IGOR STRAVINSKY

AND

TWELVE TONE COMPOSITION

THREE ANALYTICAL ESSAYS

BY

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To

PROFESSOR JOSEF RUFER

Whose Guidance Inspired This Study

CONTENTS

Footnotes are designated by a raised parenthetical (0)

Musical examples are designated thus: (ex.0)

Rehearsal numbers are designated by level parenthesis (0)

INTRODUCTION

Some foreign writers, some our own despise;
The Ancients only, or the Moderns prize.
Thus Wit, like Faith, by each man is applied,
To one small sect, and all are damned beside.

Essay on Criticism II
Alexander Pope

Of all the eras in music history, it is doubtful if any approximates this century's rapid changes of style, trends and experimentation. If one compares the reactions of various musical epochs to one another and the inevitable cyclical changes which occur in the evolution of all the arts, one can see the Phoenix of a new concept resurrecting itself from the ashes of a burnt out aesthetic. Consequently, de Vitry's Ars Nova is the repercussion of the Ars Antiqua, Caccini's Nuove Musiche ushers in the figured bass period, Mozart helps deliver the death blow to a "stile galant" and, with Wagner, harmonic theories burst their seams, formal organization seems to topple and the musical world splits into two rival camps: Wagner's Romanticism versus Brahms' Classicism.

This dichotomy is usually described as chromatic against diatonic, and partisans of each have vehemently maintained these two poles to be irreconcilable. While it is not within the scope of this paper to discuss implications of Romanticism or Classicism for different ages or even generations, I should like to point out that this dispute, which balances all artistic endeavors, has not limited itself to the music world. 'Mots de guerre' have been exchanged between literary circles concerned with the same problem (the expressionism of Kafka as opposed to Gide's Greek gestures) or in painting, Picasso versus Kandinsky; all these allegiances

have encouraged today's critics and cultural guardians to valiantly pronounce the incompatibility of Schoenberg and Stravinsky.(1)

Thus music history books generalize; Stravinsky--- diatonic,linear, rhythmically akin to bodily gesture,objective; Schoenberg--- chromatic,vertical,akin to speech and song rhythms,subjective. Is this an accurate picture? Actually all this tells us little more about these men than about Haydn or Wagner, for these generalities boil down attributes of the Romantic or Classic category. Perhaps these assertions are based on either the Firebird or Transfigured Night, early works uncharacteristic of each composer's mature personality or far flung influence. To imagine that Stravinsky was one day to adopt and even contribute to the method of composing with a 12 tone row, would have seemed so improbable even ten years ago, as to be incredible; yet it has happened, proving nothing as much as our own short sightedness. The most immediate lesson we can learn from this is that the improbable happens every day, the impossible taking only a little longer. Today we are fortunate in having a close up view of this event and the facts brought with it.

This paper will divide itself into these sections: the first will deal with the respective positions of Stravinsky and Schoenberg, their anti-thesis, problems and a discussion of early works throwing light on the subject. The second section will devote itself to an analysis of Stravinsky's recent works bowing toward dodecaphonic procedure, and in a summary-conclusion, new approaches to 12 tone handling will be discussed. By way of comparison, a brief analysis of Schoenberg's Variations for Orchestra, opus 31, will be included in an appendix.

Of course, there are inherent difficulties imposed on us by a lack of historical perspective. Lacking this view from the outside, what we cannot grasp is the relationship of Time to present day accomplishments. Yet, we can compare; our great asset is a proximity to distinguish and being able to distinguish is an essential part of understanding. It is precisely this role which we dare to play with greater effectiveness than posterity. What Stravinsky and Schoenberg have in common we do not see clearly, only clinical detachment of distance will bring this about. However, the differences between these two men are today thrown into sharp relief; perhaps a time will come when common denominators will outweigh differential factors.

I. STRAVINSKY AND SCHOENBERG: THEIR POSITIONS AND PROBLEMS.

> ... but whether we deplore or rejoice at the fact, the era of authority in the arts is rather long since past, and the word "Poetics" now arouses in us scarcely more than the notion of troublesome and old-fashioned rules.
>
> The Course in Poetics: First Lesson
> Paul Valery.

Despite the fact that both composers entered the musical arena with works of easily traceable ancestry, (Schoenberg's string quartets 1 and 2, the string sextet and Gurre-lieder being born of the blood of Brahms, Mahler, and Strauss, while Stravinsky's Scherzo Fantastique, Firebird, and Petrouschka owe much to Dukas and Rimsky-Korsakoff) they were soon to startle the world, upsetting many a proven theorem. However, Schoenberg was the villain who never repented (at least in the eyes of laymen) and Stravinsky appeared to oblige critics who thought his music had, of necessity, fallen into the court of last resorts...neo-classicism. Those terming his music of this period a "wrong note style", fail to realize

its significance. Stravinsky did borrow certain cliches of the past, but his personality always dominates this adopted vocabulary and it is unlikely that anyone mistakes the Piano Concerto with Wind Accompaniment (1924) for Bach or the Rake's Progress for Don Giovanni. This neo-classicism is rather a kind of elegant lie representing a truth for his 1920 aesthetic. One may also conjecture that this disguised past, costuming Bach, Handel, Mozart, and Pergolesi, is indicative of Stravinsky's own musical education and environment. By this I do not mean to intimate that he was unaware of these composers, but Schoenberg's and Stravinsky's musical pedigrees are quite different in that all of the former's influences were in turn members of the German tradition, while Stravinsky's sprang from the Russian school and folk music; in other words, the German tradition was almost entirely missing. For Schoenberg to parody his own musical past is unthinkable.

More important is that both of these musical cultures relied on opposing principles to shape their music. The Germans layed great stress on harmony, developing it to a saturation point, the Russians, no doubt influenced by Eastern music, placed emphasis on rhythm and were not too concerned with "correct harmony". (i.e. Boris Godunov) The Russians also depended heavily on ostinati or mechanical devices detrimental to the development of harmony. Ostinati are practically non-existant in 19th century German music, while the appoggiatura is a German invention seldom found in Russian scores. Not only did they avoid the culprit who was to sap tonality's strength as an organizing system, but the entire family of augmented sixth chords, the mainstays of chromatic harmony, were also conspicuously missing. With this in mind, the "Tristan story" hardly needs retelling.

It becomes apparent why Schoenberg's predicament became much more acute than Stravinsky's; thus,"the method of composing with 12 tones grew out of a necessity." (2)

Does this mean that Stravinsky was fully satisfied with his vocabulary,(even after Le Sacre du Printemps) and made no attempts at the type of cell manipulation which prompted 12 tone working ? In quoting the following examples I do not wish to imply that Stravinsky was writing early 12 tone works or that he was beating Schoenberg to what is rightfully his. Both excerpts simply show Stravinsky using all tones of the chromatic scale vertically as well as melodically, in a manner not to be found in his previous work and without being chromatic.

The extracts from the Firebird (ex.1) certainly do not fall into the realm of row manipulation and are more closely allied to the Lisztian type of motivic transformation; nevertheless, the 6 tone cell, stated by celli and contrabassi at the beginning of the suite, may well have constituted a basic set or linear series to work with, no matter how rudimentary the treatment may be. (It is not till 2 bars after 16 of the Finale that we hear a retrograde inversion of example 1-D) Intervallic implications inherent in notes 1-2,4-5, (a M3rd and m3rd one whole step apart) may also have intrigued him for they appear compounded, that is squeezed together, in example 1-B+C. Note also the outlying tritone resulting in this horizontal view of the series. Example 1-H is also related to 1-D in that the symmetrical relationship for notes 1-2-3,6-5-4 (all half steps enclosing the M3rd) is maintained, the 6 tone "row is augmented, the tritone outline of notes 1-4 is still used as a pivot, and the four major triads on B,C,C#,F use up ten tones of the chromatic scale.

The Firebird was composed in 1909, the Three Japanese Lyrics for soprano voice with instrumental accompaniment of 2 flutes, 2 clarnets, piano and string quartet, in 1913. They are interesting in that they shun traditional harmonic structures to an even greater degree than Le Sacre, yet manage to create a tonal impression. Mazatzumi, the second song, is Stravinsky's closest approach to non-tonality. (ex.2)

The opening and closing figurations quickly use up all chromatic intervals. There is an arbitrariness in these arpeggios, which could jump from one to the other without disturbing any pre-ordained harmonic flow, which is not unsimilar to Schoenberg's Lieder der hängenden Gärten (1908) where it also would be possible to move directly from one chord to another without disrupting a pre-set functional pattern. Here then, within a period of five years, we find both men aware of the same problems, working along similar lines, yet achieving something very different in effect.

Hindemith would say that this unstable harmonic quality (upon which one must not place any value judgement) is due to the fluctuating, disrelated bass progression. It would be possible to extract harmonic unities 'a la Schenker', but I do not think this valid; in other words, tonality no longer has a part in shaping or defining form. While the seven tone group which opens and closes Mazatzumi contains a C^7 and an f# minor triad, I do not believe this polytonal relationship is heard, due to the distribution of the notes emphasizing the tritones.(ex.2) What does help to round out the tonal impression is the vocal part which constantly hovers about C#, at the same time stressing the raised and lowered seventh degrees, and the last two chords (sFz and ppp) both of which contain C# and are transpositions.

The same is true of the two quartile structures to which a minor second has been added, lying under the 32nd note quintolet. My numbering of the closing sequential arpeggios, using up all chromatic intervals, starts on C. In the Schoenberg songs there is little concern with creating a tonal impression and the re-inforcing tendencies found in the Stravinsky are altogether missing.

So we see that although coming from different backgrounds, Stravinsky and Schoenberg both found themselves backed into the same corner; each, however, reacted in opposing ways.

Whether Stravinsky felt all harmonic paths had been explored or if he considered this element no longer valid for development is difficult to say; (certainly a compromise was not reached) instead his music advanced along lines of harmonic simplification. From 1914 to 1952, a span of 38 years, Stravinsky seemed well satisfied with his harmonic vocabulary, demanding almost no harmonic innovations. During this second period, titles such as Serenade in A, Concerto in D (1925 and 1930), Symphony in C (1938) became frequent. By temperment more interested in rhythm, Stravinsky was occupied with its development, (Ragtime and L'Histoire both dating from 1918) and perhaps new designs as well; it is from this period that the Symphonies d' Instruments a Vent (1920) come to us. Yet in 1923, Schoenberg publishes his Five Piano Pieces, opus 23 and Stravinsky is firmly entrenched in the diatonics of the Octet.

These much talked of piano pieces, containing the first conscious use of tone rows, appear after the Four Orchestral Songs (1913-15). A silence of ten years must testify how this impass affected Schoenberg. During this time he seldom composed, finishing very little. (3)

Scheenberg's Harmonielehre appeared in 1911 and the ideas here promulgated, most likely went through an incubation period. New concepts are vaguely hinted at, tonality is the chief topic, but it is so treated that one understands traditional harmony as an abstract practice, applicable only to a particular period of music's development. The tone, in fact, implies these long established practices to be no longer in use, but essential as a disciplined study in preparation for another type of tonal system.(4) So much for Schoenberg and the beginnings of 12 tone music.

If it was Schoenberg's failure to find forms indigenous to 12 tone working, the aesthetic one seemingly had to embrace, which caused Stravinsky to shy away from dodecaphony, I would not like to say; most likely it was a combination of all these factors. In Orpheus (1948), elements crop up which seem as foreign to works of this second period, as certain atonal stretches in such a tonal piece as Schoenberg's Kammer Symphonie, opus 9 (1906). I refer to Interludes 1 and 2 of Orpheus.(5)

The greater bulk of Stravinsky's music, composed during this second period, offers no insurmountable analytical difficulties, the tools and nomenclature pertaining to traditional harmonic dissection sufficing. In describing his harmonic language of this time, we could say that it moves from one traditional vertical sonority to another, these sonorities acting as sign-posts guiding linear elements;(6) but, as we shall see, this method slowly disintegrates, traditional chords becoming less and less frequent.

The prelude to act III, scene 2 of The Rake's Progress is a step in this direction. (ex.3)

In the opening measures, the bass line clearly centers around B♭, re-inforced by the pedal D♭. Caesura markings defining phrase endings and cadences, even where rests do not appear in the music, have been included in this analysis to show demarcations from one tonal plane to another. Voice leading is so shaped as to create tonal sonorities at crucial places so that these "tonal sign-posts" orient the direction of the harmonic flow. Measures seven's arrival on a B♭ $\frac{6}{4}$ is typical. The cambiata like quarters in measures 13-14, as dissonant as they are, also pass through a simple root progression; sign-posts again organizing the tonal forward surge of the music. Pedals, such as the repeated D♭ and the F triad also help weigh down the moving lines. Moving from an opening B♭ region to the final F, the prelude can easily be analyzed in b♭ minor, even mediant, submediant and dominant-tonic being touched before the final half cadence.

Orpheus' interludes advance this process of "sign-post" disintegration. The first interlude also moves from B♭ to F, but how different the method. (ex.4) Traditional sonorities are not as overt, inversions as found in the Rake's prelude have disappeared, the interlude moving in a thorny world of major-minor seconds and tritones, and while one could extract root progressions, they are not as valid or heard with the same clarity as formerly. (7) The texture only simplifies at the important cadence point modulating to the next scene.

Manifesting techniques of the prelude, the second interlude's descending violin line is tonally defined by the underlying bassoon's and celli F major-minor. Taken alone, this chromatic pleading of the "tormented souls in Tartarus," would be harmonically ambiguous, even the concluding fourths not decisive for harmonic direction.(ex.5)

The last few measures before 90 are also filled with the major-minor seconds and thirds characteristic of the first interlude.

This increasing rarity of traditional harmonic directives implies a turning from homophonic practice to a type of dodecaphonic polyphony. In the second part of this paper it will be important to notice that works combining 12 tone techniques and tonal practices, (movements 1 and 5 of the Canticum Sacrum and portions of Agon) homophonic movements continue to rely on traditional sonorities, while 12 tone sections are polyphonic. As yet I cannot find any vertical 12 tone usage of the kind to be found in the coda of Schoenberg's Fourth String Quartet, first movement. Naturally, there are sections heard vertically in Stravinsky's 12 tone music but, if this is vertically planned (which it must be), harmony, in the traditional sense, is more difficult to hear.

Now we have come to the conclusion of the first part of this paper. Whether Stravinsky at this point consciously strove for an evolution of 12 tone music, if his ear led him there or if it remained the only road left open, is difficult to surmise; once more it was probably a combination of all these factors. However, one thing is clear; the roads traveled by the analyzed Orpheus interludes, the Cantata's Ricercare II and the first movement of the Septet, could not help but arrive at theland of dodecaphony. Stravinsky's toils will prove it to still be a fertile one.

II. THE TWELVE TONAL WORKS: 1951-1957

> ...a mathematical demonstration is not a simple juxtaposition of syllogisms, it is syllogisms placed in a certain order, and the order in which these elements are placed is much more important than the elements themselves...to create consists precisely in not making useless combinations and in making those which are useful and which are only a minority. Invention is discernment, choice.
>
> On Mathematical Creation:
> Henri Poincare

The first works to be analyzed, the Cantata's Ricercare II and the Septet, by rights should still fall into the preceding part of this study. However, even though the harmonic language has not changed, I feel justified including these pieces under the present heading because of a technique used, which up to now, has not figured prominently in Stravinsky's music, namely, strict canonic working. Reasons for this will soon become apparent.

Schoenberg, in his lecture 'Composition with 12 tones' says, "the basic set is used in diverse forms. The composers of the last century had not employed such mirror forms as much as the masters of contrapuntal times." (8) In view of this statement it is not surprising to find Stravinsky composing with orders of notes and their symmetrical offsprings. The Ricercare II was no doubt a proving ground for future works involving row manipulation.

CANTATA: Ricercare II (1951)

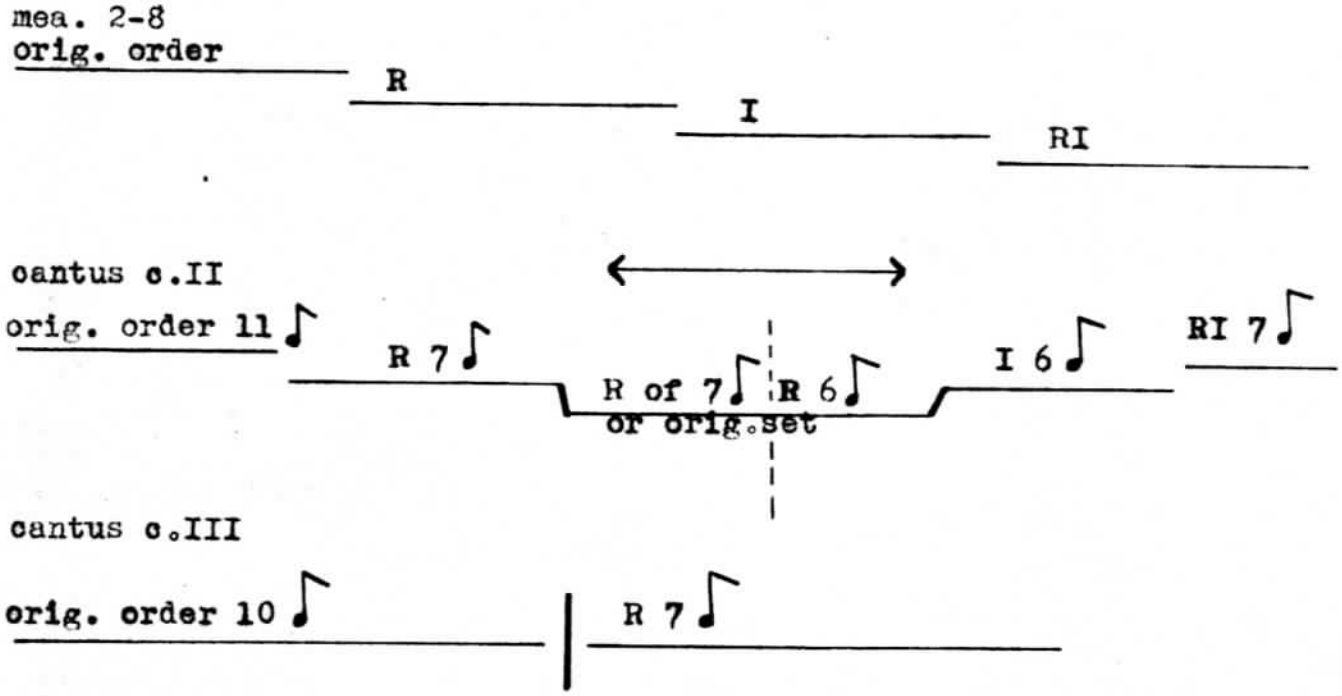
Certainly no one will quarrel about the Ricercare's C tonality with modal inflections and we need not concern ourselves with this; rather, the nature of the material must be examined along with the contrapuntal technique.

The cantus cancrizan is a typically Stravinskyian line, not too far removed from some of the undulating alto flute solos in Le Sacre. This melodic tendency, as has been often pointed out, is a characteristic of primitive Russian folk music and, in this sense at least, the Ricercare owes more to a Russian influence than to a Netherlandish one. As we shall see in the Canticum Sacrum's 'Surge Aquilo' aria, this melodic wobble is also akin to Byzantine cantillation. I make these seemingly superficial remarks to emphasize the brevity of Stravinsky's lines and their relationship to his early attempts at some type of dodecaphonic technique. The Shakespeare Songs as well as the Dylan Thomas In Memoriam, both use a row confining itself to a major third compass. In this light, the motto stated in measure one is not unlike a five tone row, E-C-D-E♭-C#, with the outlying tones B-F used as new starting tones.(9) All transpositions of the canonic material also concern themselves with intervals stressing the major-minor third.

