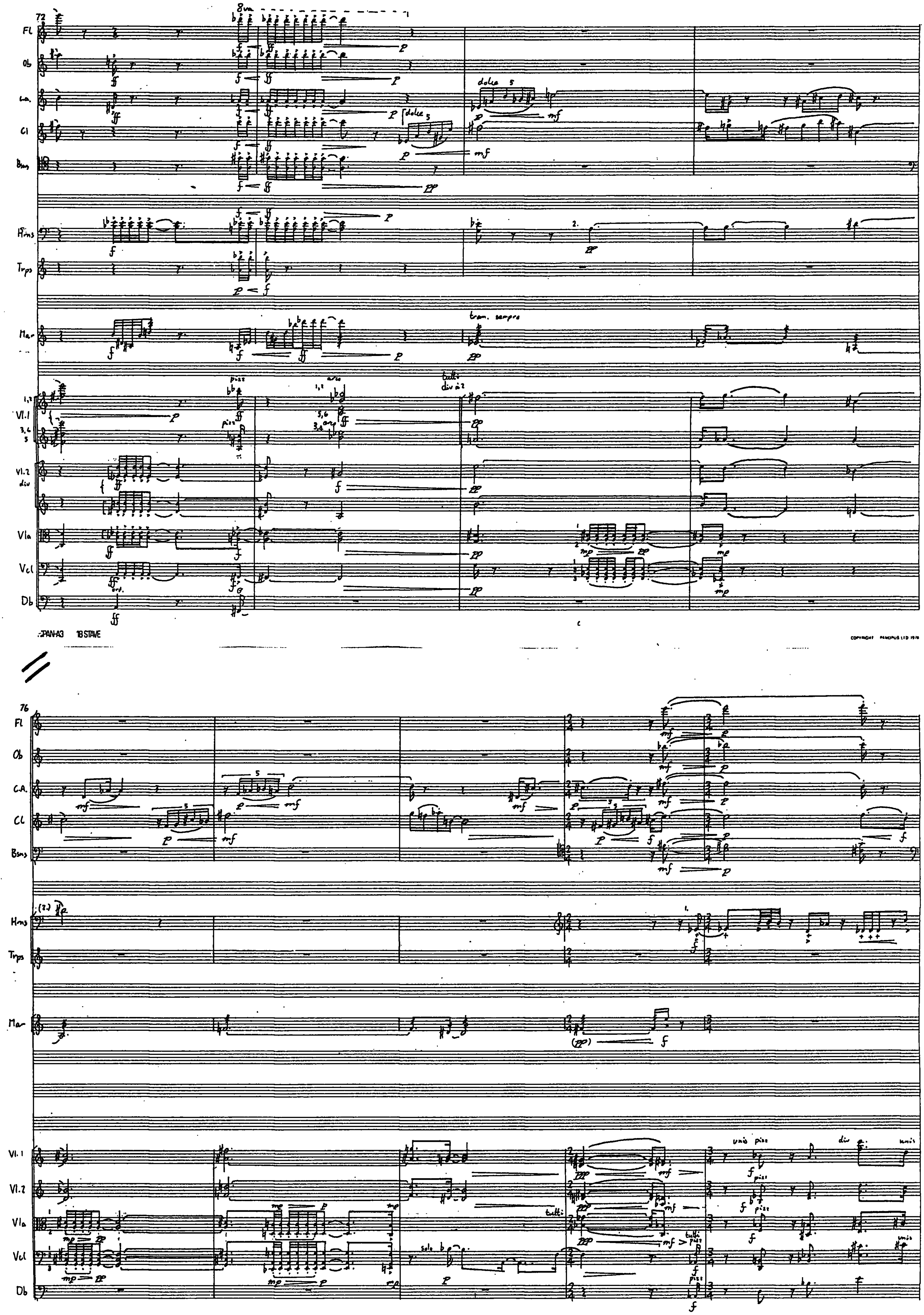
72
Fl
Ob
C.A.
Cl
Bsns
Hns
Trps
Mar
Vl.1
1,2
3,4
5
Vl.2
div
Vla
Vcl
Db
8va
dolce
5
2.
trem. sempre
pizz
arco
1,2
5,6
3,4
tutti
div à 2
ord.
76
(2)
1.
tutti
solo
unis pizz
div
unis
tutti
pizz

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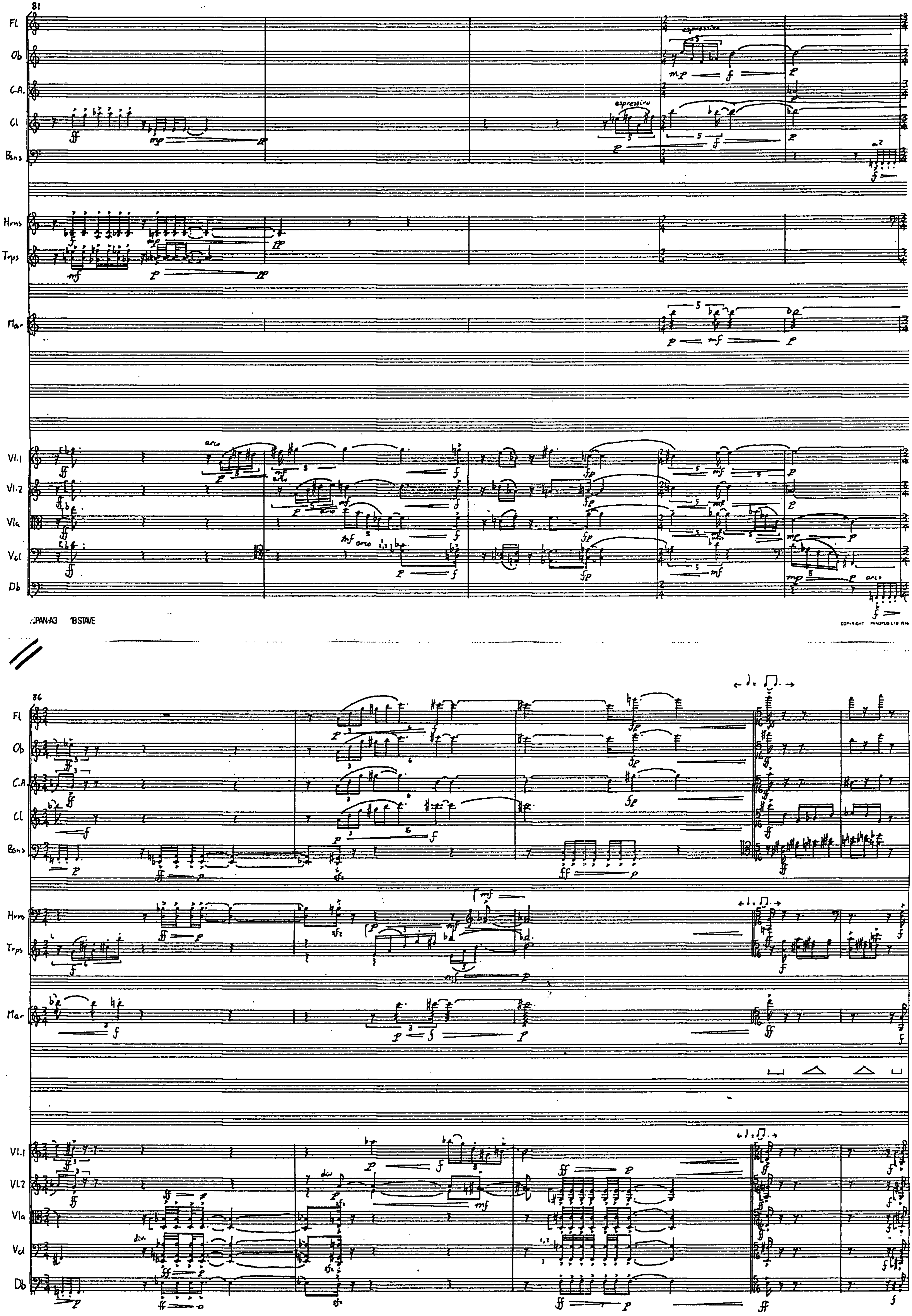
81
Fl
Ob
C.A.
Cl
Bsns
Hrns
Trps
Mar
Vl.1
Vl.2
Vla
Vcl
Db
espressivo
espressivo
a2
arco
arco
arco
arco
mp
f
p
ff
mf
fp
86
div.
div.
1,2
3
← ♩. = ♫. →
ff
sfz
pp

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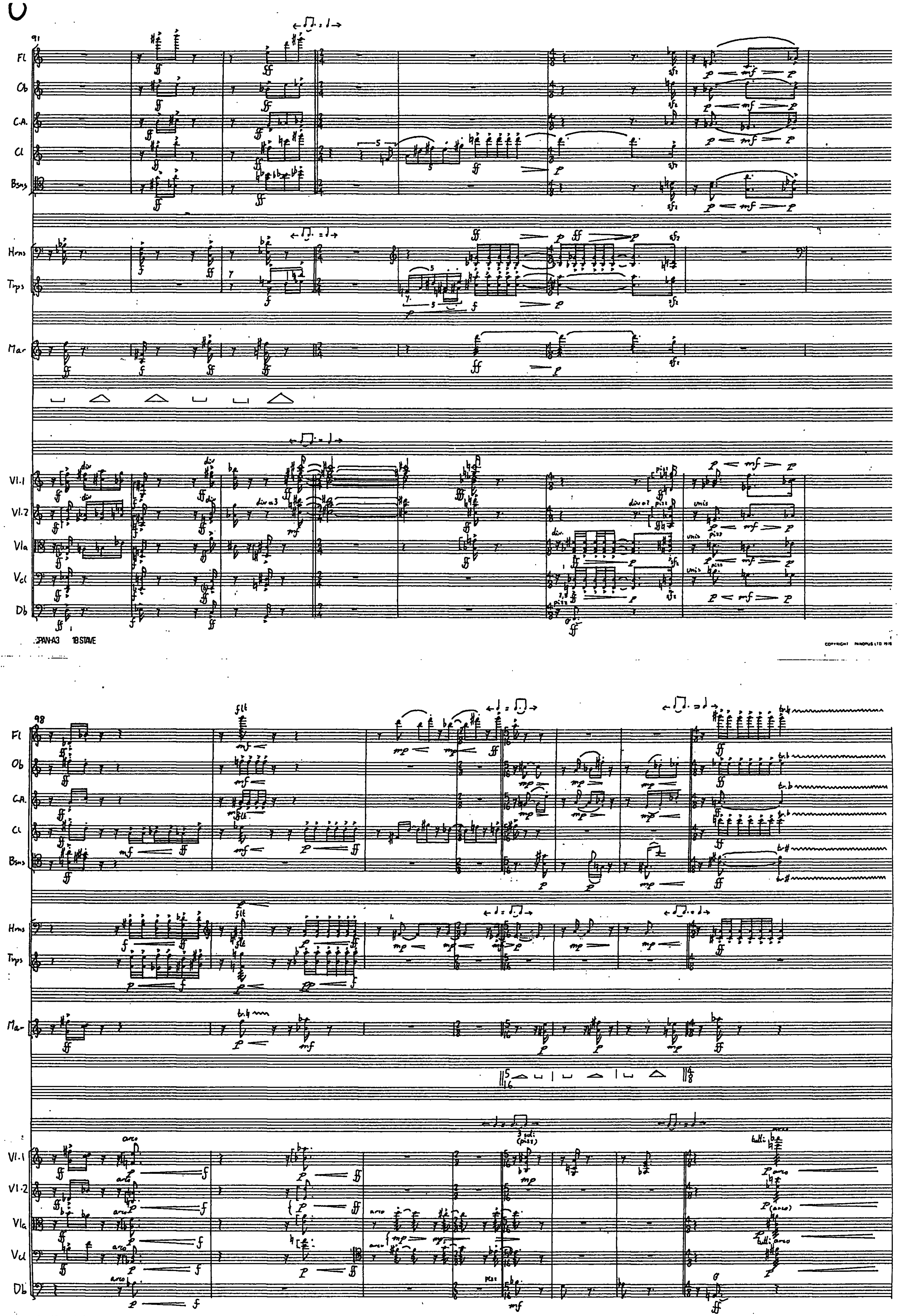
91
Fl
Ob
C.A.
Cl
Bsns
Hrns
Trps
Mar
Vl.1
Vl.2
Vla
Vcl
Db
div
div a 3
div a 2
pizz
unis
98
flt
arco
tutti
3 soli (pizz)
(arco)
mezzo
pizz
tr.

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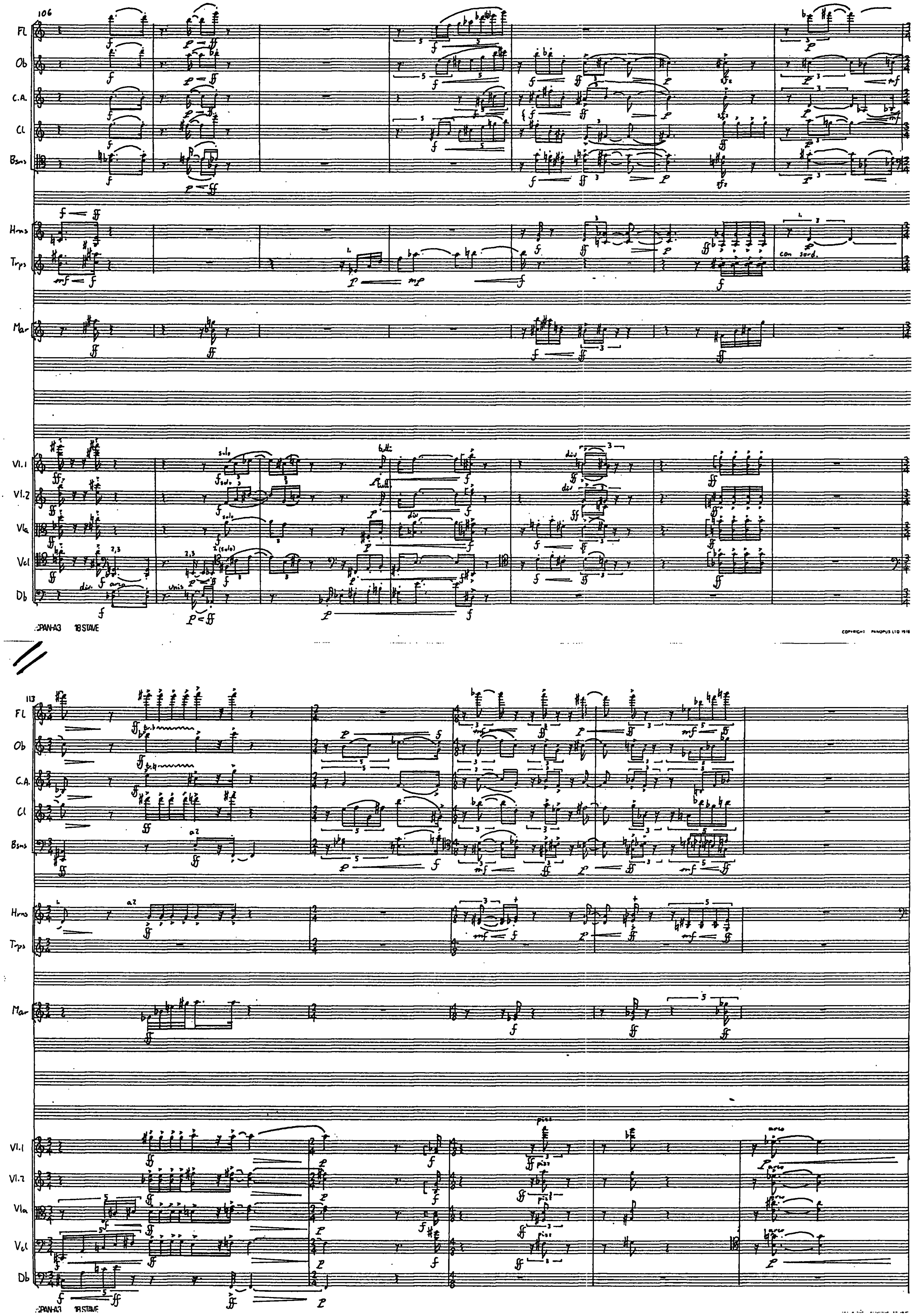
106
Fl.
Ob
C.A.
Cl
Bsns
Hrns
Trps
Mar
Vl.1
Vl.2
Vla
Vcl
Db
solo
div.
unis
tutti
2,3
1 (solo)
arco
con sord.
113
a2
pizz
arco

SPAN-A3 18 STAVE

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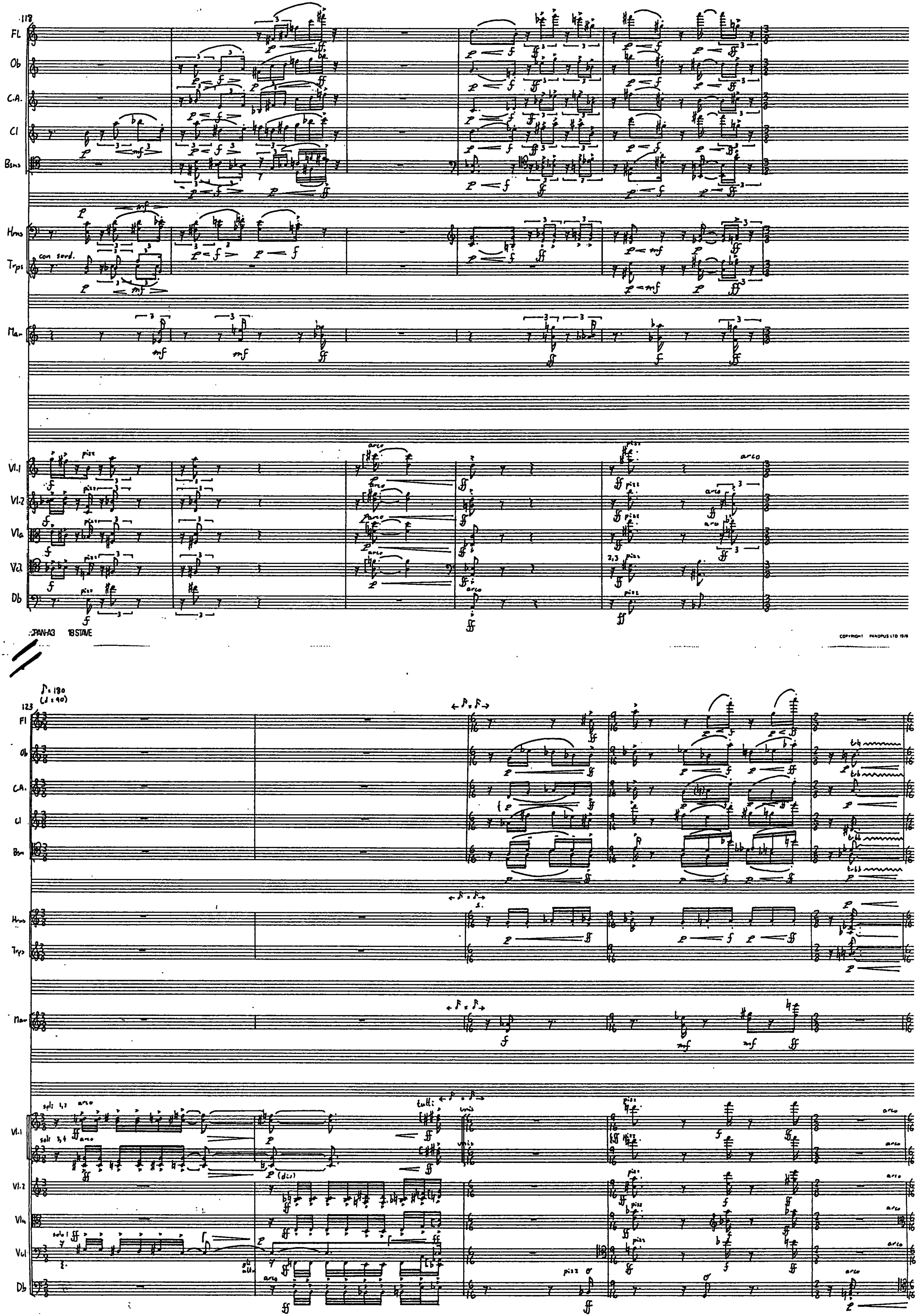
SPAN-A3 18 STAVE


118
Fl
Ob
C.A.
Cl
Bsns
Hns
Trps
con sord.
Mar
Vl.1
Vl.2
Vla
Vcl
Db
pizz
arco
2,3
SPAN-A3 18 STAVE
123
♪ = 180
(♩ = 90)
← ♪ = ♪ →
soli 1,2 arco
soli 3,4 arco
tutti:
unis
solo 1
div.
gliss
SPAN-A3 18 STAVE

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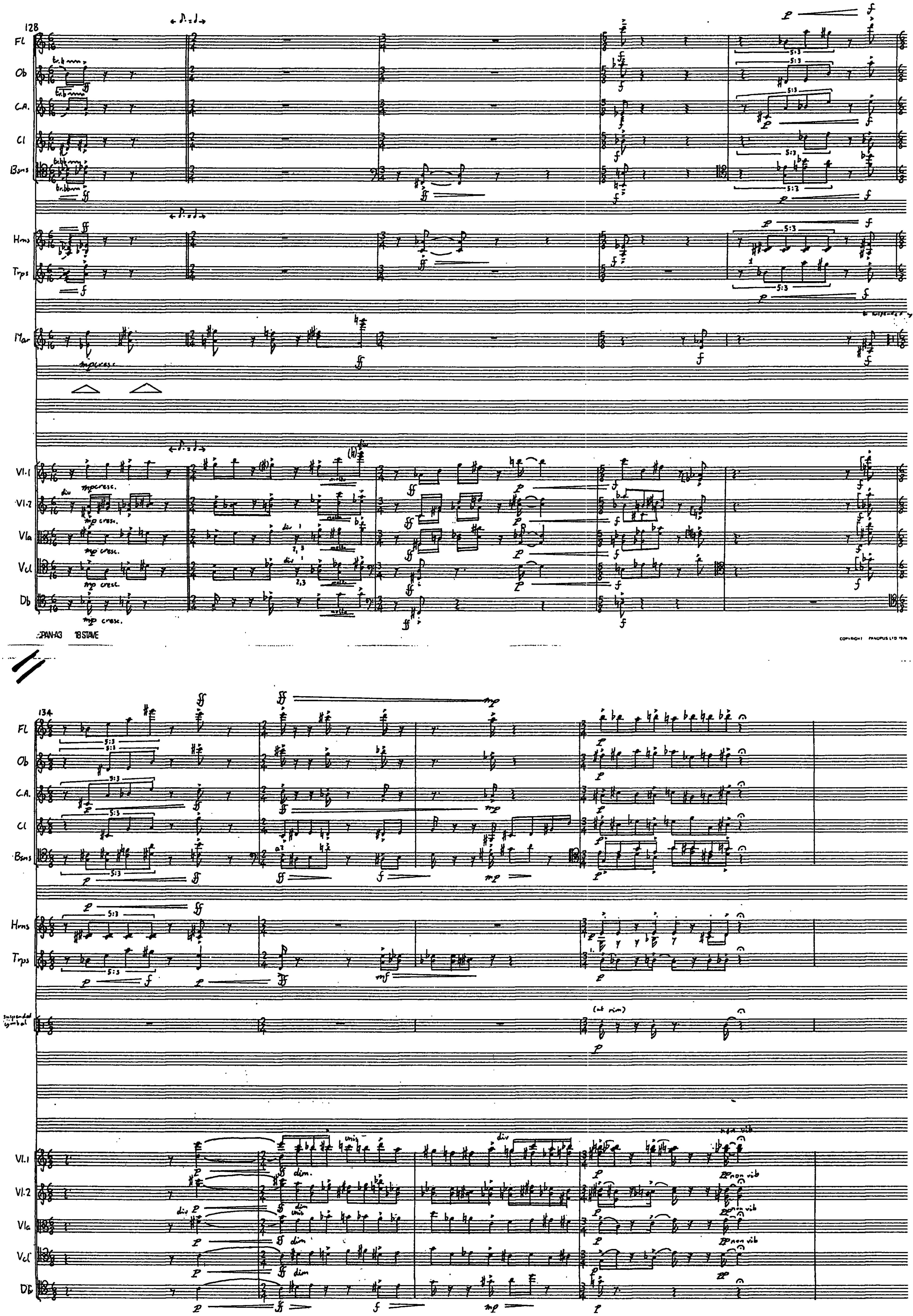
128
Fl
Ob
C.A.
Cl
Bsns
Hrns
Trps
Mar
Vl.1
Vl.2
Vla
Vcl
Db
mp cresc.
div
molto
5:3
to suspended cymbal
134
suspended cymbal
(at rim)
a2
unis
dim
non vib

PAN-A3 18 STAVE

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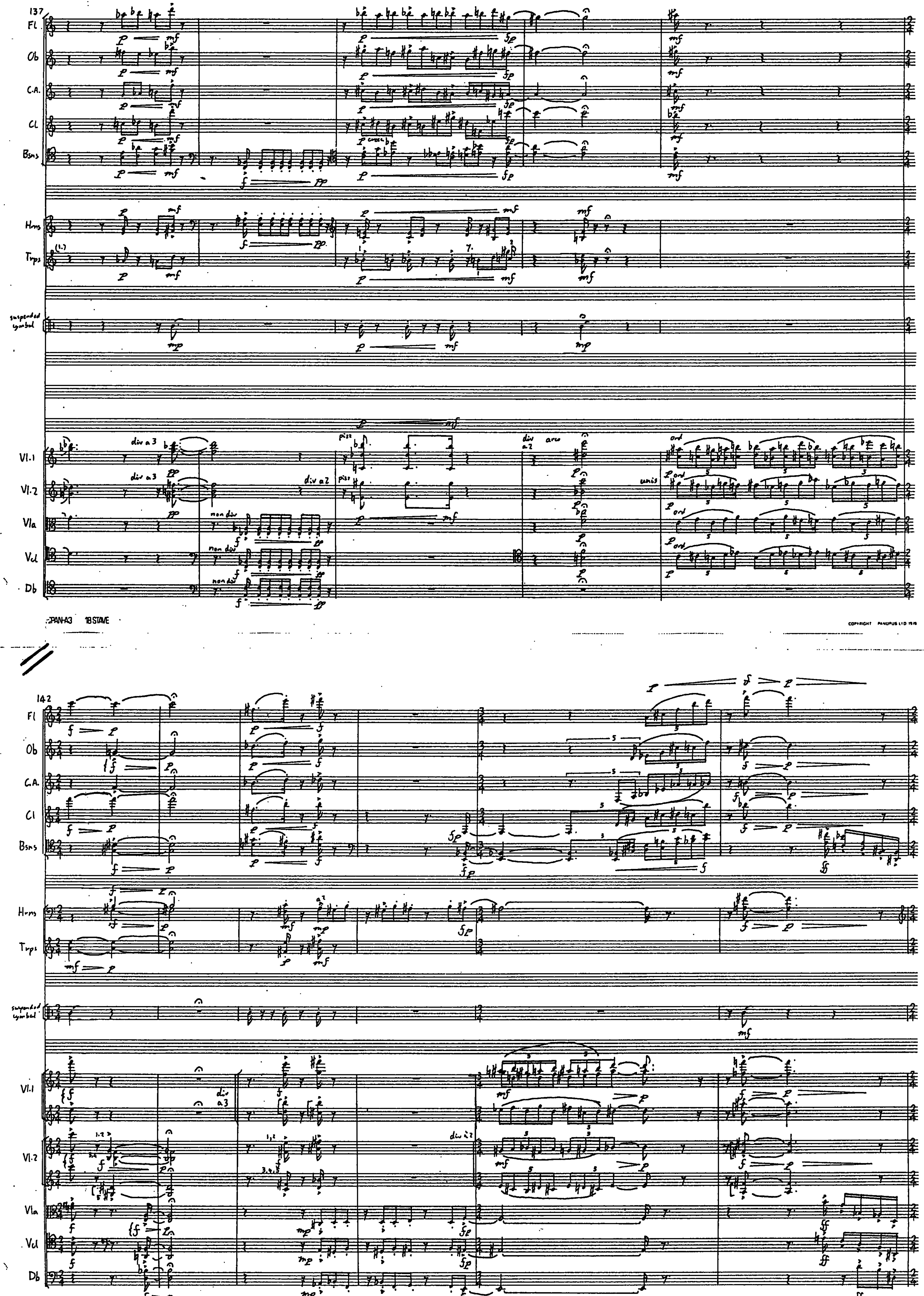
137
Fl
Ob
C.A.
Cl
Bsns
Hrns
Trps
(1.)
suspended cymbal
Vl.1
Vl.2
Vla
Vcl
Db
div a 3
div a 3
div a2
pizz
pizz
div a2
arco
ord
unis
non div
non div
non div
cresc.
p
mf
f
pp
sfp
mp
142
a2
div a 3
1.2
3.4
3.4.5
div a2
ff
fp
sfp
2/4
3/4
4/4

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PAN-A3 18 STAVE

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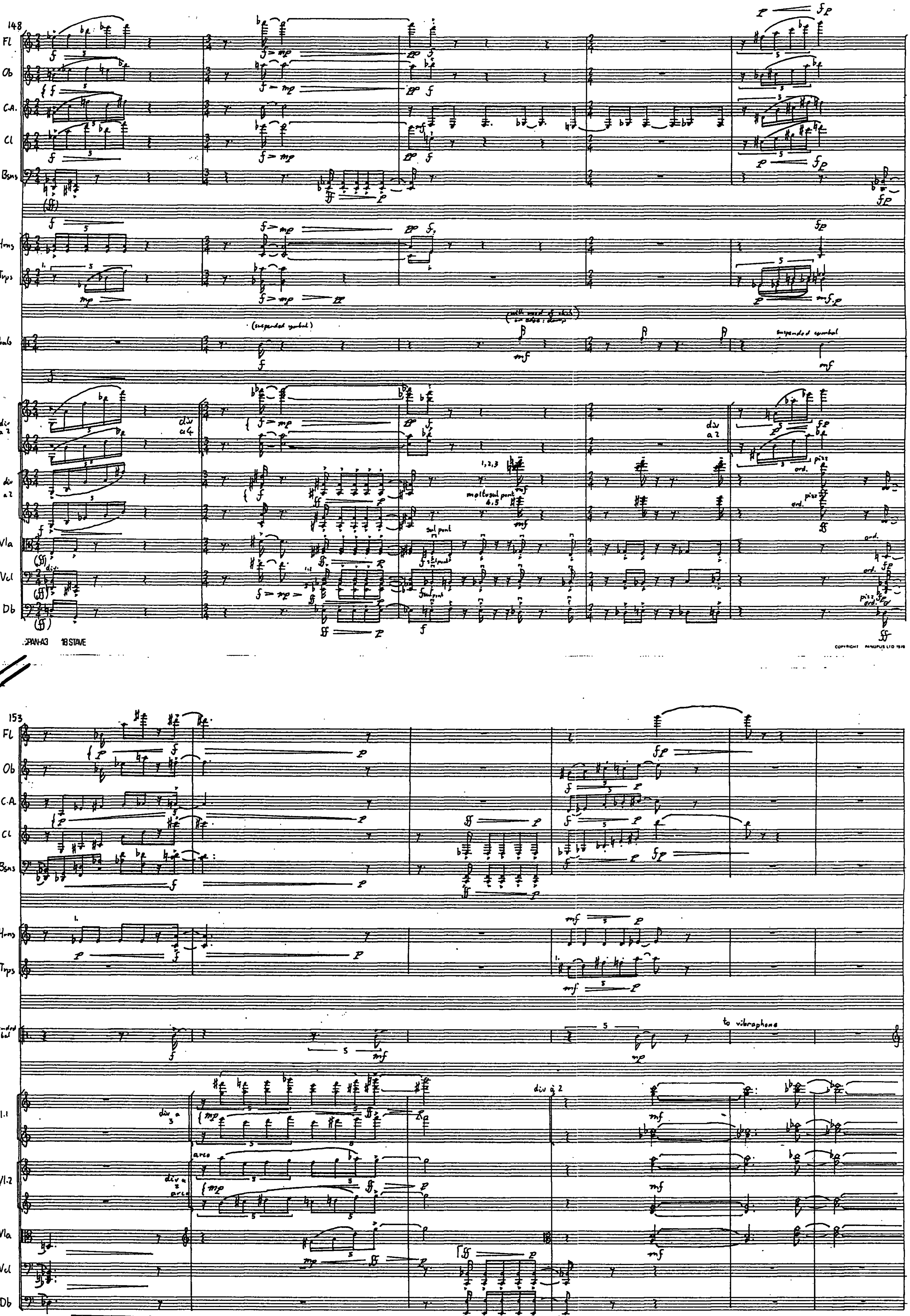
148
Fl
Ob
C.A.
Cl
Bsns
Hrns
Trps
Cymbals
(suspended cymbal)
(with wood of stick on edge; damp)
suspended cymbal
Vl.1 div a 2
div a4
div a 2
Vl.2 div a 2
1,2,3
molto sul pont
4,5
pizz
ord.
Vla
sul pont
Vcl
div.
Db
153
Fl
Ob
C.A.
Cl
Bsns
Hrns
Trps
suspended cymbal
to vibraphone
Vl.1
div a 3
div a 2
Vl.2
arco
div a 2 arco
Vla
Vcl
Db

SPAN-A3 18 STAVE

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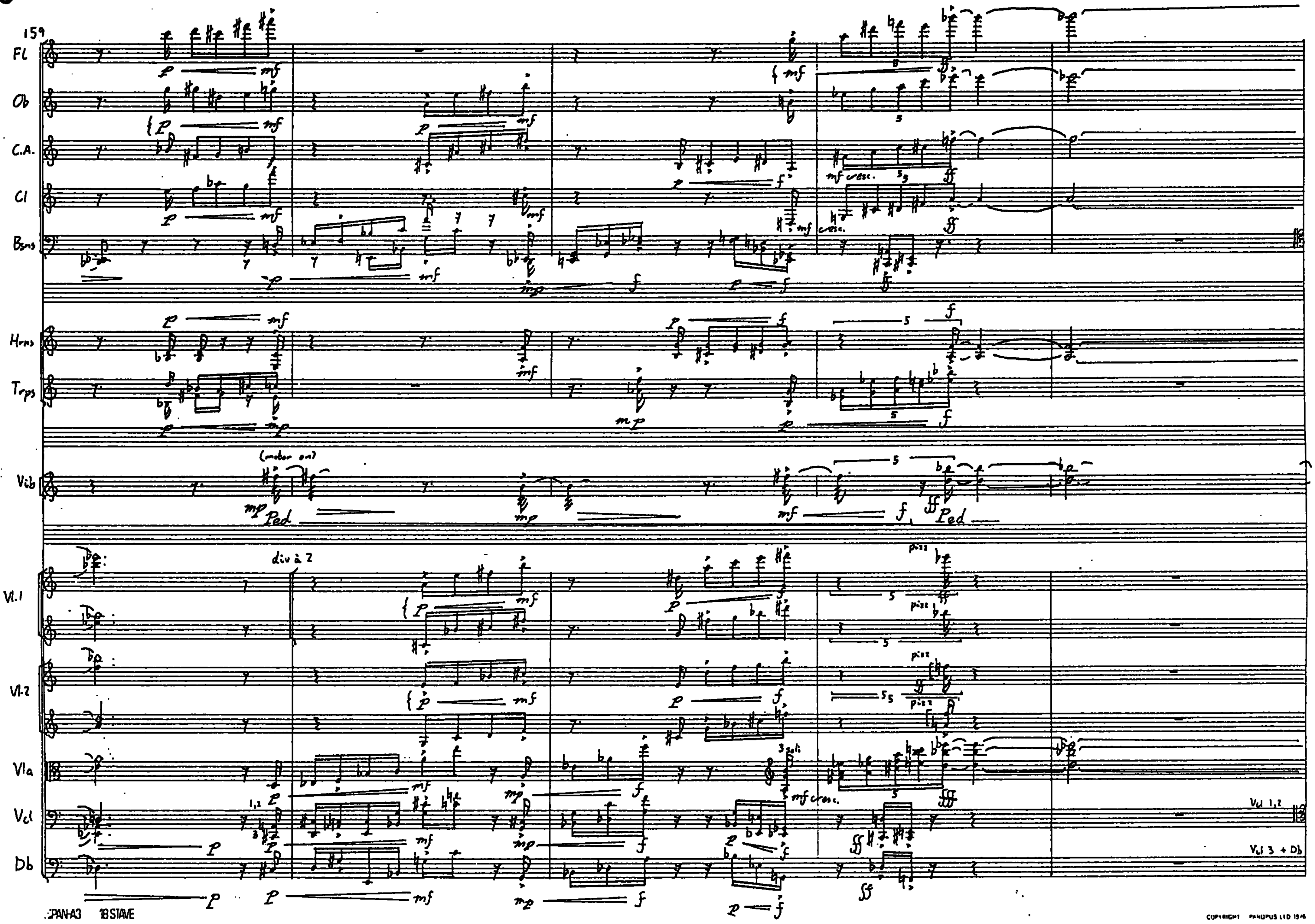
159
Fl
Ob
C.A.
Cl
Bsns
Hrns
Trps
Vib
(motor on)
Ped
Vl.1
div à 2
pizz
Vl.2
Vla
3 soli
mf cresc.
Vcl
1,2
3
Db
Vcl 1,2
Vcl 3 + Db
p
mf
f
ff
mp
cresc.

