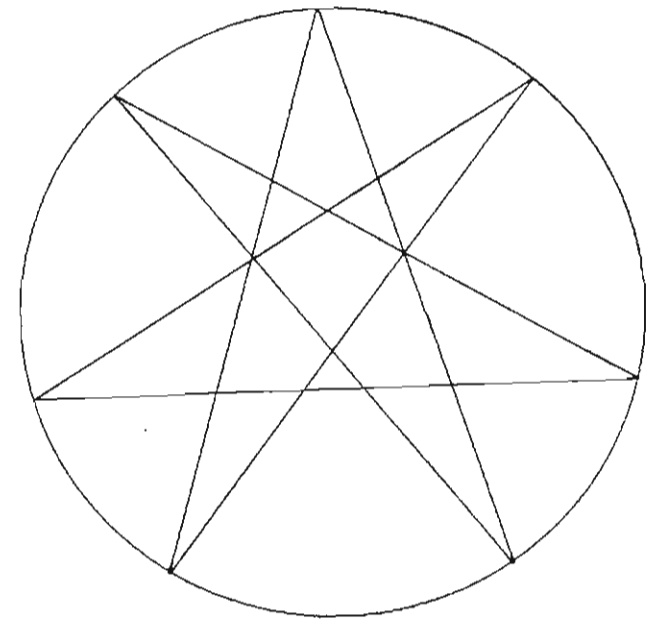
— MUSIC OF NUMBERS —



Music of Numbers

Nine Pieces for Two Players and Pianoforte

IAN BERNARD SOLOMON

Submitted in partial fulfilment of the requirements for the degree of Master of Music (Composition) in the Department of Music, University of Natal. Durban, 1981.

For

Roseline Shapiro

THE PIANOFORTE CYCLE DESCRIBED

Programme Notes in the Form of an Analysis.

The structure of this present work exploits the setting of sonata-form dialectic cast within a twentieth century stylistic framework, and is built around the idea of organic thematic growth and synthesis. The preoccupation with musical thematic synthesis looks towards its solution not through external programmatic sources only, but through the means of its own musical idiom.

The present set of pieces in the form of a pianoforte cycle, combines the effect of sonata-form growth of thematic material embalmed within the unity of a cyclic totality. The "programme" of the work is based upon an association of Cabbalistic number mysticism with Hegelian/sonata-form dialecticism: Thesis, Antithesis, Synthesis as applied to the thematic material. Outwardly each piece depicts the mystical qualities associated with a certain number. The series of pieces as a whole are constructed within the framework of organic growth depicted in the sonata-form principle. Although the work is based on 12-tone row schemes, the sonata-form principle is transferred to the general development of themes despite the absense of mono-tonality on which the traditional concept of sonata-form has rested. While each piece defines itself within the greater sphere of the cycle of nine pieces, the structure of each piece reflects its position within the cycle itself as a whole. Each structure also reflects, because of the properties of the relationship of the numbers to each other, the value of that particular piece, in Numerological terms. Music of Numbers attempts to make its technique, structure and expression a unified form. The serial technique is an expression of the structure. The music strives to express the nature behind its pitch-structure/structural relationships (not in an essentially Webernesque sense), which contain the essence of the Hegelian/Cabbalic programme. Music of Numbers is the attempt at an exteriorization of musical structure - the extroverted musical programming of serial-pitch orders in which the music and its underlying structure become part of the same expression.

The overall and in-depth form scheme of this cycle is based on an intrinsic mystical law of Nature. The formal scheme reflects the Numerological construction symbolism of the mystical values which the thematic content expresses. It deals directly with the Tryptich law of mystical systems, specifically of the Mysticism of the Trilogy based upon an interpretation of the great Sumerian/Hebrew system of Numerology - the mystic value of numbers.

The Seal of Solomon, the seven-pointed star, which if drawn consists of eight separate chords traced from one tangent to the next, contains the nine numbers which are held to constitute the basis of all calculations - the first nine digets of the abacus. In the most ancient systems of Occult law the abstract phenomenon of numbers has been impregnated with mystical sinificance and meaning. The ancient searchers after Nature's hidden laws, the Hindus, the Chaldean, Hebrew and Egyptian civilizations of antiquity were the original masters who systematized the occult or hidden meaning behind numbers - their values in relation to human life and destiny. From the remotest era of arithmetical history the hypothesis of counting vested a teleological belief in the values of the numbers 1 - 9, not only as the basis of all numbers and calculations which follow from them, but as part of the symbolic proof along with language, of the God-given gift of the ability to communicate abstract thought - a manifestation of the Divine Spark in man.

The number 1, present as the first value, represents the First Cause, Creator, Spirit. After the number 9 all numbers become mere repetitions of the first nine, when 1 is combined with the symbol of Infinity, the 0, to repeat the abacus cycle again. Since 0 is not a value or a number, therefore, the number 10 becomes a repetition of the number 1. Based on the system of Natural Addition (digital addition), adding from left to right, compound numbers such as 11, 12, 14, 123 or 339 repeat the basic values of 2, 3, 5, 6 and 6.

The Values of The Numbers 1 - 9 and Their Mystical Significance

1 The First Cause, Creator. Symbol: the Sun.

2 The antithetic motion - symbol: the Moon.

3 The first multiple related to the last value of each set, 6 and 9. Symbol: Jupiter - sign of attainment. The Holy number assigned to the Trinity.

4 Psychic regeneration. Symbol: Uranus. Related to the Sun.

5 Symbol: Mercury.

6 Sign: Venus, symbol of Love and growth.

7 Number representing, with "0", the mystical value of Infinity, Perfection. Symbol: Neptune.

8 Saturn - Halo-shadow of Darkness. "Planet of Fate."

9 Finality - Mars

As can be seen in the table above each number is assigned a planet as a symbol of the cosmic forces which immediately associate with its value, or occult vibration. In the cycle the effect of the trilogy is to relate to every third in the series: 3, 6, 9. Note that the complete cycle of nine numbers (1 - 9) is the Trinity folded in upon itself by multiplication, three sets tiees three.

The number 9 has some peculiar properties in its position at the end of the natural cycle of digits: it is the only number that will, in calculation, reproduce itself when multiplied by any other number - eg. $3 \times 9 = 27 = 9$, $7 \times 9 = 63 = 9$. The occult number of the Beast, 666, adds up to 9. Because of this property, 9 is considered the emblem of matter which can never be destroyed. Finally, the mystic symbol of Solomon's Seal reads:

The Seven-pointed Seal of Solomon

The meaning of the lines of the star are that Life starts from the Sun, proceeds to the Moon, from there to Mars, Mars to Mercury, Mercury to Jupiter on to Venus, finally to Saturn (symbol of Death) from where it returns to the Sun, from whence it came.

THE MYSTICISM OF THE TRILOGY

Georg Wilhelm Friederich Hegel's belief that all events of Life are subsistent upon a continual state of flux, a continual growth and change (evolution) as a result of opposing forces, conflicts (the Dialectical Unity of Opposites) is the basic foundation of his Absolutism. Events in history are readily analyzed into the order-of-event prototype which Hegel construed as a truth of Reality. The basic premise that conflicting forces which have the need to resolve, that life itself owes its sense of 'dynamic', its state of constant flux is also a valid premise for artistic expression. Hegel's concept of Thesis, Antithesis and Synthesis as a necessary foundation for ontology is the principle followed by form and thematic presence in this pianoforte work.

The construction principle of Music of Numbers is the juxtaposition of two thematic ideas of opposing dynamic qualities which develop into a synthetic whole by the progressive combination of its constituent elements into an organic unity. The structural foundation of the cycle is indeed an alliance between Eastern mysticism and an essentially Occidental dialecticism.

Inspired by what seems a universal feature of all organic growth, the present cycle of pieces are a celebration of a structural mode. This phenomenon (the dialectic Trilogy) forms the premise for a rich legacy of whom Beethoven is Western music's most obvious exponent; and when T. S. Eliot writes:

> We shall not cease from exploration
> And the end of all our exploring
> Will be to arrive where we started
> And know the place for the first time.
>
> (Little Gidding,
> Four Quartets)
>
> In the end is our beginning . . .
> In the beginning is our end . . .
>
> (East Coker)

we are reminded of Beethoven's final autobiographical synthesis of a lifetime's work, his late period and the string quartets.

GENERAL STRATEGY

The cycle consists of nine separate pieces inter-related as far as thematic content, formal structure and time-duration proportion. There is a strong correlative bondage between major and minor structural levels, between thematic material and major/sub-structural events. The Numerological considerations govern the proportionment of intervallic structure, row order, row transposition order, structures of form and the overall plan of the work. The ancient science of mystic number values and Hegelian dialecticism are here combined to form a correlative, homogeneous hierarchy of structures that take the shape of a tier of levels from pitch arrangement to the form of each piece to their proportions and arrangement within the cyclic concept itself.

The form of each piece reflects its place within the Numerological system. Hence the first piece, 'Genesis', is mono-thematic and mono-formal, consisting of repetitions of the first of the juxtaposed themes. Piece 2 contains the thematic material in direct antithesis to the first piece. Piece 3 is the culmination of the first sub-set in the cycle, completing

the first Tryptich and combining thematic and formal elements of the first two. The second piece is in a binary form, the third is tertiary. Piece 4 refers to the first piece but is divided into a quadruple format. Piece 5 is the most central in the cycle, and reflects its position by being symmetrical (looking in mirror fashion from the beginning towards the end of the cycle). It is built on a peculiar eleven-note row which reserves the twelfth note for a mysterious climax at its central point, signifying the middle place (in terms of form structure, not time) in the entire work. Piece 6 presents a unified culmination of the thematic ideas developed so far in the cycle. Its position reflects a parallel to Piece 3 which is the culminating point of the first Tryptich sub-set. Piece 7 is a perfect mirror-fashion pallendrome in form, symbolizing the image of infinity or mirror-form perfection, the circle, for which the value 7 stands. Piece 8 reflects the unknown quantity (based on tritonal relationships) and stands in a diametrical position to Piece 2, being based on the same thematic material as the earlier piece. Piece 9 is the summation of the work and the final fruition of its thematic material. It is divided into nine parts, each of these reflecting the events of each of the former pieces in the form of a prècised recapitulation.

Each of the three sub-sets of three pieces of the cycle of nine pieces, are closely inter-related in that they present a sonata-form logic presentation of thematic material between them - ie: the first three pieces share two thematic subjects which are combined in the third; the second three pieces share the same thematic material in the manner it has grown since Piece 3, and so on. Music of Numbers is basically a structural expression through its thematic processes of the condition of the Numerological values.

The Themes

Permeating the cycle are three distinct thematic subjects which manifest themselves in various forms in each of the pieces they occur within. It is these three themes which reflect the sonata-form dialectic, the first and second themes being in direct emotional opposition, while the third is the synthesis of their feeling. Each of the themes is based on a tone row. These themes are not stable melodic units as such, but rather the diversely changeable basic elements of the material. They are the essential aspects of certain elements in the cycle. The 'elements' are a restful one, an agitated one, and a synthesis of these two.

Each theme is more or less confined in frequency of occurrence to its corresponding sub-set of pieces - ie: the first theme occurs predominantly in the first three pieces, theme 2 in the second sub-set and theme 3 in the third. So in this way the progression of the themes throughtout the cycle forms a type of sonata-form teleology. Theme 1 (held tones) and theme 2 (fast passage) are diammetrically opposed in feeling - theme 3 is the dialectical synthesis of these. The two different themes presented in Group 1 - 2 - 3 undergo metamorphosis in 4 - 5 - 6 and present themselves in changed form teleologically in Group 7 - 8 - 9. Within the parameter of cyclic totality the theme of teleology (dialecticism) is expressed thematically in this way.

Of the three sub-sets themselves the dialectical pattern formulates again around their intrinsic arrangement. The first group (1, 2, 3) are enunciatory in style. Pieces 1 and 2 present the two conflicting themes for the first time, while Piece 3 presents their first organic combination. Group 4, 5, 6 are transitional pieces and have a more developed style of the thematic material - they form the developmental period of the work in which the most prominent thematic shaping takes place. This is the equivalent of the development section, which is usually the most elaborate operation within sonata-form. The last group presents the consummation of this trend of development, with the themes present in their final forms.

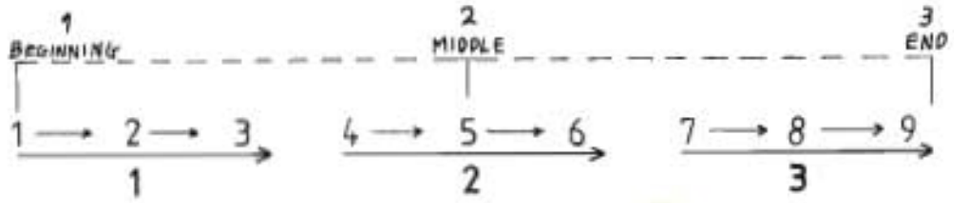
An examination of the fold-out diagram will reveal how the sonata-Trilogy logic has penetrated all layers of the structural rubric. (See first two diagrams following).

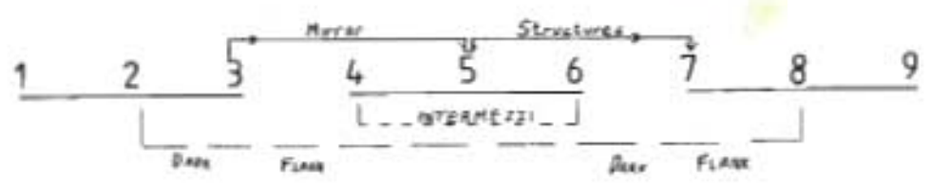
Theme 1 (because of its row construction) fits into Pieces 3 and 5, based on the same row. Its last appearance is in Piece 7, which is based on a different row. Theme 2 fits into Pieces 2 and 8, appearing continually for the last time in Piece 5 which is based on a different row to that of the theme. Theme 3 fits into pieces 1 and 7, appearing for the last time in its final form in Piece 9 , which is based on the same row. Thematic teleology is the basis of this plan, where although themes 1 and 2 combine in various juxtapositions in the third piece of each set (pieces 3, 5, 8) it is only in the last piece (9) that the final synthetic form of these ideas (theme 3) appears. Each of the themes relate to the general nature of their corresponding pieces in each group respectively: 1 (4 - 7), 2 (5 - 8), 3 (6 - 9). Within the Tryptich scheme,of the nine pieces 1, 4 and 7 are enunciatory types, 2, 5, 8 are transitional/developmental and 3, 6, 9 present synthesized forms of previous material.

RELATIONSHIP OF THE PIECES TO EACH OTHER (SYMMETRICALITY)

The formal layout of the pieces reveals certain Tryptich features: Pieces 1 and 9 are the opposite poles of the work and each reflect a similar simplicity of design. Piece 1 is mono-formic while Piece 9 comprises a set of variations on a theme. Piece 1 predicts in its thematic content (theme 1 with slight forewarnings of theme 2) the eventual outcome of the entire cycle, while each of the nine variations in the last piece is a miniature in the style of each of the nine pieces in turn. Pieces 2 (Moon) and 8 (Saturn) - also dipoles around the central axis - reflect the same essential dark character and transitional nature. Pieces 3 and 7 are the longest of the pieces (6 min. - 7 min.) and contain mystic overtones: number 3 - Deity, number 7 - Eternity. The central piece, No. 5, is the most developmental and acts as a thematic axis between the two adjacent areas of the work. Pieces 4 and 6 are similar - both are of short duration, of the same 'intermezzo' quality and are directly adjacent to the central piece of the cycle. Both are also built, appropriately, on an eleven-note row each of which reflect by their construction the adjacency of their position within the cycle by the adjacency of the minor and major thirds around the central row note. (See rows D and E - also notes on Piece 4 and 6 further on).

Piece 5 is the central piece containing a central climax based on an eleven-note palendromic row with a missing note (C♯) which manifests itself at this point in the piece. At the very constructional core of the cycle is a period of silence disturbed by unembroidered statements of each theme, acting as a divisional axis for Piece 5 and for the cycle as a whole. Diagrams of the relationships of the pieces to each other reveal this.





Further in the symmetrical relationships of the pieces, the third, fifth and seventh movements form a progressive series of mirror-structured movements in which the seventh piece is a perfectly balanced pallendrome in itself. (See diagrams).

PERFORMANCE TIMING

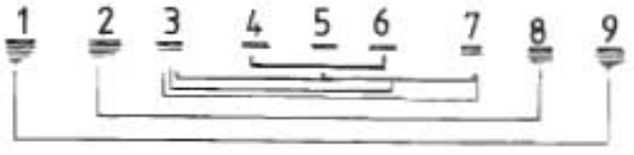
It is from the above described set of relationships that the timing procedures derive. The time-durations of the work mirror the Numerological dialectic. The durations of each piece are indicated on a separate Performance Timing Chart. The time allocation for each piece, and indeed for the entire cycle may vary. An explanation of the timing based on one of the tables as an example follows. (See also the list of tables on the Performance Timing Charts).

Total time of set.	14' - 5			13' - 4			12' - 3		
Piece No.	1	2	3	4	5	6	7	8	9
Duration 's	3	6	6	3	7	2	7	2	3
Total Duration	3	9	15	18	25	27	34	36	39
Mystic No.	3	9	6	9	7	9	7	9	3

Each total represents the total time reached from the beginning of the cycle up to that point. The totals result according to the Numerological process of addition from left to right (digital addition).

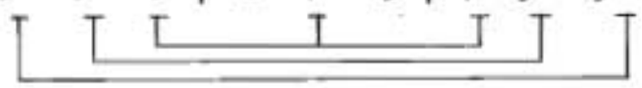
In performance timing problems will arise. Since each piece has to be performed within certain time proportions to each other the only method of managing timing discrepancies which are bound to result from performance difficulties and other considerations is to perform the pieces so as to make allowance for timing compensation. This can be achieved by varying the speeds of sections or ensuing passages/phrases slightly (an adjustment of rubato), either way, to accumulate or lose time. Passages where strict rhythmic/tempo monitoring may relapse are built into the structure of the piece (at chosen musical ponts), where variable speed passages, pauses, fermatas, etc. will allow for the recovery of time lost or gained. The list of variable tables of time values for the cycle are provided as a guide for practicable duration planning according to the capabilities of the performers. A typical timing problem follows:

> Piece 3 has to be 5' long. But it has worked out at 6' during performance. The problem is to transfer 1' of time (lost) from another piece to any other piece after Piece 3 without upsetting the balance of the Mystic Numbers, which should relate dipolar pieces as follows:



Original performance scheme

Piece	1	2	3	4	5	6	7	8	9
Duration	3	6	5	3	8	2	7	2	3
Total Duration	3	9	14	17	25	27	34	36	39
Mystic No.	3	9	5	8	7	9	7	9	3



Second Version

	1	2	3	4	5	6	7	8	9
	3	6	6	3	7	2	7	2	3
	3	9	15	18	25	27	34	36	39
	3	9	6	9	7	9	7	9	3

The required actions below will provide one solution. Take 1' from Piece 5 (reducing it from 8 to 7 minutes) for Piece 3 (allowing for its increase from 5' to 6'). Note now how the Mystic Numbers relate to the timing values for pieces 1, 3, 5, 7 and 9.

If later on during the performance Piece 5 (which was decreased from 8' to 7') has also gained in time and is 9' long, another 2' has to be omitted from the time value of an ensuing piece to restore the balance. In this case 2' dropped from Piece 7 would compensate.

	1	2	3	4	5	6	7	8	9
	3	6	6	3	9	2	5	2	3
	3	9	15	18	27	29	34	36	39
	3	9	6	9	9	2	7	9	3

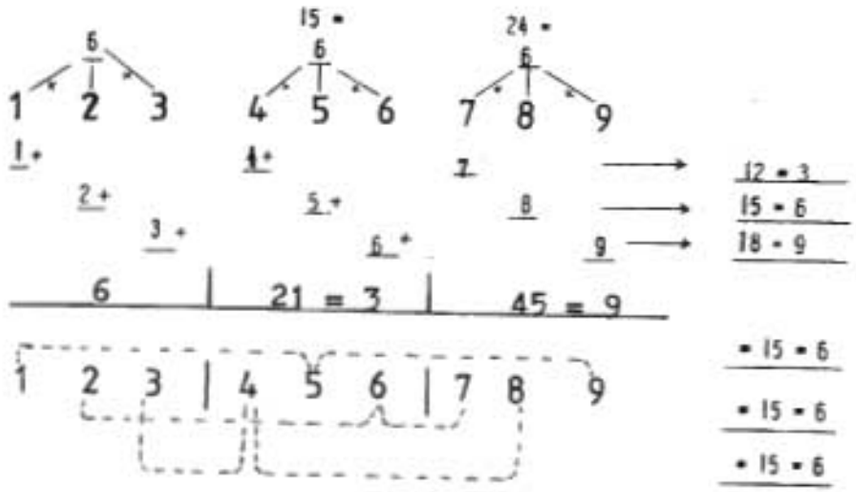
The aim of these timing procedures is to maintain the dipolar mirror proportions between the pieces as another aspect of their structural symmetricality - although, in the final instance, this particular aspect lays heavier emphasis on the Mystic Number symbolism than on the actual timing proportions themselves. Pieces 4 and 6 (Intermezzi) and pieces 1 and 9 (beginning - end) are related dipoles by the fact that they are of the same short duration.

The three groups of pieces have a time duration each of 14, 13 and 12 minutes which equal Numerologically the number progression 5, 4, 3. The number 3 is indicative of the Deity - so the Numerological designation of the third and last group of the cycle has the appropriate value - Dialectical Teleology. Furthermore, the total duration of the work as a whole (macrocosm) also expresses this value of Universality: 39 minutes = 12 = 3, 48 minutes = 12 = 3, 57 minutes = 12 = 3. Generally, as can be seen, the number 3 binds the whole together by its multiple presence.

TONALITY

Although in a dodecaphonic (dodeca-tonic) idiom, Music of Numbers contains at moments a considerable tonal complicity. The first piece in the cycle has an insistent cadential tendency towards E major (Theme 1). Pieces 2 and 8 lapse into a sustained figure (on the notes Bb - Db) at times, strongly suggesting a Bb minor tonality in places. Piece 3 lapses into periods in a definite C♯ minor/major tonality, especially at its conclusion. Piece 5 vindicates the programmatic mystery of the C♯ tonality by inducing a C♯ tonal centre through repetitive insistance. The last movement of the cycle, Piece 9, concludes on an E major tonality. The relationship of these momentarily predominant tonalities produces a tritone with C♯ acting as the central symmetrical axis. This is a significant structural feature as C♯ also serves as the mystic symmetrical climax point in Piece 5 and simultaneously of the entire cycle. Furthermore, the tritone plays an important part of the row structures and their order schemes.

Some more Numerological properties of the cycle series:



STRUCTURE OF THE CYCLE

Music of Numbers is based on pre-composed (serial) structures. The work as a whole employs the idea of mysticism of the Trilogy (Cabbala) as the formula for a series of matrixes on which the serial and formal structure of the work is based. This Tryptich idea generates a deterministic structure scheme on which falls the complete organization of the work into large and small cellular structures.

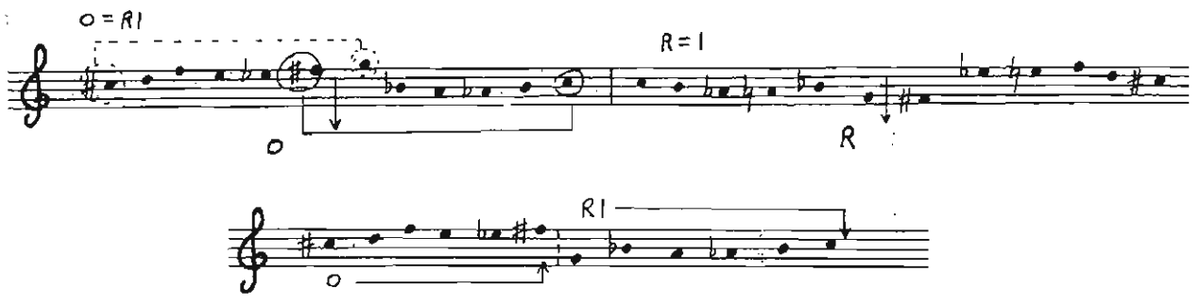
Symmetrical structural ordering occurs at all levels - from the arrangement and relationships of the pieces to each other around a central **cyclic** core, to the structure of each piece itself and the transposition orderings of the rows into symmetrical sub-systems revolving around an axis within each piece - to the very structure of the rows themselves as 12 -, 11 -, or 10 - tone pallendromes. The basic symmetrical flow is a multi - structural series of levels aligned to the essential symmetry of ternery/sonata form: A - B - A.

This intrinsic symmetry coincides with the choice of symmetrical forms for the key pieces (Nos. 3, 5, 7) and of the symbolic values of balanced form associated with these numbers.

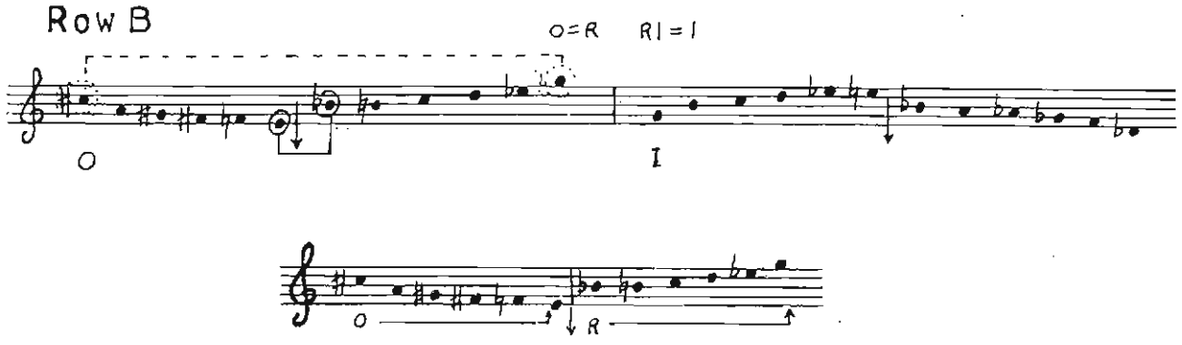
STRUCTURE OF THE ROWS

To limit the profusion of row variants, the five rows forming the basis for the work have been constructed as 12 - note and 11 - note pallendromes, whose construction falls symmetrically around tritonal axis:

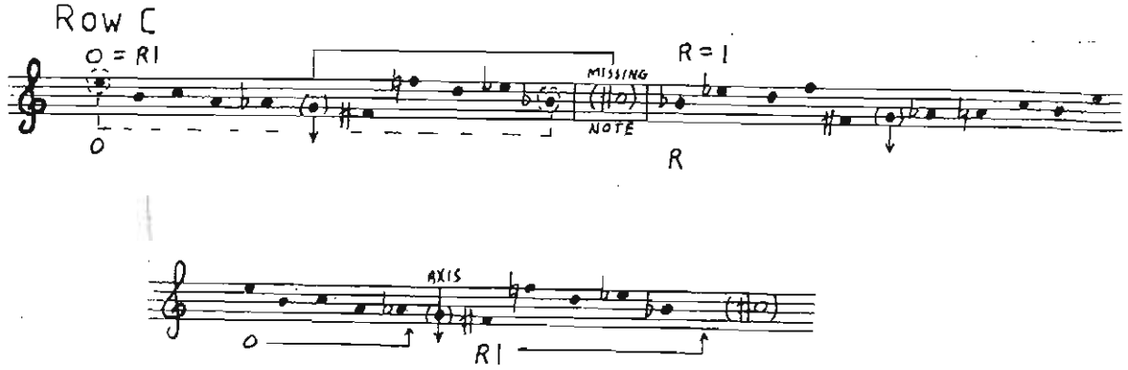
Row A



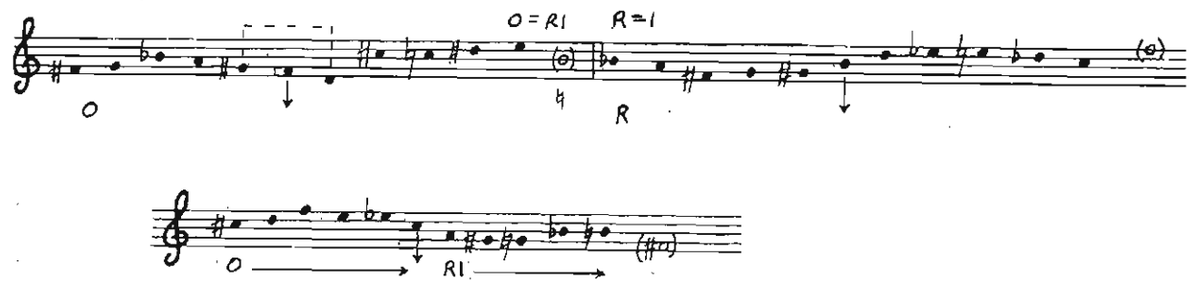
Row B



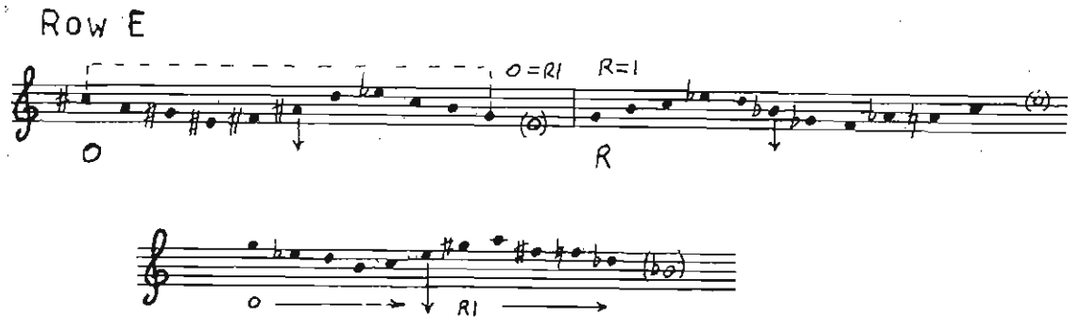
Row C



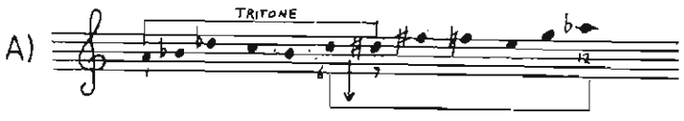
Row D

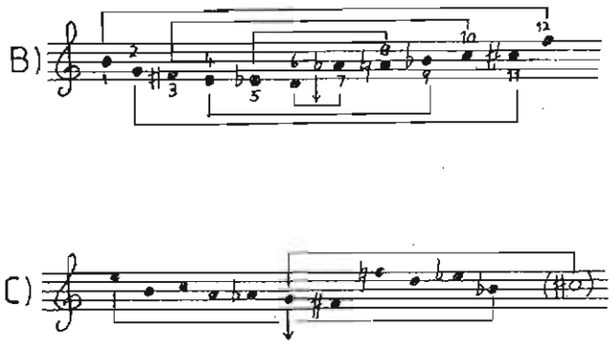


Row E



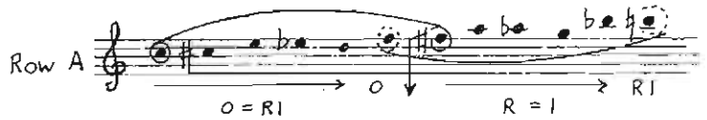
The interval of the tritone plays an important part in the work generally. The rows themselves display a complex of tritonal properties.

A) 

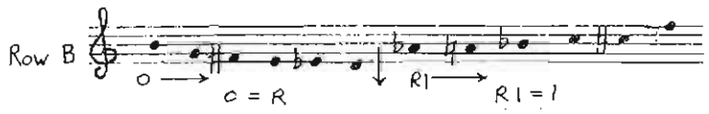


THE ROWS.

Row A is structured so that it is mirrored symmetrically about a central axis, in such a way that the second half of the row is the retrograde-inversion of the first six notes. Also, the retrograde of the row is the same as its inversion, and the retrograde-inversion the equivalent of the original version. In this way, out of the forty-eight transpositions of each version normally available, only twenty-four are left. Row A has certain peculiar properties which are exploited in Piece 7 (see notes for that piece).

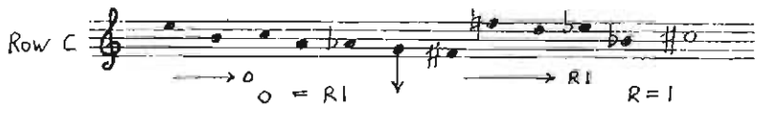


Similarly Row B is structured so that the second tetrachord is the retrograde-inversion of the first. In this case there is no retrograde version of the rows, as such. Thus twenty-four possibilities are left.



Row C is an eleven-note row (as are Rows D and E), symmetrical about a central note as the axis. The row is similar in perspective to the first two rows, and has only twenty-four transpositions. The original (prime) and retrograde versions of the row are the same as the retrograde-inversion and inversion forms respectively.

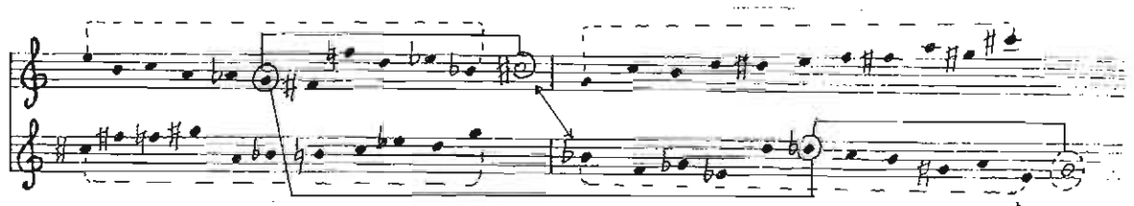
The structural formats of Rows D and E are similar to the above. For illustration see fold-out Diagram and Row Transposition Sheet.



As can be seen from the ensuing diagram, the symmetricality of the rows is another facet in the matrix of symmetrical structures which constitute the cycle.

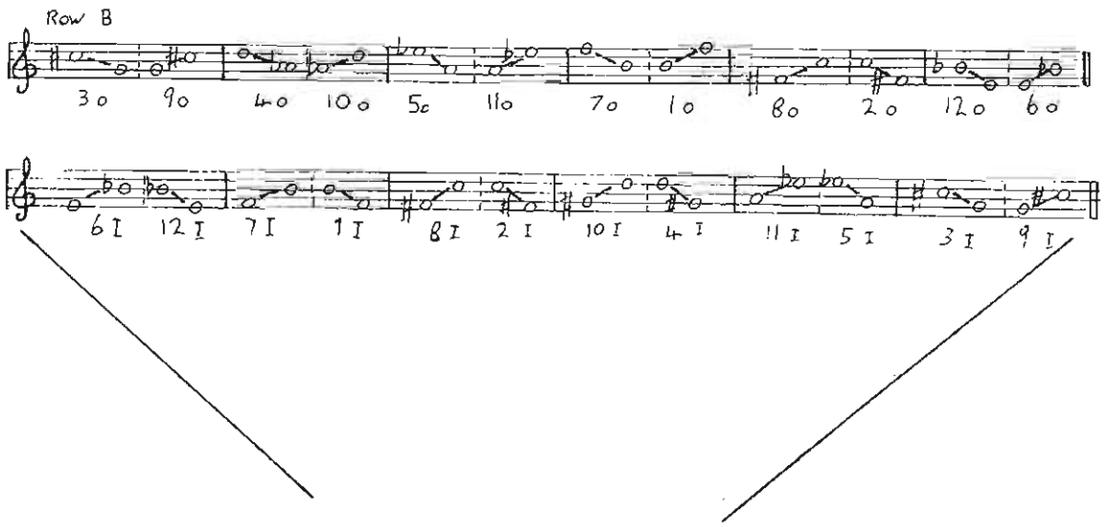
MICRO - MACRO STRUCTURE

NOTE ORDER:

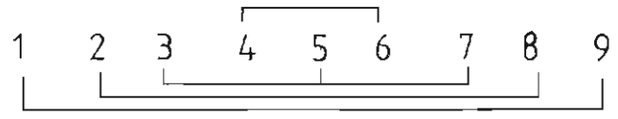


The rows are related by the tritone in the manner in which the notes C♯ - G and E - B♭ fall in place regularly within the row.

12 - TONE ROW ORDER (See also the Row Construction Sheets):



ORDER OF PIECES WITHIN THE CYCLE:



THE PIECES IN GENERAL

Each of the pieces is constructed as a mirror form. The sonata-form logic is expressed within each piece as various forms of Tryptich-paired sub-sections of row orderings. Pieces 1 - 3 form a tryptichal progression, as do 4 - 6 and 7 - 9; so that each set of three pieces expresses the same logic. However, each set also forms the separate butress of a three - part logic. The difference between sets 1 - 3, 4 - 6 and 7 - 9 is that of general thematic style and treatment of the thematic material. The first three pieces present the themes in a fragmented way - the second develop them with involved thematic investigation, and the last three pieces are of a static nature and, like pieces 1 - 3, present the material in a similar but more 'developed' way. The difference between the pieces is the difference between their thematic material. While their structures have symmetricality in common as their structural foundation, the structure differs in each piece (only) on account of the length and numbers of sections, and the treatment of the thematic material within them.

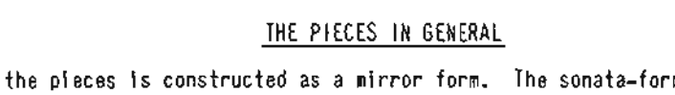
STRUCTURES OF THE PIECES DESCRIBED

PIECE 1

Piece 1 stands as a continuous non-sectional movement on its own. It acts as a mirror onto the final coda section of Piece 9 which is of a similar construction: ie. repetition of a theme. Considered as extreme points in its teleological plan, the first piece, the central climax section of Piece 5 and the final Coda section of Piece 9 carry the initial, climactic and final weight of the work.

PIECE 2

The row transposition order is arranged in an order so that the first and last notes of each row (which form a tritone interval between them) spell the notes of this transposition of the row:



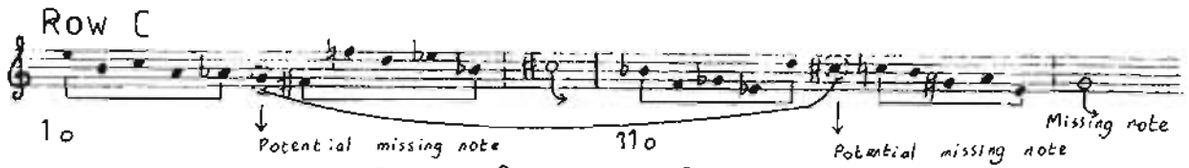
They are symmetrically planned so that these rows:

which contain the interlocked tritones C♯ - G/E - B♭ occur concentrically in the middle and outer ends of each separate 12-row system. They thus reflect the symmetrical arrangement of the row itself, and foreshadow the significance of the tone C♯ which inhabits a central point in the entire cycle as the central structural/axial climax of Piece 5.

PIECE 3

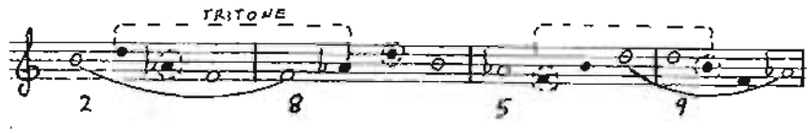
In Piece 3 the rows are ordered in pairs so that Row I o and Row II o, with the missing note complex (as explained further on in the text - Piece 5) are arranged to occur at the middle and ends of each eleven-row system. In this way the arrangement of the rows reflects the arrangement of the tritonally related arrangement of 'missing' and 'potential missing' notes within the rows themselves. In this way they are also made to stand out at certain strategic points. They foreshadow the technique of the central piece, in which these two rows, because of certain properties explained below, foreshadow the central C♯ climax of the whole work. As can be seen from the diagram below the reason why the central note axis in Row C is referred to as 'potential missing' is because it is the only other note of

the row which can be omitted and still leave the resultant ten-note row a perfectly symmetrical palindrome.



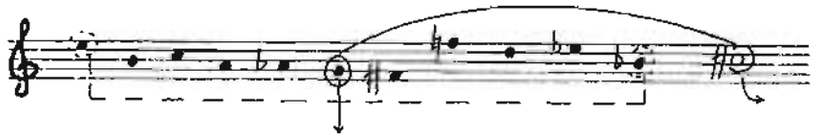
ROWS RELATED A TRITONE APART

As can be seen under these conditions the only row which can omit the C♯ and still be symmetrical around its central axis is the transposition commencing on B♭. Since Piece 5 is characterised by the absence of C♯ from every one of the rows which constitute it (until the climax section) the relationship between these rows and their ten-note symmetricality when the central G - C♯ complex is omitted renders them ideal as the only transposition orders for grouping adjacent to the central C♯ climax of Piece 5. The diagram below shows two row pairs related by the interlocking tritone method producing the diminished-seventh chord complex.

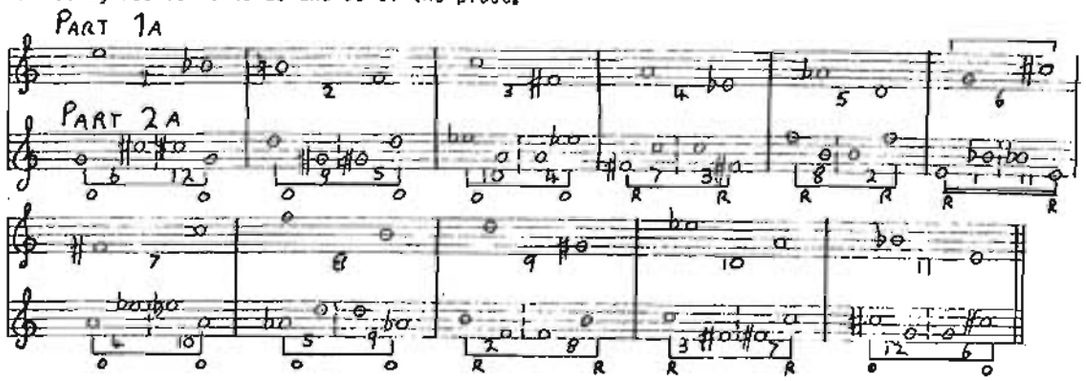


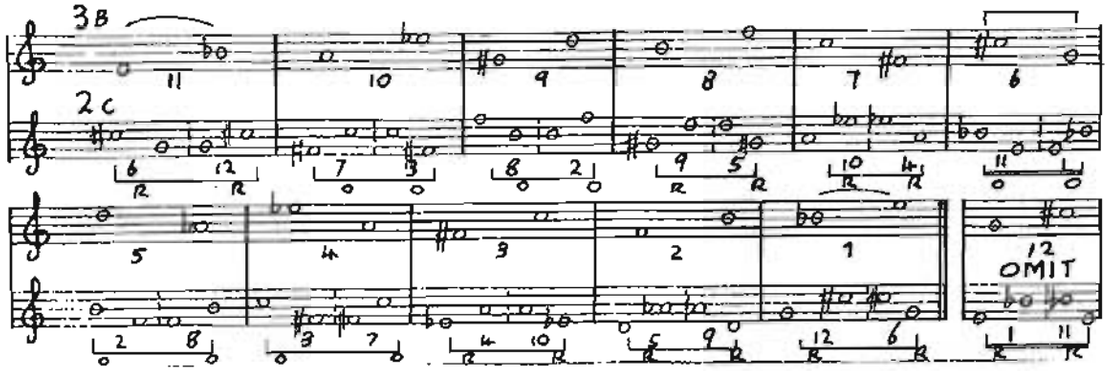
Relate this to the inherent tritonal properties of Row C itself, as a matter of comparison.

TRITONAL PROPERTIES OF ROW C



As can be seen from the illustration below there is a distinct tri-tonal cross-relationship between the eleven-row sections of Parts 1 and 2 in Piece 3. To point out, the diagram below illustrates this relationship between Part 1a and Part 2a, which subsequently are reversed in mirror fashion about the axis of the piece, and are found in retrograde as Parts 2c and 3b of the piece.

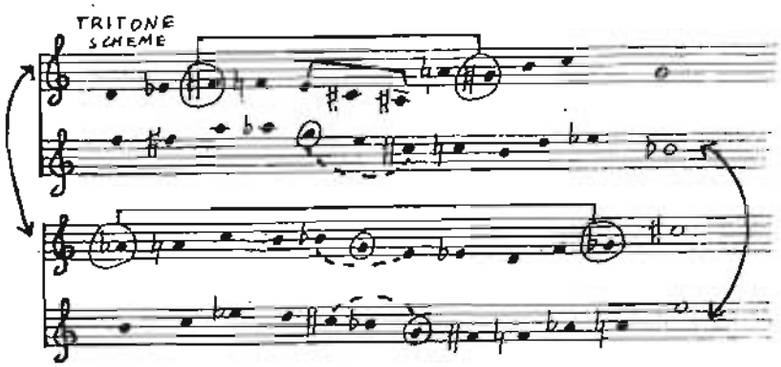




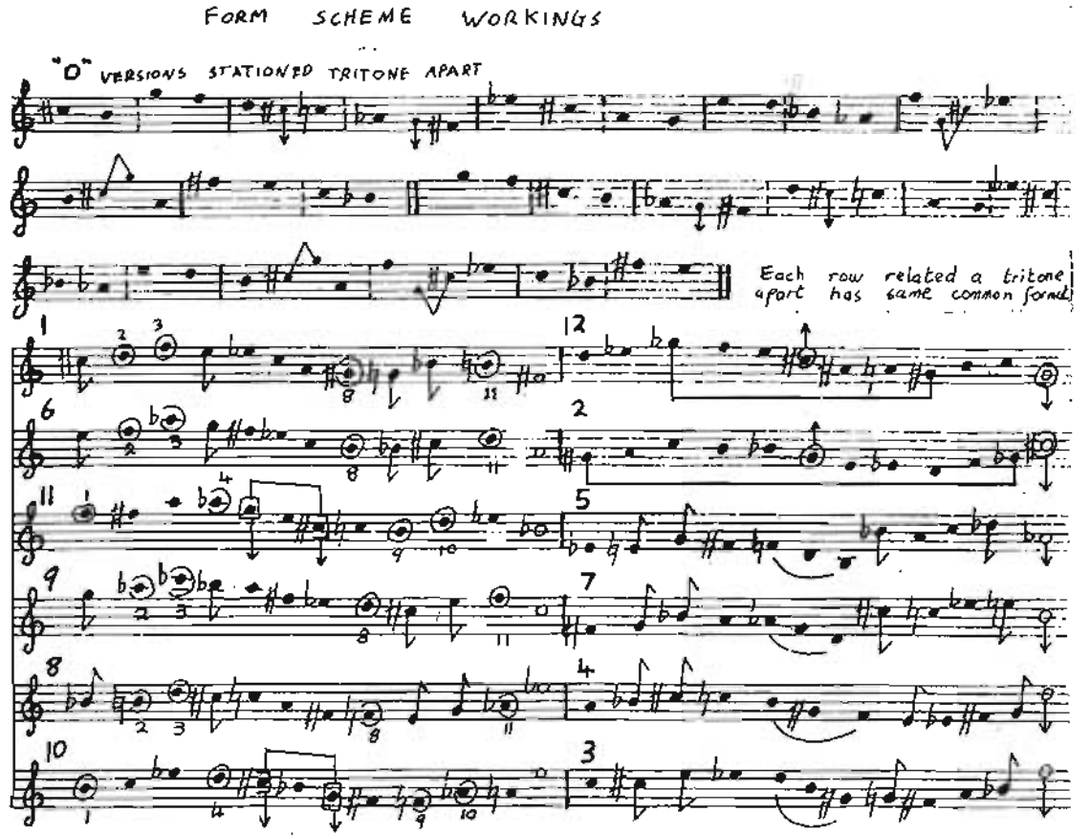
PIECE 4

The four rows with G as centre note, missing note and note as part of the tritone centre scheme of row are all situated a minor 3rd apart.

Because of its peculiar structure Piece 4 has the following characteristics. The centre of each system becomes the focal point of musical interest, (See fold-out Diagram). The first half of the piece consists of split Ia - Ib 'O' and 'R' versions of a row transposition converging from each end onto a middle in which only one transposition (No. 11) finds itself adjacent as O and R. Each of these two row systems comprising 22 rows in all are similarly placed around a central axis involving the one only occurrence of the 12th transposition of the row in its O - R adjacency. So while the O - R versions are diametrically opposed, the distance between the concentrically placed transposition halves increases from the centre of each system outwards.



A study of the row relationships within Piece 4 may be had from the list of row pairing procedures diagrammed in the table below.



PIECE 5

Piece 5 being the centre of the work and its structural pivot point is the nucleus of the developmental process of the cycle. Piece 5 combines all the elements of the first half of the cycle (Pieces I - 4) in a terse developmental process building up to the central C♯ climax of the piece. This mysterious C♯ central point is the moment after which the piece transforms the materials and process of its first part into the beginnings of what is to follow in Pieces 6 - 9.

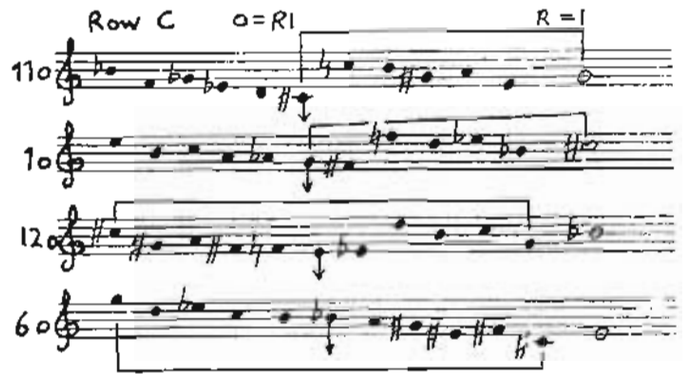
Piece 5 also reflects in its two halves the material of the pieces adjacent to it. In other words the first part of the piece deals predominantly with Theme I (as it appeared in Piece 1), the second part with Theme 2, the third part Themes I and 2 in combination, and Theme 3 in the fourth part, being the final part of the piece (coupled to the fifth part) on the opposite pole of the central axis and closely adjacent to the pieces ensuing.

For the first part of the piece Theme I predominates - the other ideas are presented in a fragmentary fashion. Part 2 is reached after the first divisionary period of tritonal material based on C♯. Here Themes I and 2 combine in a terse working-out which leads to a secondary climax onto another G♯ dominant chord at the end of Part 2a.

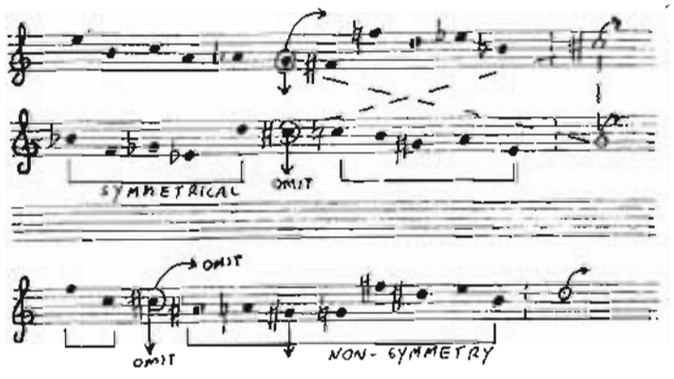
Part 2b commences with a predominantly Theme 2 development which breaks down into a kaleidoscope of Theme I - 2 fragments with Theme 3 sixths interwoven. The various timbral-

textural variated sections of Part 2 climax onto C♯ after a short silence. Part 2b presents a break-down of the thematic motor before the central section of the piece, after which they build up again and re-emerge as Theme 3 in Part 4b.

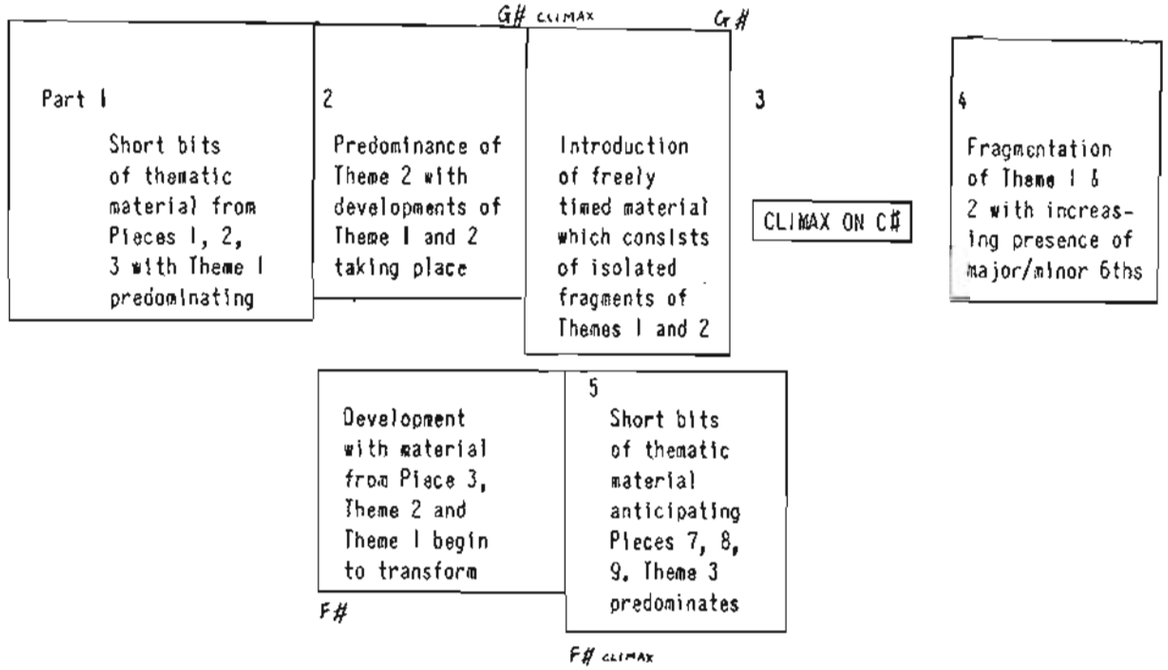
The four rows which are available as ten-tone palliendromes with both C♯ and G missing from their structure are these transpositions:



A demonstration of the symmetricality of these rows (as was explained in the notes to Piece 3) and of the asymmetricality of the other transpositions is illustrated below. The logic behind the choice of the above four transpositions of Row C as the axial and polar points of each row order structural section (see Structure Chart for Piece 5) is explained in the notes to Piece 3. These 10 - note symmetrical rows are the only transpositions placed around the central C♯ climax, this adjacency symbolizing the multiple axial function of the central section which they attend. Also the occurrence of these balanced rows (in a piece based on asymmetrical rows) at axial positions and at its centre symbolizes the use of symmetrical structure in the work generally.

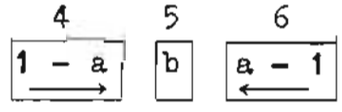


The piece forms a free mirror-structure:



PIECE 6

Piece 6 reverses the row structure ordering in Piece 4, so that they are also adjacent with tritonal correspondences, but in the order of retrogradation. In this way Piece 6 becomes the recipricol or dipolar member of Piece 4 because of its structure. (See fold-out Diagram for synopsis of structural Form Scheme).



Pieces 4 and 6 Considered Together

The structure of the rows and of these two pieces reflect the various levels of the integral structural symmetry of the work as a whole. The manner in which Pieces 4 and 6 relate to each other and to Piece 5 (as polar points and symmetrical axis) is mirrored microcosmically by the fashion in the 11-tone rows for these pieces are structured, and themselves related to each other:

PIECE 7

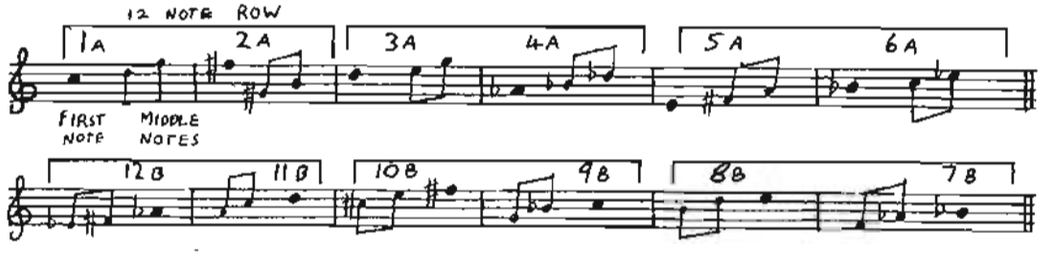
Piece 7 is based non-variable hexachordal segments and row-derived symmetrical cell motivs. The six-tone segments are paired about the tritone (0 - R, 0 - I, 0 - RI etc.) so as to form complete 12-tone formats from the pairs. Towards the centre of the piece 12-tone cycle repetition does not break down when smaller segmental units (three notes, two notes) are used - 12-tone integrity is maintained throughout.

The piece starts with complete 12-tone row structures based on the hexachordal segments of the original A row. Towards the centre of the piece the larger then smaller symmetrical component units of the row are extracted for a hybrid type of 12-tone row treatment.

To express the mystic value of the number 7, Prisms is construed as a perfectly formed mirror piece, its first half reversable about a central axis, in time and as a structure.

The first version of Piece 7 breaks down and reveals the inherent row mirror-structure even more directly in the music than the second, as though breaking down the components of white light through a prism. It is "prismated" in that the musical material itself 'reveals' the mirror symmetries of the row structures on which it is based.

The two groups (row "a" and "b" halves) converge towards the centre. Each first note of each group half related in pairs are a tritone apart. Each different group pair equals a separate 12-tone row. The first notes of each pair of each transposition order (ie. rows 1 - 6, and 7 - 12) form each of the two whole-tone scales for each separate group. Thus the two groups converge on two whole-tone scales in the centre of the piece, as illustrated below:



Like the breakdown of white light Piece 7 is a series of variations on the principle motif, revealing it in its different constituent colours or modes.

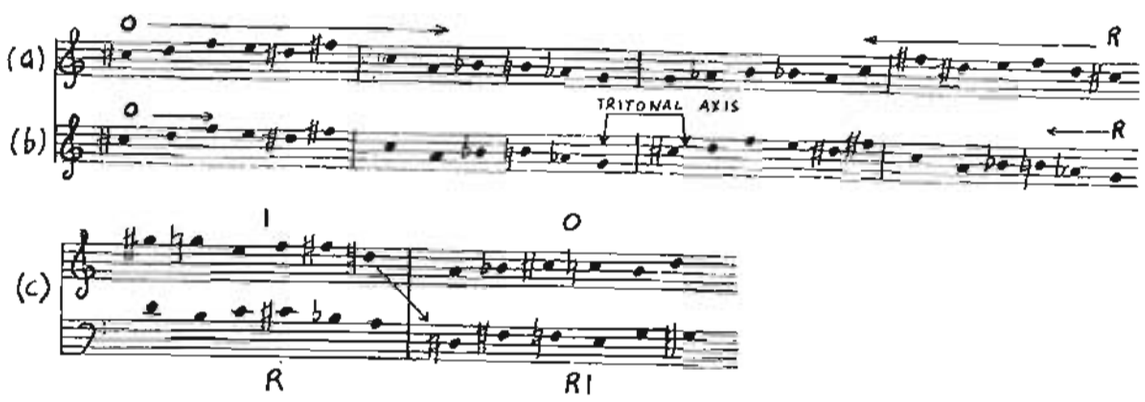
The symmetrical figure at the centre of each row is cut in half and points towards the centre part of the piece which is built up exclusively around it. The first half is mirrored by the second sets of first hexachords, which pair off by the tri-tone (to create 12-tone structures) are mirrored by set of second hexachords similarly arranged on the other side of the central pivot section. The rows thus converge and are fragmented gradually onto a central point from whence they diverge and re-assemble into the complete Row A-derived hexachordal row forms again. The different mirror permutations are arranged, in both versions of the piece, in concentric sub-structures. Refer to the Row Order Construction Sheets for a full illustration of this.