Examining the cantus cancrizans first, many similarities can be found in the retrograde unfoldings of the cantus, a device related to early isorhythmic and isomelic working and to serial methods as well. (10) As shown by the graph on the following page, the cantus cancrizans repeat three times in sections of seven, fourteen and six measures. The statements have these constructions: (see page 16) Standard abbreviations are used.

Basic or original set of the row = BS, O
Retrograde = R
Inversion = I
Retrograde inversion = RI

The cantus cancrizans repeat three times in sections of seven, fourteen and six measures. The statements have these structures:



From the score and graph we can deduct the following: primary and secondary leading tones (B and F) are used not only as reinforcing dominants, but as pivot tones in the dodecaphonic manner. Furthermore, the plasticity of each subsequent unfolding of the O order is due to dwelling on these pivot tones as well as on the first and last tone of each cantus cancrizan section. The reason for the analysis including the number of eighth notes in each phrase is to highlight this crucial problem: how can the length or duration taken up by each unfolding of the set, which in the case of a hypothetical 12 note chord need last only a quarter note, be extended ? The tripartite unrolling of the second cancrizan is a clue to the solution of this problem, a solution, I would venture to say, influenced by Webern's Piano Variations, opus 27. This particular cancrizan is also a microcosm of the Canticum Sacrum's construction.(11) Now it is necessary to briefly discuss the nine canons.

My tabulation (page 18) shows the technique to be similar in all canons; canon 1,3,5,7 and 9 are the same. Density of imitation extends to three parts at the most, with the remaining voice free, that is falsely imitative and not strict. Imitations wander from one instrument to another in the manner of migrating cantus firmi. The previously alluded to isomelic procedure can best be observed in the first phrases of canon one and four where the identity is obvious despite the hocketing. Imitative intervals used are the octave and major-minor third, these latter imitative points re-emphasizing the major-minor characteristic of the cantus cancrizan.

Canon	1	2	3	4	5	6	7	8	9
* Tenor	C	C	C	C	C	C	C	C	C
Ob. 1	free	I aug.	free	I of Ob.2	free	I	free	RI, free	free
Ob. 2	I	free	I	I	I	free	I	free, I	I
V.C.	free	I	free	free	free	I	free	free, canon	free
* I.I.	oct.	M3	oct.	m3, M2	oct.	M3	oct.	M3	oct.

*

C= cantus; I.I.= interval of imitation

Canons 1,3,5,7 and 9 are the same.

The implication of all this, not only for Stravinsky but for 12 tone procedure in general, is manifold. This isomelic problem, that is, how a row can retain its identity and yet not be repeated in the same rhythmic mold, lies at the crux of all dodecaphonic writing. Careful study of the Ricercare may also shed light on this problem.

More important for us at the moment however, is the idea of a free voice within a rigidly prescribed frame work. While in the Ricercare the free voice finds itself in a strictly controlled tonal construction, this is not quite the case in the Septet where an order of notes is used more approaching a row in the duality of its tonal centers. Here, as we shall see, the free voice manages to "sew up" ambiguous strands of a row's varying gravitations into a more strongly directed tonicality. Amalgamating a dodecaphonic orientation with a tonal one, blossoms in Agon where tonal and 12 tone sections are juxtaposed.(12)

Many of the above remarks on the 12 tone implications of the Ricercare will become more pertinant and clear with the examination of the Septet. In conclusion it must be said that this canonic movement presents not only a contrapuntal tour de force, but a marvel of motivic economy as well.

SEPTET: 1952-'53

The Septet is typical of Stravinsky passionately avoiding traditional forms and instrumental combinations in chamber works. Possible influences betrayed spring from widely separated sources. Instrumentally the piece may stem from Schoenberg's Suite, opus 29, for three clarinets, string trio and piano, which also contains a concluding gigue; compositionally the Septet has much in common with 17th century consort music not only in a contrapuntal sense but in a formal one as well. Whereas Purcell constructed the entire fourth act of Diocletian out of one passacaglia theme, Stravinsky has built the three movements of the Septet from continuously transformed material; this thematic material consists of a series of tones belonging to an extended A tonality or a duality of A-E. (see paragraph 2, page 19) In discussing the Septet, our term "tonality" in the traditional usage is still valid, but will demand re-definition in the later works removed from former concepts of tonal centers.

The first movement is the simplest from both formal and analytical viewpoints, the exposition even containing a clearly heard secondary idea at 1 on the dominant. The development section however, has little rhythmic similarity with the expository material which is continually squeezed into new shapes much in the manner of tone row handling. It is more difficult to extract a row in this movement than it would be in a straight forward 12 tone piece, but the most important "row" material to be considered is the clarinet's A-E-D-C-B-(A)-C#-D and the development's G-A-A♭-B♭-A-D-C found at 4; however, as permutation is at work, it will be easier to remember the intervals whole, w, ½, w½, 4th, w, regardless of specific pitches.

If at first glance these two series seem incompatible, further probing reveals the second row to be a permutation of the first, both seven note groups being indigenous in construction.

3 whole tones
2 half tones
1 perfect fourth

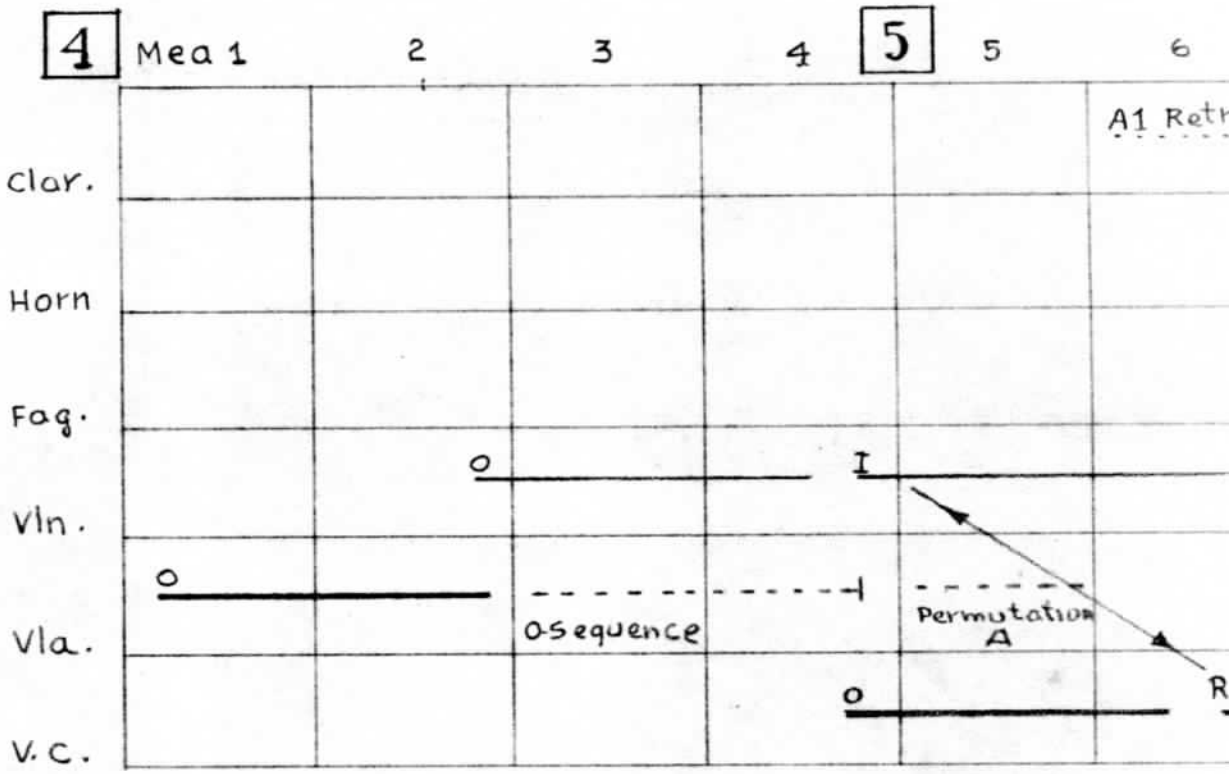
As such the exposition need not detain us; it is not dissimilar to the Octet's counterpointing diatonics. The opening measures are shot through with imitation in the clarinet, bassoon and horn. (Free retrograde augmentation in the horn while the bassoon's on-the-beat augmentation is also canonic.) Forshadowed by bassoon at 3, the row is stated in its complete O form at 4. Various row forms scatter before the development.

At four after 3,			the	piano	plays O
" seven	"	",	"	horn	" I
" six	"	",	"	piano	" R
" seven	"	",	"	bsn.	" O
				(divided with clar.)	

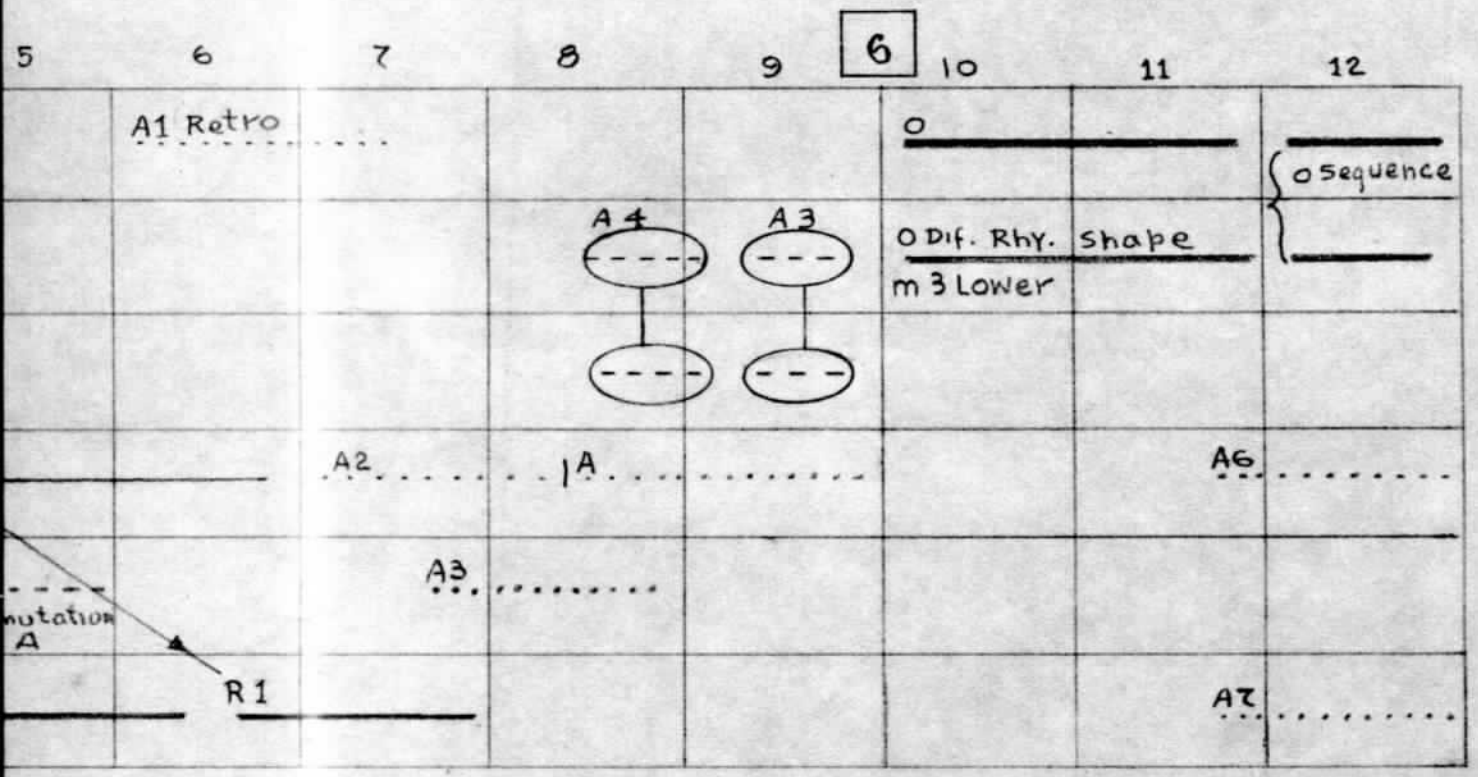
Remembering that a fugue is not as much a form as a texture, the development can best be described as fugal despite the absence of a counter-subject. Basically Stravinsky's method is to overlap forms of the row (O+I), with a permutation, labeled A, which appears each time in a rhythmic variant, (1-7 in the graph on page 22) . Often the row is divided between two instruments as in measures 8-9. The following graph will illustrate these points.

At number 8 in the score, there is a stretto involving all instruments except piano; 9 ushers in the recapitulation. A final bit of imitation between clarinet and bassoon in the coda (14) is reminiscent of the closing pianissimo passages in Dumbarton Oaks' first movement. The clarinet line is an augmentation of the opening.

Septet 1st Movement: Analysis of 12 Measure



of 12 Measures



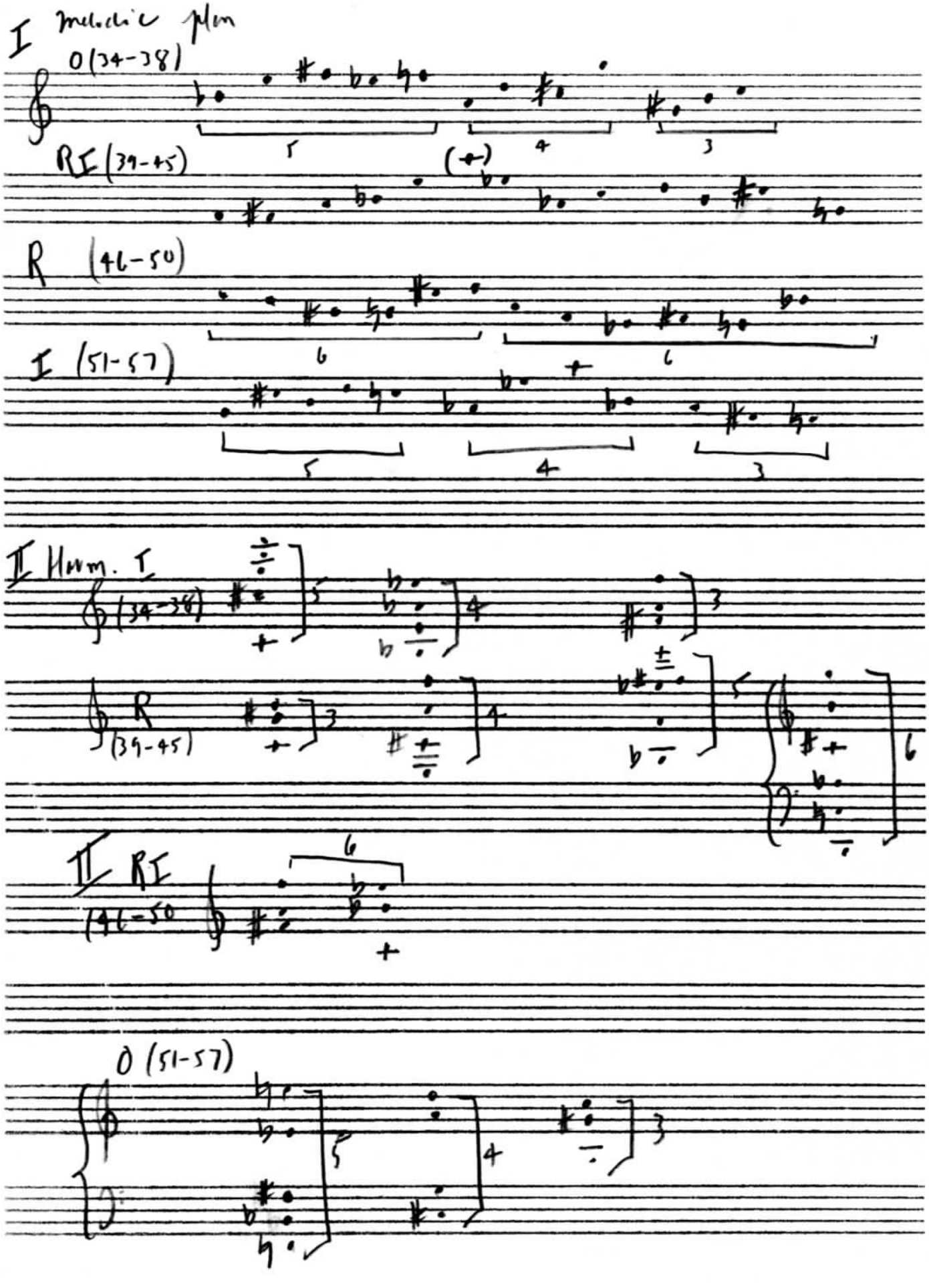
Were we to consider the first movement's exposition and recapitulation alone, they would present us with nothing new in Stravinsky's approach to either a widening tonality or working methods. If there is danger of disappointment after the Ricercare's virtuosity, this pitfall is side-stepped by the Septet's development section; only the Ricercare comes close to this economy and organic knit. The exposition's "A major-ism" and the development's retreat from this tonicality is a juxtaposition formerly thought impossible.

In the Ricercare, Stravinsky uses 12 tone methodology on tonal material, but here, still using the same techniques, he kneads material further removed from tonal implications, yet avoiding all incongruities and anachronisms between these two systems.

At this point the labors of teleological research begin to prove that the long accepted Stravinsky contra 12 tone thesis has broken down, the boundary line between row composition and free tonality vanishing, ultimately destroying any contentions that Form or forms can only be created through functional, related tonicalities.

Passacaglia---second movement

This movement consists of a 16 note cantus firmus over which nine contrapuntal variations are woven. Once more the material is not dodecaphonic although the techniques are 12 tone imbued. Notes 1-6 of the passacaglia theme are the first six notes transposed of the original clarinet subject; of the 16 notes, only eight are different. A "Klangfarben" influence is discernable in the passacaglia's initial statement. Every repetition begins on the third beat pick-up to rehearsal numbers. (ex.6)


I melodic plm
O (34-38)
RI (39-45)
R (46-50)
I (51-57)
II Hmm. I
(34-38)
R
(39-45)
II RI
(46-50)
O (51-57)

In itself the theme has strong tonal associations vacillating between A-E; whereas the cantus firmus always begins with the fifth leap E-B, it is reinforced by the ending A which, in turn, leaps to the E. This interlocking A-E-B principle may create a certain harmonic ambiguity, but it is melodically unified by the remaining notes of the row, thus connecting the two A,E systems. The impression is still basically monotonal, distant relationships avoided. (This will not be the case in later works, particularly the Canticum Sacrum, where distant tonal areas are handled as a fulcrum, balancing tension arcs in a row.

Two different materials appear in the course of the movement. The first, used in variations 1,4,7 is a trochaic rhythm carrying with it associations of the French overture; being free material, it is not related with the row and is always heard in the clarinet,horn, and bassoon. More important, however, is the second material,the passacaglia's inversion forms. These units are imposed over the cantus firmus and, in turn, transposed on to themselves within various densities and speeds. ("Ablaufzeiten" or time phase outs.)

Variation I is an octave canon (augmentation by $\frac{1}{2}$) between piano and horn.

Variation II has 0 canons at the octave (violin), fifth (viola), minor seventh (clarinet + bassoon), while the horn has the row R. Imitations are in diminutions

Variation III The piano twice plays a two part canon in quick figurations, O-R-I-RI, each ferm mirroring itself. Violin + viola play O, other instruments double; at the thirty-seconds, violin + viola play R,RI respectively.

Variation IV The winds instruments play the trochaic rhythm, while the violin has an octave canon with the cello, the viola a minor second with the violin.

Variation V Clarinet and string trio divide O-RI-R-I.

Variation VI Canon at octave between winds (cantus firmus) and strings in diminution.

Variation VII Three elements (violin canon at octave, viola at minor second playing I, violincello has cantus firmus) played against trochaic rhythm in clarinet + bassoon. Horn plays R.