PAN-A3 18STAVE

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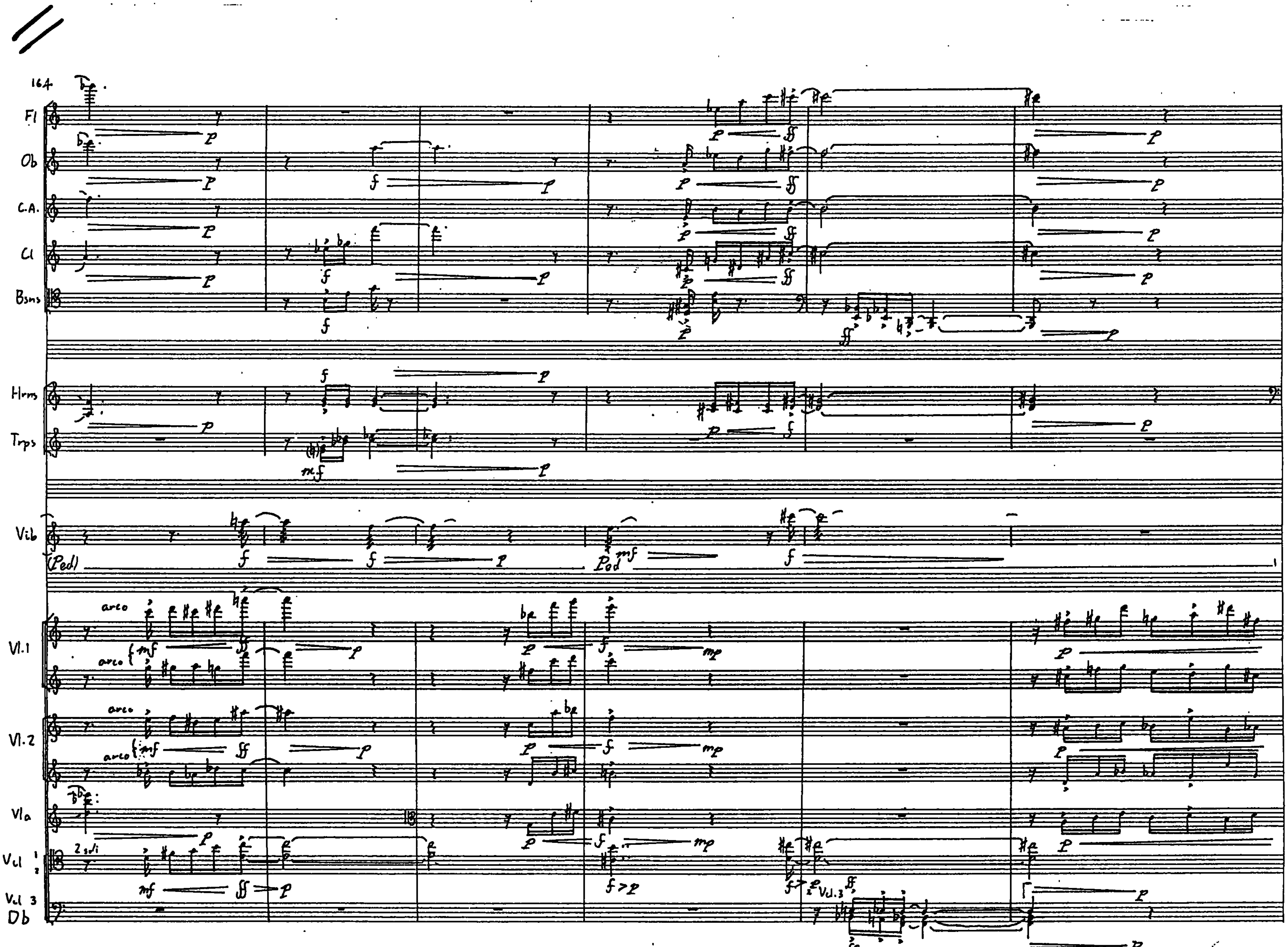
164
Fl
Ob
C.A.
Cl
Bsns
Hrns
Trps
Vib
(Ped)
Ped
Vl.1
arco
Vl.2
arco
Vla
Vcl 1 2
2 soli
Vcl 3
Db
Vcl.3
p
mf
f
ff
mp
f > p

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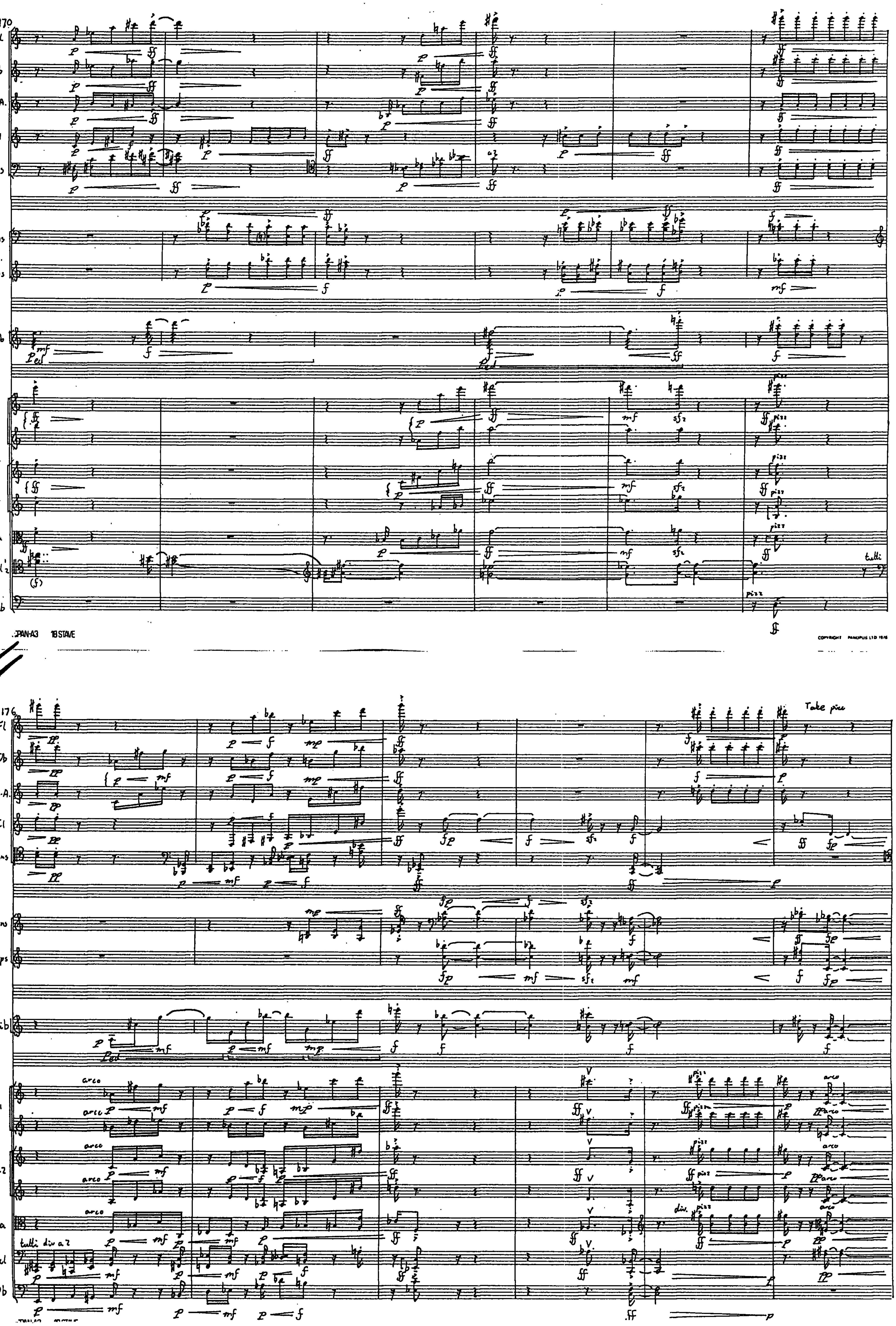
‡ Vcl.2 [illegible]


170
Fl
Ob
C.A.
Cl
Bsns
a3
Hrns
Trps
Vib
Ped
Vl.1
pizz
Vl.2
Vla
Vcl's
tutti
Db
176
Take picc
arco
pizz
div.
tutti div a 2
Vcl
p
mf
f
ff
mp
pp
sfz
fp

PAN-A3 18STAVE

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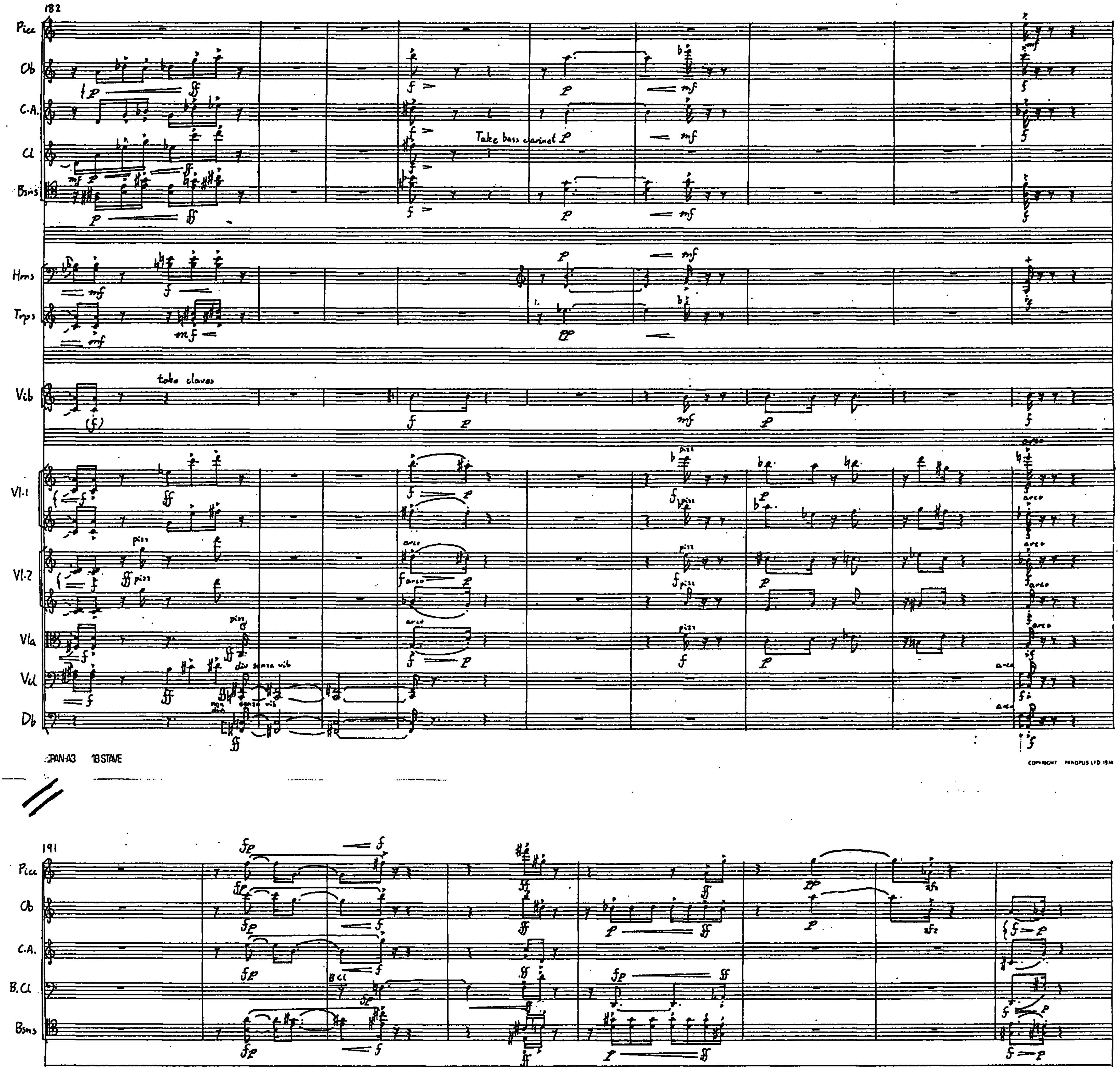
182
Picc
Ob
C.A.
Cl
Bsns
Hrns
Trps
Vib
Vl.1
Vl.2
Vla
Vcl
Db
Take bass clarinet
take claves
pizz
arco
div senza vib
senza vib
191
Picc
Ob
C.A.
B.Cl
Bsns
Hrns
Trps
Claves
Vl.1
Vl.2
Vla
Vcl
Db
B Cl
to marimba

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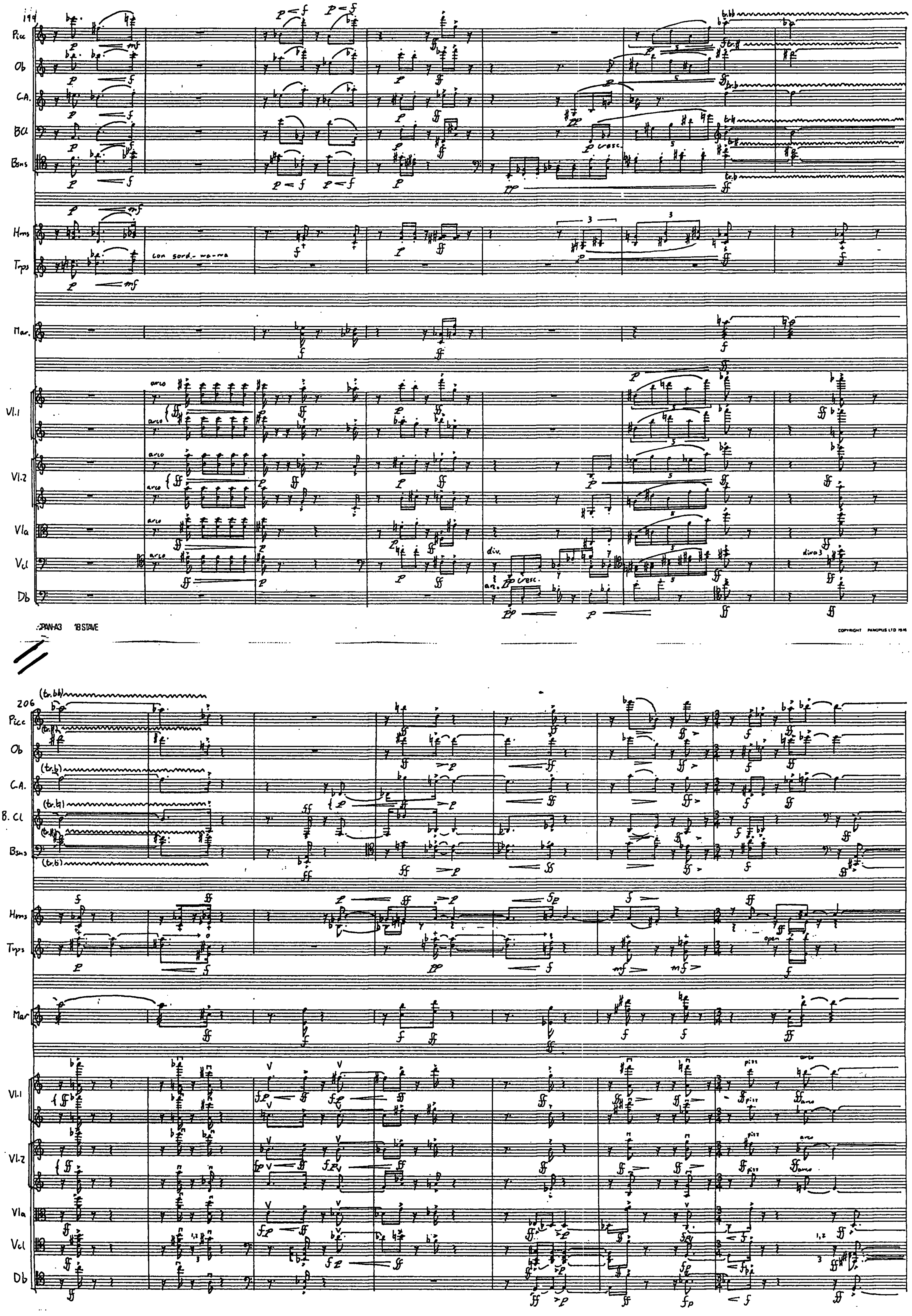
194
Picc
Ob
C.A.
BCl
Bsns
Hrns
Tpts
con sord. - wa-wa
Mar.
Vl.1
Vl.2
Vla
Vcl
Db
arco
div.
cresc.
divisi 3
206
B. Cl
(tr. bb)
(tr. b)
open
pizz
arco

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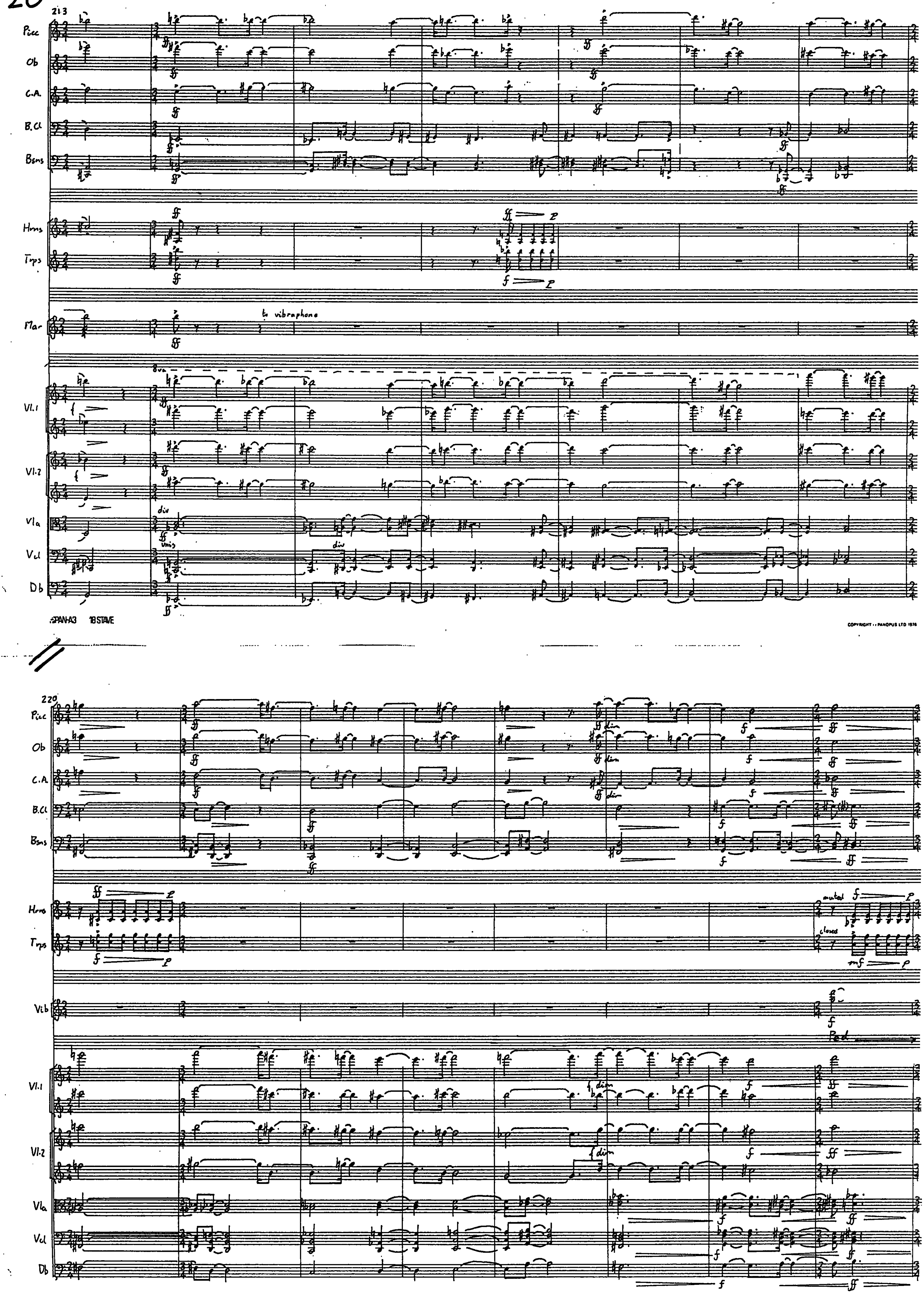
213
Picc
Ob
C.A.
B.Cl
Bsns
Hrns
Trps
Mar
to vibraphone
8va
Vl.1
Vl.2
Vla
div
unis
Vcl
Db
ff
f
p
220
dim
mf
muted
closed
Vib
Ped

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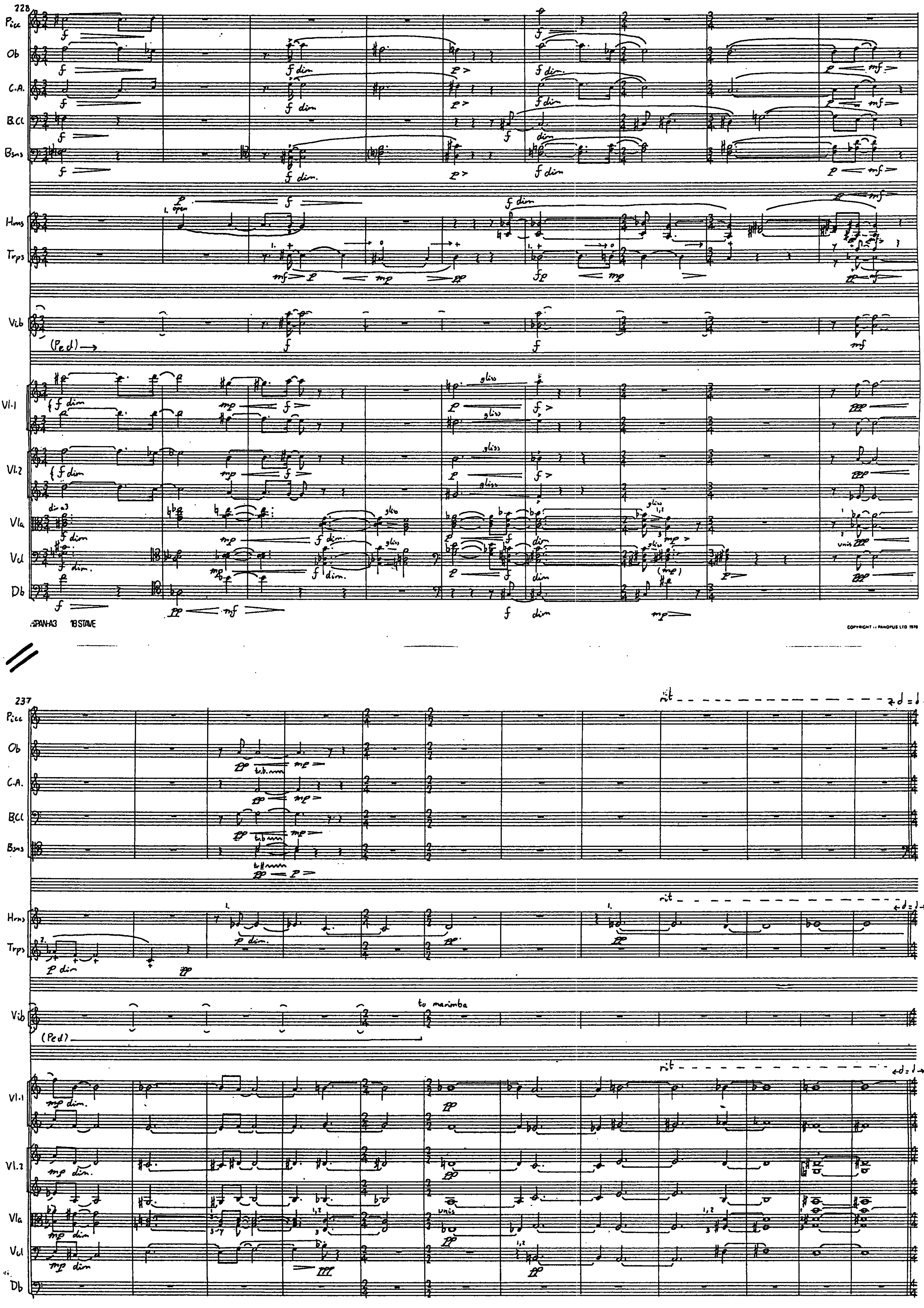
228
Picc
Ob
C.A.
B.Cl
Bsns
Hns
Trps
Vib
Vl.1
Vl.2
Vla
Vcl
Db
f dim
1. open
gliss
(Ped)
div a3
unis
237
rit
to marimba
mp dim
pp

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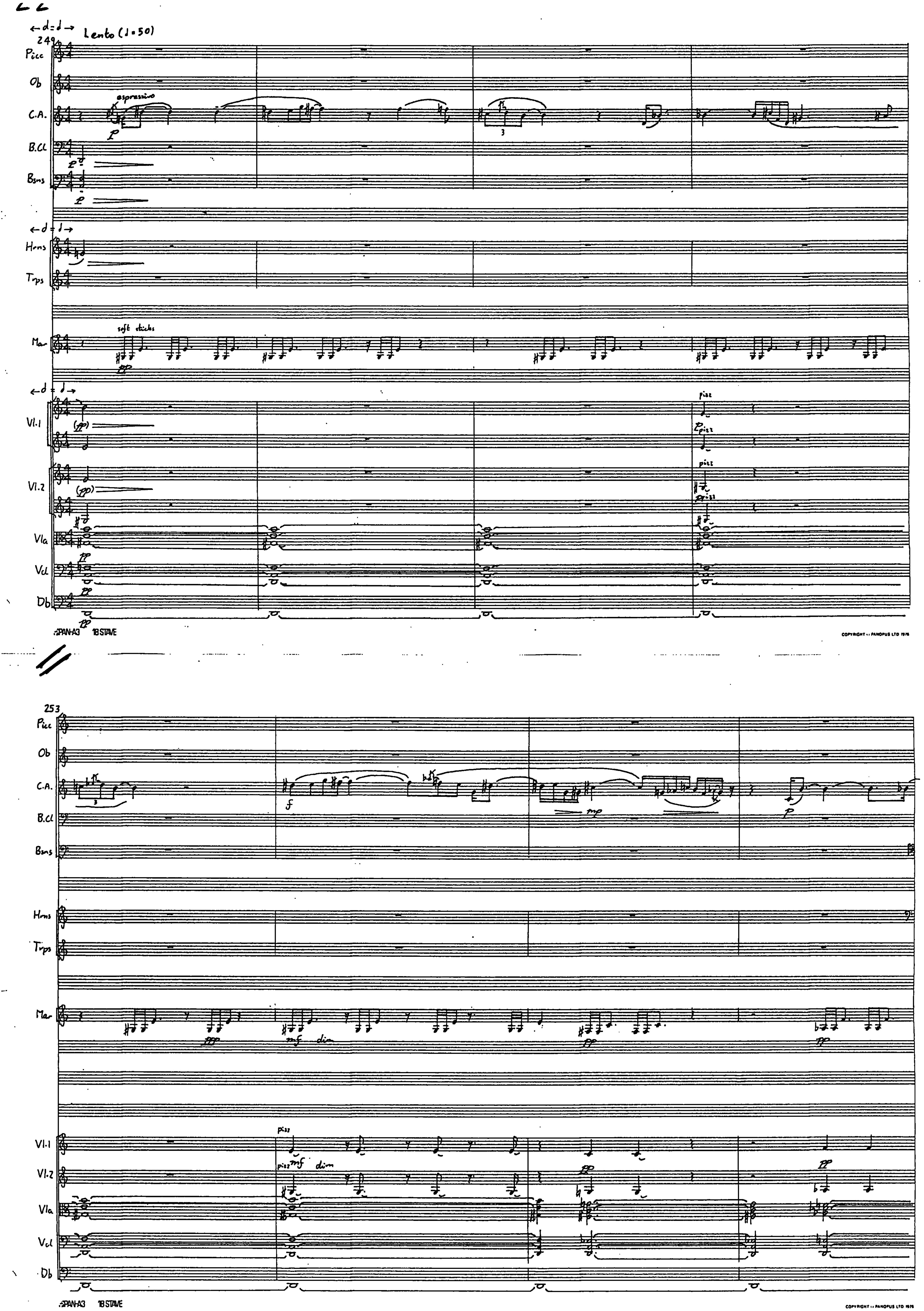
←𝅗𝅥=𝅗𝅥→ Lento (♩=50)
249
Picc
Ob
C.A.
espressivo
p
B.Cl
p
Bsns
p
←𝅗𝅥=𝅗𝅥→
Hrns
Trps
soft sticks
Mar
pp
←𝅗𝅥=𝅗𝅥→
Vl.1
(pp)
pizz
p pizz
Vl.2
(pp)
pizz
pizz
Vla
Vcl
pp
Db
pp
253
Picc
Ob
C.A.
f
mp
p
B.Cl
Bsns
Hrns
Trps
Mar
pp
mf dim
pp
pp
Vl.1
pizz
mf dim
Vl.2
pizz
pp
pp
Vla
Vcl
Db