Generally the row structures and orders in the piece reflect two principles:

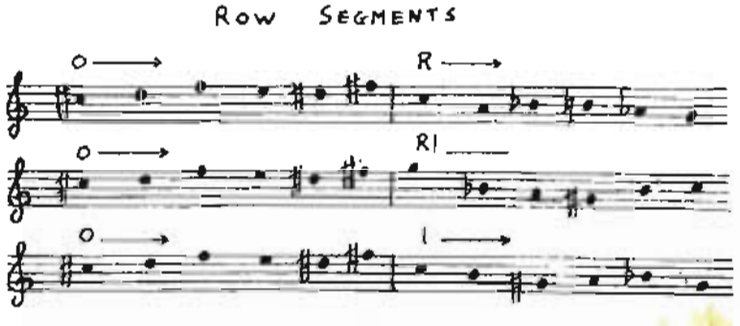
(a) Mirrored around a central note-axis or

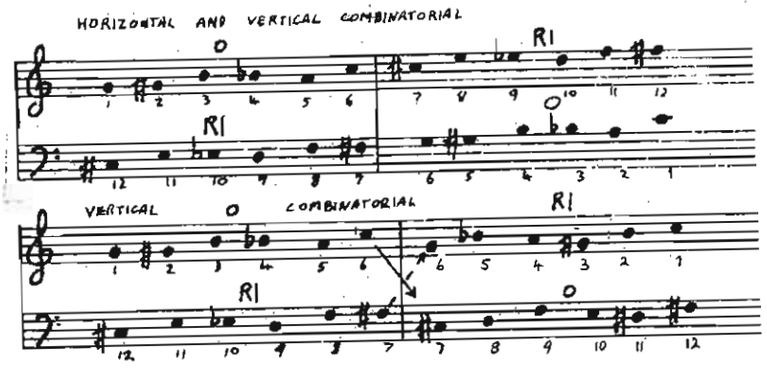
(b) Mirrored transpositionally around the tri-tone

(c) Displays a complete 4 hexachordal mirror-structure scheme.

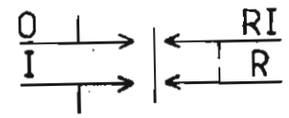


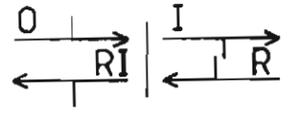
COMBINATORIALITY



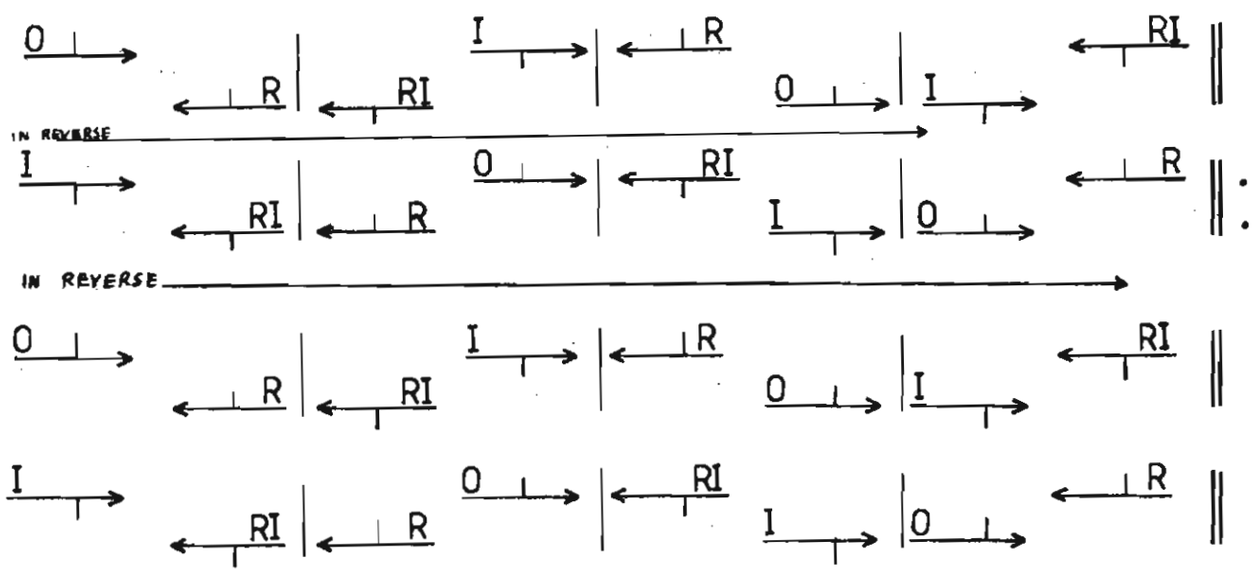


O →, I →, R ←, RI ← = 6 note segment



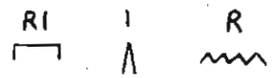


ROW SEGMENT COMBINATORIAL POSSIBILITIES

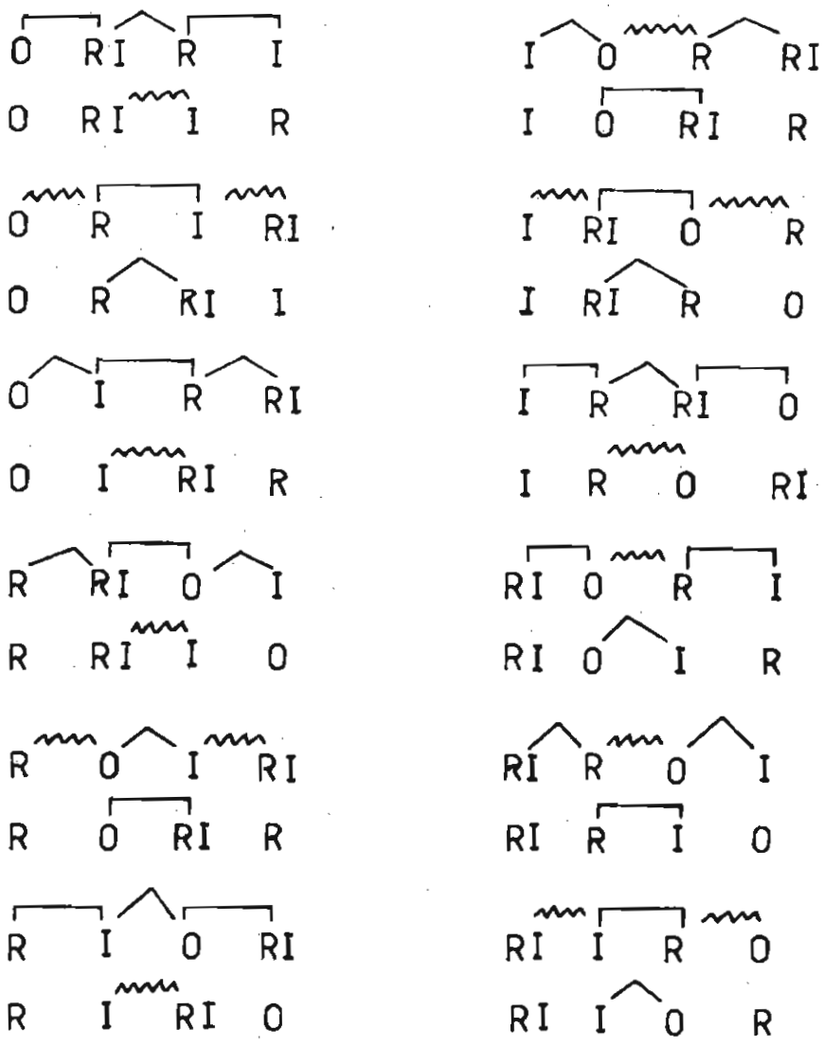


ROW SEGMENT COMBINATORIAL

Possibilities:

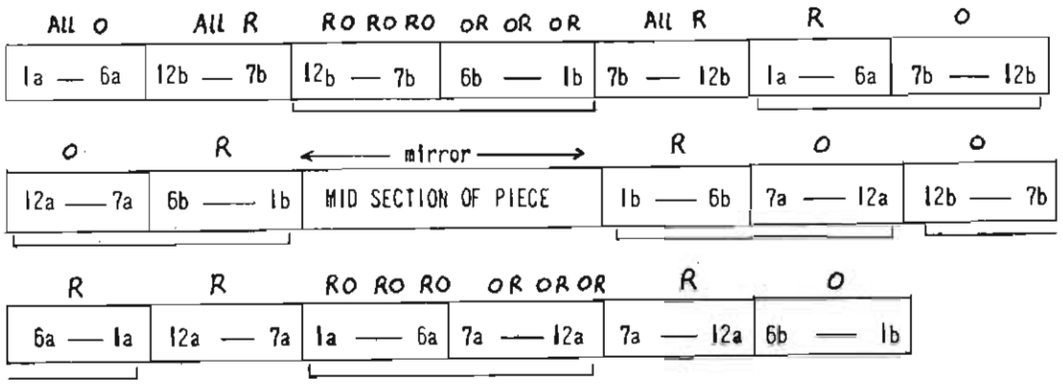


COMBINATORIAL RELATIONSHIPS OF SEGMENTS



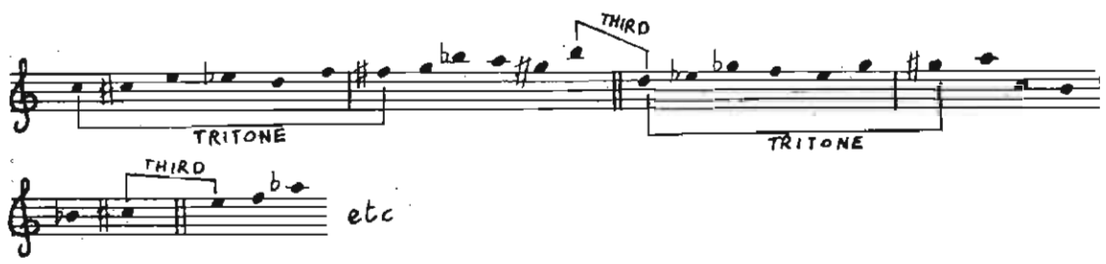
A complete synopsis of the row construction procedures used in Piece 7 follows:

Arrangement of variable row halves (hexachordal segments)



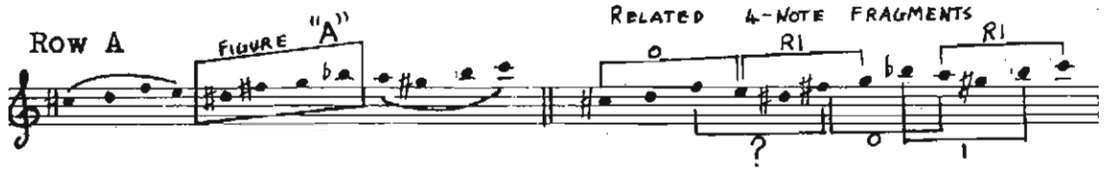
HEXACHORDAL SEGMENTS:

TRITONE PAIRING (in 12-tone stricture)



MID-SECTION

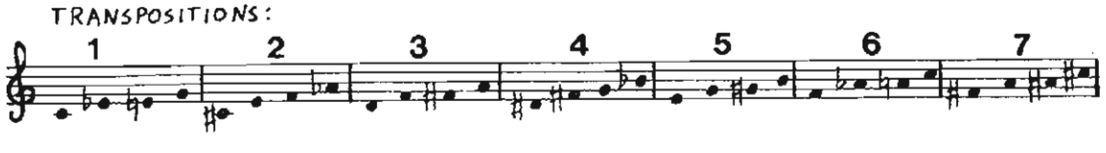
Structures derived from middle symmetrical motif of Row A



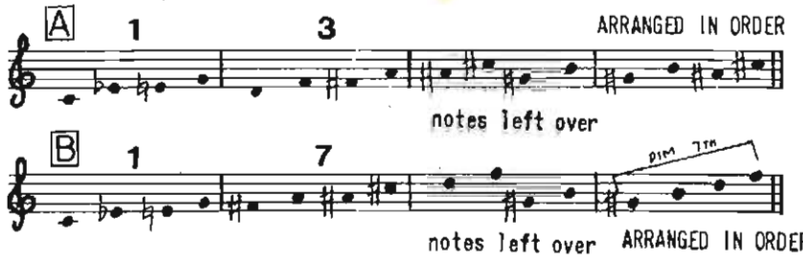
SEGMENTATION OF ROW

TETRACHORDAL SEGMENTS:

Employment of Figure "A" within 12-tone stricture



COMBINATION OF TRANSPOSITIONS IN SETS OF TWO. (Refer to Row Order Construction Sheets)

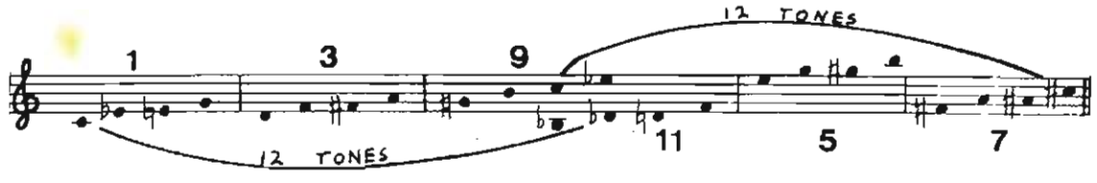


Symmetrical 4-note figure paired combination

Symmetrical 4-note figure paired combination

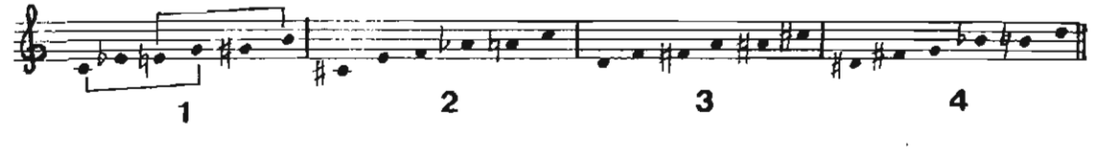
COMBINATION POSSIBILITIES

A		B	
1 - 3	8 - 10	1 - 7	6 - 12
2 - 4	9 - 11	2 - 8	7 - 1
3 - 5	10 - 12	3 - 9	CYCLE REPEATS
4 - 6	11 - 1	4 - 10	
5 - 7	12 - 2	5 - 11	
6 - 8			
7 - 9			



OVERLAPPING 4-NOTE FIGURE PAIRS

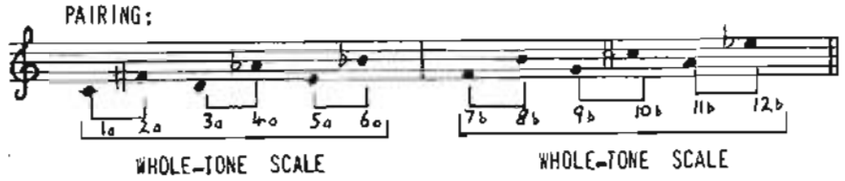
HEXACHORDAL SEGMENTS:

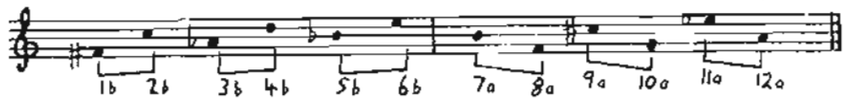


PAIRING:

DERIVATION OF WHOLE-TONE SCALE FROM FIRST NOTES OF ROW HALVES AS PAIRED IN TRITONES

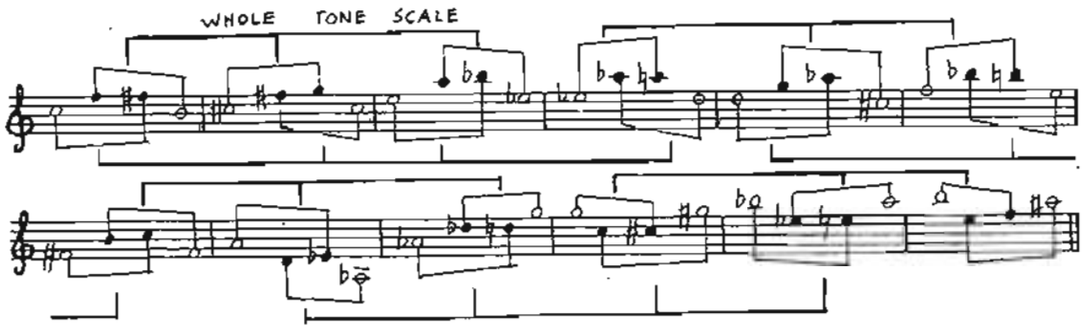
PAIRING:



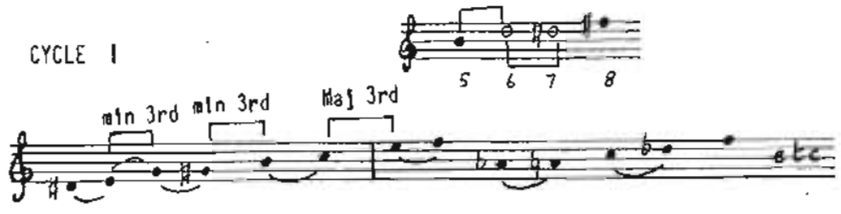


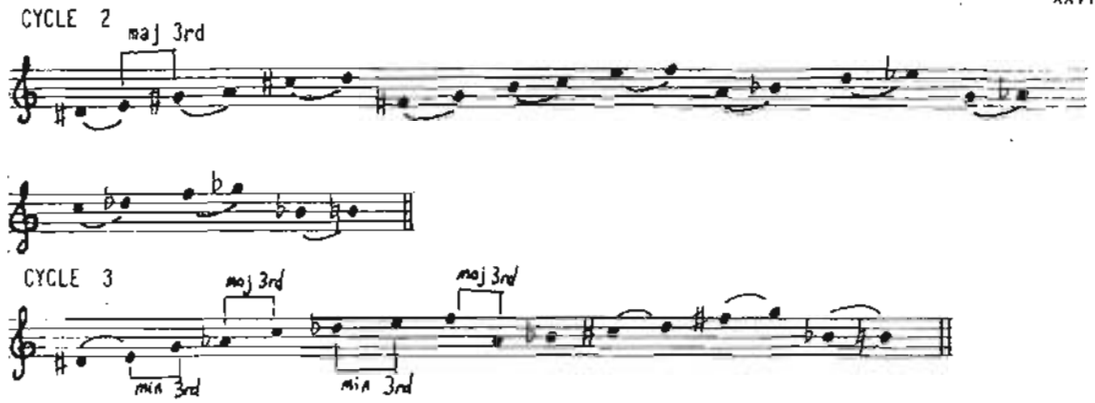
BOTH OUTER AND INNER NOTES OF ROW ONLY: ORDERED SO THAT FIRST NOTE OF EACH TRANSPOSITION SPELLS ROW "A".

TETRACHORDAL SEGMENTS:



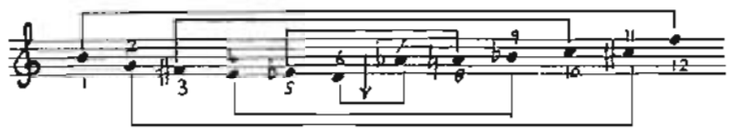
CONSTRUCTIONS USING MIDDLE 2-NOTE UNIT OF ROW



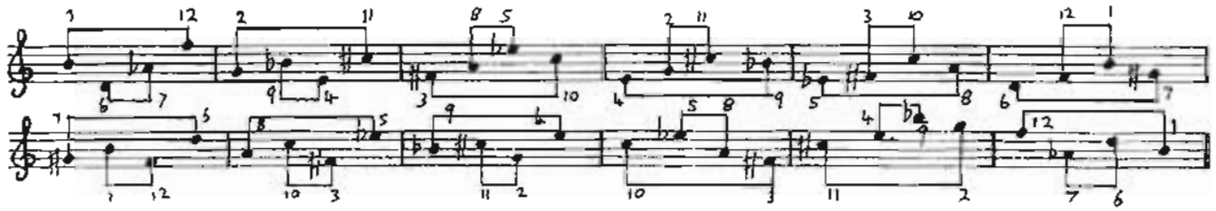


PIECE 8

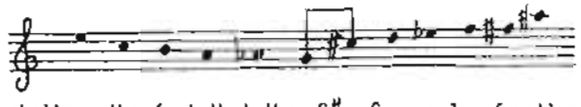
Row 8 has certain tritonal properties:



As can be seen the tritones occur concentrically within the row. This forms the basis from which the logic of the structure of Piece 8 (and earlier of Piece 2 based on Row B) is derived. The mid-section, for instance, is based entirely on tritonal segmentation.



As can be seen in the illustration above the sequence of diminished chords resulting is retrogradable about a central axis, as is the order of inner and outer number combinations. Each bar also represents the outer and middle two notes of a row which coincidentally spells out the row transposition order based on the spelling of the original row. The piece is based on this row transposition:



This symbolizes the fact that the C♯ - G complex functions primarily in the centre of Piece 8 , and not at the outer ends of systems as it does in the reciprically related movement, Piece 2. Examination of the Row Order Construction Sheet for Piece 8 will reveal the exclusive use of the significant C♯ - G tritone as a constructional measure for the central section of the piece.

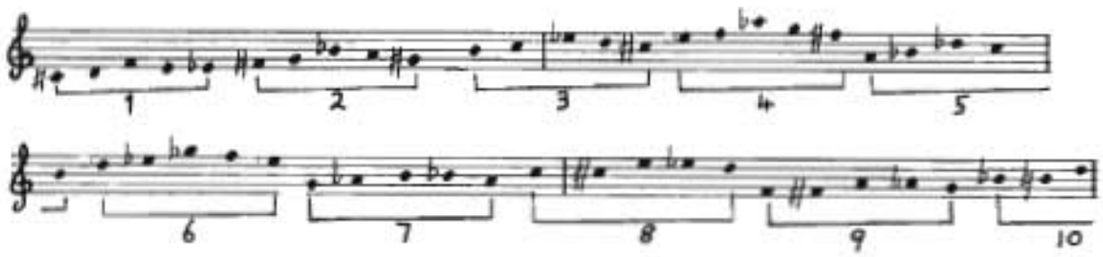
Piece 2 combines both rows in their O - R and I - IR versions. In Piece 8 the rows with first and last notes C♯ - G are central in each row order system, while those with central notes 6 - 7 as C♯ - G are at the outer ends of each system. Piece 2 follows an opposite plan, being reciprically related and based on:

PIECE 9

Piece 9 is constructed from a perpetual sequence of a five-note pattern derived from Row A and arranged so that after twelve repetitions of the five-note unit the cycle begins again, covering five repetitions of a twelve-note cycle (sixty notes) in which no pitch class is repeated, thus forming five separate 12-tone rows. This entire cycle repeated nine times constitutes the formal scheme of Piece 9.

There are a number of feature in this structure from which each section of the piece derives enabling it to be modelled more or less on the structure of the corresponding piece which it miniatures.

(a) The five-note pattern, if continued at regular intervals, eventually returns to the start of the sixty-note cycle. It begins on a penta-chordal segment starting on C♯:

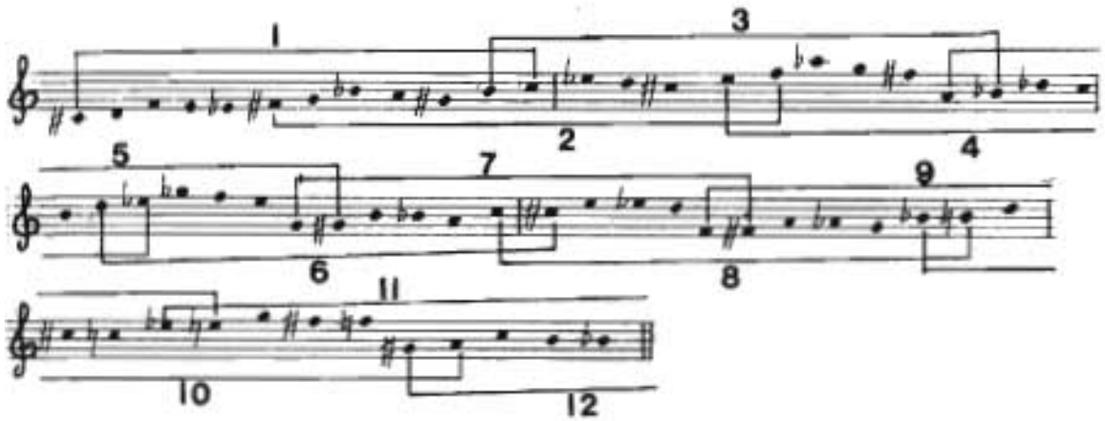


First 5 notes of Row A in continuous sequence

Sequence repeated twelve times

(b) From this cycle can be derived the series of twelve transpositions of the prime version of the row present in an overlapping fashion within the greater sixty-note series.

CONTINUOUS SEGMENT: OVERLAPPING ROWS



Stated as the constructional principle, segmental row-ordering for the last piece in the cycle thus symbolizes the state of continuity out of which the dialectic reasoning and mirror-symmetrical structuring form themselves. The synopsis of the last movement structure presented above is meant to reveal the feeling of continuity and symmetrical balance that this pianoforte cycle tries to attain in respect to its programme.

Each of the nine sections of Piece 9 is meant to represent in miniature a reminescence of each of the 9 pieces of the cycle in turn. Piece 9, the culminating movement, is meant to present an overview in miniature of the entire cycle and its logic and balance in itself. Each of the nine sections models the ordering of its 12 pentachords in a fashion corresponding to the structure of the piece it corresponds to in number and feeling. The last section of this piece consists of three repetitions of the sixty-note cycle (five rows) making fifteen rows in all, symbolizing the Trilogy - three times five equals six; sixty notes times three equals 180 notes equals 9 (digital addition). Nine is three times three - the ultimate Tryptichal balance. The last section of Piece 9 is meant to be the final statement of balance and Numerological value in the cycle, and besides the fact that it points back to the beginning of the work (consisting simply of repetitions of a theme as does Piece 1) it carries the final statement of the thematic progress throughout the entire cycle.

An anagram of the digital-tryptichal aspect of Piece 9's construction scheme follows:

5 rows per cycle = 60 notes
12 cycles = 60 rows
6

12 cycles of series
12 pentachords per cycle = 144 pentachords
9

60 notes per cycle
12 cycles = 720 notes
9

12 pentachords per cycle = 3 (digital addition)
12 notes per row = 3
12 cycles of 5 pentachords = 3
9

In the course of the above Analytical Programme Notes refer to the Row Order Construction Sheets.

Ian Solomon

IAN SOLOMON,
DURBAN, 1981.

Row Transposition Tables

Row A

o = RI

I = R

1 A B B A

9

3

11

5

8

2

10

4

12

6

7

Row B

o = R

I = RI

1 A B C D

2

3

4

5

6

7

8

9

10

11

12

Row C

o = RI

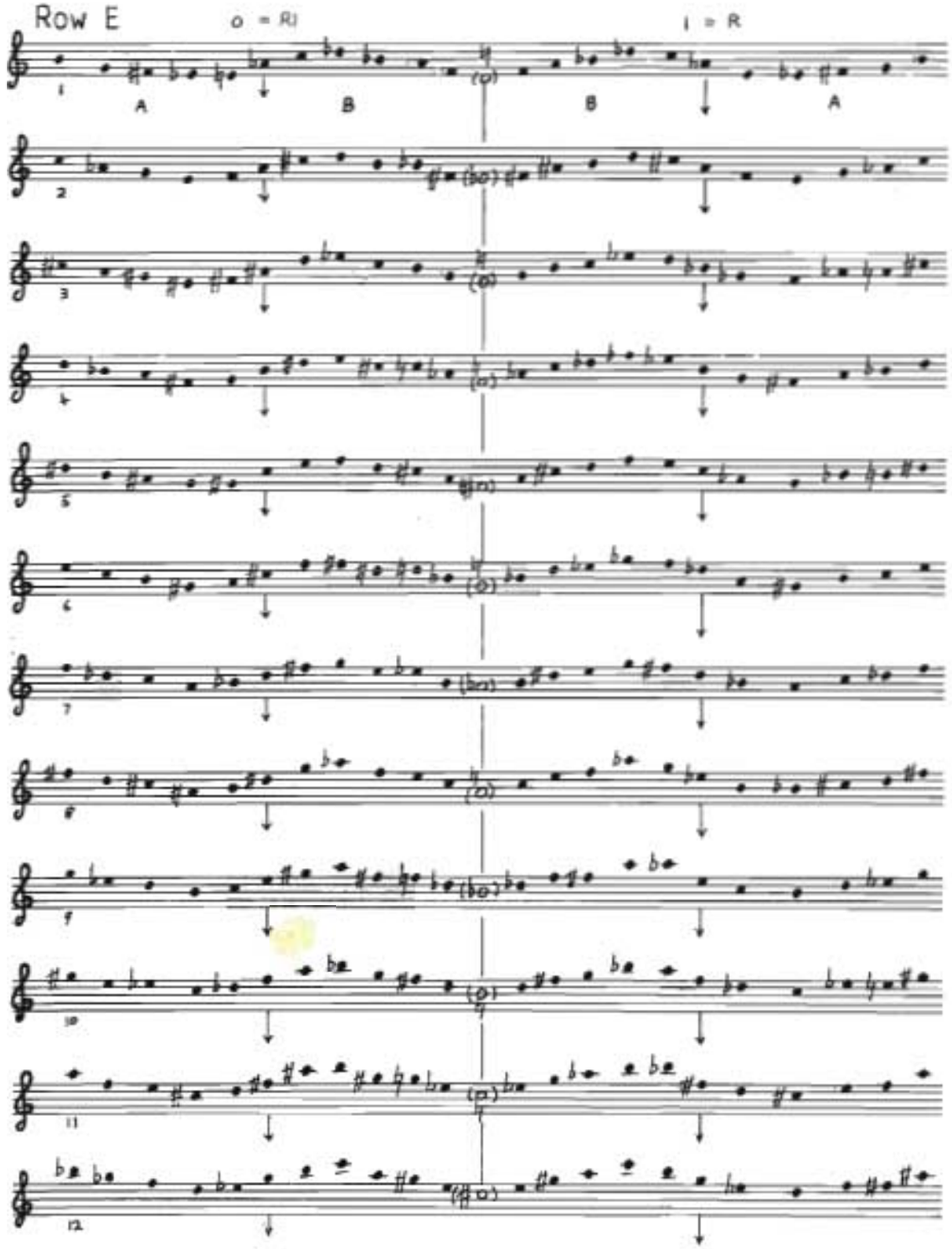
I = R

Row D

o = RI

I = R

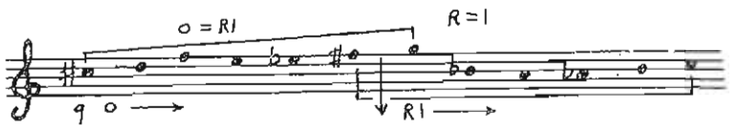
ROW E

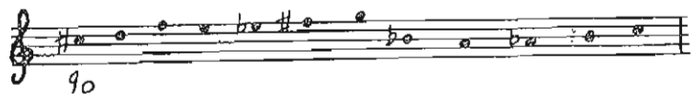


Row Order Construction Sheets

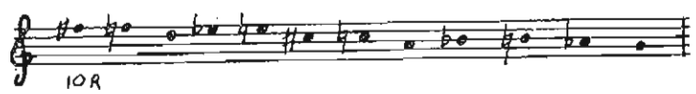
1

Row A

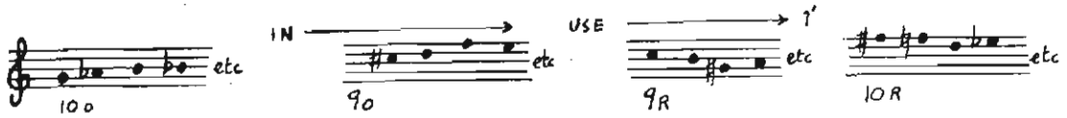




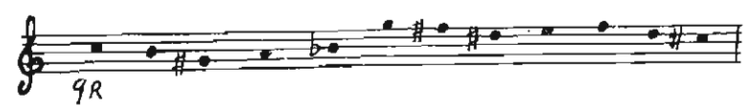
IN USE ½'



IN USE ½'



IN USE ½'

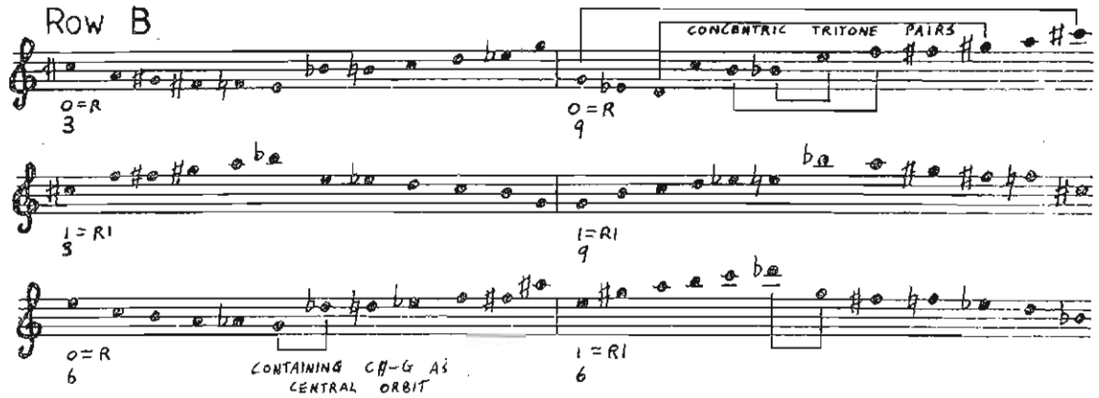


IN USE ½'

NB. When theme 1 appears it may or may not have a full or part connection with the row structure in use at any moment.

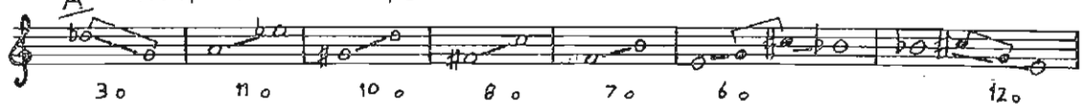
2

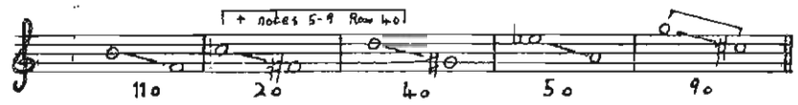
Row B



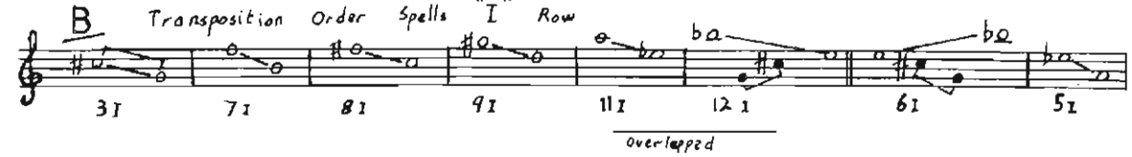
Part 1

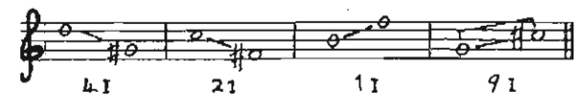
A Transposition Order Spells "O" Row



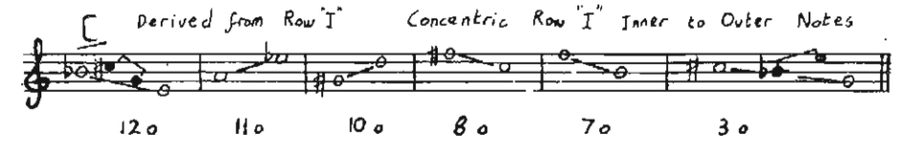


B Transposition Order Spells "I" Row

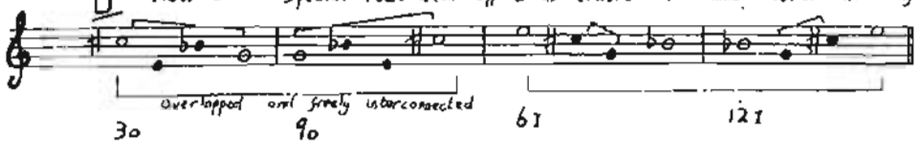




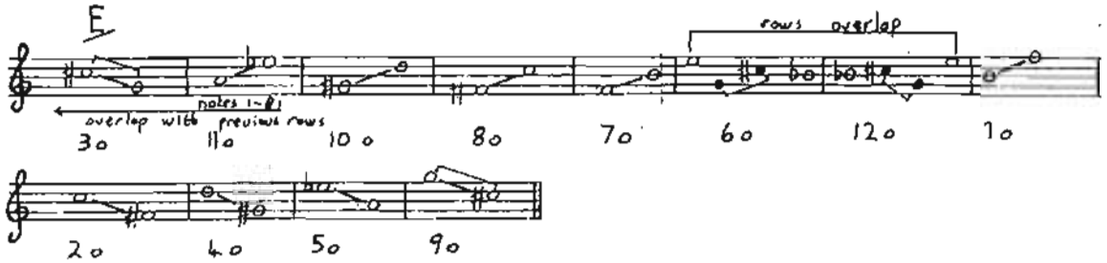
C Derived from Row "I" Concentric Row "I" Inner to Outer Notes



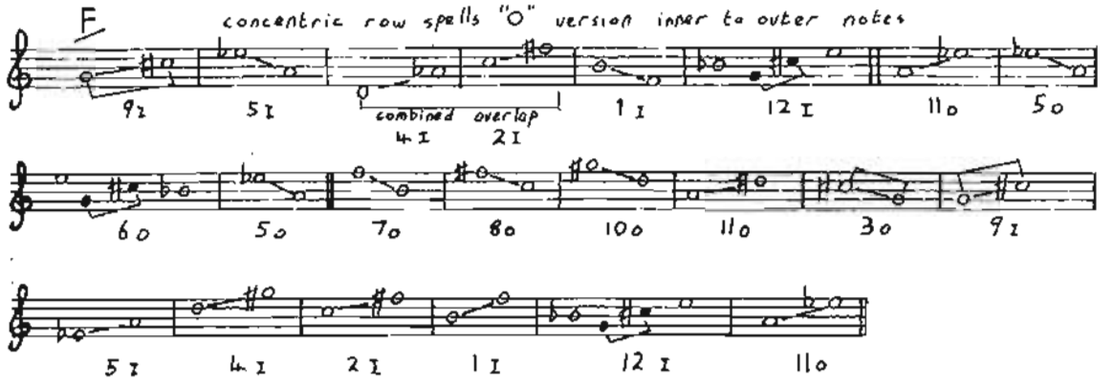
D Row "O" special rows with c♯–G as centre or inner–outer notes of row.



E

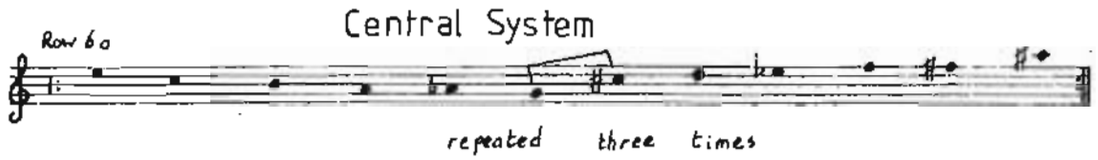


F concentric row spells "O" version inner to outer notes

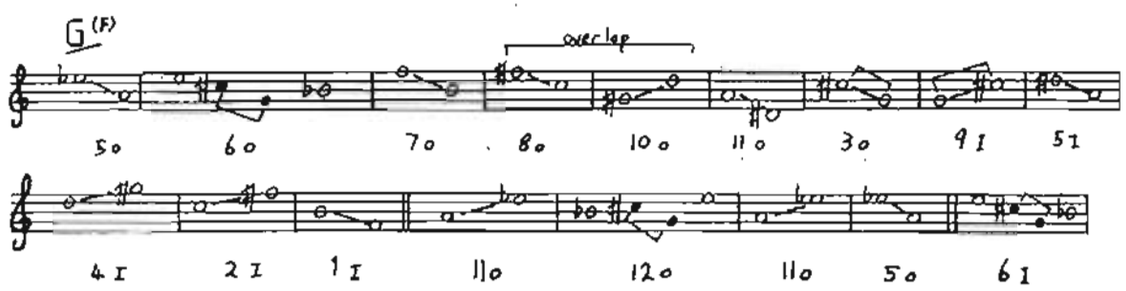


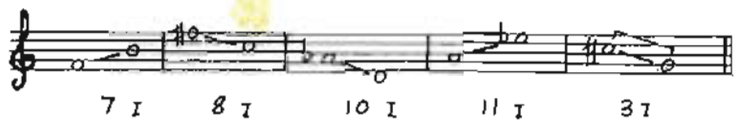
Part 2

Central System

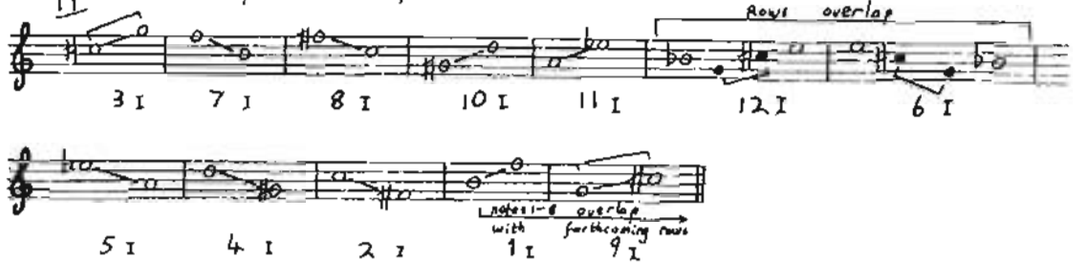


G (F)





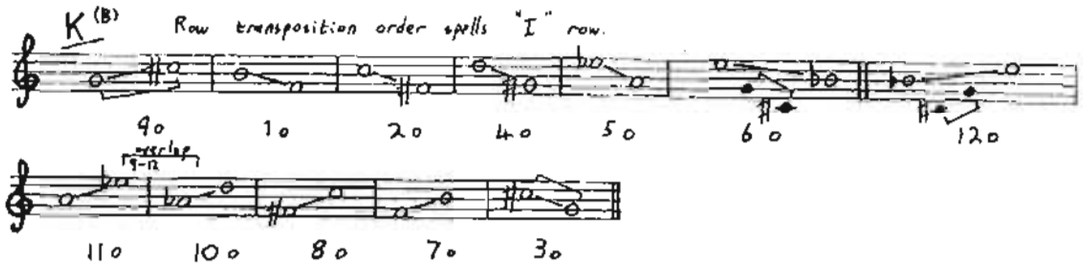
H (E) Row transposition order spells "I"



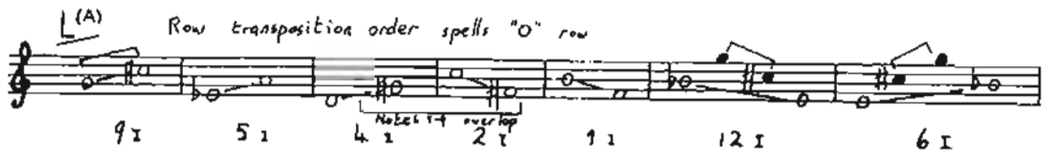
I (D)

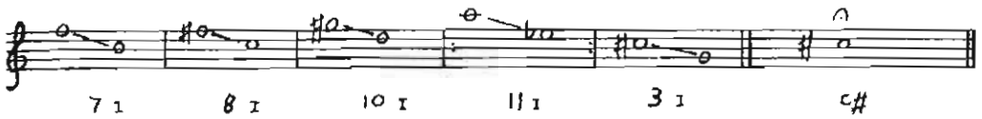
J (C) Derived from row "I"

K (B) Row transposition order spells "I" row.



L (A) Row transposition order spells "O" row





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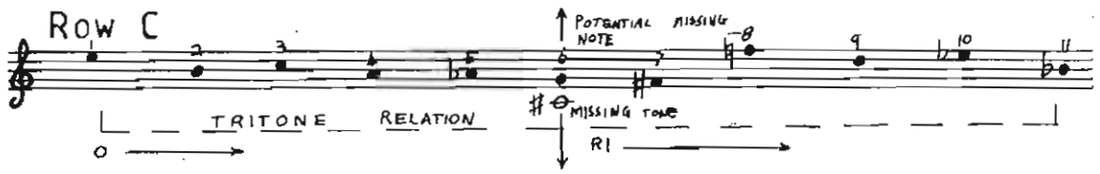
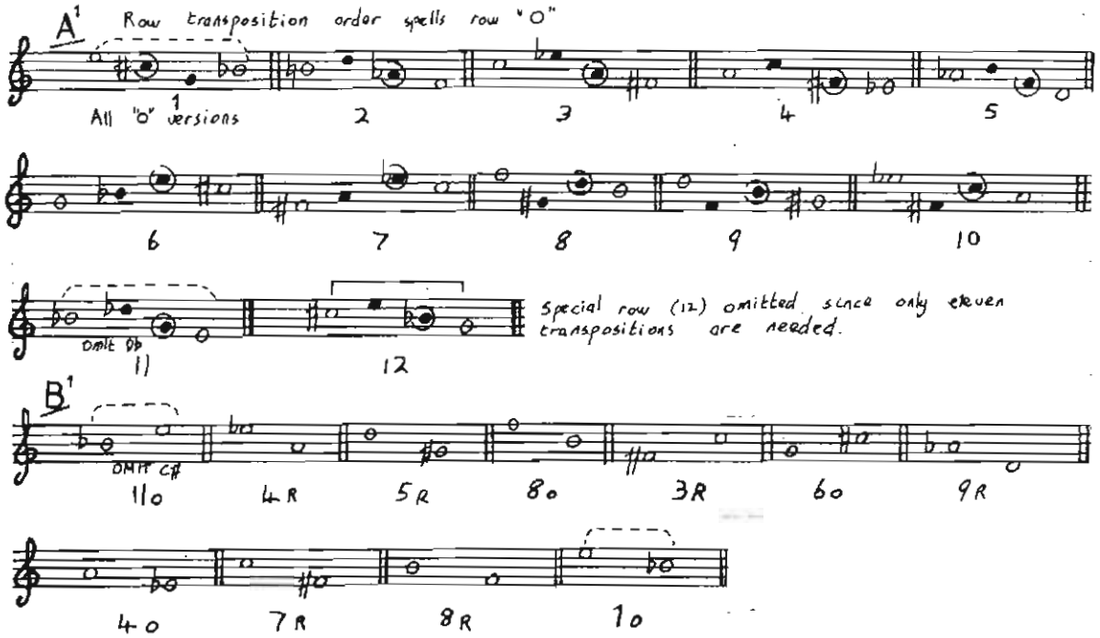


Part 1

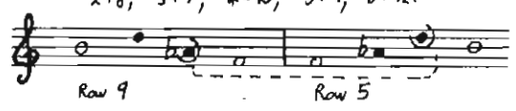


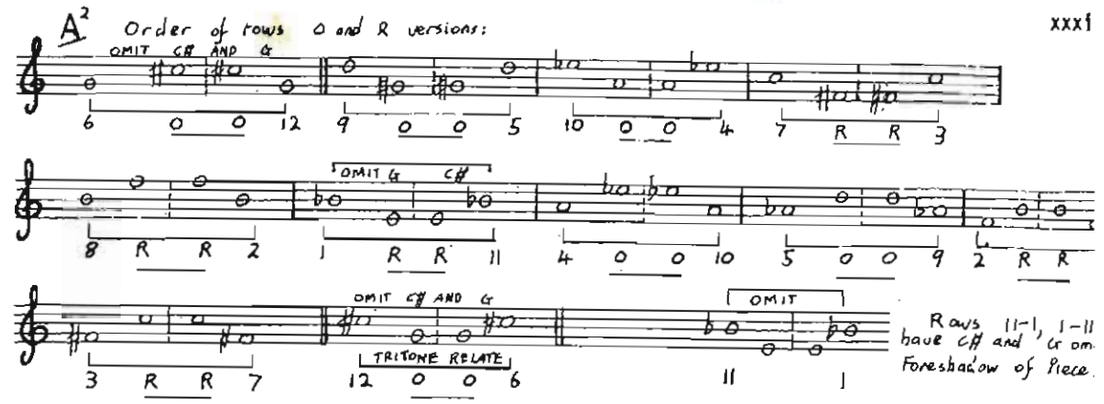
Part 2

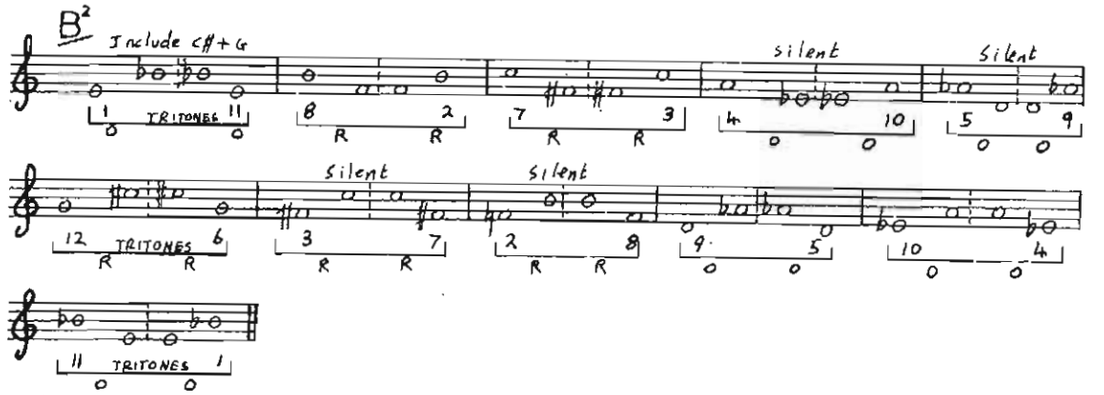
Symmetrical figure motif.

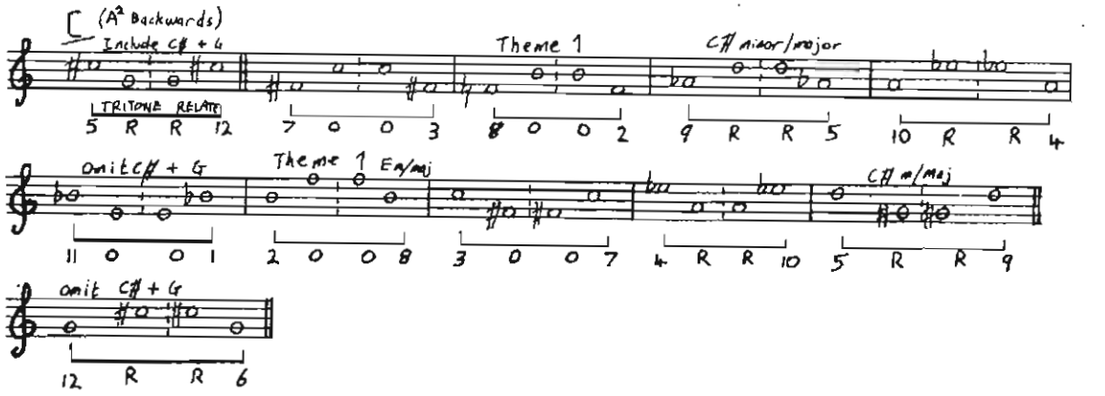
Rows IN PAIRS: RELATED A TRITONE APART. Transposition order of rows spells row. Rows which relate directly by tritone, begin and end on same two notes in inverse fashion. That is: 1+11, 2+8, 3+7, 4+10, 5+9, 6+12.

Rows are paired a tritone apart.

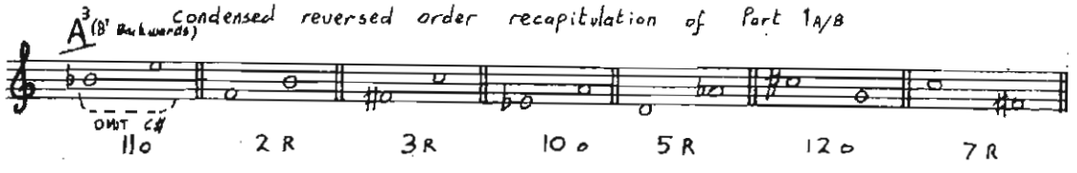


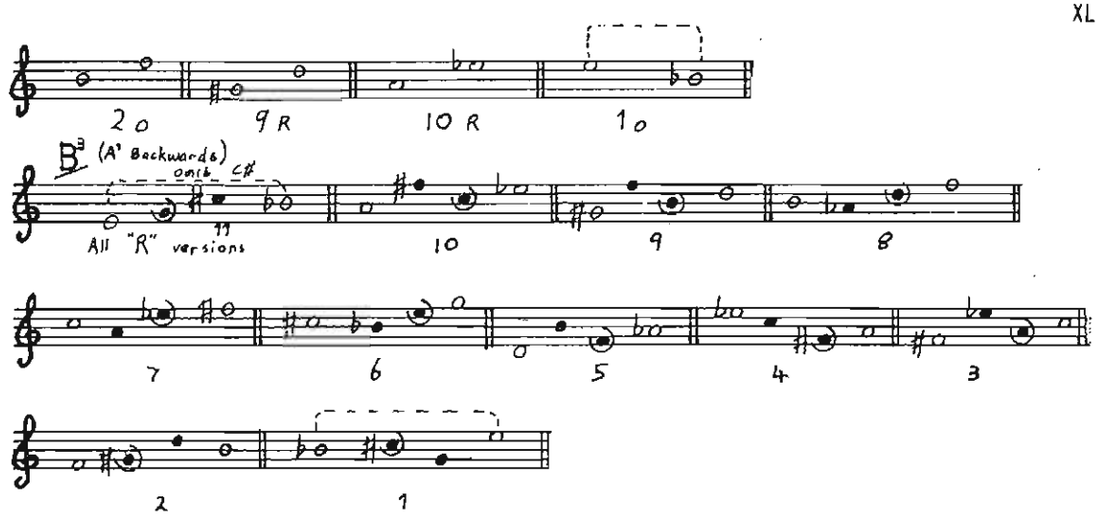






Part 3





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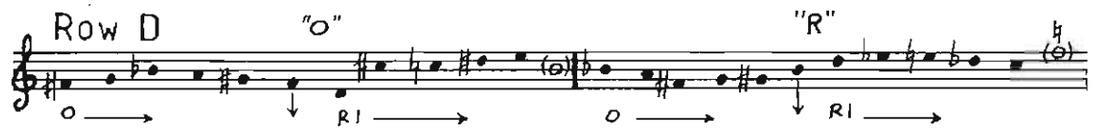
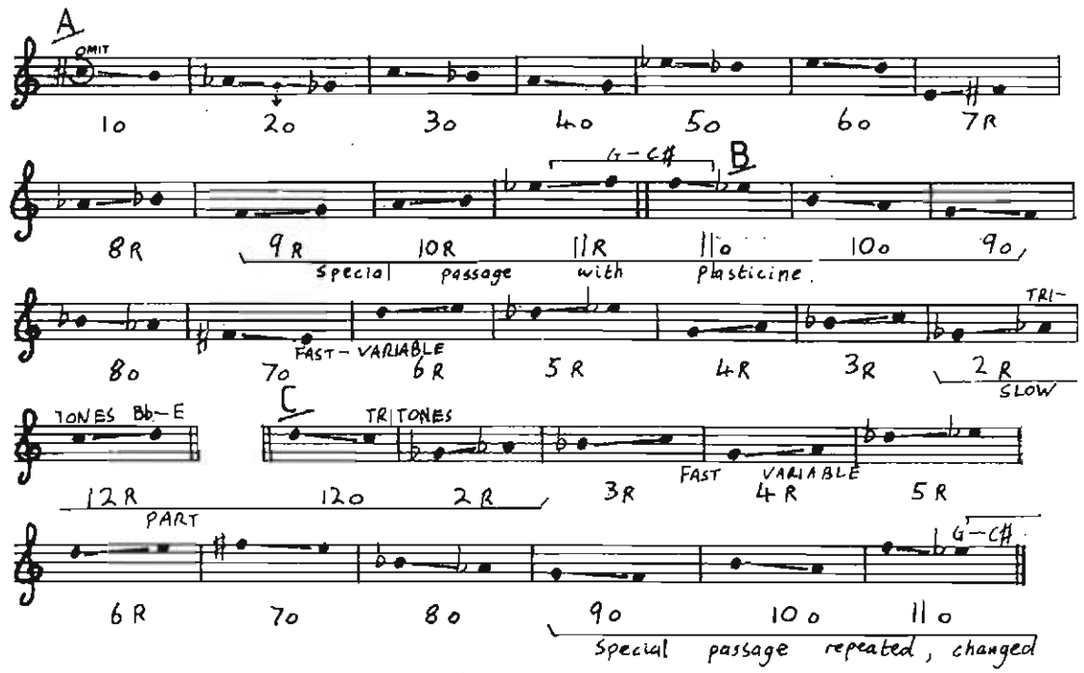
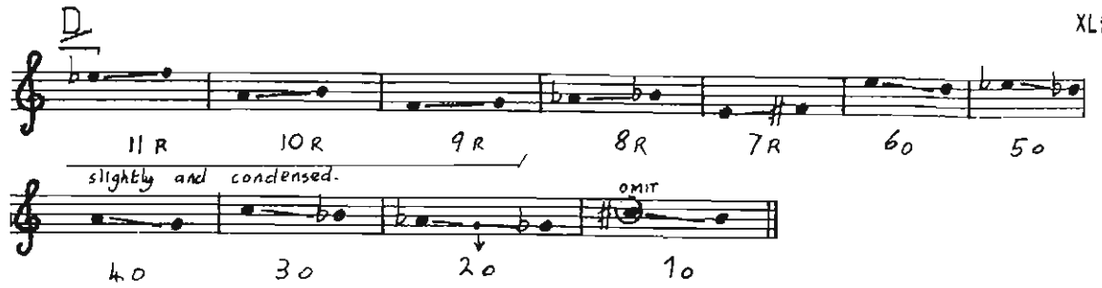


In Four Sections





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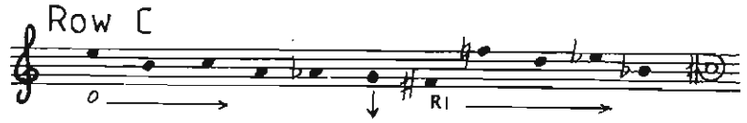
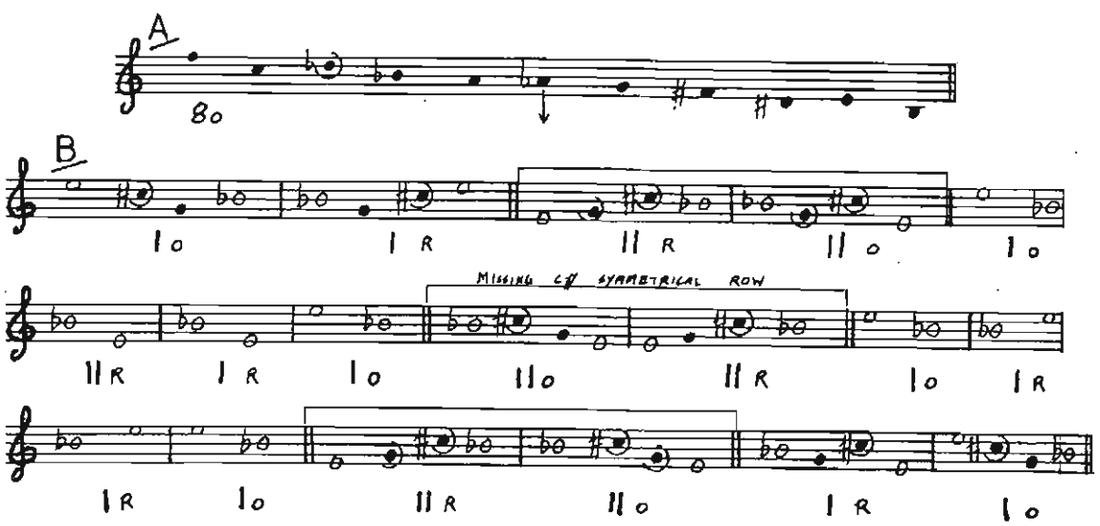
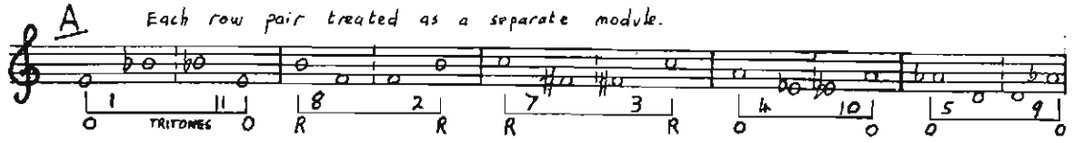


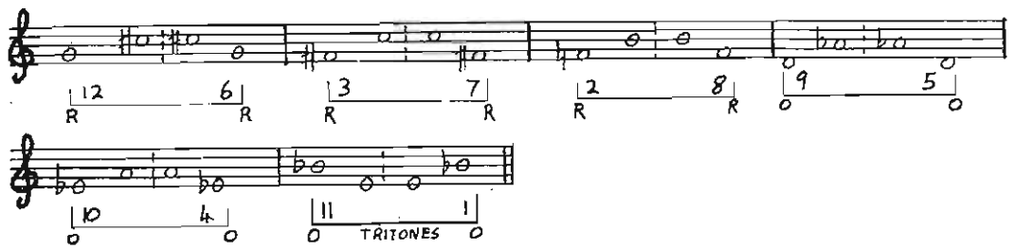
MISSING NOTE COMPLEX C♯ is omitted from each row until its separate, isolated occurrence at the structural centre of the piece. The tritonal relationship between missing and middle note, first and last notes of the row is exploited.