Variation VIII Seven voices. Piano,violincello,clarinet,bassoon play O, Horn R, viola I, violin RI. All rows unravel self at different speeds.

Variation IX R + O played off against one another simultaneously; rows divided in "Klangfarben" manner.

Gigue---third movement

Despite four sections in this movement, the over all form is bi-partite. The "Spiegelbild" technique,derived from Webern, becomes increasingly important in Stravinsky, as we shall see. A series of fugues and double fugues, the third fugue, played by string trio, is an inversion of the first while the first double fugue at 32, played by woodwinds and piano inverts itself in the second double fugue at 50. In both double fugues the piano repeats the string trio fugue. Through the double bars and instrumental divisions, the outlines of all fugues are easily discernable. The 'tete du sujet' is a rhythmic re-shaping of the 16 tone passacaglia theme.

From a 12 tone point of analysis, there is little to interest us here, the entire fabric being the most tonal (the exposition excepted) of the piece. All answers are at the fifth, fourth,counter subjects are not row related, and the free material makes use of major-minor triads. (see violin part at 28-30) The row is absorbed into typical Stravinsky diatonics, the subjects propelled with the same energy found in the Concerto for Two Pianos.

In Stravinsky's output, the Septet represents a bridge between the Ricercare's canonic testing ground and the Shakespeare Song's

full fledged row manipulations. Imitative procedures play a greater role than ever before, as do permutative principles. In the strictness of canonic techniques and adherence to a set pattern of notes, Stravinsky has adapted tools peculiar to 12 tone composition without writing music of a Schoenbergian aesthetic; a new era is at hand.

THREE SONGS FROM WILLIAM SHAKESPEARE: 1953

Immediately following the Septet's completion, Stravinsky turned once more to the voice with chamber accompaniment combination of which he is so fond. These songs also advance Stravinsky's interest in dodecaphony, yet they are quite different from the Septet or the Dylan Thomas In Memoriam which owe their debt and origin to the Sacred Historie's canonic workings. The Shakespeare Songs, on the other hand, show a marked avoidance of canons, concerning themselves instead with the spinning out of 12 tone phrases. Most important, however, is Stravinsky's discovery of Webern whose influence lurks not only in the choice of such a sparse instrumental texture, but in the concept of row construction.

It must be briefly pointed out that Webern's linking, symmetrical rows stand in sharp contrast to either Schoenberg's or Berg's. Whereas these two composers used through composed rows, that is rows based on avoidance of sequences and related cells, Webern built his with an eye and ear for symmetrical and sequential interrelation of all component notes. A glance at the assorted rows in example 7 will make this clear. Of course, it is true that Schoenberg and Berg were interested in larger forms and did compose

lengthier music which would not permit using a symmetrical row because of its more limited possibilities. We must not forget that it was Webern who first found forms intrinsic to 12 tone music.(13) Certainly the sharply chiseled rows and their derivitive constellations did much to attract Stravinsky. Let us examine the series in "Musick to heare." (ex.8)

This Webernesque principle is well illustrated by Stravinsky's six tone row. A quick glance already shows tones 4-5-6- to be 1-2-3 in RI, and that the ½ step A-B♭ serves as a pivot note. Furthermore, if we take the M3 A♭ - C (5-6) and reconstruct our row continuing a RI, we get a 10 note row still using B♭ - A as a pivot,and notes. 3-8 as a symmetrical row within a row, while the outlying tones 1-3, 8-10 (M3) are also a RI. Within this framework Stravinsky chooses the four note core B-G-A-B♭ as basic chain-like intervals, a set always"biting its tail." Thus measures 1-8 (flute) exposes the four note cell six times in this order; 0,I,0,I,0,I, the six tone row repeating four times. (ex.9)

The entire vocal part consists of manipulating the four note cell; in toto there are five repetitions of the chain-cells,found in measures 9-20, shortened, lengthened and transposed. (see full score example) The only irregularities will be found in measures 26 + 27. The last eighth in 26 and the following five eighths should read B,E♭,D♭,C,D,B♭. The enharmonics do jibe and only the 1-4 order, which began at one before 5, has been disturbed. (ex.10) Neverthless, the interval sizes have been preserved. Why did Stravinsky change the transposition of, what should have been C-D♭ (They do but...) to B-C ?

Most likely to avoid the leading tone-tonic effect which would have resulted with the G#-F#-F♮ in the viola line. In his 12 tone music Stravinsky often outlines tonal areas contrapuntally but never takes a dominant-tonic directly. The E♭ triads in Schoenberg's Ode to Napoleon would be unthinkable for Stravinsky; at the end of our row anaysis, these tonal effects will be considered.

With the exception of measure six and the concluding six, the song is two-part throughout. The accompaniment is divided up between the three instruments in a manner similar to Webern's opus 15 and 16. A four note cell (M 3rd, M 2nd, m 2nd) constitutes the instrumental material; minor sixths, which appear from 4 onwards, are simply inversions or dissonant forms of the M 3rd. (14) According to Schoenberg's "motive of the accompaniment", the strictness of the instrumental parts in adhering to the four note cell, falls into this description.(15) (ex.11)

What must concern us more in the accompaniment are the clarinet and viola parts in measures 1-8, and the concluding five. At the opening, the free accompaniment to the row is no more than the first five degrees of a C major scale with the same thing happening in the last measures. By the time the double stopped C-G has been struck, everything has been pulled into a C orbit. (see page 19, paragraph 2) Up to measure six, taking the flute line alone, every note is ambiguous, none receiving a "tonal priority." My table of note repetition shows that, were all meter and duration suspended, any note could well become a finalis.

B=4
G=2
A=3
B♭=4
A♭=1

D♭ =3
E♭ =1

However, the rhythmic pull of the D♭ (it is even accented) plus the "C major accompaniment", gives us the C orientation. Simple as this observation may seem, it elucidates the great difference between Schoenberg's 12 tone-ism and Stravinsky's 12 tonalism. All adherents of the Viennese school have a free flux of tones at cadential points, any of which can cadence either by repetition, accent, rhythmic stress, caesura, or by simply stopping, regardless of relationships between tones. It is illuminating to consider the last measures of Wozzeck, consecutive tritones and all, in this light! (16)

Once again we see two forms of 12 tone tonality existing side by side. Schoenberg's is the type of melodic tonality which can make any note a cadential center in the same manner ancient music (pentatonic for example) or modal music did; Stravinsky, on the other hand, has extended the idea of harmonic tonality to dodecaphonic methods.

While this is an important step in 12 tone composition, it does not, as might be expected, make the form "better"; at best, it only makes form more easily perceptible to the traditional ear, though it is staggering to hear "reliable" critics mentioning atonality and Stravinsky in the same breath. Tonality was a form shaping principle, but Form and forms will continue to be discovered---minus harmonic tonality.

"Musick to heare" shapes itself by cadencing on C (one before 1,4), B (one before 7), G (one before 9), and finally, C.

II."Full fadom five"

The second song of the set opens with an unbarred three part canon forcasting a seven tone row. "Of his bones are Corall made" (mea.1-2)

A seven note row was most likely chosen because each six lines of the text contains seven syllables. Moreover, this measureless head motto, descriptive of bell sounds, has diminution at the fifth (flute) and double diminution at the octave (voice).

The row is handled very simply, and used six times in the following order:

1. O
2. R
3. I
4. RI
5. O
6. I (see full score)

The accompaniment is imitative and uses a transposition of O (mea.3, viola); cancrizans of the type found in the Ricercare II are also used,i.e. measure 1 where the clarinet plays RI against the viola's O. The concluding six measures are free, though saturated with the sound of the preceding measures; in measure's 15-17, foreign notes such as C,D,E,G are avoided as anticipatory to the cadence C. The twice reiterated left hand pizzicato D's are of illustrative significance(rare in Stravinsky), while the closing "Hearke now..." refers to the opening motto. The pizzicato open C also helps prepare for the cadential finalus note with its Mixolydian implication.

Repeated notes and sequences should be observed as coagulating cells which establish a momentary tonicality. (Clar. measure 3) When such a device is used in Schoenberg, it would be negated in other voices; with Schoenberg the set passes and is used up more quickly so that stationary effects are lost. Even in longer works (I speak of duration, not the amount of complexity taking place in Time), Stravinsky limits the number of transpositions used for a given row to diatonic relations, while Schoenberg works with more transpositions, consequently becoming chromatic.

III. "When Dasies pied."

The last song of the set is the freest and it might be questioned if it has anything to do with 12 tone music, not even containing a row. As in the "Sacred historie" of the Cantata, serial techniques are applied to free tonality; it also proves how similar this type of emancipated tonality is to Stravinsky's dodecaphonic music in that it permits juxtaposition.

The vocal line of this brief bi-partite song fluctuates between $A^{\flat}$ accidentals (measures 1-7) and C major (8-11), while the illustrative accompaniment always conflicts with the voice's tonality. As in the Ricerare, phrases are spun out be 'Spiegelbild' technique. The key to this "teeter-totter" writing lies in the quartile pivot of the viola's whistlings, and the voice's $A^{\flat}$-$D^{\flat}$-$E^{\flat}$ in measure three. These short A cells equate one another till measure eight when the C manipulations become strict. (see full score) As if to reconcile the disparity between the vocal line and accompaniment, the coda (9) for flute and clarinet ends on an $A^{\flat}$-D relationship reminiscent of passages in Pribioutki.

As a whole, the Shakespeare Songs may not be of the same magnitude or importance as the Septet, but they certainly intensify the direction Stravinsky's music was taking. The realization that these songs are vignettes of 12 tone methods, displaying a simplification rare in row music, generally fails to be made. From here on, there was no turning back. Writing of Stravinsky's new trends and the Dylan Thomas In Memoriam in particular, the next work to be treated, Richard F. Goldman says: In Memoriam, alas, not only looks like an exercise, but sounds like one: a neutral, complicated, morally indifferent

and laborious exhibition."(17) At this point, Voltaire seems quite appropriate: "Le critique est pour l'artiste ce qu'est une mouche sur un cheval de course. Elle le pique mais elle ne l'arrete pas."

IN MEMORIAM DYLAN THOMAS: 1954

Dirge-Canons and Song.

Before going on to a detailed analysis of the "Song", I would like to make a few general remarks about the piece itself in relation to previous 12 tone works. In his short preface concerning the origins of the work, Stravinsky states, "here my music is entirely canonic." As might be expected, Stravinsky's idea of "canonic writing" hardly coincides with any academic definition. Yet the basis of strict canonic writing, as we recognize in either the music of the Netherlanders or Bach, certainly carries over into dodecaphonic manipulation; we may even borrow the "dux" and "comes" terms, in the idea that 12 tone composition has a "leader" and "follower." Essential differences are rather to be found in the alteration of note values either lengthened or shortened, a greater freedom of entry intervals and choice of inversions.(18) The last Webern song of the Five Sacred Songs, opus 15, a canon in'moto contrario' will illustrate these points as well as the In Memoriam . This "canonic" element,which remains constant in Stravinsky and with Webern from his opus 17 onward (the works prior are not 12 tone) and with all strict dodecaphonic works, is the cellular, chain-like repetition of the row and its forms. Broadly interpreted every strict 12 tone piece is a series of canonic variations on a row.

The 12 tone influenced works written between 1952-54, the Cantata, Septet, Shakespeare Songs and In Memoriam are all technically related, yet stand in contrast. While the Cantata and Septet use a canonic procedure which is more traditional than that found in the Songs or Memoriam, it is interesting to note that the rows used in the Ricercare II, the first Shakespeare song and the Memoriam, all embrace the major third, but that each work has a different orientation. Thus, the Septet and the Cantata are tonal works using dodecaphonic procedures, while the Shakespeare Songs and In Memoriam are dodecaphonic with tonal references. These tonal references are created in two ways: 1. by limiting a row to diatonic shaping (Septet and Shakespeare Songs 2 and 3),or: 2.by having tonic "loaded" cadences occur in the midst or at the end of dodecaphonic sections. The second method is to be found in the first Shakespeare song, parts of the Septet and all through the Thomas piece. However, the Septet is unique in using both methods; while all voices have a clear tonal direction, it is only possible for the ear to be aware of, and assimilate some of the individual tonalities, but these strands are pulled together and tightened into tonically based supports at essential cadence points. While the row used in the Memoriam (E-E$^{\flat}$-C-C#-D) prohibits the first method, because of the half steps weakening a positive tonal suggestion, the second is employed. Yet it is important to notice that the C-D-E cadence in the Prelude and Postlude, while tonal, is arbitrary; such cadences can be constructed on any scale degree and do not have to be arrived at through tonal function, but by voice leading which may not be tonally directed or oriented.

My analysis will concern itself with the song which was composed before the Prelude and Postlude framed it. A complete diagraming is included in the attached score. Not one tone in the song is free, every phrase consists of the row and its derivatives and, in this respect in does not differ from the first song in Webern's Drei Lieder aus Viae Inviae, opus 23, with which I should like to draw a comparison.

Superficially these two songs are akin, the difference being that Webern works with a complete 12 tone row,while Stravinsky uses a set of five tones. A row numeration of the Webern (ex.12), shows no deviation from the basic set ordering and the same is true of the Stravinsky. However, the crucial point in both songs presents itself,as it does in every free or strict 12 tone work,when the row has been used up and the composer must choose his new starting degree for the next completion of the set. Despite the fact that the "Reihentechnik" is similar, the following comparitive tables will show the difference between both composers using this all important determining matter of choosing a new starting tone.

Both composers re-use the set and inversions many times to create a cantilena.

Webern		Stravinsky	
Row used:		Row used:	
O	=3	O	=4
I	=3	I	=14
R	=3	R	=13
RI	=7	RI	=5
	16		36

While these figures are not important in the present part of this study, I will return to them in the final section when they may

provide "food for thought." These figures are taken from only the vocal line, but the net findings hold true for the accompaniment as well. (A piano in the Webern).

Going further, we find Webern making the following choices for the starting points of his row and its inversions. (ex.13) All starting points are held within the orbit of a minor third. If we add up these notes, we get a diminished structure on D, a structure whose gravitational pull is melodically weak and harmonically vague. Once again this bespeaks no qualitative judgement.

As the Stravinsky vocal line is more melismatic, the accentuated notes (marked X), usually of a higher pitch and longer duration than the grouping of its surrounding tones, form the heard tones which organize the cells and which should be compared with Webern's starting tones. (ex.14) Note that the last structure heard in the string quartet is E-D-B (root E), and that the beginning cadences at A, 1 before B,4 after D, and 3 after C in the Postlude, all outline a major third relationship which, in turn, mirrors outlying poles of the row, E-C!

Stravinsky creates tension through polar affinities, while Webern achieves tension by a more dispersed, torturous vocal line, and dissonance removed from polaric relationships.

Stravinsky also re-inforces his tonal impression through use of a ritornello, a principle which is to play an ever greater role in later works. This ritornello is a two measure phrase first used as an introduction to the tenor's entry, repeating itself no less than six times between verses; the refrain, "Rage,rage against the dying of the light," occurs four times.

While there is no ritornello in the Webern, let us, nevertheless, compare his basic set's repetition with Stravinsky's rhythmic re-shapings. (ex.15) It will be seen that Webern deliberately stretches his row out of shape to avoid any "tonal" impression which even repetition might imply.

In closing, the only unorthodoxies to be noted are use of octave doublings at 1 (open viola D and tenor), three measures before 4 (C♭ light-ning), while at two before 4, RI follows RI (viola,cello) as B♮ and A♮ octaves. These octaves, I maintain, are innocuous in that they might create added tonal stress, as Schoenberg feared. The octave, most likely, will be restored to 12 tone music as it carries no tension, only weight.

These findings are important. They prove that out of one technique, two divergent aesthetics can exist side by side, even if both are applied with the greatest strictness. It also focuses the fact that tonal functionalism is dead, but that tonal elements freed from a dominating orbit can build their own Form. Divisions between a free tonal, free tonal music with 12 tone elements, free 12 tone or strict dodecaphonics have broken down altogether. The composers who seem to have grasped this first and whose music illustrates this are Goffredo Petrassi, Boris Blacher and, surprisingly enough, Pierre Boulez in a later work, Improvisation sur Mallarme.

Less than 10 years ago it was thought correct and fashionable, to compare the advent of Schoenberg's 12 tone-ism with the music of Monteverdi and Gesualdo. If in 1600, composers believed music to have reached a state where part writing was freed from vertical considerations (as long as the text demanded it), and passages such as

those in example 16 were 'a la façon,' is not today's state of affairs a closer parallel ?

CANTICUM SACRUM: 1955

> The music of Ephrata, Kretschmar told us, was too unusual, too amazing and arbitrary, to be taken over by the world outside, and hence it had sunk into practical oblivion...
>
> Doctor Faustus,
> chapter VIII,
> Thomas Mann.

With the appearance of Stravinsky's first row-composed music, the world was startled, but not impressed. Everything was as it had always been, just another influence he had absorbed and was now treating to the ink of his parody-pen. Even people who were interested in the new wanderings of the 70 year old master felt disappointed in the bloodlessness and simplicity of his attempts.(19) They made two mistakes. Aside from Webern, composers and audiences expected every work born of a tone row to be emotion drenched, sublimating Freudian complexes, painting Kafka-esque nightmares —— sinfonia eroica's of 20th century Man's remoteness and despair. In a word, ANGST. Stravinsky's Gallic tastes would not permit this; to him a well painted glass of water holds more interest than the canvas of a badly painted ocean. And secondly, these people still equated complexity with aesthetic worth.

Yet a few years later, always regarding Stravinsky as a "musical weather vane, many musicians began prying into the secrets of these principles, and few understood.

Experience and a glance at our present world , should make us wary of accepting any formula or style as "The Way for the Future", but no serious minded composer can afford to ignore music on which the 76 year old master, still the world's youngest composer in spirit, has lavished much time and devotion. Of the later works, none is more instructive than the Canticum Sacrum, which is easily the most important contribution to Church music of the past two hundred years; nor does any other work sum-up, quite as well, Stravinsky's entire cultural and musical personality.

It is impossible to analyze the Canticum Sacrum without heeding its formal plan, so bound up with the architecture of Venice's San Marco, or its textual unity. "To the City of Venice, in Praise of its Patron Saint, the Blessed Mark, Apostle." This inscription, sung in Latin by the tenor and baritone soloists, presents a nine measure aisle leading to the interior of Stravinsky's church. Like the domes of Saint Mark's, the five movements are concentrically balanced; the fifth is a retrograde of the first, the fourth corresponds to the second in its use of solo voice, while the third, or middle movement, balances the others centrifigully in construction and length.

As is usual with his sacred works, Stravinsky selected texts from the Vulgate of the old and new Testaments. Taken together these form a complete "message." The outer movements command, "preach the Gospel to every living creature," while surrounding the Trinity of Virtues (the central movement), the 'Surge aquilo' is a sacred aria describing the nature of love before the Fall of Man; after 'Fides' we hear Stravinsky discourse on the problem of belief. "Lord, I believe; help Thou my unbelief." (Ev. sec. Marcum, cap. IX, 22-23)

In addition to the novel construction of the work, Stravinsky's over all sonority departs from the expected poly-choral style reminiscent of Gabrieli's and Willaert's Venetian schools; as such the Canticum's bass ridden movements (I,V) and contrapuntalism is so scored as to be unaffected by St. Mark's acoustics.(20)

Dedicatio

This dedication, a kind of call to worship by a Byzantine proto-praepositus, need not detain us. Its flavor is modal, evoking the 1948 Mass with its concluding minor third Burgundian cadence.