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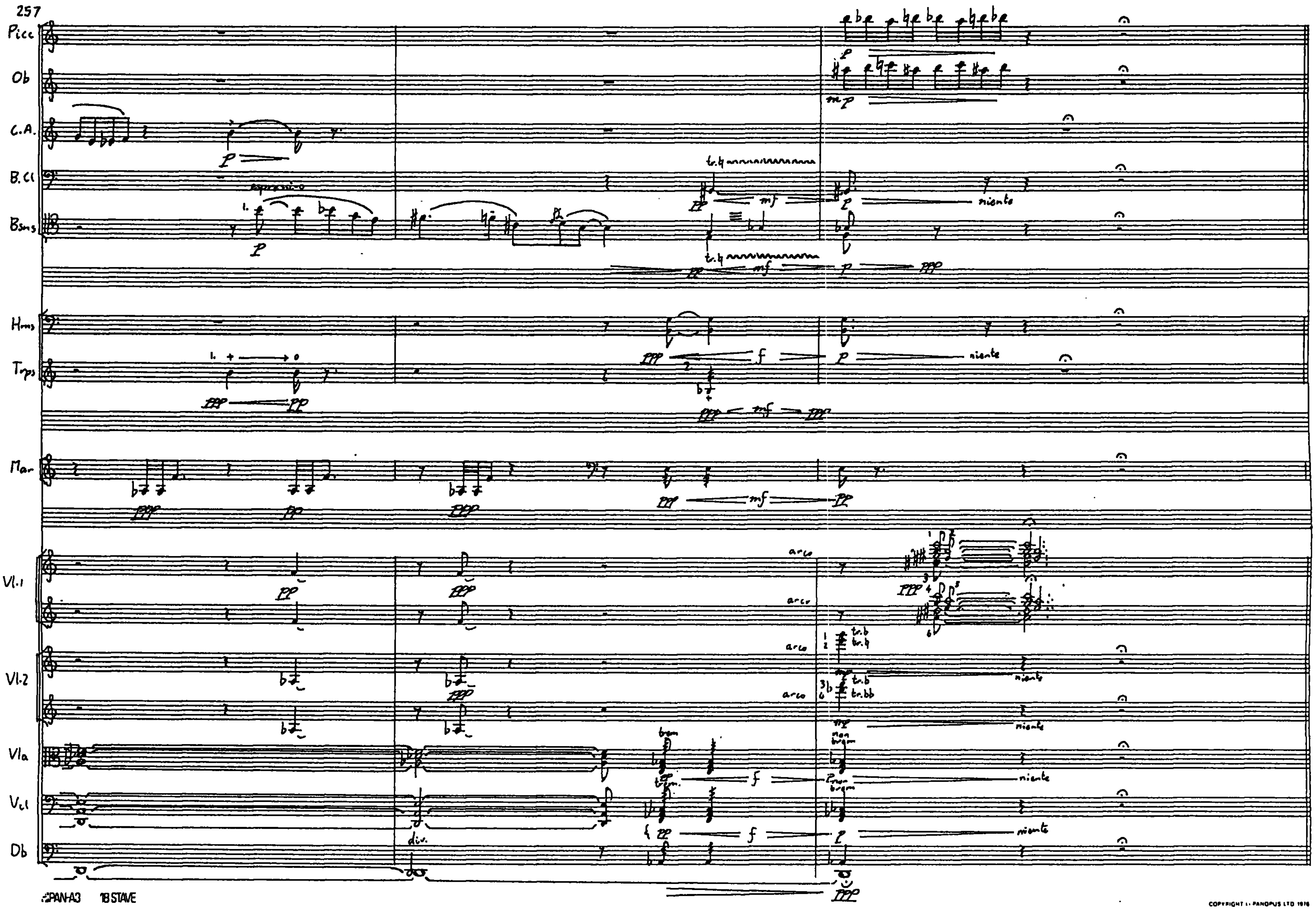
257
Picc
Ob
C.A.
B. Cl
Bsns
Hns
Tpts
Mar
Vl.1
Vl.2
Vla
Vcl
Db
espressivo
tr.
arco
div.
niente
mf
f
p
pp
ppp
mp
SPAN-A3 18 STAVE
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Paul Archbold

Chiaroscuro

for double bass and ten strings
(1996)

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24 FEB 1999

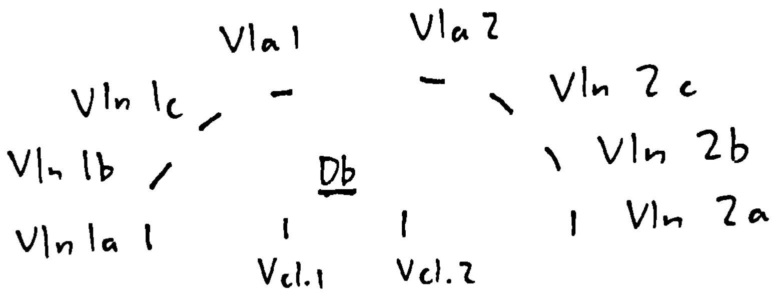
Chiaroscuro

Instrumentation

solo double bass

6 violins
2 violas
2 cellos

Suggested Seating Plan

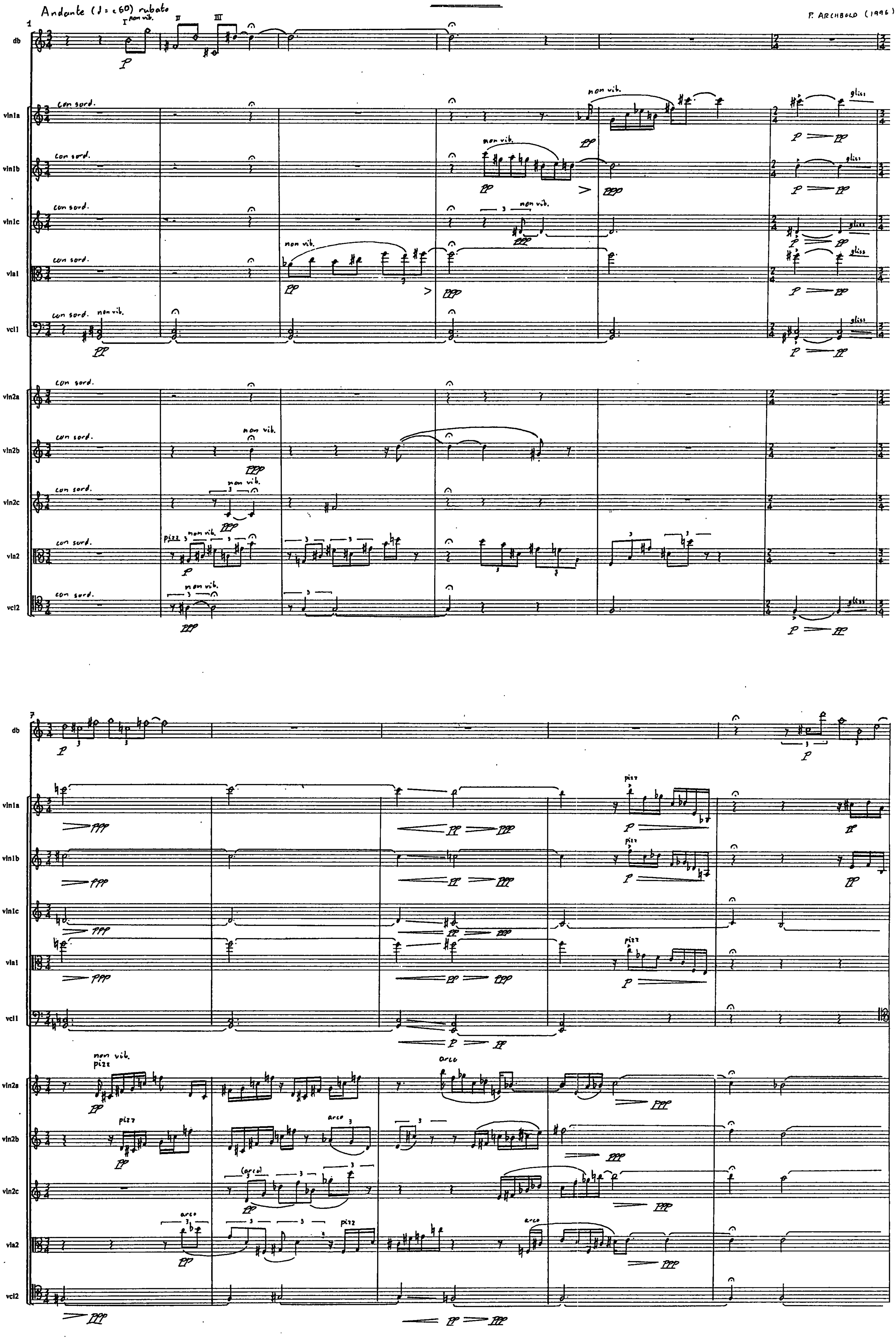

Vla 1
Vla 2
Vln 1c
Vln 2c
Vln 1b
Db
Vln 2b
Vln 1a
Vln 2a
Vcl.1
Vcl.2

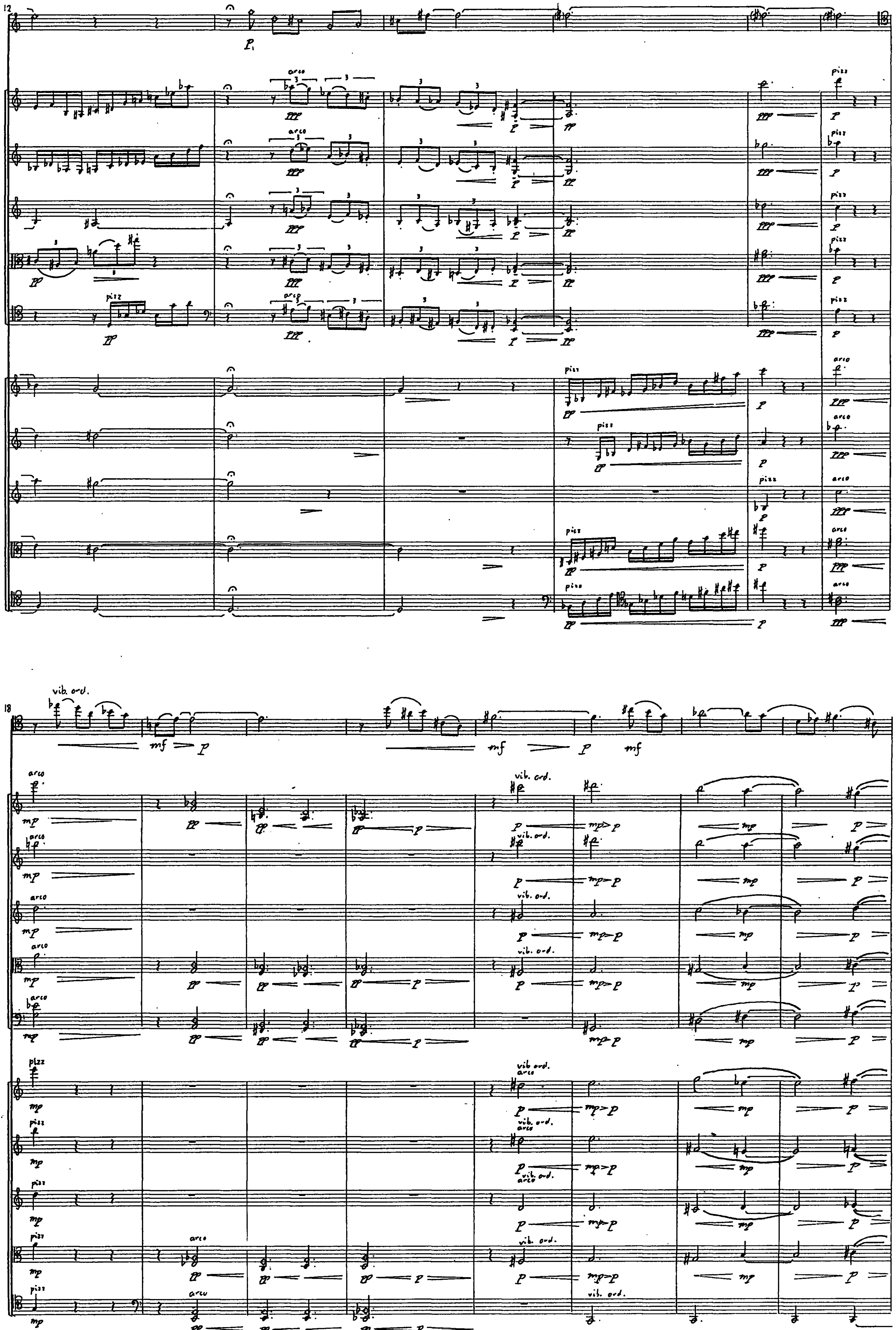
Commisioned by Paul Sherman with funds from London Arts Board

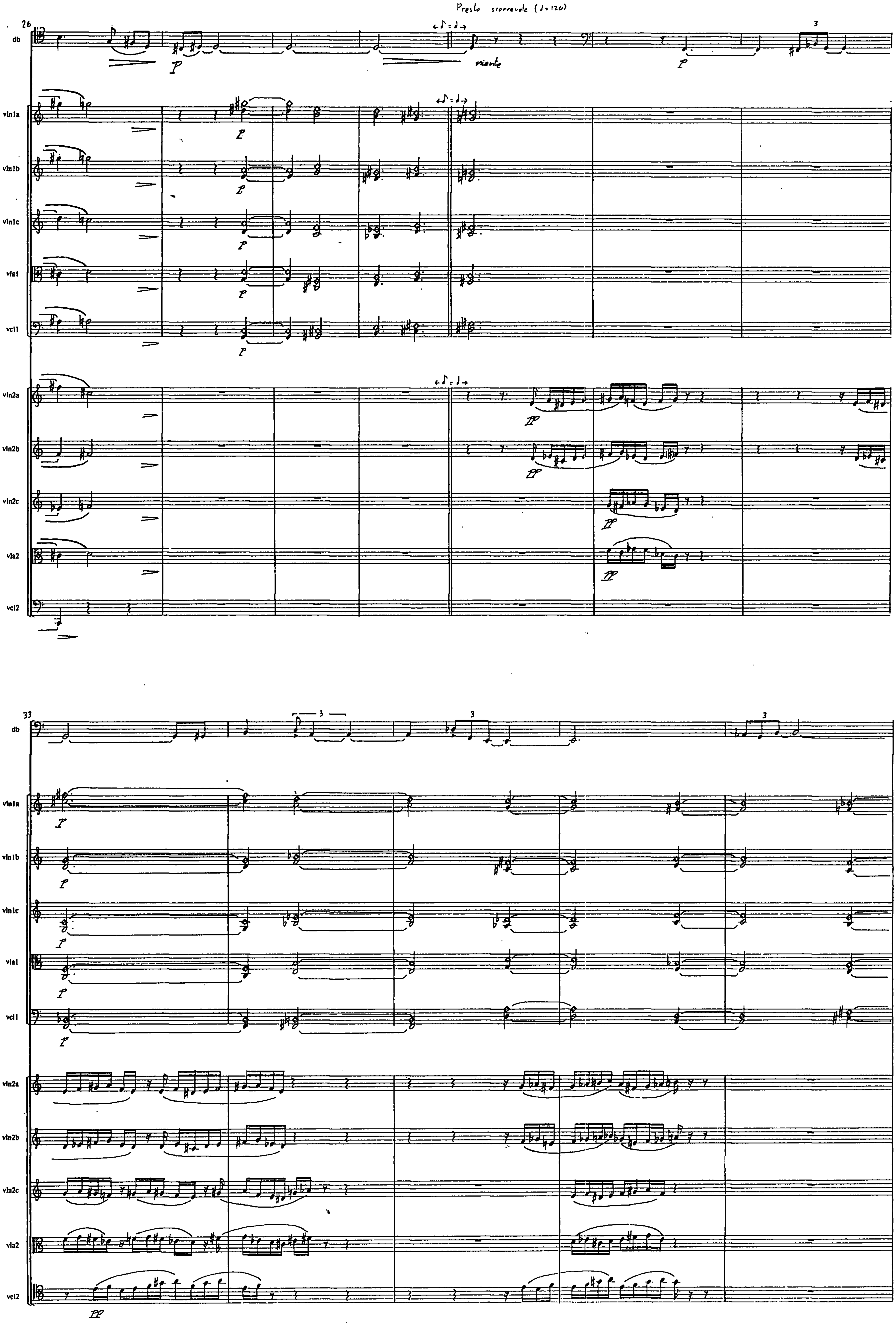
First Performance

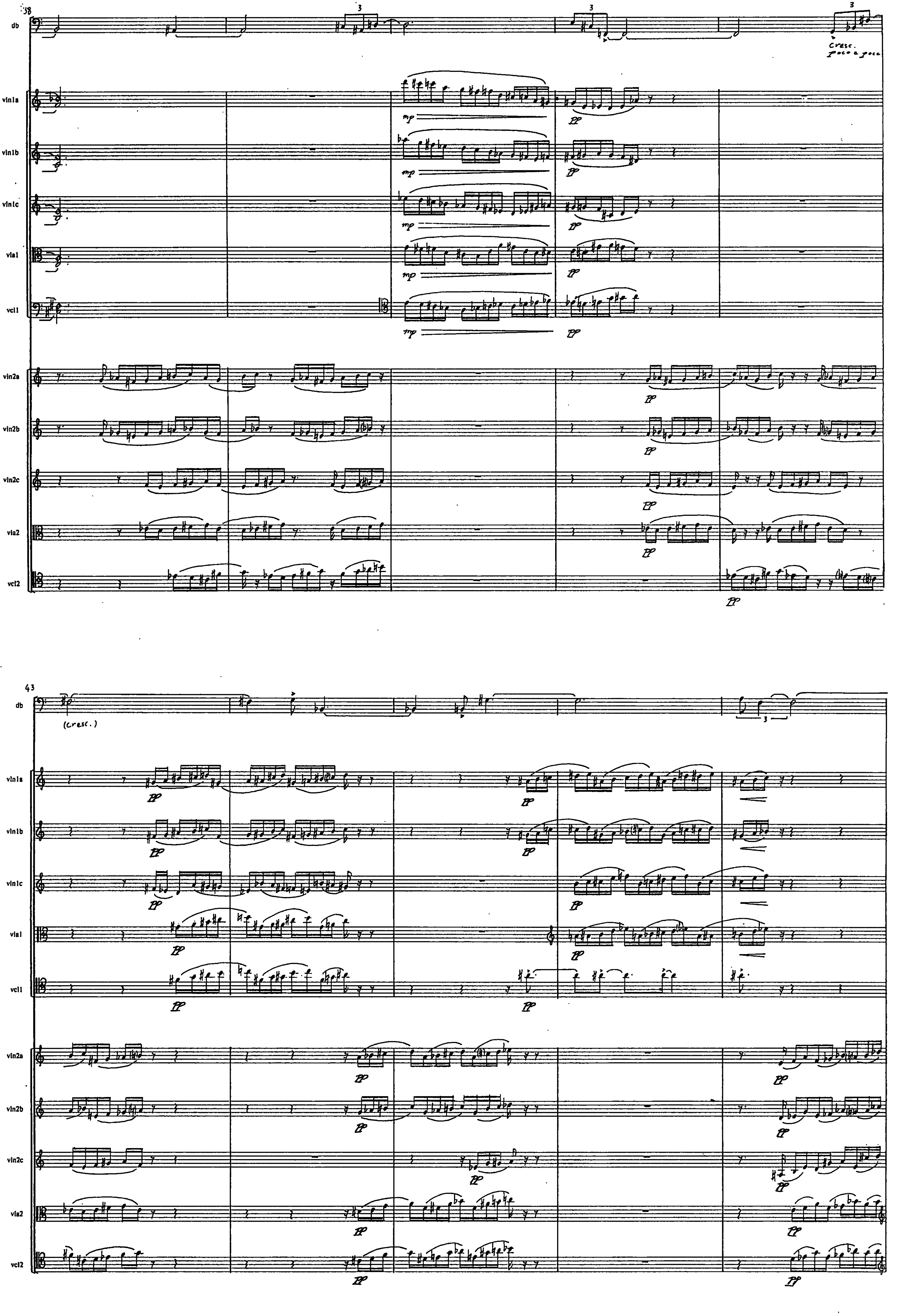
First performance by Paul Sherman (double bass) and Opus 20 (conductor Scott Stroman) on Tuesday 19th March 1996 at St. Giles Cripplegate, London.

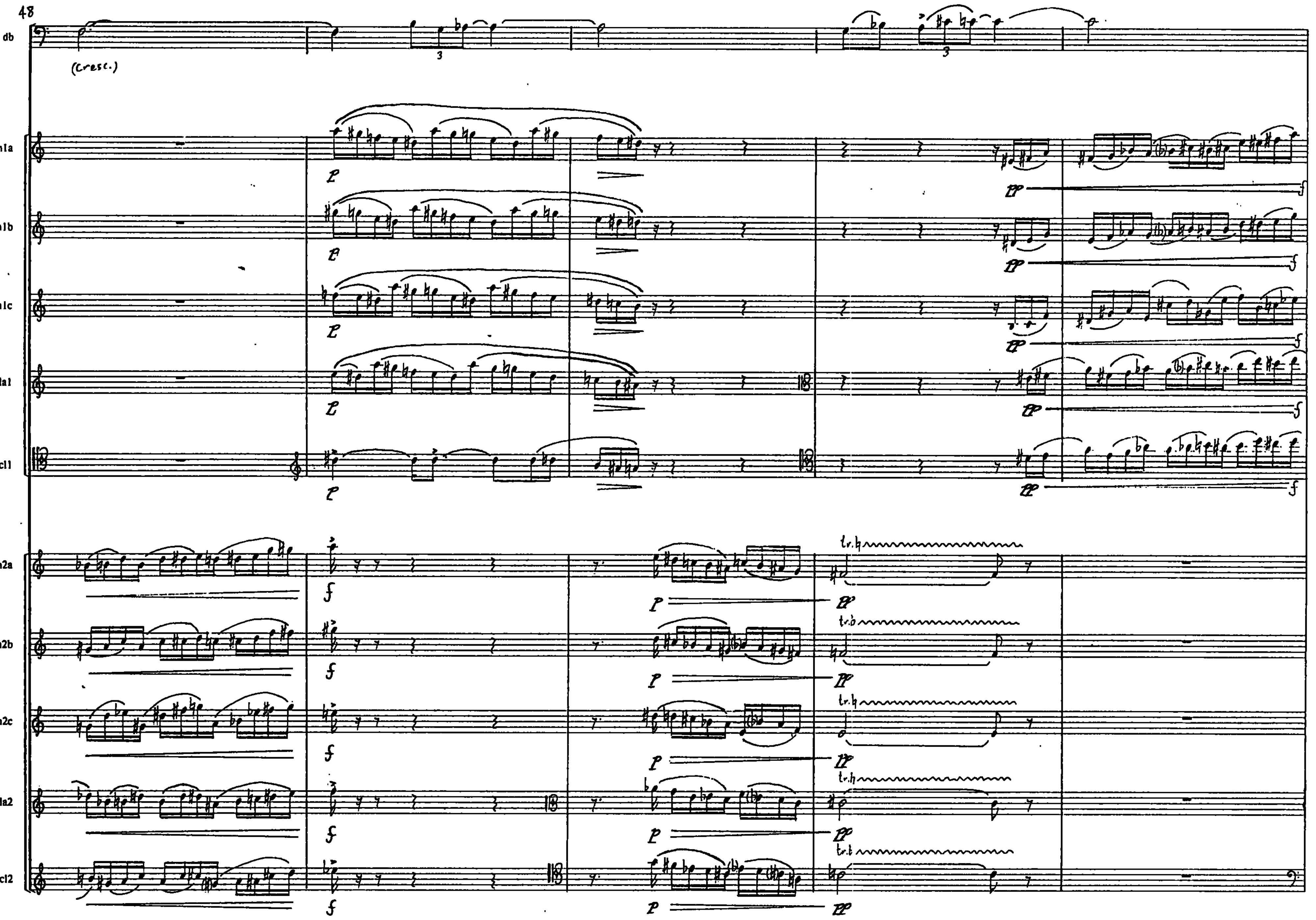
Thesis H
1998/
ARC

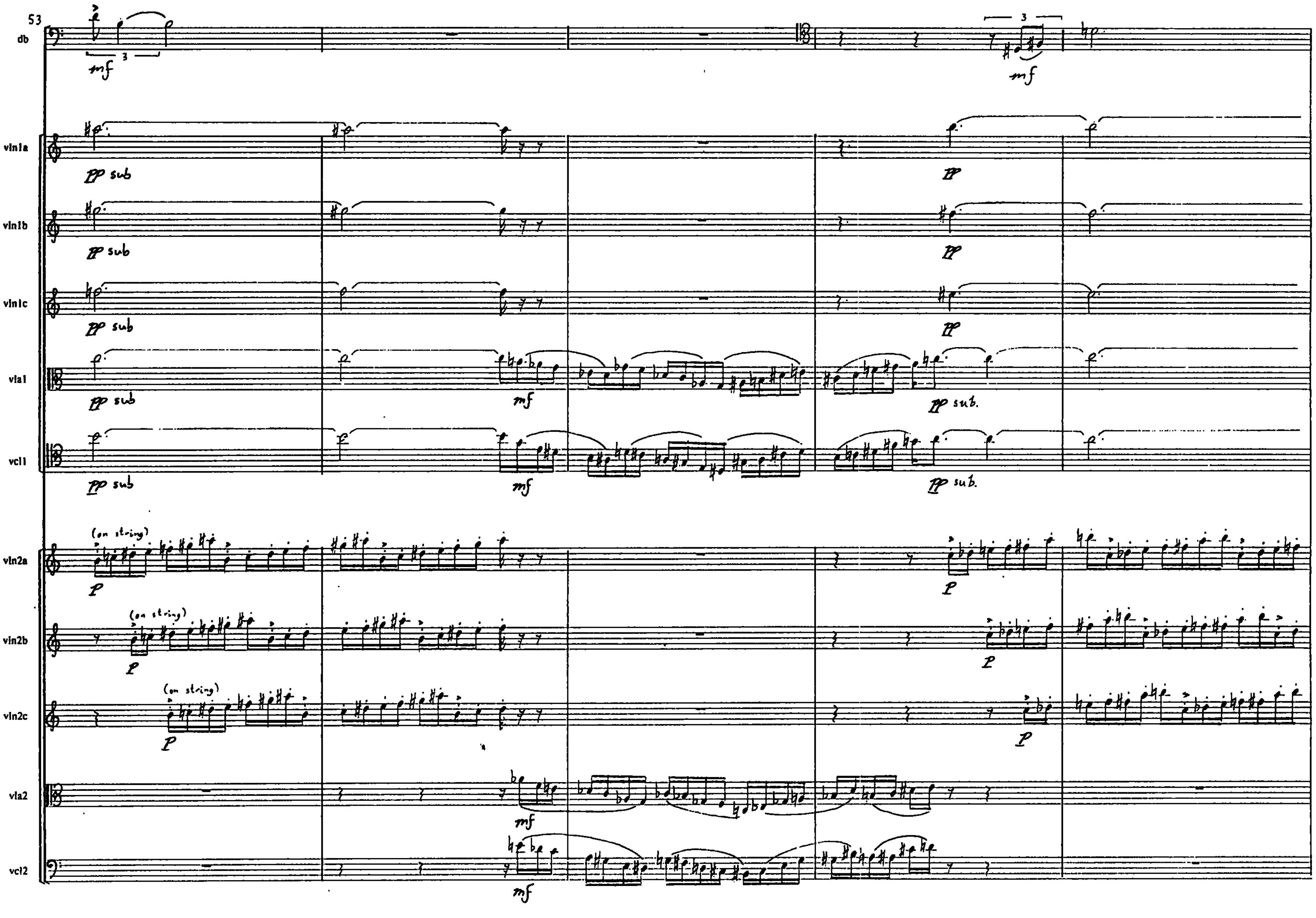

Andante (♩= c60) rubato
P. ARCHBOLD (1996)
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
con sord.
non vib.
I
II
III
pizz
arco
(arco)
gliss
p
pp
ppp
7

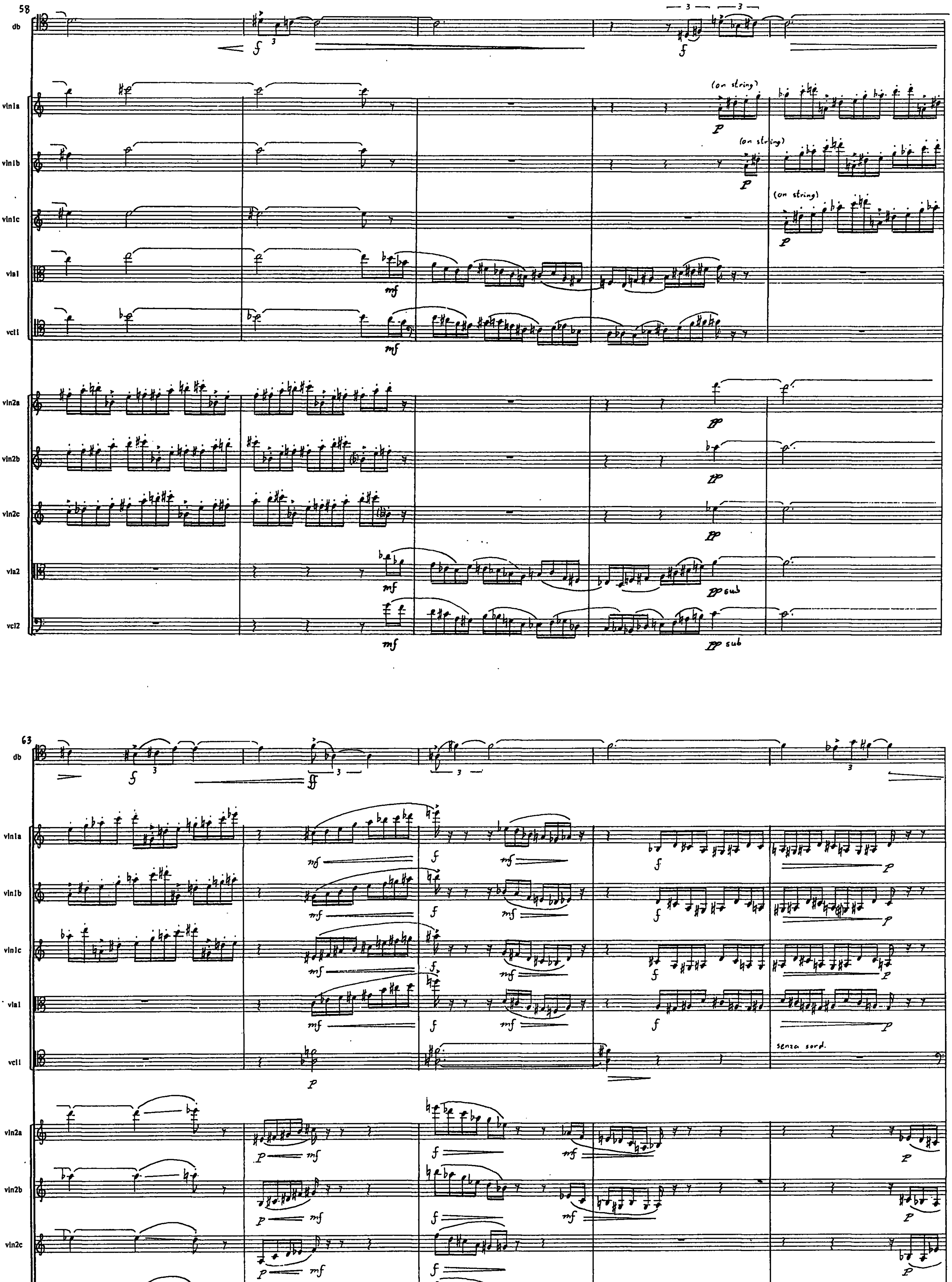

12
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
arco
pizz
18
vib. ord.
p sempre