Part 1



Part 2

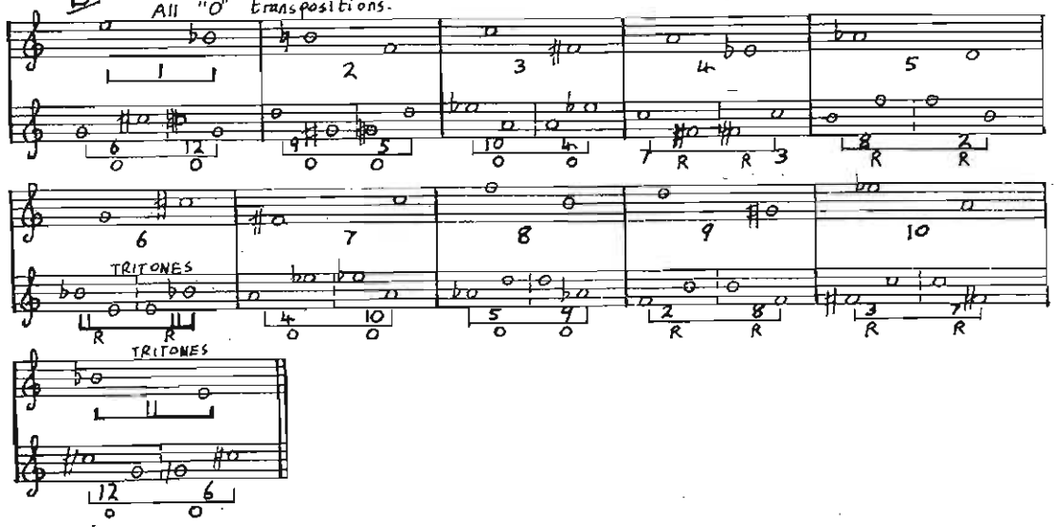




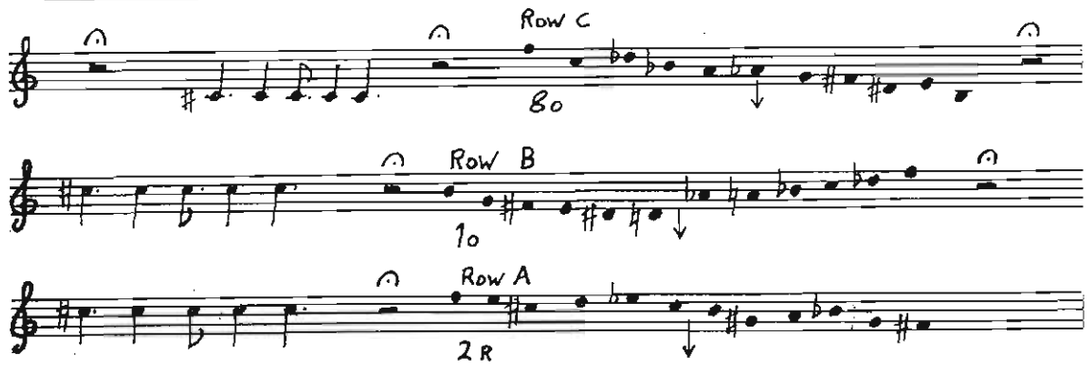
B

Derived by combining row sets from Piece 3 — PARTS 1A – 2A' → 2A, 3B♭ – 2C → 4B PIECE 5

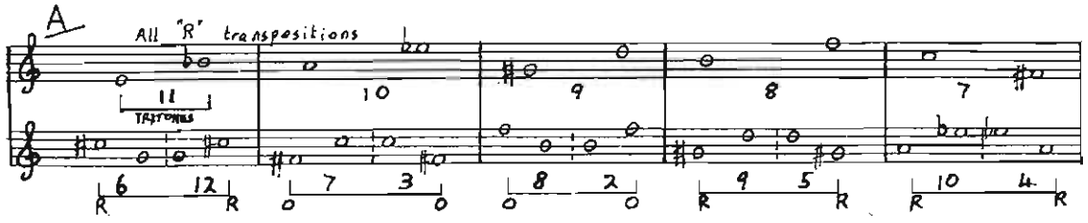
All "O" transpositions.

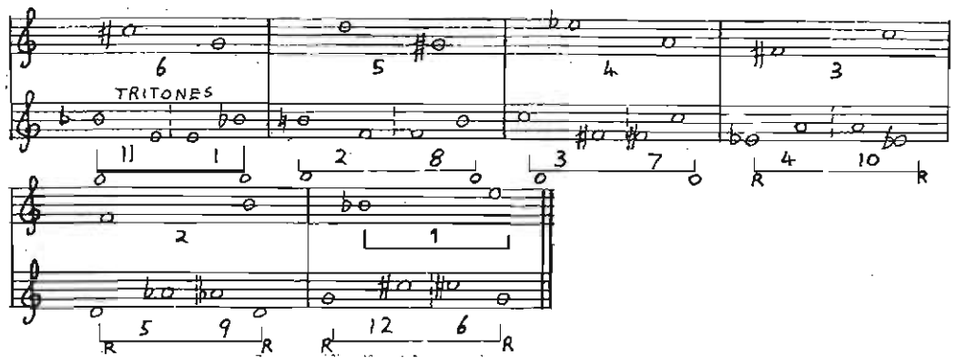


Part 3

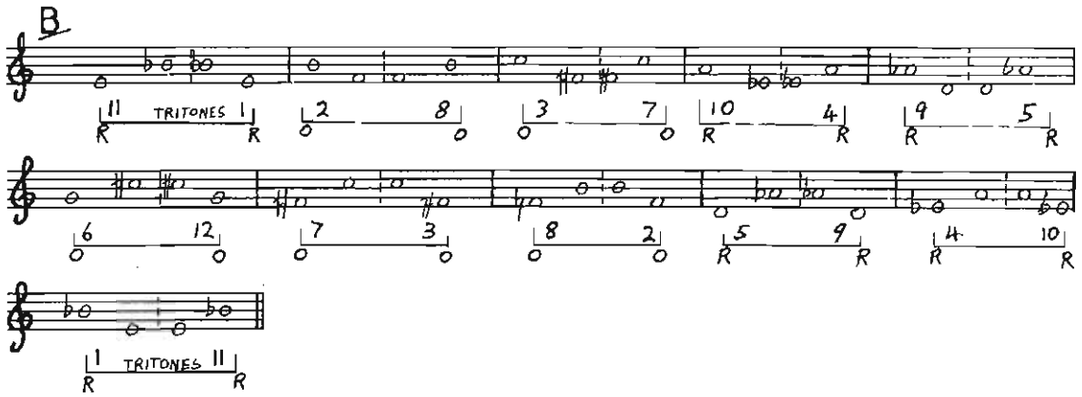


Part 4

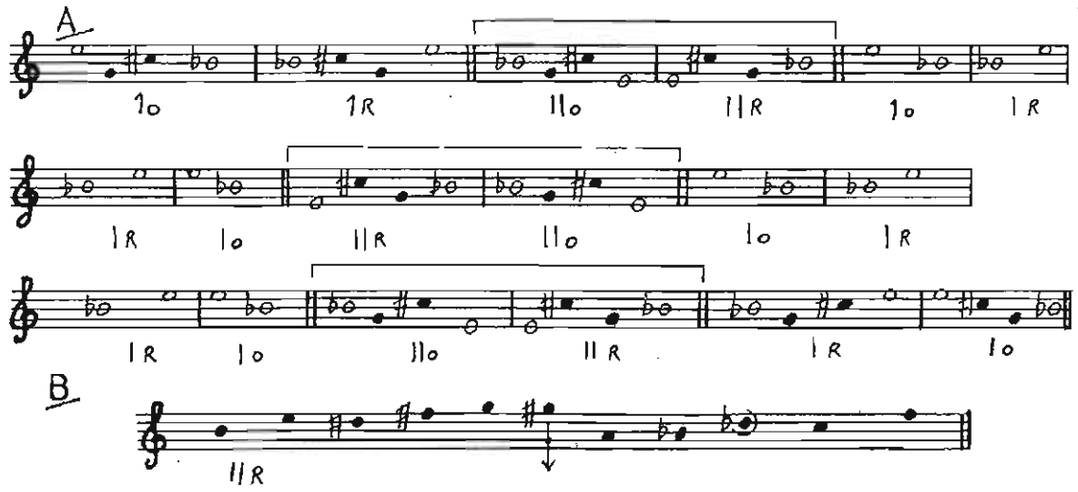




B



Part 5



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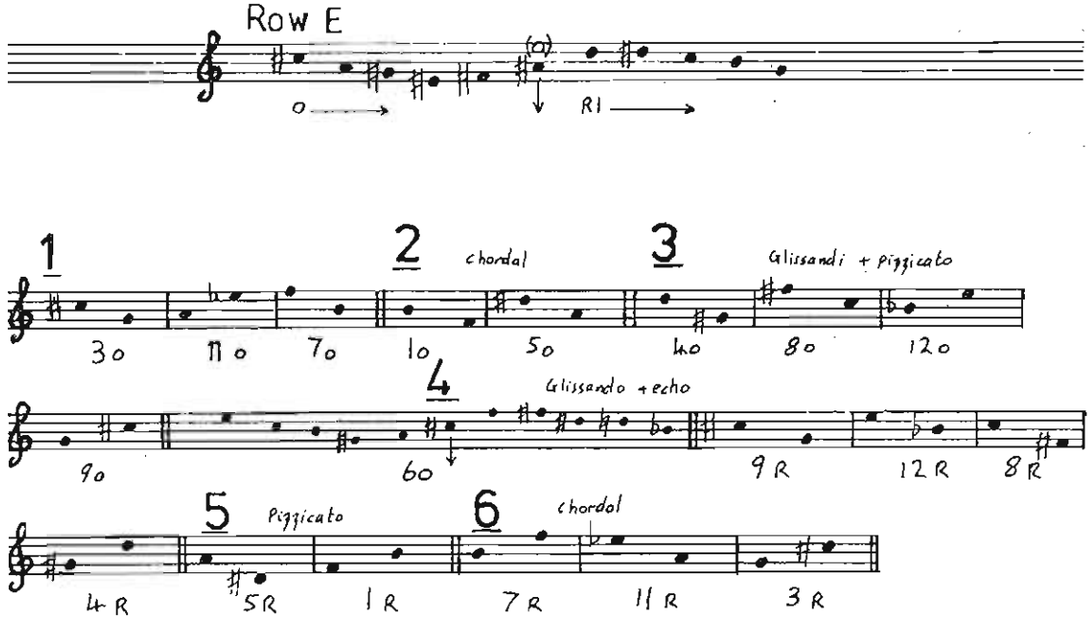
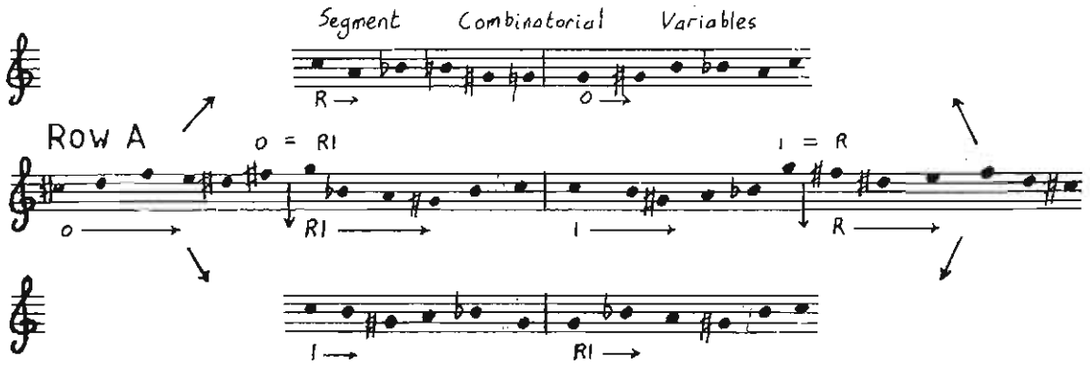
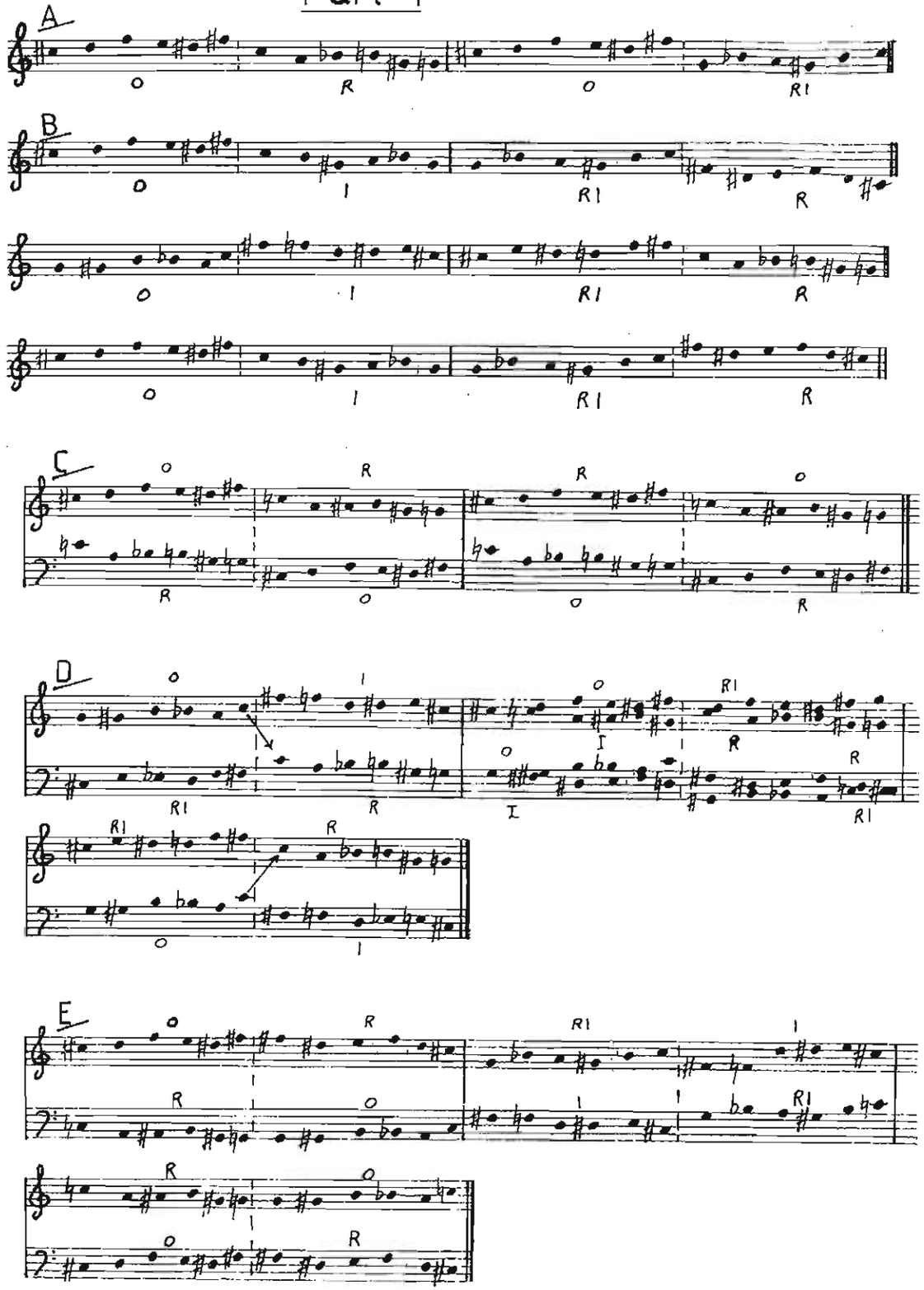


7a°



° First version

Part 1



Part 2

F

A

B

C

D

E

F

G

H

Part 3

F

Part 4

A

RI I O O RI O RI I RI R

R O I R O R I R I RI

B

C

D

E

F

G

H

I

PARTS 5, 6, 7 — STRUCTURES REVERSED AND INVERTED

Part 5

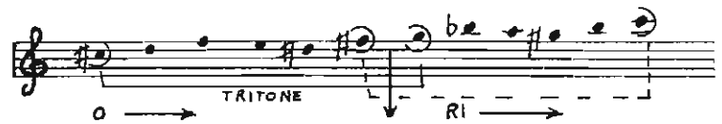
A

B

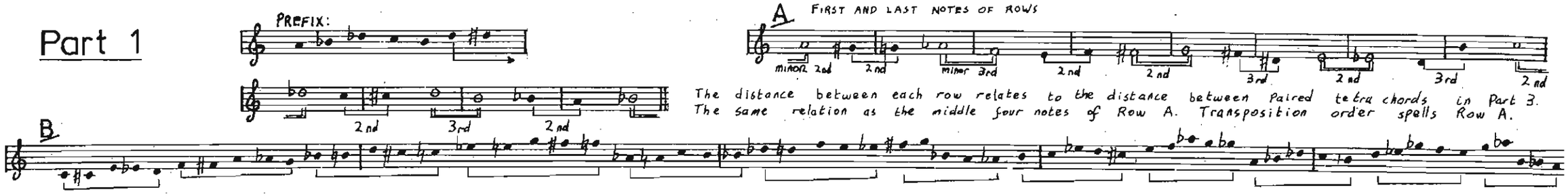
CONTINUE INVERSE READING UNTIL FIRST NOTE OF PART 1 = LAST NOTE OF PART 7.

7 b°

Row A



Part 1

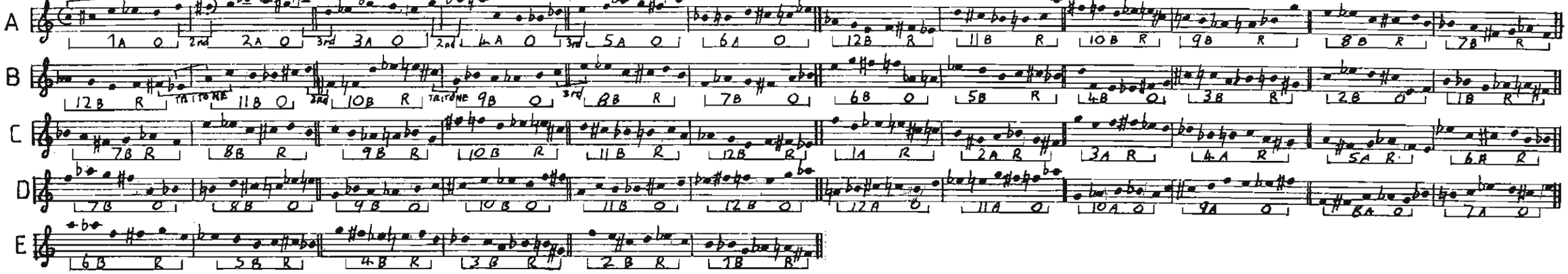


The distance between each row relates to the distance between Paired tetra chords in Part 3. The same relation as the middle four notes of Row A. Transposition order spells Row A.

FIRST FIVE NOTES OF ROW A IN CONTINUOUS SEQUENCE. FORMS FIVE 12-TONE ROWS.

Part 2

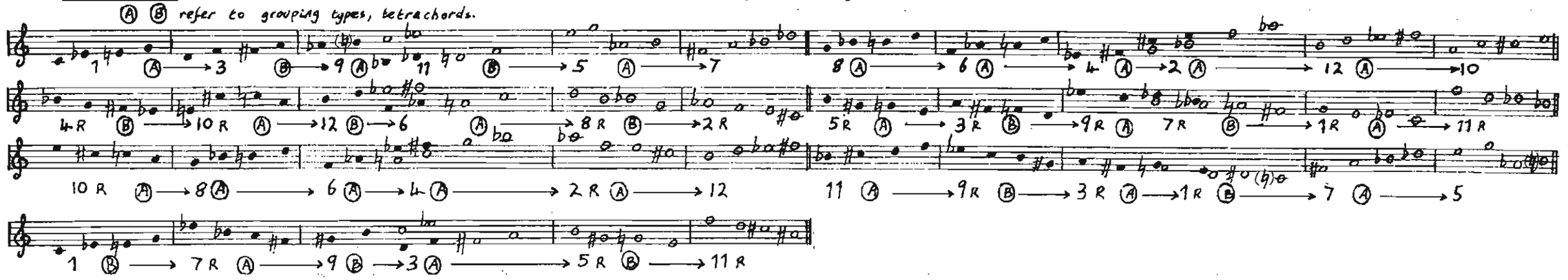
ROW HALVES PAIRED BY THE TRITONE.



Part 3

COMPONENT UNITS OF THE ROW Using row fragments to form continuous patterns with 12-tone control.

(A) (B) refer to grouping types, tetrachords.



° SECOND VERSION

Part 4ª

A CYCLE OF SECONDS/THIRDS BASED ON MIDDLE FOUR NOTES OF ROW.

READ ABOVE ← READ IN REVERSE ←

WHOLE TONE SCHEME Paired inner and outer notes of row. Transposition order spells "O" row.

B

C FIRST NOTES OF TETRACHORDS

D 6 TONE ROW / 12-TONE ROW

OVERLAP WITH PART 5

Part 4ᵇ

A

B FIRST AND LAST NOTES OF EACH TETRACHORD

C

TWO OUTER AND INNER NOTES OF ROW
WHOLE-TONE SCALE

D CYCLE OF THIRDS-SECONDS BASED ON MID 4-NOTE MOTIF OF ROW A

Part 5

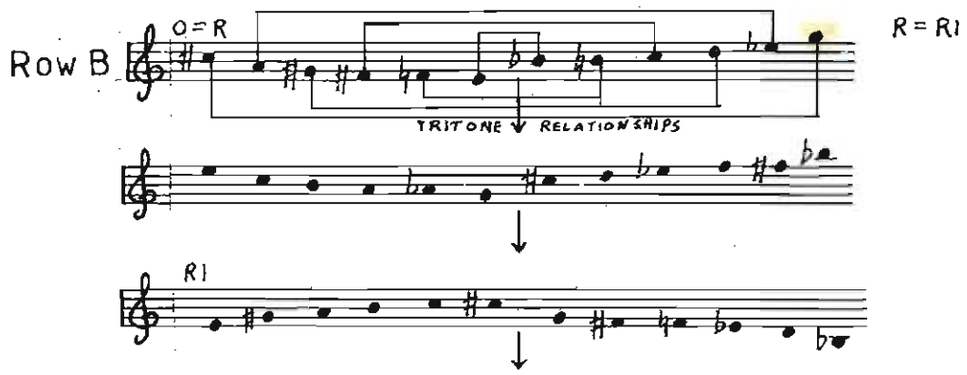
Part 6

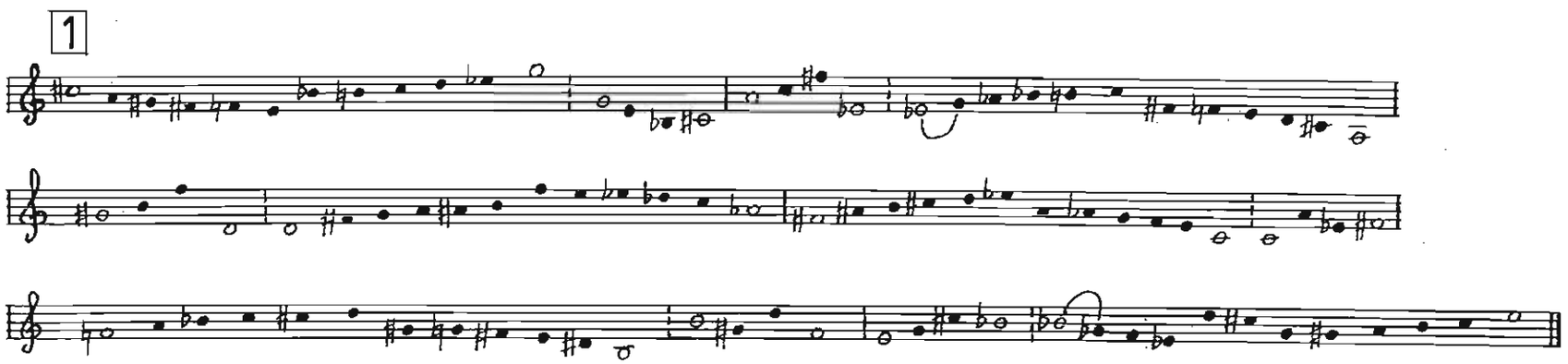
Part 7

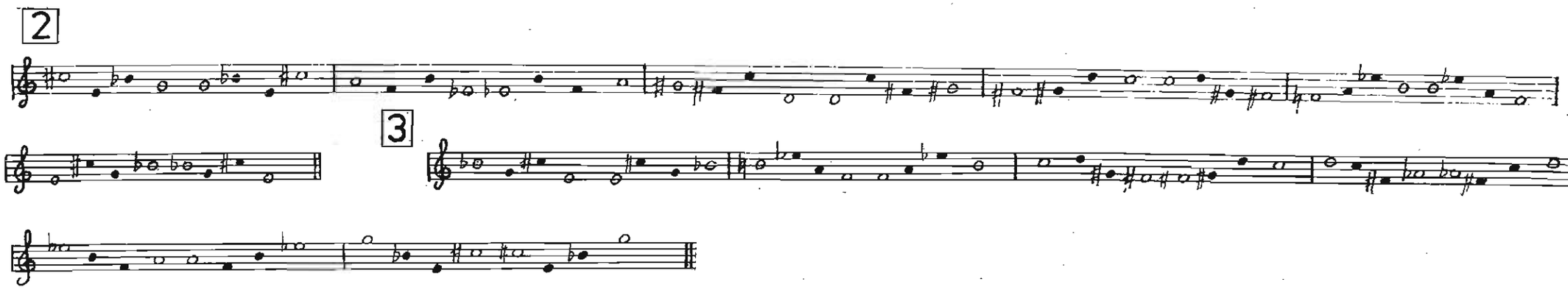
B FIRST AND LAST NOTES OF ROW

SUFFIX :

8







4 Order of transpositions. First notes spell row "O". Last notes spell row "R".

O RI R I O RI R I O RI R

5

I

SILENCE SILENCE

First notes spell row "I". Last notes spell row "RI".

↑ OUTER AND MIDDLE NOTES OF ROW or by concentric method – notes 1-12, 2-11, 3-10, 4-9, 5-8, 6-7.

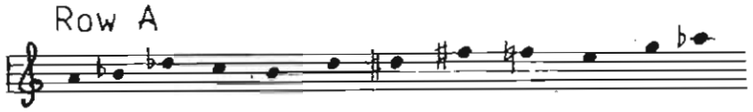
6

7

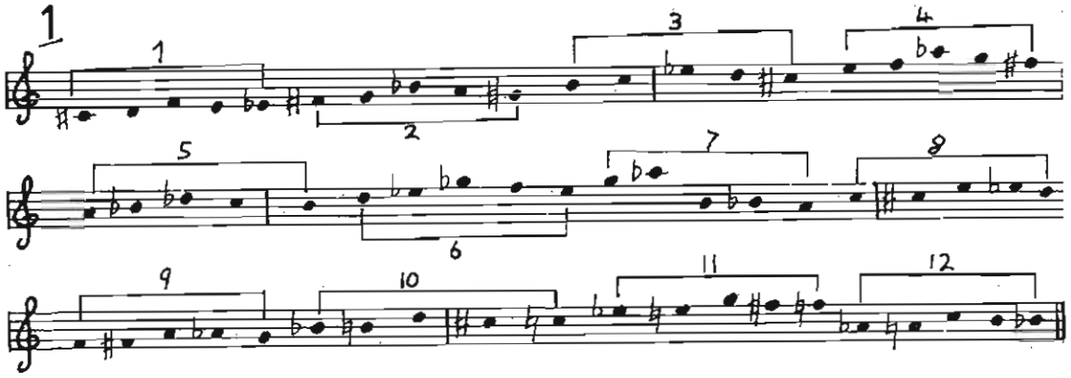
8

9

Row A



1



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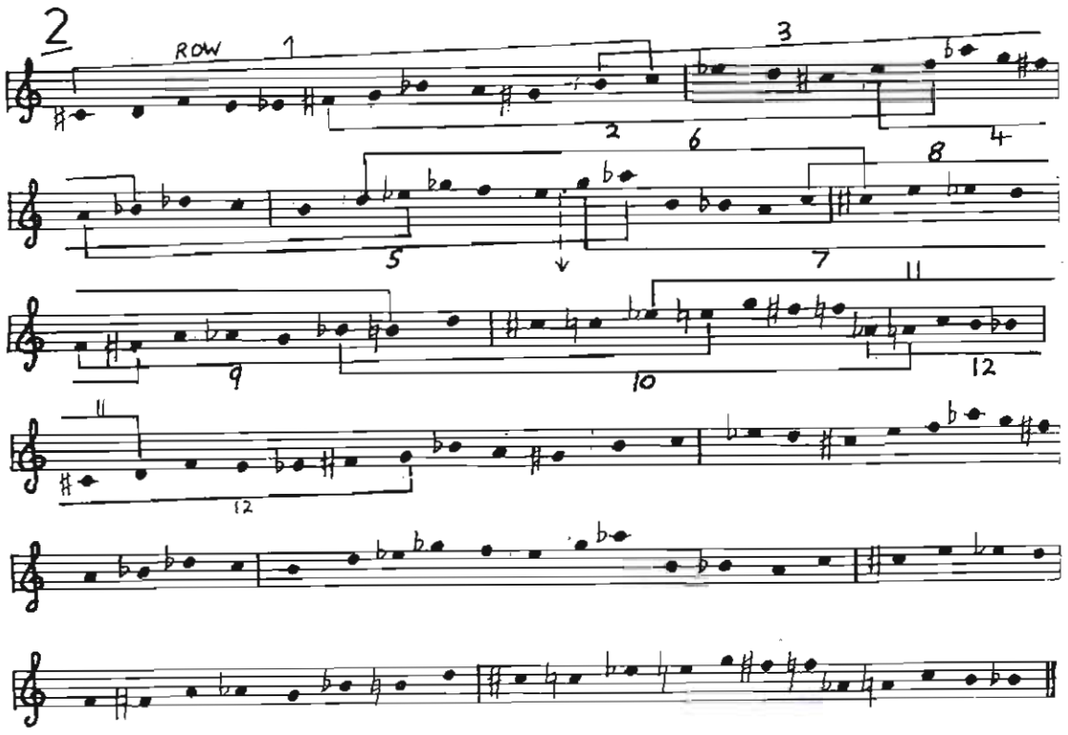

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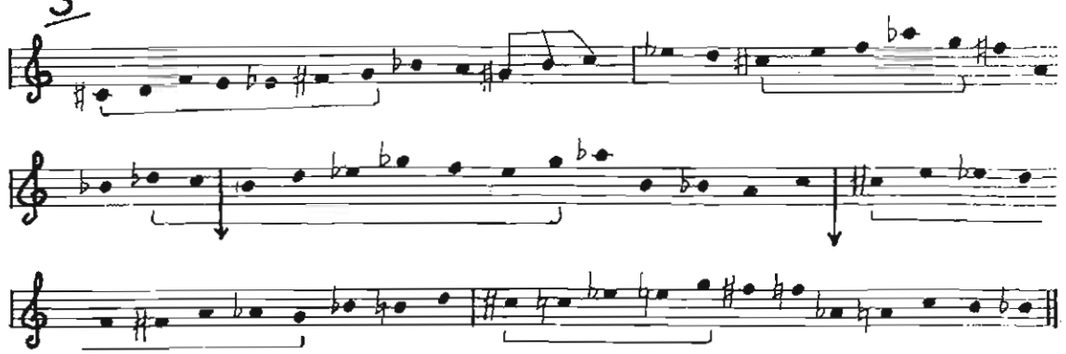

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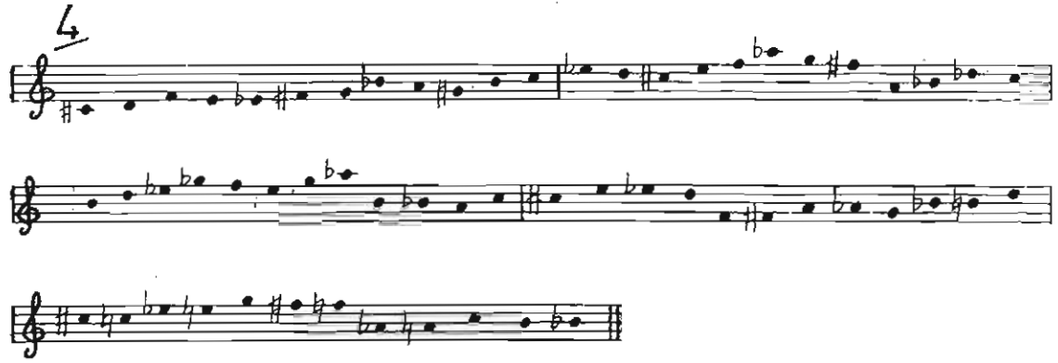

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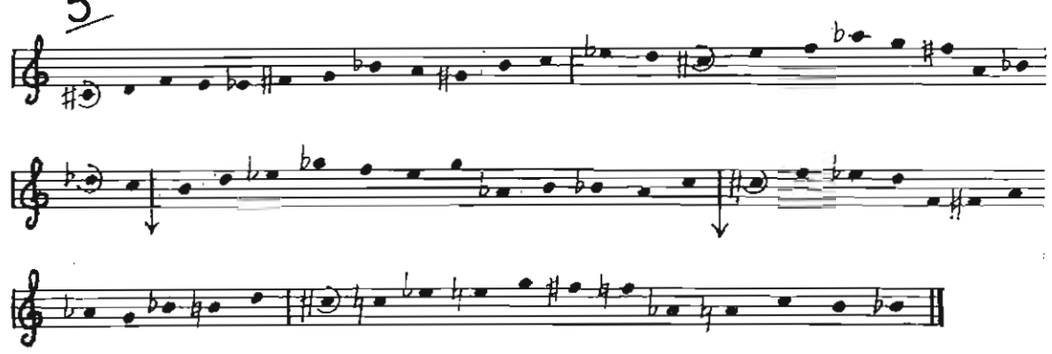

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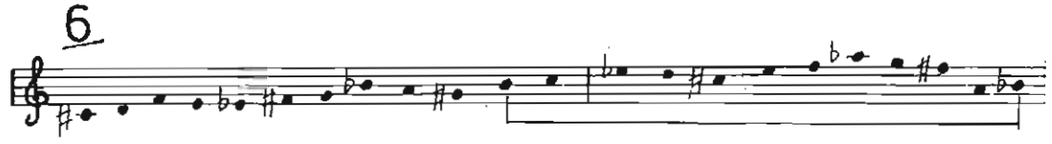


7

8 c# + G emphasized. Notes enclosed by them are isolated: ie 5+3+7+7+3=25=7

9 CODA

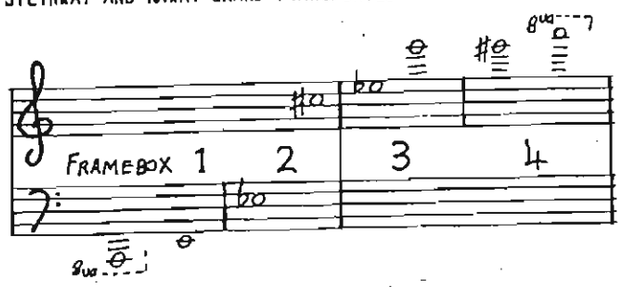
CENTRE — CODA

Ian Solomon
Durban, 1981.

Performance Instructions And Explanations of Musical Nomenclature

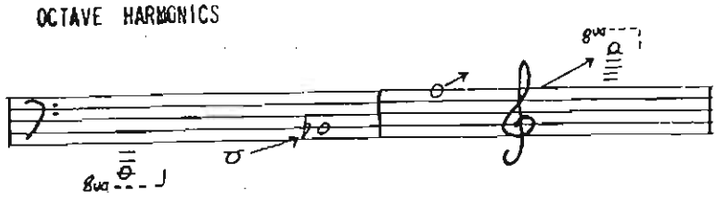
The present cycle of pianoforte pieces may be performed on one pianoforte, four hands simultaneously, or on two separate instruments simultaneously.

GENERAL AVAILABLE RANGE ON
STEINWAY AND KAWAI GRAND PIANOFORTES



Because the position of metal beams on grand pianoforte frameworks are not standardised, the performance requirements for this work may alter slightly from instrument to instrument. The metal crossbeam arrangement of each individual pianoforte will decide which notes are accessible for execution interior of the instrument. Unless construction arrangement of an upright frame pianoforte permits, it will be found that the present work is only feasible on one or two grand/baby-grand pianofortes. The cycle as it stands will be playable on most Steinway and Kawai grand/baby-grand pianofortes. Generally 90% of the notes will be available on other makes of pianoforte. If in the case of certain strings not being available for special effects, alternative methods of execution of special effects (such as pizzicato, harmonics) will have to be considered. Alternative means to certain of the special effects called for are listed with the explanation of each effect. For instance, if a metal beam hampers production of a harmonic on a second partial, then the same harmonic must be re-considered as a fifth or third partial on the next best available string. While certain of the strings may be inaccessible for effects which require the portion of the string behind the dampers to be touched, all of the strings can be reached from the front of the dampers near the tuning pins.

STRINGS AVAILABLE FOR
OCTAVE HARMONICS



NOTATION: All notes to be read as ♮ unless indicated otherwise as ♭ or ♯. The ♮ sign is used only to cancel a previous ♭ or ♯ on the same pitch or one immediately (8ve or 16ve) above or below. A tie carries over an accidental. This method should eliminate any doubt from the performer's mind as to whether a note is either ♭, ♮, or ♯ whilst avoiding a cluttered notation.

All notational symbols have been preselected to coincide with an interpretation within the traditional manner, to offset accumulating a confusing plethora of special symbolic indications. All purely keyboard/pedal sounds (modo ordinario) played by the keyboard executant and special effects obtained by manipulating the inside of the piano (by the second performer or assisistant) are notated on a separate pair of pianoforte systems each, so that they may be clearly distinguishable apart in the score by sight. In performance, however, it will be found that not all of the special effects notated on the piano assistant's staff (marked "Frameboard") will be managable by him alone, or all at once within a given space of time. Performance situations will arise where the keyboard player will have to compromise his sitting position at the keyboard in order to execute some of the special effects himself interior of the pianoforte, simply because of impracticable physical demands on the second player. Often these effects will have been intended for the keyboard executant to perform because of the greater ease for him at his position to co-ordinate the effect alone, at moments when he needn't give full attention to the keyboard - ie: harmonics, smorzato effects. In view of this, the present format of notation was preferred because it was thought to be easier for the keyboard performer to ring in red ink any of the moments he had to perform from the second (the top) staff than both players having to hunt out the special notation for these effects amidst the conventional pianoforte notation. If the performers decided that they wished to change the order of a formally assigned performance duty this scoring allows that freedom.

Bar-lines are placed at strategic points to facilitate ease of reading. Large and double bar-lines delineate major structural sections (see explanation of construction details of the cycle).

PERFORMANCE: Each of the performers should wear a black full-face mask. The work deals with the impersonal forces of History and the Supernatural. It is meant to be the expression of a type of Ritual Magic. The masks are intended to de-personalize the performance so that the performers (like the Shaman) and the performance project only the programmatic mystery behind the music.

The accessibility of each string inside the pianoforte will be made easier if the performers label each string by affixing its letter name to the head of each damper in a fashion enabling both executants to read them from their respective positions at the piano.

Players One and Two co-ordinate and share the tasks necessary for the rendition of certain effects such as ⊕—, for instance, where the first player would mute the required strings by hand before player Two struck the keyboard or changed pedal.

During the entire performance the keyboard player is required to remain at the traditional sitting position before the keyboard unless he is needed to manipulate the pianoforte interior, in which case he will find that most of the intended effects can be managed if he simply rises from the piano stool. Often, in simultaneous renderings of keyboard and special effects, (see notes on Notation/presentation above) he will have to

manipulate the keyboard and strings in this manner from a semi-crouched position, such as will be demanded in the playing of harmonics or pizzicato and 'modo ordinario' at the same time.

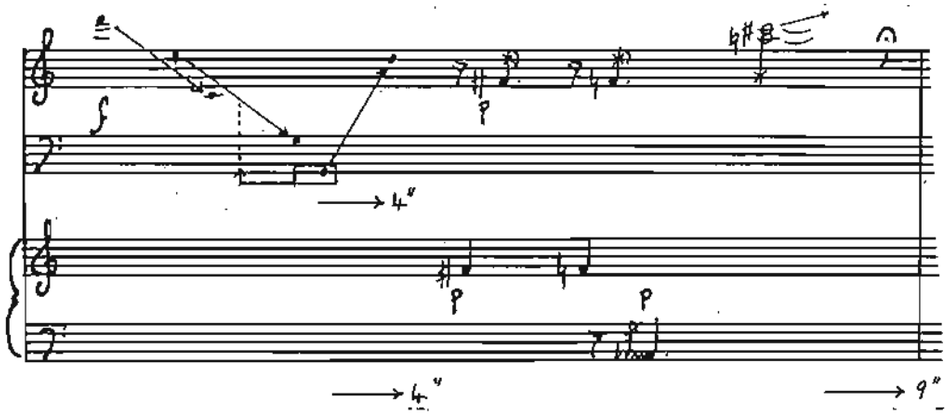
The second performer will have to position himself in a diagonally opposed standing position to the pianist, allowing him access to the area from the vicinity of the dampers to the middle of the longest string. He may find that he will have to move around the bell-circumference of the pianoforte as he is required to produce certain of the special effects in turn from treble to bass, if his reach from any one position is limited. Difficulties will arise if there are special effects to be co-ordinated simultaneously in the extreme treble and the extreme bass. These are the situations in which the pianist will very often be required to help. For ease of access the piano lid will have to be removed.

SCORE: The pianist may have to use clamps on some part of the piano rim to support a light orchestral music stand for his score. The second performer could do the same. The only other alternative to suspending the scores somehow from some overhead projection or simply standing them from the floor, would be to retain the pianoforte lid and clamping the music stands from this. The disadvantage is that the full-stick piano lid may still obstruct easy access to the frameboard.

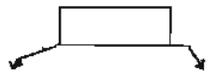
TIMING: Although the performers should aim at a performance of each piece to coincide with its allotted time span within the prescribed set of time proportions between each piece in the cycle, approximations within the first minute in a complete performance of the cycle of nine pieces will be sufficient. The timing marks are meant to be a guide. Each bar does not have to adhere strictly to its specified time. Interpretation of the more difficult rhythmic and time complexities is at the discretion of the performer. Compensation for time lost or gained in judging the duration of sections during performance of a piece should be absorbed as part of the governing process of interpretation of the ensuing events.

Generally the notation is orthochronic, but a compromise between that and notation in terms of time - proportionalism has been made in the score.

SIXTH MOVEMENT "Venus"



→8" indicates time value in seconds. Figure placed at point of termination of that time value from the last figure.

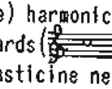


Boxes indicate material which can be played in free time over a specific time lapse, which the arrows indicate.

SPECIAL AIDS: (1) Two glass rods of approximately 9" length, or a suitable number of ashtrays - needed for certain parts of the work to create a gamelin effect, alteration of piano timbre.

(2) A metal chisel to produce glissandi harmonics on the strings.

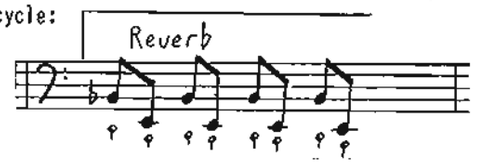
(3) For facility during performance a number of the special effects may be prepared beforehand using artificial aids.

Plasticine or rubber strips may be used to "prepare" certain notes by insertion on/between strings if it is decided that certain of the stopped-note effects are too difficult to cope with all at once in performance. By placing plasticine near the hammers (behind the dampers) a xylophone-marimbaphone type of effect is achieved. By placing plasticine on half-nodes a marimba-like quality of tone combined with 8ve (octave) harmonics is achieved. On most pianofortes from C' upwards() it will be found necessary to place the plasticine nearer the rear pins (away from the dampers) to retain any semblance of resonant tone. A more resonant tone can be achieved by placing the plasticine in front of the dampers - equivalent to "Y" (see notes on symbology below).

Generally, if it will help eliminate any performance difficulties, there is no objection to using artificial aids for the special effects, as long as the same result is achieved.

(4) Wooden mallets or wood blocks.

AMPLIFICATION : The present pianoforte cycle "Music of Numbers" may be performed with or without sound amplification. If performed with amplification, contact microphones relaying the sound to an amplifier and four speaker system is to be preferred. If so desired the range of pianoforte timbres in this work may be experimented with and substantially altered by electronic means according to various dictates of taste by ring modulation, amplification and filtration. However, if the original piano effects are altered in certain ways the plan of modifications must remain faithful by adhering to the consistency of timbral hierarchy in the score. For instance the basso drum-like sound from the second piece in the cycle:

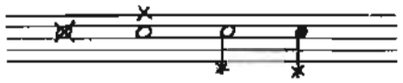


may be made to sound more spatially contingent and sinister by the use of a reverberation unit.

The choice of modifying equipment and its arrangement is left to the experience and discretion of the performer.

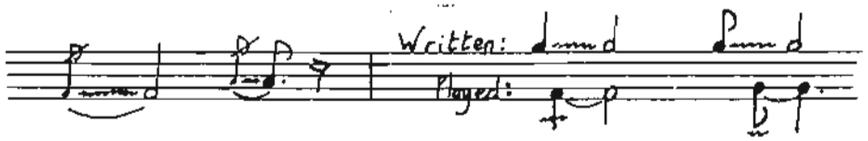
Notation Symbology

ON THE STRINGS:

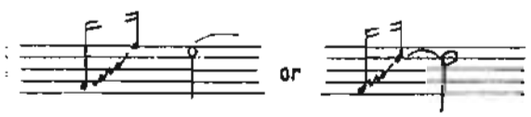


Pluck strings. Pluck with fingernail or with plectrum; where not specified, at the discretion of the performer. In most cases pluck two strings from a twin-string or three-string note, where ease of execution permits. ① indicates one string to be plucked and ③ the three strings of the same pitch simultaneously. The performer's judgement will decide how many strings should be employed in the execution of various dynamic intensities.

The position for plucking the strings in front of (near pins) or behind the dampers is indicated as F and R respectively. In the course of the performance pluck strings to the rear of the dampers normally unless F is indicated. Pluck as near the middle of each string as is possible.

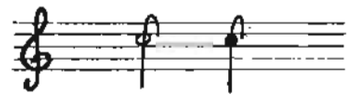


Scrape string (if copper wire wound) with plectrum or fingernail, release finger immediately afterwards and allow to resonate for the duration of the note value. If the particular string (pitch) specified for this treatment is not copper - wired on particular make of pianoforte, strum two or three strings of that pitch and allow to resonate. Scrape strings in direction of keyboard generally, unless performer's position makes scraping in opposite direction easier. It should be noted that depending on which part of the string's length is scraped, direction to and from the pins induces a change of timbre.



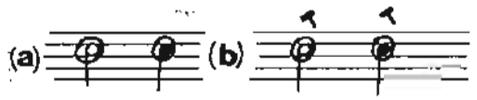
or

Scrape diagonally across strings - mixture of scraping and harp effect.



Hold finger on string (on half-node), strike note by conventional method using keyboard: to produce a curtailed, metallic effect. It is preferable to stop the string near the tuning pins if any other part of the string is used experimentallyto produce this effect. The more firmly the finger is held on the string prior to the hammer hitting it, the more abrupt the effect will be. Pressing the finger more lightly on the string allows the harmonics produced at any particular division (node) to resonate to various degrees.

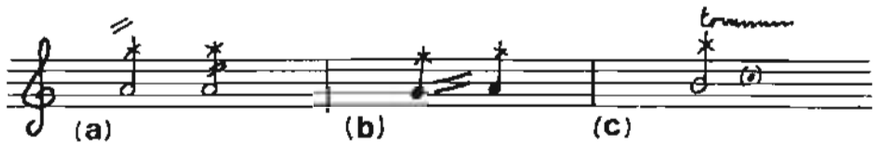
On copper-wound strings the effect is best achieved if the string is muted at the point where the copper ends and the steel wire protrudes towards pin.



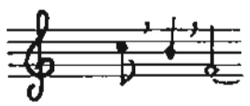
(a) Hit string with finger-nail or light plastic/metallic object.
(b) Hit string firmly with metallic or wooden object (mallets).

A result of the distortion incurred by attacking the strings, especially with an assortment of foreign objects, is the alteration of the original pitches.

represents a note of indefinite pitch.

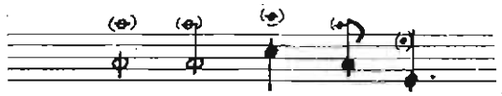


(a) Tremolo or trill on one string - can be played on one or two strings of that pitch.
(b) and (c) are tremolos on two different pitches.



Silently depressed note.

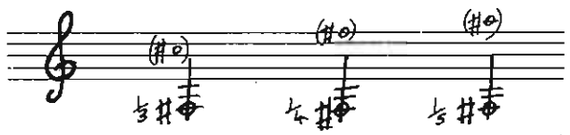
HARMONICS:

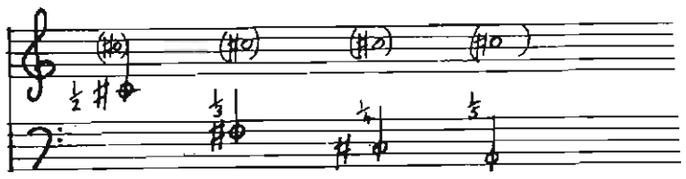


Harmonics sound an octave higher than written. All harmonics to be executed as 2nd partials unless circumstances will not allow, or otherwise indicated. The written note indicates the string on which harmonic is to be played. Depress pedal prior to stopping string (half-way for 8ve harmonics) with finger tip. Strike note in conventional way on keyboard and release finger from stopped string the instant the hammer has set the string in vibration. This will allow the harmonic to resonate freely over the depressed pedal. This technique may require practice before proper application allows the harmonic to ring with a sustained resonance. Alternatively the harmonic may be allowed to ring without the aid of the pedal simply by keeping the key depressed until the sound dies away.

Simply stopping the string and keeping the finger in place after this has been set in vibration produces an effect similar to with the harmonic present in a muffled fashion.

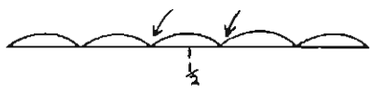
Any harmonic not playable from the half-node because framework beams render it inaccessible may be played as a quarter-node harmonic on a string two octaves below the harmonic required, or as a 3rd partial (two-thirds of the string distance) a perfect twelfth below the harmonic desired.



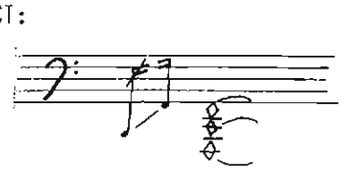


For 5th partials stopping the string at the nodes nearest to the centre of the string produces the clearer-sounding harmonic.

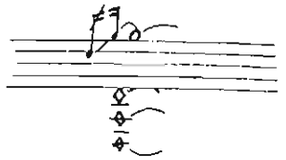
Thus:



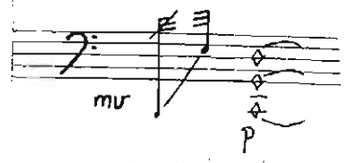
'AEOLIAN HARP' EFFECT:



or



Rapid glissando over strings just after notes are silently depressed on the keyboard. For prolonged durations depress pedal immediately <u>after</u> strumming to retain vibrations. Only the notes indicated must be sustained after the strumming effect.

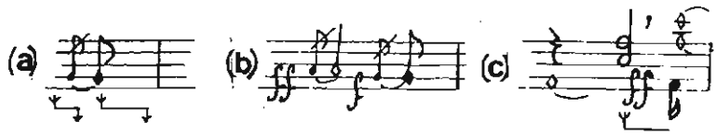


Sometimes, as indicated in the score, to increase the sustaining power of chord the glissando roll is played a degree louder than indicated for the chord intensity.

KEYBOARD/STRING/PEDAL EFFECTS:

The following effects rely on the sustaining effect of the damper pedal.

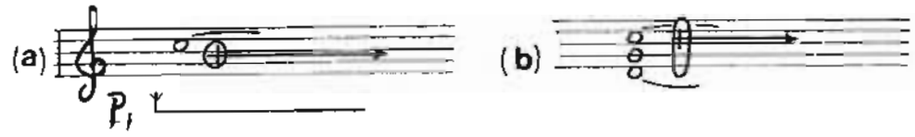
The operation of the pedal to obtain each of these effects is indicated by pedal markings with the examples, (see notes on PEDALLING).



(a), (b). Depress pedal and strike key - lift pedal and depress immediately again to catch reverberations – release key

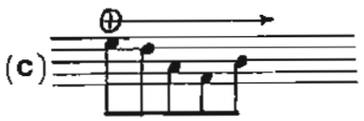
(c) Depress note silently - sympathetic vibration should cause silent note to sound.

Play - but keep note depressed (or pedal, if possible) after sound has ceased.

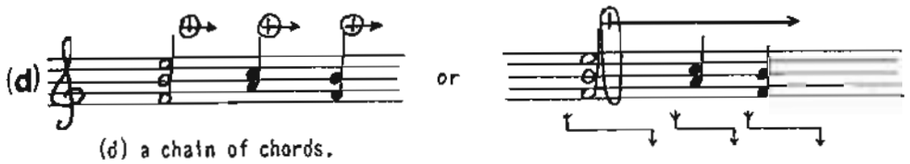


Dampen strings with hand or finger immediately after being played, but release immediately again to allow note to resonate - a ringing echo effect should result. Depress damper pedal prior to striking notes to aid the effect. Mute near centre of string.

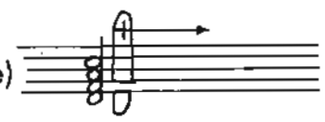
(a) and (b) indicate how this effect is notated for single, held notes and chords.



(c) as applied to a succession of single notes individually.

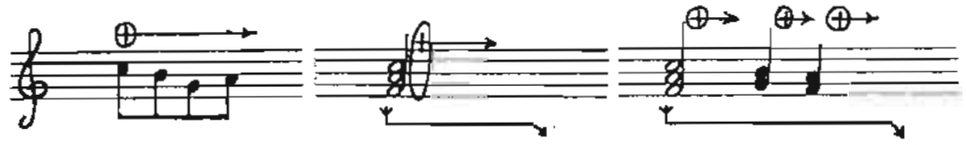


(d) a chain of chords.

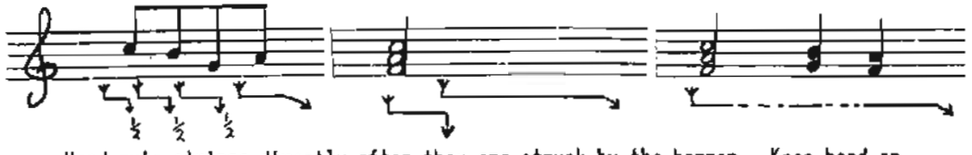


(e) a chord with one note played normally.

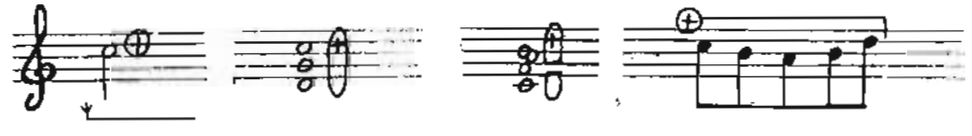
In cases where the following effect is not performable:

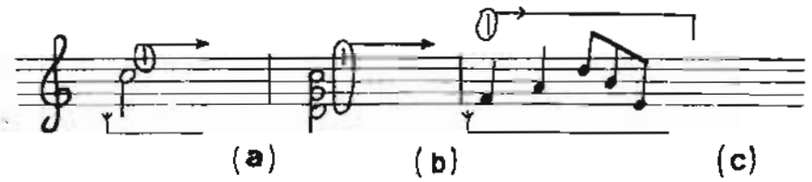


the following method will guarantee the same results. (See notes on Pedalling).



Hand-mute strings directly after they are struck by the hammer. Keep hand on string for a short while - about half the length,or less, of the note value.The table of nomenclature applies the same as above.



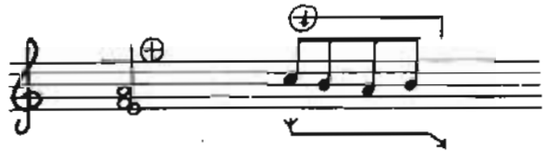


Depress damper pedal - mute strings as in the two previous methods above, but keep hand or finger lightly on strings to prevent harmonics from ringing too resonantly. Or - place hand/fingers lightly on the strings before striking keyboard; but place hands lightly enough to allow resonance to occur and without muffling the tone entirely, as in ϕ effect.

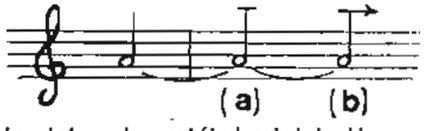
Keep damper pedal depressed continually during a succession of such semi-stopped notes, (c).

This is to produce a subdued echo effect. The notes themselves, however, must sound if the effect is to work with a clearly audible result. The choice of hand muting (half-damping) either near the middle or ends of string is left to the performer's discretion. If a fair level of volume is to be sustained after string is hand-dampened, then dampen string nearer the tuning pins.

If the last two related methods above are not managable, the alternative suggested below will approximate the required result.

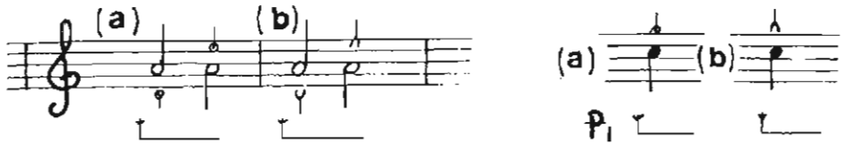


played as:



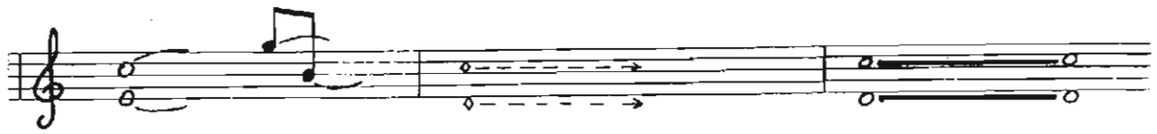
(a) Hand-mute string at specified point in time.

(b) Mute string with hand/finger and quickly release again to allow string to resonate further. May be used in conjunction with the damper pedal to create an echo effect. If a fair level of volume is to be sustained after the string is hand-dampened, then dampen string nearer the tuning pins.