I. Euntes in mundum
V. Illi autem profecti

Because these two movements are retrogrades of one another, only the Euntes will be discussed. The upper tenor note D, of the Dedicatio cadence, is used as a doubled third in the opening chord of Euntes, a connecting device of which Stravinsky is very fond, witness the Mass. What other chord in music strikes such terror of belief ? Despite its brutally severe scoring, it seems to reveal the entire Heavenly Host sitting in judgement.

Comprised of a b minor chord with doubled root and third, leading tone in bass, the choral parts vacillate between a B♭ - D tonality. The text is set in three phrases, separated by organ interludes. While this movement features static sections of tonal blocks, the organ interjections are serial in implication. Each sheath of counter-point is serially regulated by a set number of notes taken from a scale of eight notes, D-E-F-G-A-B♭-B♮-C. These repeated organ and bassoon sections function as a

contrapuntal precis of various sized shafts revolving in different sockets. Each shaft uses a different number of notes. (ex.16)

Voice 1.	D-A-G-F-E	= 5
2.	D-C-E-B♭	= 4
3.	A-G-F	= 3
4.	C-B	= 2
5.	D-E-F-C-G-A	= 6

Despite the use of such a serial device, a method much favored by the Darmstadt school, the music nevertheless remains diatonic and modal in feeling. Up to this point, in fact, Stravinsky has reverted back to a style reminiscent of works prior to the Cantata.

Surge, acquilo, second movement.

The concluding chord of Euntes, with its piling up of perfect fifths and a tritone from its root, is a typically Stravinskian chord. It is a structure not unlike the C major chords of the Psalm Symphony, in the pristine grandeur of its radiance, nor the ending chords of the Septet's first and last movements. Perhaps these structures may best be described as "rainbow chords" because of the manner in which they embrace and explode the gamut of three major tonalities. However, with the opening choked sounds of Surge, acquilo, the listener is led into a world of new musical dimensions, where contrabassi are permitted to sing soprano to a harp bass line.

None of Stravinsky's previous 12 tone music has so succeeded in breaking its harmonic bonds, entering a sound sphere the music world considered irreconcilable with a Stravinskian aesthetic. Yet, with every bar we are fully aware of whom we are listening to, and while there maybe traces of Webern, they vanish into Stravinsky's sound world. Similar techniques need not produce a like result.

Surge, acquilo confronts the analyist with a whole new set of problems, where his trusted, long established analytical jargon may fail him. A new way of hearing and looking will be required (21), but the domain is fertile, the rewards great. One issue, however, will become apparent, and that is, that Schoenberg's commandments (which he brought from Walhalla), are not as complete "l'esprit des lois," as was once imagined.

Yet the roots of Surge, acquilo and its related movements, are buried in all previous works involving dodecaphonic manipulation. This movement is not a "12 tone plunge." Its seeds exist at the end of diatonic channels prepared by all the pieces discussed thus far. It is music which is not chromatic and, furthermore, music created by horizontal rows floating only in the sphere of their own tension, set free from former vertical considerations, yet melting into the space of their own perfections.

By simply labeling notes or chasing tone rows, we will not arrive at any salient points throwing light on Stravinsky's contribution to dodecaphonic methods. Rather, this analysis will divide itself into two parts concerning themselves with,1. innovations Stravinsky has made toward the organization of the row and,2. its application to the music.

That the inner movements of the Canticum Sacrum are not as vertically orientated, as they are horizontal, is evident from the visual make-up of the page alone; but this vertical aspect brings with it a concept of tonality new to 12 tone music, yet remaining consistant with Stravinsky's earlier work.

This tonality permeates down to the peculiarities of the row itself. The strict 12 toner's phobia for fifths and octaves is well known, but with Stravinsky this banishment comes to an end. Stravinsky sets up his "tonal" organization in four different ways.

1. The octave is restored and assumes a function of lessening tension. (measure 55, $A^{\flat}$ in tenor, flute, english horn;
   " 79-83, $A^{\natural}$ in tenor, flute)

2. The octave receives its needed support from fourths and fifths for tonal and formal weight.
   (measure 59-60, 62, 68-69, 93)

3. A semi-tone leverage is used to create gravitational pull to a given center.
   (measure 51-52, $D^{\flat}$-C-B-C in tenor,
   " 60 , flute-tenor
   " 72 , tenor)

Of course, the first three points are the results of the row's construction; in other words, the microcosmic characteristics enlarge themselves unto the tonal shape of the entire aria. Thus,

4. there is a quintal axis constructed within the row to create polarity. (ex.17)

Regarding the row alone (ex.17), note the length stress of 1,6,7,12. The horizontal balancing axis of the row are the high E and the cantillating $E^{\flat}$. The treatment of the $E^{\flat}$ is particularly interesting in the emphasis it receives via the "Luftpause" before the $E^{\natural}$, and its lower neighbor, $D^{\flat}$. Vertically the row gravitates between the $A^{\flat}$-$E^{\flat}$ fifths (1,7 of the row), and $A^{\natural}$-$E^{\natural}$ (6-12). Naturally, gravitation implies a duality of polar attraction, and that is just what happens once the kinetic energy of the row begins to function. To prove this, one need only note the 1-7,6-12 linkage which supports the entire weight span of the row. If 7 were exchanged for 6 ($E^{\natural}$ for $E^{\flat}$), 1-6,7-12 would result, splitting the row into two weaker halves.

As far as the individual application of the row is concerned, I would like to point out three ways Stravinsky manages his set.

1. Complete melodic orders of the row unravel in the tenor and instruments simultaneously.

An example of this maybe found at the very beginning of Surge, acquilo. After the tenor has initially unfolded the O version of the row (mea.2-5), the first six notes of R are sung, to be followed immediately by their own RI, while with 'hor-tum' R is completed. Against this, flute, english horn and harp unfold O + R, cadencing on A^{b} at 55, (ex.18). This is also the case with the stretto in prolations starting at 86. Here, as the tenor sings I, the flute has I at prolatio duplum (one-half the speed), while the english horn and harp divide up the same canon in prolatio quadruplum, four times as slow.

2. Complete melodic segments are repeated or transposed at recognizable levels, melodically, harmonically and rhythmically.

If Stravinsky does repeat a segment or entire phrase, it is seldom literal. The alteration may take place by either throwing the phrase into harmonic relief or by rhythmic re-shaping. Compare the tenor's first exposition of O and its english horn accompaniment (47-50), with the reprise at 74-76, accompanied again by flute and english horn dividing up RI; Stravinsky's second method becomes apparent. At 74 the solo line extends itself with every note given a different perspective of value. Notice the arsis and thetic qualities of A^{b}-G (ex.19). They are as difficult to judge properly as is a refined melismatic plain song passage.

A unique application of this second principle is to be found in the 69-71st measure. As these five chords occur in the very center of this

48 measure piece, they have a formal punctuating effect. The peculiar pull and release sensation created by these chords is due to one and five being identical, four is a re-spacing of two, while three, containing two tritones, is at the nadir of the five chord complex, (ex.20).

3. Untransposed series are given particular attention so, that through their repetition, not only are formal outlines established, but transpositions are heard as modulations moving to and away from untransposed sets.

Stravinsky is very fond of the 0 set order and after it is complete, pivot note 12 (A), gives him the opposite half step polarity gravitating back to $A^{\flat}$, (47-55), the initial unfolding of the row.

As an example of this third principle, I would like to compare the R versions at 63, with its corresponding versions at bars 50-55, and 80-82. R, in 63, can definitely be heard not only as a repetition, but as a new formal division as well. In 63-72, we have the same treatment of the row as in 50-55. At 63, the tenor also sings the retrograde's first six notes, and then sings the same six notes RI, as in 51-52, before completing the order. Not only is another point of identity established by the R repetition at 80 (corresponding to 63), but the R orderings are heard as modulations as, arriving at 62, an open fifth cadence is established by the tenor $E^{\flat}$ and the flute's flutter tongued $B^{\flat}$. With the tenor re-entry a diminished fifth lower (63), the four repeated $A^{\flat}$'s in the harp, create a new pitch plane and the modulatory effect is accomplished. When the tenor sings the R series for the third time at 80, the sustained A in the flute reverses the effect of the former harp $A^{\flat}$'s. Not only has the pitch plane moved from $A^{\flat}$ to $A^{\natural}$, the new three octave and semi-tone pitch level (harp's

A^{b} to flute's $A^{\natural}$) also creating a newly arrived at orientation point, but the very difference in contrapuntal density found at 63-68, where tenor, flute and harp are heard, with 80, where only the sustained flute A builds an octave orientation point with the tenor, also shapes a new sound texture wherein the tenor's repeated R is always heard in a new prespective, thus as a modulation.(22)

These then are the working principles of Surge, acquilo. We shall see them brought into play again during the remaining movements of the Canticum. When Stravinsky chooses to re-apply one of these methods, perhaps treating them to a minute variation, we maybe sure that these consequences will be far reaching, not only for Stravinsky's music but for music in general. After all, does not the final cadence of Surge, acquilo restore dignity to the long degraded perfect fifth ?

Ad Tres Virtutes Hortationes: third movement.

1. Caritas.

Movements III and IV are composed with a row not dissimilar from the one used in Surge, acquilo. Indeed, notes 5-4-3-2 become the last four tones of the new series; furthermore, both rows begin and end with a half and whole step, thus contributing even more homogeniety to the material. The quintal nodes of emphasis have been displaced,however, and the Caritas row hinges itself on a perfect fifth with notes 6-7; the supporting cross structure found in the 'Surge' row is missing, yet this row manages to focus readily to an orientation point A, (ex.21). That the second movement ends on A, and the third begins on A, is no coincidence.

The O order of the set is played by the organ in a passacaglia-like

manner. This instrumental interlude uses all four versions of the row.

Tpt.+ Eng.Hn.	= RI
Tbne.	= I
Vla.	= R,RI
Ob.+ Bsn.	= I
Tbne.	= R

It should be noted in the viola part how Stravinsky violates the 12 tone canon of finishing a series before another is begun. Completing their RI, they go on to 0 only to break it off at note 7, finishing 10-12 in R form. By so doing he manipulates B# as a leading tone to the tenor's C#. The subsequent four part canon follows the Webern practice of semi-tone entries.

1. Tenor	= RI twice,R
2. Bass tpt.+ C tpt.	= RI,I (double aug.)
3. Alt	= R twice,RI
4. Discanti	= RI twice.

Repeated intact, the canon may well symbolize the extension of the New Testament from the Old. There are also great affinities of text.

Spes-Fides: the ritornello principle

Through repetition, the organ "theme" used in Caritas, assumes a ritornello function in Spes and Fides. As emphasized earlier, merely tracking down particles of a row will not be too beneficial, in fact it will miss the mark and point of Stravinsky's 12 tone handling, namely, form building comprehensibility.

A retrograde inversion, be it used by Webern, Stravinsky or Schoenberg, remains a retrograde inversion; what distinguishes them and interests us is their function. How are they employed ? Stravinsky, as we have seen, is greatly interested in recognizable row repetition, more so than Schoenberg, at any rate. (23) Of course, Stravinsky, scrutinizing Schoenberg in regard to this, benefited; thus he circumvented the problem by simply using repetition of a row in a ritornello

shape, to define his formal areas. This holds true for the Cantata, Dylan Thomas In Memoriam, the Septet and Agon. In'Spes'and'Fides', let us examine Stravinsky's method of achieving contrast, thereby giving definition to sections either side of the ritornello.

Using the previously alluded to linking tone device,'Spes' begins on C, the last tone of 'Caritas'. The sliding effect of the repeated short C into the long B, further creates a modulatory effect, after the C-C arc has been maintained. Six sections constitute the movement, of which the first is instrumental, the remaining five dividing the two Biblical quotes into five more sections. Using A-B-C to denote sections, 'Spes' breaks itself up accordingly.

measures 130-47 = A
148-53 = B
154-62 = C
163-68 = B
169-77 = C
178-83 = B

By comparing the graphs on the following page, we see just how contrasts are achieved. Instrumentation, tessitura of accompanying lines, and rhythmic design all contribute to this distinction. Scetions are repeated in toto, and transpositions remain the same in individual sections.

Fides

This last movement is similar to 'Caritas' in its use of canon, and to 'Spes' in use of the ritornello principle and instrumental introduction. Existing only on a vertical plane, not one conventional triad is formed through the curvature of the voices. In the canon all entrances are at the fifth:

Alto =A^{b}
Discanti=D#
Tenor =C#
Bass =F#

Section: A 130-47

Series	0	I	I (2 part opt)
Measure	130	141	142
Meter	♩ = 108		
Voices			
Instr.	Organ, Tpt, Bsn.	C.B, Vla, C.Fag.	Ob, E.H.

Section: B 148-53

Series	I R	I	0
Measure	148		151
Meter	♩ = ♪ = 108	Organ notes halved	
Voices	Ten.+Bar.		
Instr.		Tbne.	Brass + Harp

Section: C 154-58 158-62

Series	I RI I	I - I	I (3-6)
Measure	154	158	161
Meter	♩. = ♩ = 72, ♪ = 144	devalued by	
Voices	Disc.+Alt	Disc.+Alt.	
Instr.	Ob.+Tbne.		Tbne.

A further point of identity is established by the ritornello's durational values being used in other parts. Trumpet and trombone play I in augmentation, one note to a bar, oboe and trombone doing likewise. Polyphonic antecedants are easy to find. The three part canon between between trumpets and organ, is an intervallic canon not bound by exact rhythmic duplication. In conclusion the strings play the ritornello, ending on A, the first note of Virtutes.

Brevis Motus Cantilenae: fourth movement

Antiphonal effects of chorus and baritone make this movement the most stylized which, in turn, may have something to do with this movement's immediacy.

Beginning, as the other movements have, with a severe instrumental introduction, the baritone sings phrases (O+R), which are echoed by the chorus. The A of the last choral phrase corresponds to the opening A of the tenor. After a contrasting, agitated, canonic episode (tenor RI, alto I, bass R, discanti O), the music turns "doppio lento" at the word "lacrymis." At this point the baritone implores as a "voice crying in the wilderness," 'Credo, Domine, adjuva incredulitatem meam." On "credo," the baritone seems to hark back to the chorus' chant, "credidi propter quod locutus sum." The conflict of belief and disbelief is masterfully symbolized in the final statement of O (divided by oboe and bassoon), which descends into the chordal web of the organ;, the C#-D-E^{b} are still antagonistic, but softened by the fifth, G-D.

The "Amen" cadence at 341 of the canorizan Illi autem profecti, is a re-arrangement of the opening choral Euntes.

To permit a better over all, formal view of the Canticum Sacrum, I compare it graphically with the architectural lay-out of Saint Mark. (ex.22)

Finally, suffice it to say that in this work, the great tradition of polyphonic sacred music is revived in all its breadth and scope. It is a marvel in every way, contributing new techniques and not mawkishly imitating the "old style" as is the want by so many composers when it comes to writing a sacred work. The Canticum is hard with maturity and belief, devoid of sentimentality (this is the reason why it most likely will never be popular as a religious work), dealing with the universal problem of belief, relating itself to a greater whole than the confines of 20th century Man's psychological ills of misunderstanding which, often, in their solution, lead to a tinsel and sugar God.

That the particular glory of sacred music distinguishes itself from secular music is well known, we need only mention the respective "glories" of the Beethoven 7th symphony and the Sanctus of his Missa Solemnis. As alien as it may seem, the Canticum also has its particular "gloria," which in its giving, however, also demands of us. T.S. Eliot's statement, "a religion requires not only a body of priests who know what they are doing, but a body of worshippers who know what is being done," is a directing illumination. It should not need explaining.

AGON - A Ballet for 12 Dancers: 1953-57

> Harmony, a doctrine dealing with chords and chord relations, has had a brilliant but a short history. This history shows that chords gradually abandoned their direct function of harmonic guidance and began to seduce with the individual splendors of their harmonic effects. Today harmonic novelty is at an end. As a medium of musical construction, harmony offers no further resources in which to inquire and from which to seek profit.
>
> Igor Stravinsky (24)

Robert Craft, on record-jacket liner notes, stresses the point that Agon was composed intermittantly beginning in December, '53 and April, '57; thus, sections of this work precede the Thomas In Memoriam as well as the complete Canticum Sacrum. Craft's assertion that these dates help "explain the more consistant and fundamental use of serial technique as the work proceeds," is true. On the other hand, a fact no less important must also be included, namely, that in Agon, Stravinsky achieves a complete and homogenious synthesis of tonal and 12 tone music.

The statement," divisions between a free tonal, free tonal music with 12 tone elements, free 12 tone or strict dodecaphonics have broken down altogether," issued on page 36 of this study, comes to full circle.

Modeled after a 1650 French dance manuel by de Lauzon, the 15 pieces of this dance contest (Agon is an abstract ballet), can

be divided into four large sections. Three different rows are used in the course of the piece which may well have been extracted from already existing music before the piece "turned dodecaphonic." (ex.23) This is suggested because the Pas de Quatre Double and Triple, also composed in 1953, while not carrying a strictly definable row, seem to prophesy rows two and three; notice that tones 1-4 (row one) are re-arranged as 6-10 and 1-4 in rows two and three respectively.

I

Pas de Quatre	-- Free tonal	
Double Pas de Quatre	-- 12 tone	In part row 1
Triple Pas de Quatre	-- 12 tone	

II

Prelude	-- Free tonal
Saraband	-- Free tonal
Galliard	-- Free tonal
Coda	-- Free tonal + 12 tone (row 1)

III

Interlude	-- Free tonal
Bransle Simple	-- 12 tone (row 2)
Bransle Gay	-- 12 tone (row 2)
Bransle de Poitou	-- 12 tone (row 2)

IV

Interlude	-- Free tonal
Pas de Deux	-- 12 tone (row 3)
Four Duos	-- 12 tone (row 3)
Four Trios	-- 12 tone (row 3)
Coda (mea. 561)	-- Free tonal

The Prelude, two Interludes, the opening Pas de Quatre and closing Coda are the same music. For clarity and simplicity's sake, it will be more advantageous to discuss free tonal, free tonal with 12 tone elements, and strict 12 tone sections in separate groups.

Stravinsky being an undogmatic composer, there will naturally be a certain amount of overlapping.

I. Free tonal sections receive definition through four basic methods:

1. Repeated notes "nail down" a center. (Pas de Quatre) While the accompanying pizzicato chords suggest F, the harmonic movement of the repeated trumpet C is a sub-dominant one, arriving at its tonic seven measures later. This idea is no different than that used by Beethoven in the introduction to his first symphony.

2. Repeated major and minor triads or inversions weigh down other parts not belonging to a specific tonality or region. (Prelude and timpani part of Interludes.) Such triadic repetitions become pedals in effect and surrounding lines, even if in distant regions, become absorbed into their web.

   The fugato voices (flute 3, mandolin and harp) of the Galliard may well have been added after the lower string parts which play only C major root position triads and inversions. As such these moving lines, emphasizing raised and lowered 4th and 7th degrees, are only higher partials. A parallel between figured bass practice can easily be drawn.

3. Perfect fourths and fifths, grounding intervals par excellance, are used. The two trombone parts of the Saraband - Step create a definite B feeling, arriving at a half cadence double bar. The Coda, also using fifths, is another matter and falls into another category to be taken up presently.

4. Tonalities are kaleidoscoped, building a saturated sonority, which returns to an already established center. (ex.24) As this creates a clouding, moiré effect, it is ambiguous enough a method to theoretically permit venturing into any area. Note the triadic trmmbone parts.

These four principles illustrate a point often overlooked in a discussion of Stravinsky's 12 tone concepts.

Stravinsky's tonality does not approach 12 tonalism, his dodecaphonic material rather approaching a former sense of tonality. This is not meant to sound equivocal; it only proves that the rapprochement between Stravinsky's diatonic music and the later works is not as wide as is usually considered. If the same reasoning be applied to Schoenberg, this will not prove to be the case. When Schoenberg's later tonal works (the Organ Variations for example), regress to former ideals, they are closer in spirit to Reger's chromaticism than to Schoenberg's own early oeuvre.