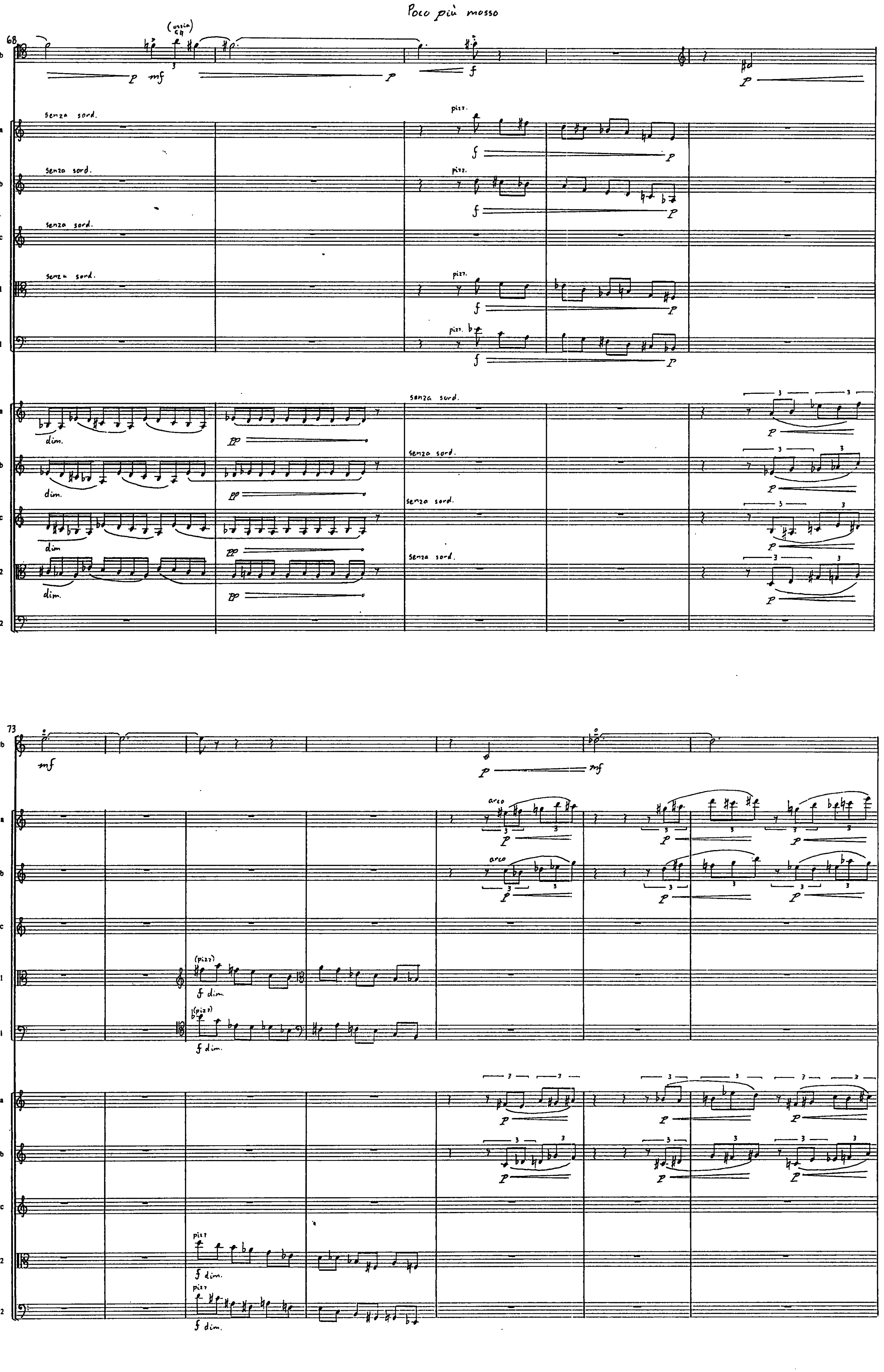

Presto scorrevole (♩=120)
26
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
p
niente
←♪=♩→
←♪=♩→
←♪=♩→
3
pp
33
3
3
3
p

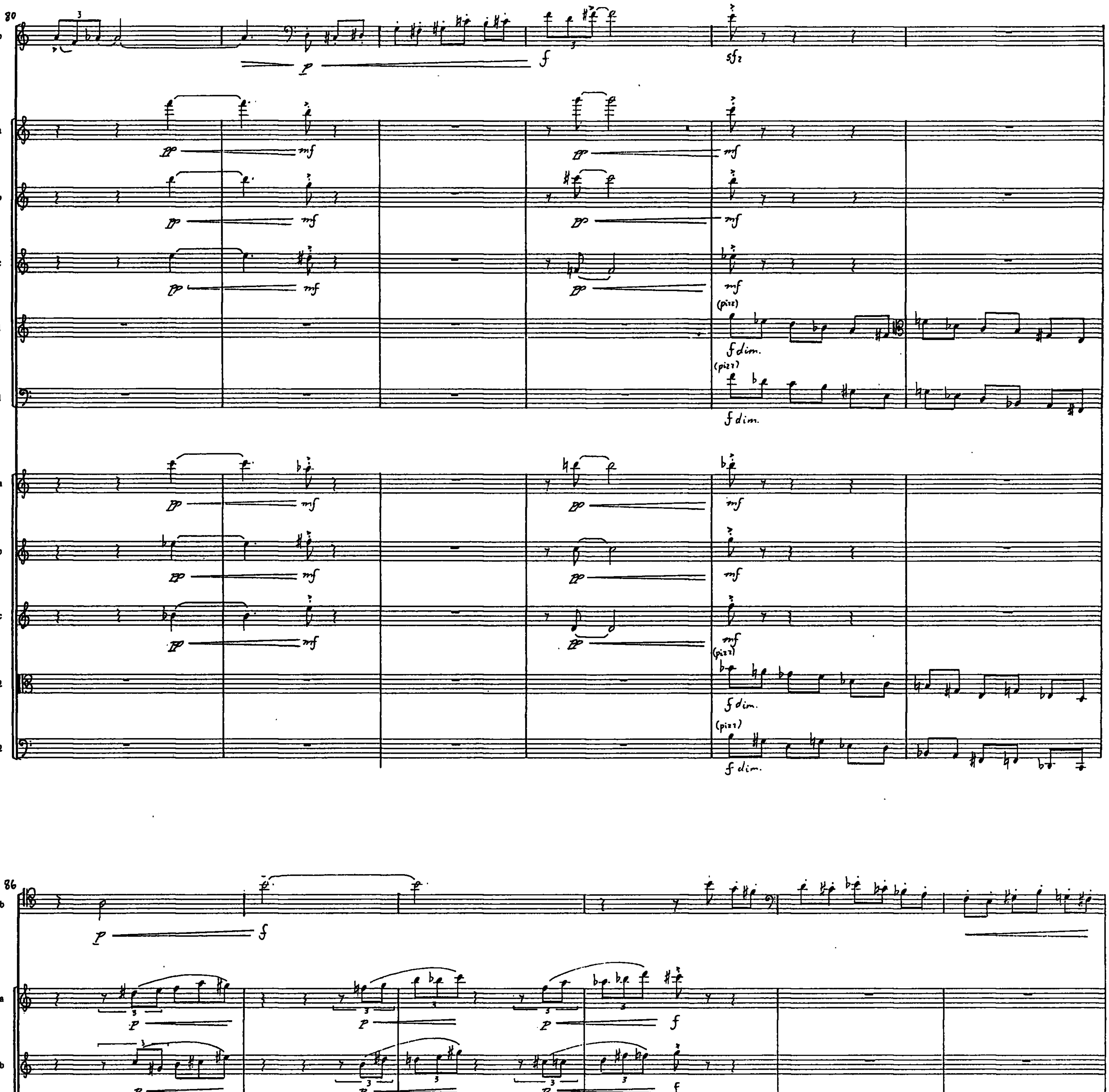

38
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
3
mp
pp
cresc.
poco a poco
43
(cresc.)

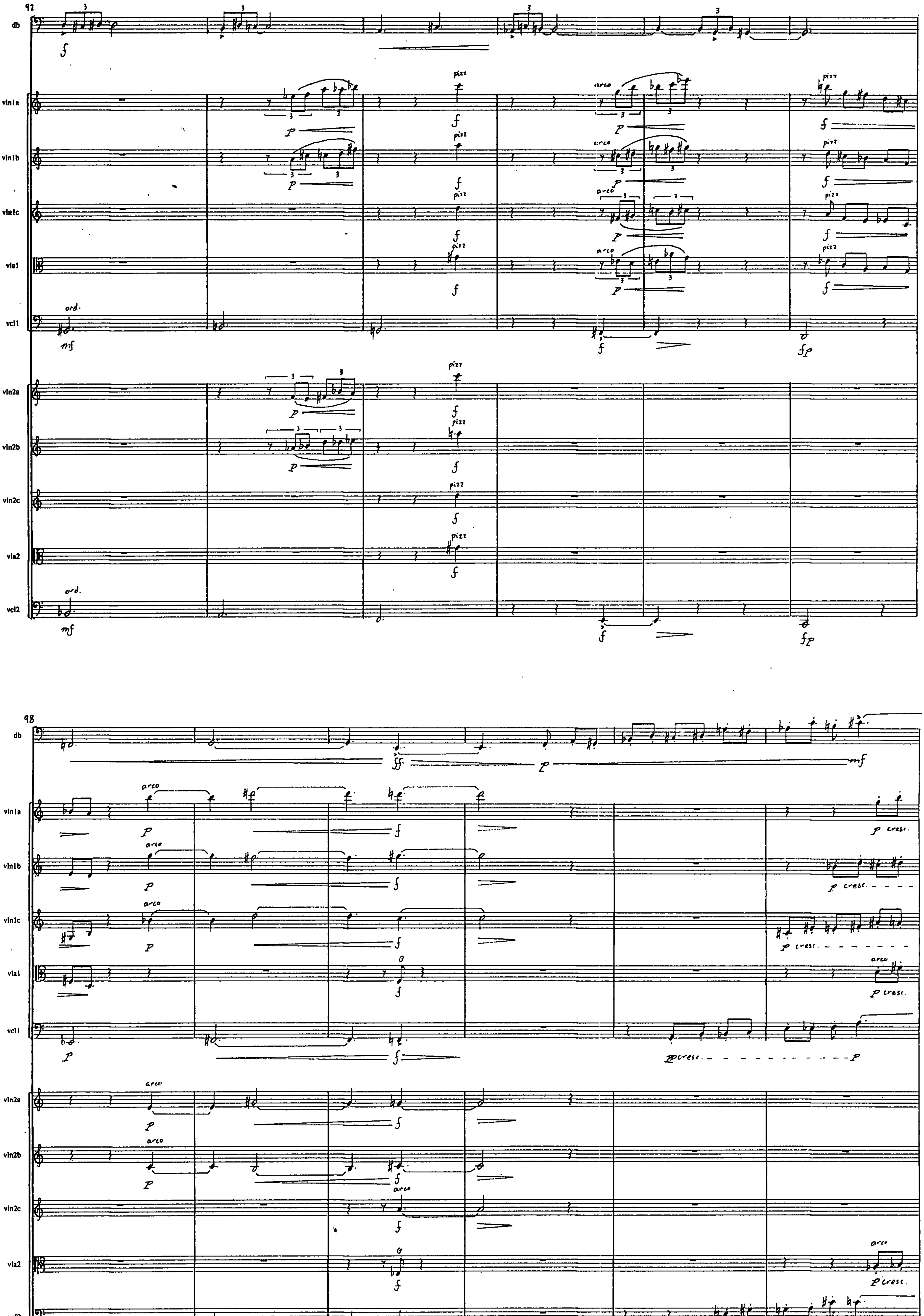

48
db
(cresc.)
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
p
pp
f
tr.

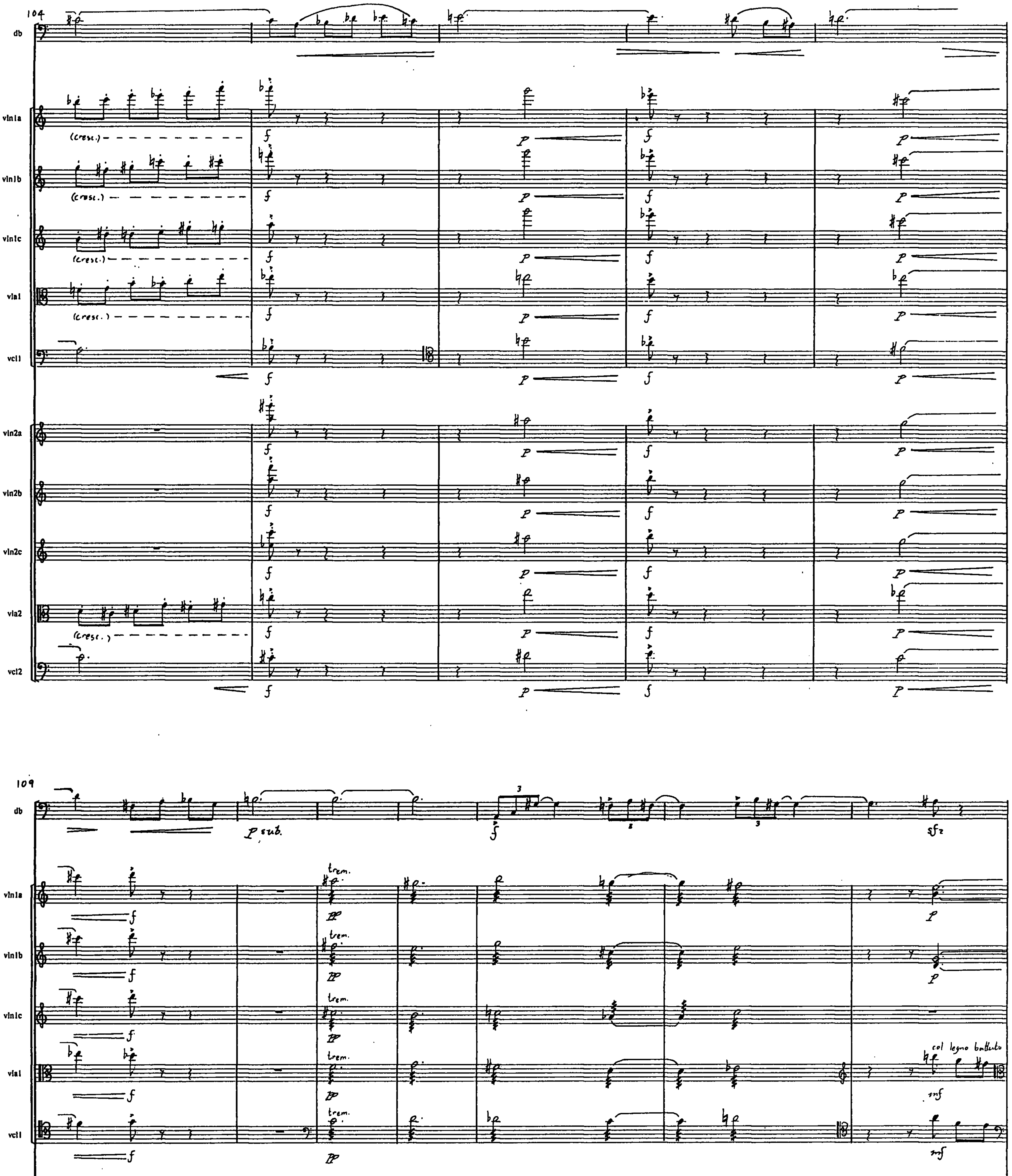

53
db
mf
vln1a
vln1b
vln1c
vla1
vcl1
pp sub
pp sub.
mf
vln2a
vln2b
vln2c
vla2
vcl2
(on string)
p

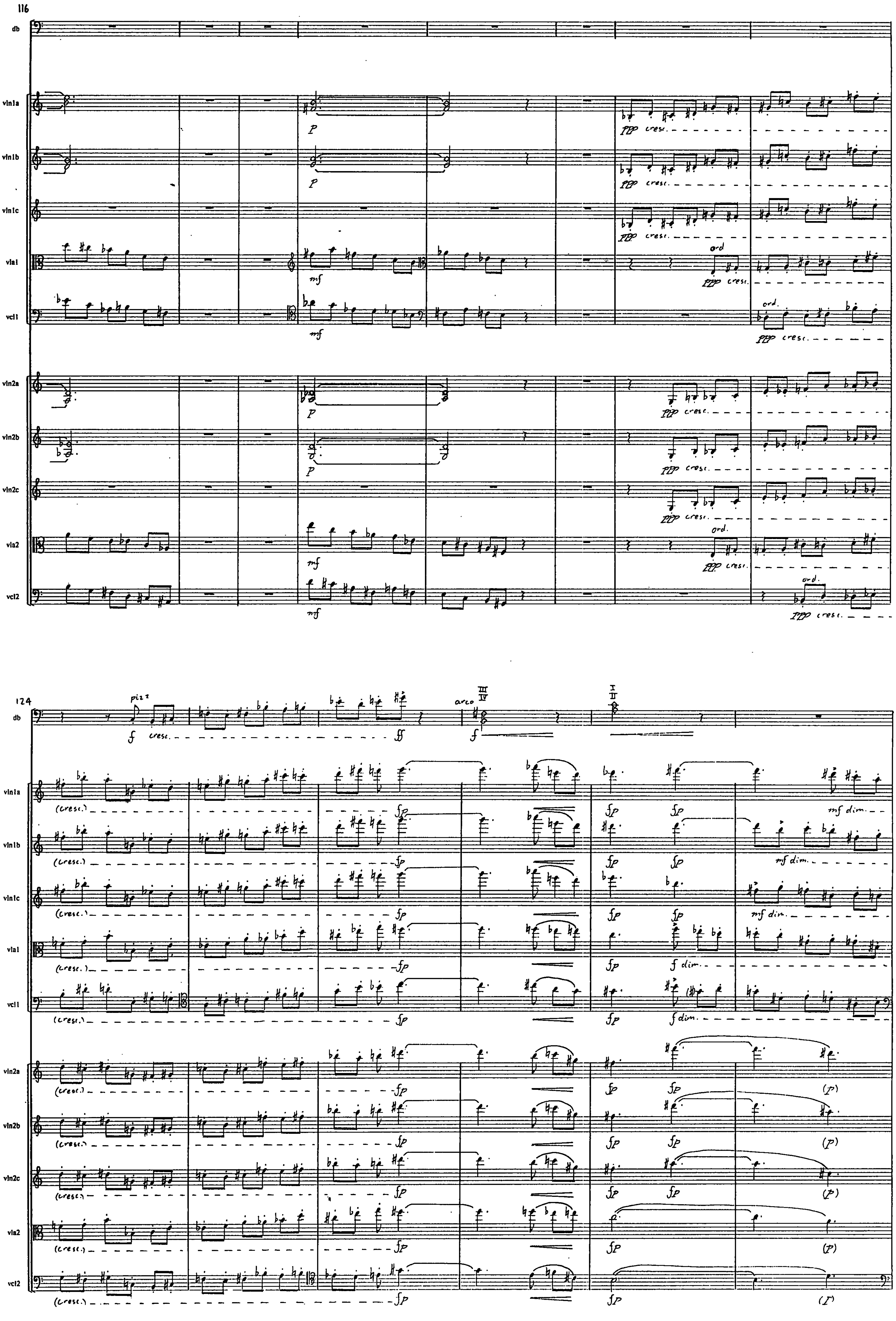

58
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
(on string)
(on string)
(on string)
f
f
p
p
p
mf
mf
mf
mf
pp
pp
pp
pp sub
pp sub
63
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
f
ff
mf
f
p
senza sord.
senza sord.

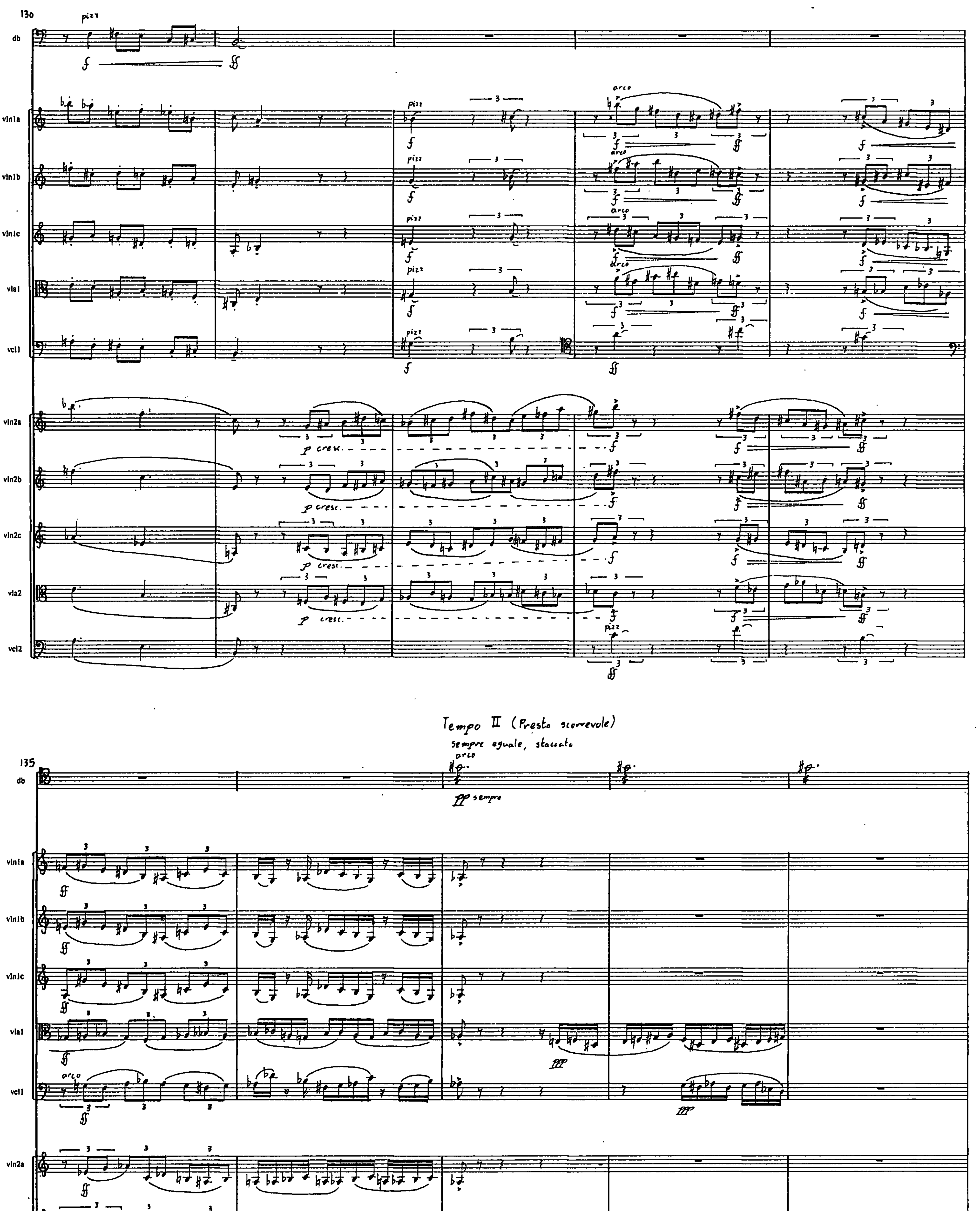

Poco più mosso
68
73
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
(ossia 64)
senza sord.
pizz.
(pizz)
arco
dim.
f dim.
p
mf
f
pp

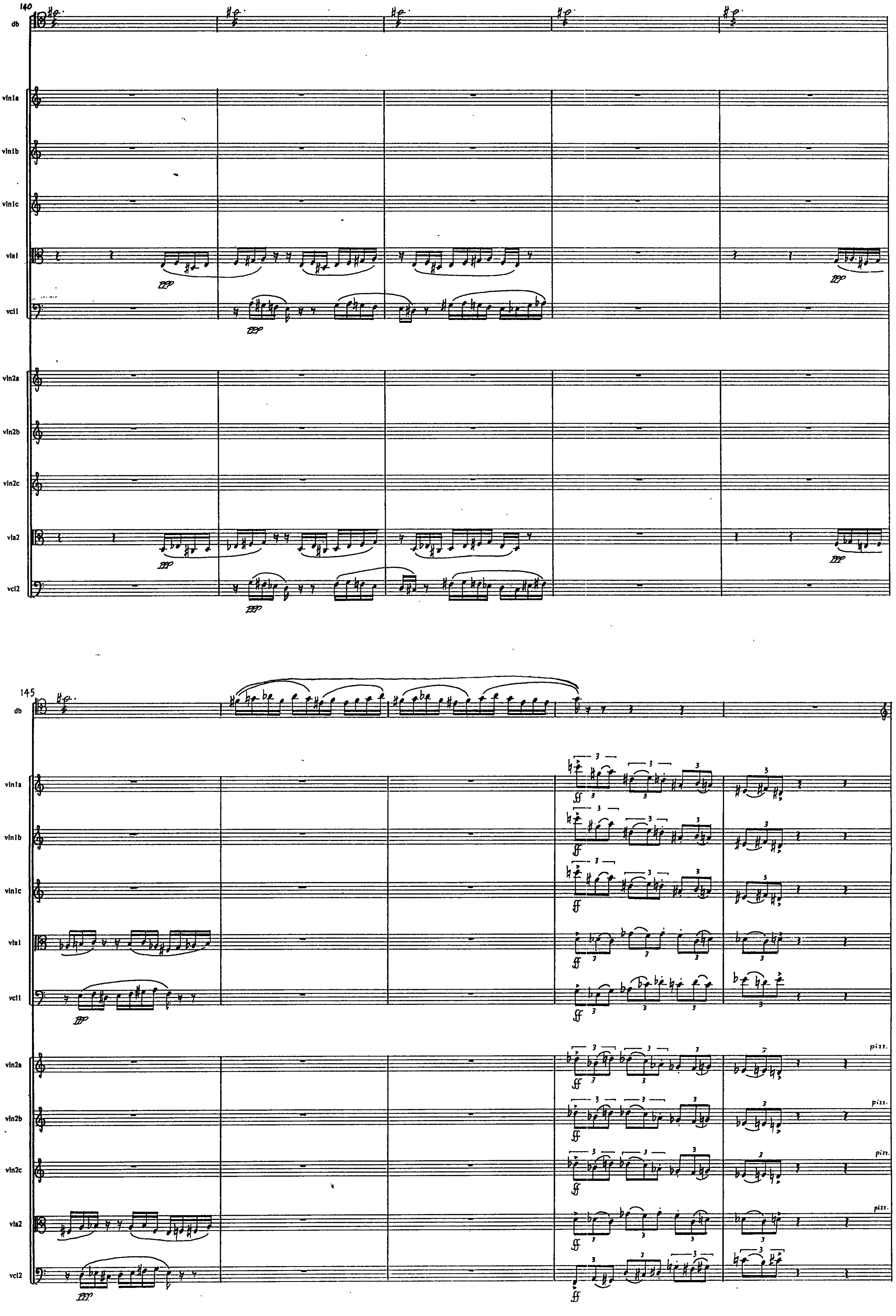

80
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
p
f
sfz
pp
mf
(pizz)
f dim.
86
p
f
arco
col legno battuto

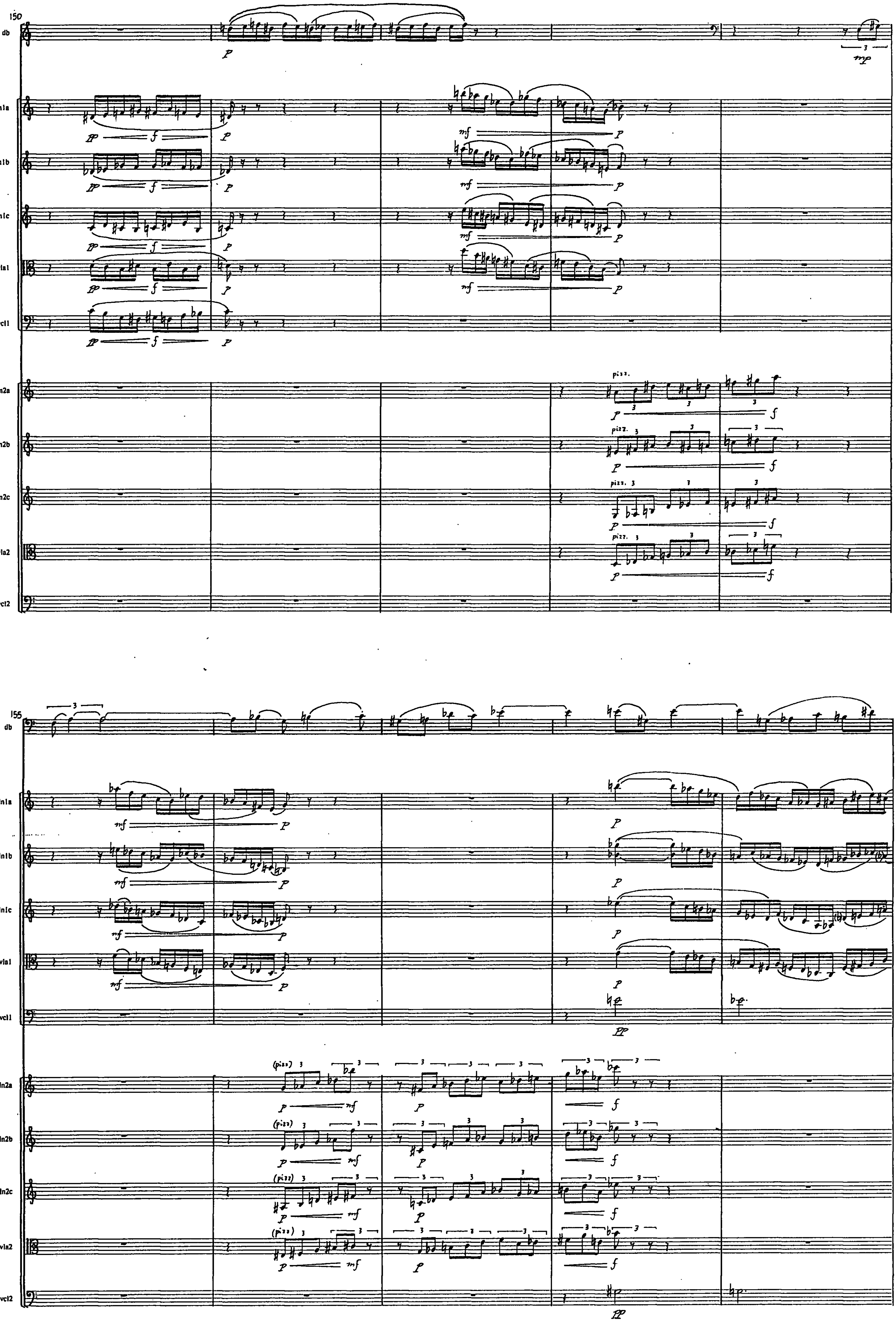

92
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
ord.
mf
f
p
pizz
arco
fp
98
p cresc.
mf

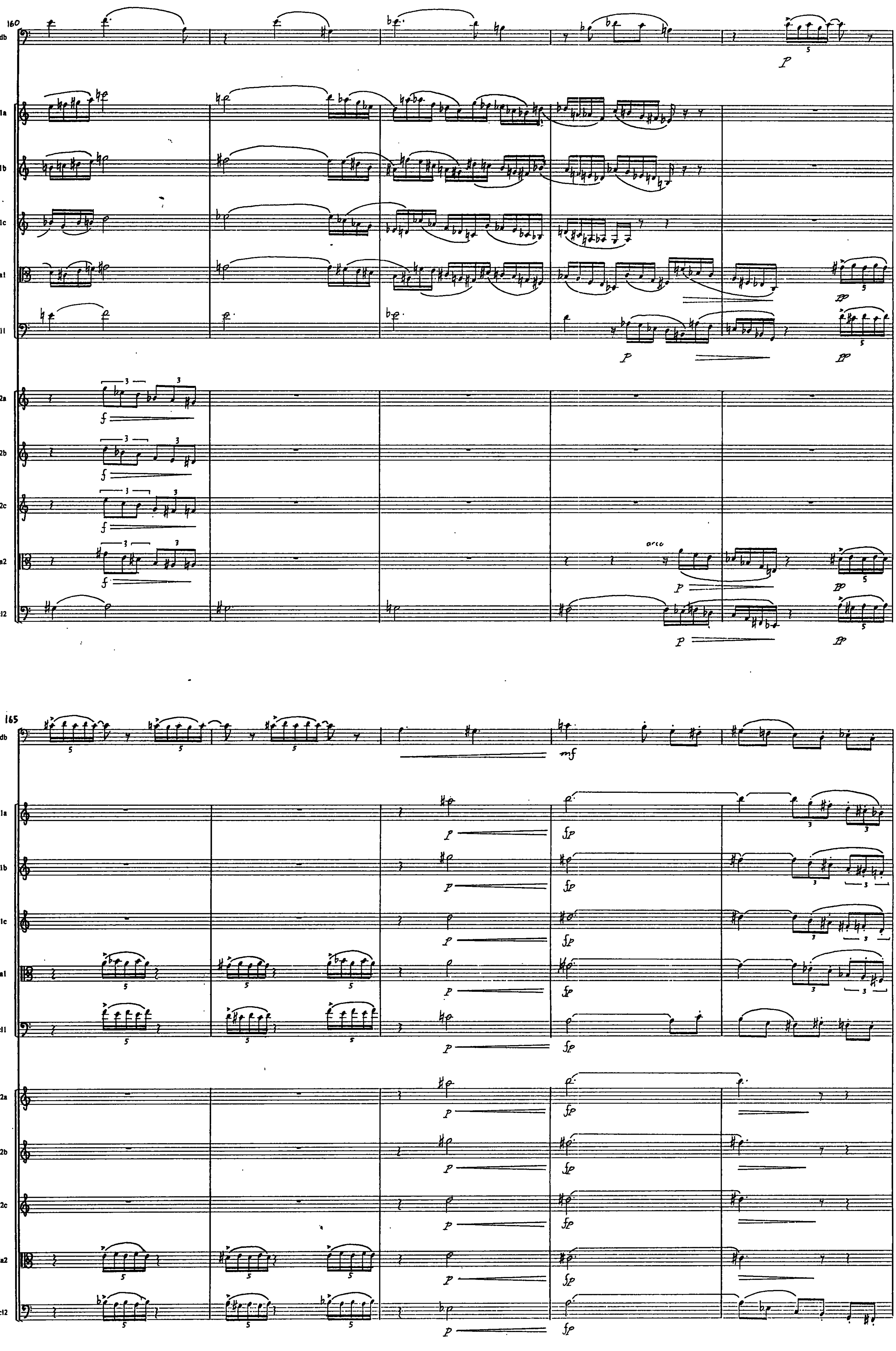

104
db
vln1a
(cresc.)
vln1b
(cresc.)
vln1c
(cresc.)
via1
(cresc.)
vcl1
vln2a
vln2b
vln2c
via2
(cresc.)
vcl2
f
p
109
p sub.
sfz
trem.
pp
col legno battuto
mf