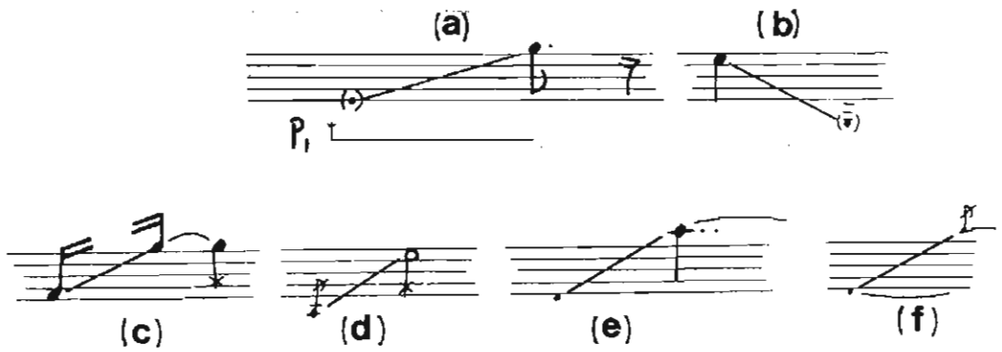
(a) Depress pedal, mute string with finger (before striking keyboard note) an inch to half-an-inch from pins to allow note to half resonate. A dark, semi-sustained tone is the result.

(b) **Depress pedal, mute string near pins** (fingers against pins) before striking keyboard note. A muffled but fully sustained, resonant sound results.



Slurs and dotted lines as illustrated above indicate that notes are to sound for as long as possible, dying out of their own accord unless some notated termination is indicated. Beams are used as indications of a prolonged tie over, in lieu of tie-slurs (in places).

GLISSANDO ON STRINGS:



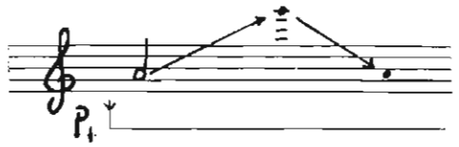
Glissando on pianoforte strings. Direction read left to right. Using back of finger-nail or finger itself, play glissando by running (strumming) across the strings in an even sweep. Pitch range, duration, intensity and tempo of glissando all indicated by notation.

Duration of the glissando indicated by the value of the note preceding it, until the next value which then terminates it. Thus the first glissando (a) is to be taken in time at the discretion of the performer, and terminates on a note struck by keyboard action. The second glissando (b) lasts for the duration of a

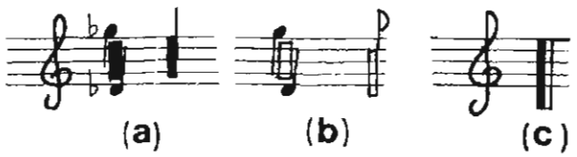
crotchet and then trails off into nothingness (a controlled decay into silence) after reaching the region of E. The next two examples (c) and (d) present glissandi played as quick as possible, both terminating on a 'pizzicato' note. The last illustrations resolve notation of glissandi showing them terminating in a single sustained note (e) and a termination on a specified but unaccented note, the entire glissando cluster being sustained afterward by the pedal, (f).

It is essential to depress the damper pedal in the execution of all glissandi during the time the finger(s) sweeps the strings.

Glissando with metal chisel: Lightly poise a metal chisel on string(s). After string is set in vibration by hammer (or other specified method) apply the chisel in a sweeping motion across string to produce a glissando of the fundamental's upper partials. In the example the upper note indicates the topmost pitch from which the glissando should descend.

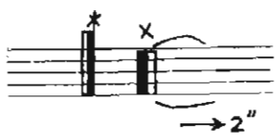


NOTE CLUSTERS:



On Keyboard:

(a) Black note cluster
(b) White note cluster
(c) Chromatic cluster



On Frameboard:

Chromatic cluster on strings

PEDALLING:

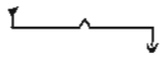
The following effects apply mostly to the damper pedal (P_1), which is indicated at the beginning of each movement and then taken for granted. Other pedallings are specifically indicated each time.

P_1 right (damper) pedal

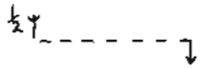
P_2 middle (sostenuto) pedal

P_3 left (una corda) pedal

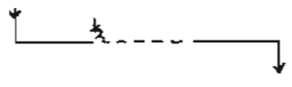
Full sustain



Quick or half-pedal

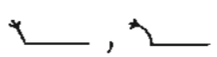


Half sustain

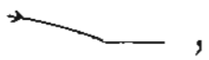


Depress fully, bring up to half-way, depress fully, release.

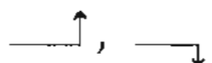
Depress swiftly



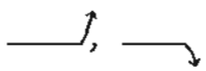
Depress gradually



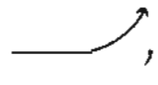
Depress very gradually



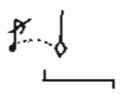
Release swiftly



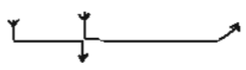
Release gradually



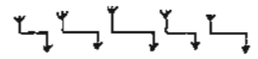
Release very gradually



Depress only after keyboard attack and keys are lifted - to sustain the 'echo' of overtones alone.



Pedal depressed on attack. Lifted to allow sound to diminish, and depressed immediately after to recapture diminished string vibration before sound has completely decayed.



Rapid depress-release movement, usually with a single sustained sound to create a smorzato/smorzando effect.

ARTICULATIONS:

// Short pause , Pause ; Long pause

FINAL REMARKS ON NOTATION

Effects managable by the keyboard executant are notated on his staff system, and in the case of effects relying on the coordination/cooperation of both performers the notational preference is for notation on the frameboard staves except where the keyboard player should have monopoly of an effect for performance reasons, or simply where ease of reading is considered. Generally, whenever a special effect can be more easily performed by the keyboard player than by the other executant, it will be notated on the keyboard staff system.

PERFORMANCE TIMING CHARTS

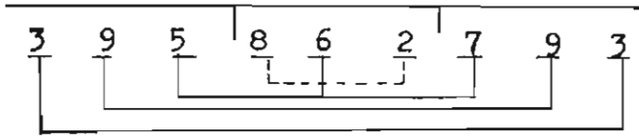
Each of the pieces is performable within the time limits indicated below:

1	2	3	4	5	6	7	8	9
3 – 4'	6 – 8'	5 – 7'	3 – 4'	6 – 8'	3 – 4'	8 – 10'	2 –3'	8 – 12'

Because the duration of each piece can vary according to performance circumstances (rests, choice of speeds, speed changes) the eventual time proportions of the pieces will vary. Set out below is a list of tables governing a few of the more general possibilities that would arise from live performance.

The tables derive a mystical symbol for each of the pieces according to their time-value in relation to the rest of the work. In each instance the mystic numbers derived reflect the relationships of the pieces to each other. The same basic relationship of numbers carries through each of the tables. That is, pieces 1 and 9, 2 and 8 relate to each other (beginning/end - transitional pieces), and 3 - 5 - 7 which are the palindromic set forming a progression of mirror-structured pieces up to piece 7, which is a perfect mirror structure itself.

1	2	3	4	5	6	7	8	9
3	6	5	3	7	5	14	2	12
3	9	14	17	24	29	43	45	57
3	9	5	8	6	2	7	9	3



During a performance of the entire cycle the periods of silence between the pieces must also be taken into account as part of the total time span. The periods of indicated silence separating the movements can be shortened between pieces 1 and 2, 5 and 6, and lengthened as required between the others.

As can be seen from the timing tables, dependent on duration variability, the total length of the cycle may vary from 39 to 48 to 57 minutes in duration. Each of these durations reflect the same value Numerologically (by digital addition) of the mystic Trilogy:-

39 = 12 = 3
48 = 12 = 3
57 = 12 = 3
66 = 12 = 3

A performance lasting beyond the duration of 66 minutes is not feasible.

Each of the possibilities tabled below, if adhered to as close as possible, will maintain the order of Numerological proportions and balance between the pieces, which should be the aim of performance timing in the present work.

Time lapse in between movements

1 (15") 2 (30") 3 (30") 4 (20") 5 (15") 6 (30") 7 (25") 8 (20") 9

Piece	1	2	3	4	5	6	7	8	9
Duration	3	6	6	3	9	2	5	2	3
Total	3	9	15	18	27	29	34	36	39
Mystic No.	3	9	6	9	9	2	7	9	3

1	2	3	4	5	6	7	8	9
3	6	5	3	8	2	7	2	3
3	9	14	17	25	27	34	36	39
3	9	5	8	7	9	7	9	3

1	2	3	4	5	6	7	8	9
3	6	6	3	7	2	7	2	3
3	9	15	18	25	27	34	36	39
3	9	6	9	7	9	7	9	3

1	2	3	4	5	6	7	8	9
3	6	7	2	7	2	7	2	12
3	9	16	18	25	27	34	36	48
3	9	7	9	7	9	7	9	3

1	2	3	4	5	6	7	8	9
3	6	5	3	6	3	8	2	12
3	9	14	17	23	26	34	36	48
3	9	5	8	5	8	7	9	3

1	2	3	4	5	6	7	8	9
3	6	7	3	6	3	6	2	12
3	9	16	19	25	28	34	36	48
3	9	7	1	7	1	7	9	3

1	2	3	4	5	6	7	8	9
3	2	5	3	6	3	6	4	11
3	10	15	18	24	27	33	37	48
3	1	6	9	6	9	6	1	3

1	2	3	4	5	6	7	8	9
3	6	6	3	6	3	7	2	12
3	9	15	18	24	27	34	36	48
3	9	6	9	6	9	7	9	3

1	2	3	4	5	6	7	8	9
3	6	6	3	7	2	7	2	12
3	9	15	18	25	27	34	36	48
3	9	6	9	7	9	7	9	3

1	2	3	4	5	6	7	8	9
3	6	5	3	6	3	8	2	12
3	9	14	12	23	26	34	36	48
3	9	5	8	5	8	7	9	3

1	2	3	4	5	6	7	8	9
3	6	6	3	7	2	7	2	10
3	11	12	20	27	29	36	38	48
3	2	8	2	9	2	9	2	3

1	2	3	4	5	6	7	8	9
3	6	6	4	6	3	6	2	12
3	9	15	19	25	28	34	36	48
3	9	6	1	7	1	7	9	3

1	2	3	4	5	6	7	8	9
3	6	8	3	6	3	14	2	12
3	9	17	20	26	29	43	45	57
3	9	8	2	8	2	7	9	3

1	2	3	4	5	6	7	8	9
3	6	5	3	7	5	14	2	12
3	9	14	17	24	29	43	45	57
3	9	5	8	6	2	7	9	3

1	2	3	4	5	6	7	8	9
3	6	5	3	7	3	16	2	12
3	9	14	17	24	27	43	45	57
3	9	5	8	6	9	7	9	3

1	2	3	4	5	6	7	8	9
3	5	6	4	6	3	16	1	12
3	8	14	18	24	27	43	44	57
3	8	5	9	6	9	7	8	3

1	2	3	4	5	6	7	8	9
3	6	8	3	6	3	14	2	12
3	9	17	20	26	29	43	45	57
3	9	8	2	8	2	7	9	3

LXXvi

1	2	3	4	5	6	7	8	9
3	6	5	3	7	5	14	2	12
3	9	14	17	24	29	43	45	57
3	9	5	8	6	2	7	9	3

1	2	3	4	5	6	7	8	9
3	6	6	4	7	3	10	2	12
3	9	15	19	26	33	43	45	57
3	9	6	1	8	6	7	9	3

1	2	3	4	5	6	7	8	9
3	6	11	3	6	3	11	2	12
3	9	20	23	29	32	43	45	57
3	9	2	5	2	5	7	9	3

1	2	3	4	5	6	7	8	9
3	6	10	3	6	3	12	2	12
3	9	19	22	28	31	43	45	57
3	9	1	4	1	4	7	9	3

1	2	3	4	5	6	7	8	9
3	8	10	5	7	2	10	2	10
3	11	21	26	33	35	45	47	57
3	2	3	8	6	8	9	2	3

1	2	3	4	5	6	7	8	9
3	8	2	5	6	3	8	2	10
3	11	23	26	34	37	45	47	57
3	2	5	1	7	1	9	2	3

LXXvii

1	2	3	4	5	6	7	8	9
3	8	13	5	7	2	13	5	10
3	11	24	29	36	38	51	56	66
3	2	6	2	9	2	6	2	3

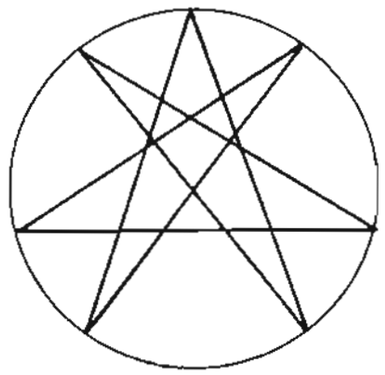
1	2	3	4	5	6	7	8	9
3	5	3	5	7	2	10	8	13
3	8	21	26	33	35	45	53	66
3	8	3	8	6	8	9	8	3

1	2	3	4	5	6	7	8	9
3	5	3	5	16	0	6	2	10
3	8	21	26	42	48	54	56	66
3	8	3	8	6	2	9	2	3

1	2	3	4	5	6	7	8	9
3	9	9	5	8	4	10	9	9
3	12	21	26	34	38	48	57	66
3	3	3	8	7	2	3	3	3

1	2	3	4	5	6	7	8	9
3	8	2	5	15	3	8	2	10
3	11	23	28	43	46	54	56	66
3	2	5	1	7	1	9	2	3

— MUSIC OF NUMBERS —



1ª GENESIS

* The sounds should generally (within phrases and through obvious breaks in continuity) merge with each other, preceding sounds being allowed to expire gradually even after their indicated time value (where pedalling directions permit) so that sound aggregates and time spans overlap. The build-up of sustained tone is thinned out between phrases or disconnected events by more half-pedalling activity.

Slow Tranquil * (♪ = 60)

Frameboard

Keyboard

p sempre sostenuto

7 7 5

→ 7" → 7" → 5"

P_1

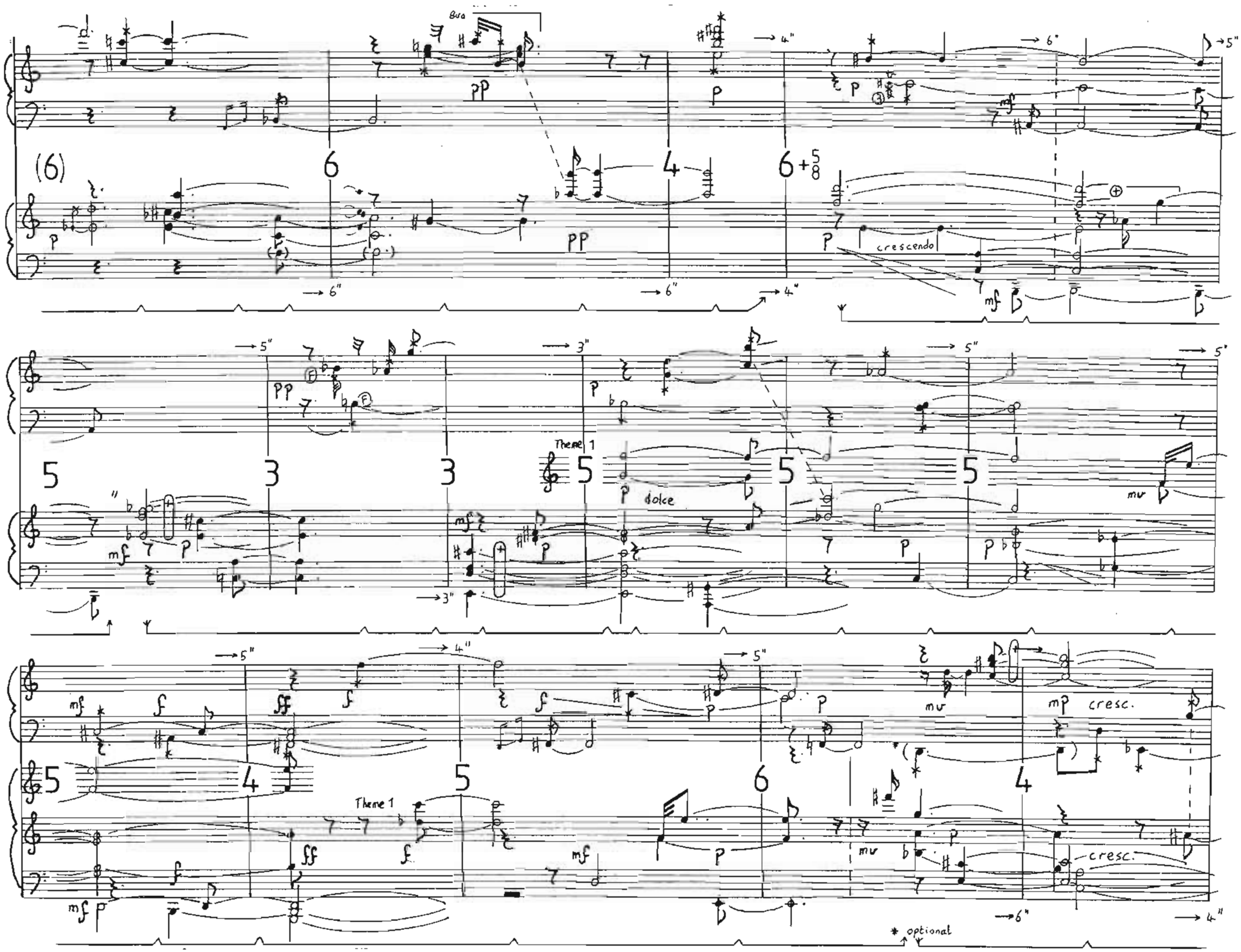
7 8 5 5 3+6/8

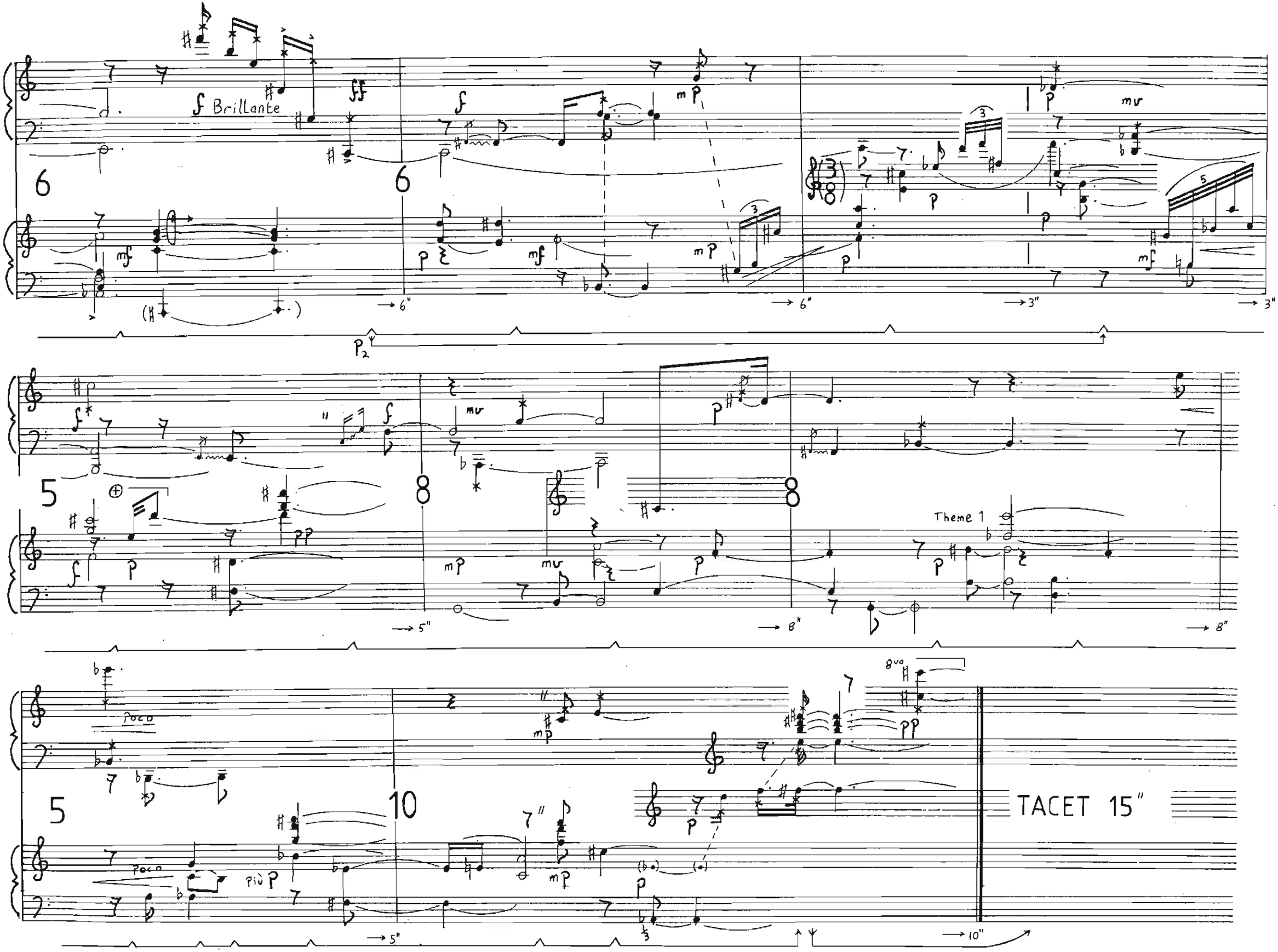
Theme 1

8va

→ 7" → 8" → 5" → 5" → 3"

P_2


Bua
(6)
crescendo
Theme 1
dolce
Theme 1
cresc.
cresc.
* optional


f Brillante
Theme 1
Poco
Più p
TACET 15"

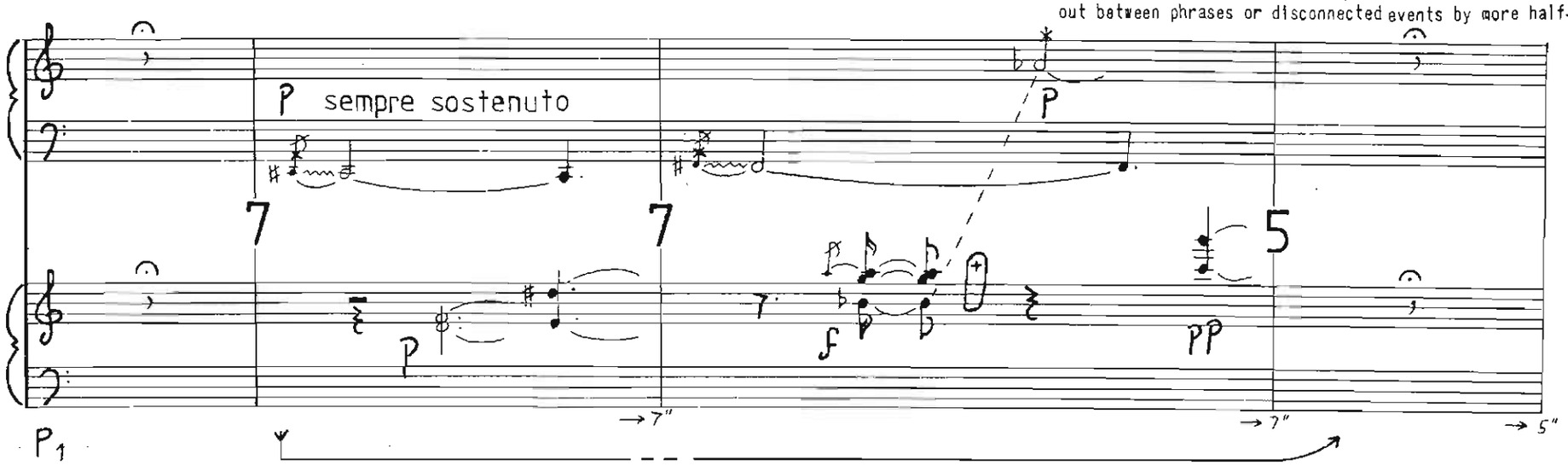
1b GENESIS

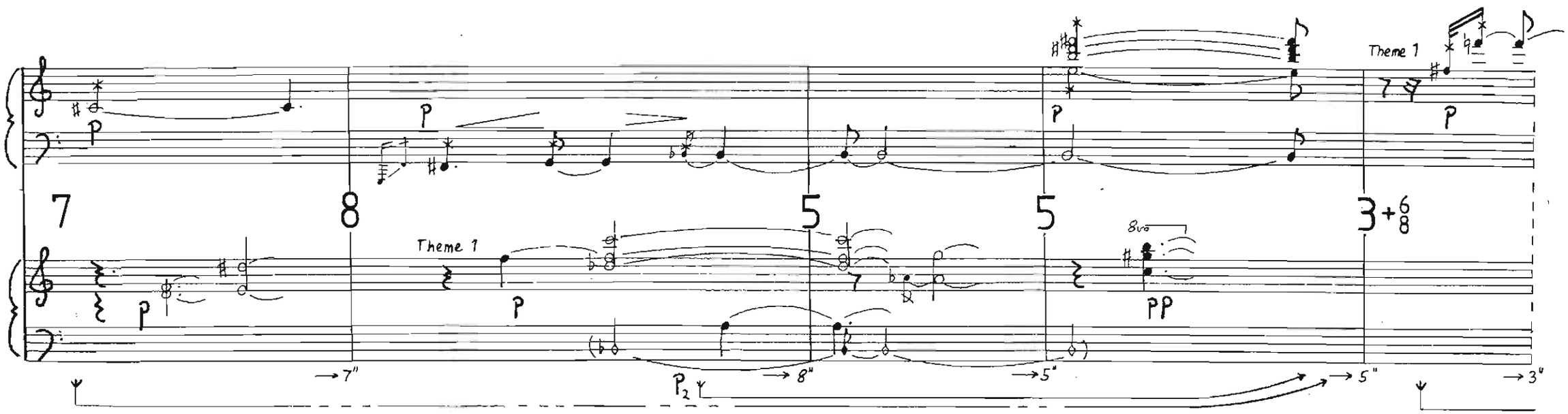
Slow Tranquil* (♪ = 60)

* The sounds should generally (within phrases or obvious breaks in continuity) merge with each other, preceding sounds being allowed to expire gradually even after their indicated time value (where pedalling directions permit) so that sound and time spans overlap – the build-up of sustained tone being thinned out between phrases or disconnected events by more half-pedalling activity.

Frameboard

Keyboard





(6)

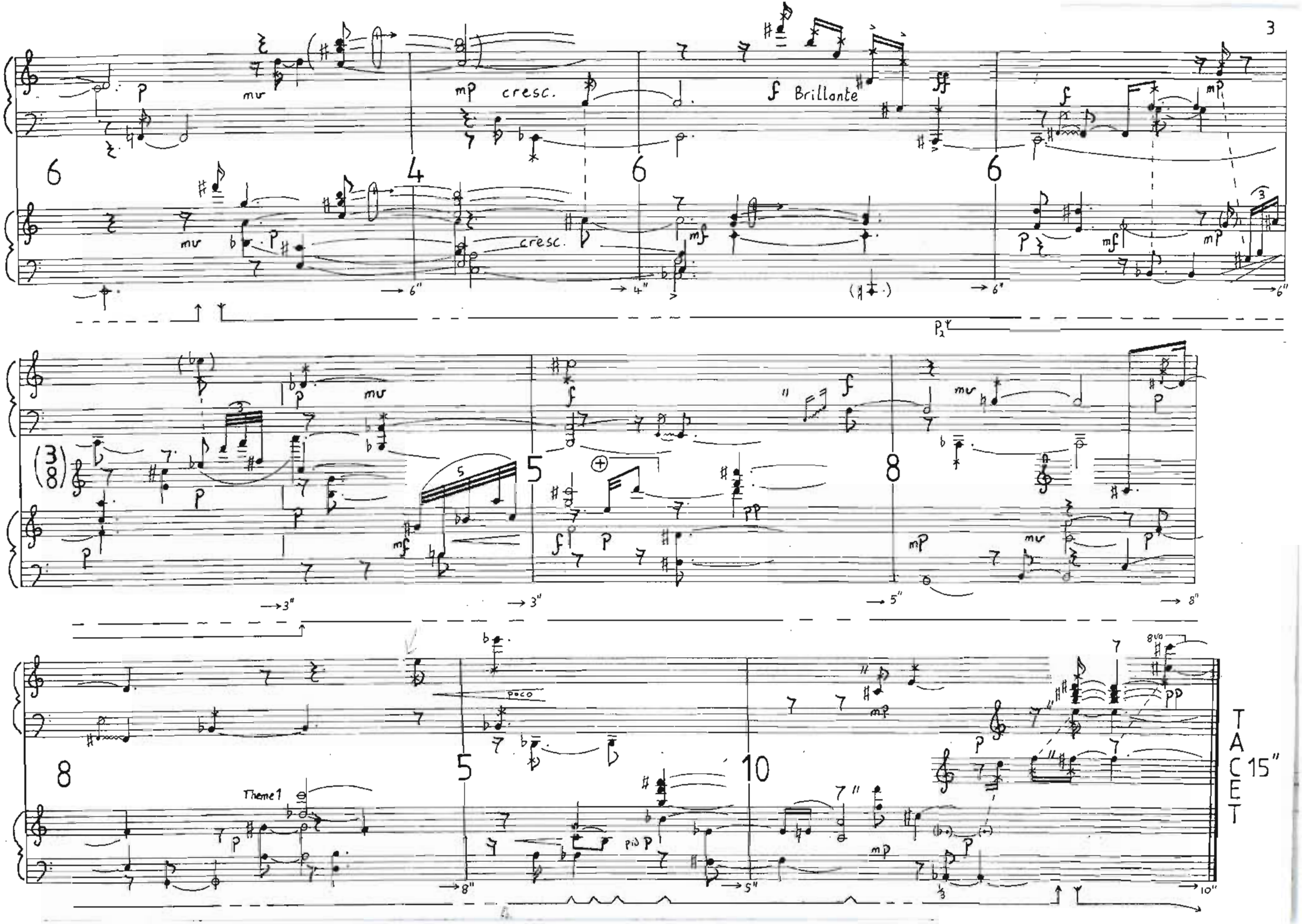
8va

crescendo

Theme 1

dolce

Theme 1


cresc.
Brillante
cresc.
poco
Theme 1
TACET 15"

2 MOONSHADOW

Agitato (♪~144)

Frameboard

Keyboard

Theme 2

molto

Theme1

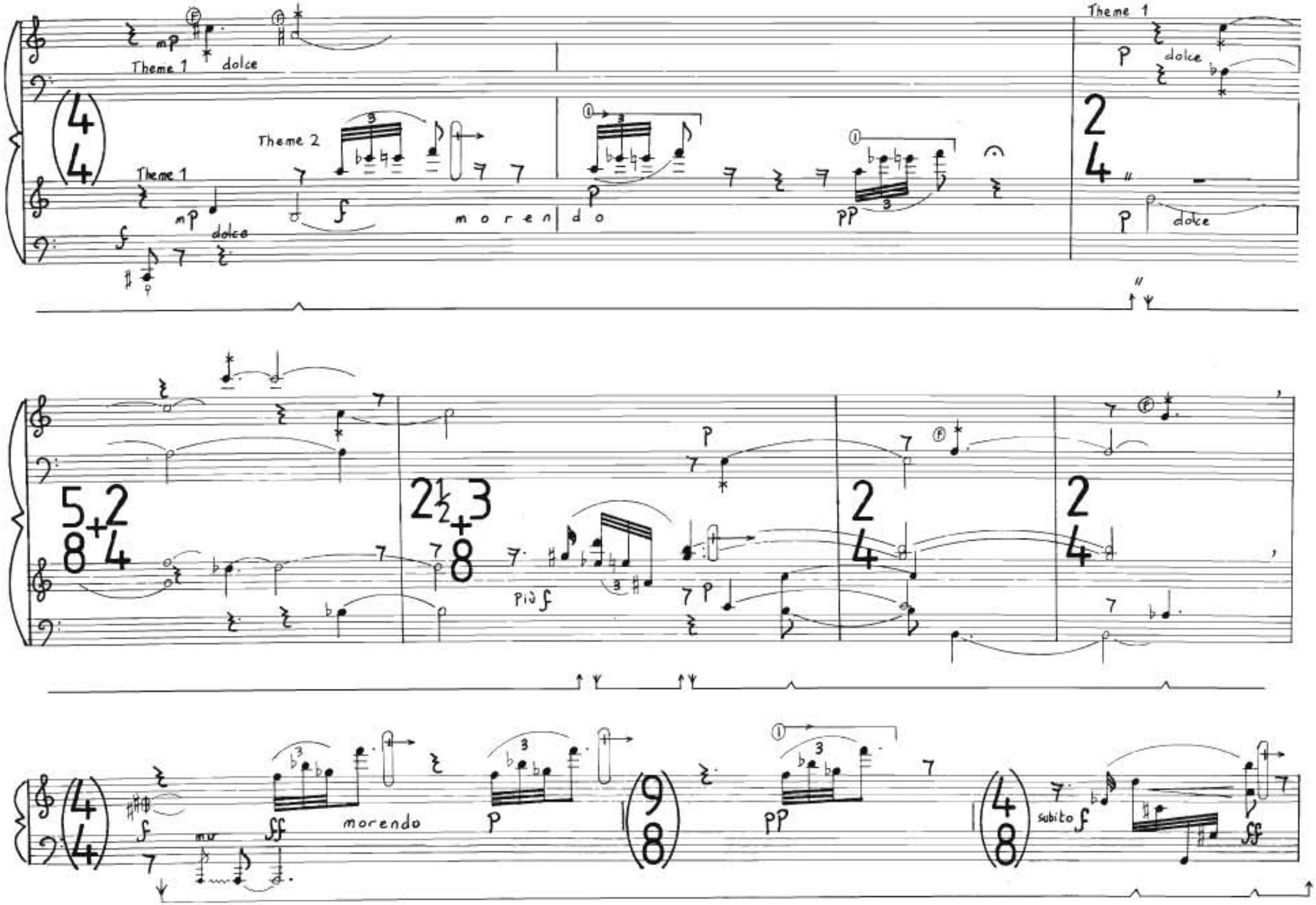
Placido

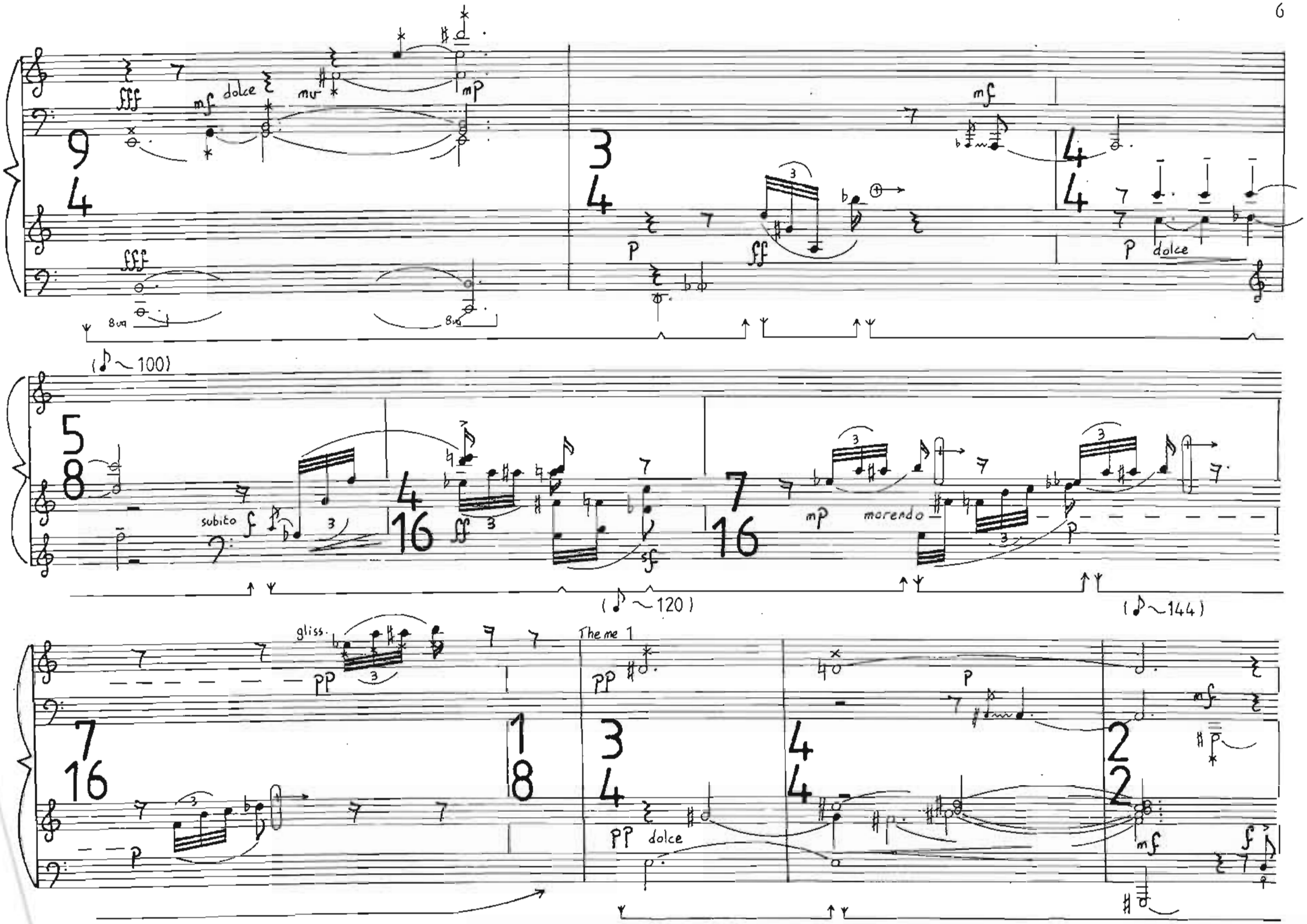
Impetuoso

allargando

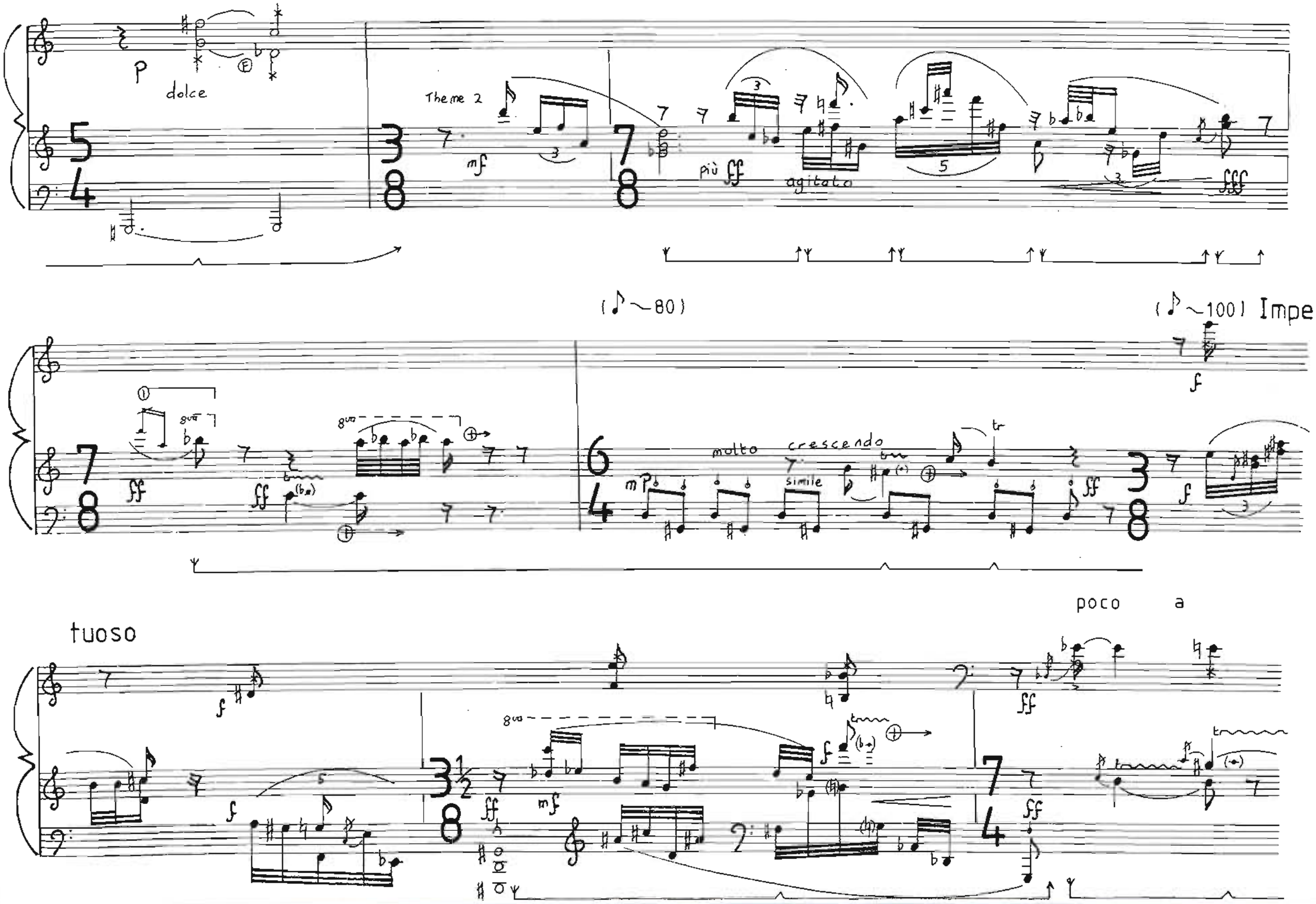
Theme 1

Più f


Theme 1
dolce
Theme 2
Theme 1
dolce
morendo
Theme 1
dolce
dolce
Più f
morendo
subito f


fff
mf dolce
mv
mp
mf
p
ff
p dolce
8va
(♪~100)
subito f
ff
sf
mp
morendo
p
(♪~120)
(♪~144)
gliss.
pp
Theme 1
pp
p
mf
pp dolce
mf
f

Subito Sciolto, liberamente e Animato



poco piu agitato

Presto

leggiero

(♪. ~ 120 ~ 80)

Poco a poco crescendo

(♪. ~ 80 ~ 106)

molto f

Fairly slow

(♪~120)

(♪~80)

espressivo

OSSIA

Placido (♪~120)

leggierissimo

(Quasi Jade)

sotto voce

PP leggeiro

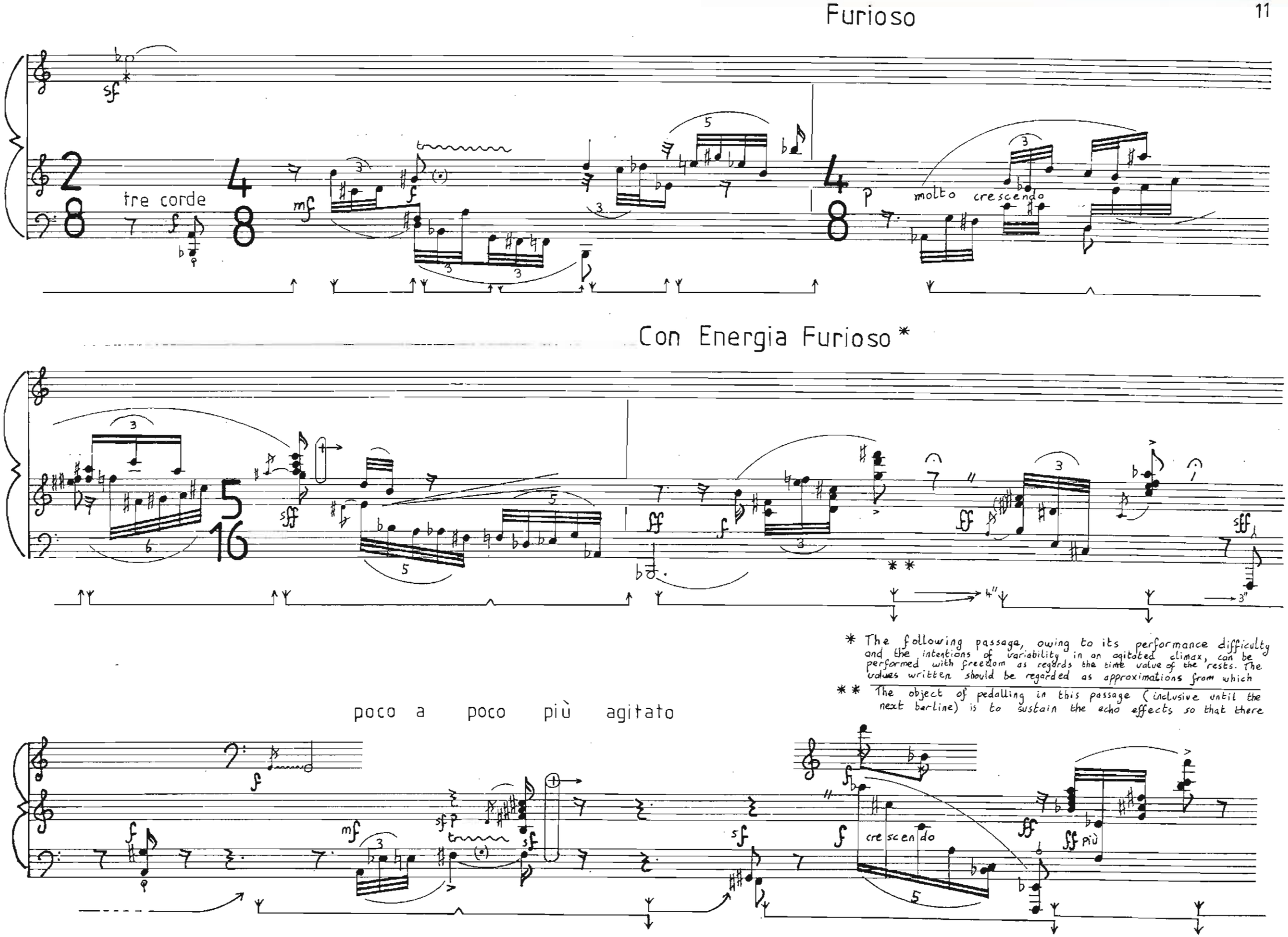
Agitato

R.H.

cresc.

Impetuoso

una corde



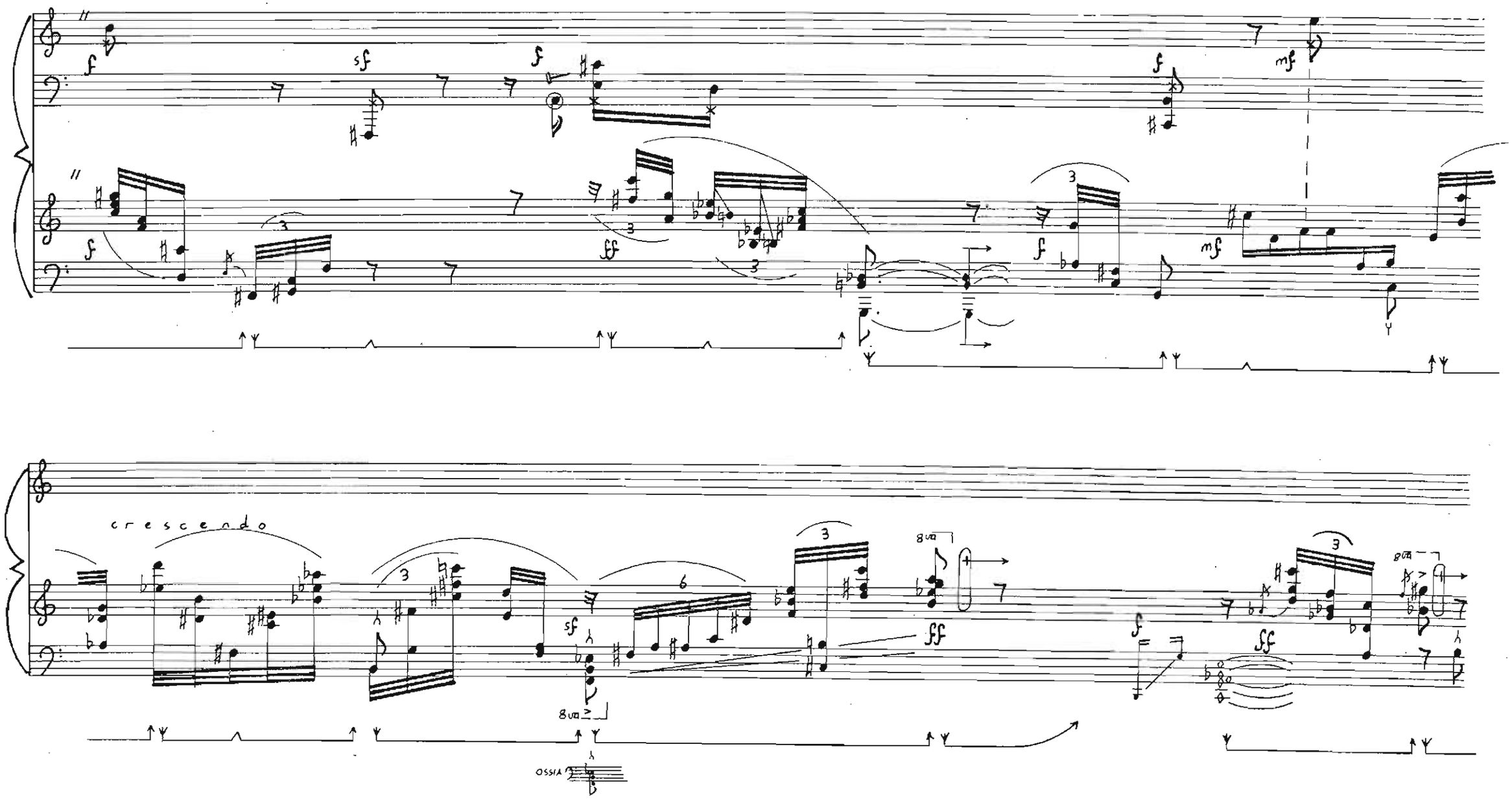
* The following passage, owing to its performance difficulty and the intentions of variability in an agitated climax, can be performed with freedom as regards the time value of the rests. The values written should be regarded as approximations from which

** The object of pedalling in this passage (inclusive until the next barline) is to sustain the echo effects so that there

* deviance should not be too great. This passage is thus suitable for a variety of interpretations. As a result the above non-metred, unbarred passage is meant to serve as a close model around which various modifications in time can be constructed. The passage must, however performed, always retain the effect of a climactic build-up of agitation and tension by isolated events which, eventually occurring within shorter spaces of time, become more connected together until a climactic (daemonic) jumble of events is reached.

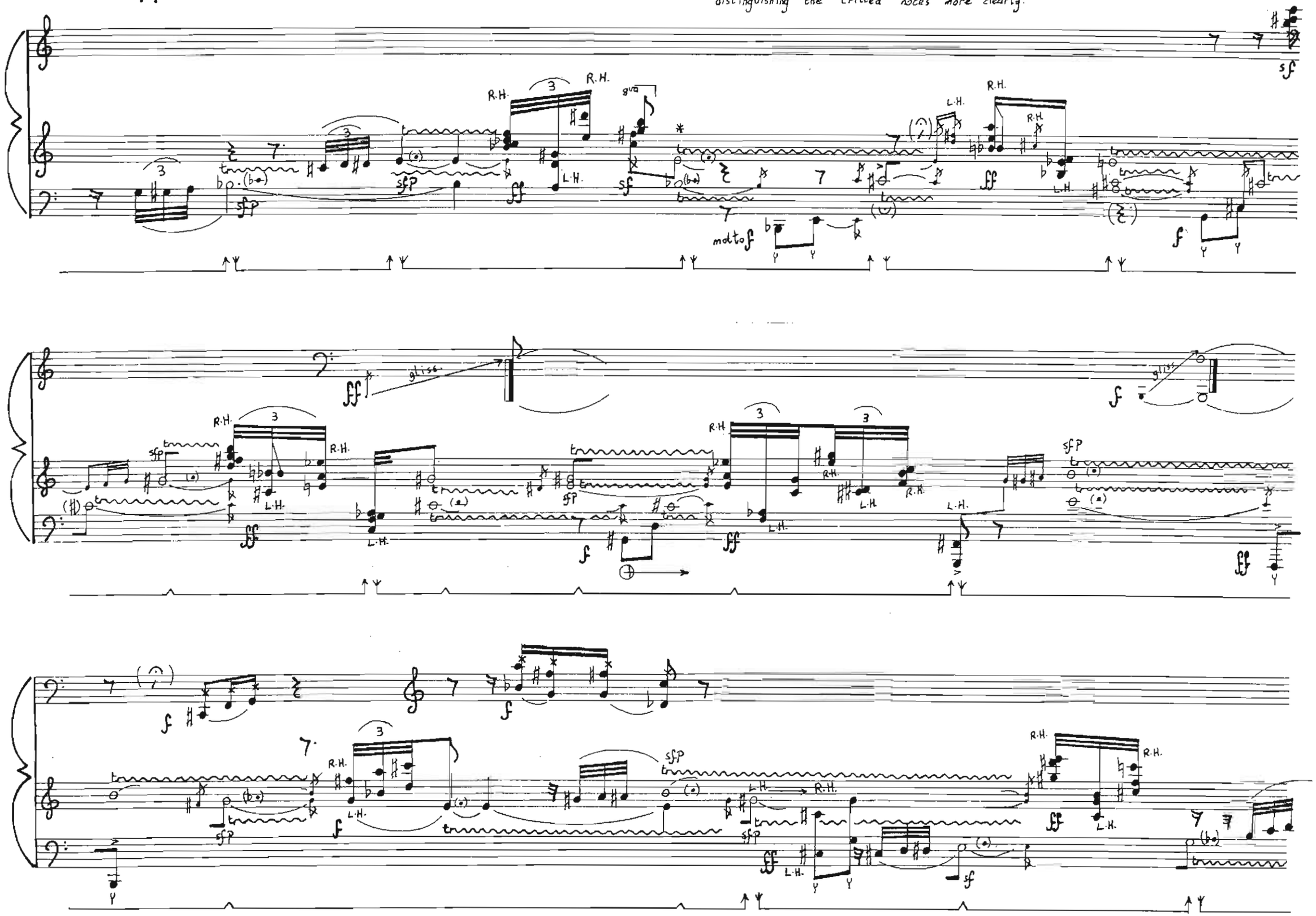
** is a continual build-up of echo-overlapped (sustained) sound from each preceding event onto the next. The purpose is to accumulate a fairly large amount of reverberation from conglomerated sound decay as the passage continues towards its apex.

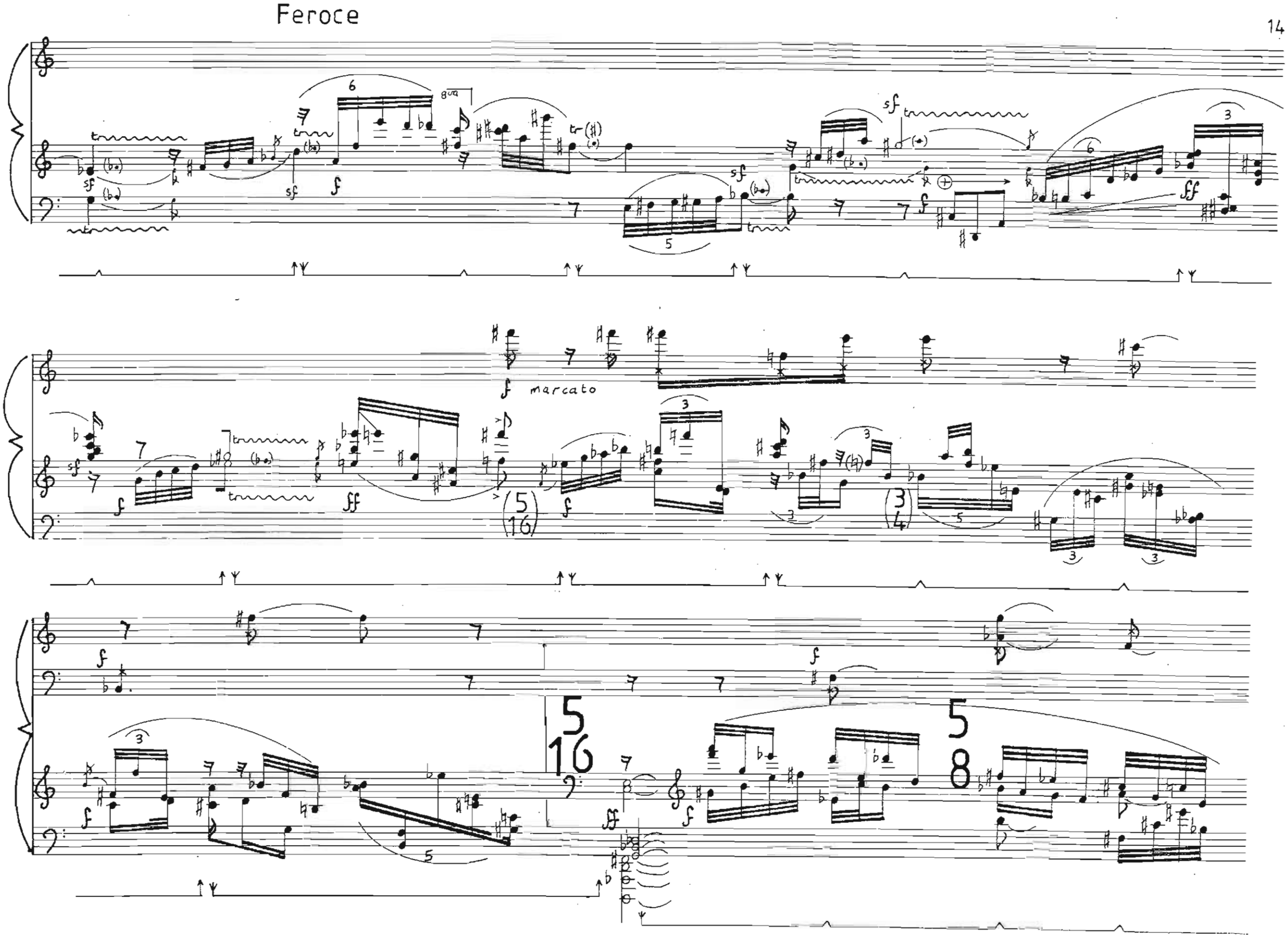
(sempre forte e fortissimo)



Con Appassionato Diabolico

* The use of white note heads on these next two pages does not indicate time value but is for distinguishing the trilled notes more clearly.



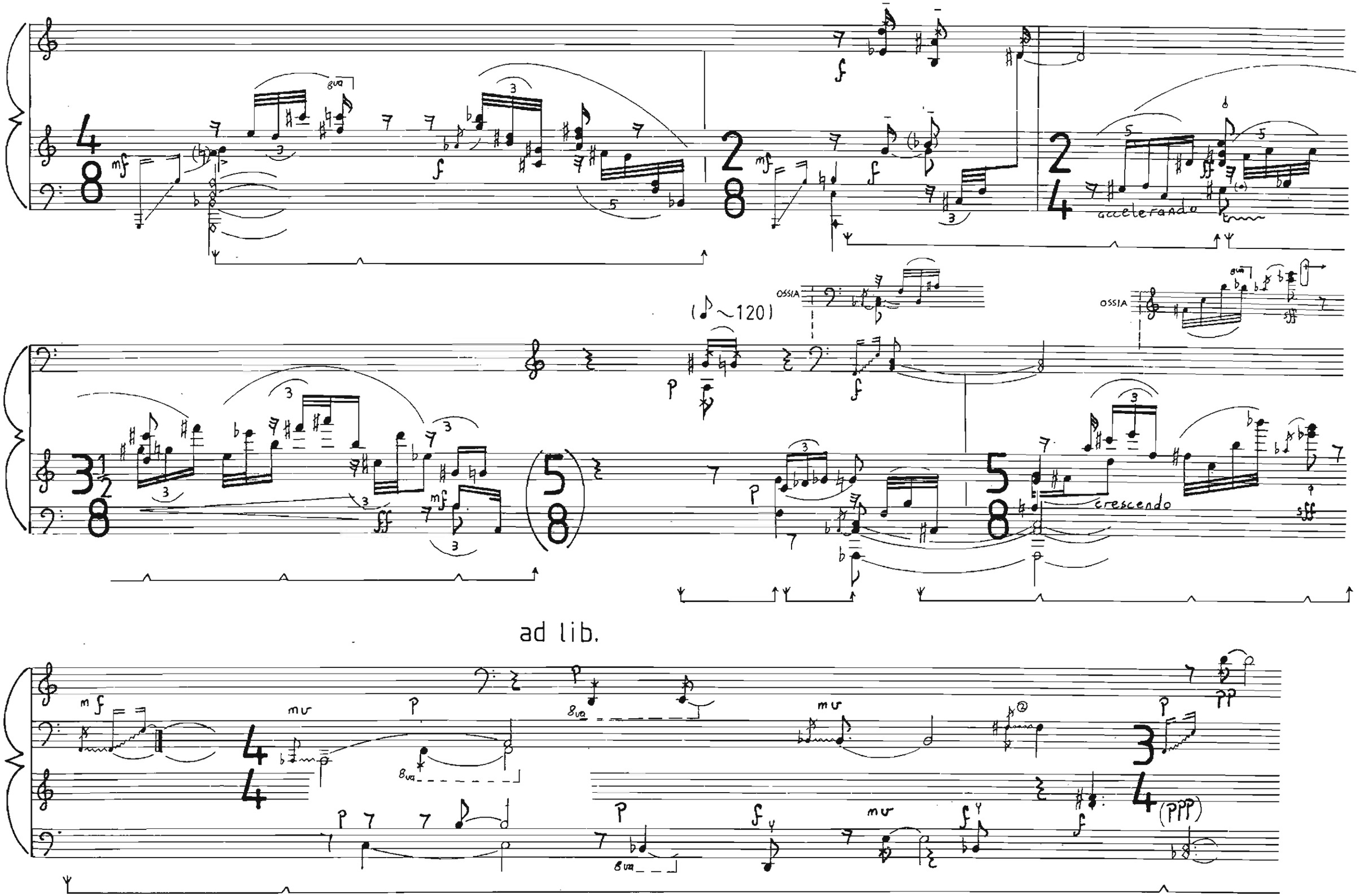

Feroce
8va
marcato

diminuendo

crescendo

accelerando

OSSIA


accelerando
OSSIA
(♪~120)
OSSIA
crescendo
ad lib.