In going on to the 12 tone categories of Agon, we will see that:

II. the above listed tonal principles are flexible and ambiguous enough to allow application to 12 tone sections without sounding anachronistic.

While it maybe conjecture to say that Stravinsky drew row one from the Double Pas de Quatre, there is no doubt as to the similarity of alternating half and whole steps which characterize both the Pas de Quatre and row one. As in free tonal sections, major and minor triads appear almost arbitrarily against the relentless propulsion of the half, whole step motive. At 81, free 12 tone play occurs in the form of two distinct phrases (flutes and oboe 1) which are repeated in various length shapes, permutations and inversions, to the scattered accompaniment of minor thirds. (see bass clarinet mea. 81, trumpet mea. 91) The same technique holds true for the Triple Pas de Quatre . At this point, the following seems to hold a solution:

1. Contrary to assuming a real weighing down function, as in free tonal sections, triadic repetition does not succeed in super-imposing tonal centers unto a row.

One must bear in mind that this middle section (81-95) serves to contrast, braking the half, whole step motivic onslaught cadencing on D; despite the D features, this section will not readily be pulled into any region, yet it does not sound anachronistic. For Stravinsky, tonality and 12 tonal writing have merged into one language. The crux of the matter is that,

III. from the viewpoint of harmonic listening, it is impossible to differentiate between free tonal with 12 tone elements, from more strict dodecaphonic procedures.

Compare the Bransle Gay with the Four Duos and Four Trios; the former has a definite $B^{\flat}$ quality, though it is the second half of row two transposed a minor 3rd higher and used vertically, while the Trios use row three strictly, suggesting C. Juxtaposing the Pas de Deux and its Coda, a listener might infer these episodes to be 12 tone not because of any established harmonic listening habits, but for syntactical reasons.

For all its apparent complexity, Stravinsky's attitude toward harmony has not basically changed from 1913 to 1955. The manipulating principles found in the abstruse Pas de Deux and Coda, witness Stravinsky's frame of mind. If we regard the row alone, the chain-like divisions of minor thirds and half steps, offer a minimum of working material.

Note that this row is an exact replica of Webern's Concerto, opus 24. Furthermore, as the row is symmetrical, the permutational possibilities are narrowed down proportionately. Therefore, using this methodology, it can be deducted that,

1. vertical sections (Bransle Gay, the Bransle de Poitou's middle section) have a low, static rate of harmonic movement, while
2. horizontal sections (the Bransle de Poitou's outer parts, the Duos and Trios) are tonally directed, yet are not concerned with developing or extending a tonality.

Within this unified, economical framework, the implication is classical: variety through simple means.

Stravinsky, as did Schoenberg, abhors the term "atonality." In speaking of Movements, Stravinsky uses the term "anti-tonal" to designate works not encompassing a specific area. Anti-tonal seems an excellent description for Stravinsky's present music and all music not embracing an over all center, yet not floundering in uncharted chromatic waters. (24)

If Stravinsky's concepts are new, as I have certainly maintained, it is only fair to compare past practice and present problems, deciding the validity of each for ourselves.

Before going on to a summary-conclusion, I feel it essential to insert an analysis of Schoenberg's Variations for Orchestra, opus 31, so that we may at least have a glimpse of another side of the ledger.

VARIATIONS FOR ORCHESTRA, OPUS 31.

Schoenberg's clearest concept of row manipulation is to be found in the 24 measure theme to these variations. (ex.25) Celli in measures 34-38 expose the row, which is divided in half by a perfect fourth, in its entirety. The row reads:

$$B^{\flat}\text{-}E\text{-}F\#\text{-}E^{\flat}\text{-}F^{\natural}\text{-}A \mid D\text{-}C\#\text{-}G\text{-}G\#\text{-}B^{\natural}\text{-}C^{\natural}$$

Two distinct motives form themselves, constructed intervalically they are: 1. Tritone, M2, m3, M2, M3

and 2. m2, Tritone, m2, m3, m2.

The tritone and minor 3rd intervals belong to both motives, and along with the dividing perfect 4th, are of special importance in determining not only transpositions, but interval distance between two and at times four rows which are stratified.

In variation 1 for example, two parallel voices weave counterpoint to the "cantus firm-ized" theme. (mea.58-69) The first voice appears in woodwinds, first + second violins, while the second voice appears in the brass, violas and celli. These row sheaths glide along in a minor 10th relationship (a m3, M6 compounded): the four basic set transpositions relate themselves to the tritone and m3 intervals. These four rows constitute the two countrapointing lines, and are juxtaposed through unison, m3, tritone and perfect fourth intervals. In measure 64 (woodwinds, violins 1 + 2), the first voice is extended by two retrogrades running parallel at a M6 span; one voice transposes itself from the tritone (F# from C), the other by a m3 (A from C). The second set of two voices are also parallel constructed, 2 retrograde inversions being used, however.

Moving at M6,m3 intervals, these retrograde inversions also stand in tritone,m3 transpositions as in the first set, B from F and D from F. Rows transposing from the same scale degree stand in a quartile relation, F#-B.

In the second variation, these two countrapuntal voices build a canon by inversion, (flute + bass clarinet), while the oboe and violin's O set is also in canon. The rows forming the canons stand in a m3, tritone relationship; in transposition, the rows are in m3 relationship E to C# (flute + bass clarinet), and tritone (violin + oboe) from the O set. Measure 87 further continues this two voice manipulation. The first voice (cello + bass clarinet) is a retrograde transposition again on the m3, $E^{\flat}$ from C; the second voice (bassoon + flute), is a retrograde inversion also in m3 transposition, $A^{\flat}$ from F. Both rows are in quartile relationship, $E^{\flat}$-$A^{\flat}$.

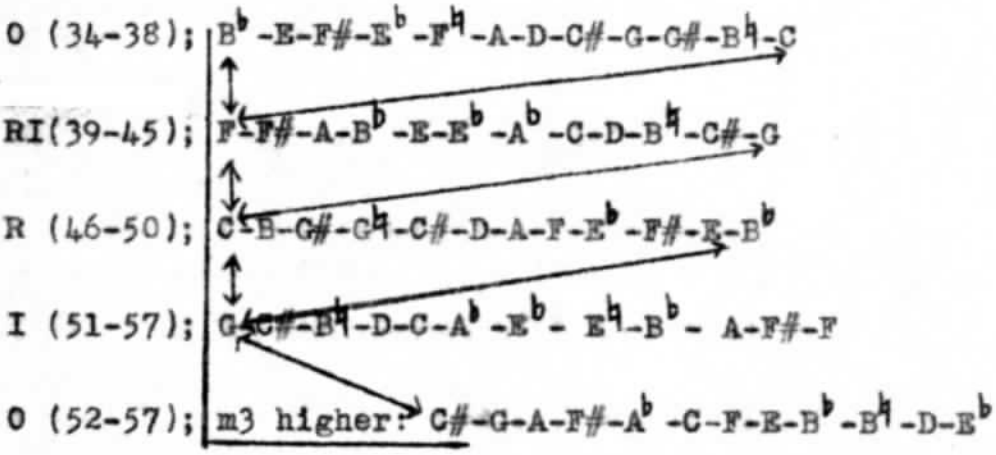
At measure 98, the m3, tritone transposition technique is used again. The cello and first bassoon (first voice), play an inversion in tritone transposition (G from C#); the first clarinet + english horn also play in tritone inversion (E from $B^{\flat}$); both rows are related by a m3 (C# -E).

In the following measures all degrees of row transpositions limit themselves to the m3 and tritone.

mea.83;	starting	tones	of	both	rows	(I): E-C#
88;	"	"	"	"	"	(R): A-C
94;	"	"	"	"	"	(RI):D-B
100,	"	"	"	"	"	(O) :G-$B^{\flat}$

The process of tritone row relationship is used throughout variation 3, with the exception of measures 113-14 which use the M3 distance; degree transpositions are the m3 and tritone.

The function and transposition of the m3, tritone and 4th intervals is already apparent in the theme's four row exposition.



One may well argue that as a complete row containsall intervals, <u>all</u> degree transpositions of the row are possible. True; but in consistantly singling out the same degree transpositions (it goes without saying that they must work musically) a tonality of intervals comes about.

That Schoenberg knew the possibilities of his row and constructed them beforehand, can be seen in the manner by which he extracts the B-A-C-H transposition in a new version of the row.

O form: B♭-E-F#-E♭-F♮-D

tritones : C#-G { B♭-C♮-A -B♮

This new row order and the BACH transposition figures in the second variation and the fifth, which uses all intervals inherent in BACH.

m2 = B♭-A, C-B♮, B♭-B♮

M2 = B♭-C, A-B♮

m3 = A-C

All melodiw and harmonic conception relies on the peculiarities of the row's construction. The formal structure (mea.34-57) divides itself into two equal parts of 12 measures.

I = 34-45

II= 46-57

Both parts sub-divide and correspond symmetrically.

I = 5 measures (34-38) and 7 measures (39-45)

II = 5 measures(46-50) and 7 measures (51-57)

This plan holds for all variations except the fourth (10+14) and the sixth (18+18).

Furthermore, this scheme is all important as it also determines the melodic and harmonic shape of each variation.

I. melodic : O (34-38) RI (39-45)

harmonic : R (34-38) I (39-45)

II. melodic : R (46-50) I (51-57)

harmonic : RI (46-50) O (51-57)

When an O form is used in I melodically, II uses it harmonically, and vice-versa.

In all melodic aspects, the theme is shaped by a certain <u>numerical grouping of motives</u>. (ex.26)

Permutations of 5-4-3 are worked out in O,RI and I, motivally and harmonically. In this way, melodic elements become harmonic while the harmonic elements equal the melodic. (ex.27)

The unity created by this melodic, harmonic exchange of the row is further strengthened by a corresponding rhythmic schematization. (ex.28) Groups of five, four and three notes, with only slight deviations, use the same rhythmic motives. (ex.29)

From this analysis it should become evident to critics accusing Schoenberg of "not going far enough", that his belief rested as much with ratiocination as it did in inspiration.

Drawing up a comparison with Stravinsky's working methods, we are left with the following points.

1. The nature of rows used by each composer is radically different. Stravinsky, as Schoenberg in early works, prefers short rows of a symmetrical, chain-like nature, while Schoenberg's rows, for the greatest part, fall into the through composed or semi-combinatorial category.

2. Stravinsky's rows exist in a more readily definable tonal region, emphasizing intervals of greater pull value and generally avoiding tritones. Schoenberg's rows are more difficult to localize, tritones playing an important part in searing tonal bonds.

3. Schoenberg uses his row vertically with five, six and seven note structures being common. 12 tone harmonic precedures are considered parallel with tonal melodic and harmonic polarity. This, with few exceptions, Stravinsky has been reluctant to do. (25)

4. Stravinsky's transpositions are tonally and <u>formally</u> emphatic; the reasons why a particular transposition is used seem to be explicable only in terms of "ear," i.e. they sound better to <u>his</u> ear.

Schoenberg uses many transpositions within a single movement, seemingly determined by characteristic intervals found in the row. (opus 31) Schoenberg was more concerned with the concrete "why" explanation for transpositions.

5. In syntactical terms, Schoenberg depends heavily on established 19th century practices. With the exception the the Septet's exposition, Stravinsky avoids these conventions.

6. Judging from opus 31, Schoenberg worked with, perhaps quite conciously, pre-determined rhythmic values imposed unto his row; at least the five-four-three motivic division intimates this. Stravinsky prefers interpolating one set's rhythmic shape unto another set,as in the Canticum Sacrum's 'Fides' movement, but in the Movements for piano and orchestra (1959), he does not shy away from schematized rhythmic constellations.

It is often said that inspiration, today, is harder to come by than ever before. Personally I do not hold this to judgement to be wholly accurate. Perhaps we must speak of valid inspiration, that is, inspiration which is aware of its own historical perspective. This has been an exceedingly difficult matter in every age and, accepting this dicta,and that music has never found itself in a more complex state of affairs, the innovations assaulting music and music and musicians today, are not the harmless thunderbolts some would have us believe.

III. THE TWELVE TONE EVOLUTION: 1930-1960

> ...music is neither purely mathematical nor purely natural in its essence; it is partly both, and may consequently be said to be a medium between the one and the other.
>
> Sopplimenti Musicali,
> Zarlino

> ...whatever progress the art of music may have made amongst us, it would appear that the more the ear becomes sensible to its marvellous effects, the less is the desire manifested to understand its true principles; so that one may say that reason has lost its rights, while experience alone has acquired any authority.
>
> Traité de L'Harmonie,
> Rameau

If Stravinsky's concepts to the 12 tone idea are, as I have certainly maintained, new, it is only fair if we compare them with past principles and practice; the validity of each we can only decide for ourselves. While the first parts of this study concerned itself with practical application, this section necessitates theoretical involvement and, as will be shown, should perhaps be sub-titled, "the disappearance of the 12 tone concept."

By way of approaching this survey 12 tone thought, articles by Ernst Krenek, whose concern with these problems since the '30's

make him an authoritative, if somewhat chameleon-like, spokesman for the dodecaphonic cause, will be relied on.

However, one of the earliest and most penetrating scholars in the field was R.S. Hill, whose study Schoenberg's Tone Rows and the Tonal System of the Future, sheds definitive light on what were then considered problems inherent in 12 tone composition.(26)

As late as 1936, Hill found himself facing such misunderstanding concerning Schoenberg's promulgations, that the German critic, Leonhard Deutsch, attempted to prove the false justifications for 12 tone music by maintaining that all possible dodecaphonic manipulations could be identified with altered diatonic chords.(27) The orientation of the times was clearly a harmonic one and Hill was quite right in stressing the motival nature of row workings which was much more akin to polyphonic procedure than the music of the last 200 years admitted. If the music of the 19th century was also motival in construction, it was so within the confines of a melodic-harmonic duality, and it was precisely this which had vanished. Realizing this and being a discerning analyst, Hill saw that in Schoenberg's music, the 12 tone principle has "passed through enough stages to give us a clue to its development." (28)

Hill, correspondingly classified three types of rows, placing them all within the scope of Schoenberg's work.(29)

I. Simple series without any interior complication.
op.23,#5; op.24,#4; op.28,#9; op.30

II. Rows divided into segemnts appearing as groups, frequently in harmonic forms.

op.25; op.33a; op.35,#7

III. Rows where intervals are so arranged that the notes of different sections are somewhat allied.

1. Pieces in which the sections of the row have either the same series of intervals (or the same series inverted), so that the parallel series of notes maybe found within the row itself, or else identical series between two transpositions or between a direct and crab form of the row.

op. 26; op.27,#4; op.28,#3; op.29; op.32;

op.35,#1;

2. Pieces in which the row is divided into two six note groups, the first of which in the prime contains the same notes as the second half of the mirror, but in a different order, the other halves being necessarily related similarly.

op.27,#1-3; op.28,#3; op.29; op.31; op.32;

op. 33b; op.34; op.35,#2,3,5.

Hill adds a complimentary table of 1. contrapuntal and 2. harmonic practices as found in Schoenberg's work. This research led to two conclusions: 1. The row must be used as a complete unit and that parts of it cannot be repeated until all other parts have been used.

2. No matter how obliquely used or stated, the row maintains its validity.

To the last point it must be added, <u>but loses its identity.</u>

These points formed the basic tenets of 12 tone composition for that time. I underline <u>identity</u>, because identification of the row was considered a prime factor, witness the "theme-like"

character of 12 tone music of this period when athematicism was closely guarded against while today this quality is sought. Also, Hill, in his concern for the "why" of transpositions, betrays a harking back to traditional harmonic thinking. The question of transpositions will most likely never be solved except in the composer's ear, yet this problem was considered paramount. The basic set and its transpositions were still treated to the melodic and developmental methods of 19th century German music. For all his supposed extremity, the composer still relied on 'Einfall,' an inner vision of a row which was speculatively absolute; absolute in as far as the row was inviolate through 'Einfall' and speculative as regards what happened to it or how it was used.

By 1943, the rewards of motival row working became suspect. "Music written in the 12 tone technique during the last years... shows an important trend toward exploring the province of extra-motival function of the series, as it is obvious that the essential potentialities for further evolution lie in that field." (30) Mr. Krenek distinguishes between <u>two</u> types of 12 tone music, motival and extra-motival. While he easily defines the first as music whose structures are made up of melodic elements extracted immediately from the row, his definition of extra-motival as music <u>not</u> making use of motivic operations, is vague. In other words, purposeful "mis-manipulation" has crept into 12 tone composition. The Schoenberg <u>Violin Concerto</u> is cited as an example of extra-motival construction, in its departure from strict row order.

It is also admitted that the series motivic function is as good as completely obliterated, and that consequently it loses " its initial power as an organizing principle." (31)

If this raised doubts at that time, today it is often conceded not to be important if the series is heard. The very fact that a work is serial seems to guarantee some composers peace of mind as regards organization; this denotes a fundamental difference of attitude towards the row in general and music in particular. If there are such deviations, could it not mean that a particular grouping or set, by virtue of greater repetition, could take on a tonic function? (32)

Krenek also mentions several new techniques to be added to the 12 tone arsenal. While I would like to mention one, it should be understood that the method is not as important as the type of thinking and concern expressed behind the method, namely, the importance attached to the very act of finding an individual solution.

When some tones are frequently repeated after more of the subsequent tones have been sounded, points of contact are established. If chords are built comprising these contact or "axis tones," a systematic series of chord relations is formed. This method, which implies harmonic thinking, is not to be found in early dodecaphonic scores and, at present, we cannot speak of 12 tone composition exploiting either harmonic or polyphonic paths, a concern for density or texture seemingly the crucial point.

Furthermore, when Krenek speaks of his music written then as, "tending to break down the integrity of the series... however, stressing its power of generating motivic elements," the dichotomy becomes even more acute. (33) Today the "avant-garde" seldom use the word "motivic," yet is concerned with the integrity of the series; the result has been music of super restrained conception which can only be described as sounding like athematic impressionism. Similarities to be found between the 12 tone stand of 1943 and today are not to be found in the music or even compositional method, but in the constant search for new methodology, which acts as a key to a work's construction.

Formerly music was involved in the exploitation and extension of physical resources and the development of a common language. In all epochs, at least one element of music is slighted while another gains ascendancy; the romantic's interest in harmony led to stunted rhythmic growth. At present, there is a struggle to achieve new Form, and this brings with it an independant search for method which, at first usually turns out little accepted criteria.

Ten years later, Krenek inquired, "Is the 12 Tone Technique on the Decline ? (34) He concluded that as orthodoxy in 12 tone composition collapsed, new facets of dodecaphonic procedure were probed. What these new problems were, now appear under the question mark of serial music; certainly the 12 tone idea had come along way and one may legitimately wonder if the original 12 tone idea is even remotely related to present efforts.

While Krenek notes the row being divided into ever smaller groups which, however, are extended to the entire length of a composition through principles of transmutation, little is total serialization considered. No mention is made of it, the permutations limited to tone rows. Corrrelating pitch sets with rhythmic rows is thought a dead-end.

In 1950, Boris Blacher, seeking a relationship between the two, writes, "perhaps the position is something like this: one can imagine a co-ordinate system in which the metrical values are marked on the X-axis and the tonal values on the Y-axis; the result of these would emerge as living music." (35) To this Krenek answers, "we should not be surprised if he would eventually discover that there is none." (36)

Today this correlation is of definite concern to most composers who have had any affiliation with the 12 tone movement, and onve more, the solutions are individual, ranging from Blacher's 'Summationsreihe' to Stravinsky's isorhythmic schemes in Movements, to Messiaen's modes in Mode de Valeurs et d'Intensities, to some composers even using the Fibonacci series. Often pitch values are simply reduced to numbers which can be transformed into a time series on any chosen scale. The possibilities are so numerous as to be inexhaustible; most likely no standardization will be possible except the striving for individual methodic.