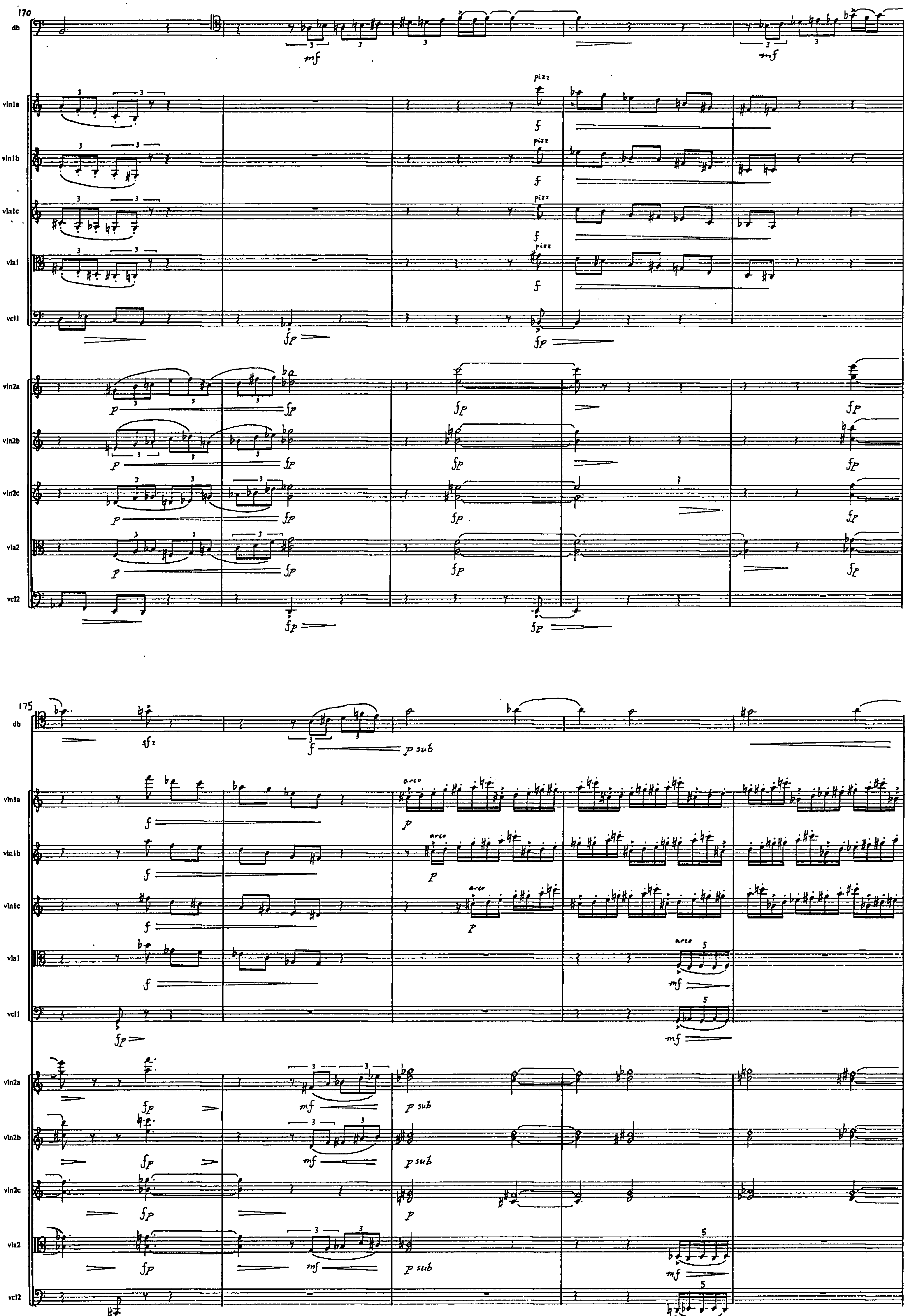

116
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
p
mf
ppp cresc.
ord.
124
pizz
f cresc.
ff
arco
III
IV
I
II
(cresc.)
fp
mf dim.
f dim.
(p)

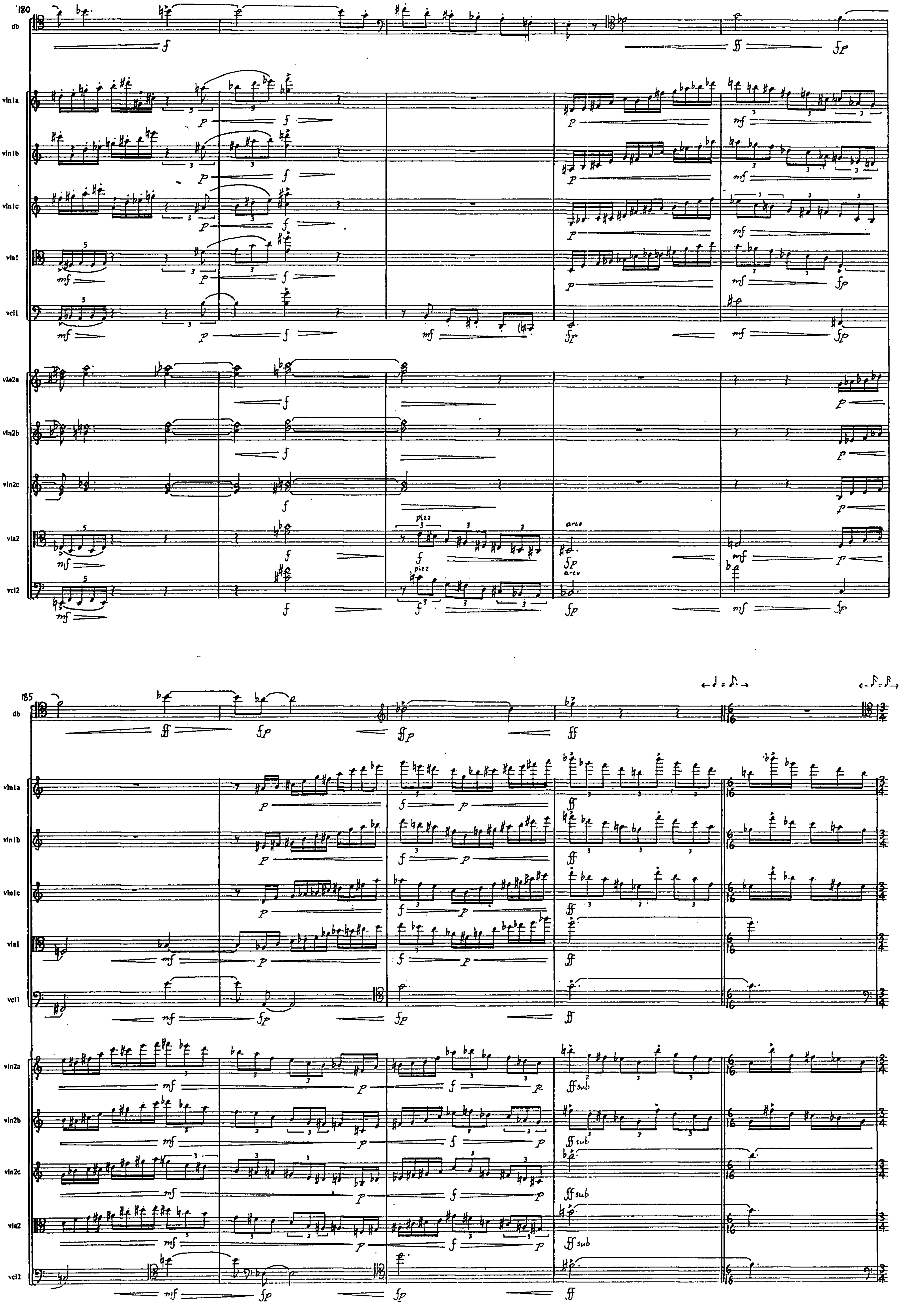

130
pizz
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
f
ff
arco
p cresc.
Tempo II (Presto scorrevole)
sempre eguale, staccato
135
pp sempre
ppp
3

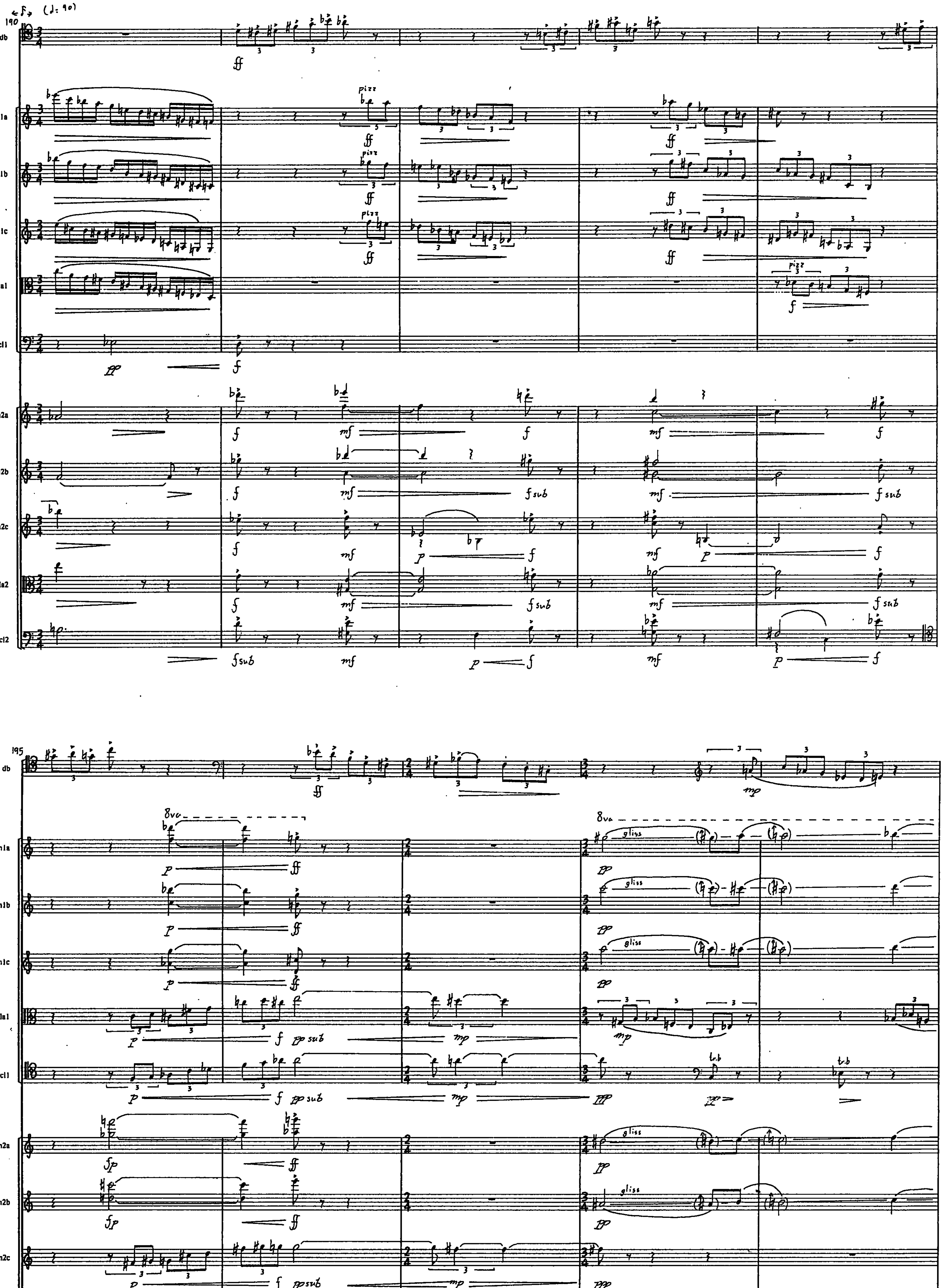

140
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
ppp
145
ff
pizz.


150
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
pp
f
p
mp
mf
pizz.
3
155
(pizz)
pp

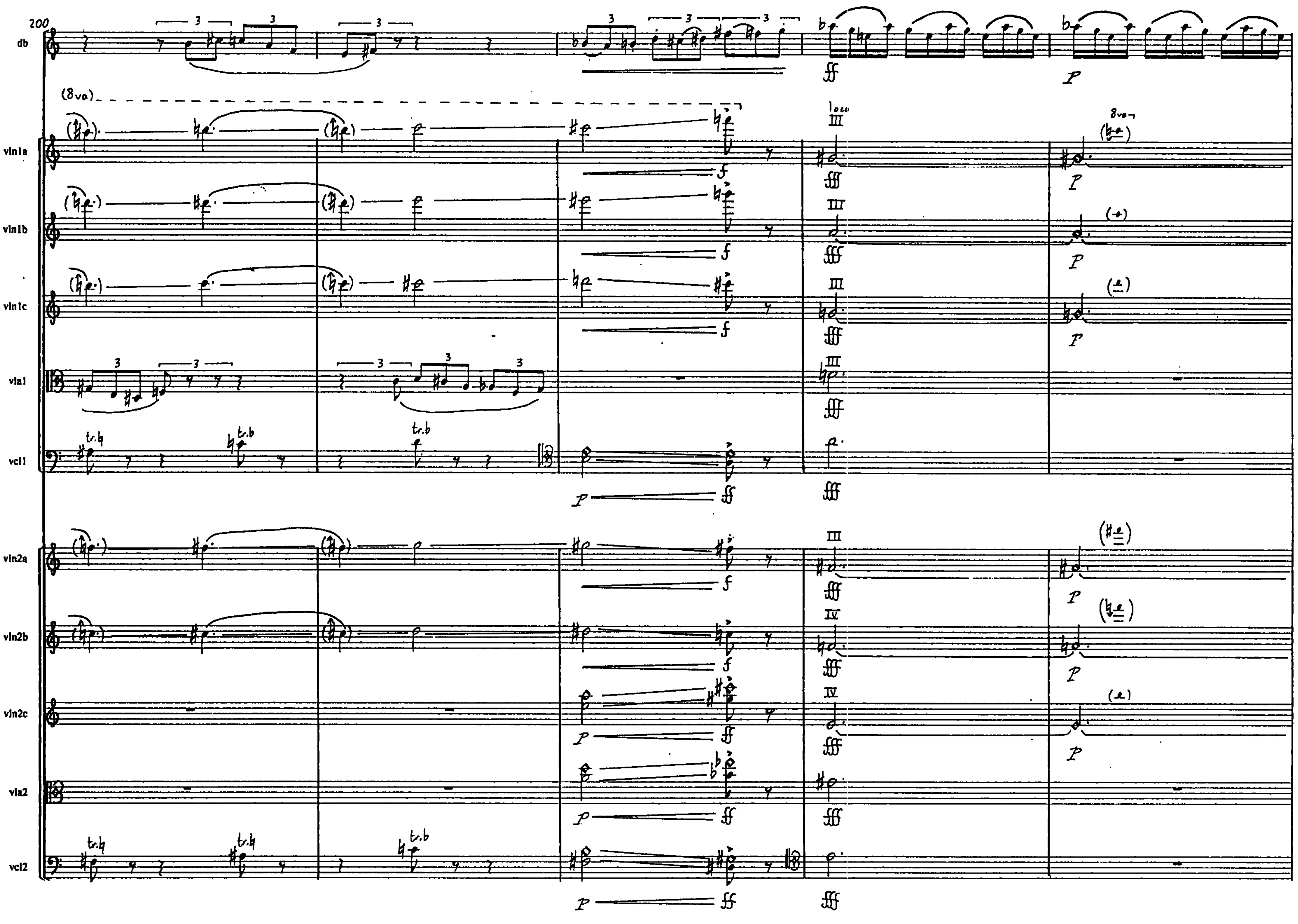

160
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
p
pp
f
arco
165
mf
fp
3
5

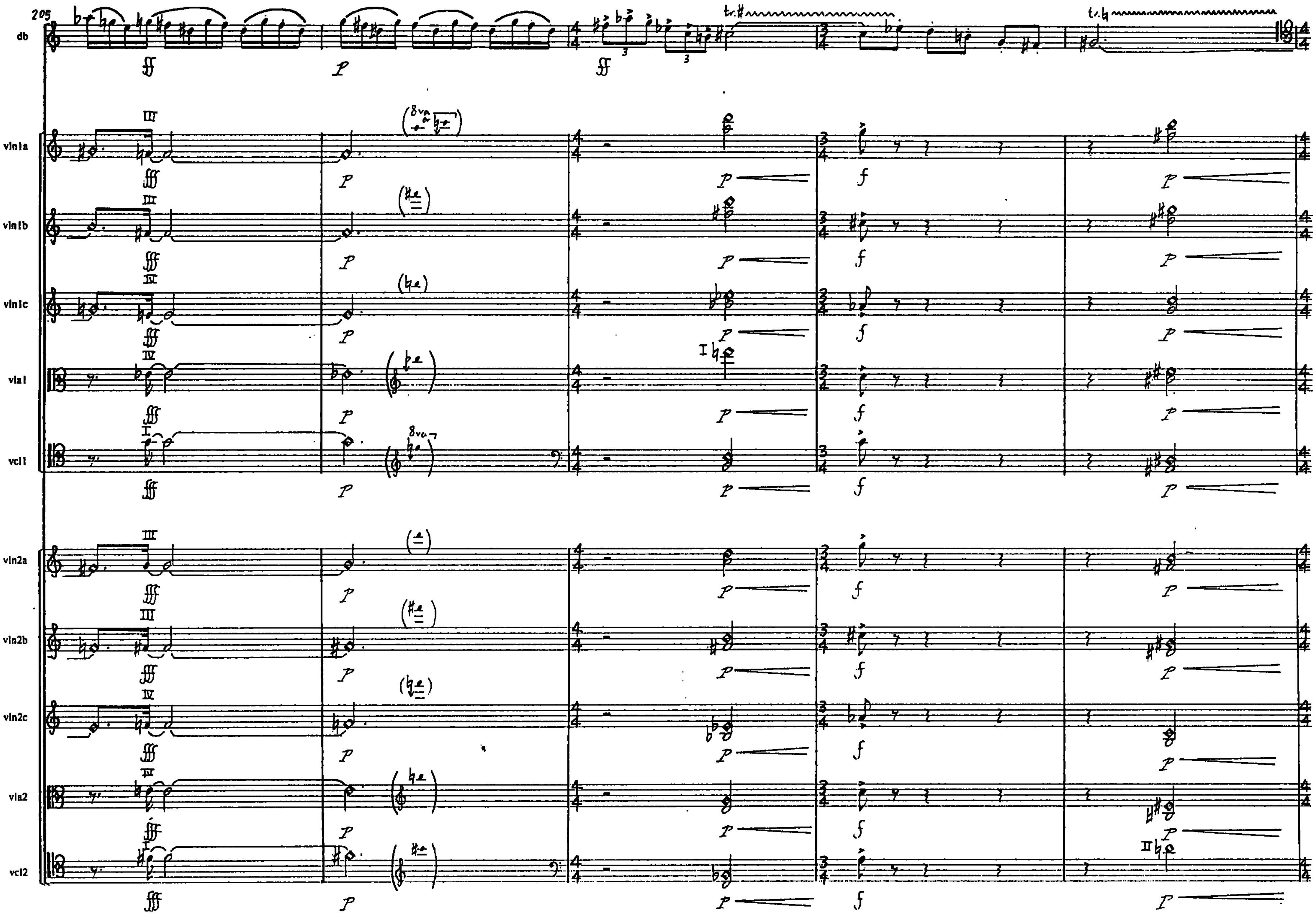

170
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
mf
pizz
f
fp
p
175
sfz
p sub
arco
5
3

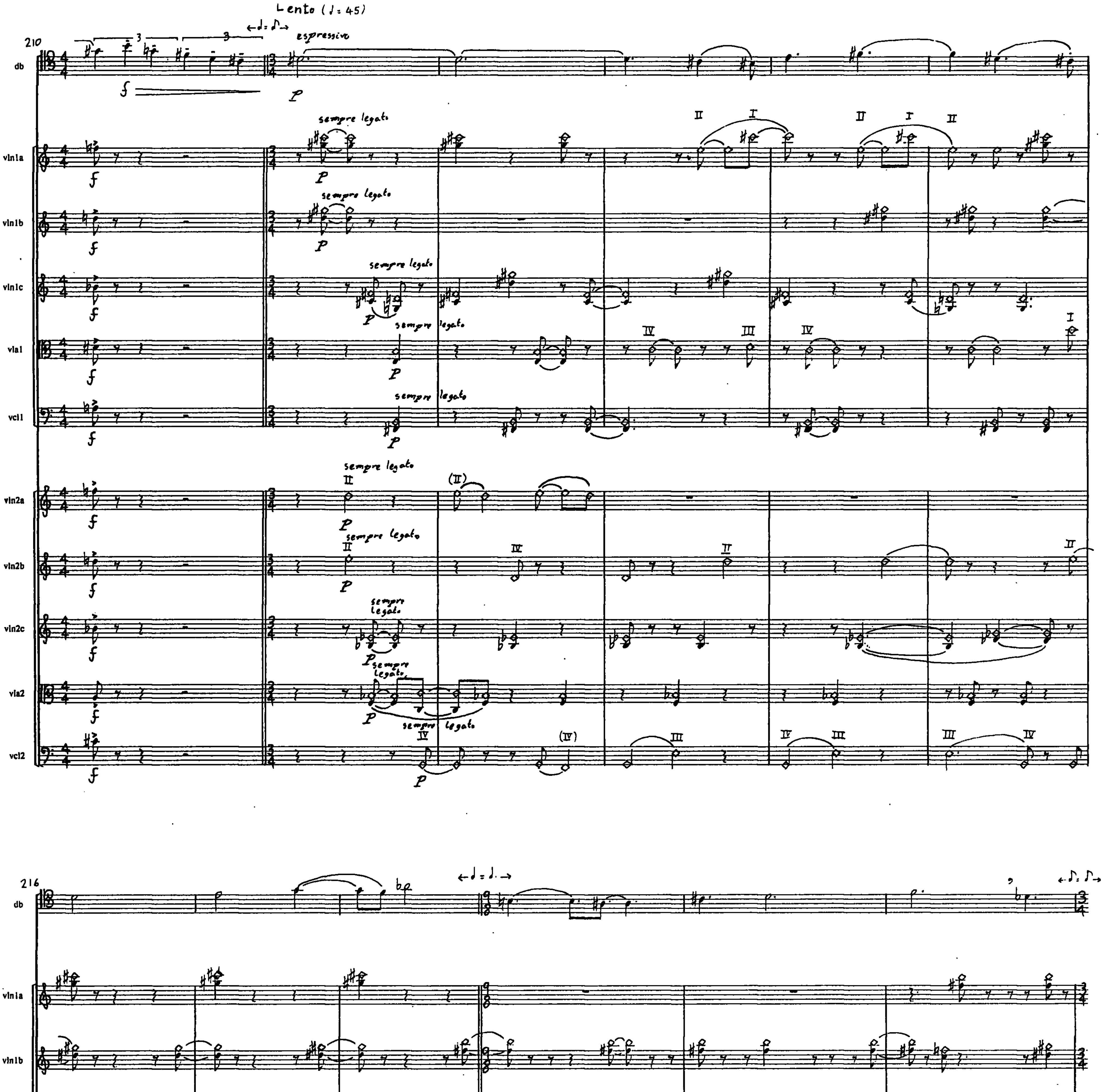

180
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
f
ff
fp
p
mf
pizz
arco
185
← ♩ = ♪. →
← ♪. = ♪ →
ff sub
6/16
3/4

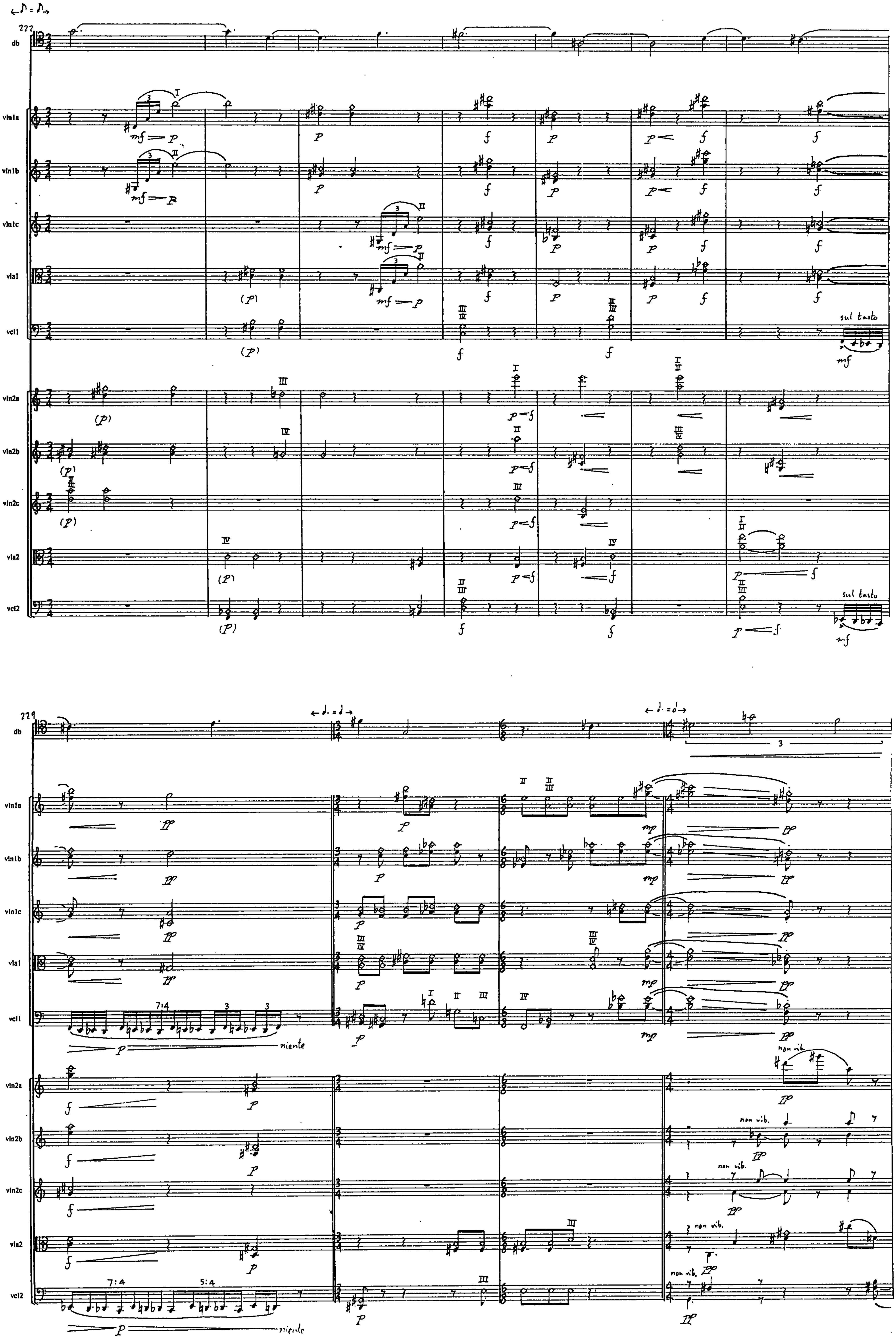


← F → (♩= 90)
190
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
pizz
ff
f
mf
p
pp
f sub
195
8va
gliss
p sub
pp sub
mp
fp
ppp
t.b
t.h

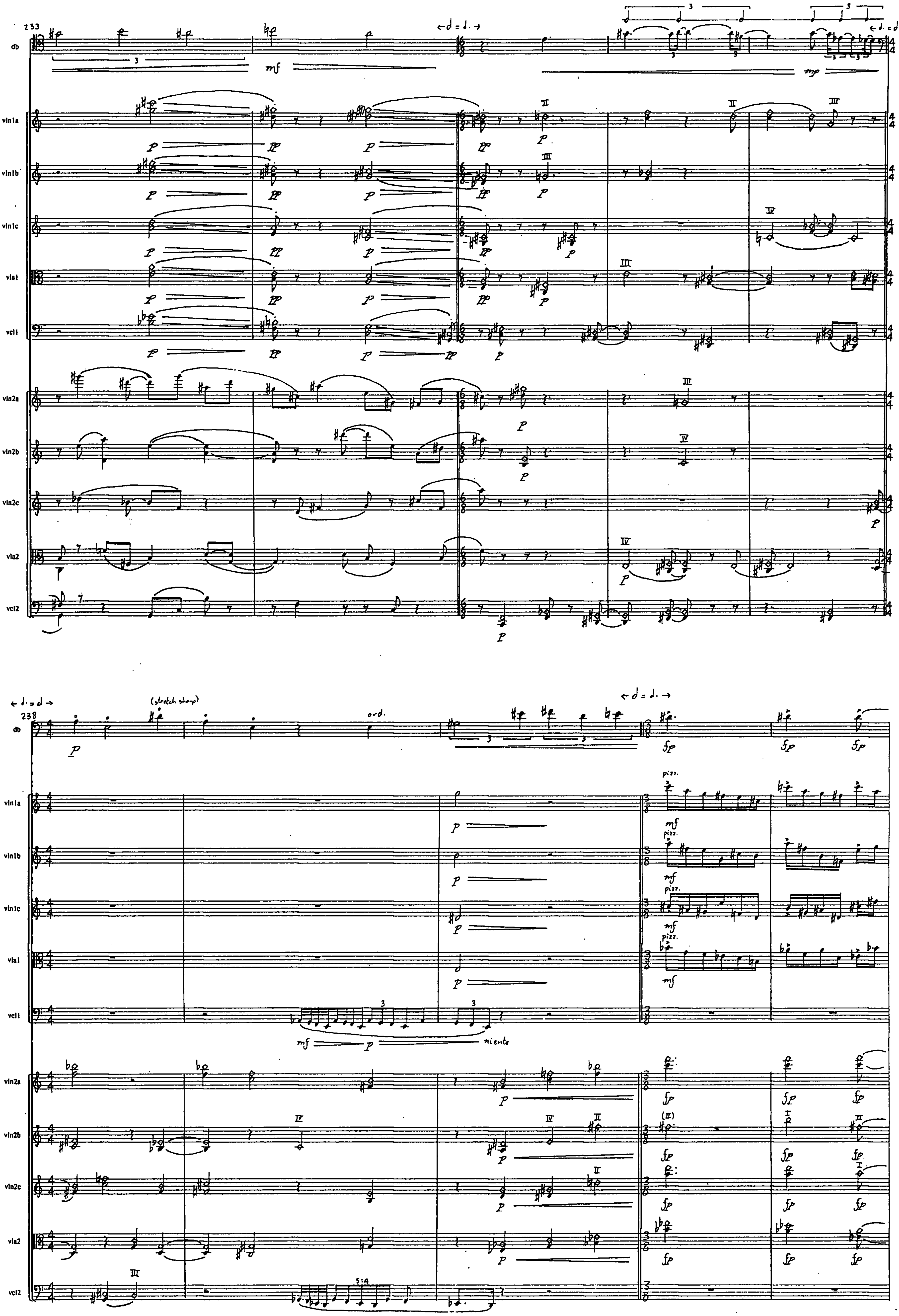

200
db
(8va)
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
loco
tr.♮
tr.♭
8va
ff
fff
f
p