Capriccioso (♪~144)

Tranquillo

Misterioso (♪~80) (♪~100)

poco a poco agitato

accelerando e molto poco

agitato a poco

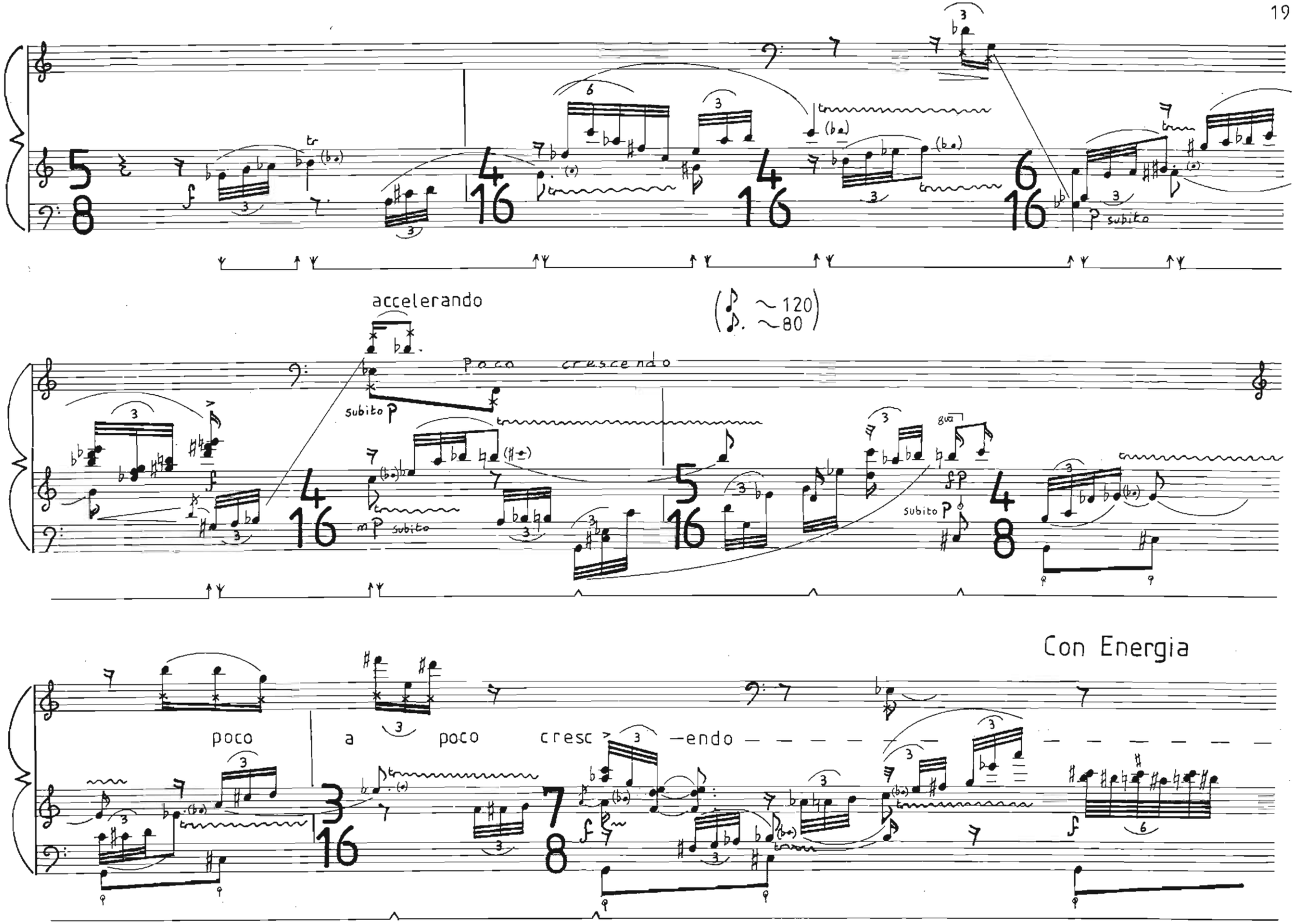
cresc endo

OSSIA

(♪~120)

(♪~100) Con Molto Fuoco

cresc endo


accelerando
(♪ ~120
♪. ~80)
poco crescendo
subito p
mp subito
subito p
Con Energia
poco a poco cresc -endo

cresc e n d o m o l t o e a c c e l e r a n d o

tremolo

tr

tr simile

sempre Pedale

* for alternative version see page 28

(♪~200)

Con forza Diabolico*

(♪~120)

trem. simile

tr

G.P.

Subito Pausa

subito senza pedale

R.H. Loco

Lunga

L.H. 8va RAPID GLISSANDO WITH RULER

decrescendo a niente

Lunga

WITH FOREARMS

8va

Lunga

decrescendo a niente

12/8

semplice,

8va

mf

8va

mf

2"-4"

alla campanello

legato e leggiero

8va

8va

diminuendo

poco a poco languido

Misterioso (♪~80)

Molto Agitato (♪~108)

OSSIA

sempre pp (quasi una sospiro)

Pedale ad libitum

OSSIA

tenuto

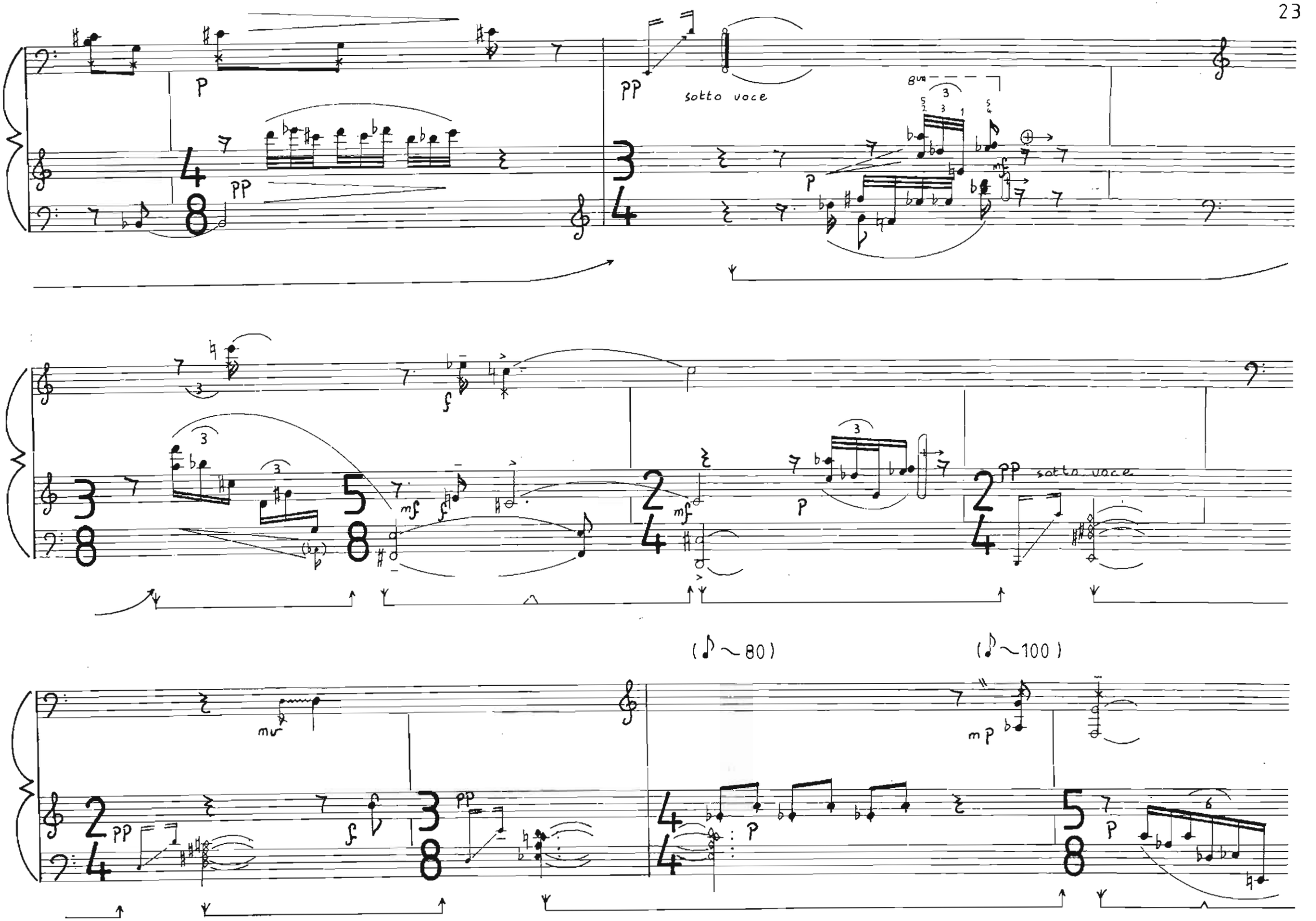
Calmato e

OSSIA

Meditativo (♪~80)

(♪~108)

(♪~100)


sotto voce
sotto voce
(♪~80)
(♪~100)

gua

PP Leggiero e cappricioso

P

tr(b)

mf

mf

P

3"

(♪~80)

sempre P

sotto voce

crescendo

PP

P

crescendo molto

R.H.

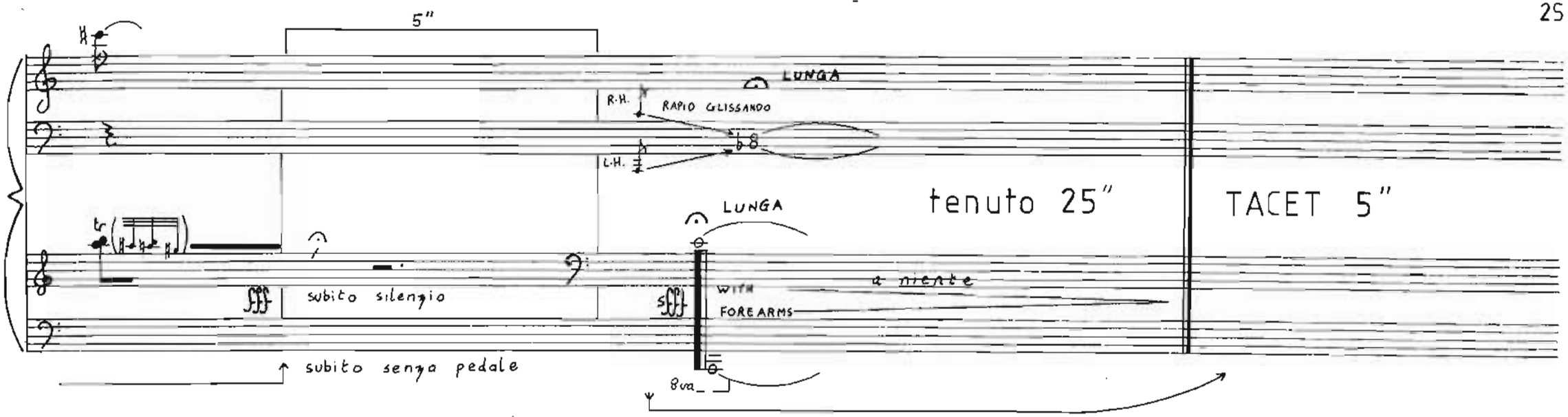
LH.

simile

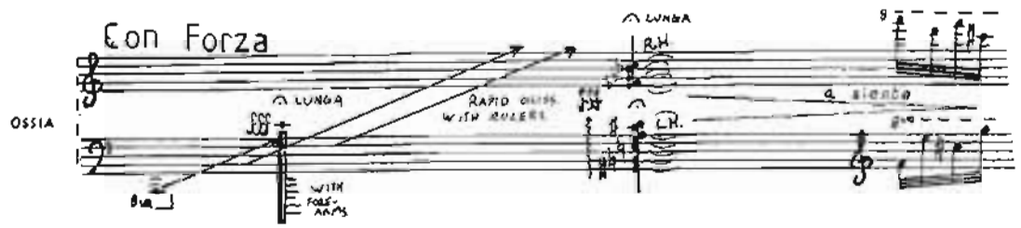
tr

accelerando

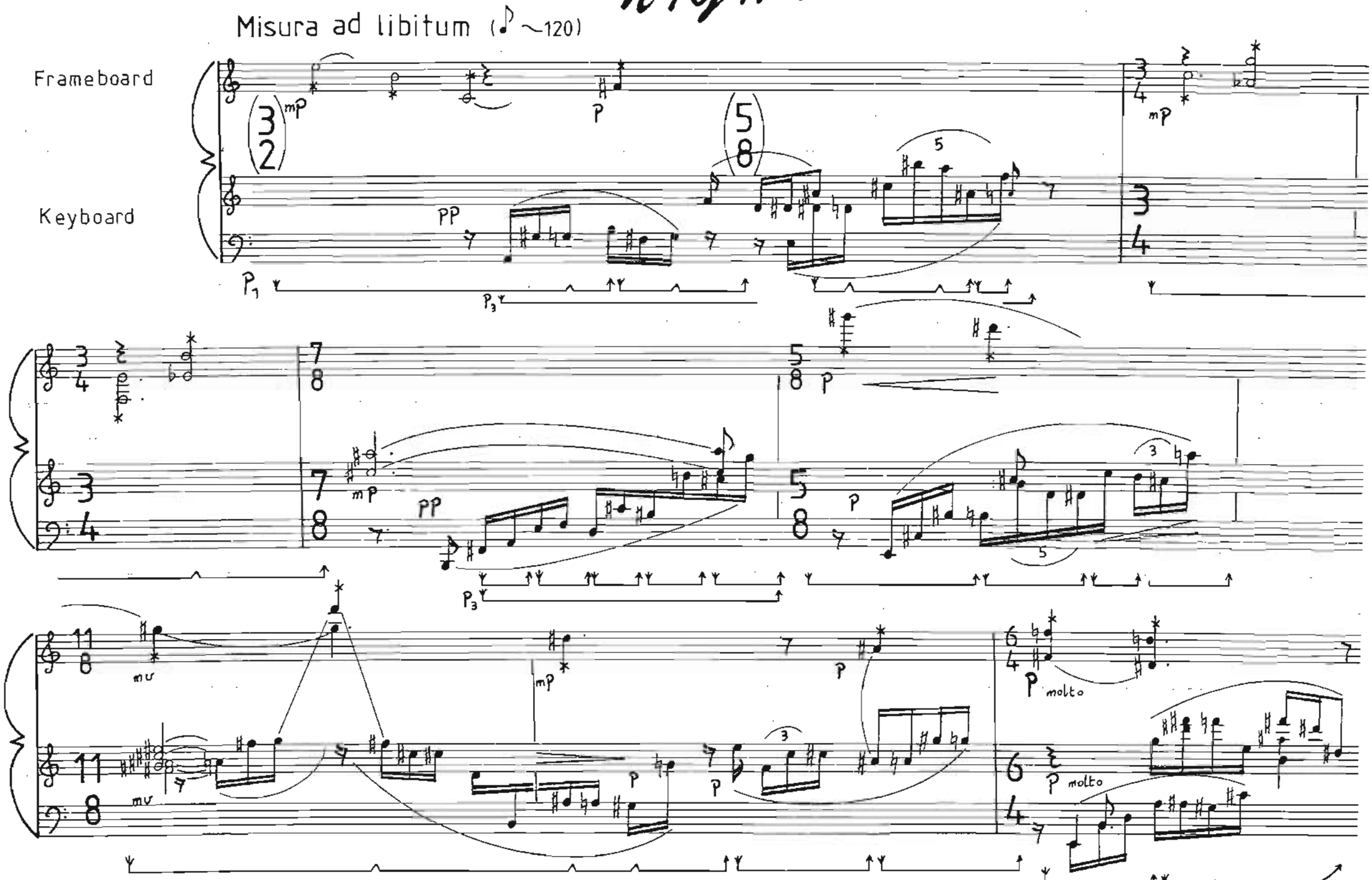
sempre Pedale 1

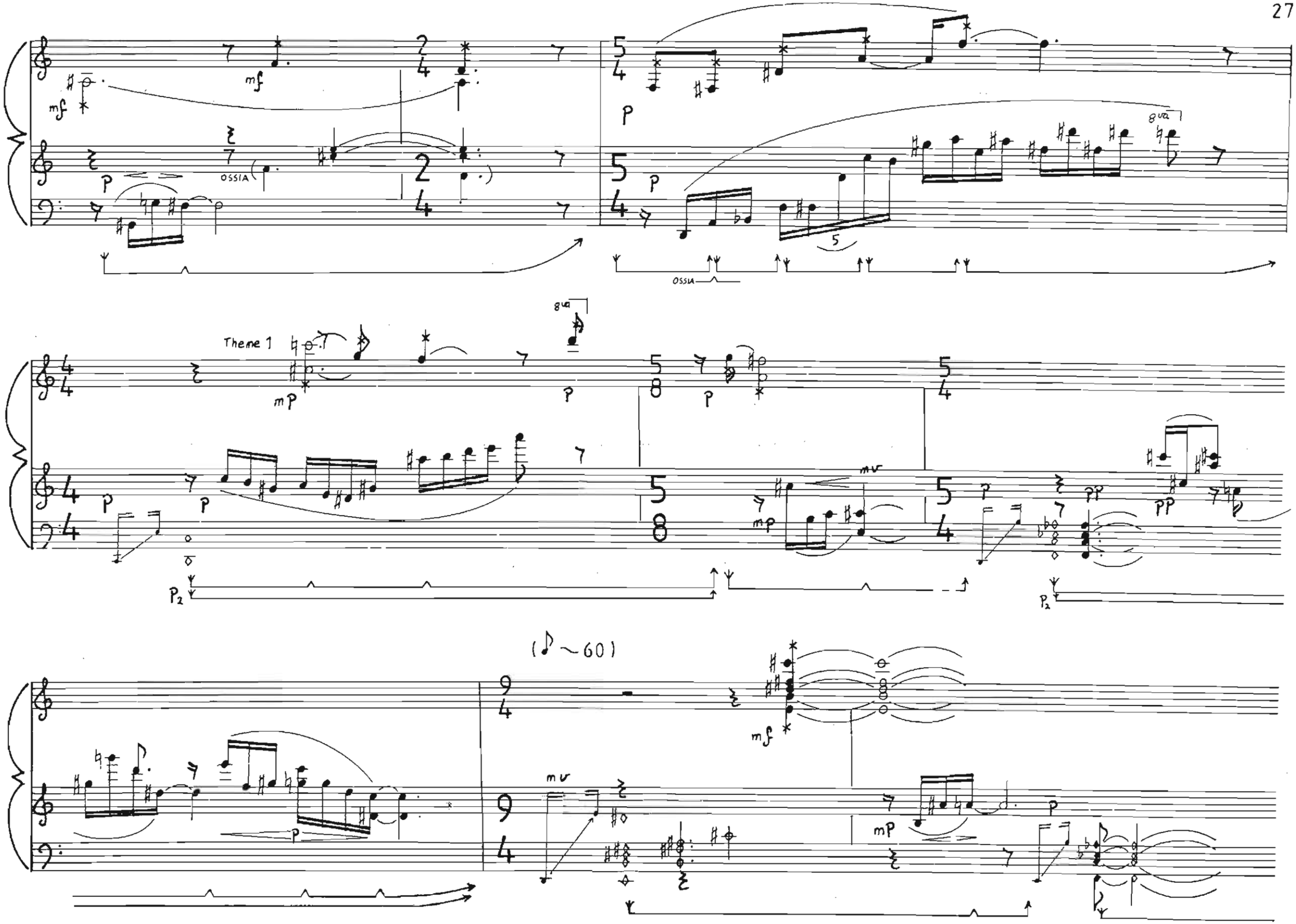


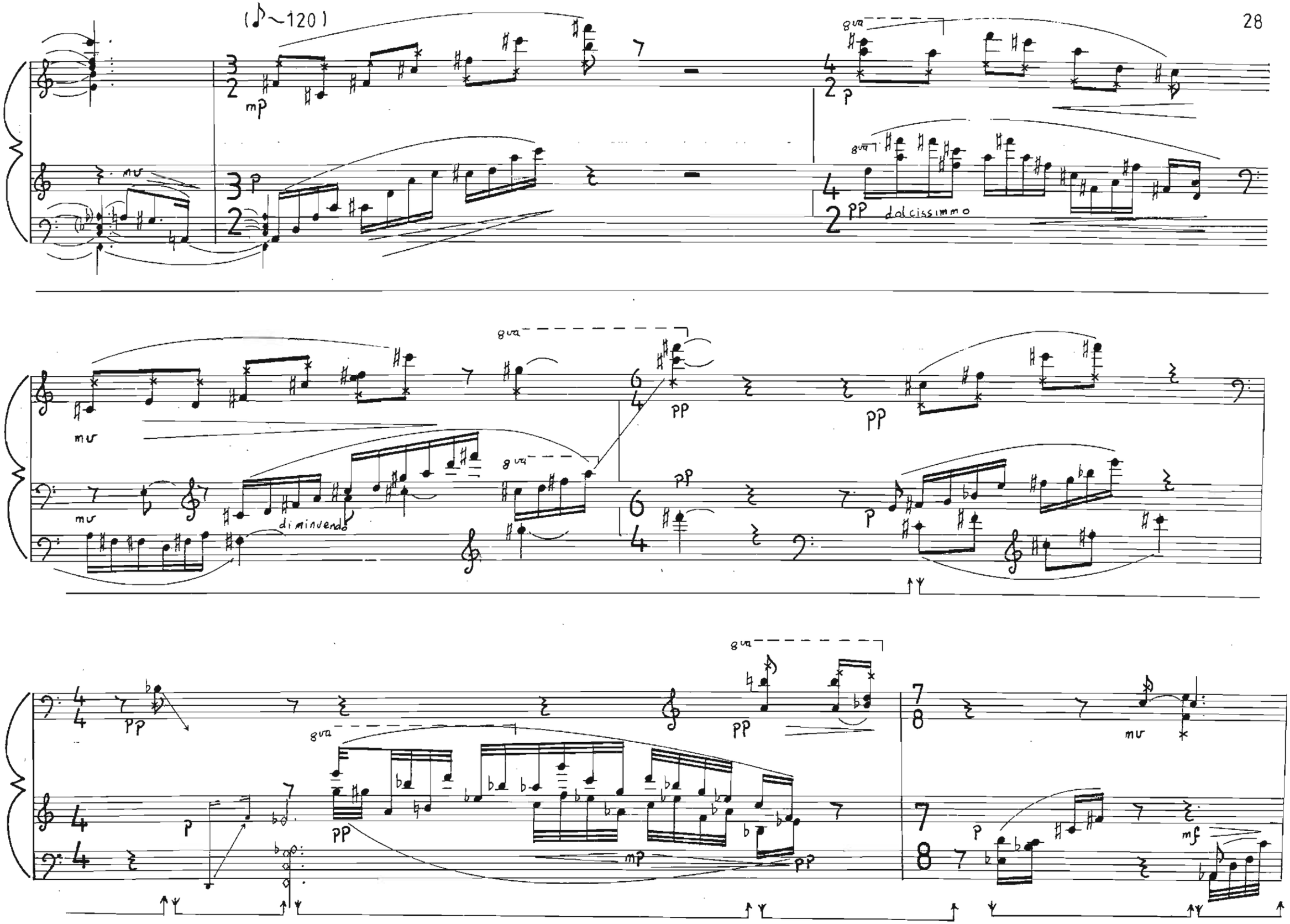
Alternative version for page 23

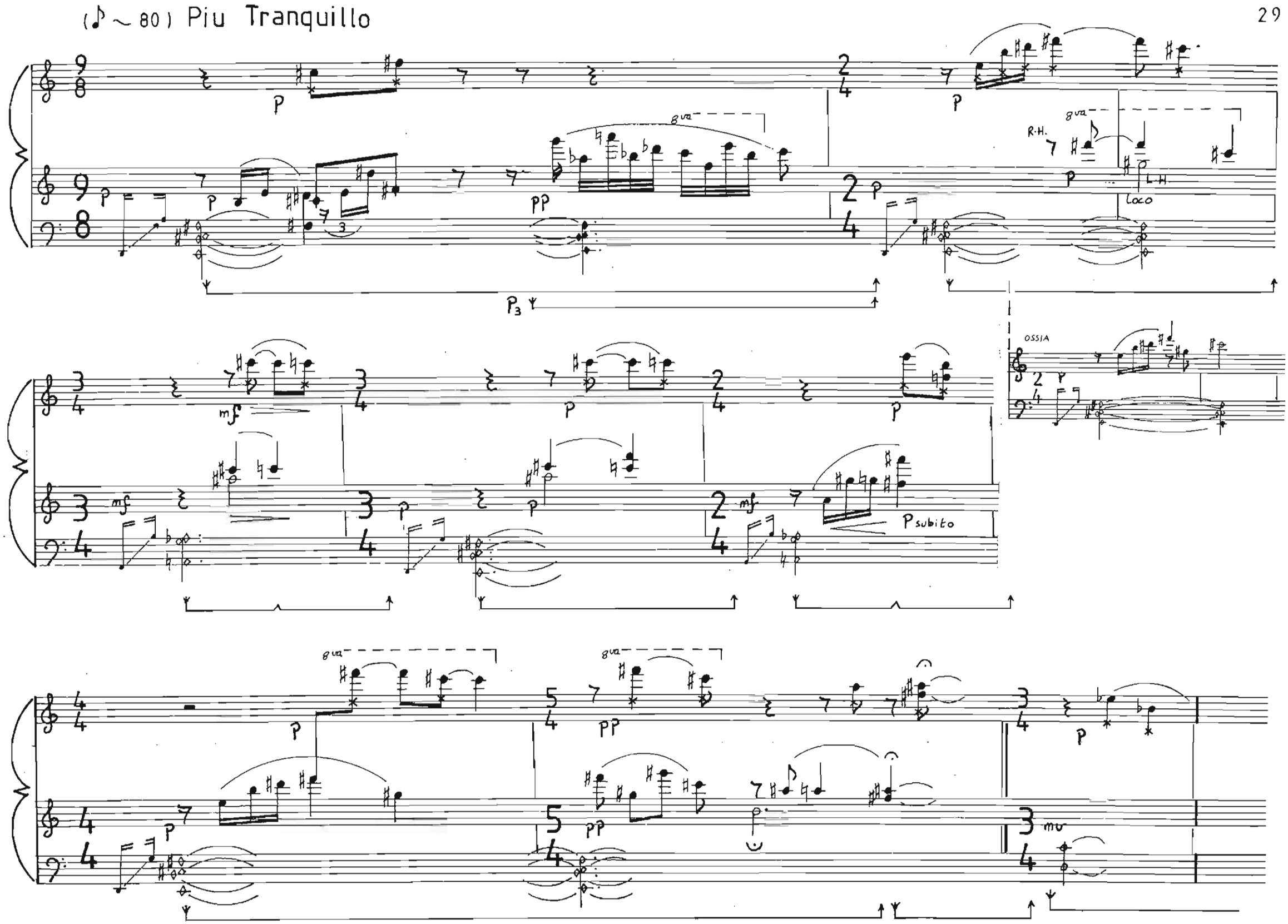


3 AMETHYST: NIGHT MUSIC




mf
mf
p
OSSIA
p
p
8va
OSSIA
Theme 1
mp
p
8va
p
p
p
mv
mp
p
pp
pp
P2
P2
(♪~60)
mf
mv
mp
p
p


(♪~120)
mp
mv
p
8va
pp
dolcissimmo
diminuendo
mf


(♪ ~ 80) Piu Tranquillo
8va
R.H.
L.H.
loco
P3
OSSIA
P subito
mu

Misterioso (♪ ~100)

* Stop string with finger just behind damper and scrape with ruler or plectrum.
** Harmonics on stopped notes.
*** Cover all strings with hands or strips of plastercine placed just behind the dampers.

senza Pedal

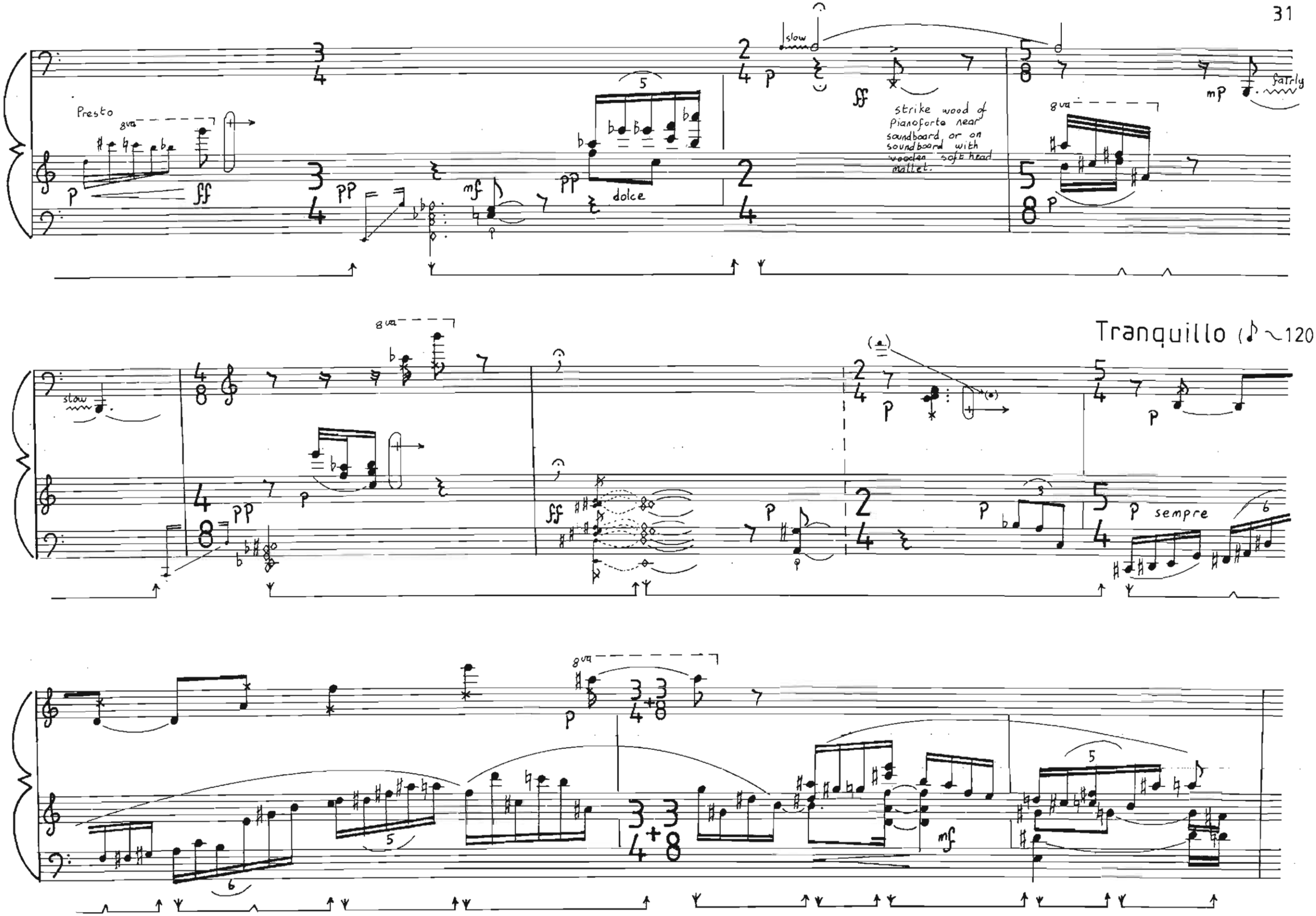
OSSIA

Fairly slow

strike metal frame with mallet head

Keyboard player silences strings with hand.

Fairly slow


Presto
8va
p
ff
pp
mf
dolce
slow
strike wood of pianoforte near soundboard or on soundboard with wooden soft head mallet.
mp
fairly
Tranquillo (♪ ~120)
sempre

synchronised on any of the three middle notes of quintuplet.

più P dolce

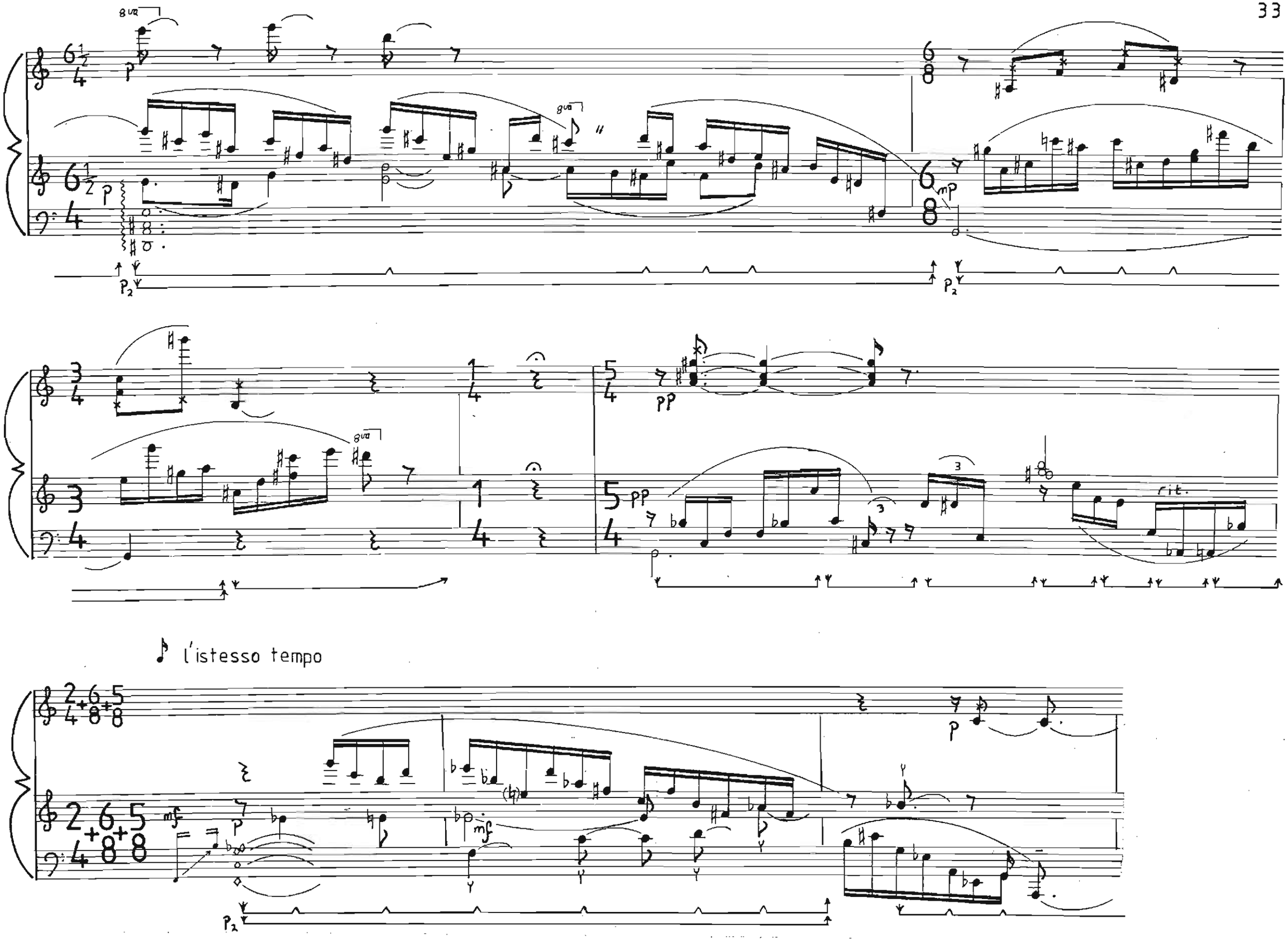
più PP

mv

Loco

rit.

OSSIA


8va
p
mp
pp
rit.
mf
l'istesso tempo

Misterioso (♪ ~160)

Calmato

Cantando

(♪ ~120)

♪ sempre l'istesso tempo

rythme mècanique

8va

slide finger gradually along strings from pins to dampers

più pp

(P₂ to create/aid an echo effect)

Theme 1

mp

pp

p

f

Tranquillo (rythme mècanique)

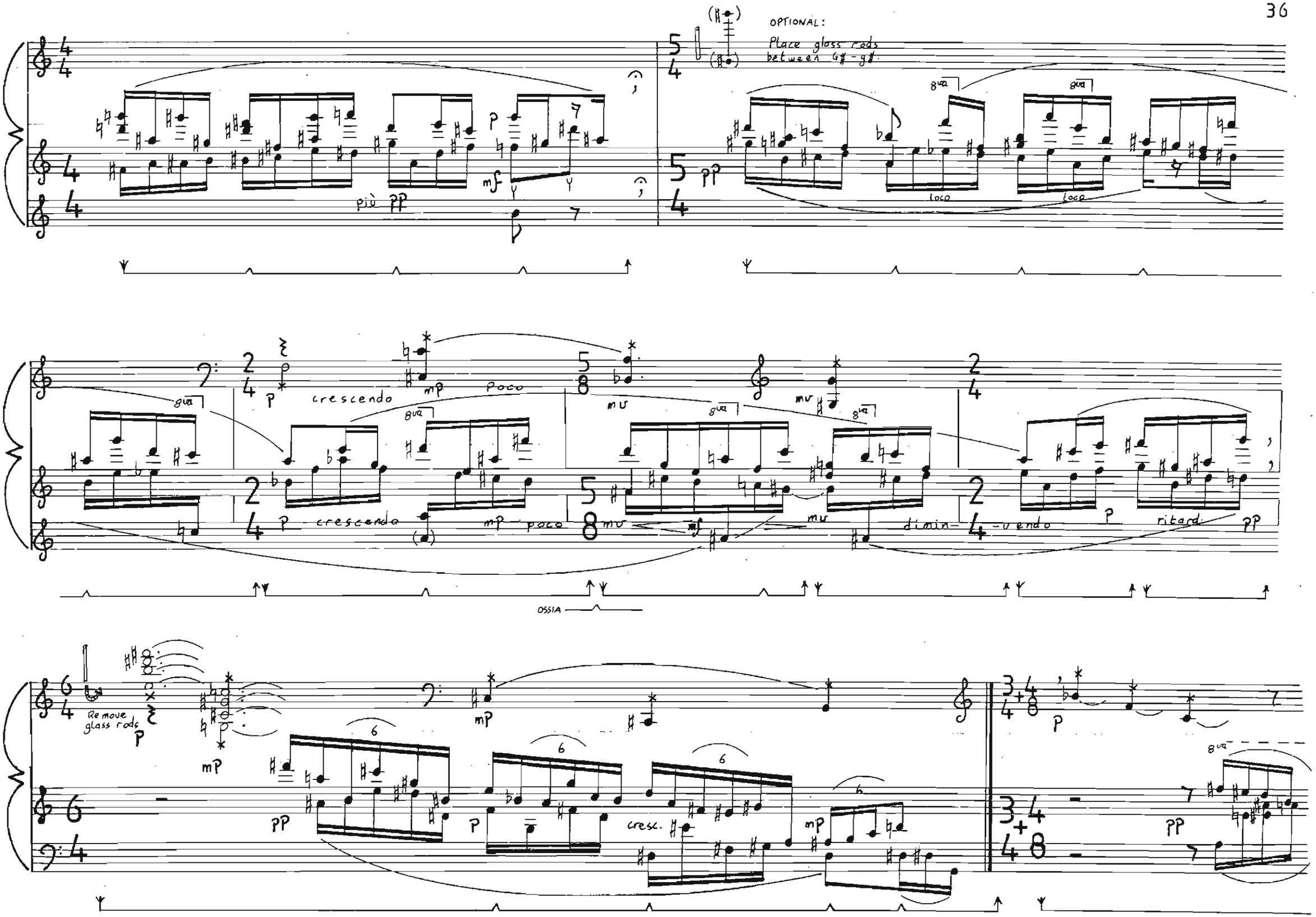
8va

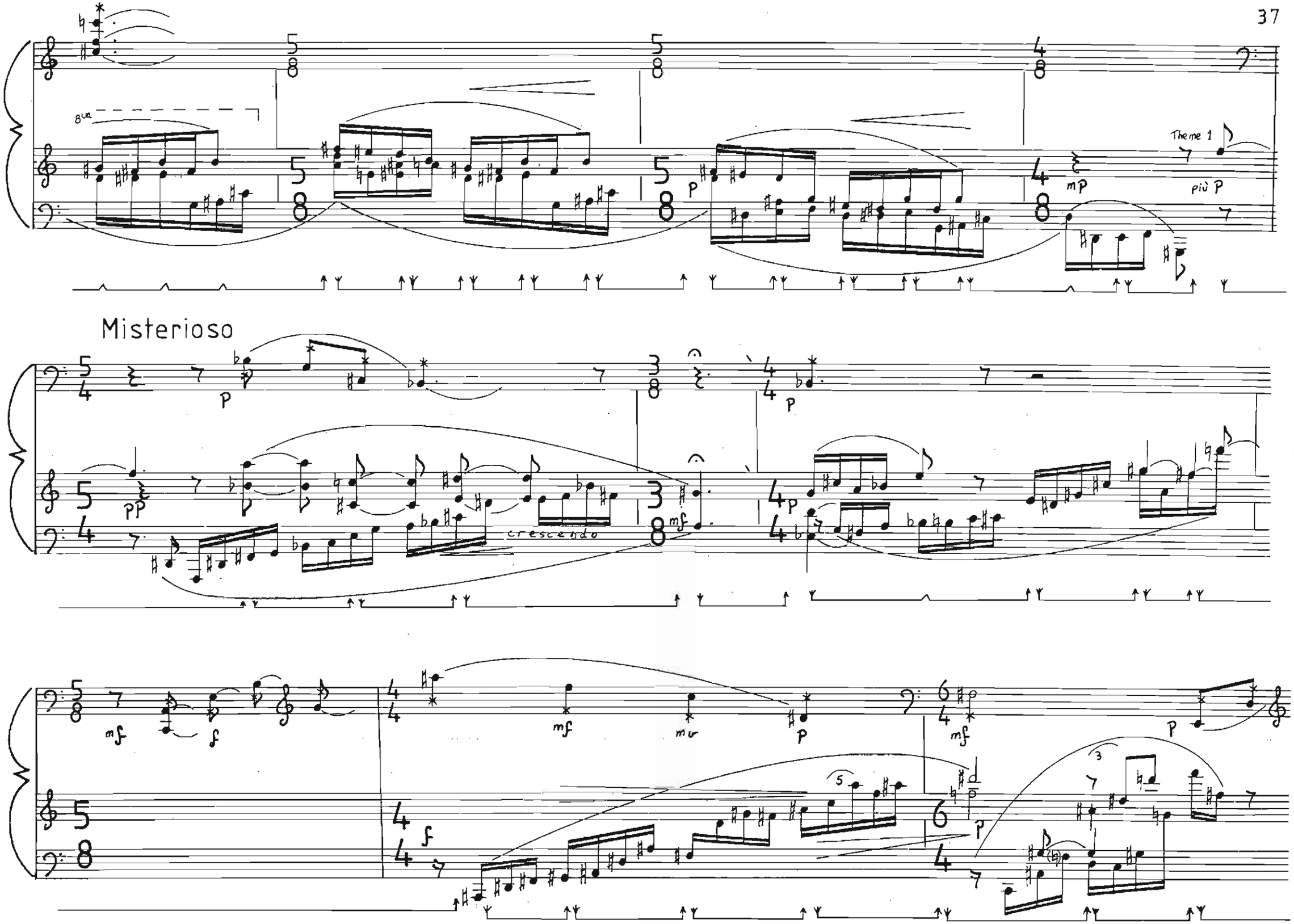
simile(♯)(♮)

più pp

legato

mf


OPTIONAL:
Place glass rods between G♯ - g♯.
più pp
mf
p
pp
8va
loco
crescendo
mp
poco
mv
dimin-
-uendo
ritard.
OSSIA
Remove glass rods
cresc.


8va
Theme 1
più P
Misterioso
crescendo

Misura ad libitum e Tranquillo

Tranquillo

Theme 1

mp

Bang on soundboard with mallet.

sostenuto

Più Molto Tranquillo

subito PP

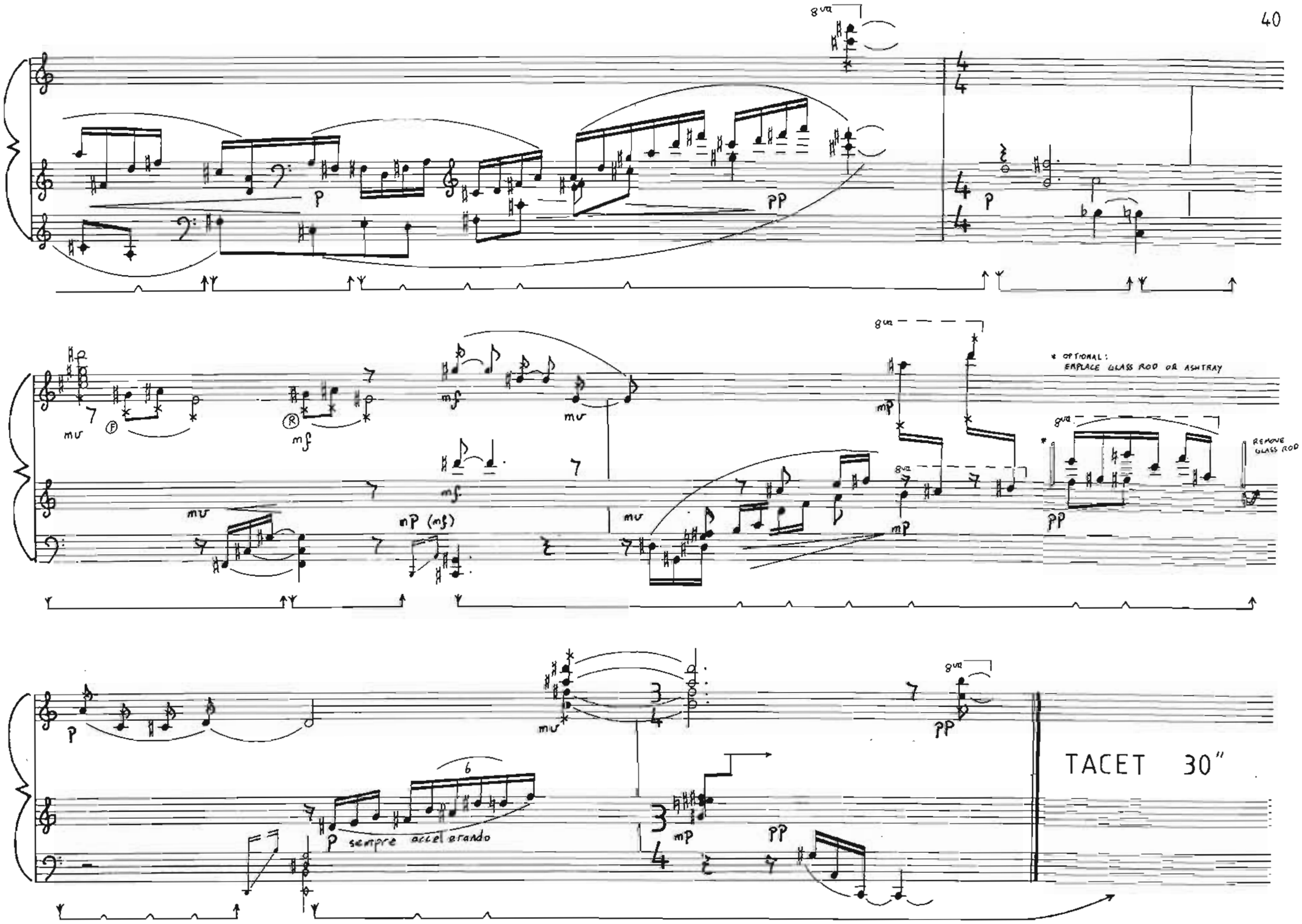
OSSIA

poco cresc.

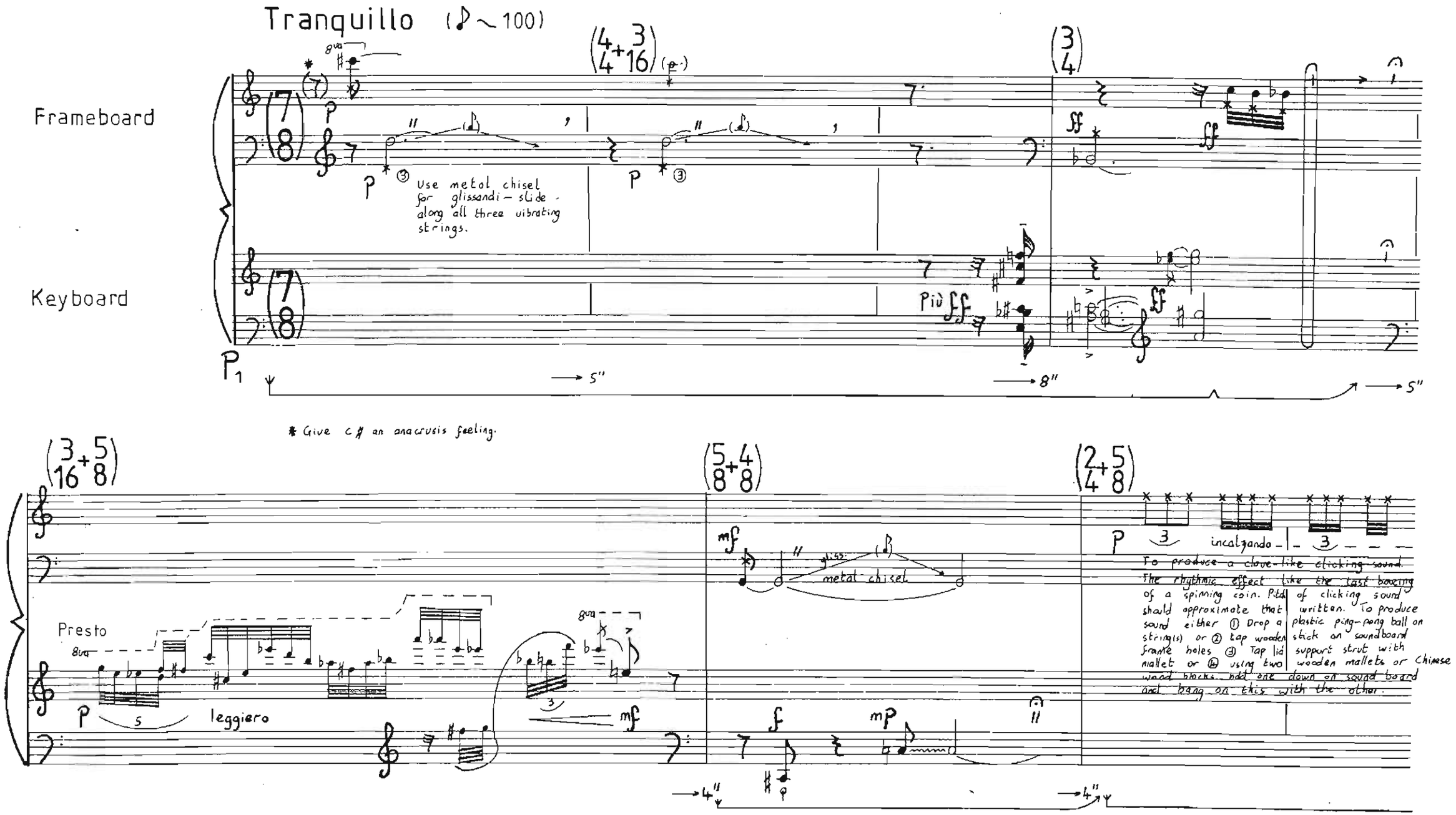
Lunga

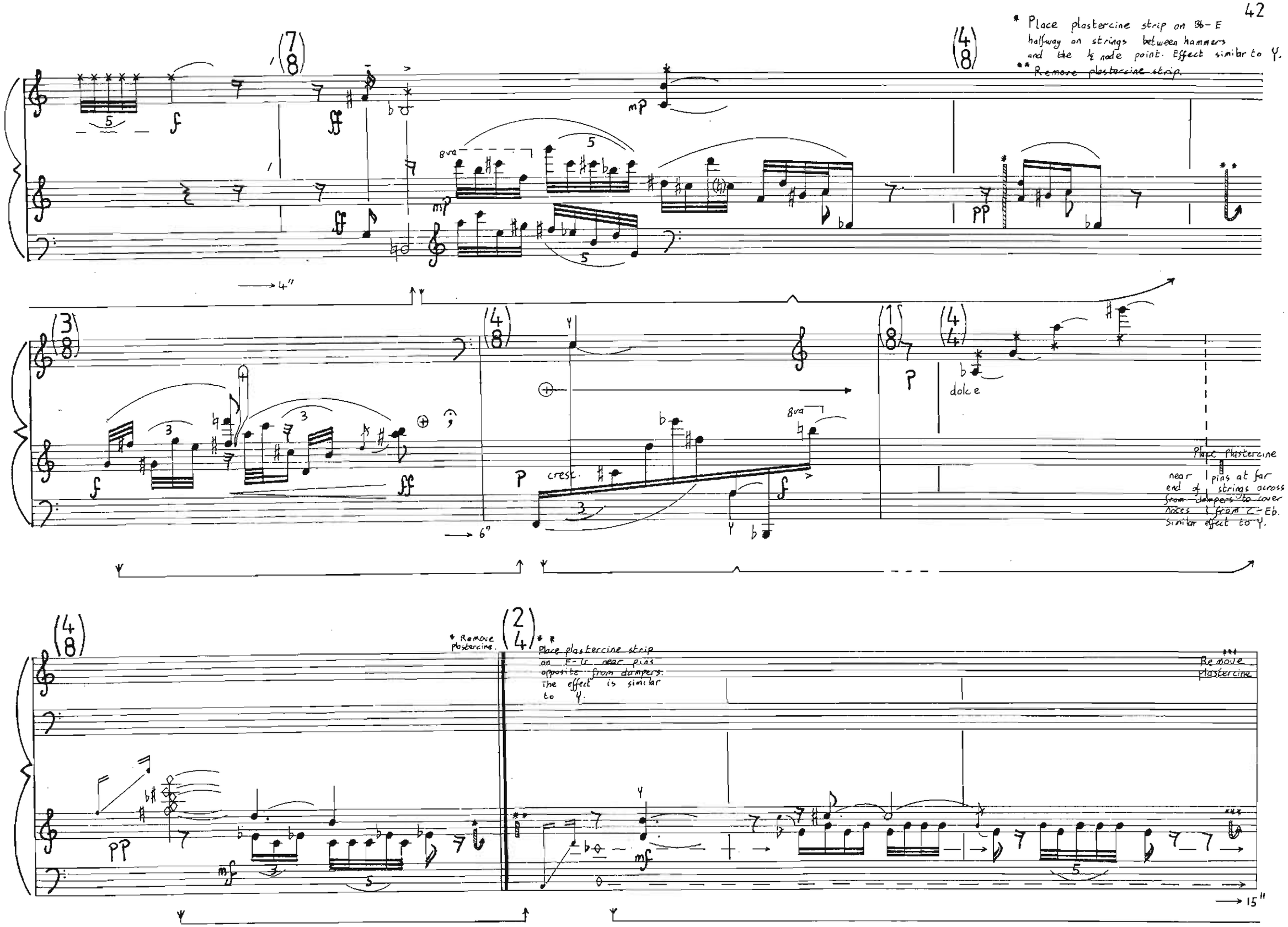
più PP

dolce


8va
p
pp
mv
mf
mp (mf)
mp
* OPTIONAL:
EMPLACE GLASS ROD OR ASHTRAY
REMOVE GLASS ROD
p sempre accelerando
TACET 30"

4 NEBULAE

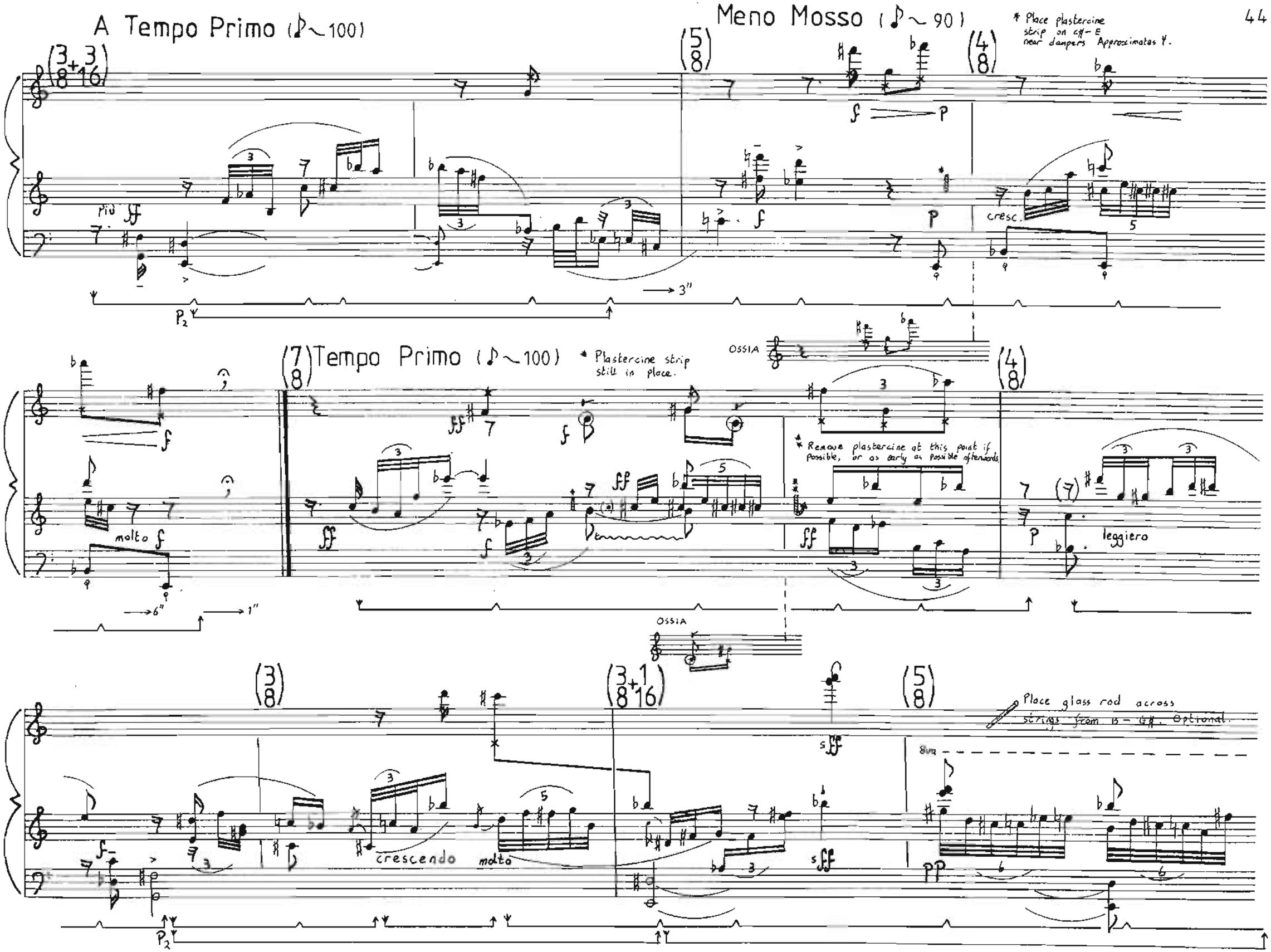

Tranquillo (♪ ~ 100)
Frameboard
Keyboard
Use metal chisel for glissandi – slide along all three vibrating strings.
Più ff
P1
→ 5"
→ 8"
→ 5"
* Give c♯ an anacrusis feeling.
Presto
leggiero
metal chisel
incalzando
To produce a clave-like clicking sound. The rhythmic effect like the last bouncing of a spinning coin. Pitch should approximate that sound either ① Drop a string(s) or ② tap wooden frame holes ③ Tap lid mallet or ④ using two wood blocks. Add one down on sound board and bang on this with the other.
of clicking sound written. To produce plastic ping-pong ball on stick on soundboard support strut with wooden mallets or Chinese
→ 4"
→ 4"