The above mentioned Messiaen piano piece, dated Darmstadt-1949, is not only important for its organizing of rhythmic modes.

In its categorization of tones, values, dynamics and even manner of attack, it provided the spur for the entire Darmstadt school. When the structure of a piece is determined from one aspect, an inner plan or process supporting the whole, this carries with it the core of a new argument and logic.

Whereas Schoenberg always spoke of the row's conception in terms of 'Einfall' which meant that an inner "urge" or movement projects the music toward reality, the Darmstadt circle, heralding Webern, views the creative process, or music projecting itself towards reality, in a different light. If a row is to contain the embryo for an entire piece, it must hold within itself all elements for its own Form; naturally, this led to total organization. Regardless of what one may think of this, it must be considered in at least two of its radical aspects.

Formerly 12 tone composition stressed motivic permeation to create not only development, but form based on motivic repetition. The Darmstadt school reasons that where all is thematic, nothing is thematic. This fact alone is sufficient to maintain that present serial composition has severed all relation with the original 12 tone principle.

Secondly, by the transposition of linear units on to one another, the idea of composition with 12 notes related only to one another disappears, and a new concept of "tonality" emerges. While the analyzed Stravinsky works point out that tonal 12 tone music does not stand in equal relationship to "atonal" 12 tone,

this principle of transposing units creates an entirely new relationship.(ex.30) If this process is carried to its conclusion, starting on 2,3,4,5 and inversions are formed, the notes derived stand in equal relation to the first five and become astronomical in number, enough in fact, for an entire composition. By using the same manipulation, even rhythm, dynamics, and octave placements can also be extracted. Of course, 12 tone composition left all these elements free and <u>did</u> relate the 12 tones to one another; the serial method relates the original five to the derived set.

As the row becomes subjected to extreme atomization and cells proliferate through rigid, automatic and pre-ordained plans which remain sacrosanct to their unswerving conclusion, it becomes evident that the proportion of decision involved in composing diminishes. Admitting that total organization induces musical constipation, the Darmstadt school is now seeking improvisation as a cure. This emphasizes as never before, the matter of control and restraint in music.

Edmund Burke's statement, "by having a right to everything, they (men) want everything," applies also to the composer. By having a right to everything, he certainly <u>does not want everything</u>. Constraints are positive. William James' insight that conscious thought is an effort to check the natural incoherence of spontaneous generation, neither forbids spontaneity nor does it advise complete surrender to automation. Despite the seriousness of

purpose characterizing most of the Darmstadt school, their fanaticism has led them from one extreme to another with little moderation of balance.

Nevertheless, these efforts have come to the attention of many serious minded musicians, and have caused Mr. Krenek to collect his most recent observations into an essay, "The Extents and Limits of Serial Techniques." (37)

This essay is a result of the 1959 Princeton seminar devoted to contemporary music. Rather than to discuss techniques as found in the most "up-to-date" music, I would like to consider statements made by Krenek which, in their ill reasoned lack of aesthetic perspective focus on the core of today's problem.

Krenek believes that serial techniques have caused "fundamental changes in the structure, appearance, perceptibility, and meaning of music." (38) Certainly anyone acquainted with these new attempts will agree with this remark. Speaking of the processes used in a serial composition, he continues, "the sequence in which the forty-eight rows thus obtained were used in the work was determined by the decision to have each original form followed by the second of the two forms of the inversion which would have for their first tones the last tones of the preceding original, while this inversion in turn would be followed by an original form beginning with the last tone of the preceding inversion." (39)

The above illustrates not only the constant search for self sufficient methodology less amenable to analysis, but the composer's reluctance to make more than one initial decision.

Such an approach reveals the fundamental difference of attitude embraced by serial composers. No longer is the row regarded as a speculative absolute (see page 66) animated by romantic necessarianism towards realization; serialists consider the row One and Absolute with the inner music. Whereas formerly two creative processes functioned, "Einfall" and realization, today "Einfall" becomes the complete realization.

The unexpected, the element of surprise is essential to all sophisticated music. Boulez puts it well; "l' inattendu, encore: il n'y a de création que dans l'imprévisible devenant nécessité." How does this work in total organization ?

Krenek, defending serialism to the obvious criticism of emasculated inspiration, sets up the claim that once a compositional plan has been erected, "what happens afterwards is predetermined by the selection of the mechanism, but not premeditated except as an unconscious result of the predetermined operations. The unexpected happens by necessity. The surprise is built in." (40)

Can the composer be aware of "surprise" if it is"built in ?"

Krenek does not see that Bricken's argument, (Some Analytical Approaches to Musical Criticism, Music Teacher's National Association, Oberlin, 1936) which he quotes, can be used against him. Bricken maintains that the "inevitable" occurs in the process of harmonic tonality and that the unexpected is a result of a deviation from the norm.

If, for the serialists, the compositional graph is the norm and determines the results, how can the abnormal be "built in ?"

The nature of music is obviously changing, but whether all music will turn serial remains to be seen. Of the music composed by the Darmstadt serialists most will be forgotten. If their proclamations seem arrogant, they must be overlooked as the fanaticism of a serious composer must be. Perhaps the most irritating thing about the serialists is their extremity which lacks balance, perspective and that maturity characteristic not only of a great composer, but of compositional epochs as well.

The great comfort and attraction of Stravinsky's recent music is the avoidance of the extreme, and its balance and perspective of technique. Serialists often maintain that his music of later years is too conservative; the music's maturity argues against this criticism. Avant-gardist constantly asserting that every work a composer writes must be stylistically more progressive than the last, falls into his own trap. Often a serialist work receiving more attention than another, does so for no intrinsic musical reasons but because its methodology out-maneuvers other works. Composition of this order depends on gimmicks to attract attention; as long as this remains the case, no matter how ingenious the trick, such composition will lack maturity; nor will the necessity of always denying past works for new stunts ever make possible an extended line of mature development.

The novelty of Karlheinz Stockhausen's Zyklus für Ein Schlagzeuger is one percussionist improvising on a large battery from a most curiously notated score discernible only to the initiated.
His Refrain für Drei Spieler uses another notation entirely and features three players improvising.

It is impossible to say which work recommends itself more because of greater maturity. Composition embracing such principles as their raison d'etre, loses sight of the gradations of thought which give consistency to successive creative efforts.

While Stravinsky's music does engage in polemics, it also prooves there are other ways of writing "new music." without giving in to either total organization or improvisation which dispenses with the composer. Stravinsky's music is important for precisely this reason. Without some sense of tradition or stylistic permanence, the style extending from the Cantioum Sacrum to A Sermon, Narrative and a Prayer would be impossible.

A validity of artistic existence can only be judged from the objective premise of its own starting point. However, we must not foget that once an idea transcends itself, throwing off the cloak of its own self containment, universal laws (of which we may be quite unaware) deliver a final pronouncement of Life or Death. Translating this into aesthetics, we can credit an esoteric work with as much validity as a work conceived in traditional terms; thus there can be no progress in the arts. The unconventional becomes convention, and we must have conventions if we are to have the unconventional.

Every age spills its partisan ink, but this can neither alter the obligations of the artist nor deter him from his goal.

Berlin-Minneapolis

December 6, 1960

FOOTNOTES

1. One might add that neither Stravinsky or Schoenberg engaged in these verbal battles and that they were seemingly always aware and respectful of what t he other was doing; the barking was done not by the masters but by the disciples.

2. Style and Idea, Philosophical Library, 1950, New York. page 103, section III.

3. These much discussed piano pieces, containing conscious use of tone rows, appear after the Four Orchestral Songs (1913-15). A silence of nearly ten years must testify how this impass affected Schoenberg; during this time he seldom composed and finished very little. This phenomenon in a virile creative artist is not unusual, but seemingly does occur to German romantics. A point was reached by Schiller, Kleist, and Novalis where technique depended solely on inspiration and this may well explain the abundance of fragments. A similar state of affairs may have existed with Schoenberg at the end of his "atonal" period." Erwartung, the monodrama, on the other hand, was composed in a two week span, August 27 - September 12, 1909.

4. It is most unfortunate that the English version, translated in 1948, expurgates the original by nearly one-half, leaving

out the all important aesthetic discussions, as well as definitions of terms and practices so essential to understanding Schoenberg's frame of mind. His concepts of consonance, dissonance and terms such as 'Klangfarbe' do not even make an appearance.

5. One might divide Stravinsky's periods according to these compositions: the first closes with the Rites of Spring, the second, extending from 1913 to 1950 contains his diatonic works (L'Histoire du Soldat, Octet, Ragtime) while the third may begin in 1950 with his interest in 12 tone composition. With Schoenberg things become more complex, his first period containing the first and second string quartets, the string sextet, Gurre-lieder and the Chamber symphony; the second period includes the so called atonal works with Pierrot Lunaire standing out. This period ends in 1914. Schoenberg's next published work, the Four Orchestral Songs appears in 1923, along with the piano pieces opus 23. From this time to his death, periods are difficult to single out, works such as the second Chamber symphony and the Kol Nidrei reverting to earlier styles.

6. The vertical traditional sonorities to which I refer are major-minor triads, all seventh chord forms and their inversions to which a foreign note passes through or is added; the same holds true for diminished chords and augmented triads (the latter being rare). A compendium of examples illustrating the above maybe found in the beginning of Orpheus, the first scene before the Air De Danse.

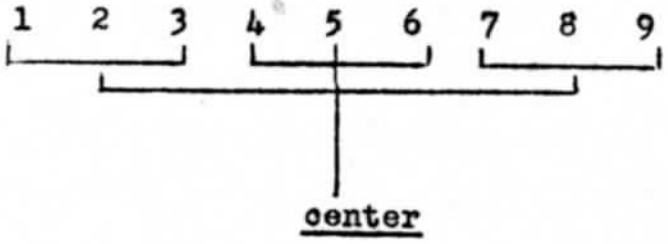
7. This interlude seems to forshadow parts of the Canticum Sacrum. The manner of unravelling single notes is similar to the Canticum's third section ritornello, while the music from 43 to 46 sounds like the Canticum's 'Diliges Dominum' canon. Even the isolated trumpet $A^{\flat}$ (2nd beat, 5th measure) suggests the Canticum's instrumental world. I also do not believe anyone has as yet pointed out the symmetrical construction of measures 1 - 3 with 5-- 7 in this interlude. This device, often used in dodecaphonic working and the passacaglia like quality of this section, find further refinement and extension in the Septet.

8. Style and Idea, p.109

9. I define starting tones as the new tone chosen by the composer for a new unfolding of the set; a pivot tone is an elided tone, that is,the first tone of a new unfolding is the same as the last tone of the previously used set. It has the nature of a common tone (1=12, 12=1) While pivot tones are easier to use, they nevertheless create a static effect.

10. A strong distinction must be made between serial composition and 12 tone composition. The reasons for this will become evident by this paper's conclusion. Suffice it to say that the latter term only refers to compositions involving row manipulation for linear and horizontal purposes; serialism takes into account total organization of all elements, i.e. duration, rest proportions, dynamics, ranges, as well as linear and rhythmic. A clarification of nomenclature is needed.

11. All canons are regularly twelve measures long with the exception of four and six which are nine measures long; the reason for this is that in the even measured canons the tenor part varies from 23 to 32 syllables while the shorter two have 28 and 27 respectively. I point this out not only to further emphasize the symmetrical construction of the movement,



but also to call attention to the peculiarity of Stravinsky's syllabication, and its elasticity in relation to his "row."

A far cry from Marot's 'vers mesure'.

12. Schoenberg was also concerned with this problem, admitting that tonal elements might eventually be permitted re-entry in a dodecaphonically conceived harmonic scheme. When speaking of this problem, Schoenberg's Ode to Napoleaon, is usually cited."In this piece Schoenberg shows some surprising inner connections between tonal and 12 tone music, and a way of combining them organically which shows them to be two different sides of the same process of human thought and creation." (Composition with Twelve Notes, Rockliff, London, p.131) Also concerning this Ode, Rufer writes, "it ends with a pure chord of $E^{\flat}$ major, though no feeling of a key-note arises during the course of the piece. It is therefore more correct

to speak, not of a triad of E^{b} , but of a triad consisting of the notes E^{b}-G-B^{b},..." (Ibid. p.103) While this E^{b} major "sound" is alluded to in the course of the piece, and Rufer is right in stating that major or minor triads in 12 tone music are only of "local importance" as key relationships are missing, I do not believe this type of treatment convincing as a solution to the task of combing tonal and 12 tone elements. Schoenberg's ending E^{b}-G-B^{b} is still an anachronism, I feel. When Palestrina wrote his "G-B-D's" going to "C-E-G" he was not thinking in terms of C major but, ears today, nevertheless hear this as a perfect V-I cadence!

13. This is often misunderstood. Webern did not discover a new form, but rather the necessity for each 12 tone work finding its own Form. This implies a difference of approach which will be returned to in the final pages of this study. The gist of the matter is that with Schoenberg the row's 'Einfall' became a speculative entity within an inner movement or "urge" of the composer. If, as was the case with Webern, every piece is concerned with the possibilities within a row, in other words a constructivistic search, the row cannot be considered as a speculative absolute "descending" before composition; it becomes a formal idea with which the inner movement is connected.

14. The new nomenclature being developed by the Darmstadt school considers inverting or the compounding of an interval dissonant.

15. "The distribution (12 tone) maybe varied or developed according to the circumstances, in a manner comparable to the changes of what I call the 'motive of the accompaniment." Style and Idea, p.117.

16. Perhaps a re-definition of cadence is needed. Generally, whereas in classical and romantic music, a cadence was a caesura in the musical flow, the completeness determined by the amount of consonance and dissonance and its distance from the main tonal center. While the last part of this definition became invalid by Wagner and Strauss, the amount of consonance or dissonance present has, of late, also become unimportant. Only Hindemith seems still immersed in these problems and at times the results are also problematical. A pause in the flow seems the only remnant left of my definition. I doubt very much if the cadences found in Schoenberg's opus 31, variations or Webern's Piano Variations, opus 27, are any better than those found in Stravinsky's Danses Concertantes or Petroushka. Cadences have, by and large, always been a matter of cliché (the approach to the cadence is something else). In previous times, cadences which departed from the norm, whether a Burgundian cadence or a perfect cadence, have been the most admired by musicians; as we have no norm today, this very lack gives us our standardization of cadences.

17. Musical Quarterly, April, 1956. Current Chronicle by R.F. Goldman. What does "morally indifferent" mean ?

18. It is most essential to observe here that the former 12 tone dogma of exact intervallic repetition, demanded by the individual significance and autonomy of each note, has broken down; this testifies that new concepts are with us.

19. Emile Vuillermoz, reviewing a concert devoted to Stravinsky's 12 tone music premiered in Paris, writes: "Stravinsky looked like a beginner. His essay in dodecaphonics was laborious and monotonous. It was, indeed, the exercise of an artist who has never devoted himself to the purely cerebral, and who, during his prodigious career, has given us music inspired by very different ideas...only a wager of the essential Stravinsky... an exhibition revealing nothing...but propaganda for a formula of writing of only documentary interest." Christian Science Monitor, Boston, November 16, 1957.

20. From the sonoric point of view it is valuable to note that no other music, aside from Webern, is so concerned with density. In this respect Boulez' Le Marteau sans maitre is even more important; looking at all the new music being written today, it is not improbable that the very words "harmony" and "counterpoint" will soon fall into disuse, being replaced by "density." The implications are far reaching.

21. Is it not possible, today, to regard a piece of music's length in other terms than the temporal ? Could not a fugue from the Musical Offering be considered longer than a movement of either a Bruckner or Mahler symphony because certain forms

require more complexity in concentration, thus more music ?

22. Here an apology is due ! While it is always difficult to talk about music, I have never in the course of this paper, till now, been so struck by the inadequacies of our analytical vocabulary. Whereas it is now considered absurd to talk about "atonal music," (though the term has found a permanent niche in our language) Schoenberg pointing out that one might as well talk about painting being a-spectral, it seems equally improper to talk about tonality in a music not governed by tonal theory. To be sure, there is a modified concept of tonality evolving today, but let us be quite certain what the object of this concept is; while the crucial demand of tonality was to build forms, the building of Form is still the greatest preoccupation of most composers today without, however, depending on tonal concepts of organization. Terms such as dominant-tonic, and period, in short any terms not covering a particular species of form, are fine when discussing traditional music, but to imagine them having value when discussing music not commited to these laws, is unrealistic. One cannot prove that the materials of music as re-defined today, are any less poor in form building substance than a tonal or modal system. Thus, in discussing the sustained flute A^2 in Surge, acquilo, where something has expired in the music which has contributed to the building of Form and because this section of the Canticum and this type of composition in general is not ruled by tonal laws, it is false to say "tonal center." Orientation point seems to be not only more precise, but free from the connotations

of tonal center. In using pitch plane or level, I mean just that. But who would have thought that only pitch level or tessitura could be used to define formal sections as Webern does in his opus 28, string quartet ? I would also like to add that our traditional analytical vocabulary does not break down even in the case of Schoenberg, but only with Webern and his disciples.

This is most apparent in a letter written by Webern to an English musicologist who had requested an analysis of this quartet. Webern speaks of his piece as a cross between a scherzo and a fugue; everything in his analysis can only be accepted by allowing the widest allowance in interpreting "fugato","stretto", or "reprise." In fact, at the letter's conclusion, even Webern seems surprised that he has come to "solch eine leichte Erklärung," for his music. Of course, he was far from the mark. (It is hoped that this letter, now in the possesion of Wolfgang Fortner, Heidelberg, and shown to me while discussing problems of contemporary analysis at Darmstadt, will soon be published.) I personally envisage, in the not too distant future, a system of graphic analysis related to the workings of symbolic logic wherein every analysis would have a set of symbols which could be slightly varied from piece to piece, yet would clearly describe what relationships all elements had to one another, as well as any metamorphosis taking place.

23. A retrograde inversion, be it used by Webern, Stravinsky or Schoenberg, remains a retrograde inversion. What does distinguish them and hold interest for us is their function: how is it employed ? Stravinsky, as we have seen, is very concerned with the recognizable repetition of his series, more so than Schoenberg, at any rate. The Schoenberg of the Orchestra pieces, opus 16, or Erwartung , contains only the barest scraps of repetition and, as we know, this perplexed Schoenberg to such an extent that despite his 12 tone discoveries, he was forced back to traditional forms in this later period. The remark about the violin concerto, "take away the dissonance and you have Brahms," is not wholly untrue. Stravinsky, on the other hand, did not have this problem. That his dodecaphonic usage is not as complex as Schoenberg's is true; Schoenberg, using many transpositions, is chromatic while Stravinsky, limiting himself, is diatonic.

24. The Atlantic, June, 1957. Composing by Igor Stravinsky and Robert Craft. p.48.
Strictly speaking, the word "dodecaphonic" is also a misnomer but has, like "atonal" secured a firm place in our language. Nevertheless, dodecaphonic implies in 12 parts, which is certainly misleading."Dodecatonic" seems more correct in expressing 12 tone function.

25. Theses exceptions are: Canticum Sacrum, Surge, acquilo's opening chords; Threni, bars 23-26, 188-92 (trombone part, 179-83 (chorus).

26. Musical Quarterly, vol. XXII, no.7, January, 1936.

27. Das Problem der Atonalität und das Zwölfton prinzip, Melos, vol. 6, 1927, pp.108-118.

28. Hill, p.14.

29. Today, two types are generally discerned:

    1. Semi-combinatorial sets = a set where horizontal continuity and identity can be established by the other inversions making use of the total row in an unordered form. This is the most popular type, very frequently found in Schoenberg's early work.