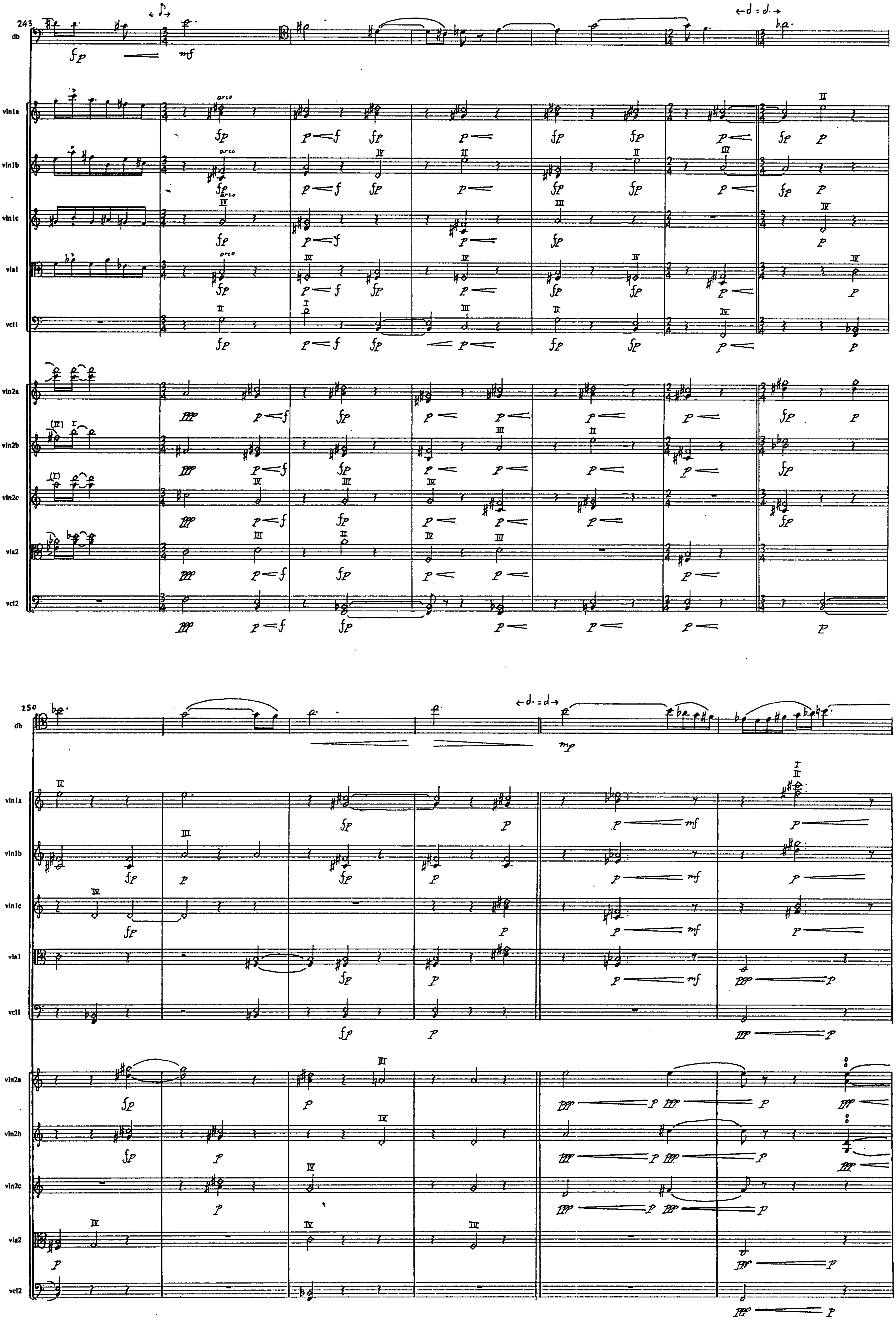

205
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
tr.♯
tr.♮
8va
fff
ff
f
p

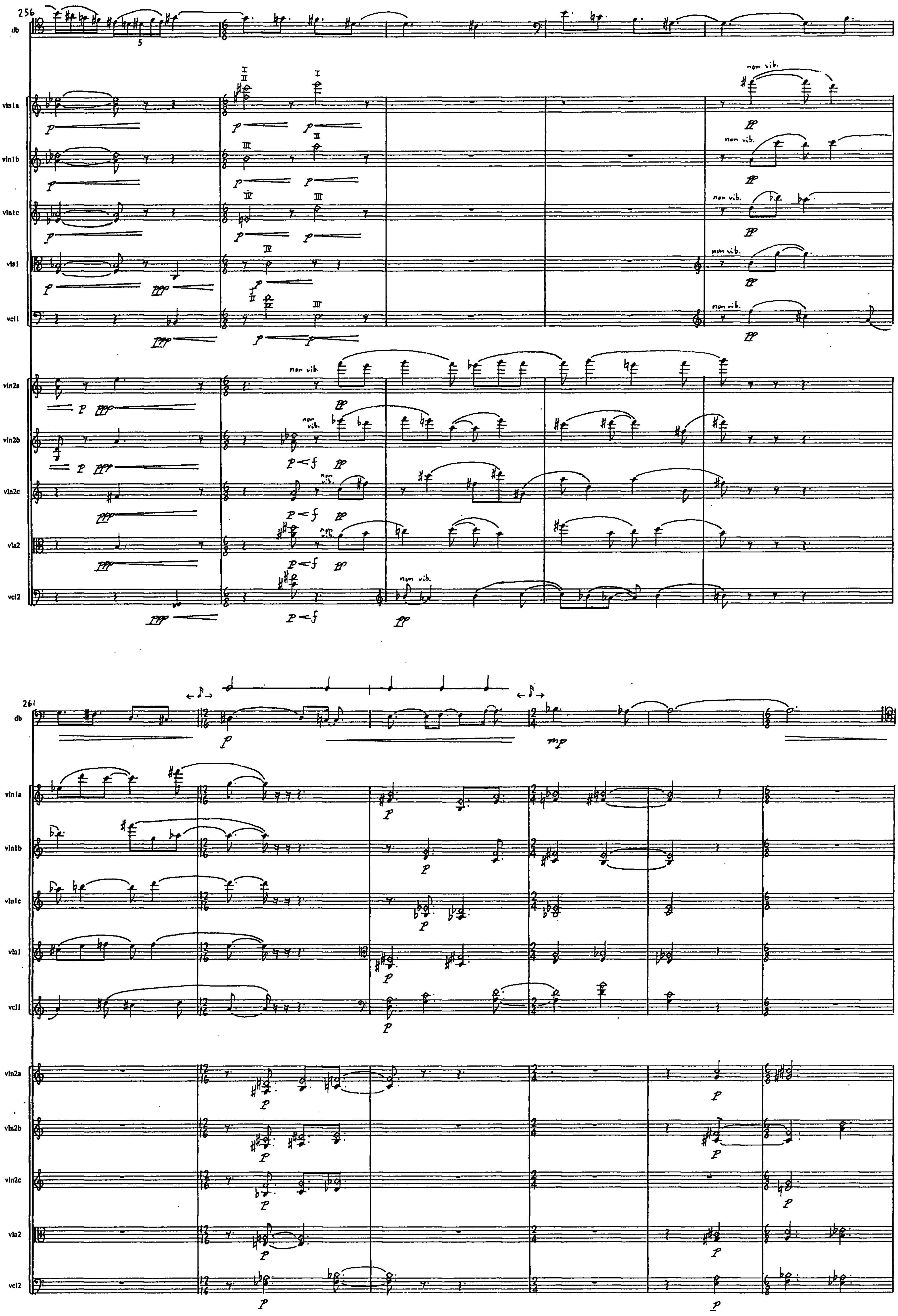

Lento (♩= 45)
←♩.=♪→
espressivo
210
216
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
3
f
p
sempre legato
I
II
III
IV
(II)
(III)
(IV)
←♩=♩.→
←♪=♪→

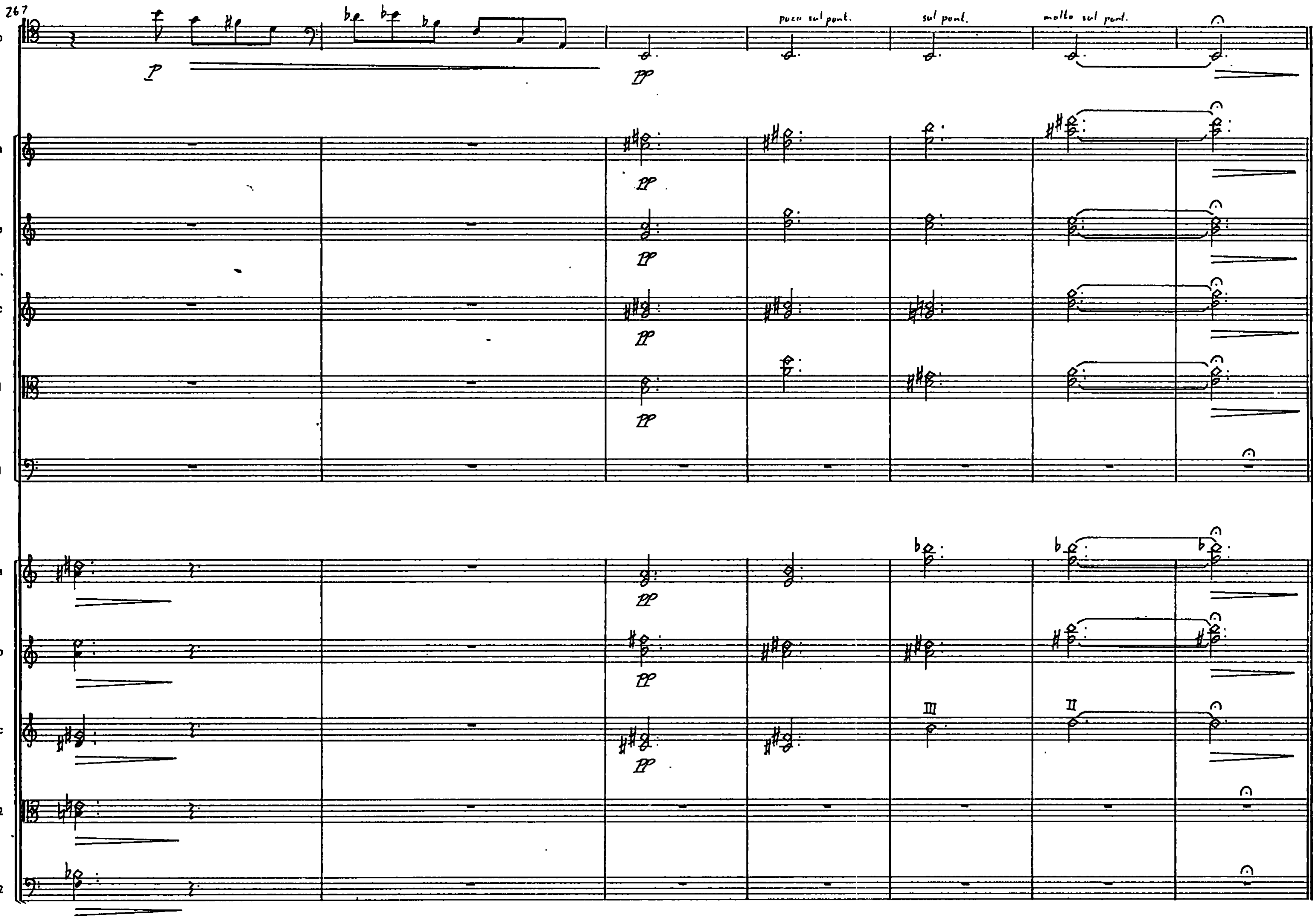


←♪ = ♪→
222
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
mf — p
(p)
p
f
mf
sul tasto
229
← ♩. = ♩ →
← ♩. = 𝅗𝅥 →
7:4
5:4
3
mp
pp
niente
non vib.
I
II
III
IV


233
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
← 𝅗𝅥 = 𝅗𝅥. →
← 𝅗𝅥. = 𝅗𝅥 →
3
mf
mp
p
pp
II
III
IV
238
(stretch sharp)
ord.
pizz.
niente
5:4
fp
(II)
I


243
db
vln1a
vln1b
vln1c
via1
vcl1
vln2a
vln2b
vln2c
via2
vcl2
arco
250
mp
mf


256
db
vln1a
vln1b
vln1c
vla1
vcl1
vln2a
vln2b
vln2c
vla2
vcl2
5
I
II
III
IV
non vib.
p
pp
ppp
p < f
mp
261
← ♪ →
12/16
6/8
2/4


267
db
p
pp
poco sul pont.
sul pont.
molto sul pont.
vln1a
pp
vln1b
pp
vln1c
pp
vla1
pp
vcl1
vln2a
pp
vln2b
pp
vln2c
pp
III
II
vla2
vcl2

Paul Archbold

Of crossed destinies
(1993)

for solo harp

24 FEB 1999

Of crossed destinies (1993)

Programme note

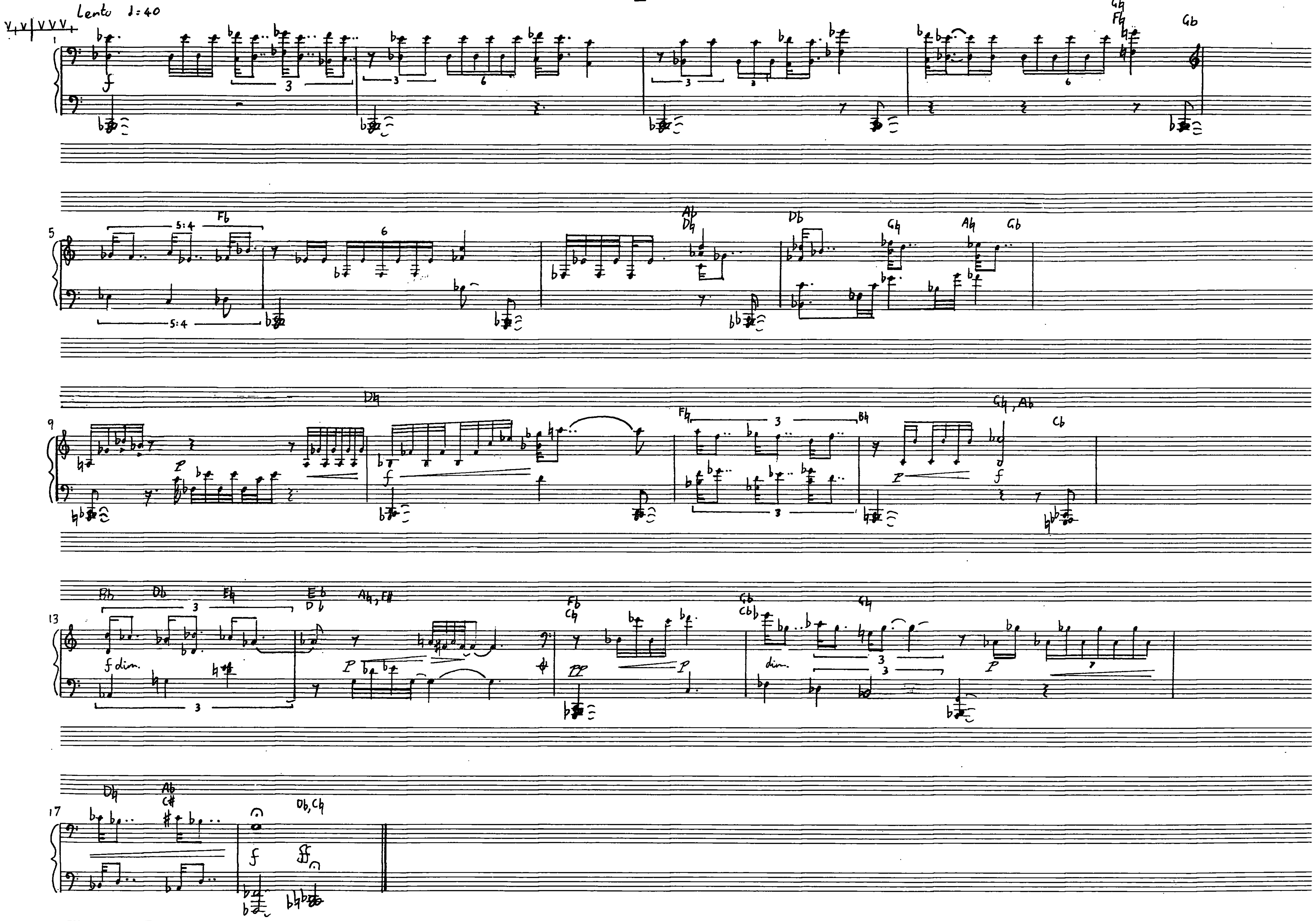
This work for solo harp takes its title from "The Castle of Crossed Destinies" by Italo Calvino. In this novel, a group of travellers rest in a remote castle and discover that they have mysteriously lost the power of speech. Each traveller tells their tale using a sequence of appropriate tarot cards. As the tales are told, many of the cards are reused and take on different meanings. In the final pattern of cards all tales are told, but this pattern also connects all the travellers imprisoning them in the castle.

My work consists of five movements : three 'tales' enclosed by a musical frame. All the tales share melodic figures and harmonic progressions, yet have different characters and directions. The whole work is constrained by a sombre mode.

The work was commissioned by Hugh Webb with funds from the Arts Council of Great Britain and first performed by Hugh Webb at the Purcell Room, London in September 1993.

Thesis H
1998/
ARC

I


Lento ♩=40
V V V V V
Gb
Fb
Ab
Db
Gb
Ab
Gb
Db
G♮, Ab
Cb
F♮
B♮
Bb
Db
Eb
Db
A♮, F#
Fb
C♮
Gb
Cbb
G♮
Ab
C#
Db, C♮
f
p
pp
f dim.
dim.
5:4
6
3
7
1
5
9
13
17

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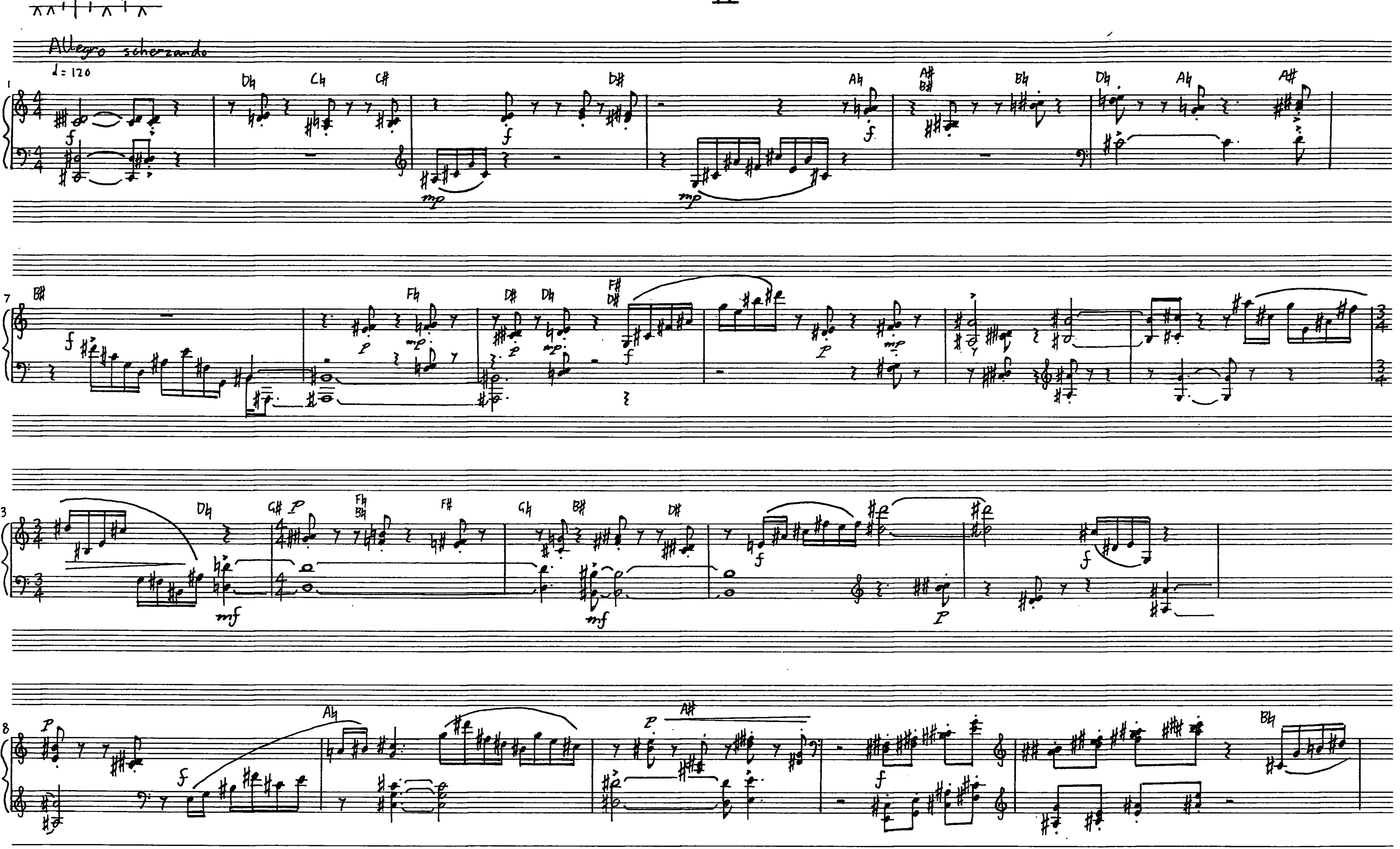
II


Allegro scherzando
♩= 120
1
D♮
C♮
C♯
D♯
A♮
A♯ B♯
B♮
D♮
A♮
A♯
f
mp
mp
f
7
B♯
F♮
D♯
D♮
F♯ D♯
f
p
mp
f
p
mp
13
D♮
G♯
F♮ B♮
F♯
G♮
B♯
D♯
p
mf
mf
f
p
f
18
A♮
A♯
B♮
p
f
p
f

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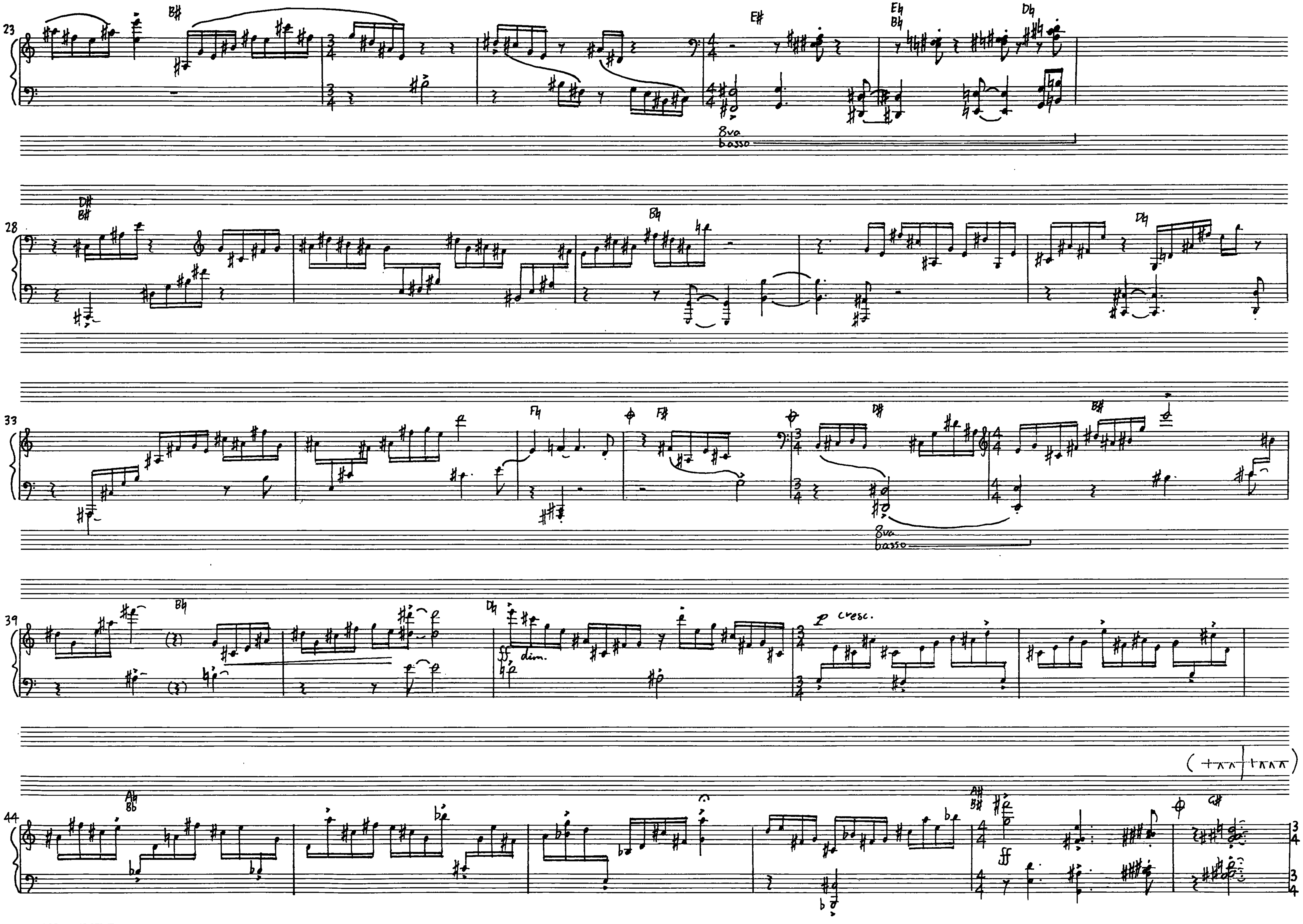
23
B♯
E♯
E♮
B♮
D♮
8va
basso
28
D♯
B♯
B♮
D♮
33
F♮
F♯
D♯
B♯
8va
basso
39
B♮
D♮
ff
dim.
p
cresc.
44
A♮
B♭
A♯
B♯
ff
C♯

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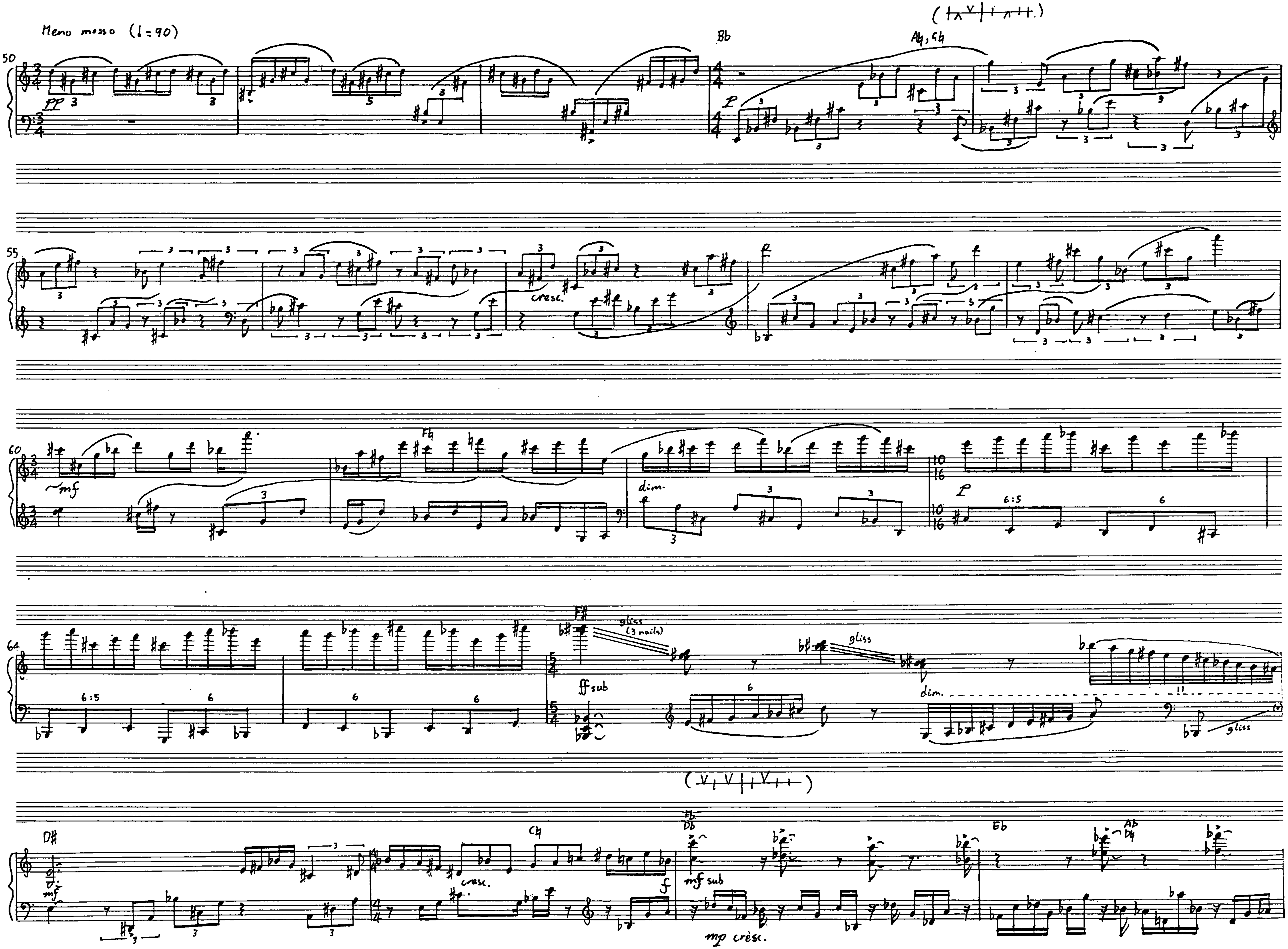
Meno mosso (♩=90)
50
pp
Bb
p
Ab, Gb
55
cresc.
60
mf
F♮
dim.
p
64
F#
gliss (3 nails)
gliss
ff sub
dim.
D#
mf
C♮
cresc.
f
Fb
Db
mf sub
mp cresc.
Eb
Ab
D♮

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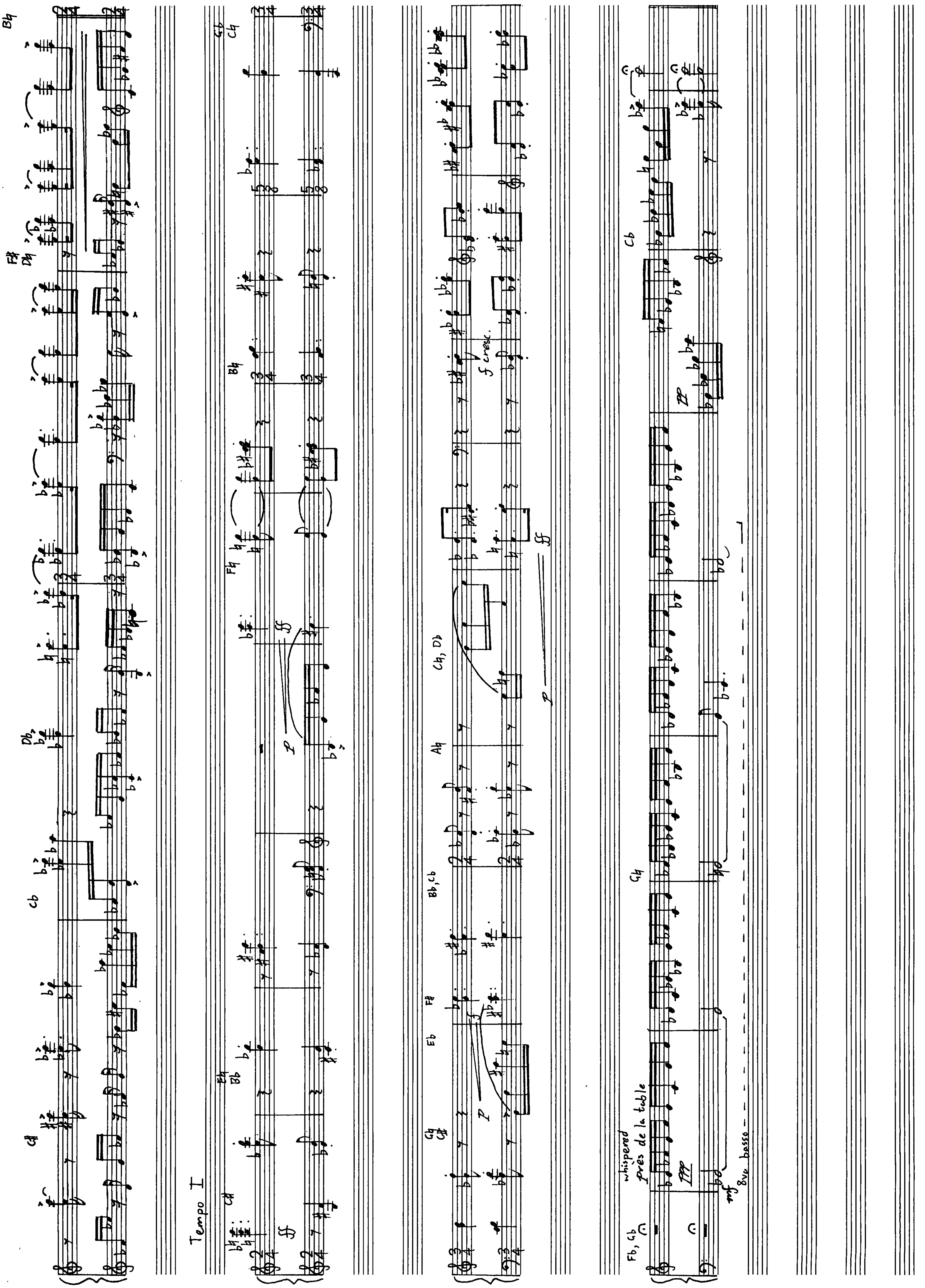
Tempo I
whispered
près de la table
8va basso
ppp
pp
p
f cresc.
ff
Fb, Cb
C♮
Cb
Db, Bb
Bb, Cb
Ch, Db
A♮
C♮
B♮
F♮