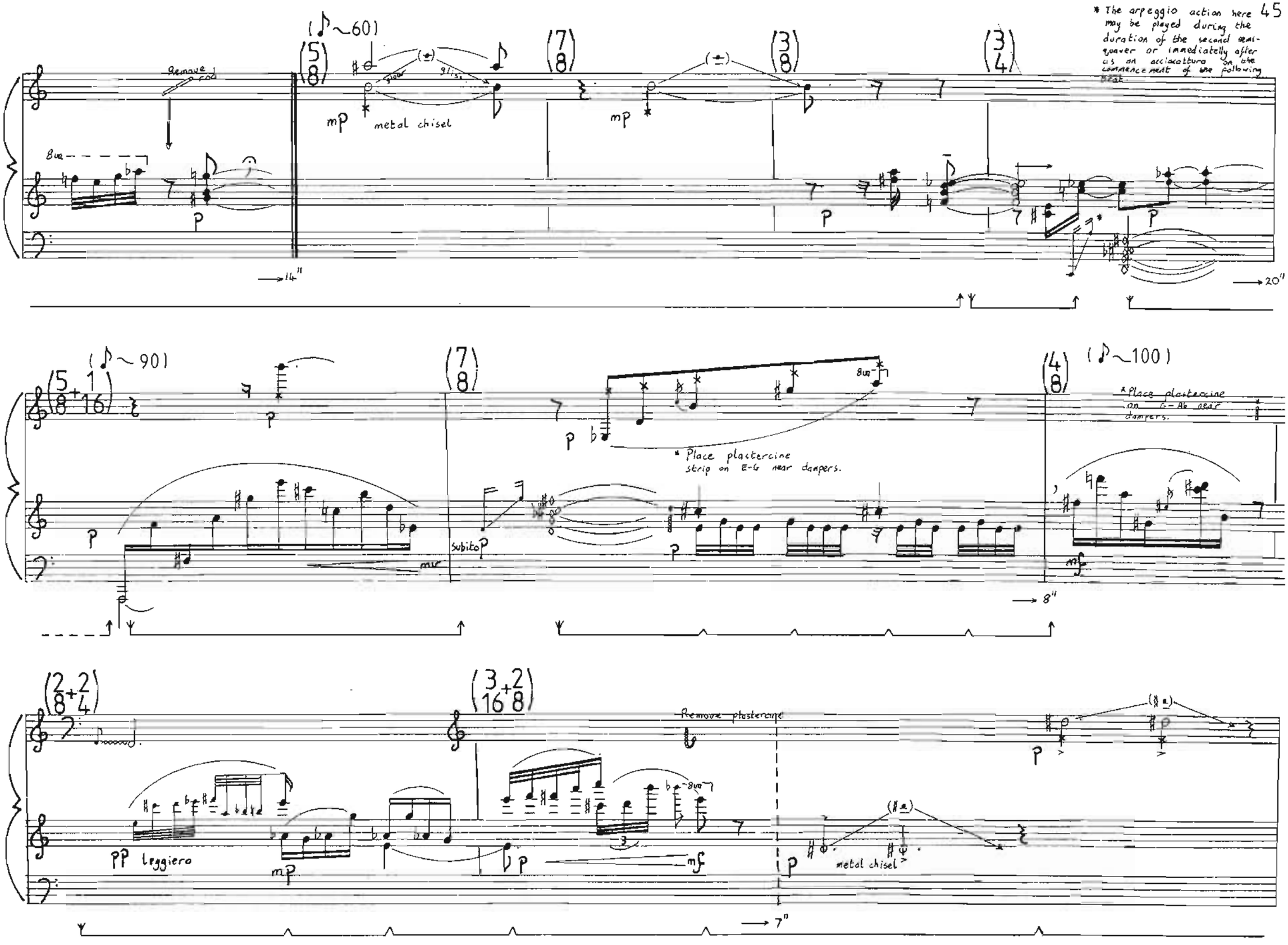

* Place plastercine strip on Bb-E halfway on strings between hammers and the ½ node point. Effect similar to Y.
** Remove plastercine strip.
8va
4"
6"
dolce
crest.
Place plastercine near pins at far end of strings across from dampers to cover notes from C-Eb. Similar effect to Y.
* Remove plastercine.
** Place plastercine strip on F-G near pins opposite from dampers. The effect is similar to Y.
*** Remove plastercine
15"

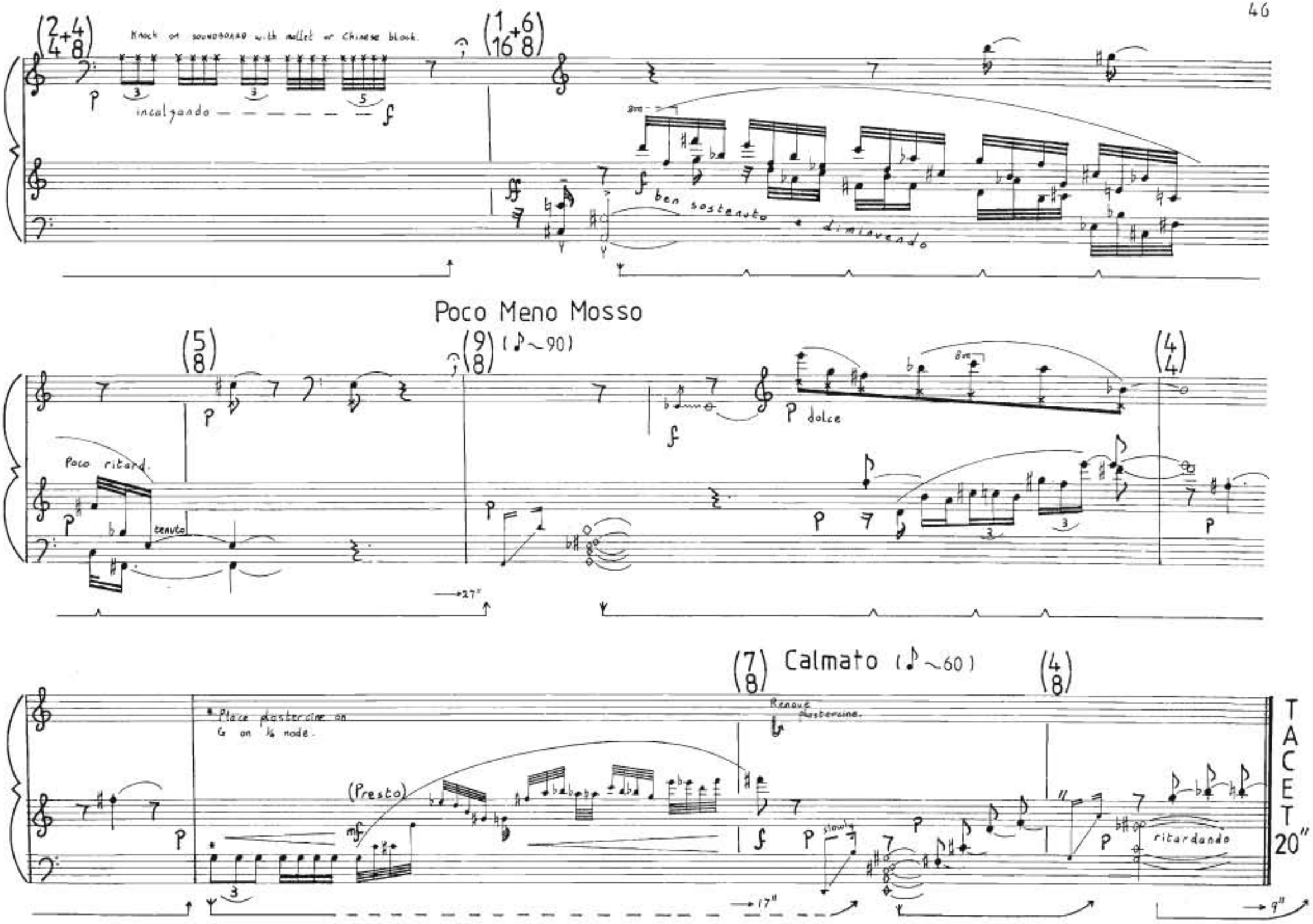
Theme 1

* Assistant employs metal chisel. When glissando reaches octave note is struck again to create vibrations for the return stroke of the metal chisel.

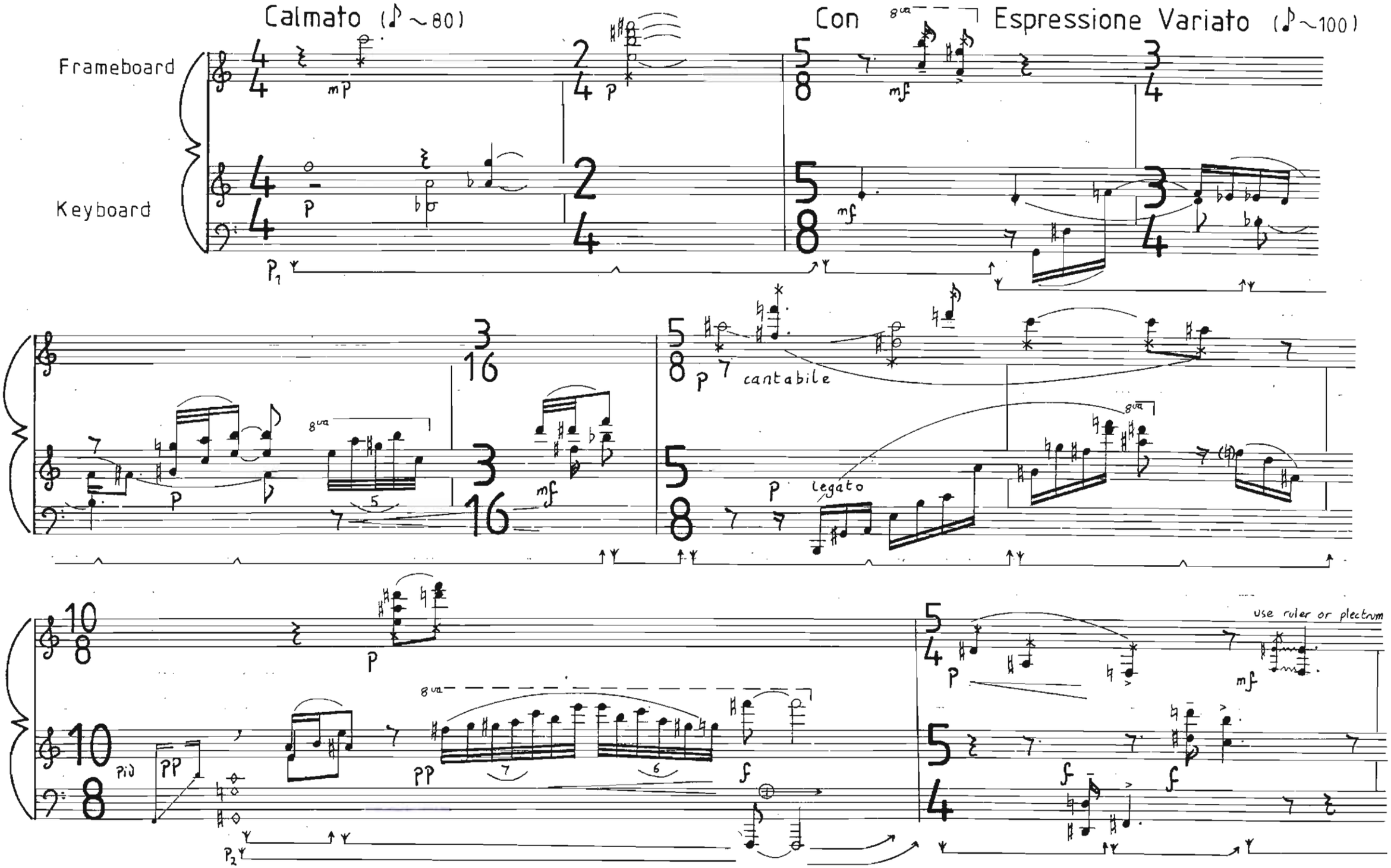
Poco Meno Mosso (♪~90)


A Tempo Primo (♪~100)
Meno Mosso (♪~90)
* Place plastercine strip on c#-E near dampers Approximates Y.
Più ff
cresc.
→ 3"
P2
Tempo Primo (♪~100)
* Plastercine strip still in place.
OSSIA
molto f
* Remove plastercine at this point if possible, or as early as possible afterwards
leggiero
→ 6"
→ 1"
crescendo
molto
Place glass rod across strings from B - G#. Optional.
8va
pp


* The arpeggio action here may be played during the duration of the second semi-quaver or immediatelly after as an acciacattura on the commencement of the following beat.
Remove rod
8va
p
(♪~60)
mp
metal chisel
glass
gliss.
mp
p
p
→14"
→20"
(♪~90)
p
p
subito p
mf
* Place plastercine strip on E-G near dampers.
8va
(♪~100)
* Place plastercine on C-Ab near dampers.
mf
→8"
Remove plastercine
pp leggiero
mp
p
mf
p
metal chisel
p
→7"


Knock on soundboard with mallet or Chinese block.
incalzando
ben sostenuto e diminuendo
Poco Meno Mosso
(♪~90)
Poco ritard.
tenuto
dolce
Calmato (♪~60)
* Place plastercine on G on ¼ node.
Renove plastercine.
(Presto)
slowly
ritardando
TACET 20"

5 EXODUS


Calmato (♪ ~ 80)
Con Espressione Variato (♪ ~ 100)
Frameboard
Keyboard
mp
p
mf
8va
cantabile
legato
pp
f
Più
use ruler or plectrum

(♪~120) Calmato

Energico (♪~100)

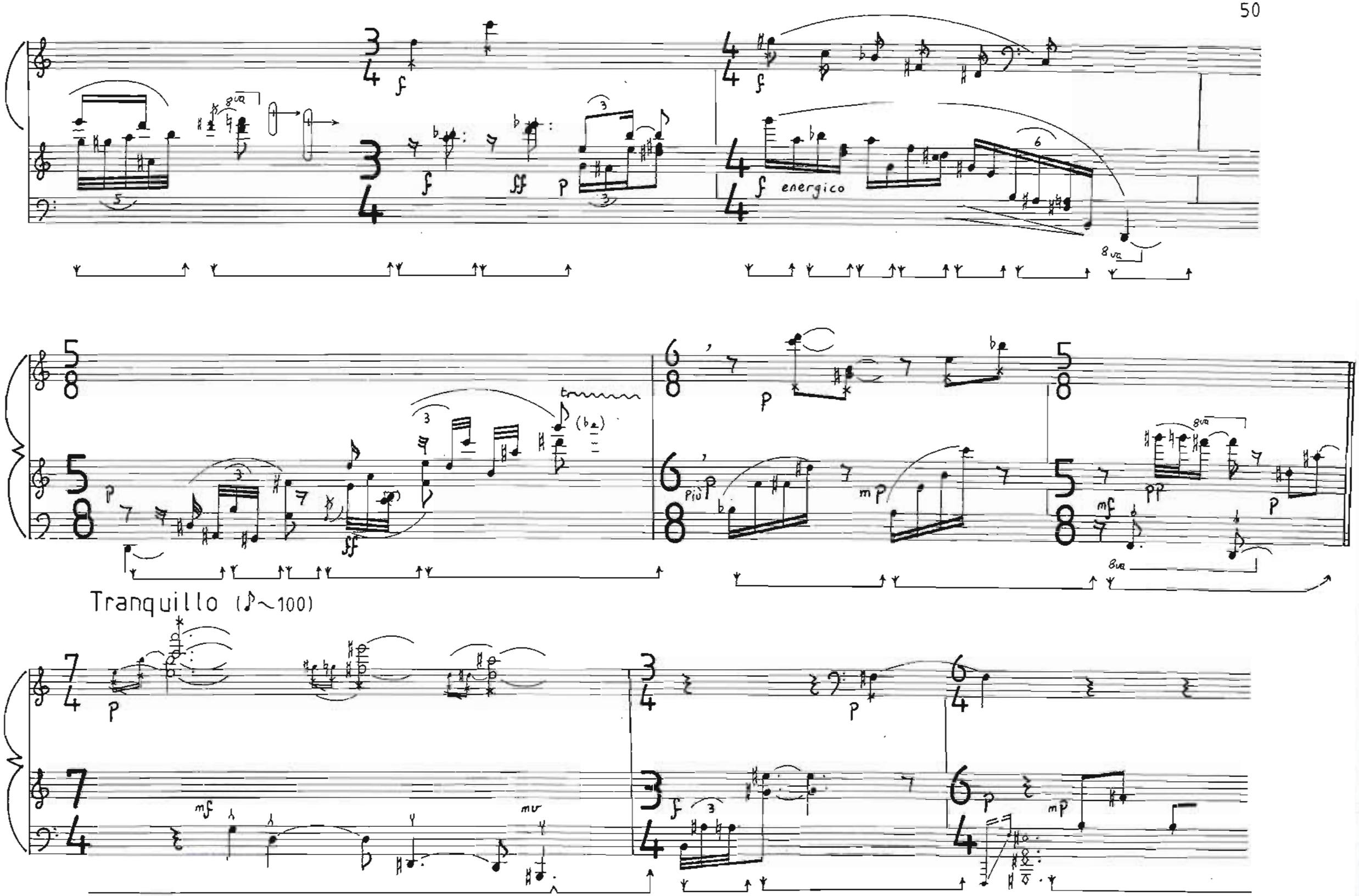
OSSIA

Espressivo come prima

(♪~80)

(♪~120)

molto


energico
Tranquillo (♪~100)

pp leggiero

mu

Poco a poco

Animato

mu

crescendo

Con Brio

ad lib.

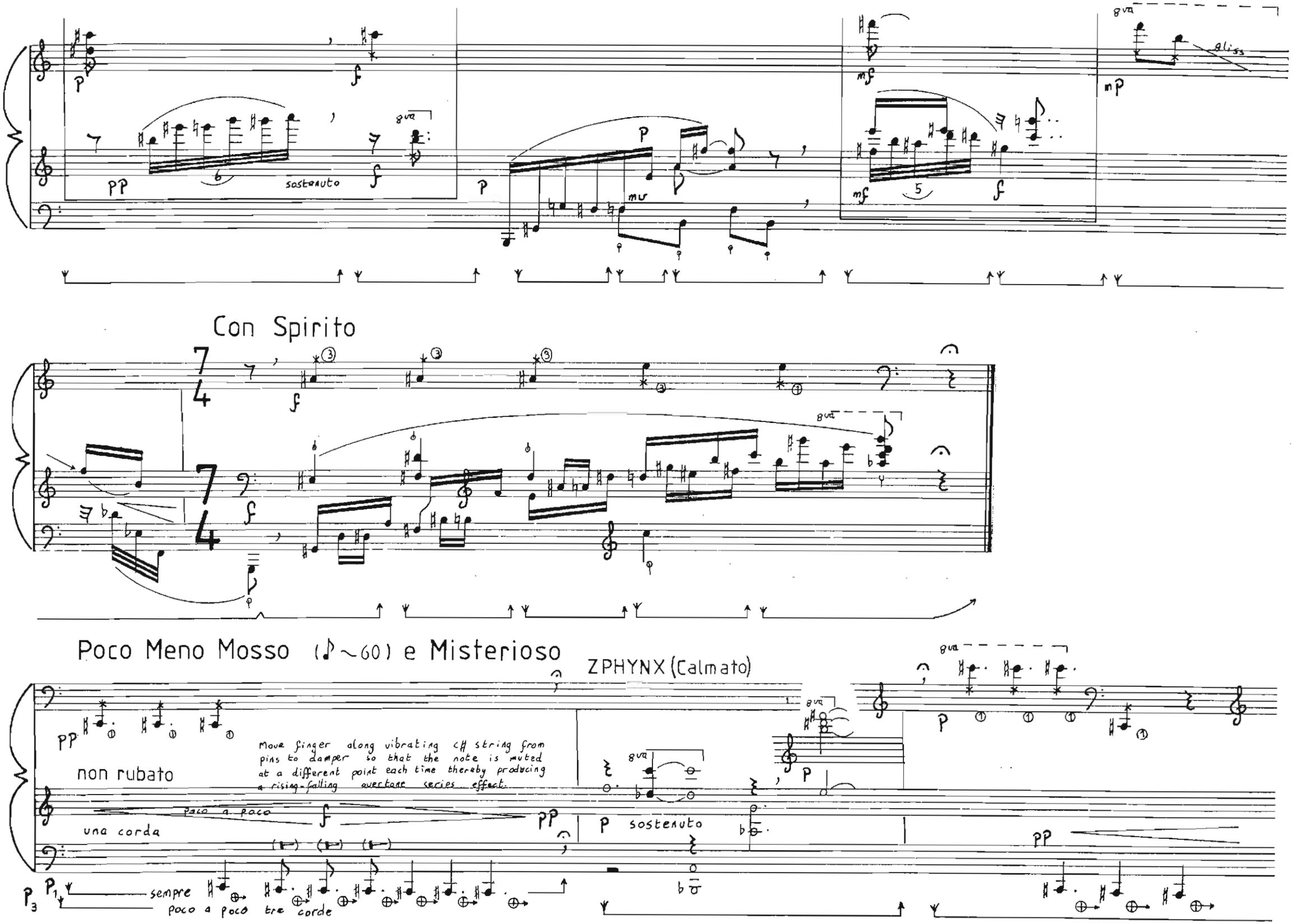
cresce- -ndo

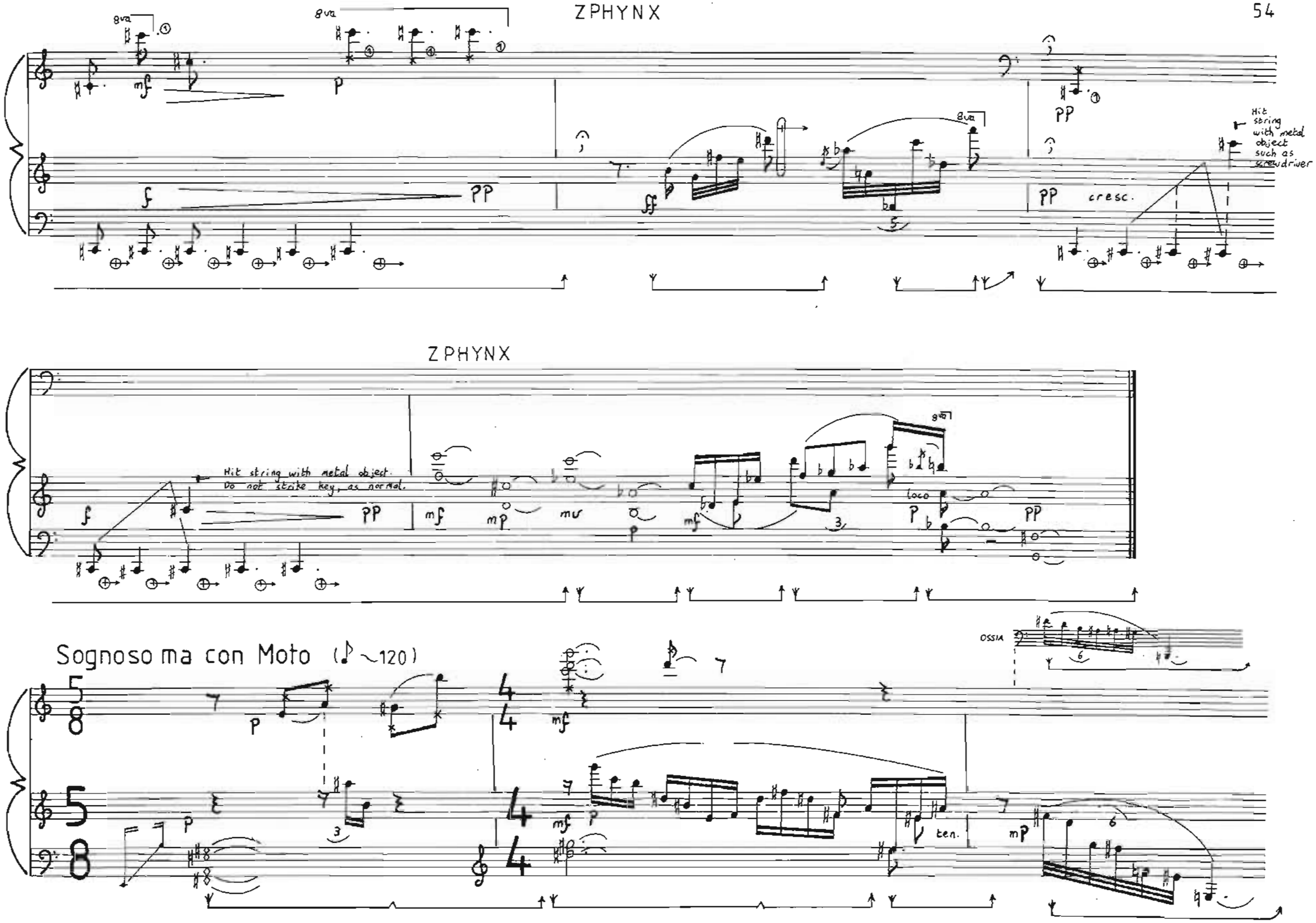
Allargando ma Brillante

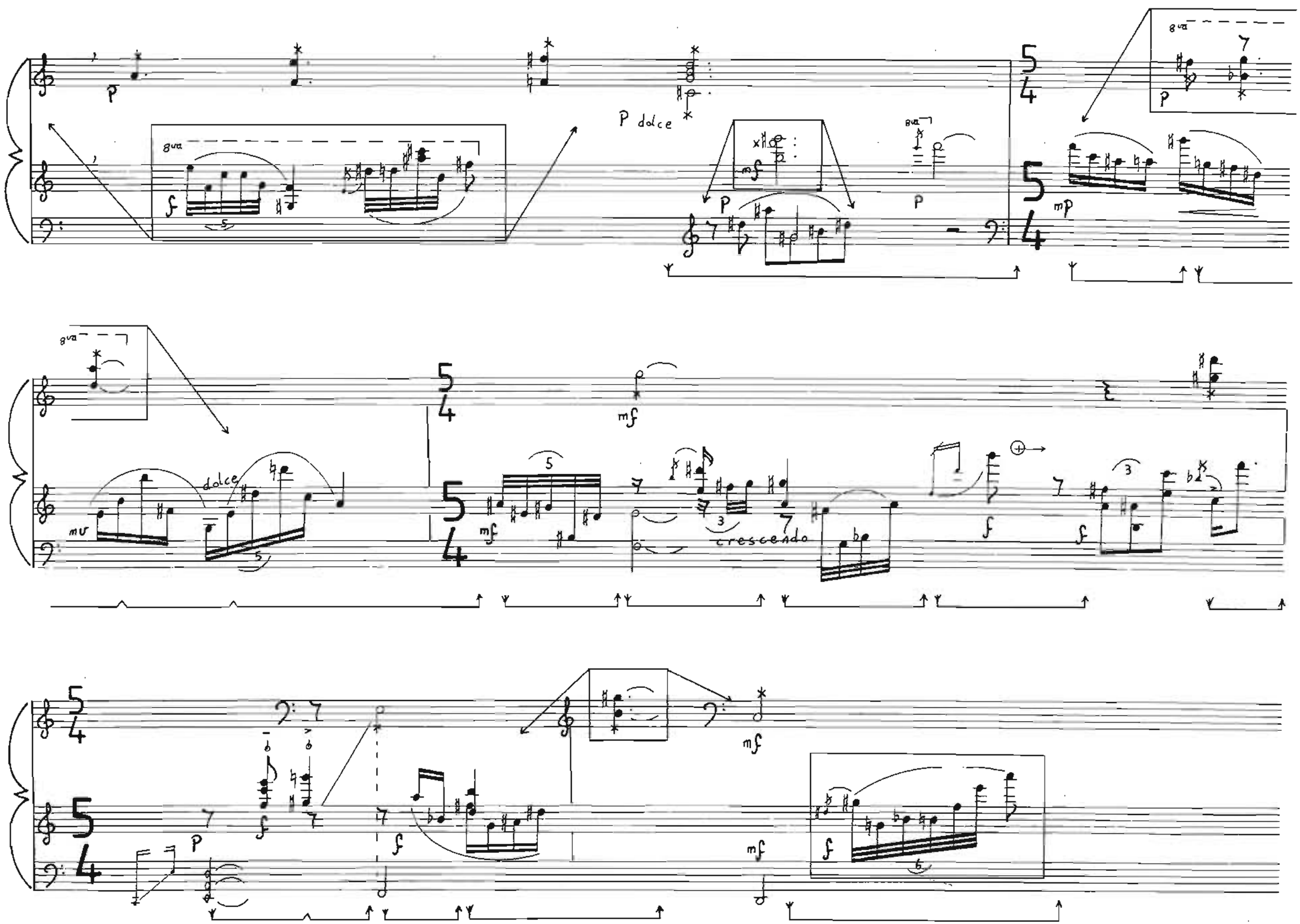
* The positions in time of the material in the boxes lies at the discretion of the performer.

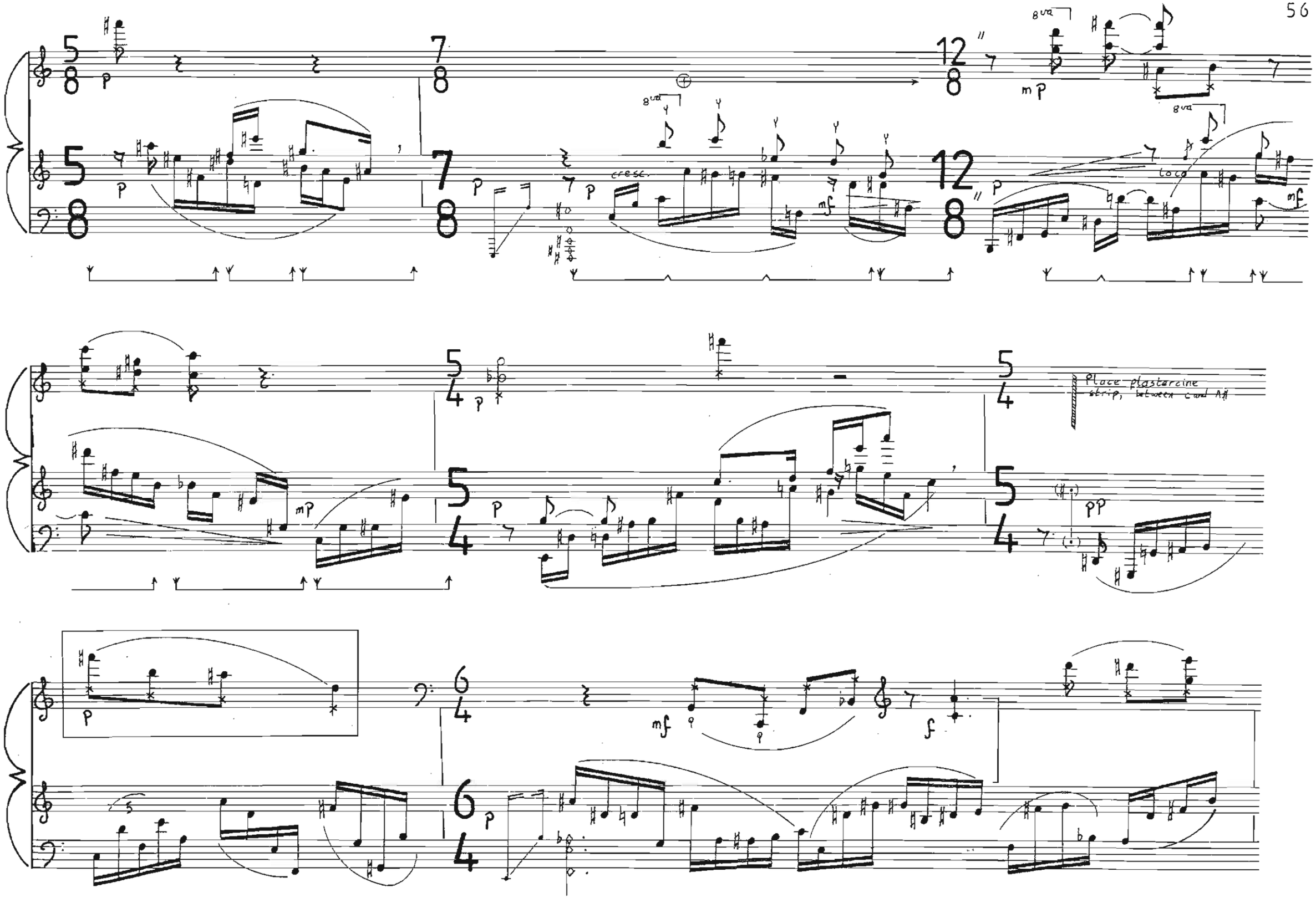
ad lib.

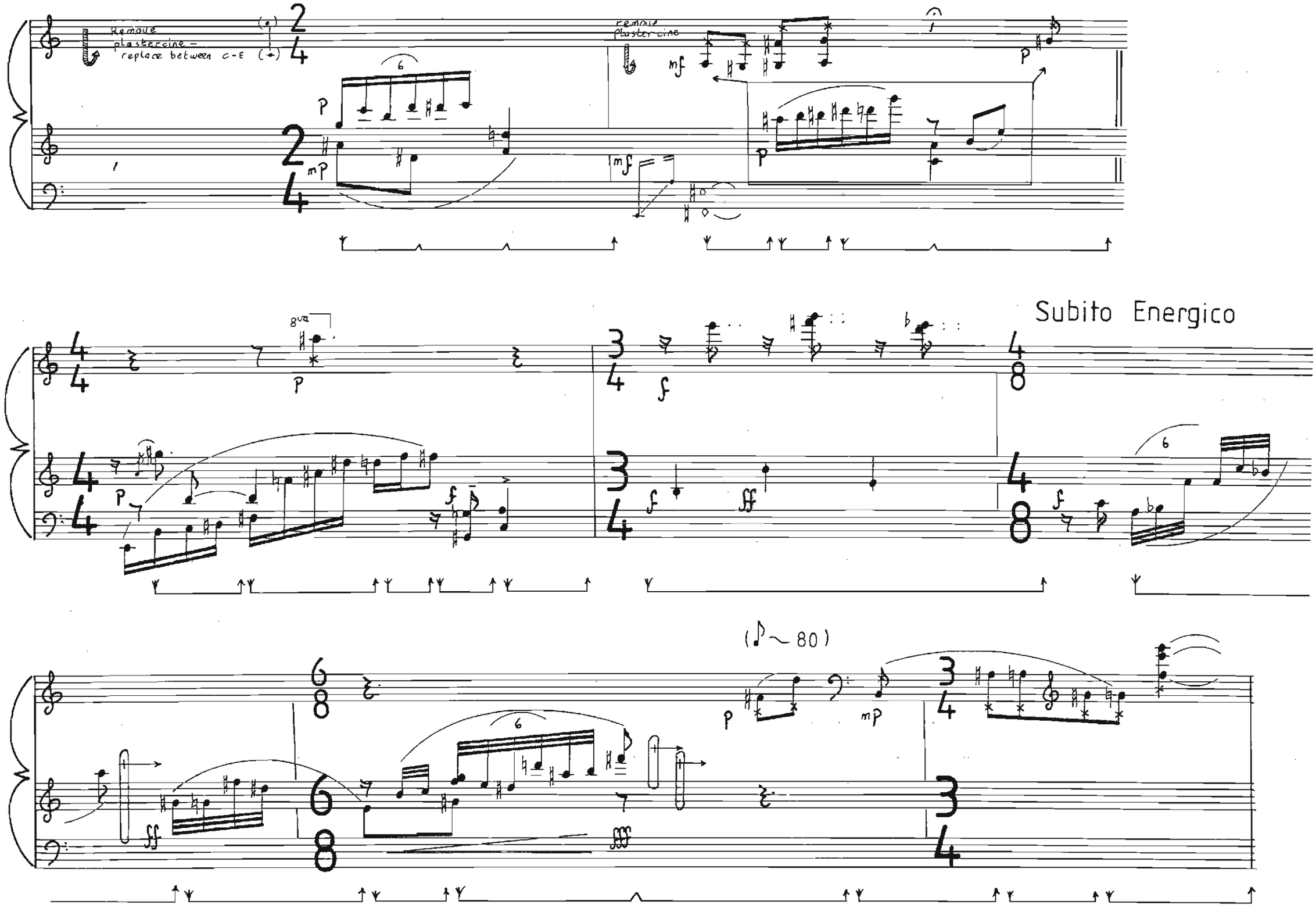
simile


sostenuto
gliss
Con Spirito
Poco Meno Mosso (♪~60) e Misterioso
ZPHYNX (Calmato)
Move finger along vibrating c# string from pins to damper so that the note is muted at a different point each time thereby producing a rising-falling overtone series effect.
non rubato
una corda
poco a poco
sostenuto
sempre
poco a poco tre corde


ZPHYNX
8va
mf
p
f
pp
ff
cresc.
Hit string with metal object such as screwdriver
ZPHYNX
Hit string with metal object. Do not strike key, as normal.
mf
mp
mv
loco
Sognoso ma con Moto (♪ ~120)
OSSIA
ten.


P dolce
dolce
crescendo


8va
cresc.
loco
Place plastercine strip, between C and A#


Remove plastercine – replace between C-E
remove plastercine
Subito Energico
(♪ ~ 80)

(♪~120)

(♪~80)

4+

cresc endo

3+

mu

(♪~120)

8va

(♪~80)

(♪~120)

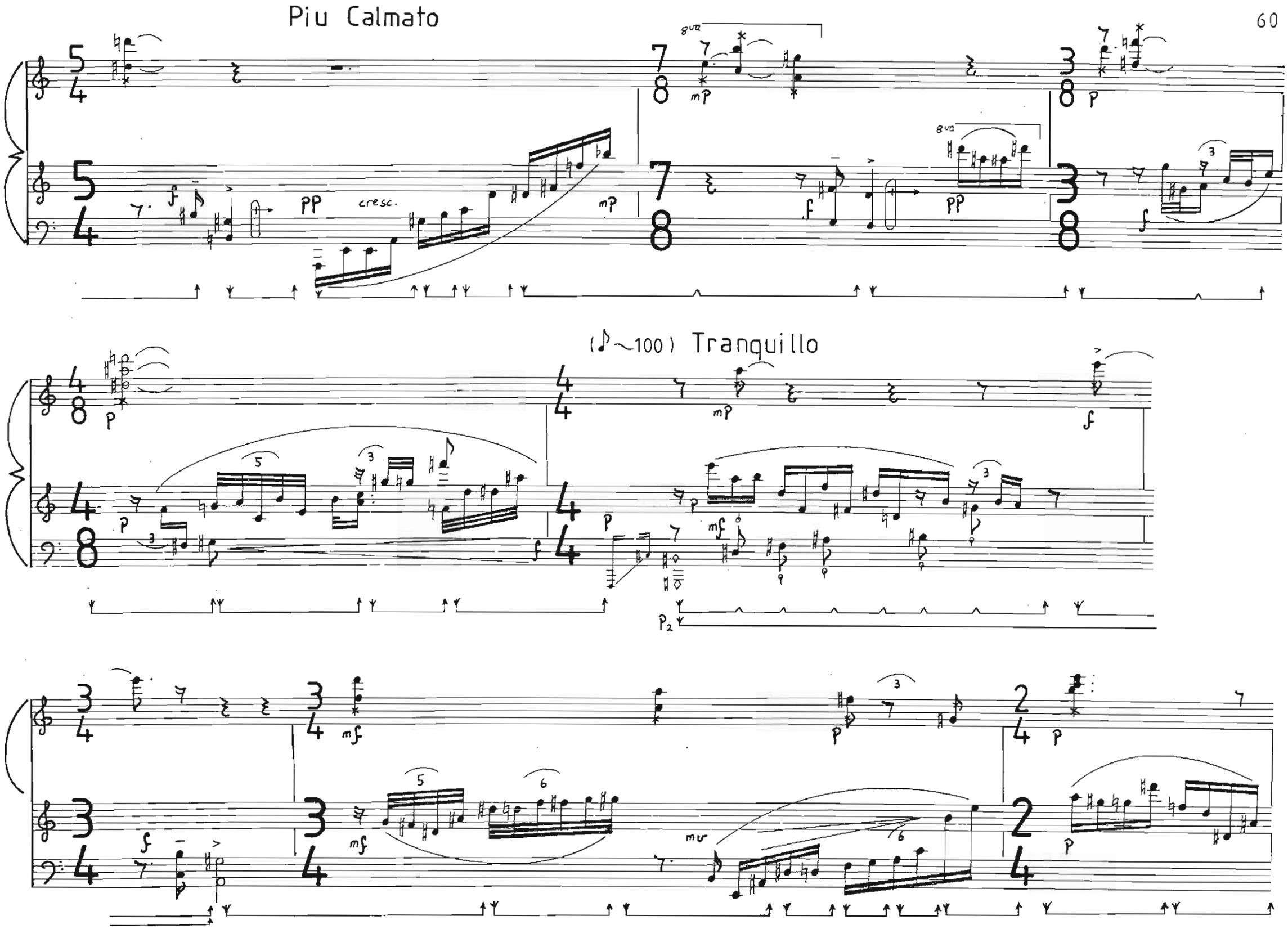
(♪~80)

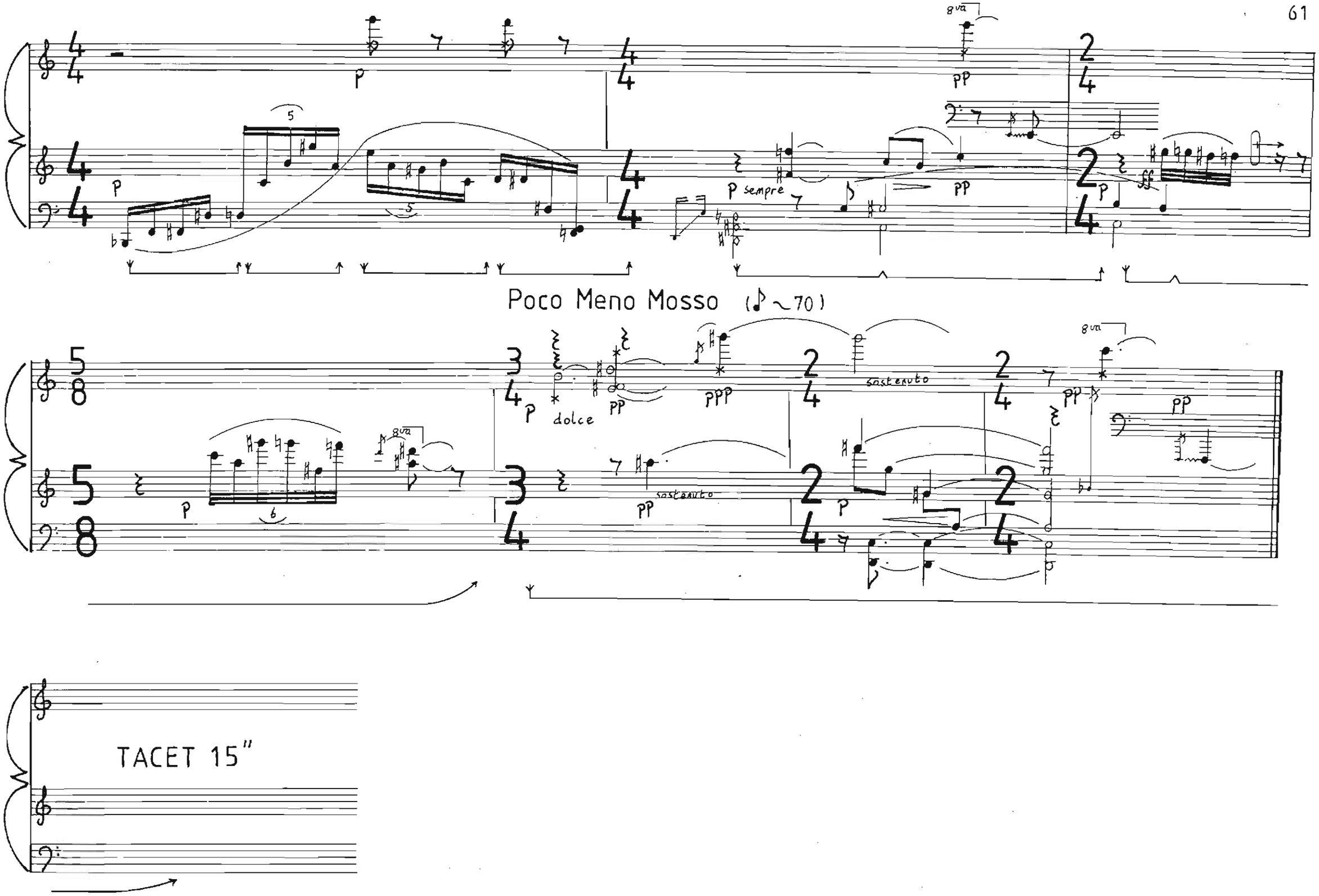
(♪~120)

8va

diminuendo

sempre Pedale


Piu Calmato
8va
mp
p
f
pp
cresc.
(♪~100) Tranquillo
mf
mv
P2


p sempre
Poco Meno Mosso (♪ ~ 70)
dolce
sostenuto
TACET 15"

6 NOCTURNE

Tranquillo (♪~80)

Frameboard

Keyboard

slowly

molto p delicato quasi una sospirando

(4/4) (♪~100)

—5" —5" —3"

P1

8va

molto p

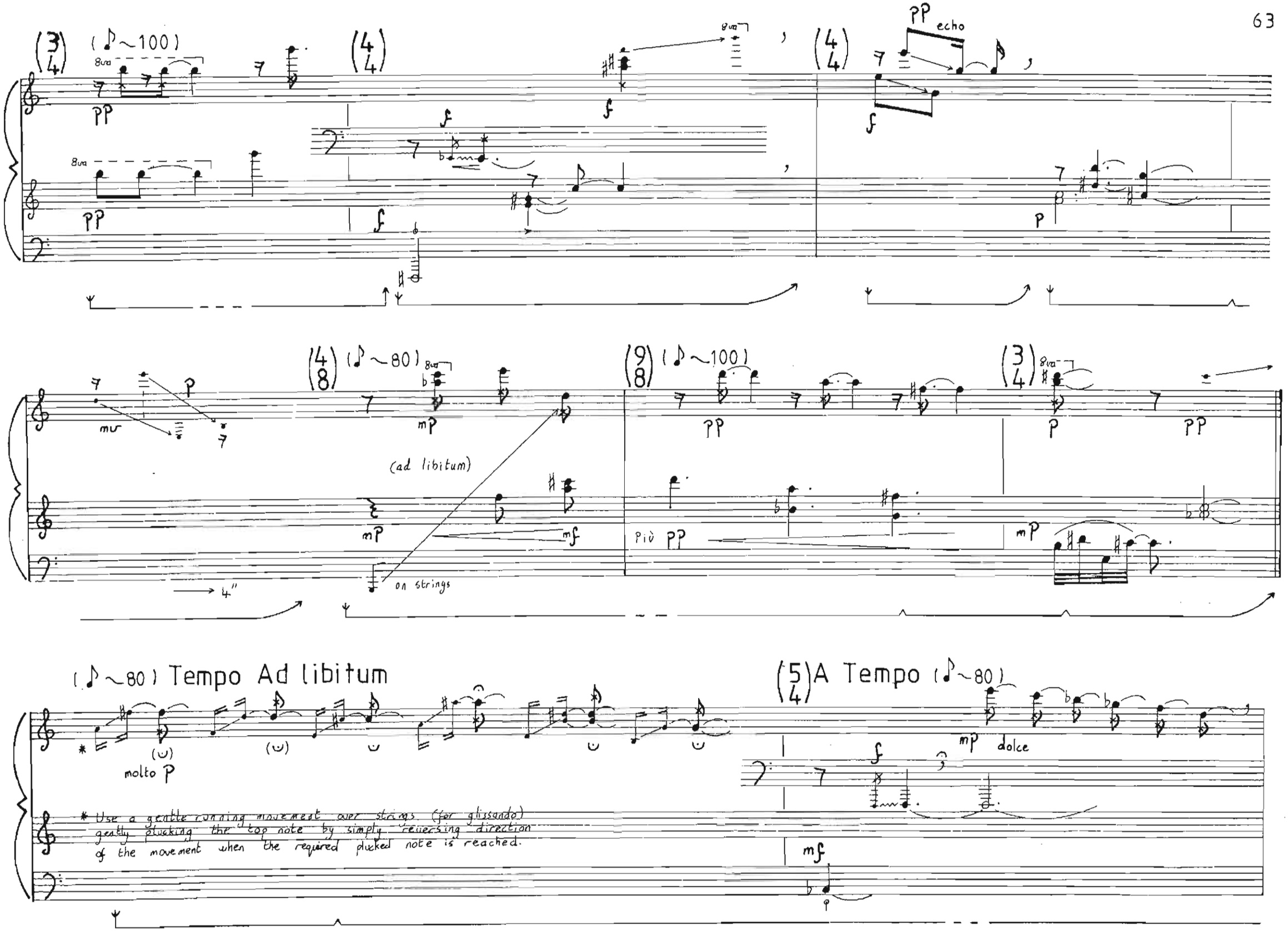
(6/4)

(3/4) (9/8) (♪~80)

on Strings

→ 5" → 5"

* OSSIA


(♪~100)
8va
pp
f
pp echo
p
mv
(♪~80)
mp
(ad libitum)
mf
on strings
4"
(♪~100)
pp
più pp
(♪~80) Tempo Ad libitum
molto p
* Use a gentle running movement over strings (for glissando) gently plucking the top note by simply reversing direction of the movement when the required plucked note is reached.
A Tempo (♪~80)
mp dolce
mf

Tempo Ad libitum

(4/4) (6/8)

8va

8va

(7/8) A Tempo (♪~80)

glissando

(7/8) (♪~100)

8va

8va

(5/4)

(♪~80)

PP echo

PP echo

(♪~100)

stop note near pins on copper-wound part of string.

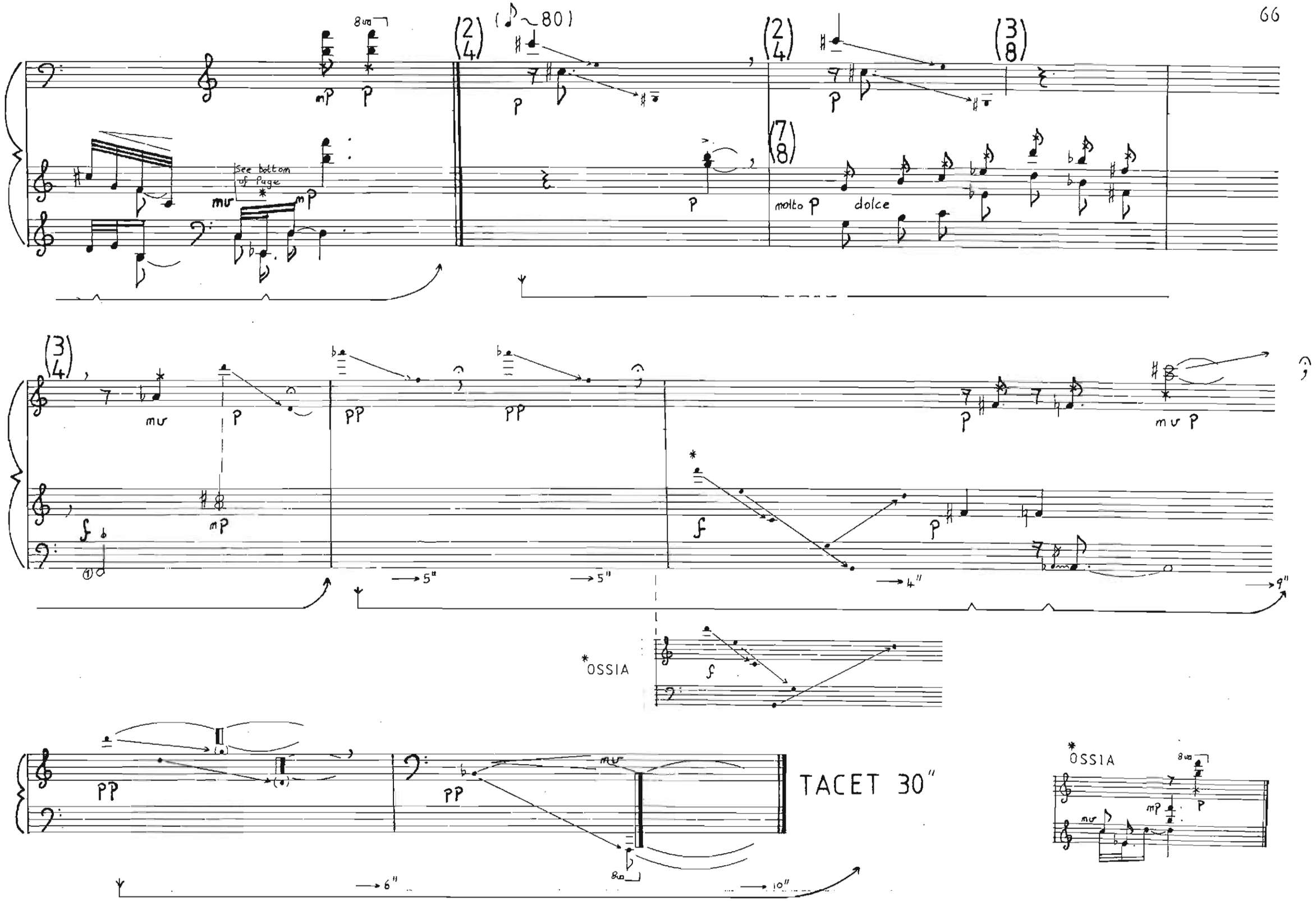
8va

16va

8va

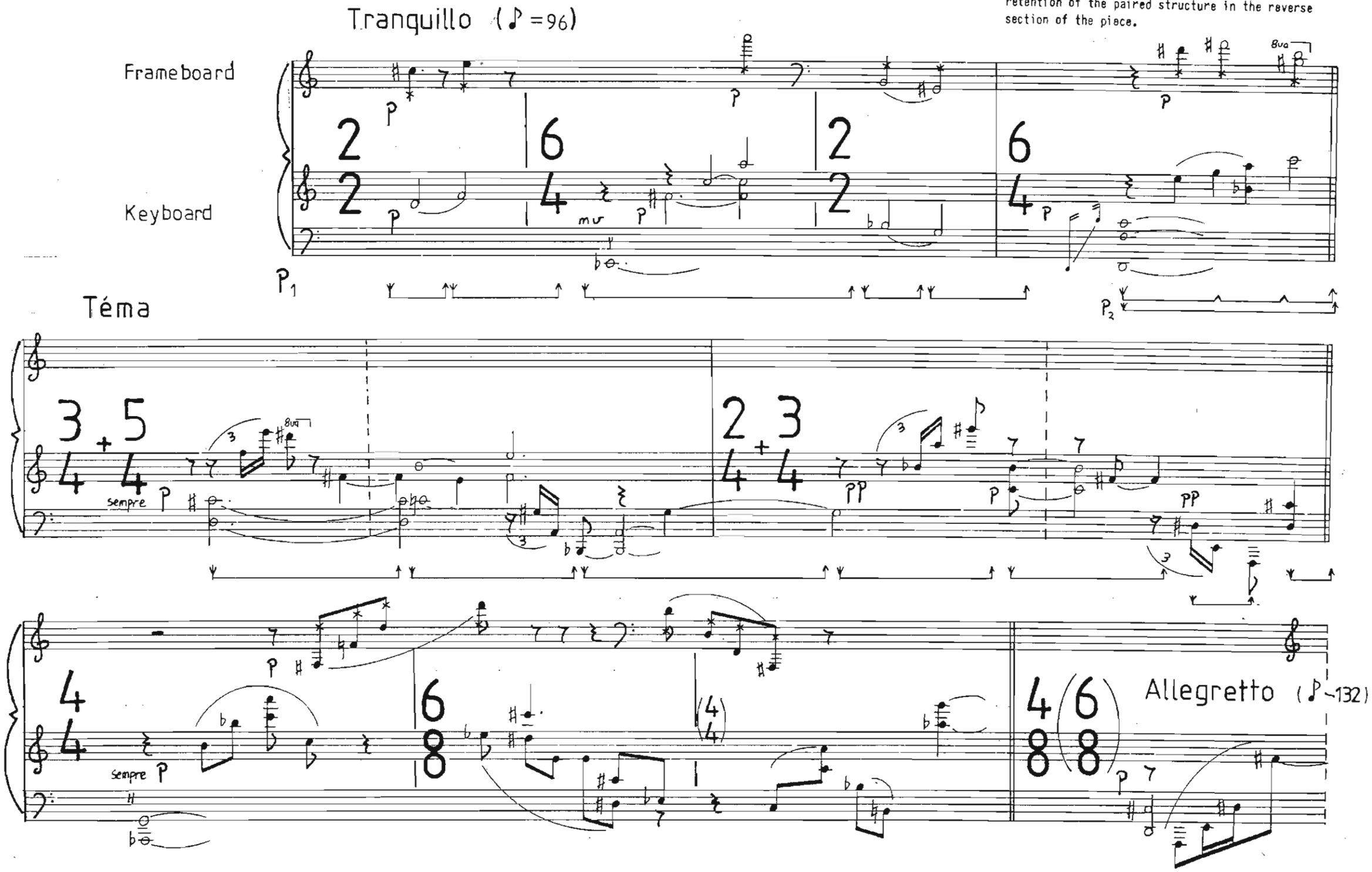
Keyboard player

8va


See bottom of Page
molto p
dolce
*OSSIA
TACET 30"
*OSSIA

7ª PRISMS

THEME AND VARIATIONS. Based on a sense of logical musical procedure, certain of the structures in this piece may be omitted for timing purposes. Each complete structural sub-unit is contained within double bar-lines. Choice of omission is limited to retention of the paired structure in the reverse section of the piece.