    2. All-combinatorial sets = these are complimentary, symmetrical hexachord types which, if there is a concern for total identity, depend on proper ordering. Agon, row three

    Both types are capable of forming their own derived sets. Agon's set one maybe considered a source set of two.

30. Music Review, vol. IV, no.2, May, 1943. New Developments in 12 Tone Techniques, by Ernst Krenek. p.82.

31. Ibid. p.85.

32. The purpose of these figures and point raised on page 34 of this study, should now take on some significance. Because of a shorter row, Stravinsky must naturally repeat more often than Webern. In Viae Invaie, Webern does not seem to prefer any row form over another (perhaps realizing the danger), while Stravinsky definitely seems to prefer the I and R forms. Here a bit of conjecture may prove beneficial. Cannot the use or avoidance of certain row forms create a formal impression ?

33. Ibid, p.87.

34. Musical Quarterly, vol. XXXIX, no.4, October, 1953.

35. Composition with Twelve Notes, by Josef Rufer. p.178

36. Musical Quarterly, vol. XXXIX, no.4, p.525

37. Musical Quarterly, vol. XLVI, no. 2, April, 1960.

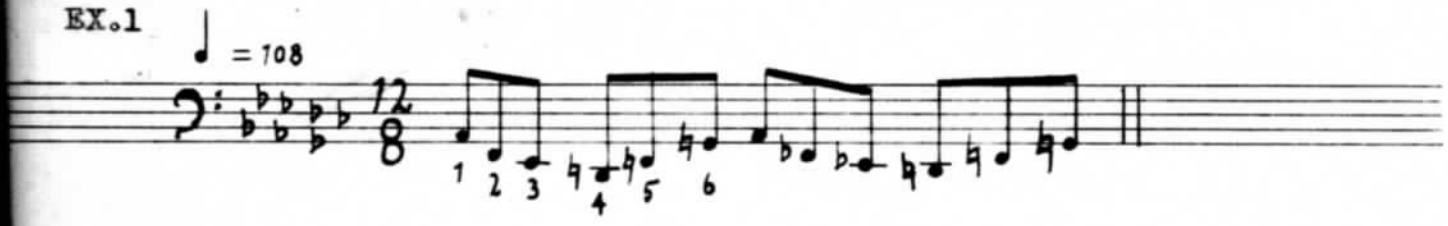
38. Ibid, p.211.

39. Ibid, p.214.

40. Ibid, p.229.

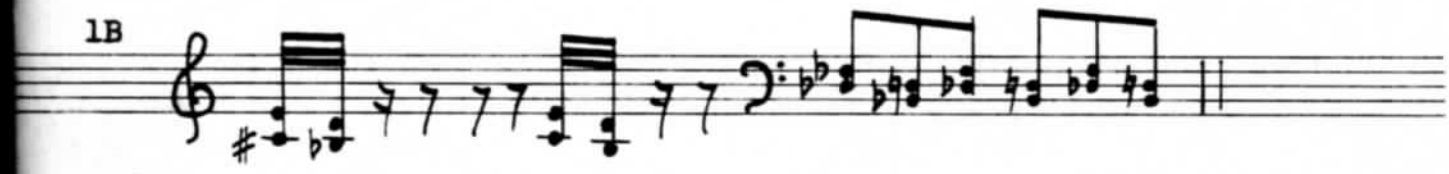
MUSICAL EXAMPLES

EX.1



3 after 1

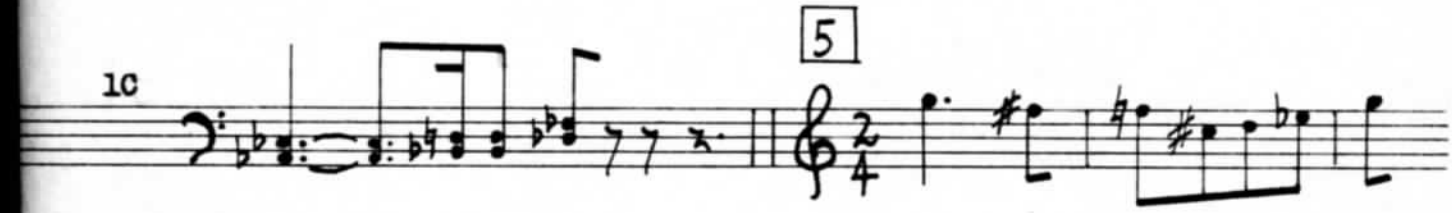
1B



1 after 2

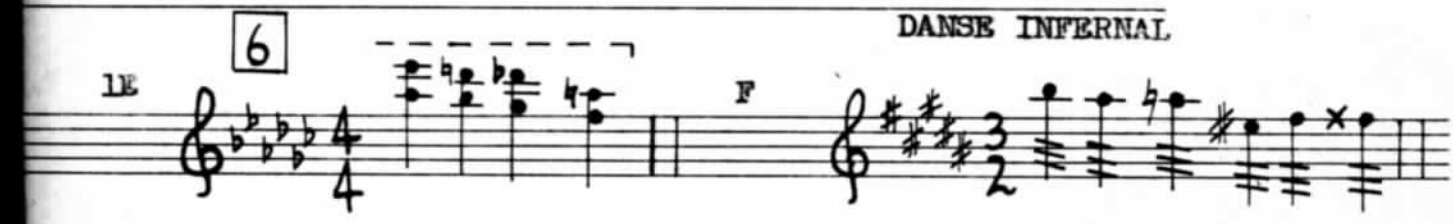
1D

1C



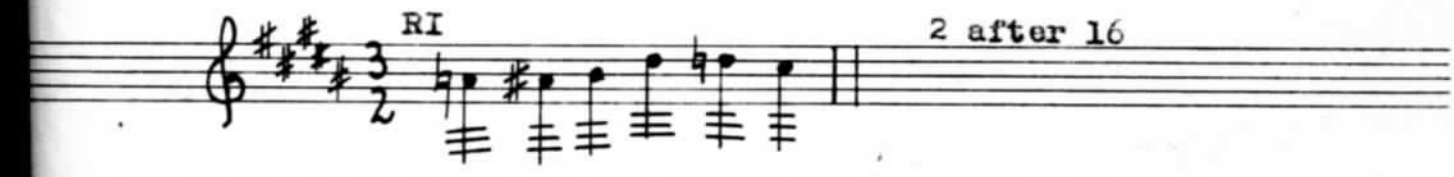
DANSE INFERNAL

1E



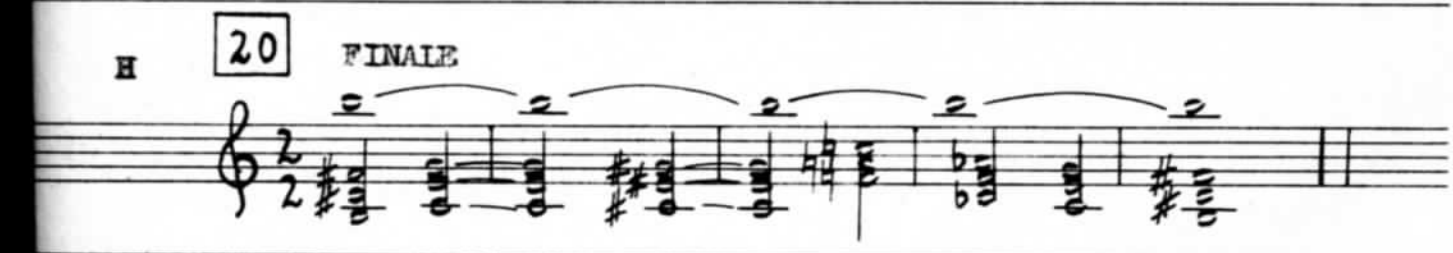
BERCEUSE

G

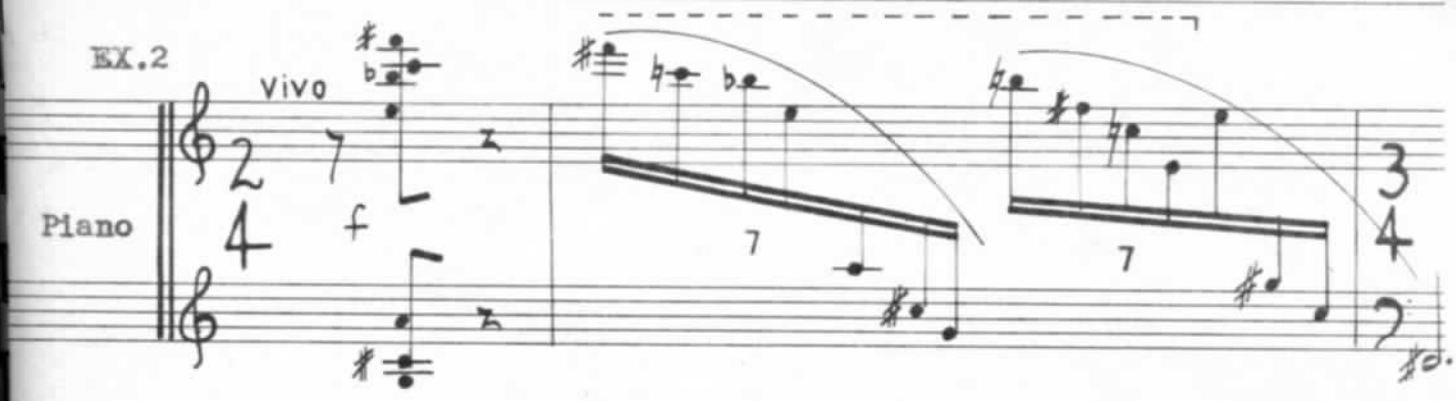


2 after 16

H



EX.2



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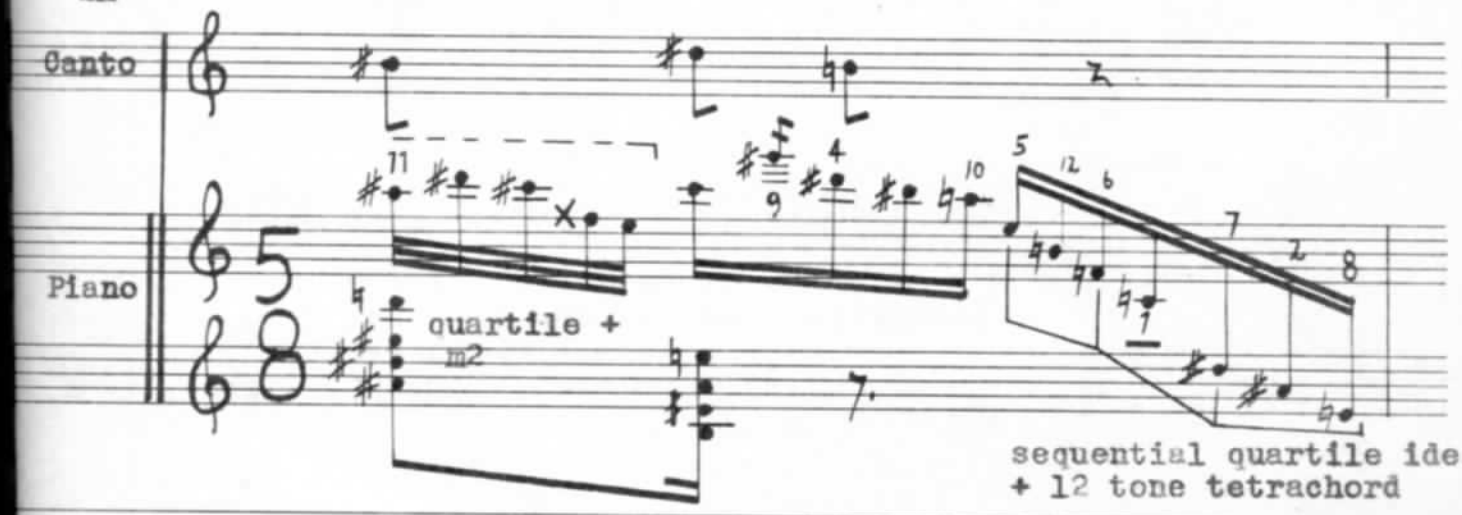
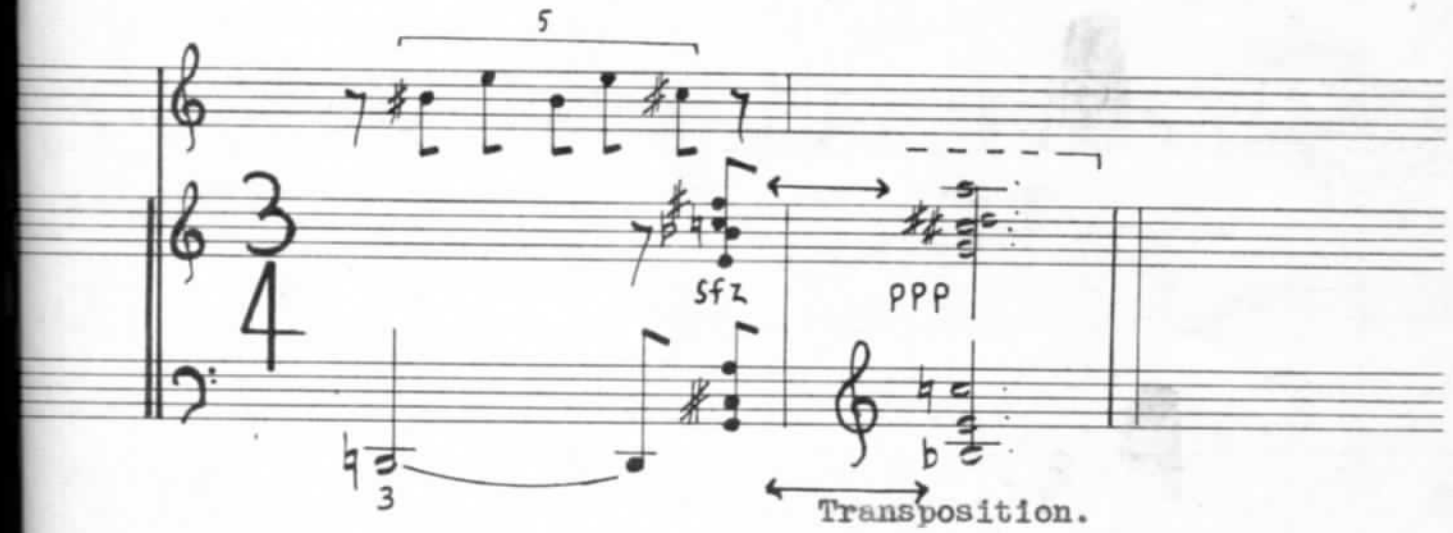
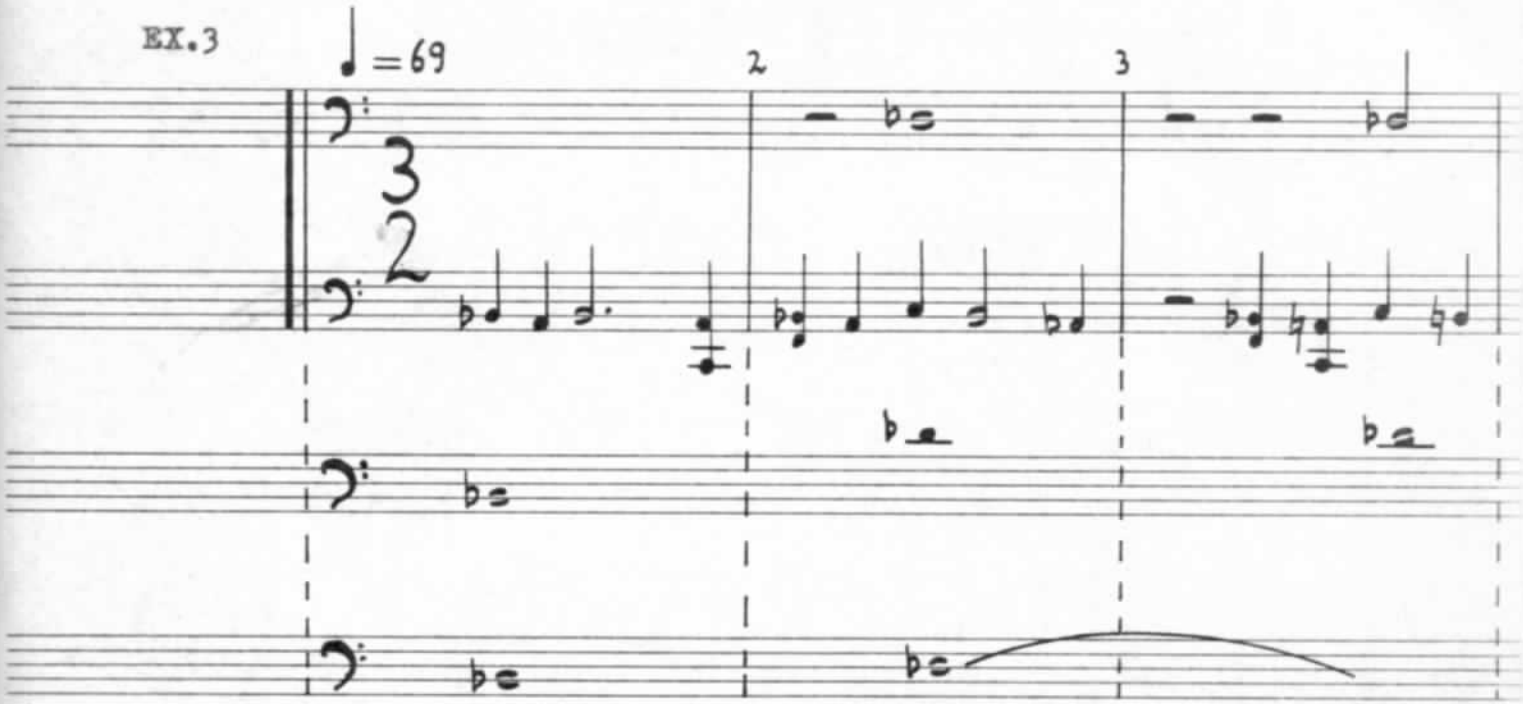