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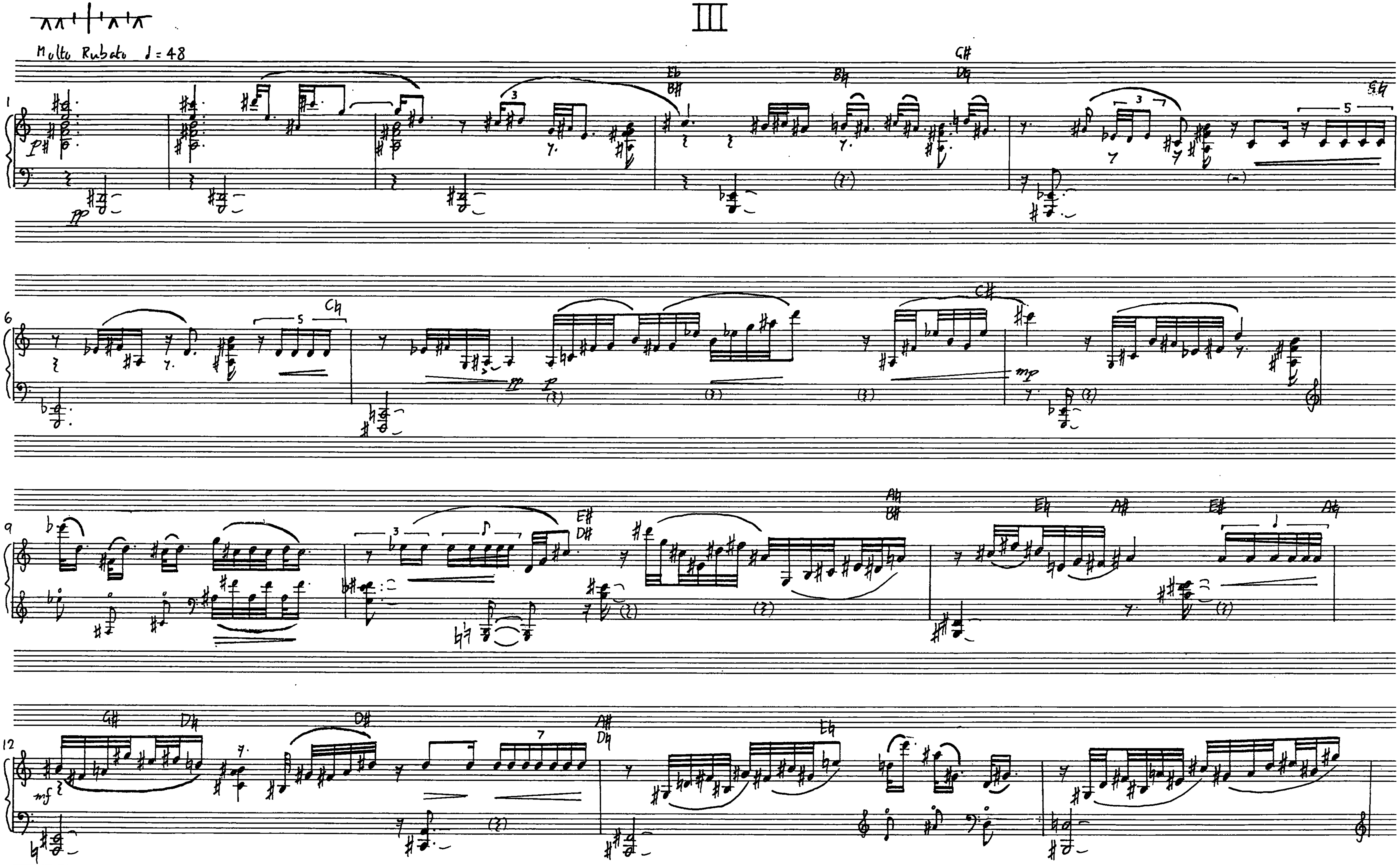
III


Molto Rubato ♩ = 48
1
6
9
12
pp
p
mp
mf
E♭
B♮
B♮
G♯
D♮
G♮
C♮
C♯
E♯
D♯
A♮
B♯
E♮
A♯
E♯
A♮
G♯
D♮
D♯
A♯
D♮
E♮

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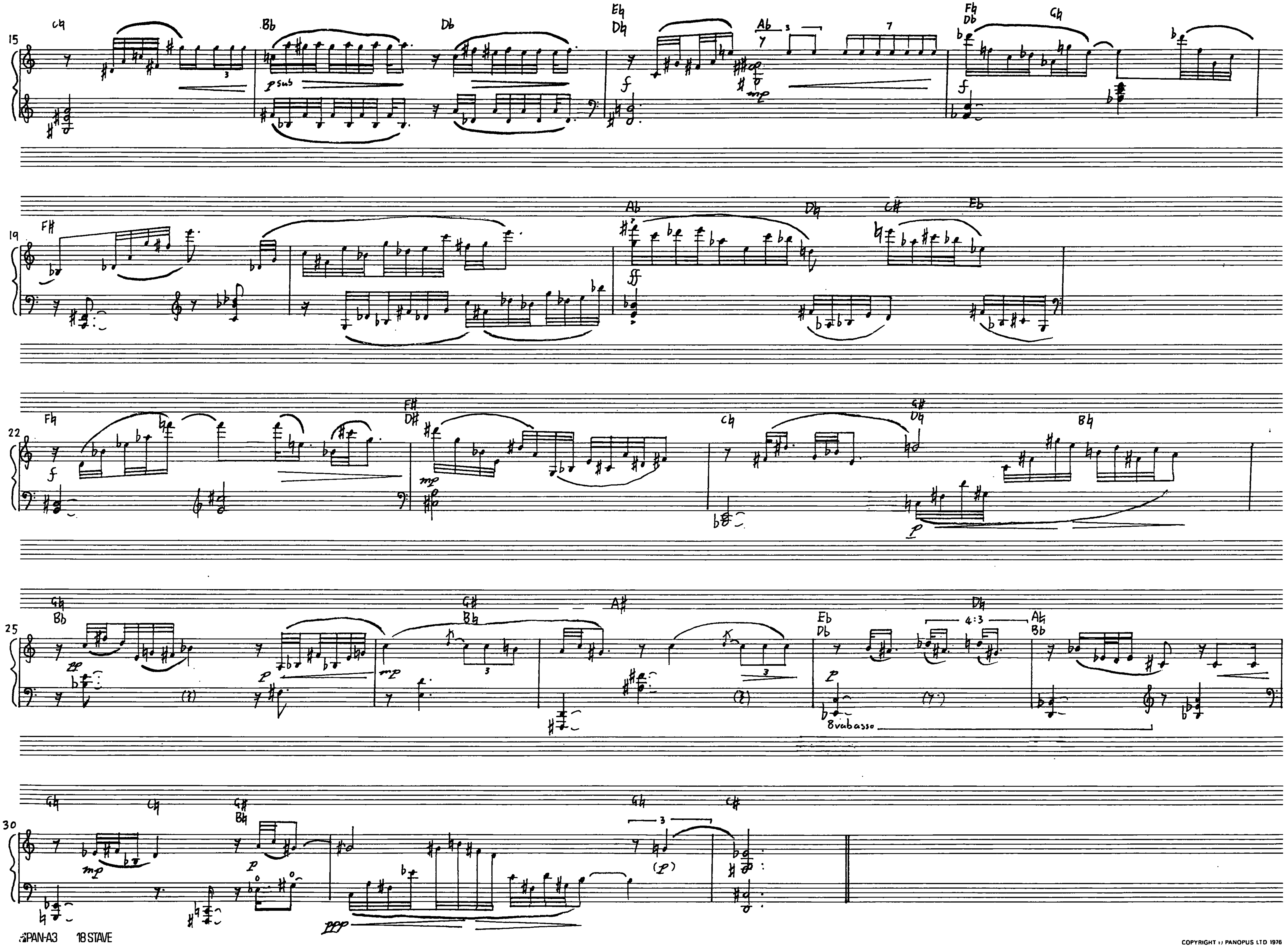
15
C♮
B♭
D♭
E♮
D♮
A♭
F♮
D♭
G♮
p sub
f
mp
19
F♯
A♭
D♮
C♯
E♭
ff
22
F♮
F♯
D♯
C♮
G♯
D♮
B♮
f
mp
p
25
G♮
B♭
G♯
B♮
A♯
E♭
D♭
D♮
A♮
B♭
4:3
pp
p
mp
8va basso
30
G♮
C♮
G♯
B♮
G♮
C♯
mp
p
(p)
ppp

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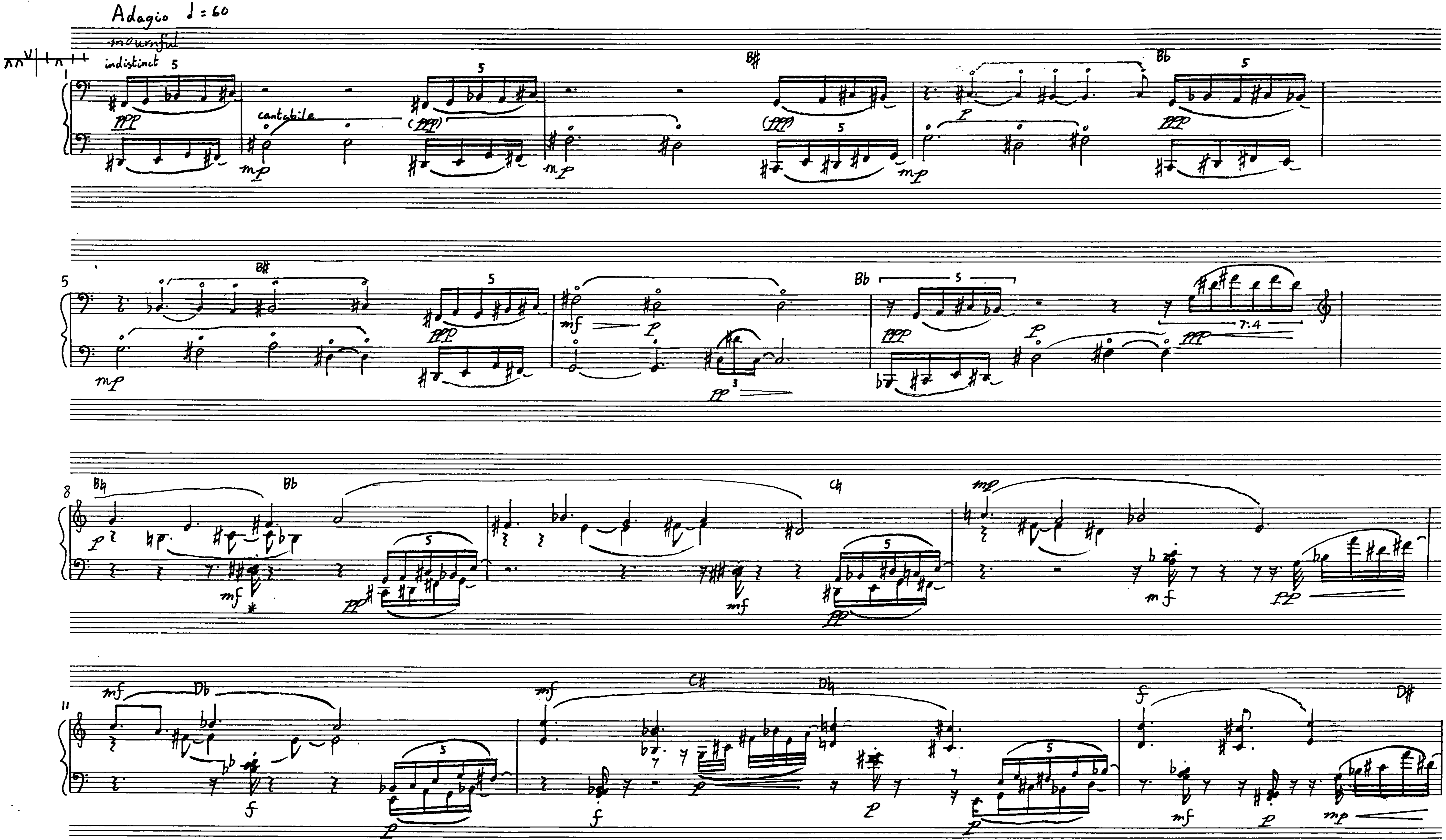
IV


Adagio ♩ = 60
mournful
indistinct
ppp
cantabile
mp
(ppp)
p
Bb
B#
5
mf
pp
7:4
3
Bh
Ch
C#
Dh
Db
D#
f
*

---

* Ideally, the staccato quavers should mark the point at which the low resonance is damped.

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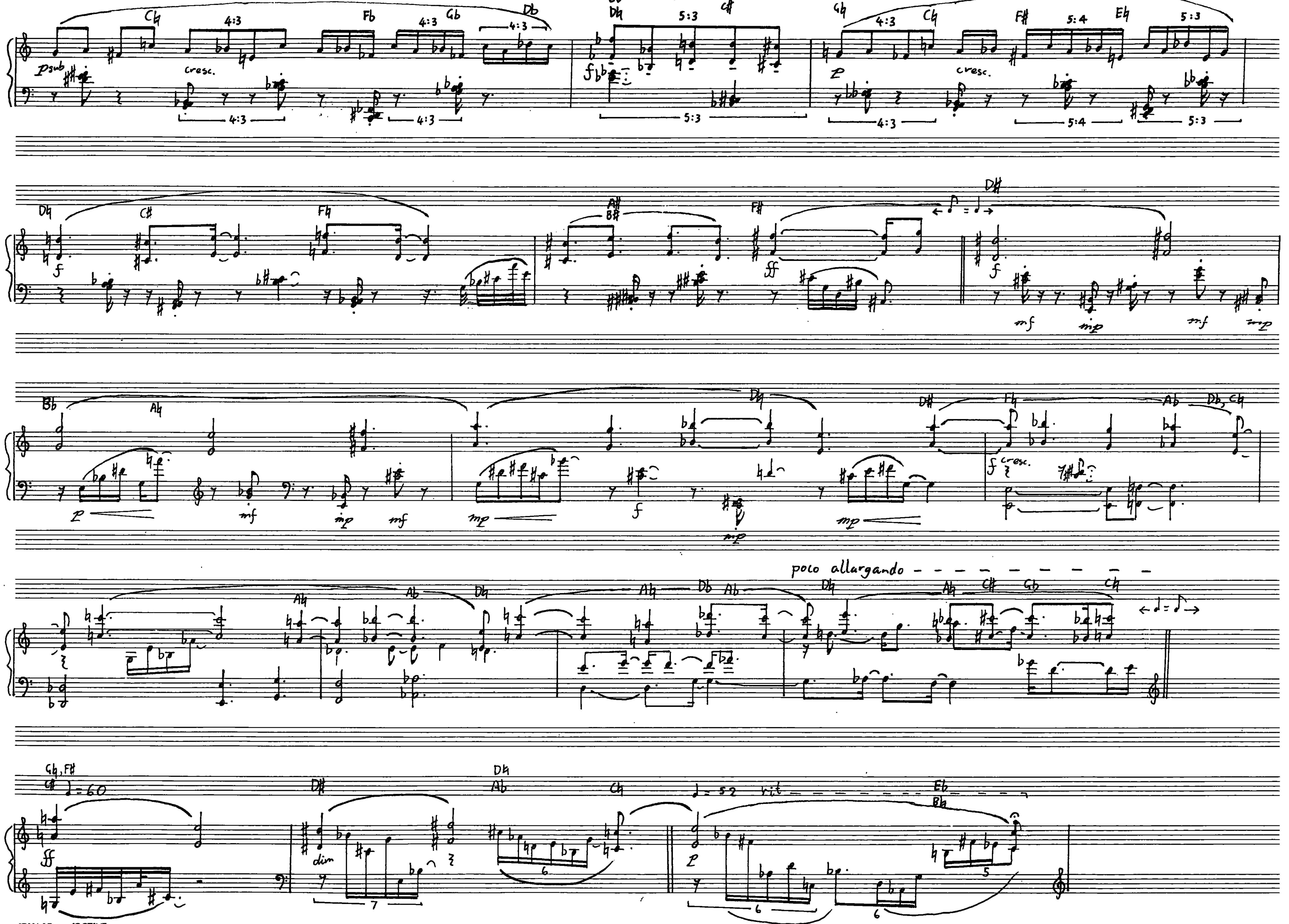
C♮
4:3
F♭
4:3
G♭
4:3
D♭
E♭
D♮
5:3
C♯
G♮
4:3
C♮
F♯
5:4
E♮
5:3
p sub
cresc.
f
p
cresc.
D♮
C♯
F♮
A♯
B♯
F♯
D♯
ff
f
mf
mp
mf
mp
B♭
A♮
D♮
D♯
F♮
A♭
D♭, C♮
p
mf
mp
mf
mp
f
mp
mp
f
cresc.
poco allargando
A♮
A♭
D♮
A♮
D♭
A♭
D♮
A♮
C♯
G♭
C♮
♩ = ♪
G♮, F♯
♩ = 60
D♯
D♮
A♭
C♮
♩ = 52
rit
E♭
B♮
ff
dim
p
7
6
6
6
5

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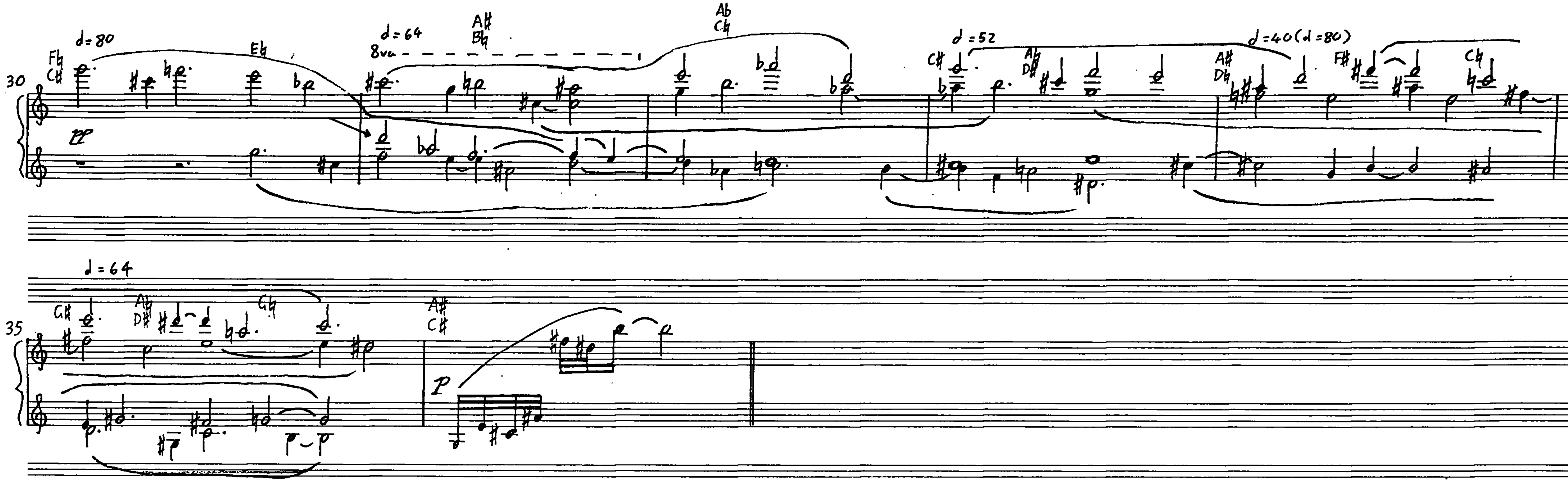
30
F♮
C♯
𝅗𝅥 = 80
E♮
𝅗𝅥 = 64
8va
A♯
B♮
A♭
C♮
𝅗𝅥 = 52
C♯
A♭
D♯
𝅗𝅥 = 40 (𝅗𝅥 = 80)
A♯
D♮
F♯
C♮
35
𝅘𝅥 = 64
C♮
A♭
D♯
G♮
A♯
C♯
p

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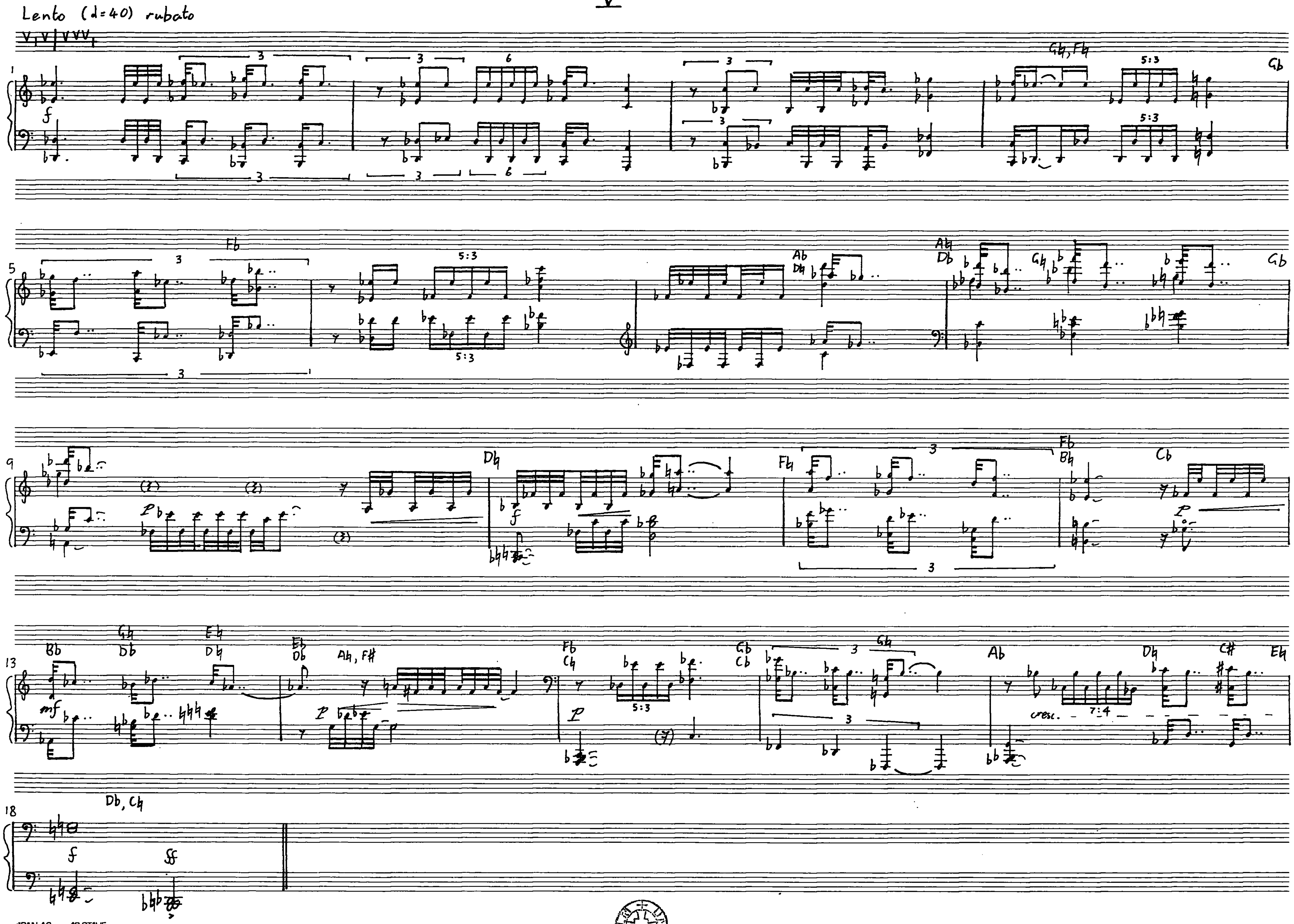
V


Lento (𝅗𝅥=40) rubato
1
f
3
6
Gb, Fb
5:3
Gb
5
Fb
Ab
Db
Ab
Db
Gb
9
Db
Fb
Bb
Cb
p
f
13
Bb
Gb
Db
Eb
Db
Eb
Db
Ab, F#
mf
p
Fb
Cb
Gb
Cb
Gb
Ab
Db
C#
Eb
cresc.
7:4
18
Db, Cb
ff

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Paul Archbold

études en mouvement
(1995)

for piano solo

24 FEB 1999

Paul Archbold

études en movement (1995)

for solo piano

i	éclat	to YG
ii	mirrors	to MY
iii	canon a 60	to PMD
iv	riffs	to SU
v	So	to KG

Duration 10 minutes

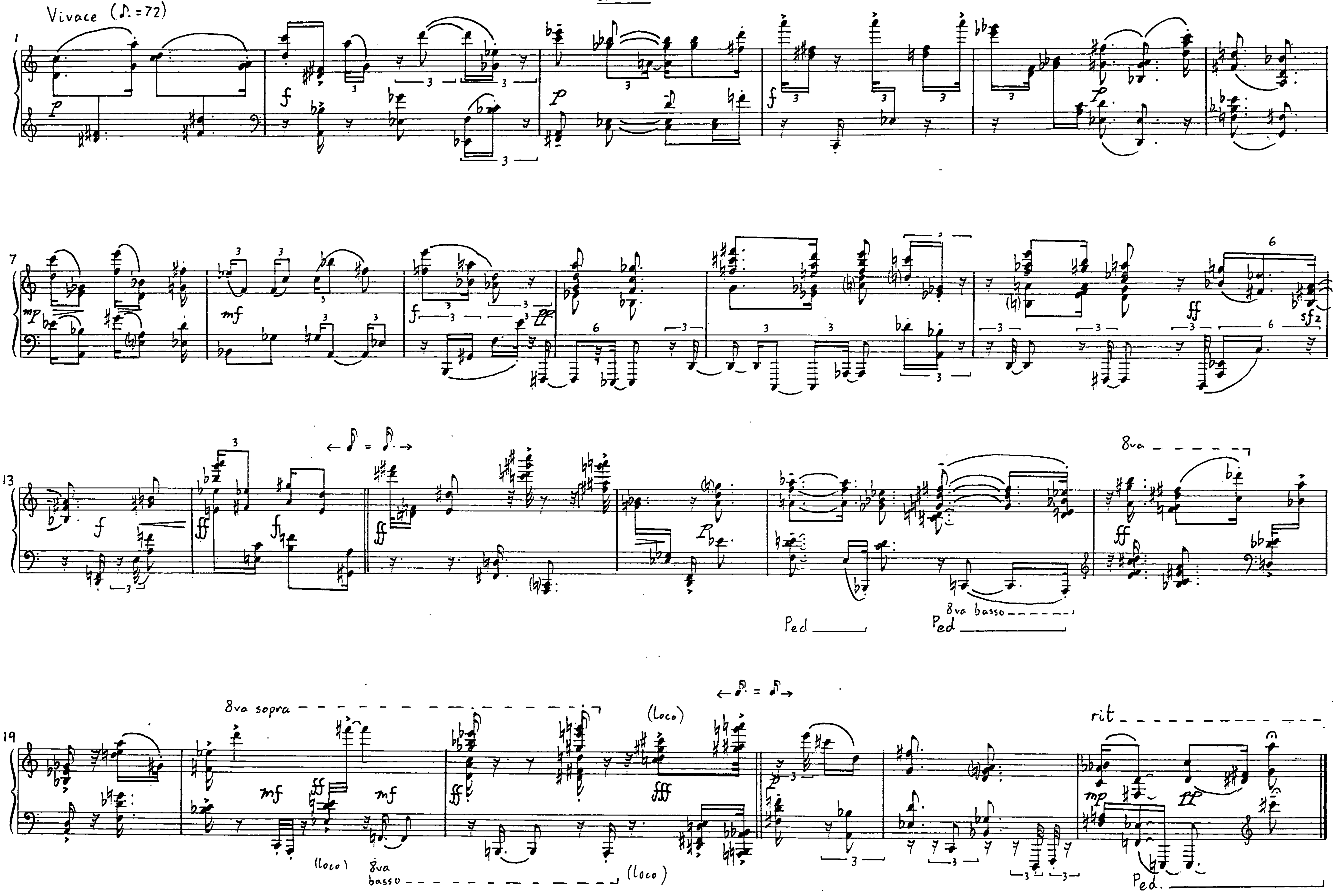
Thesis ++
1998/
ARC

études en mouvement

I - éclat

to YG

Paul Archbold


Vivace (♪. = 72)
1
7
13
19
p
f
mp
mf
ff
fff
sfz
← ♪ = ♪. →
← ♪. = ♪ →
8va
8va basso
8va sopra
(loco)
Ped
Ped.
rit
3
6

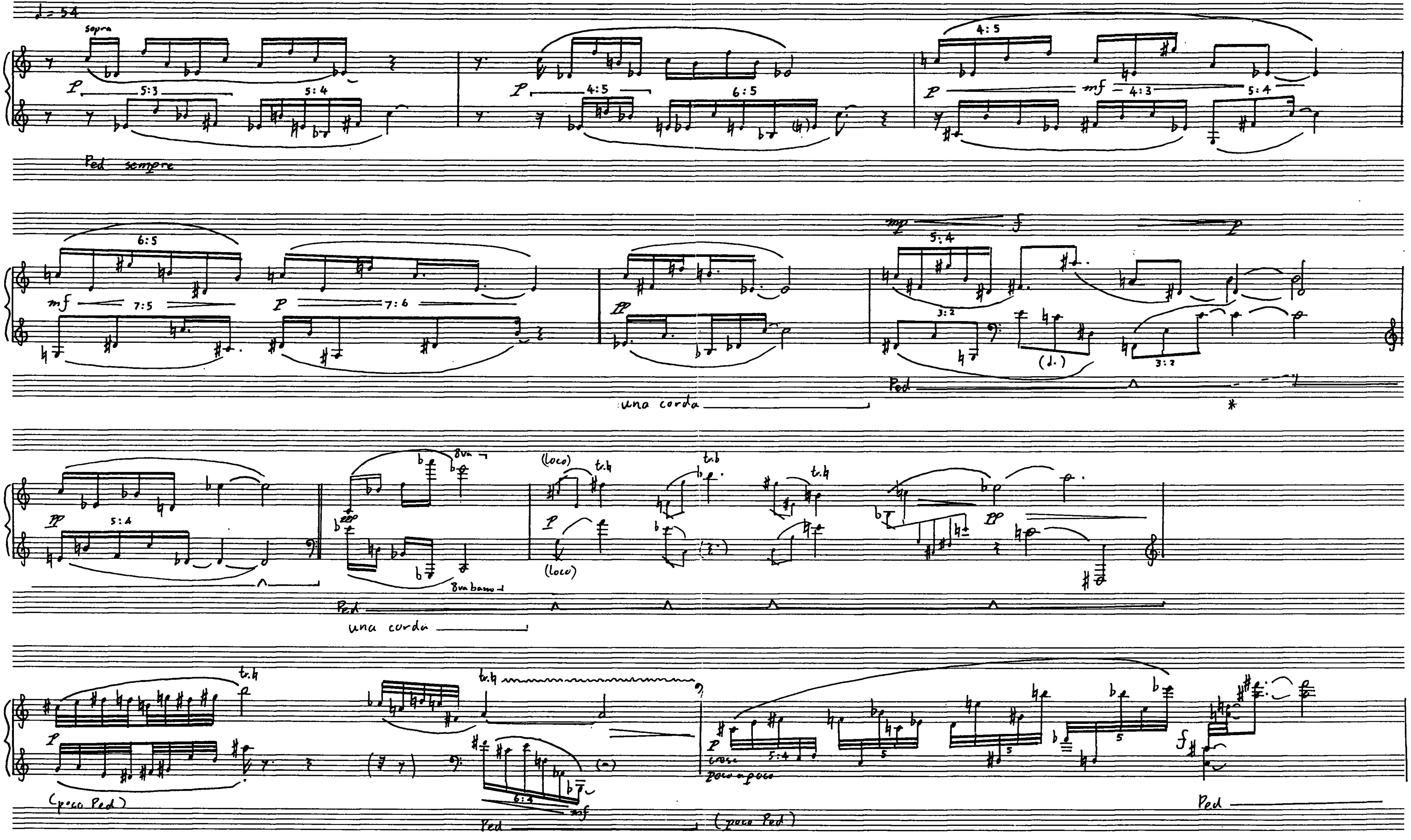
Études en mouvement
Movement 2

II Mirrors

to MY

Lento, rubato

P. Archbold (1993)


♩= 54
sopra
p
5:3
5:4
Ped sempre
4:5
6:5
mf
4:3
6:5
7:5
7:6
pp
mp
f
5:4
3:2
(♩.)
3:2
Ped
una corda
*
pp
5:4
8va
8va bassa
(loco)
t.h
t.b
p
(loco)
Ped
una corda
t.h
p
(poco Ped)
6:4
mf
Ped
cresc. poco a poco
5:4
5
5
5
f
(poco Ped)
Ped