Serioso (♪ ~112)

(3+2)

(2+3)

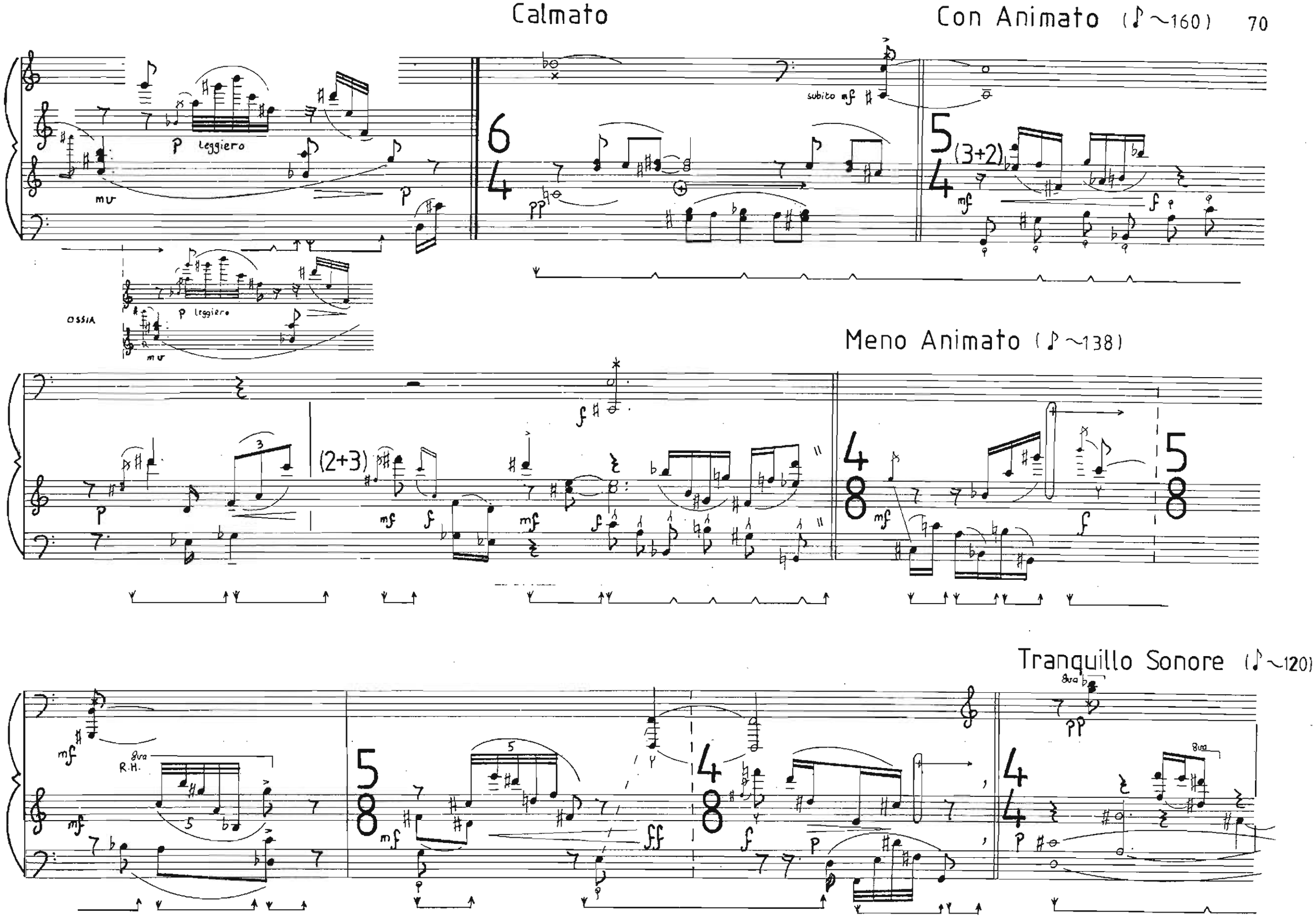
5+6

Con Brio (♪ ~132)

Misterioso

Espressivo con Energico (♪~132)

Tranquillo (♪~116)


Calmato
Con Animato (♪~160)
p leggiero
mv
p
OSSIA
p leggiero
mv
6
4
pp
subito mf
5
4
(3+2)
mf
f
Meno Animato (♪~138)
p
(2+3)
mf
f
mf
f
4
8
mf
f
5
8
Tranquillo Sonore (♪~120)
mf
8va
R.H.
5
8
mf
5
ff
4
8
f
p
4
4
p
8va
pp
8va

8va

8va

8va

Delicato (♪~96)

Con Espressione (♪~120)

Meno Mosso (♪~96)

Più P

Mesto (♪~120)

attacca

Dolcemènte

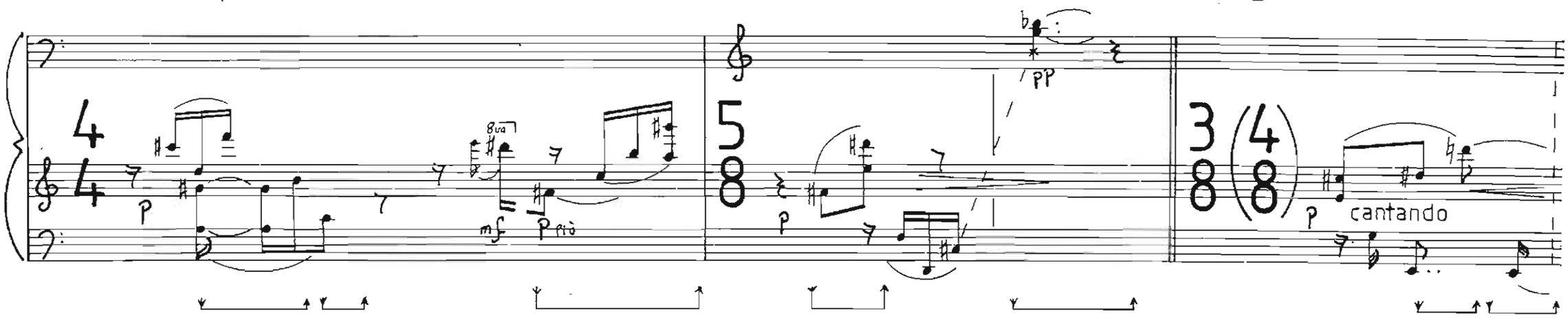
L'istesso tempo

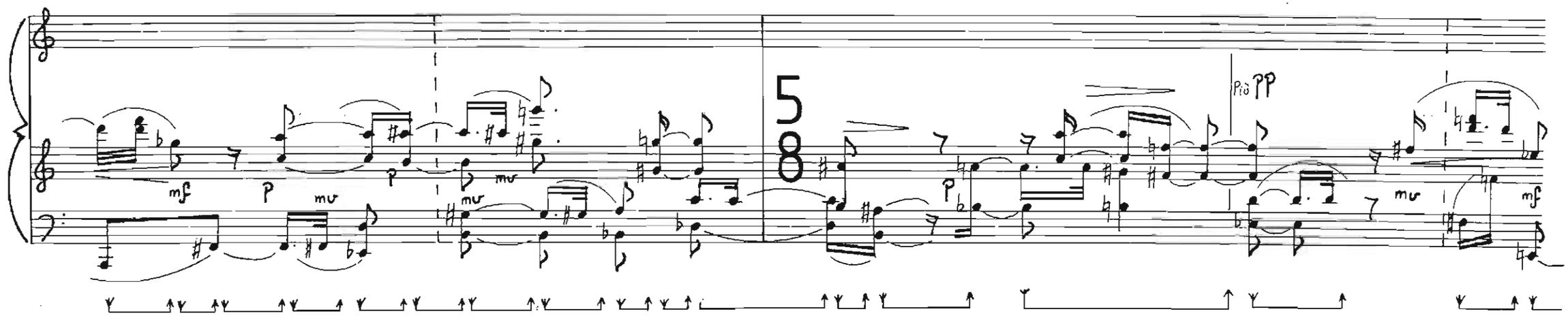
Tempo ad libitum (♪~95)

Ad Libitum

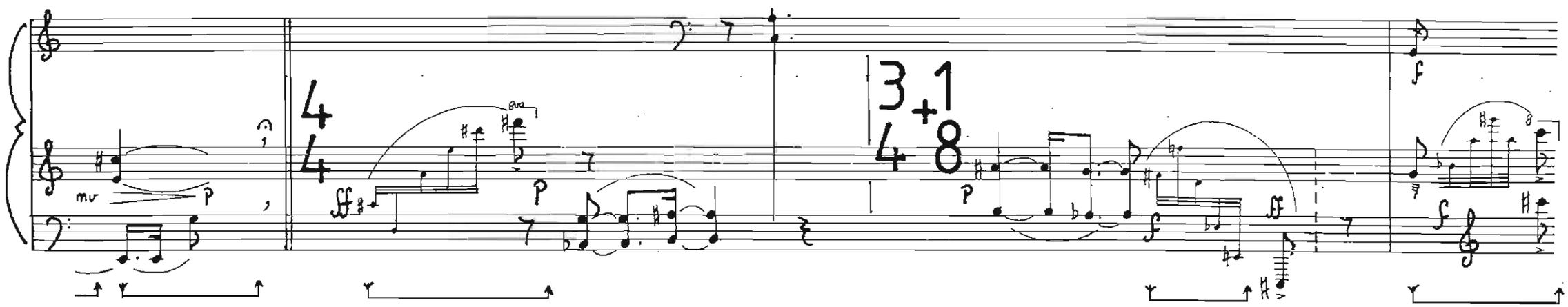
Più Mosso (♪~112)

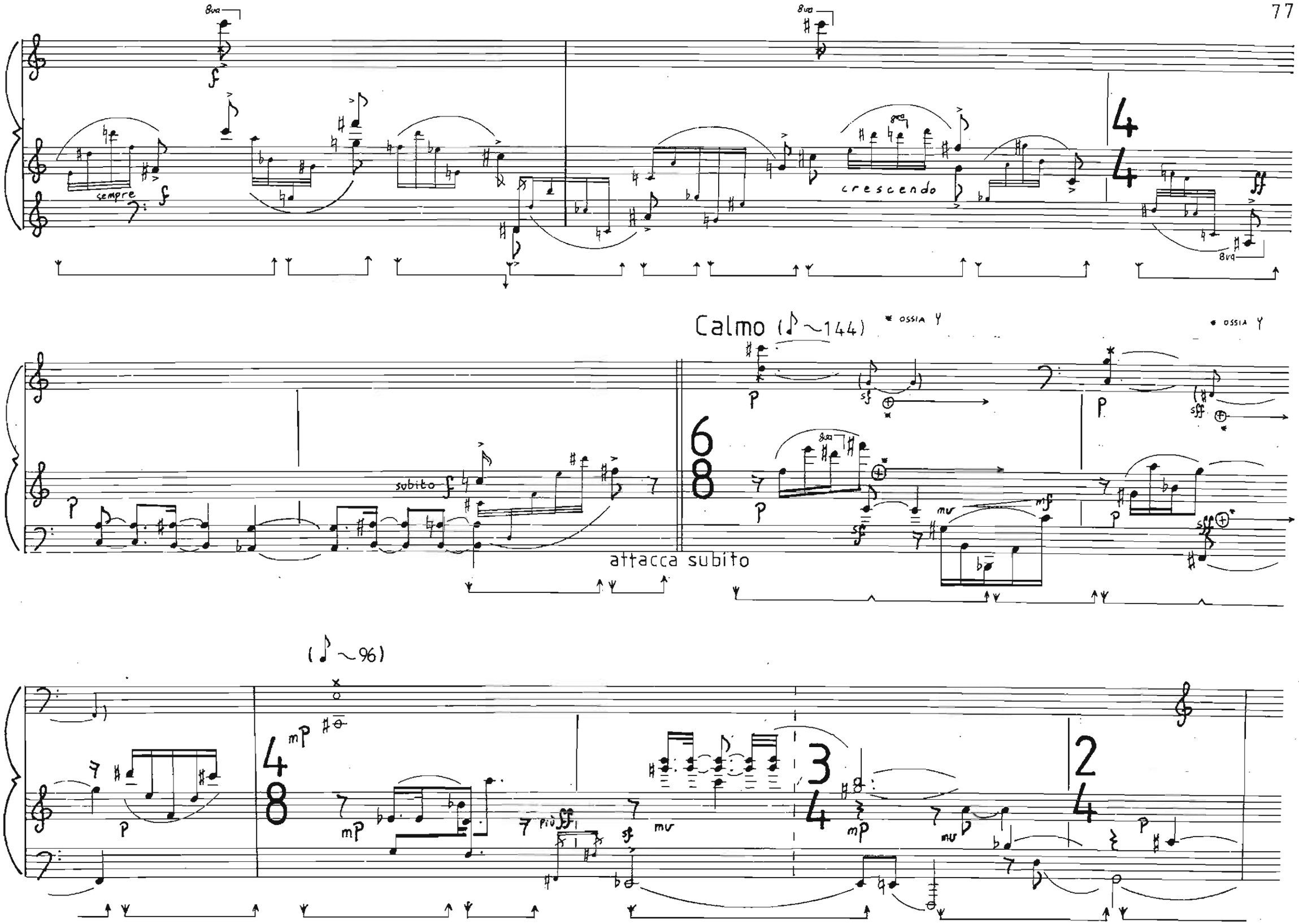
Tranquillo (♪~95)





Ad libitum (♪~95)




8va
sempre
crescendo
Calmo (♪~144)
* OSSIA Y
subito
attacca subito
(♪~96)
più ff

Tempo Primo (♪~144)

Delicato (♪~96)

Più Calmato

Meno Mosso ma

Delicato (♪~60)

A Tempo (♪~96)

Tranquillo Sonore (♪~120)

Calmato (♪~120)

sempre p

8va

p

(4+3)

f

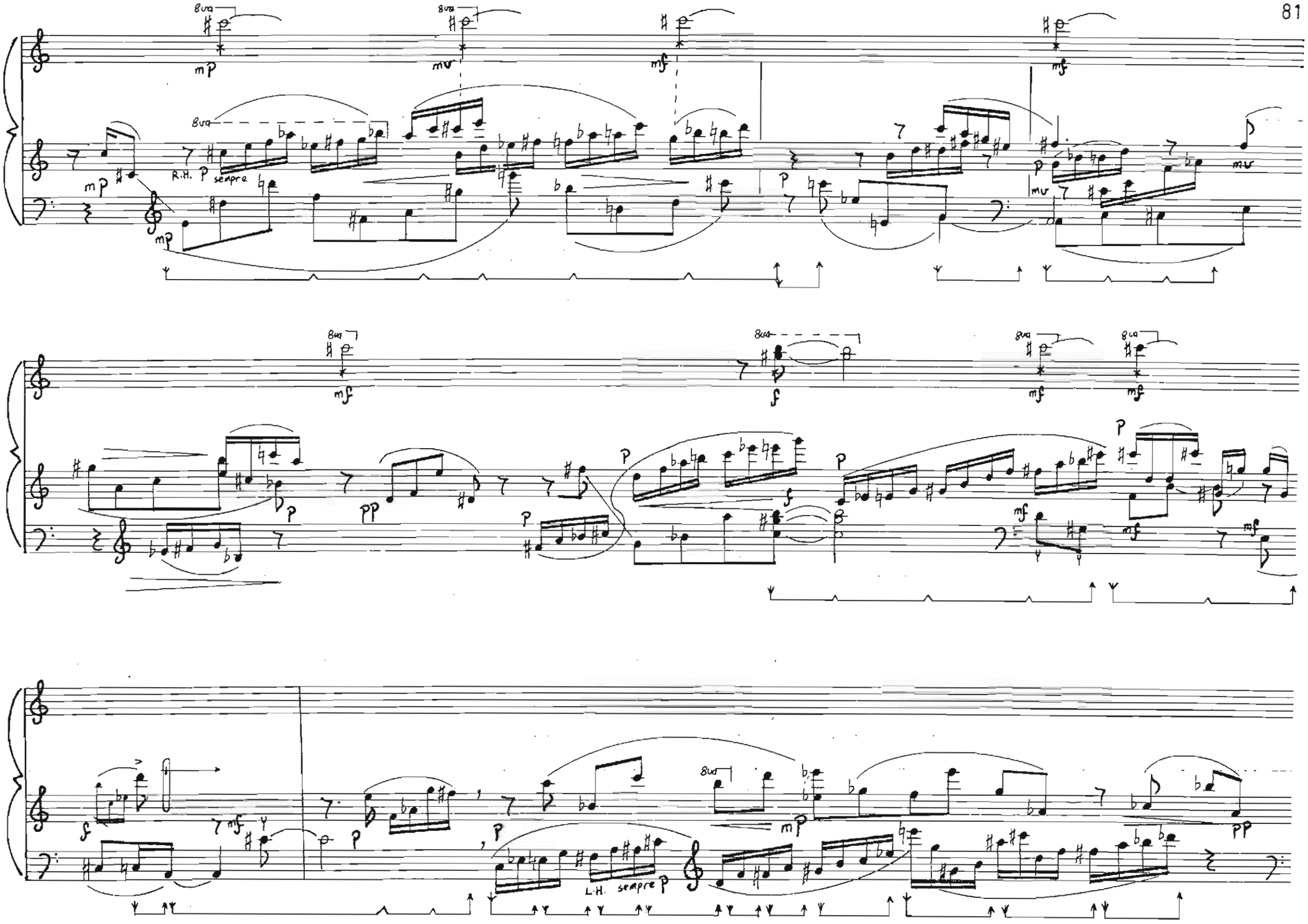
Leggierro Con Moto (♪~160)

8va

loco

f

p


8va
mp
mv
mf
R.H. p sempre
p
pp
f
L.H. sempre p

Molto Meno Mosso (♪~66) e sostenuto

Moto come sopra (♪~160)

subito

molto

diminuendo

Pedale simile

Con Moto

8va

ossia

(♪~160)

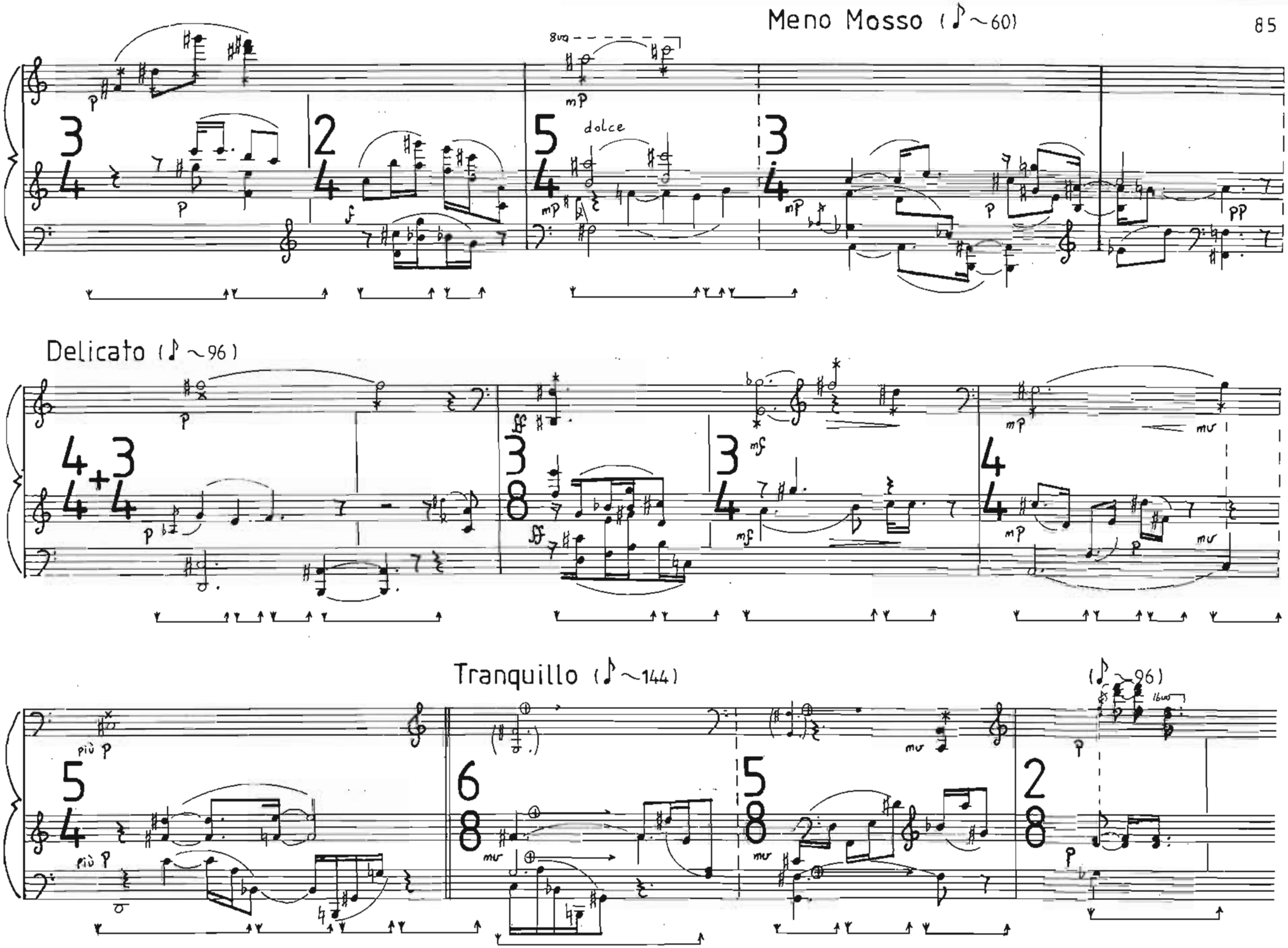
Calmato e Misterioso (♪~120)

diminuendo

sempre p

Tranquillo Sonore (♪~120)

Delicato (♪~96)


Meno Mosso (♪~60)
8va
dolce
Delicato (♪~96)
Tranquillo (♪~144)
(♪~96)
più p
più p

Piu Mosso (♪~144)

attacca

Presto ad libitum (♪~100)

Mesto (♪~108)

Serioso (♪~96)

88

Più Mosso (♪~112)

Ad libitum

(♪~95)

7+4+5
8

5
4

Tranquillo Sonore (♪~120)

6
4

5
4

L'istesso tempo (Deciso)

4
4

2
4

3
4

crescendo

diminuendo

Dolcemènte

Deciso come sopra

Moderato (♪ ~96)

Espressivo (♪~120)

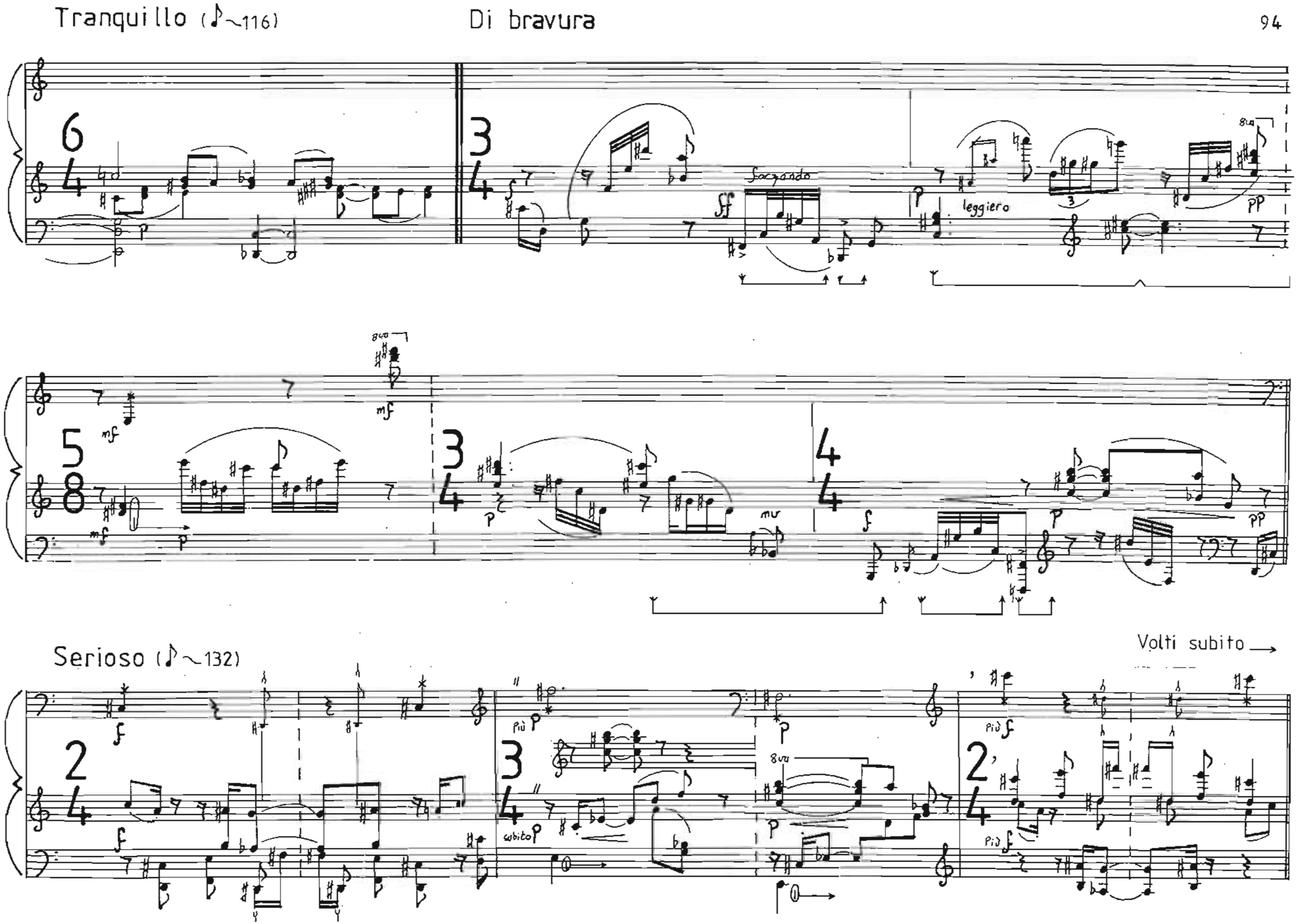
Con amore (♪~96)

Tranquillo Sonore (♪~108)

Desto (♪ ~160)

8va

Con brio


Tranquillo (♪~116)
Di bravura
forzando
leggiero
Serioso (♪~132)
Volti subito

Cantando (♪~116)

Misterioso

Espressivo (♪~112)

Allegretto (♪~132)

Tranquillo (♪~96)

sempre P

OSSIA

TACET 25"

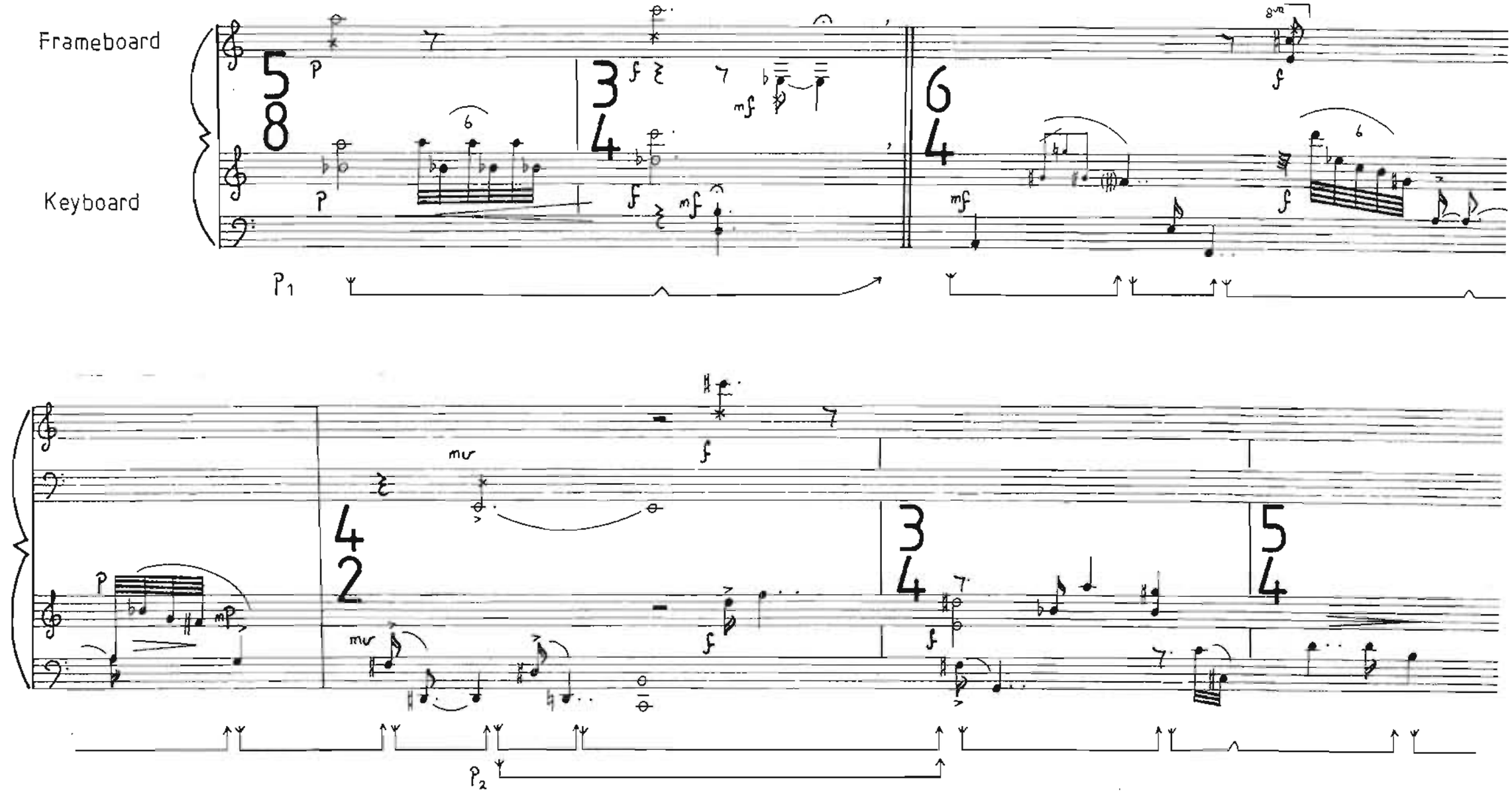
7b PRISMS

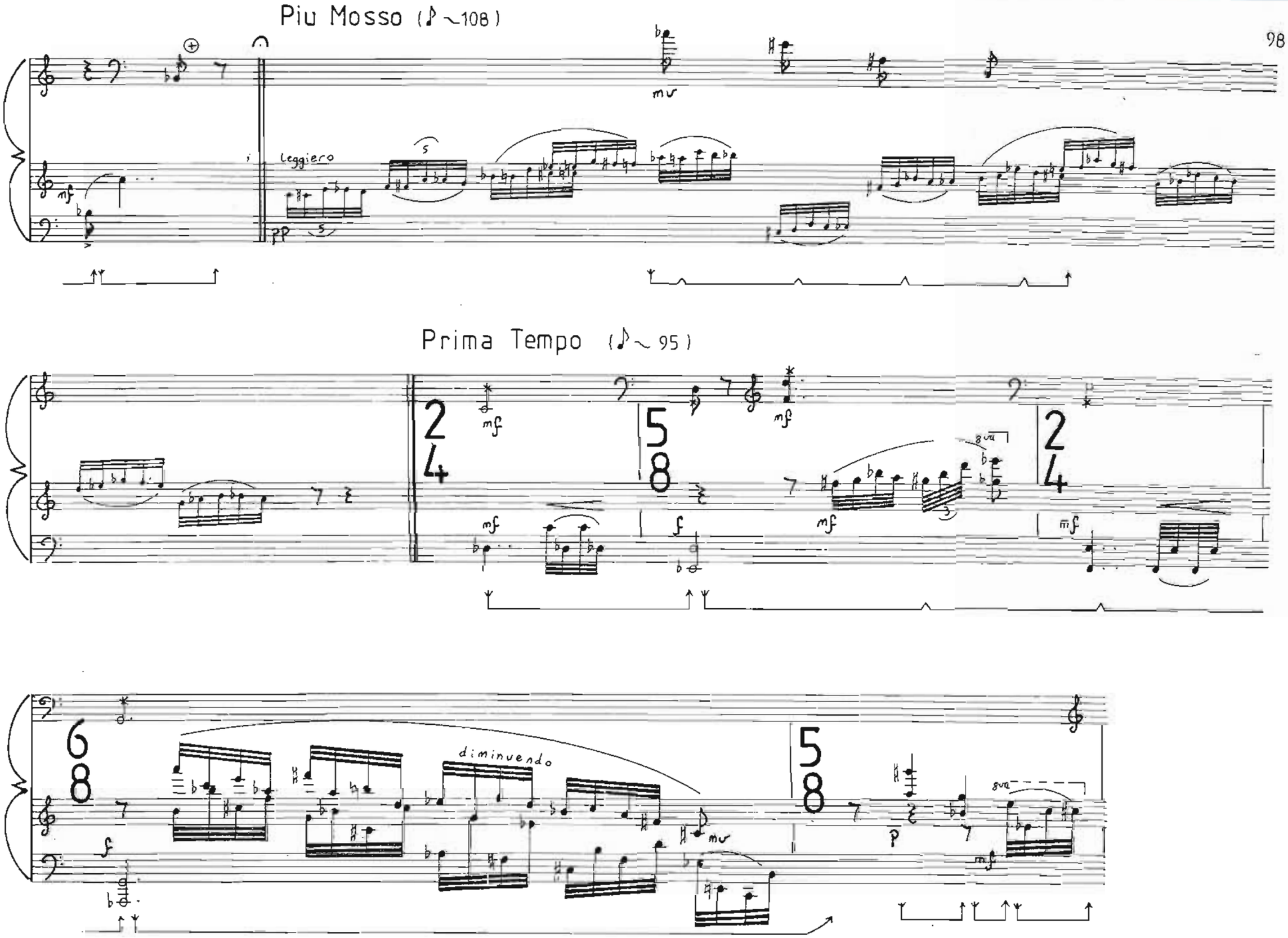
THEME AND VARIATIONS. Based on a sense of logical musical procedure, certain of the structures in this piece may be omitted for timing purposes. Each complete structural sub-unit is contained within double bar-lines. Choice of omission is limited to retention of the paired structure in the reverse section of the piece.

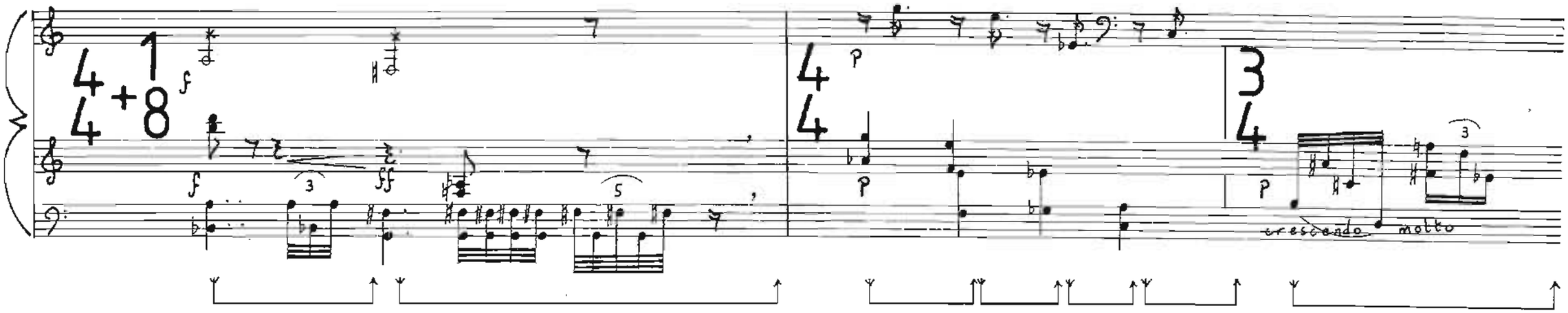
Sostenuto (♪ ~95)

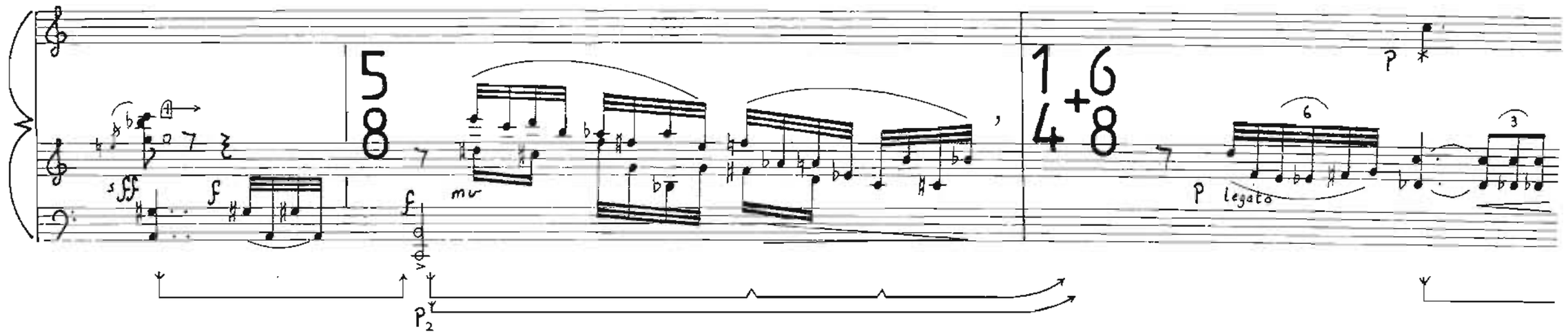
Frameboard

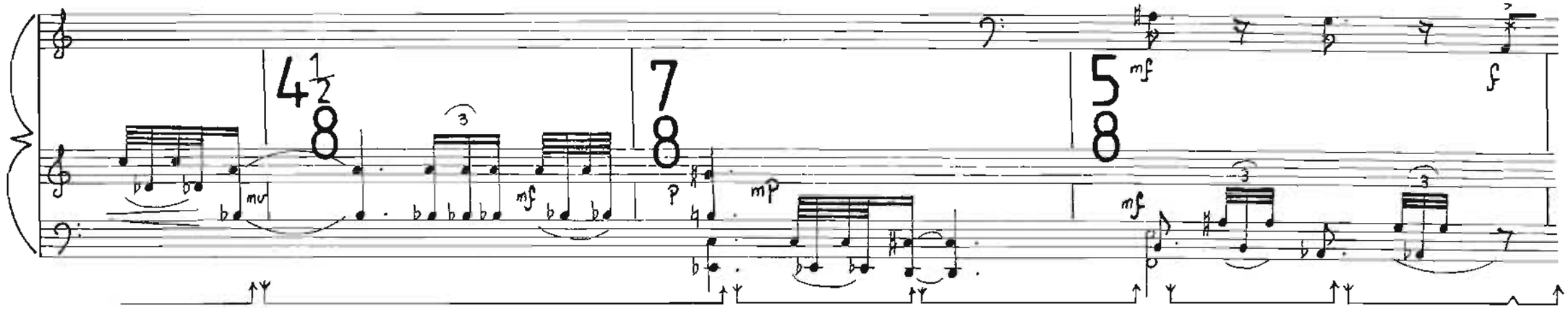
Keyboard

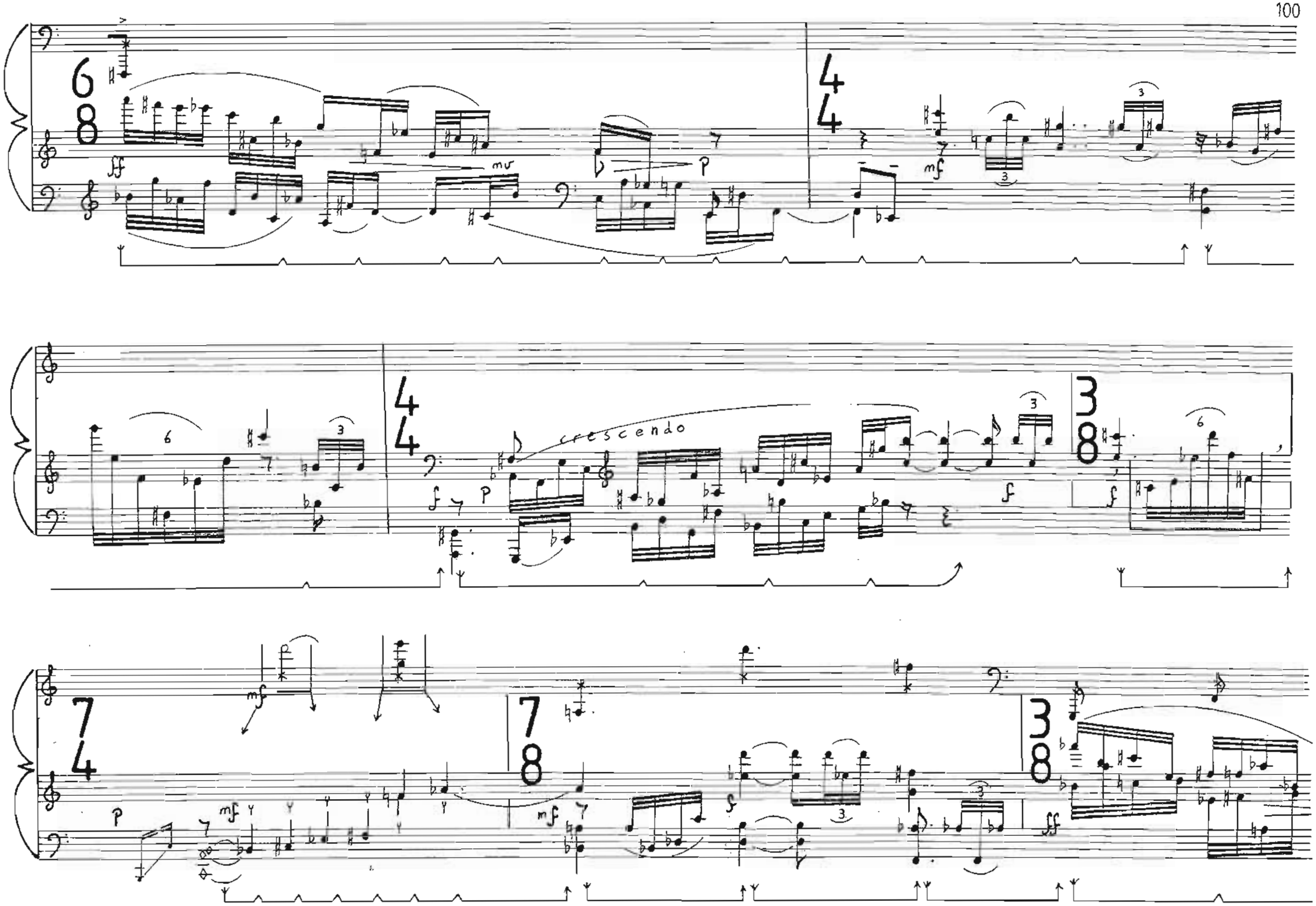


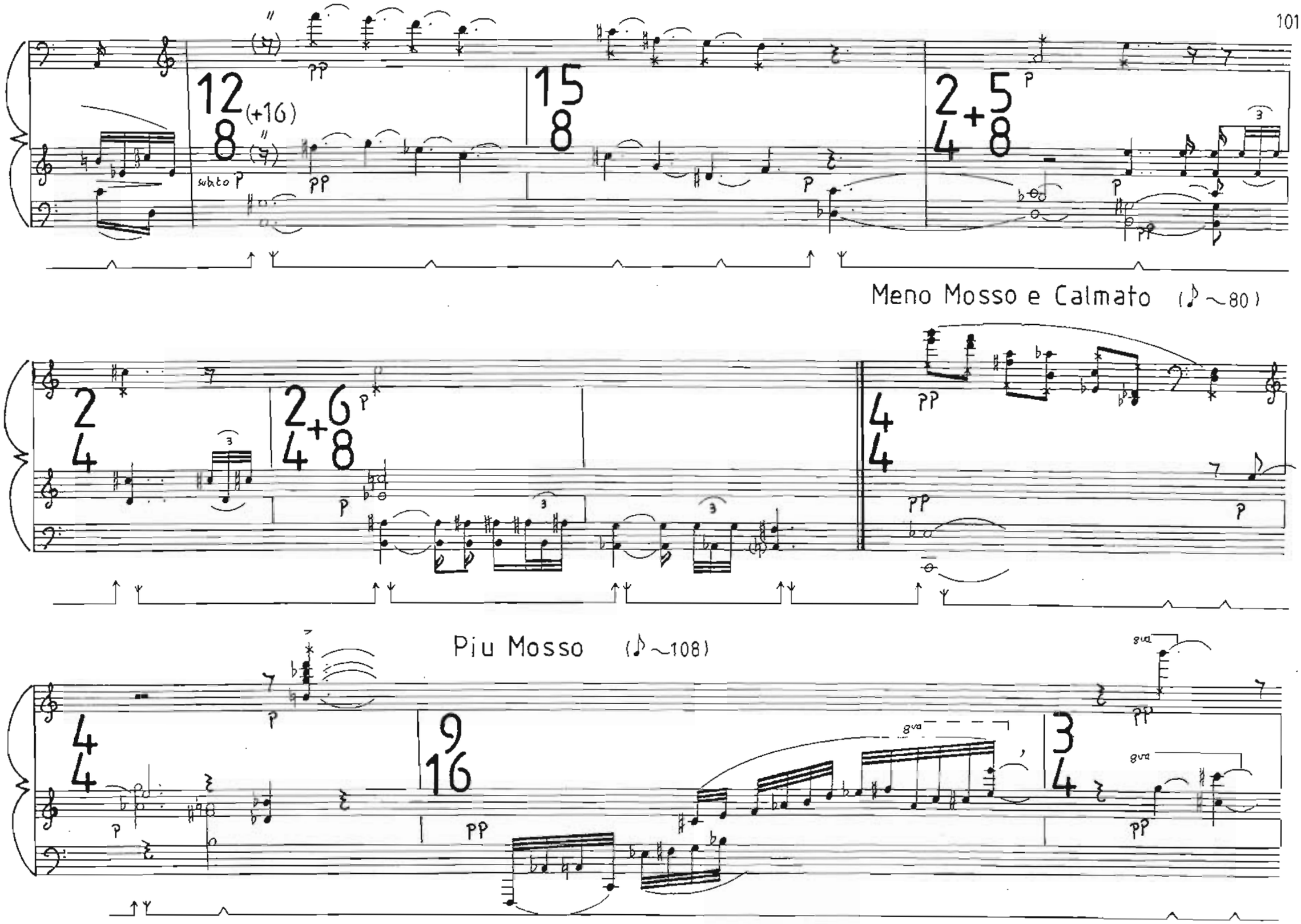

Piu Mosso (♪ ~ 108)
leggiero
mf
pp
mv
Prima Tempo (♪ ~ 95)
mf
f
8va
diminuendo
p


f
p
cresc. molto


sff
f
mp
p
legato


mp
p
mf
f


crescendo


12
8
(+16)
subito p
15
8
2+5
4 8
Meno Mosso e Calmato (♪~80)
2
4
2+6
4 8
4
4
Piu Mosso (♪~108)
4
4
9
16
3
4
8va

Meno Mosso (♪ ~80)

(♪~108) Piu Mosso

(Calmato)

Leggeiro

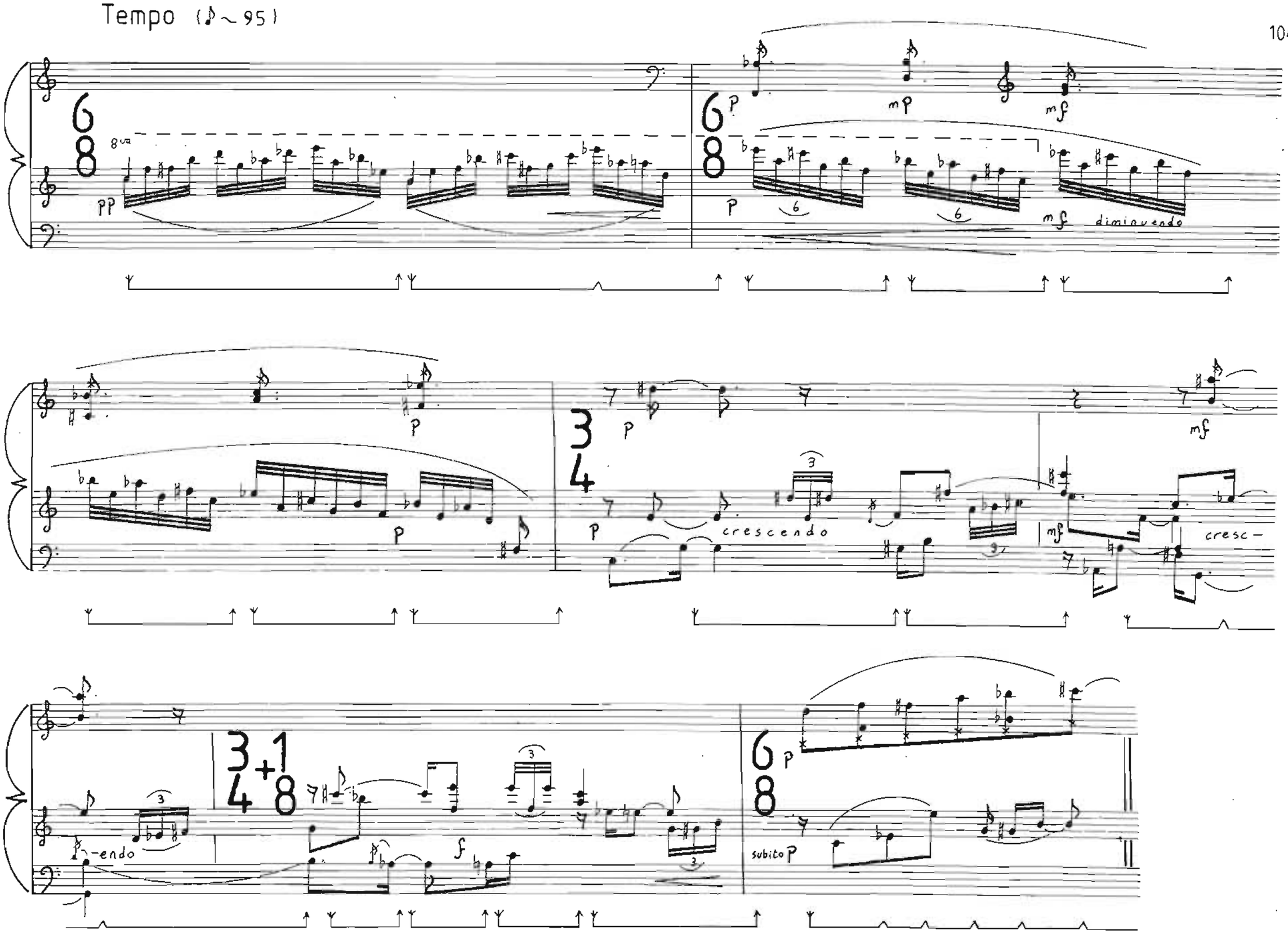
A Tempo Prima (♪~95)

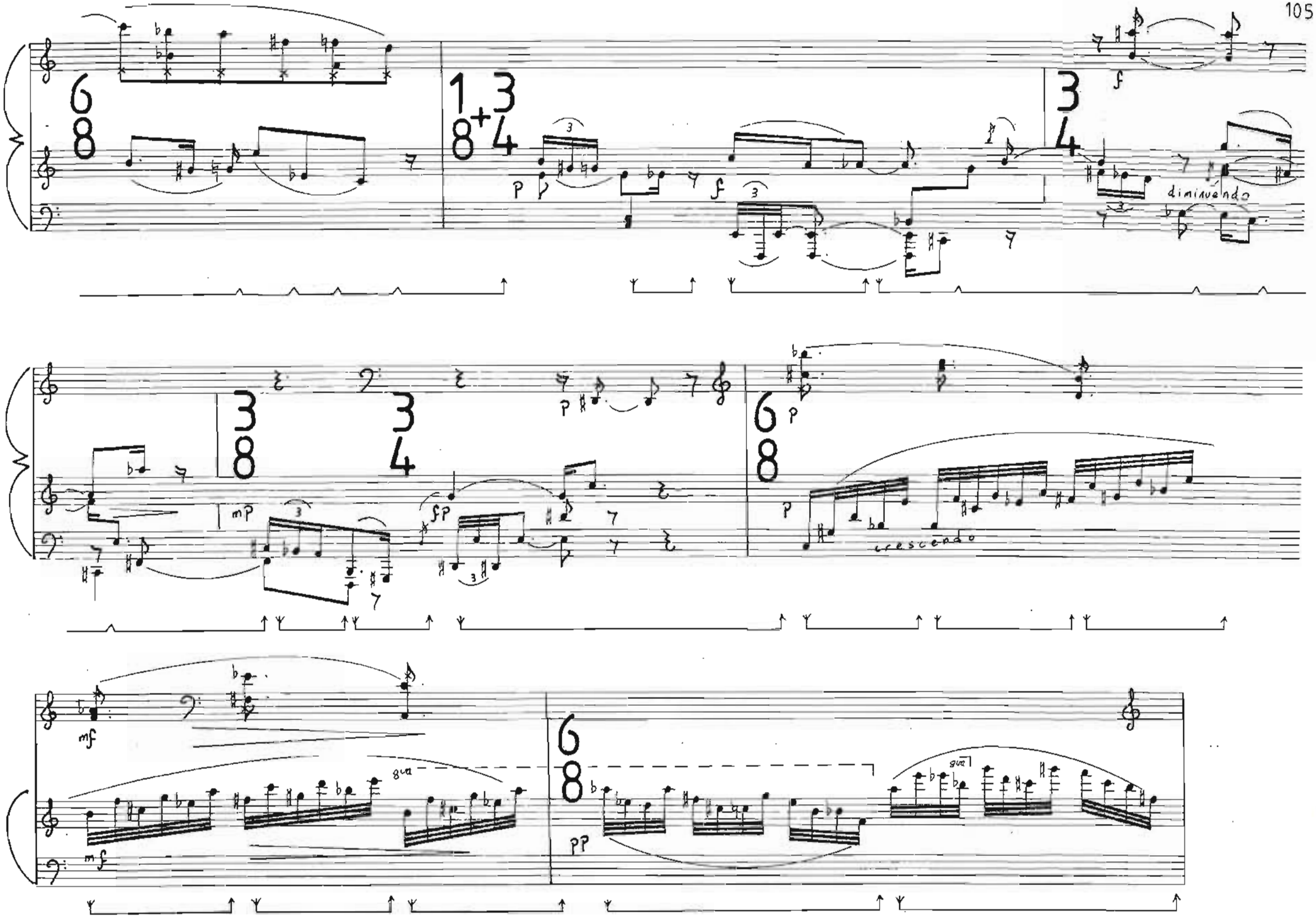
OSSIA:

Tranquillo (♪~80)

sostenuto

OSSIA


Tempo (♪~95)
8va
pp
p
mp
mf
diminuendo
crescendo
cresc-
-endo
f
subito p


diminuendo
crescendo
8va

Tranquillo (♪ ~80)

poco a poco crescendo

diminuendo

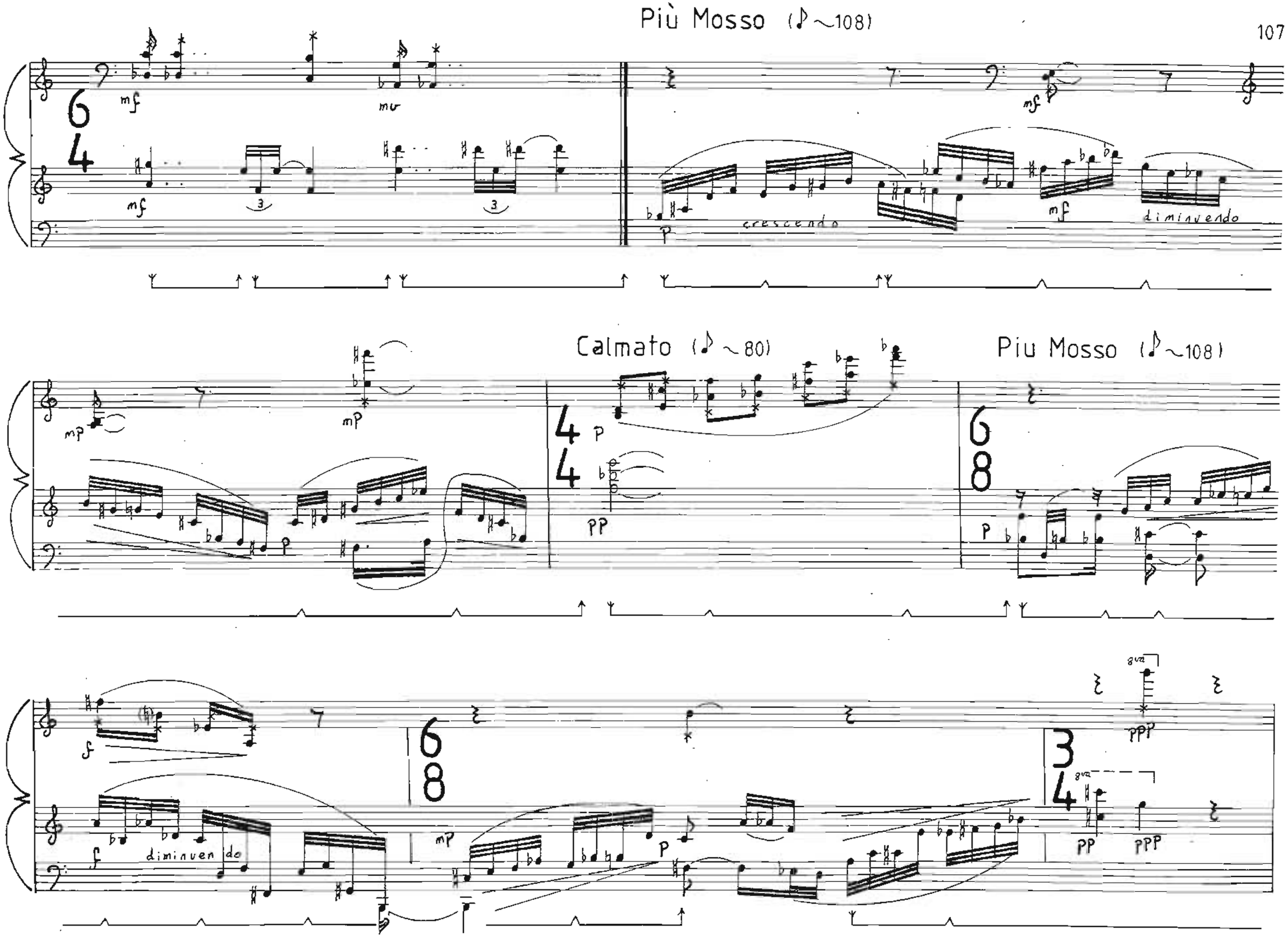
simile

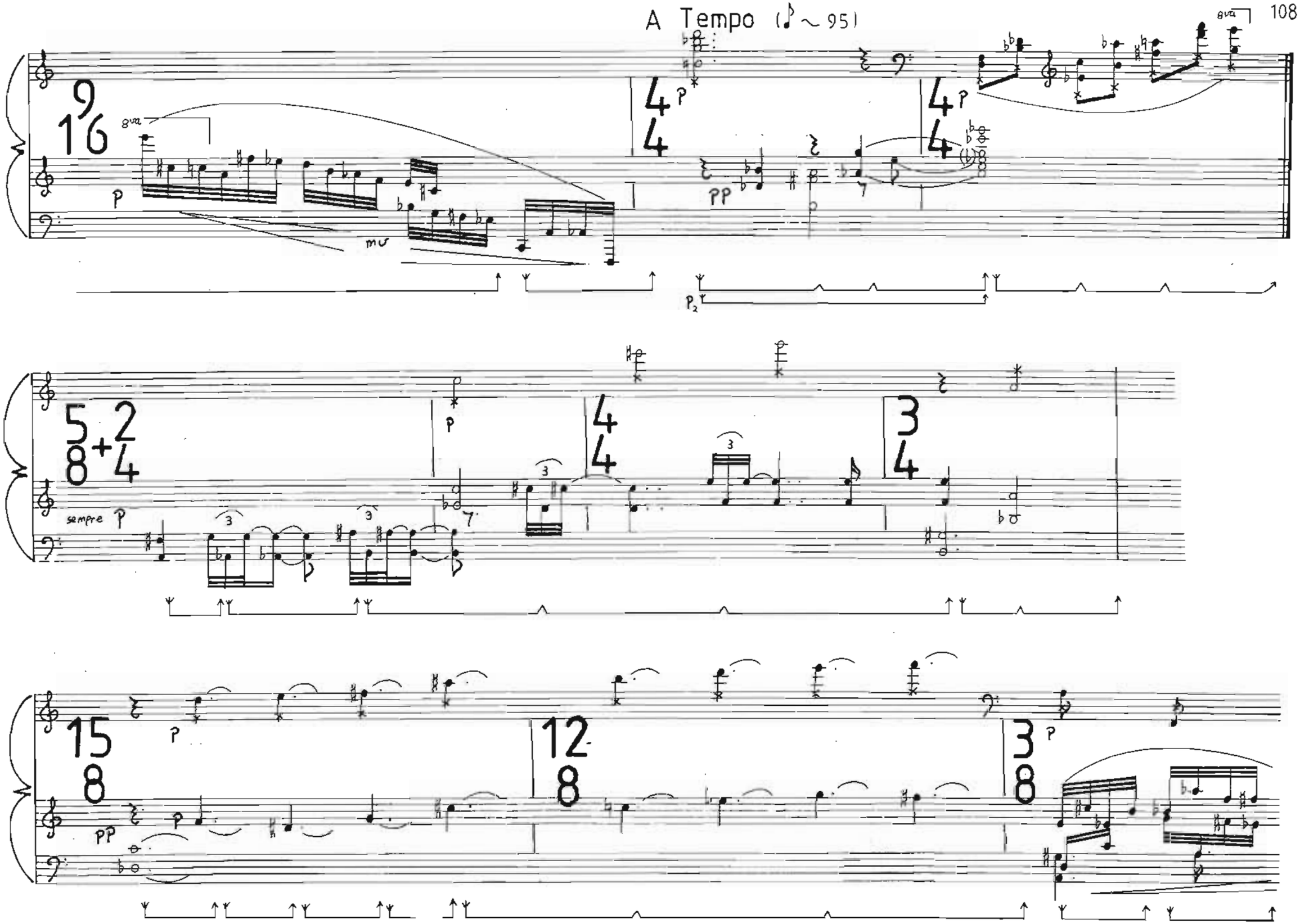
Tempo Prima (♪ ~95)