* gradually release the sustain pedal

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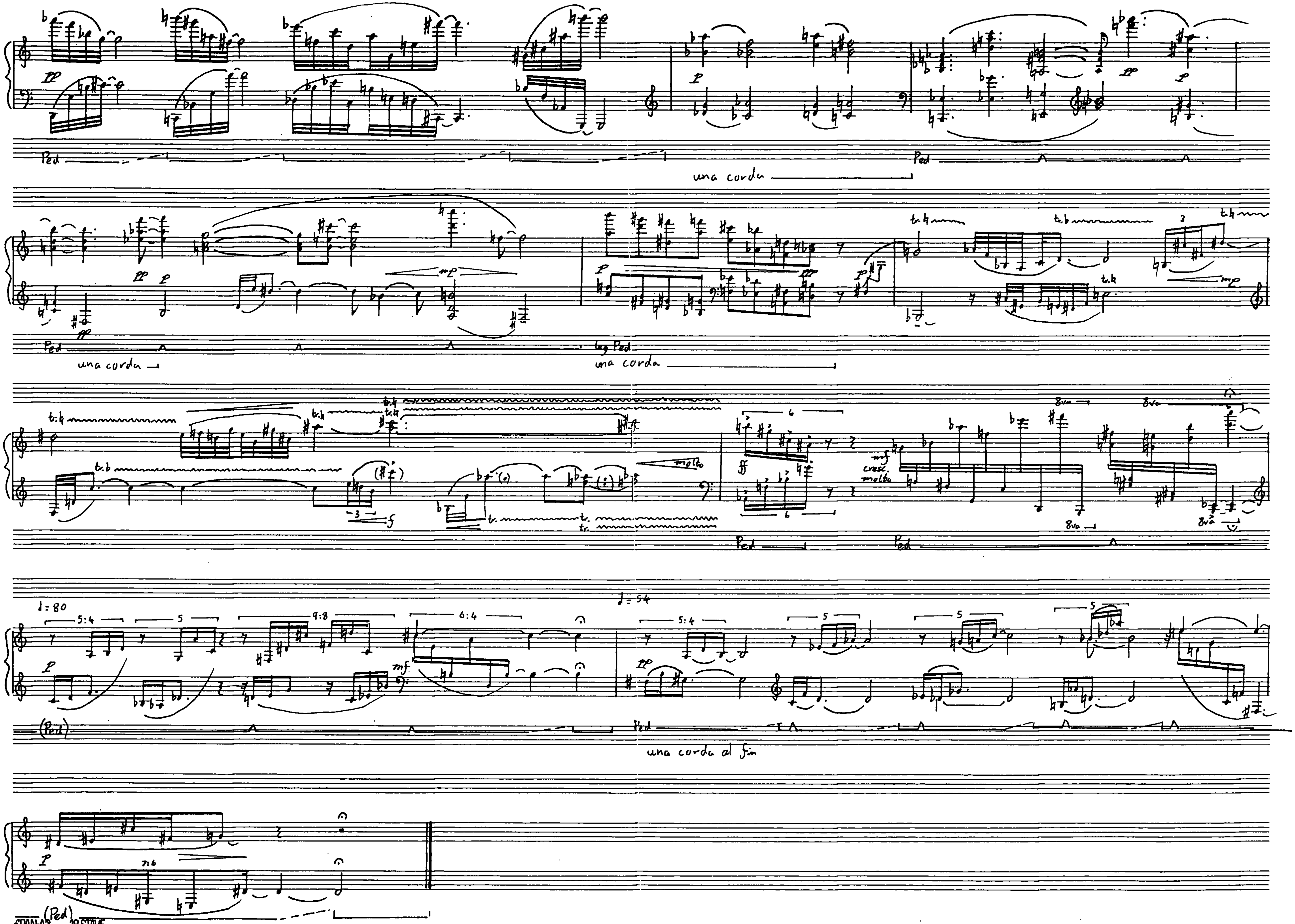
pp
p
Ped
una corda
mp
una corda
Leg. Ped
tr.♮
tr.♭
3
tr.♮
molto
f
ff
6
8va
mf
cresc.
molto
Ped
♩= 80
5:4
5
9:8
6:4
♩= 54
7:6
(Ped)
una corda al fin

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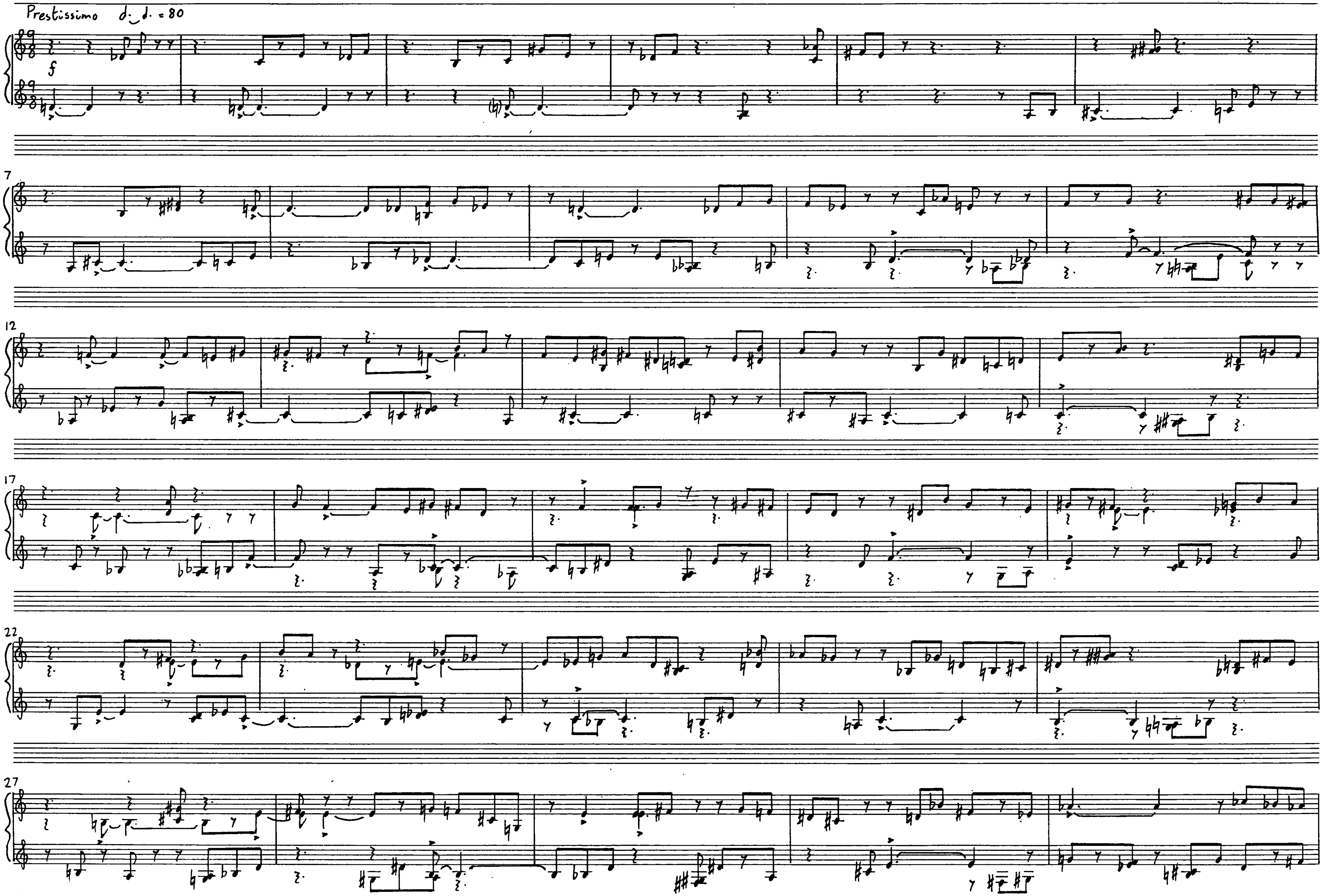
III Canon a 60

to PMD

P. Archbold


Prestissimo d.‿d. = 80
f
7
12
17
22
27

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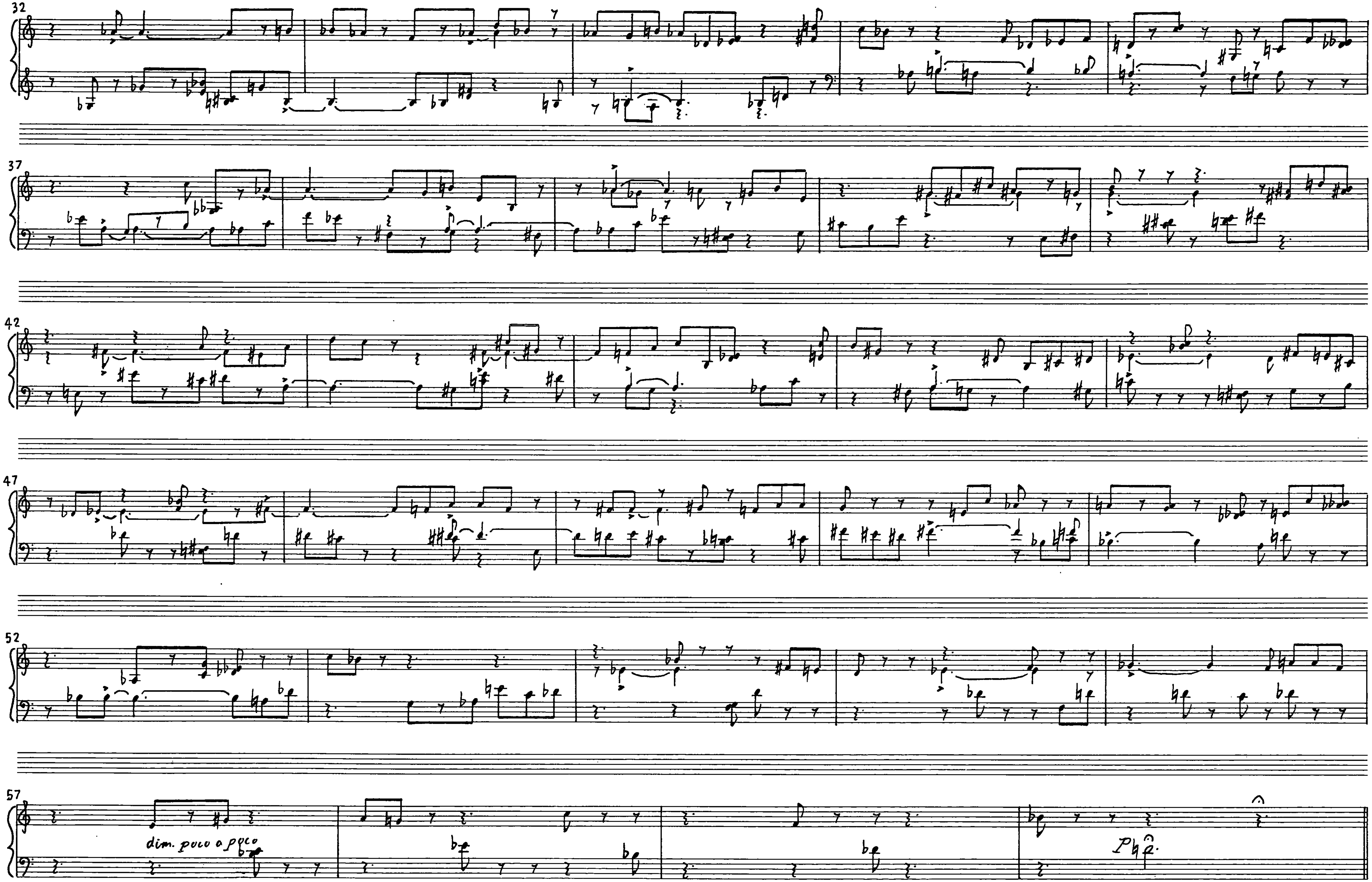
32
37
42
47
52
57
dim. poco a poco

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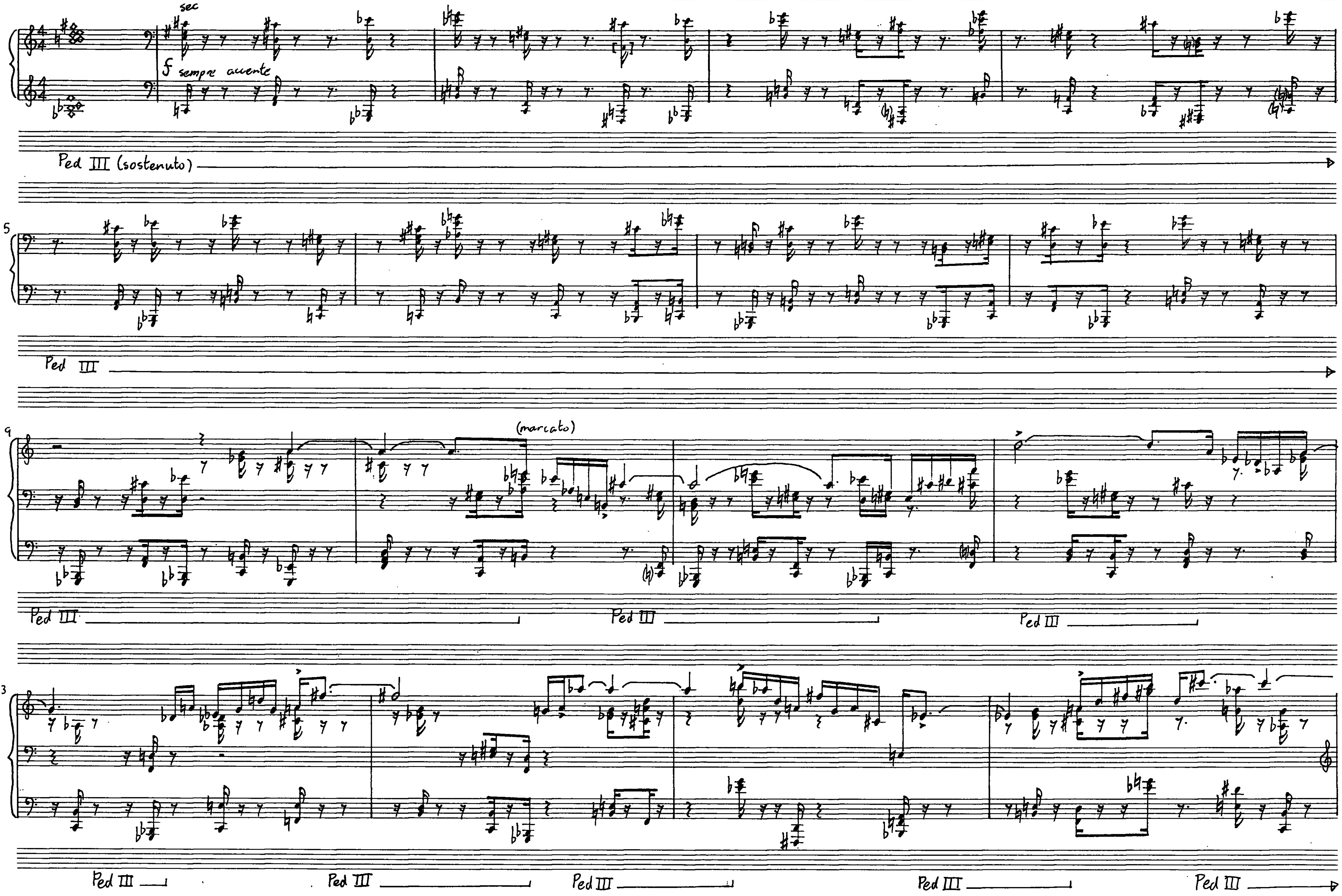
IV Riffs

to SU

Allegro molto (♩ = 120)


sec
f sempre accente
Ped III (sostenuto)
5
Ped III
9
(marcato)
Ped III
Ped III
Ped III
13
Ped III
Ped III
Ped III
Ped III
Ped III

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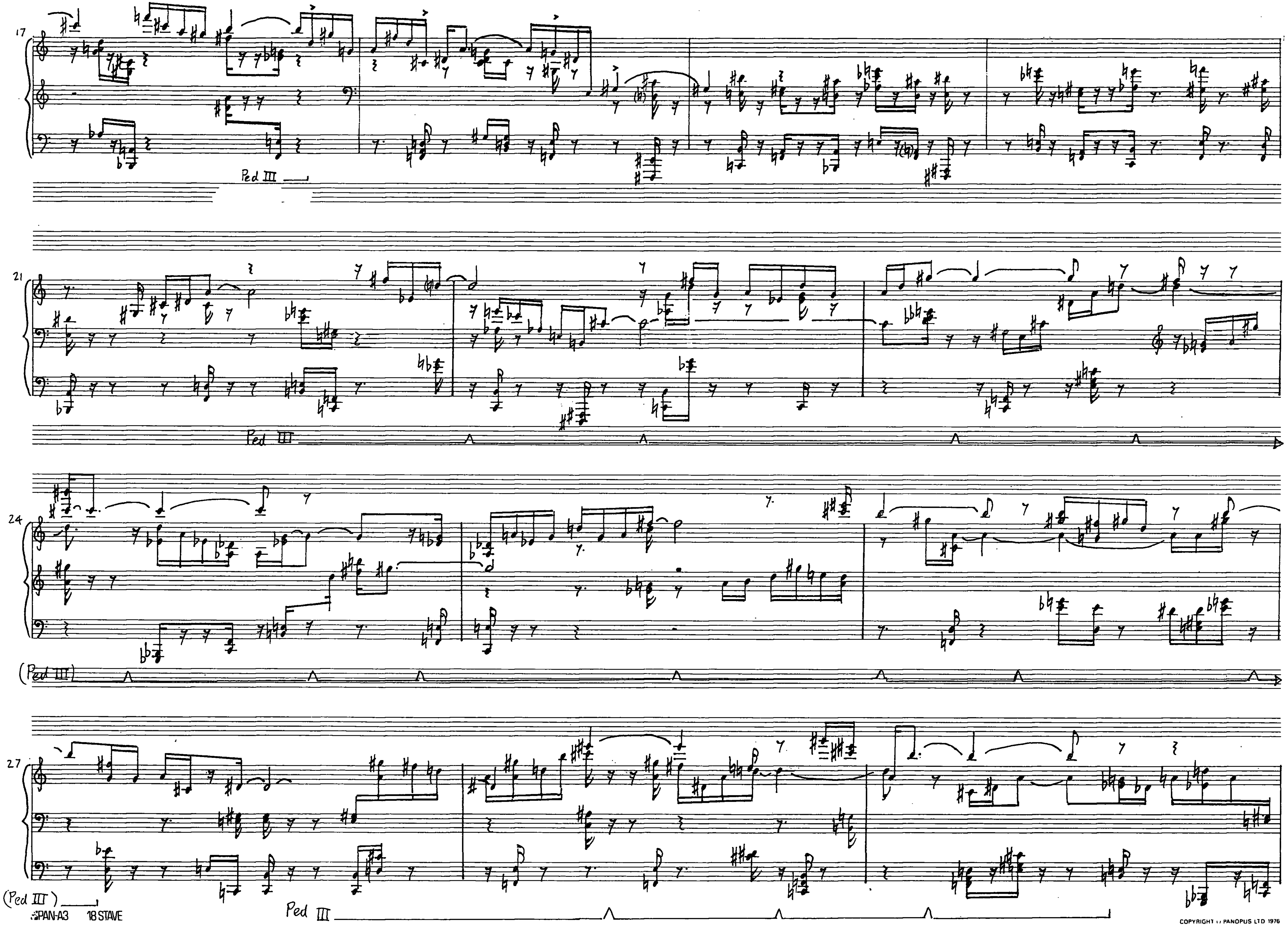
17
Ped III
21
Ped III
24
(Ped III)
27
(Ped III)
Ped III

PAN-A3 18 STAVE

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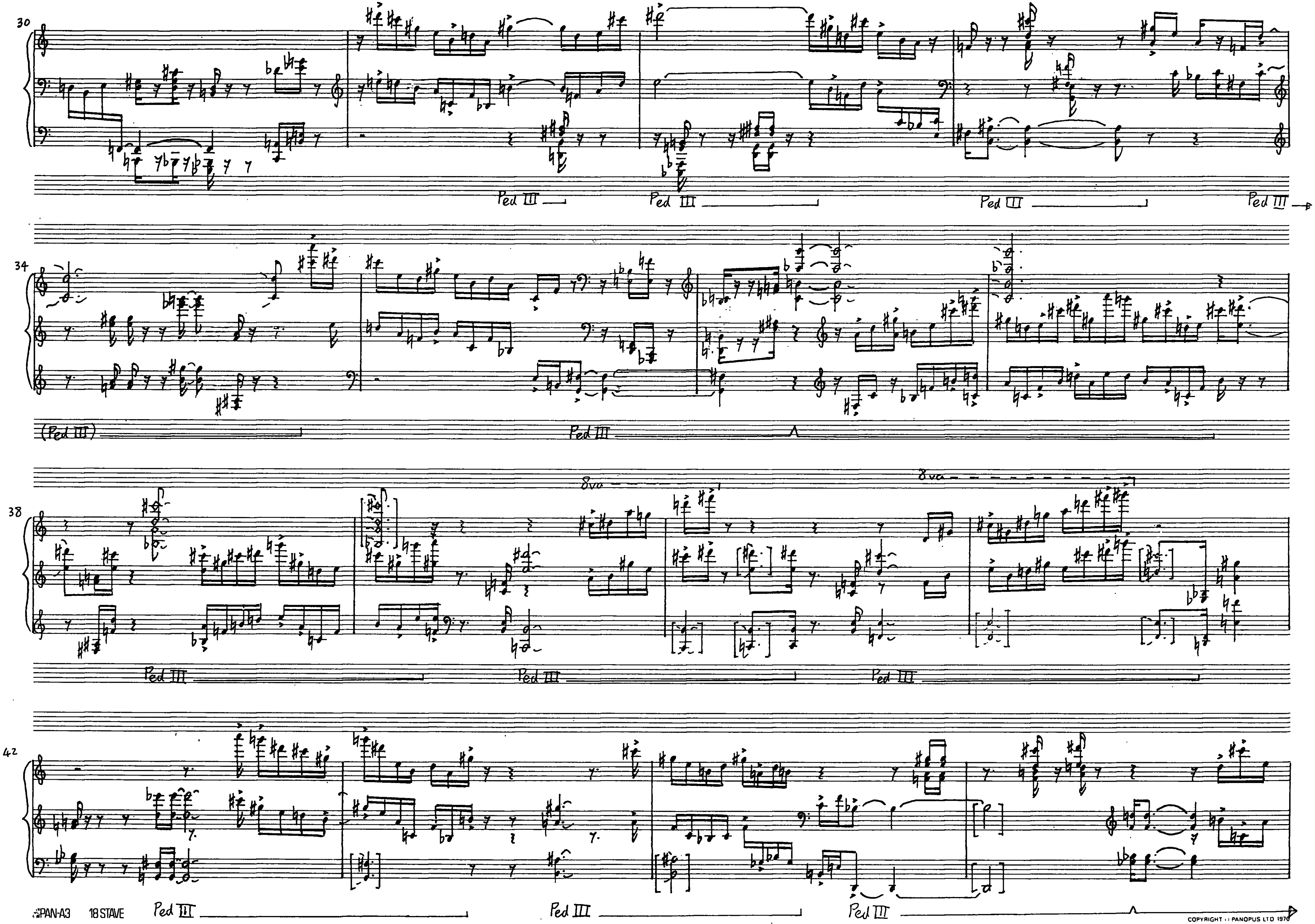
30
Ped III
Ped III
Ped III
Ped III
34
(Ped III)
Ped III
38
8va
8va
Ped III
Ped III
Ped III
42
Ped III
Ped III
Ped III

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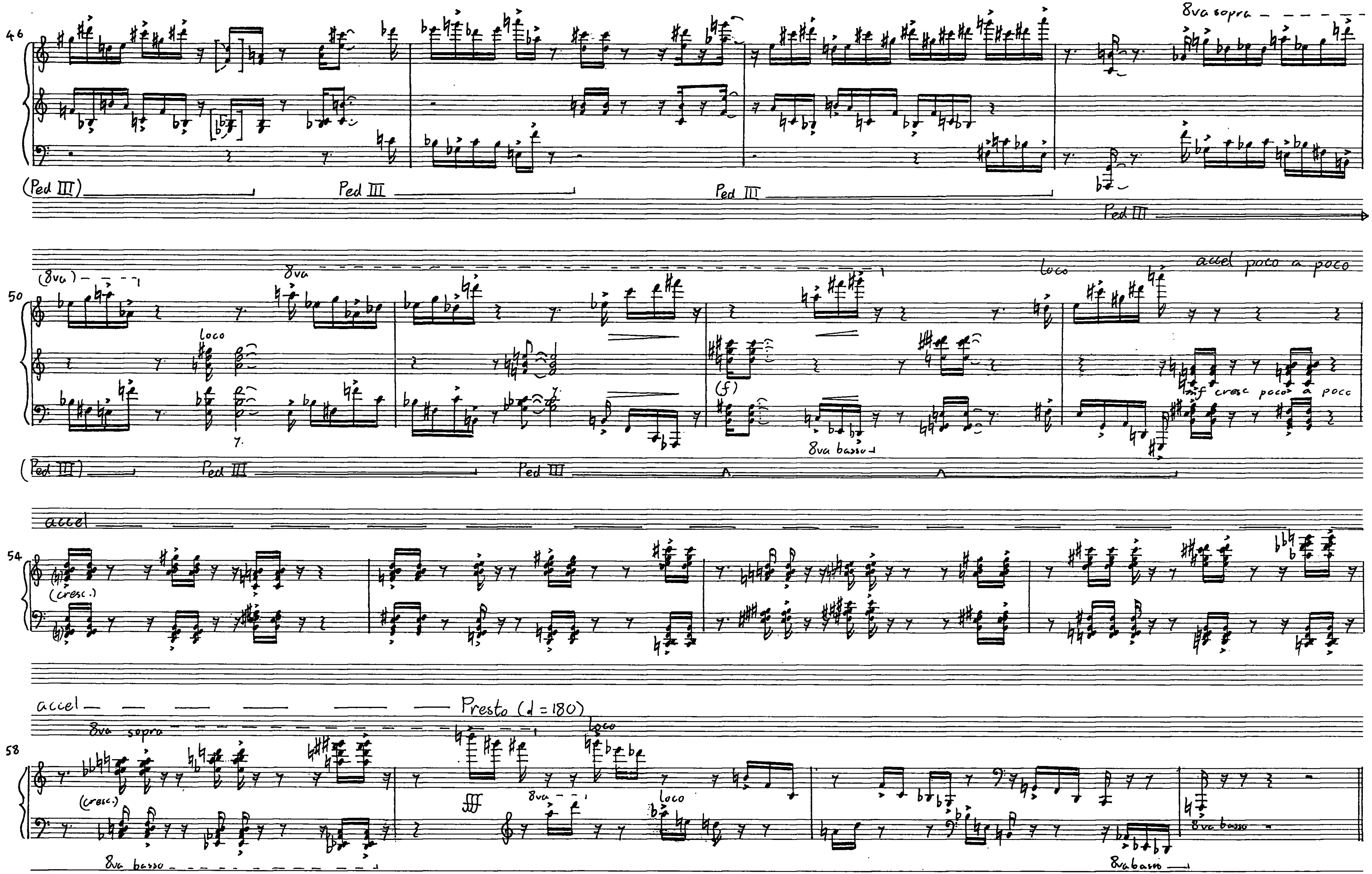
46
8va sopra
(Ped III)
Ped III
Ped III
Ped III
50
(8va)
8va
loco
loco
accel poco a poco
(f)
8va basso
mf cresc poco a poco
(Ped III)
Ped III
Ped III
accel
54
(cresc.)
accel
Presto (𝅗𝅥 = 180)
58
8va sopra
(cresc.)
8va basso
loco
fff
8va
loco
8va basso
8va basso

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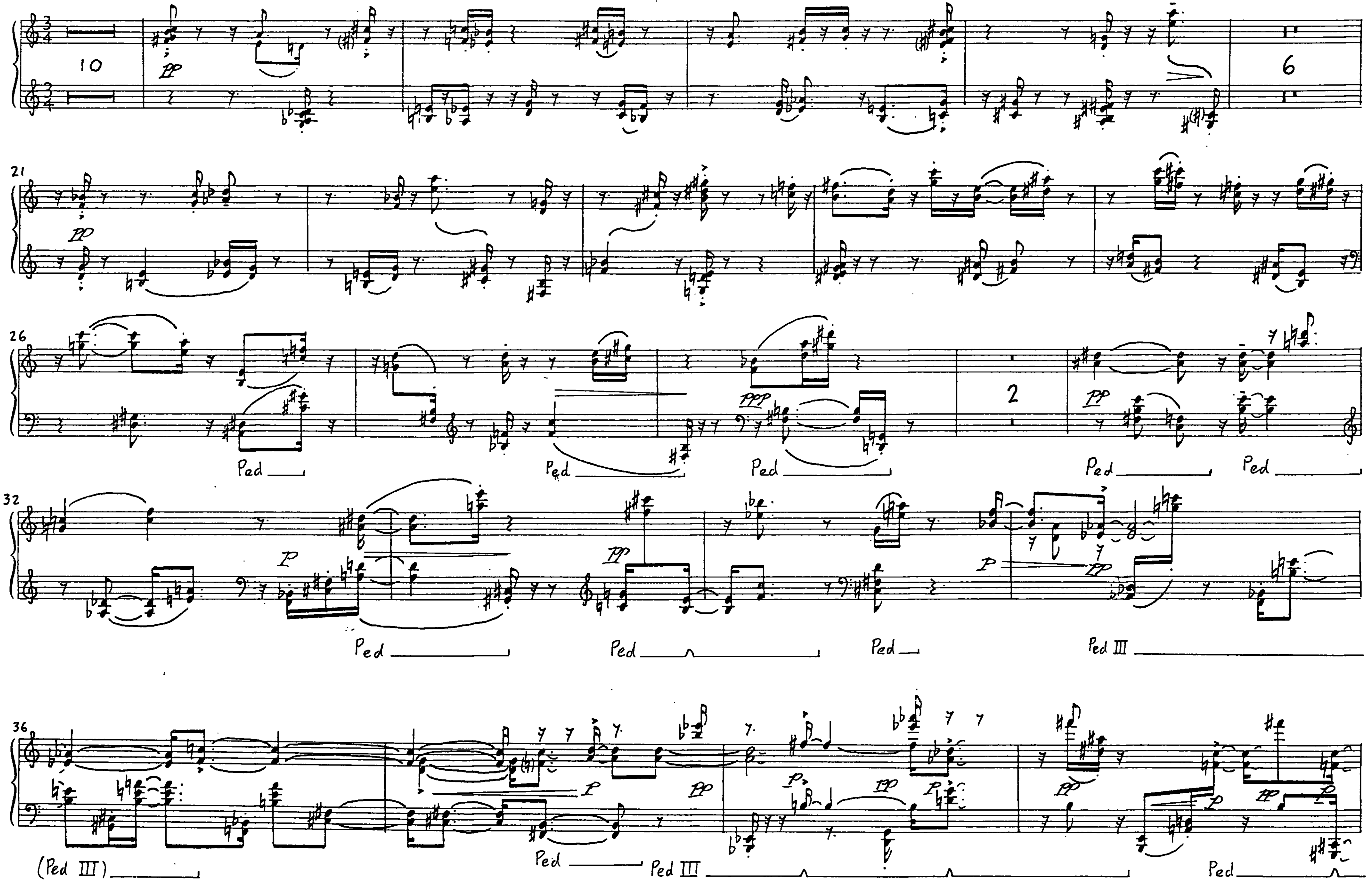
Etudes en mouvement V

So

for Kuni, Miyabo e So Goto

P. Archbold (1995)

Allegro e delicato (♩ = 90)


10
PP
6
21
PP
26
Ped
Ped
PPP
Ped
2
PP
Ped
Ped
32
P
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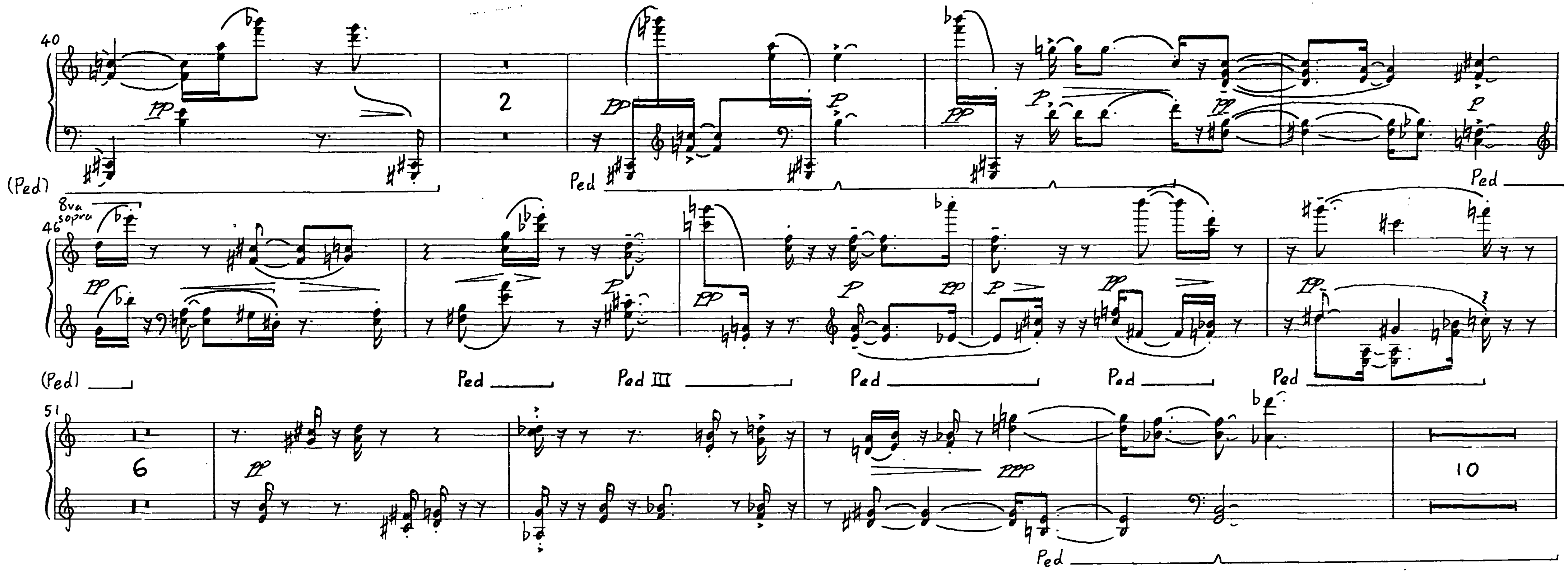
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