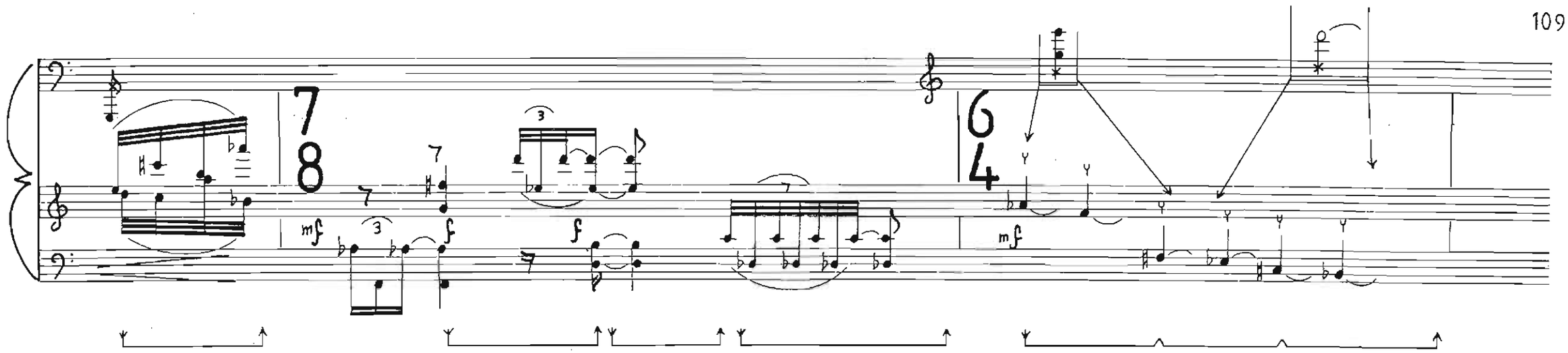
8va

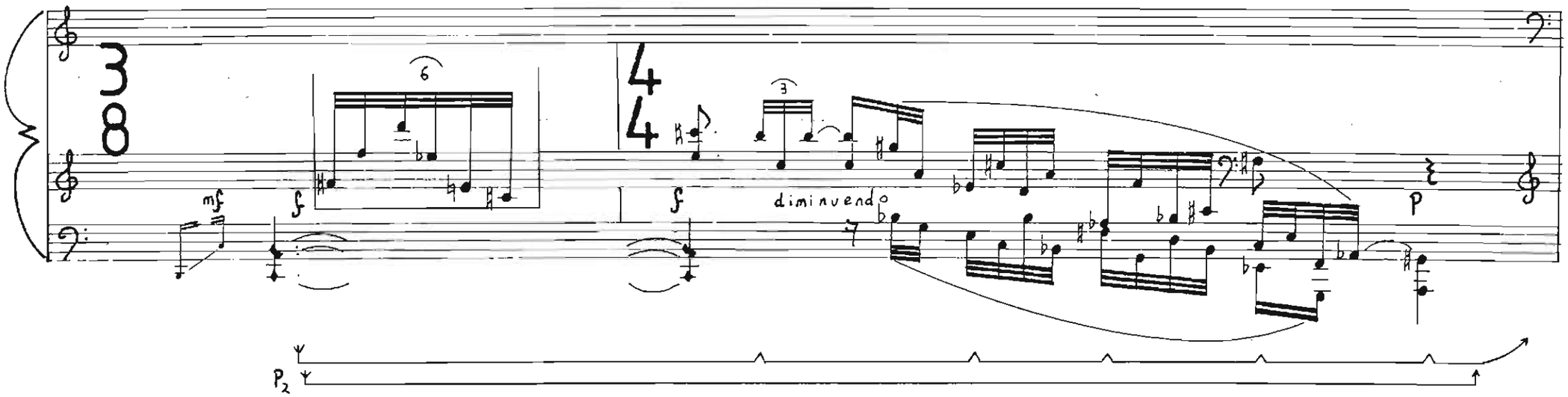
crescendo

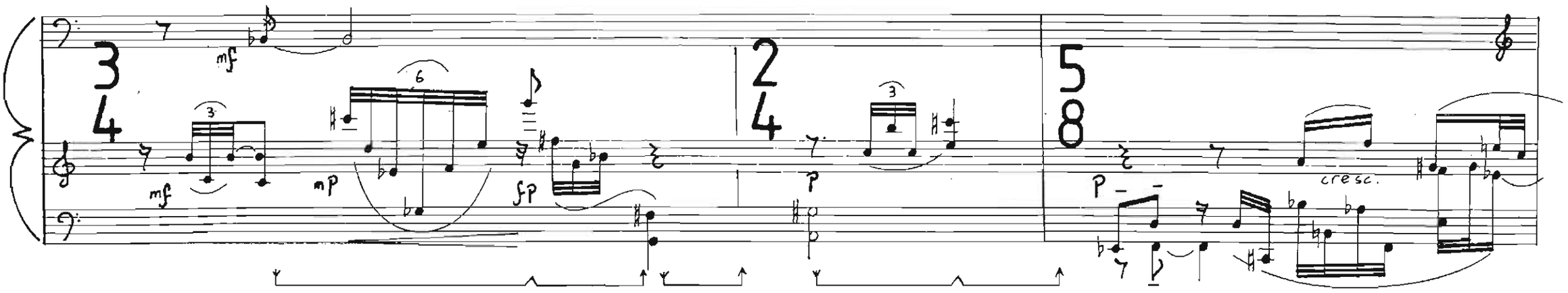
subito p

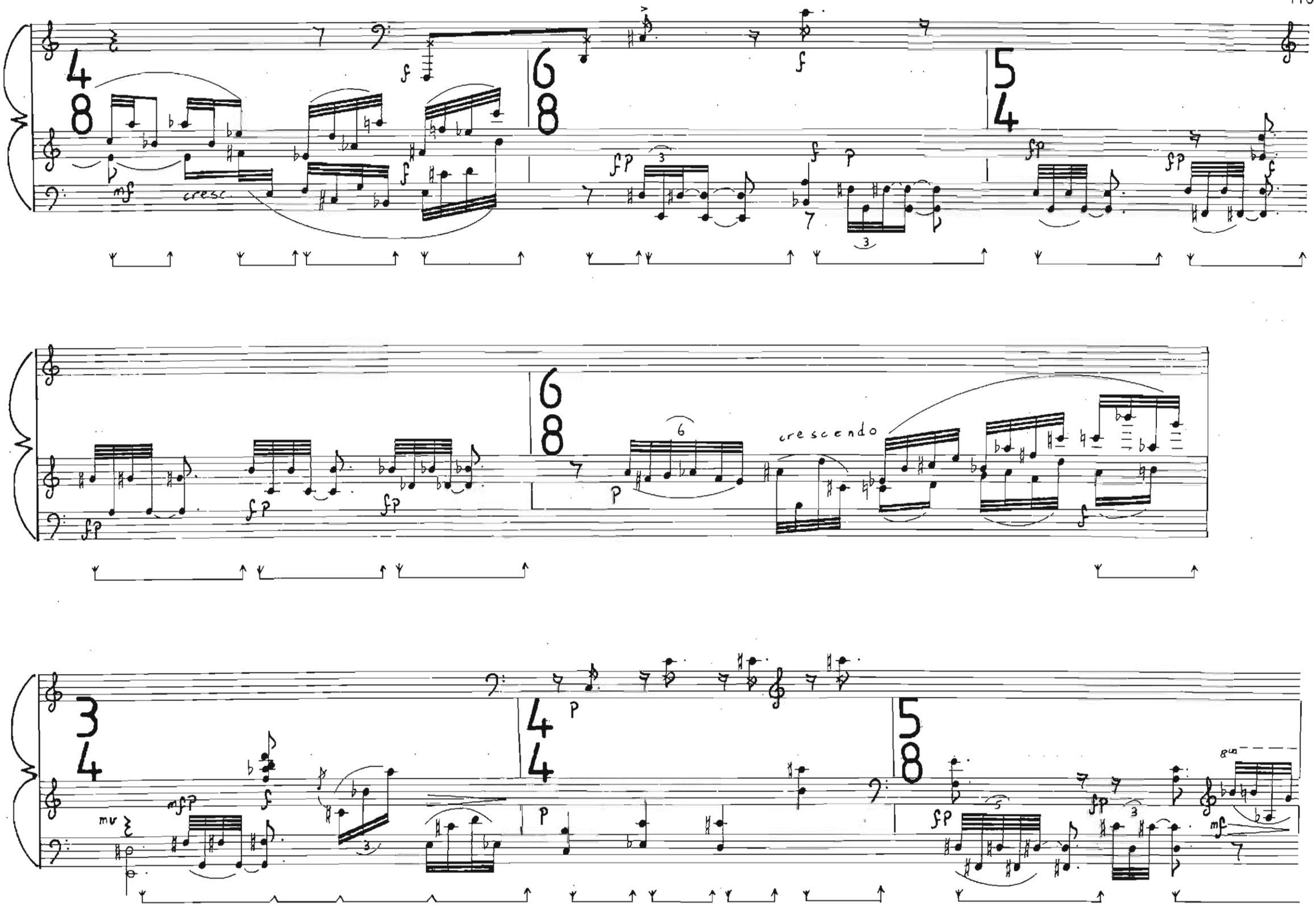

Più Mosso (♪~108)
mf
mv
mf
mf
crescendo
mf
diminuendo
Calmato (♪~80)
mp
mp
p
pp
Piu Mosso (♪~108)
p
f
diminuendo
mp
p
8va
ppp
pp
ppp


A Tempo (♪ ~ 95)
8va
p
mv
pp
p2
sempre p
pp


7/8
mf
f
6/4
mf


3/8
mf
f
6
4/4
f
diminuendo
p
P2


3/4
mf
mf
mp
fp
2/4
p
5/8
p
cresc.

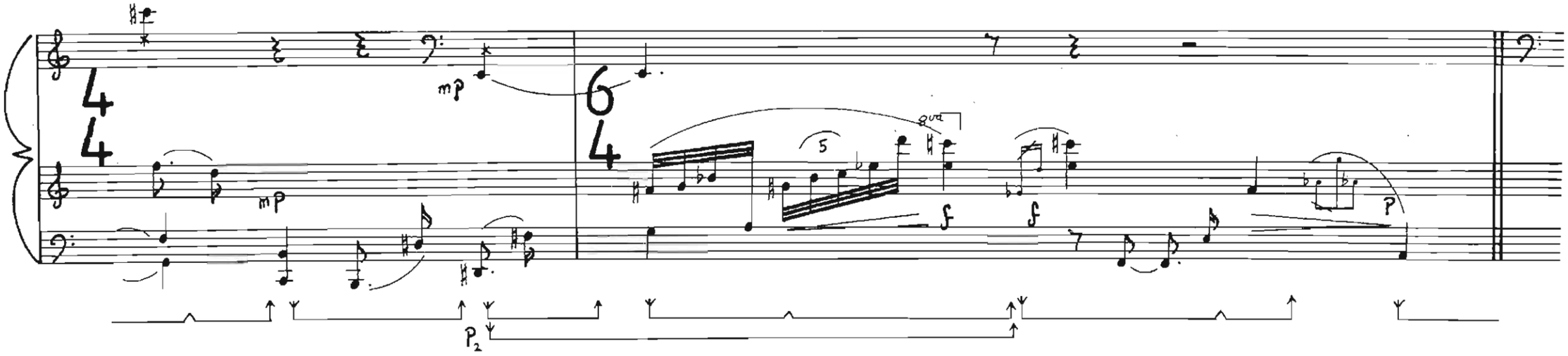

cresc.
crescendo

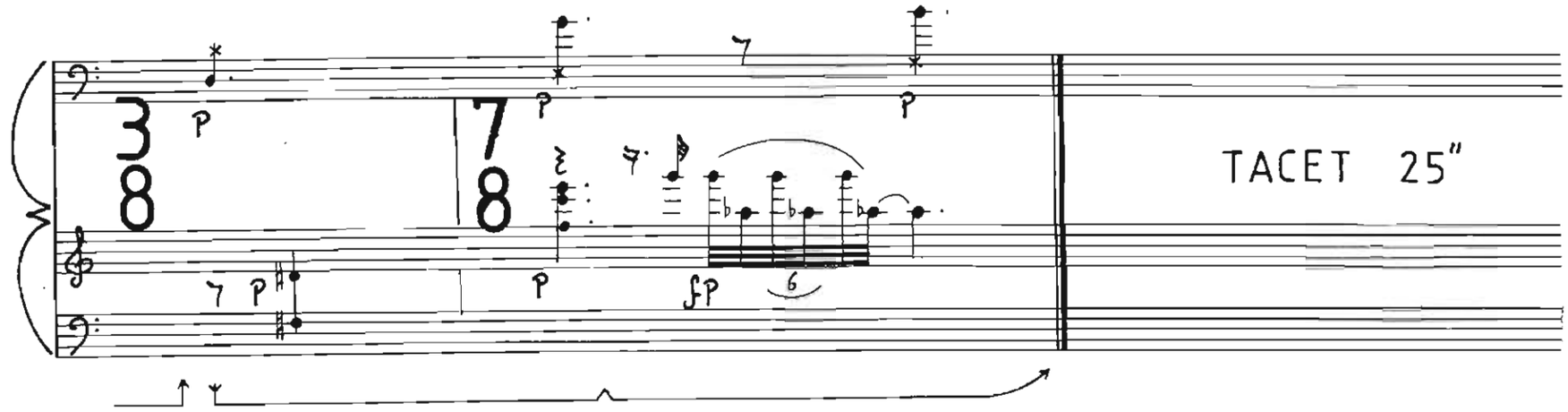
Piu Mosso (♪~108)

A Tempo (♪ ~ 95)

come n sospiro

sempre

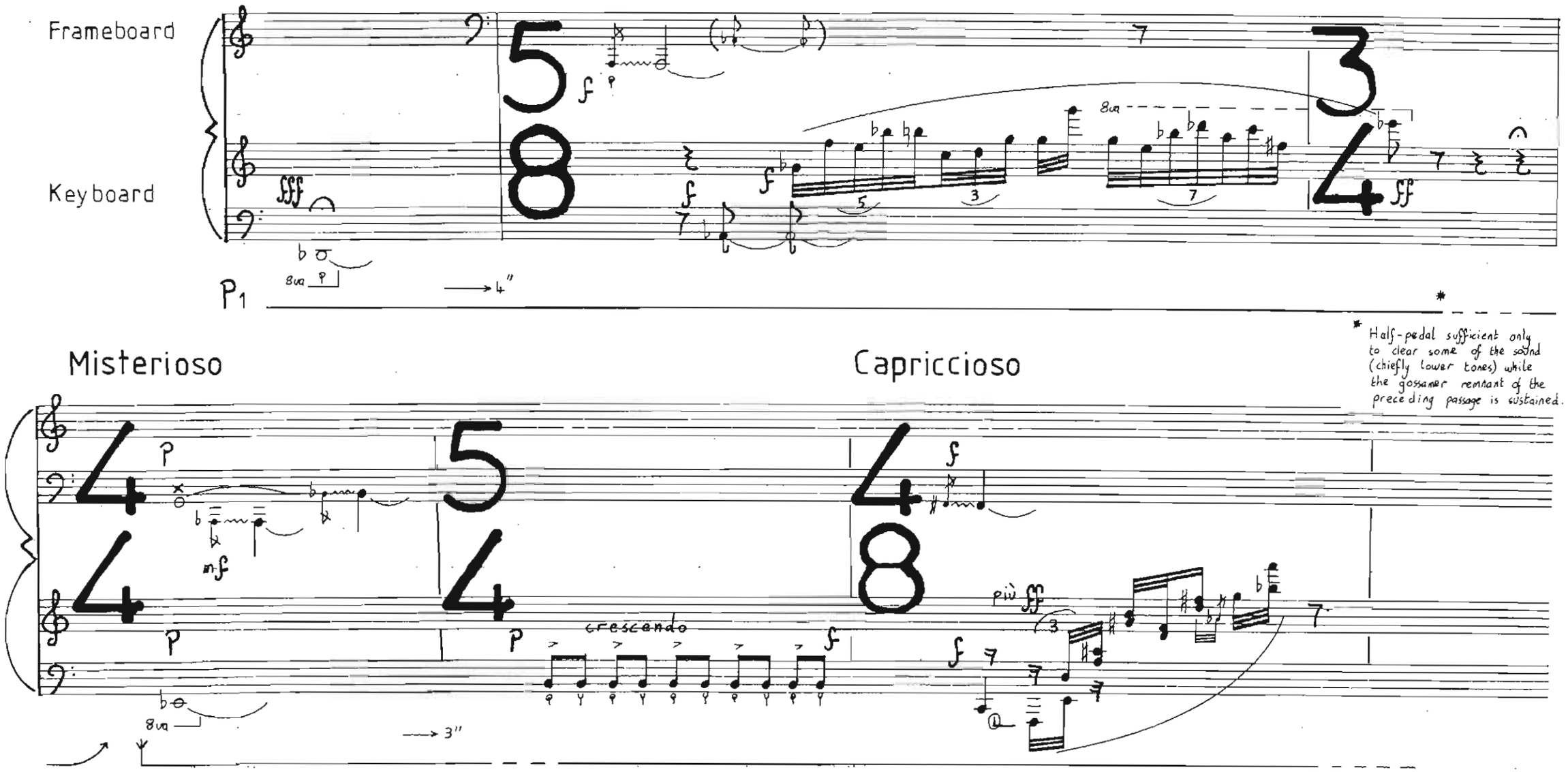




TACET 25"

8 HOUSE OF SATURN

Con Appassionato Diabolico (♪~120)



* Half-pedal sufficient only to clear some of the sound (chiefly lower tones) while the gossamer remnant of the preceding passage is sustained.

Accelerando

Hit soundboard with mallet

gliss

(un sospirando)

Poco crescendo mf

cantando

* Insert a glass ashtray or glass between C - D.

Feroce

crescendo

A Tempo (♪~120)

Dolcemente

Use Plectrum

ff

8va

ppp leggiero

come parlando

pp

8va

mp

pp tenerezza

Misterioso

cantando

subito

subito

Hit string with mallet as well towards fff

pp crescendo f ff fff

8va

mp

mf

diminuendo

Semplice

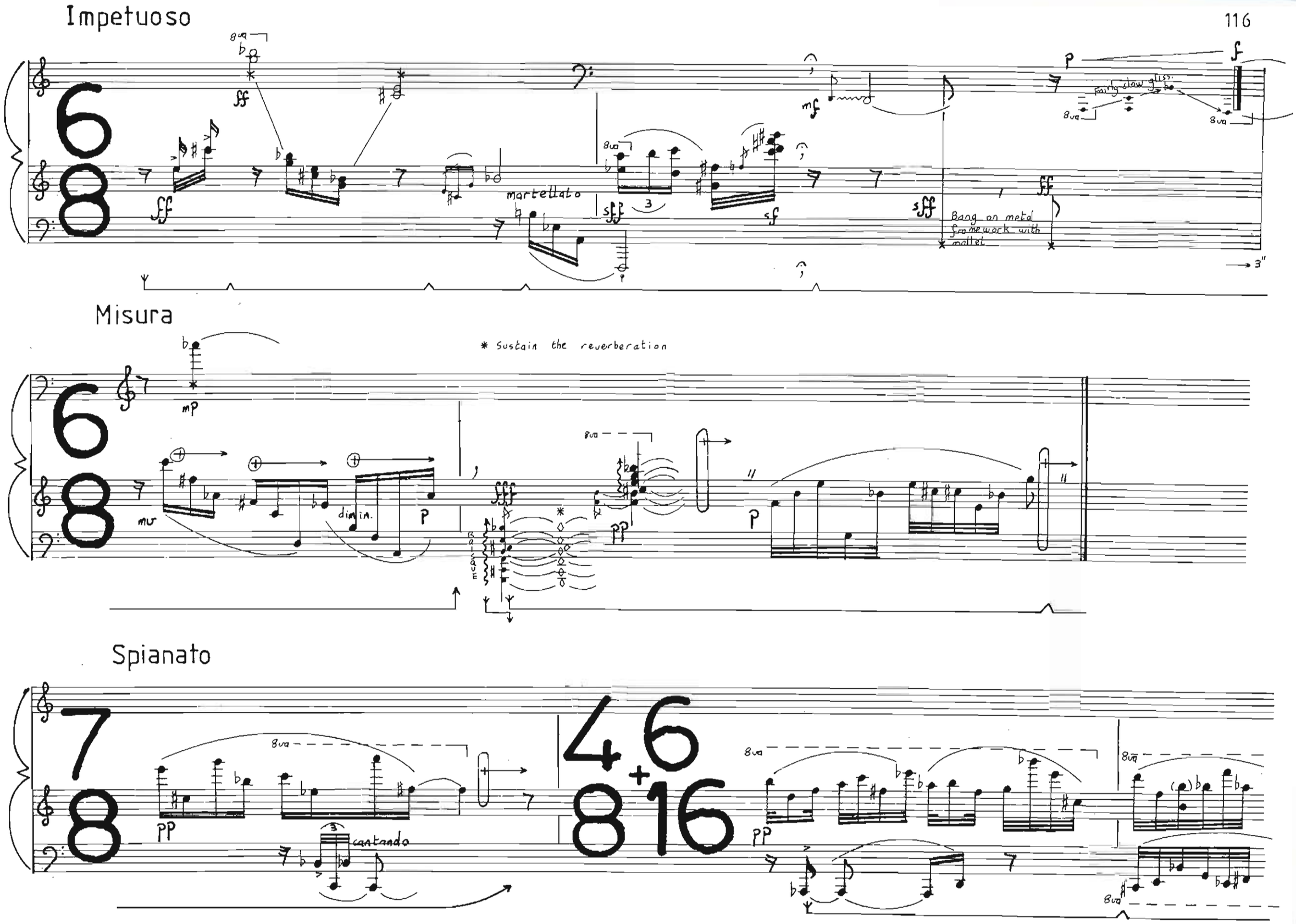
citardando

pp

a tempo

p

Chinese block on soundboard to create a loud tap.


Impetuoso
martellato
Bang on metal framework with mallet
Fairly slow gliss.
Misura
* Sustain the reverberation
dimin.
Spianato
cantando

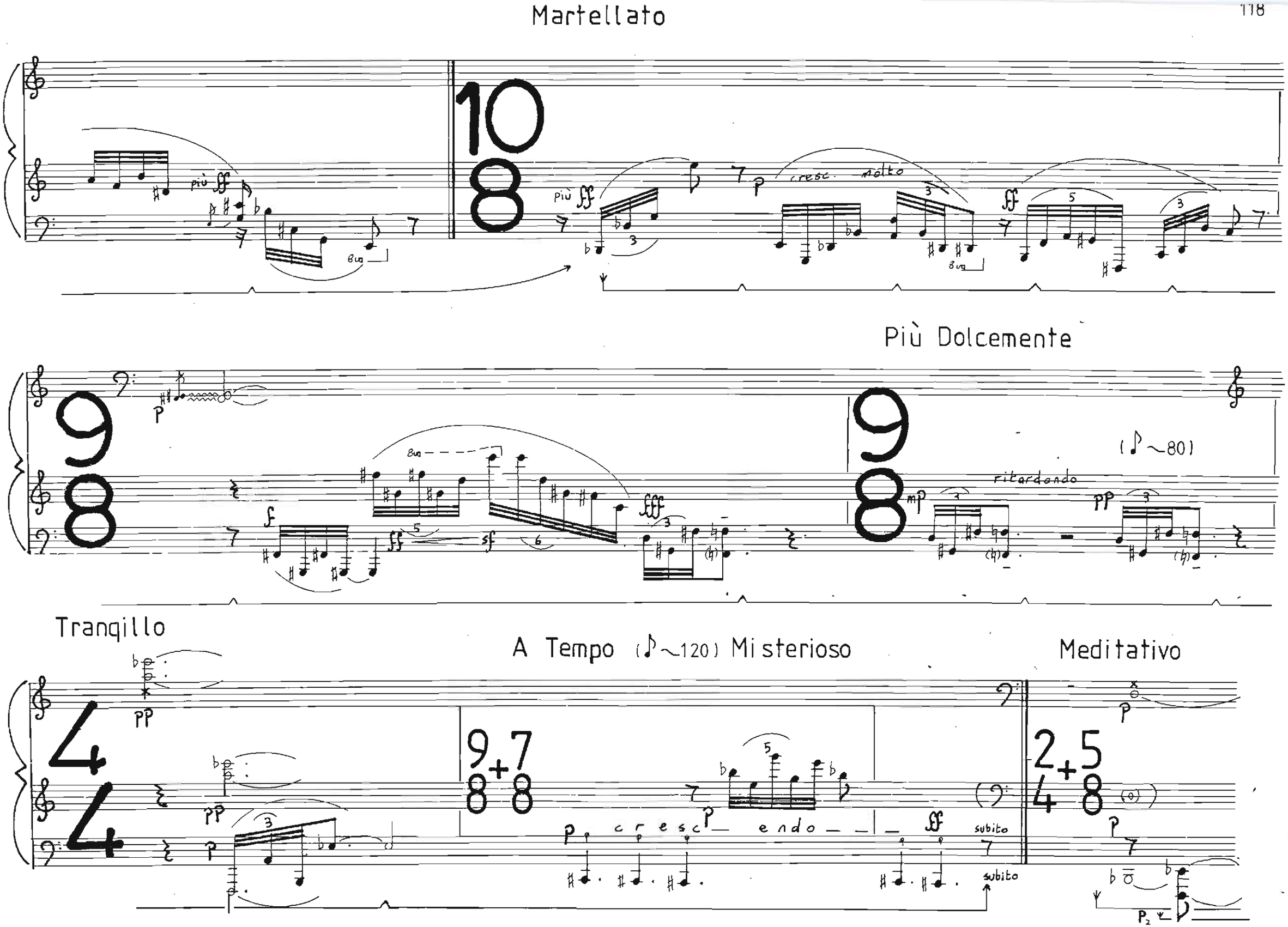
Molto Tranquillo

Serioso

quasi una sospirando

affrettando

Placido


Martellato
più ff
cresc. molto
Più Dolcemente
ritardando
(♪~80)
Tranqillo
A Tempo (♪~120) Misterioso
Meditativo
cresc endo
subito

tempo ad libitum

At this point only the rustling sound of the vibrating strings should be aimed for. The actual

Gentle scraping sound. Use backwards scraping motion with edge of fingernails.

notes (pitches) articulated so as not to be too individually prominent. Other strings in the near vicinity of chose indicated can be scraped simultaneously – in cluster fashion. The performer, however, must adhere to the give tessitura for this effect.

sempre Pedal

più PP sempre

PP

P₁ come sopra

smorzando poco a poco al fine

OSSIA

P sempre

PP

PP

PP ritard.

subito

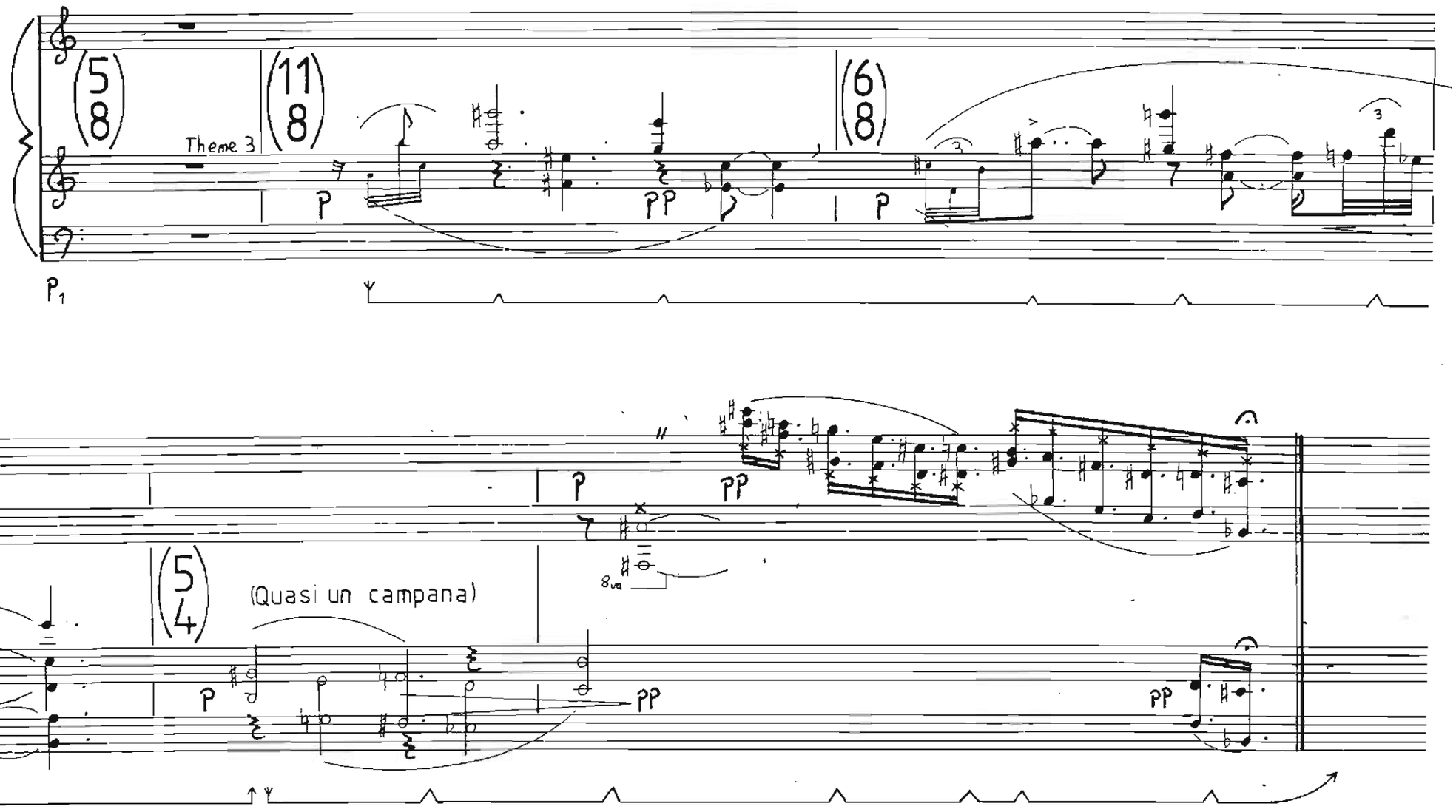
subito

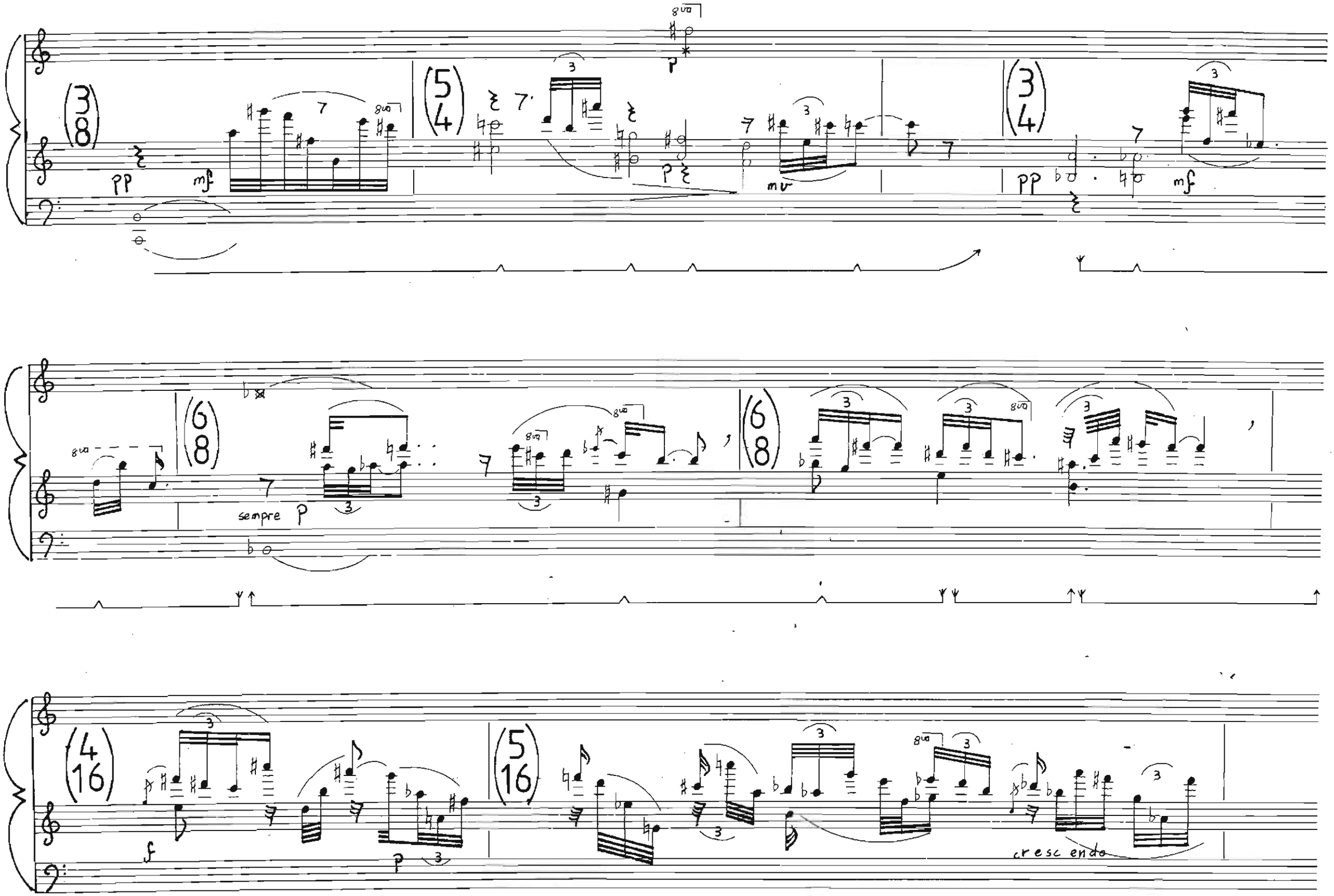
TACET 20"

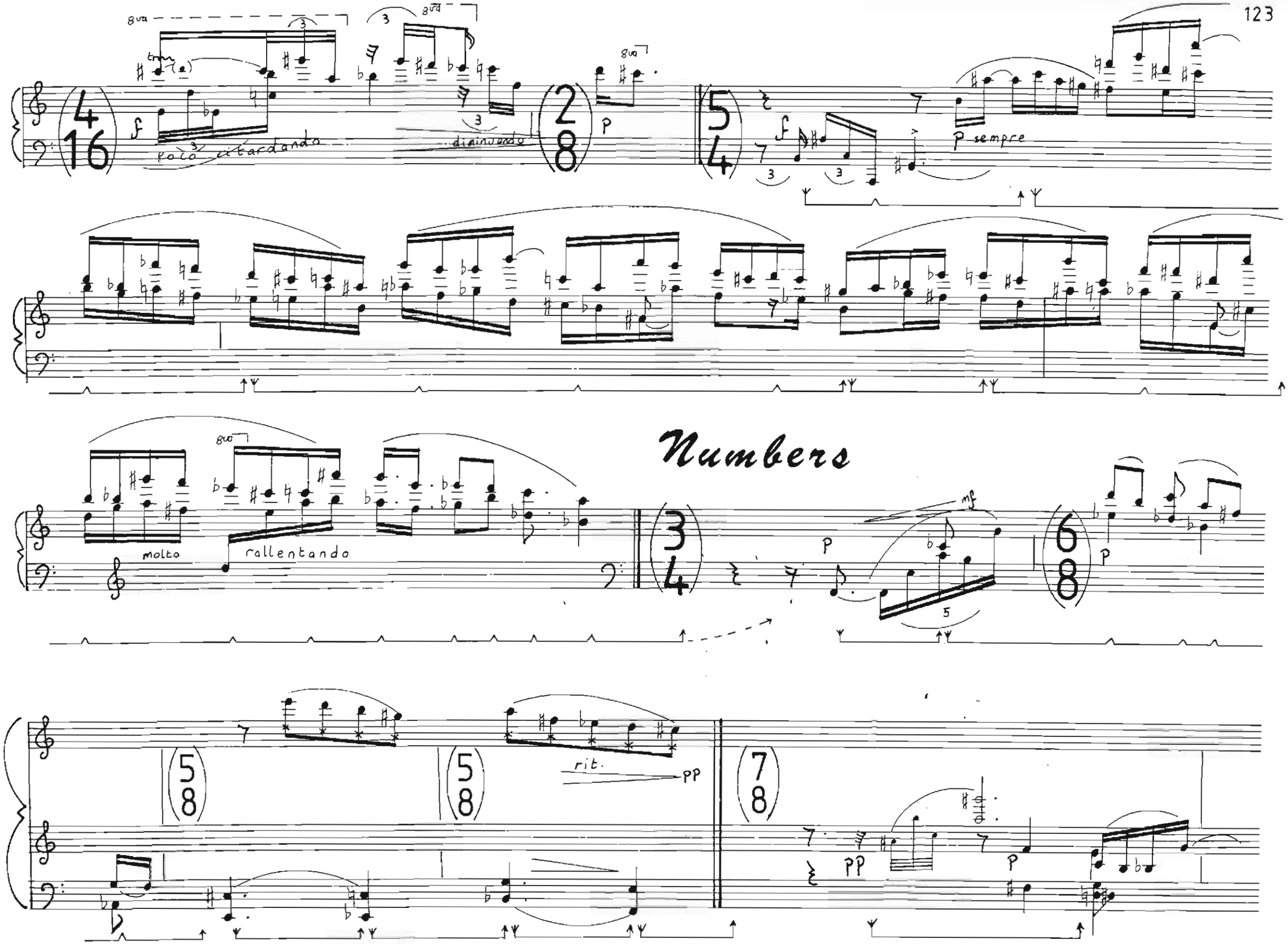
9

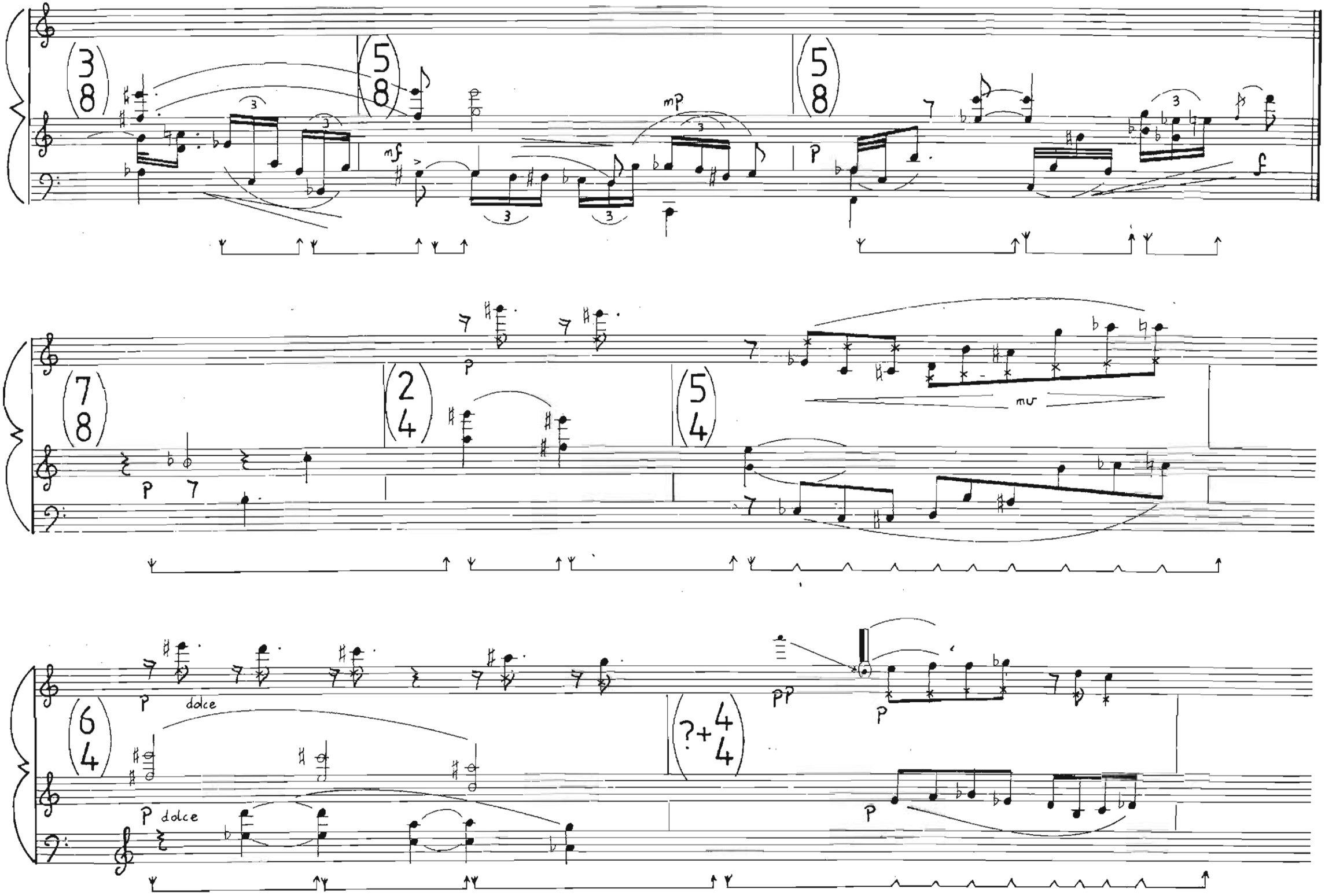
Leviticus

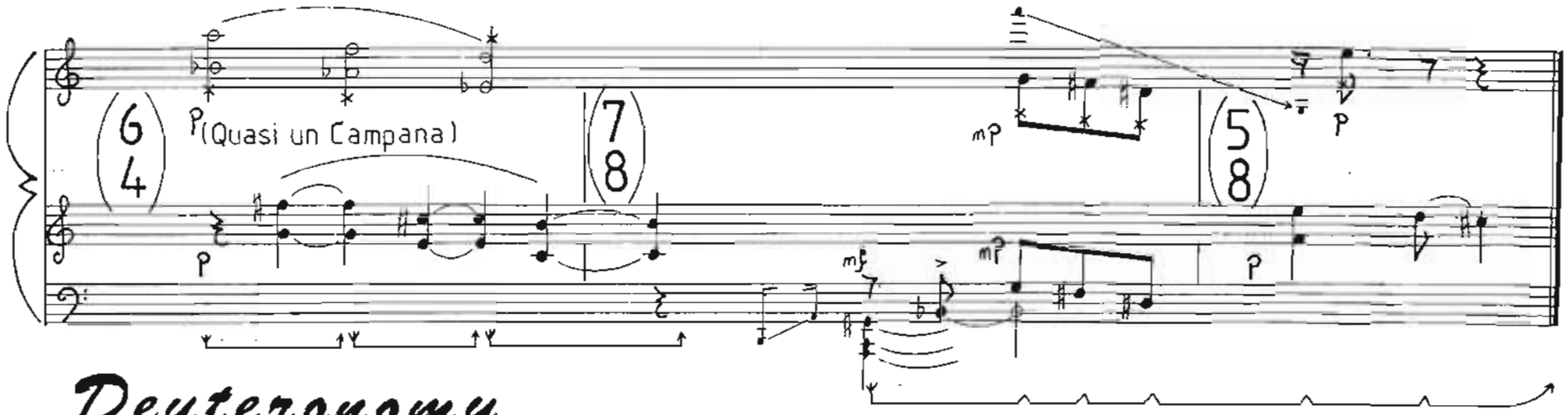
Andante Molto Tranquillo (♪～60)




pp
mf
p
mv
pp
mf
sempre p
f
p
cresc endo

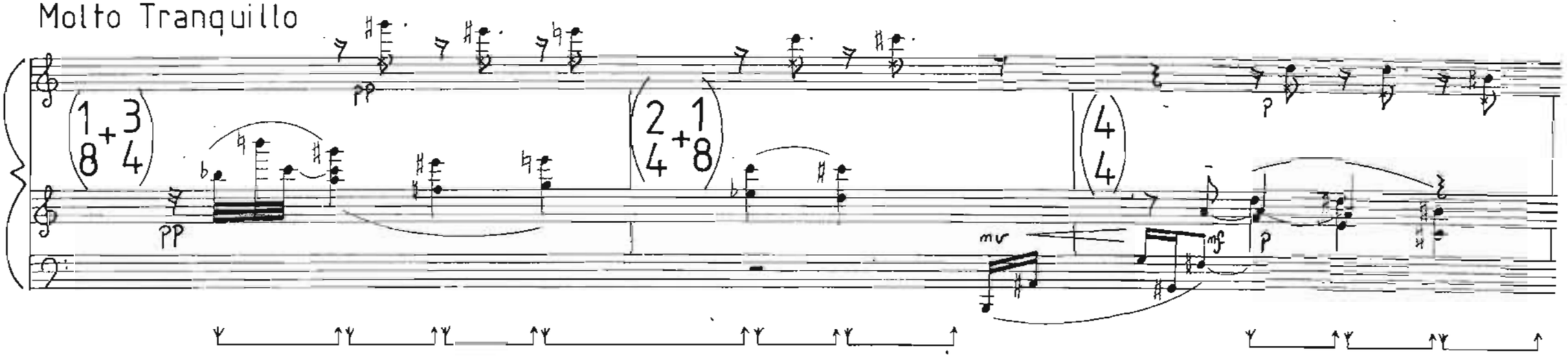

poco ritardando
diminuendo
p sempre
molto
rallentando
Numbers
rit.

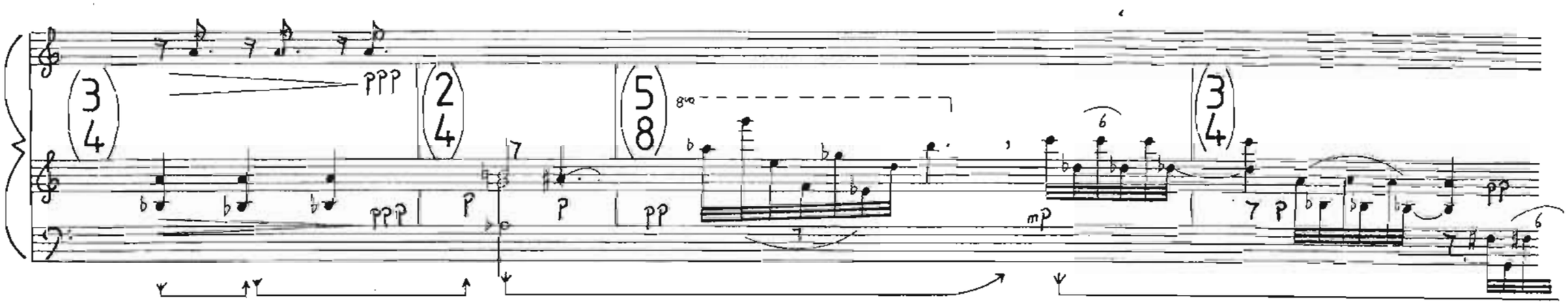

mf
mp
p
f
mv
p
dolce
p dolce
pp
p
p



Deuteronomy

Molto Tranquillo



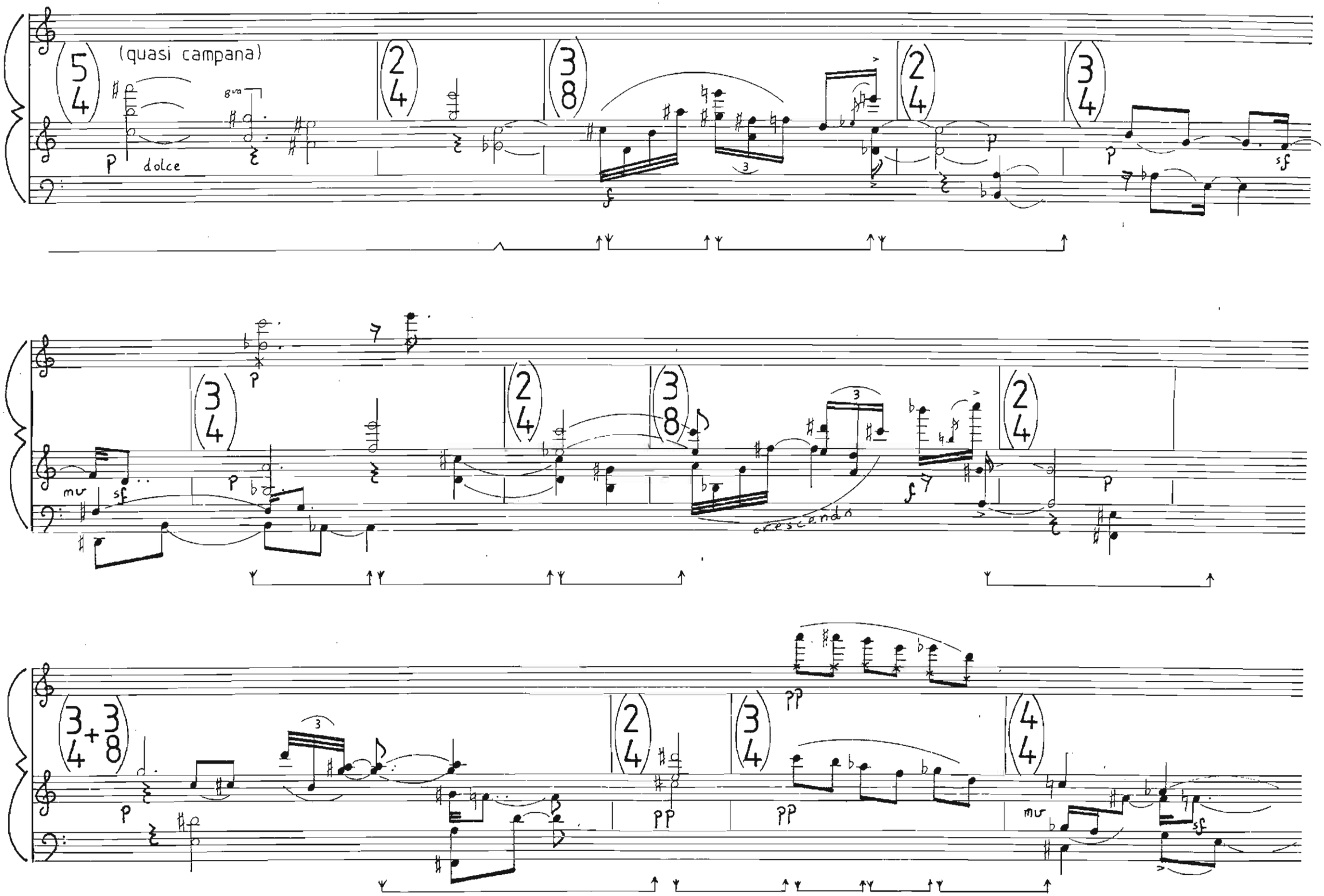


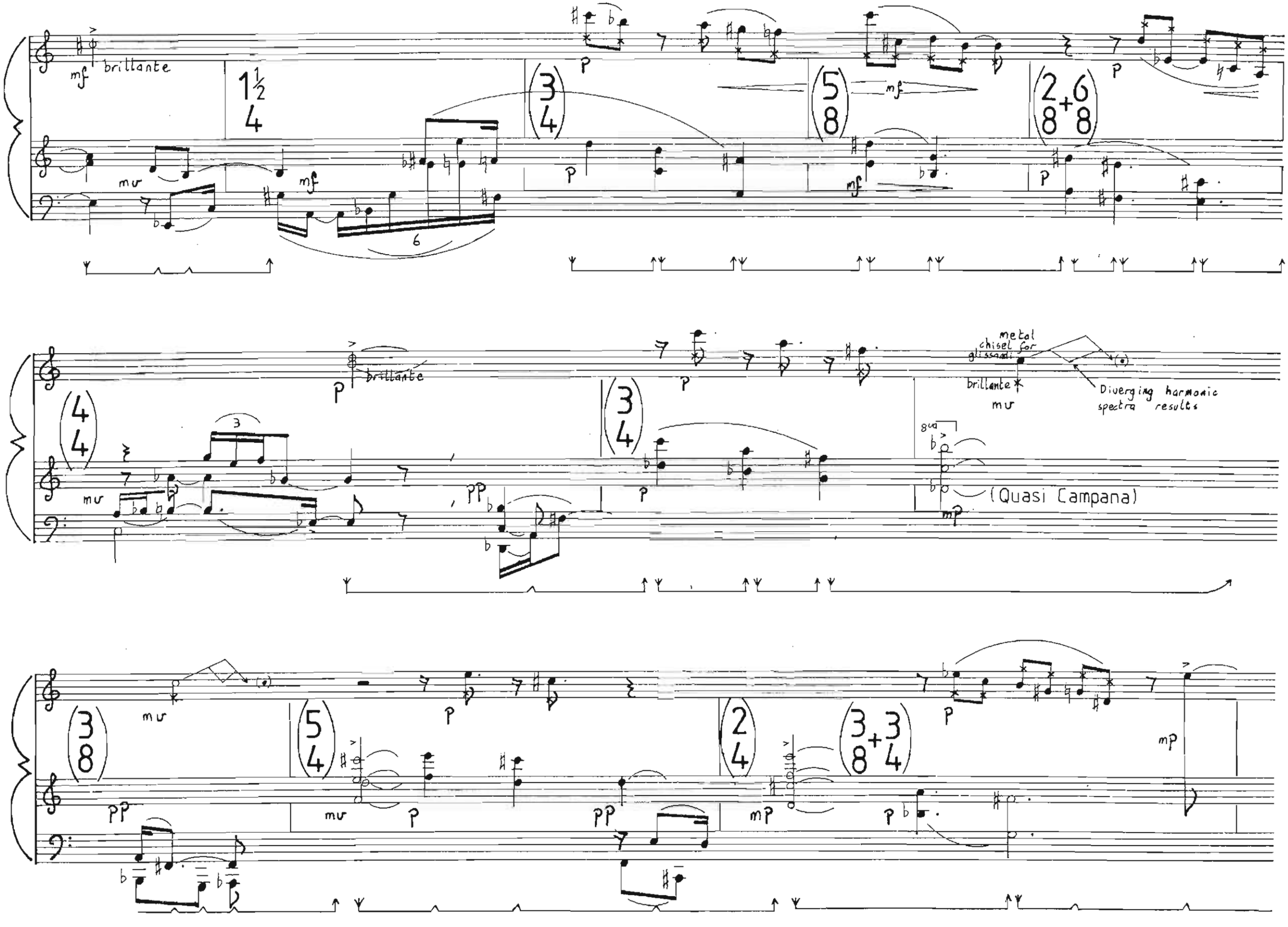
4+3

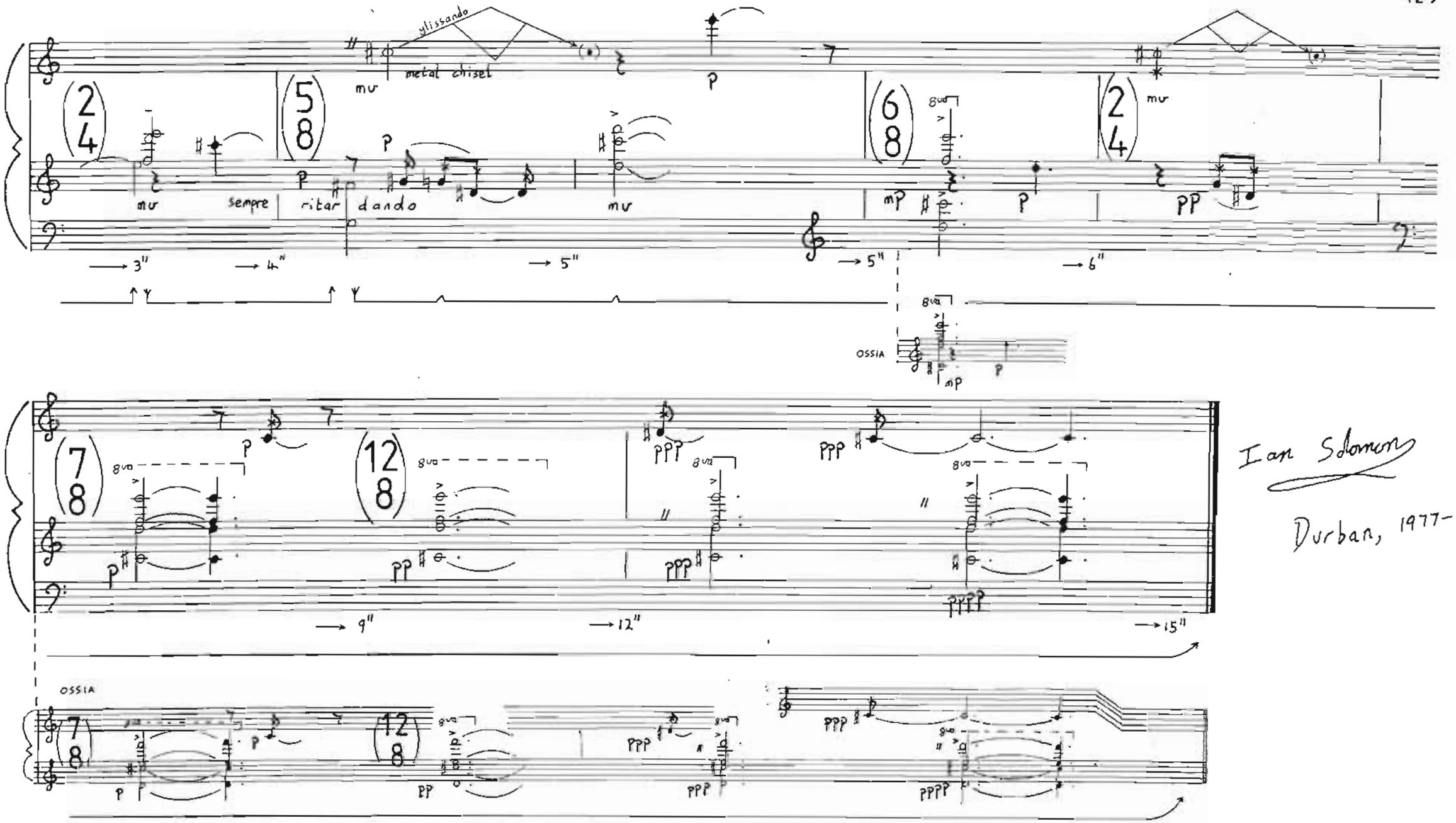
(al' campana)

2+3+4

OSSIA


(quasi campana)
dolce
8va
crescendo


mf brillante
mv
mf
p
mf
p
p
p
brillante
p
mv
pp
p
metal chisel for glissandi
brillante
mv
Diverging harmonic spectra results
(Quasi Campana)
mp
mv
p
mv
p
pp
mp
p
mp



Ian Solomon

Durban, 1977-81