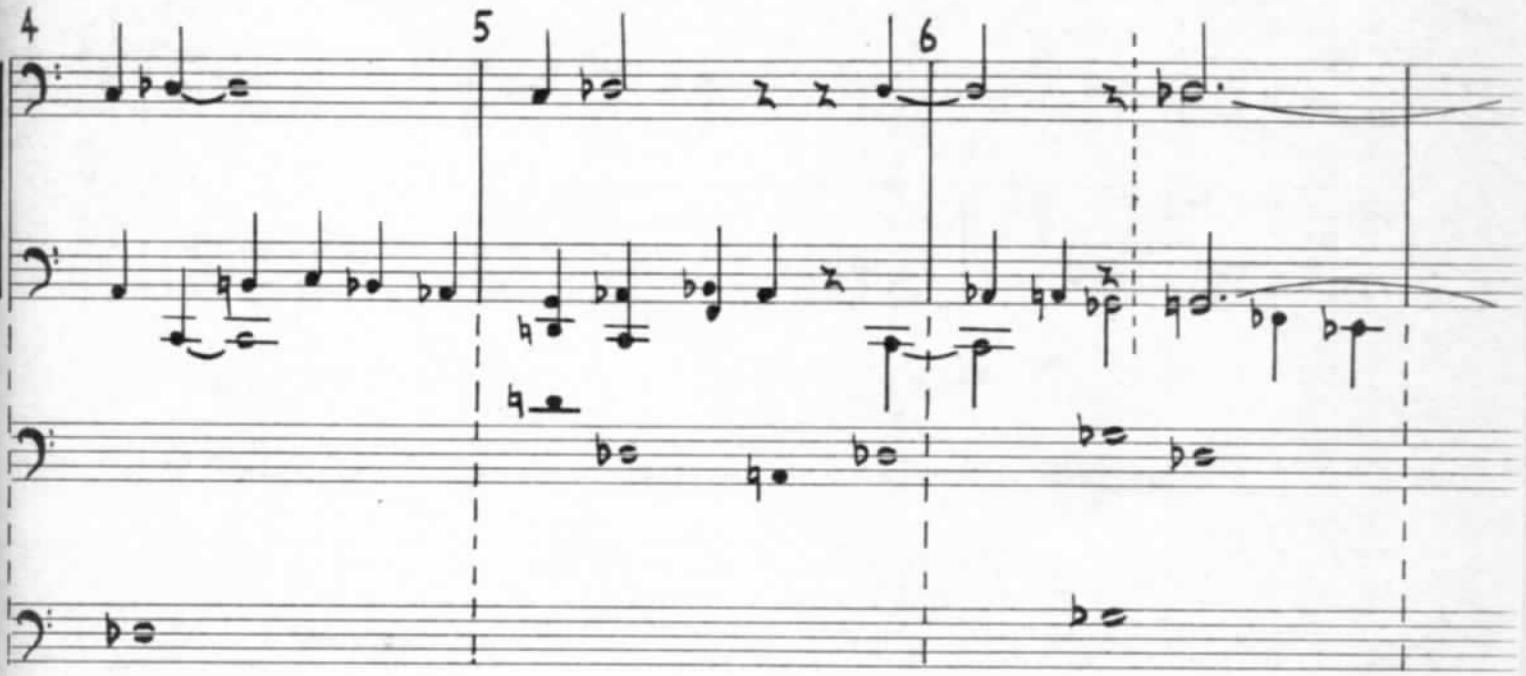
Three Japanese Lyrics,

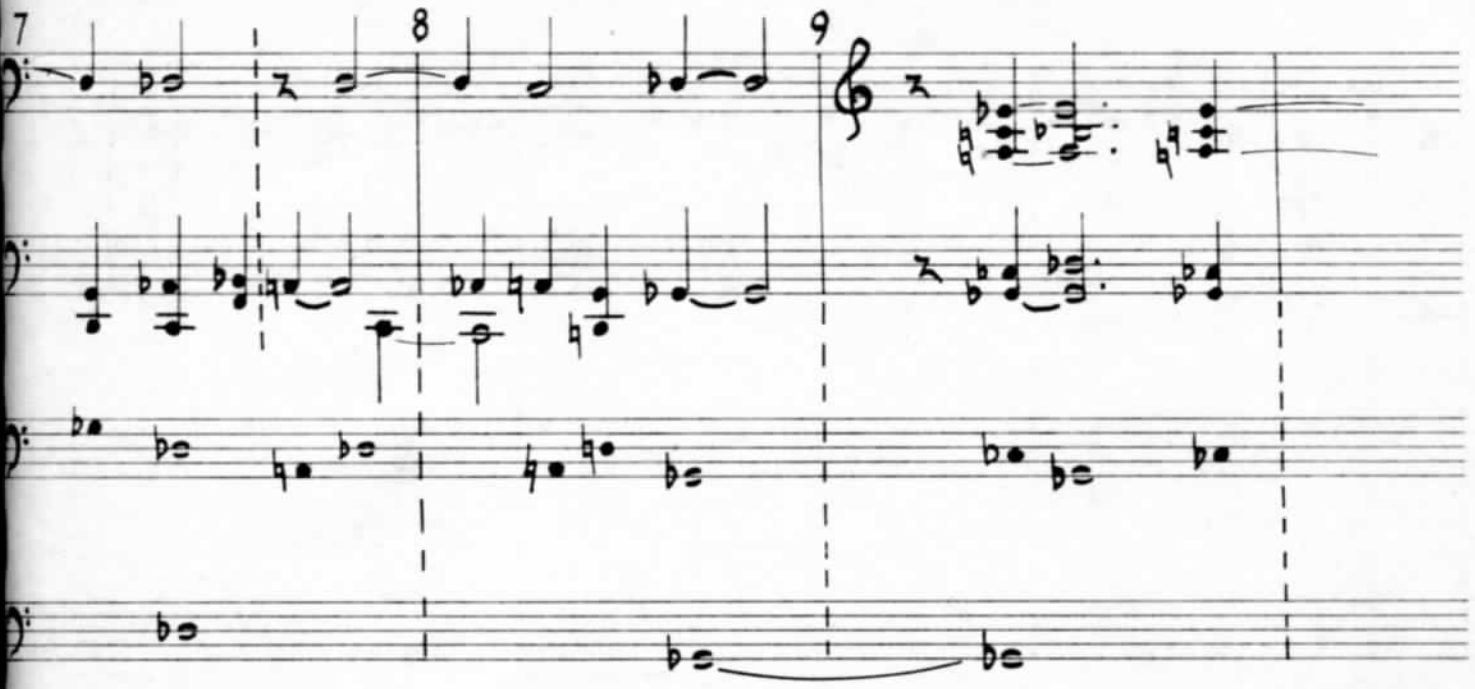
Hazatzumi, 2.

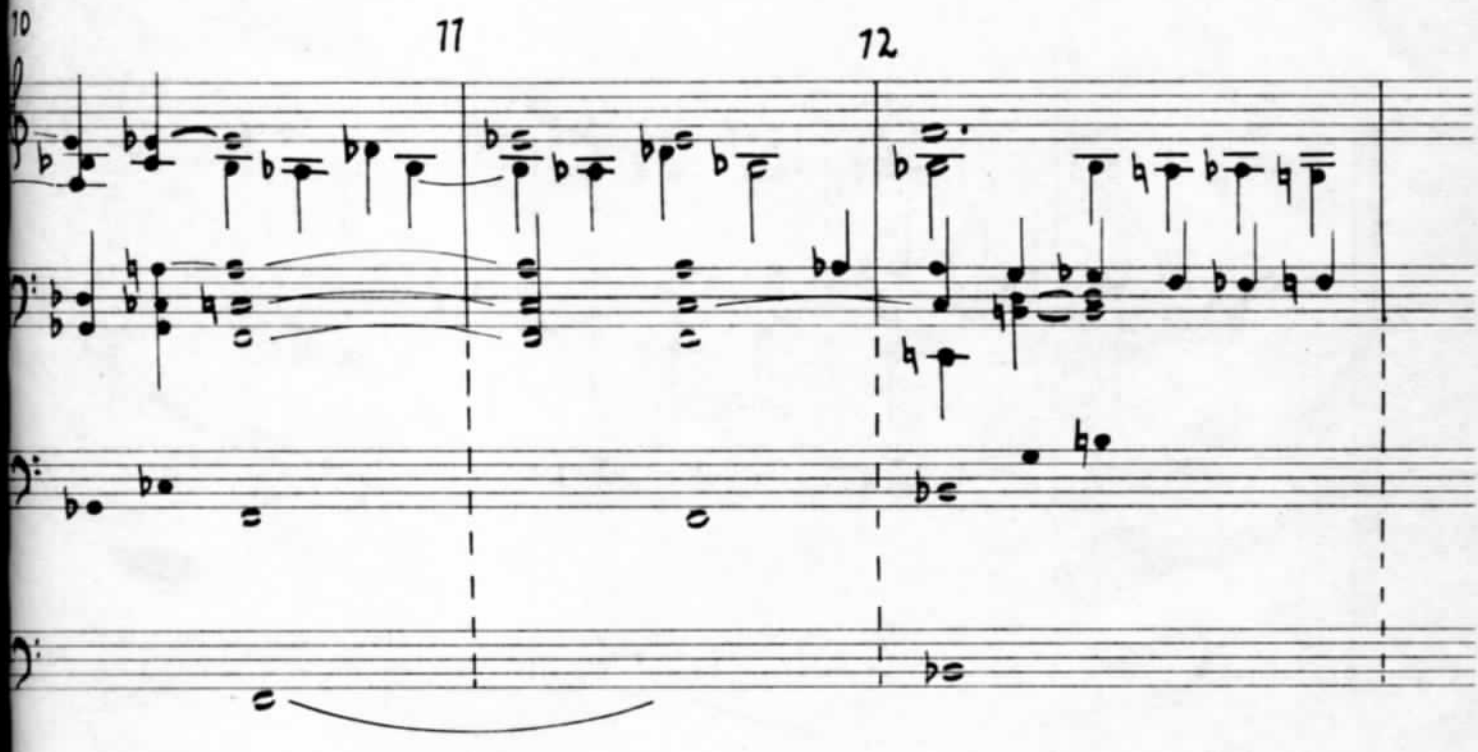
EX.3

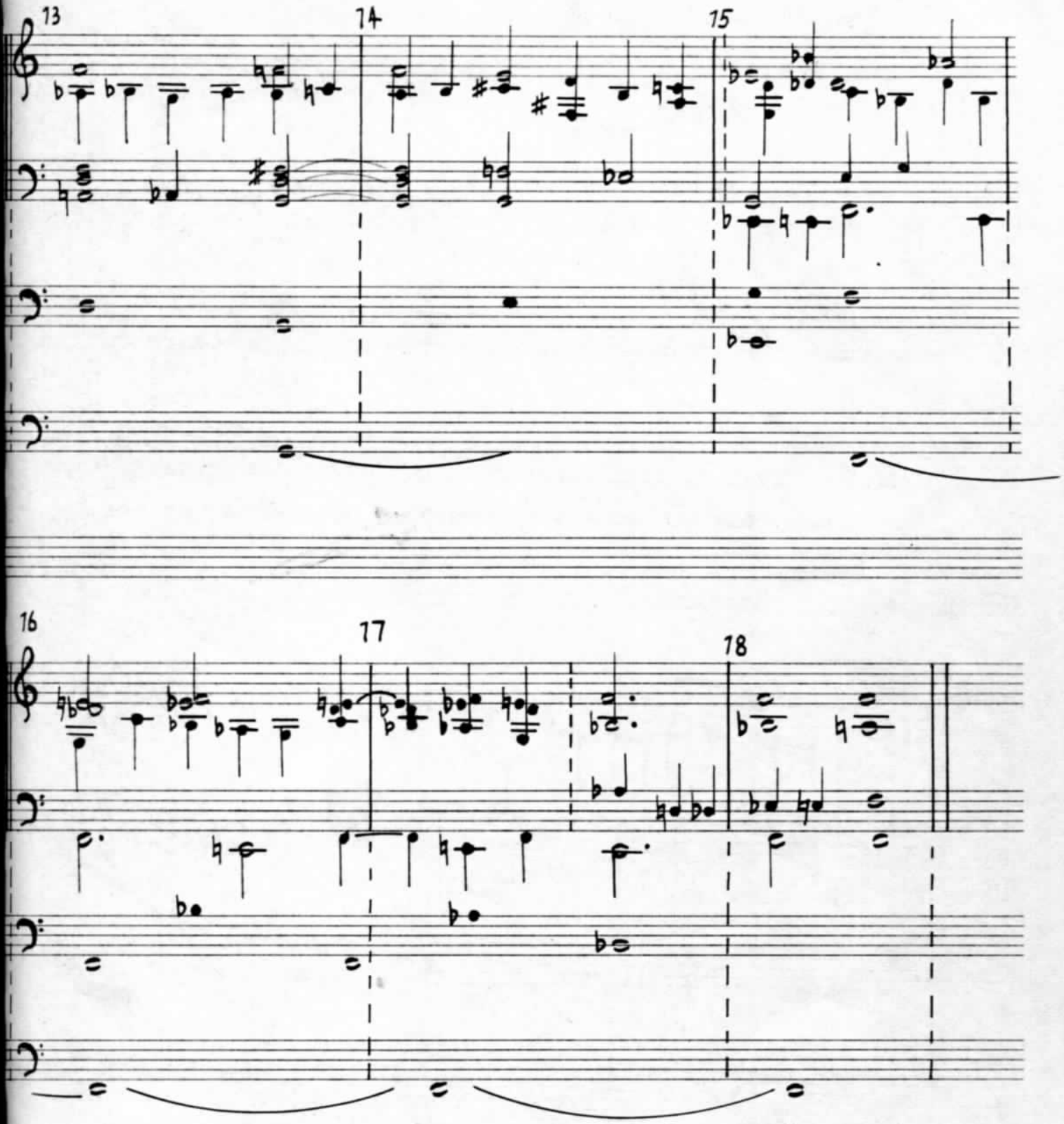


primary progressions= ○ (roots)
secondary progressions= ● (degree)
caesura =



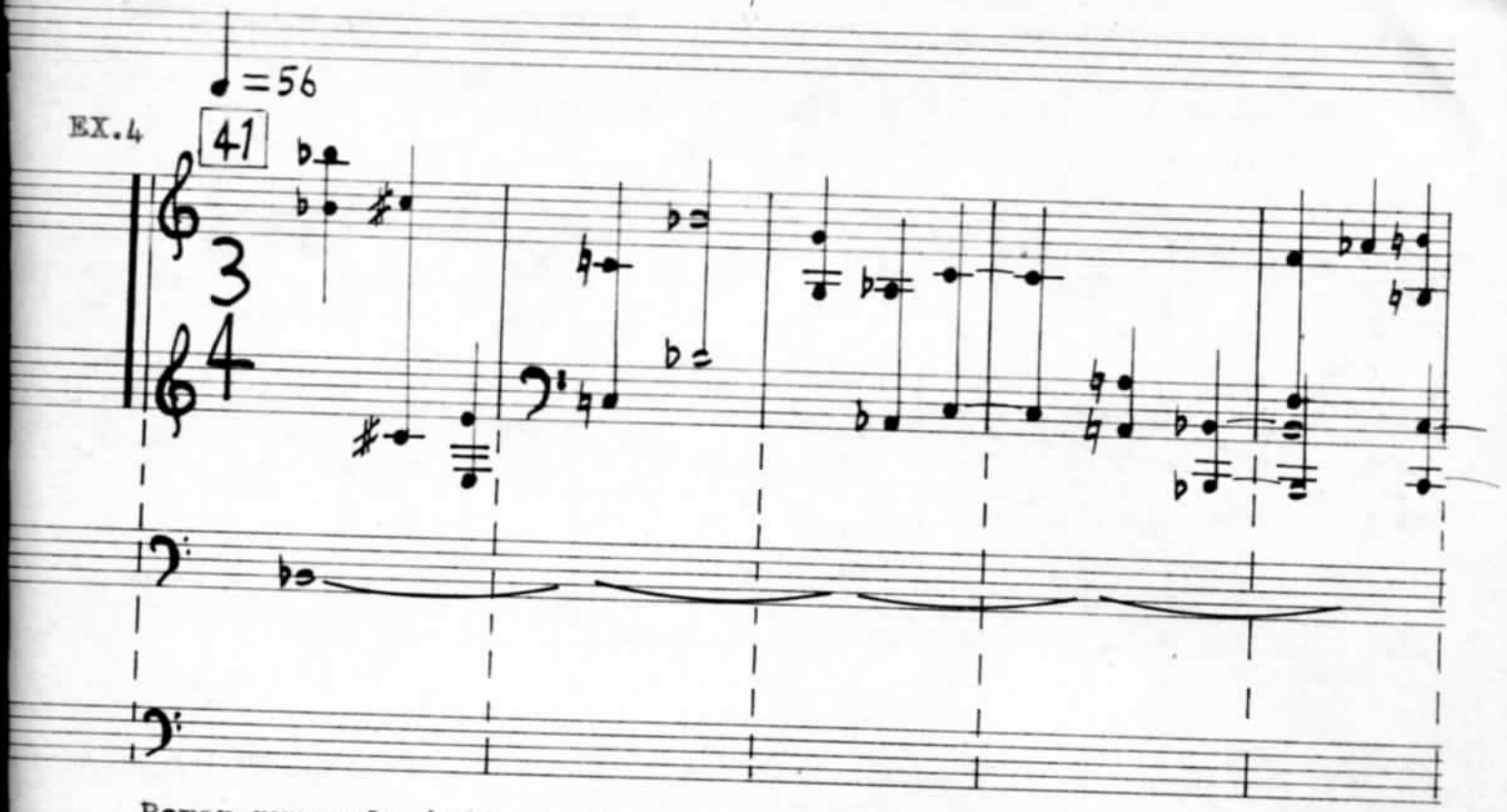

7
8
9


10
11
12

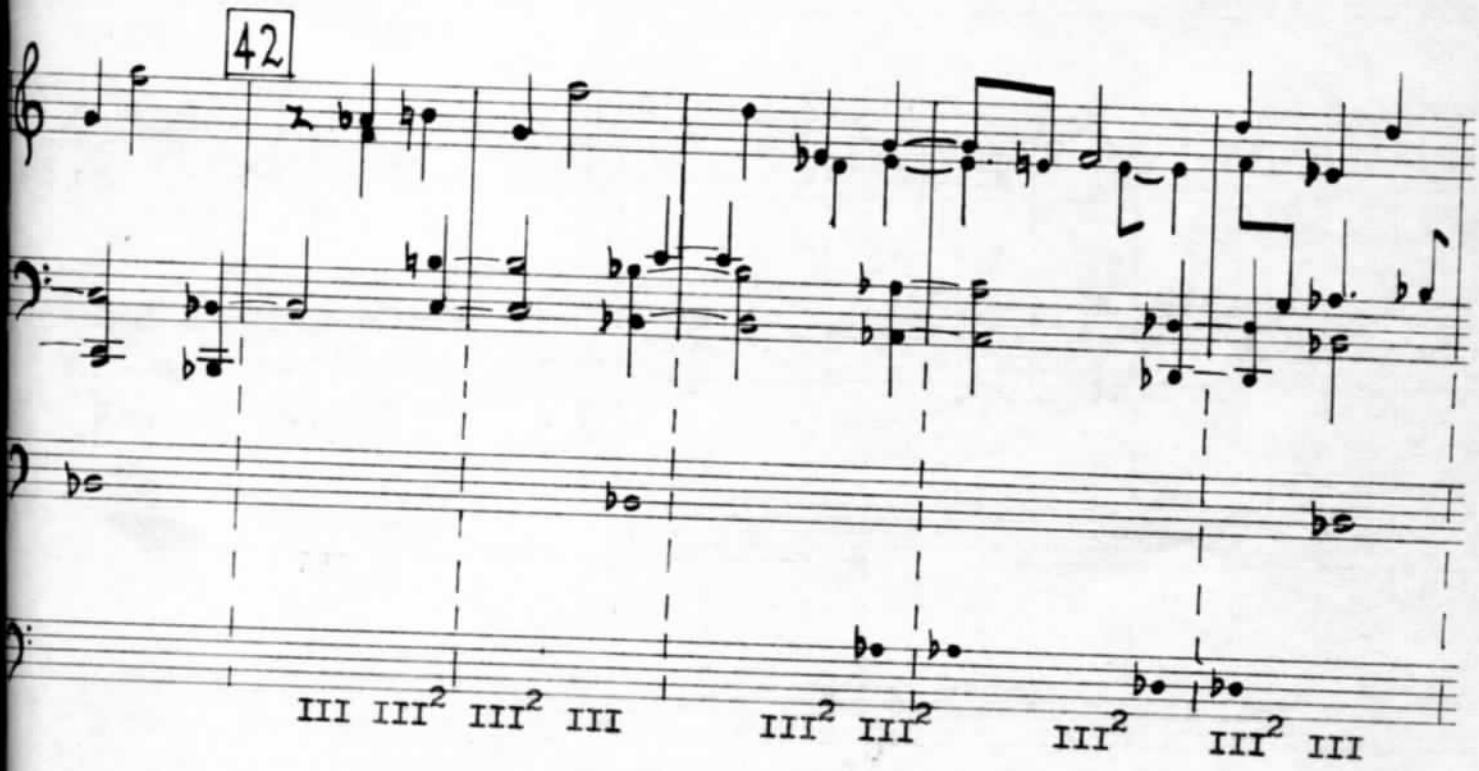


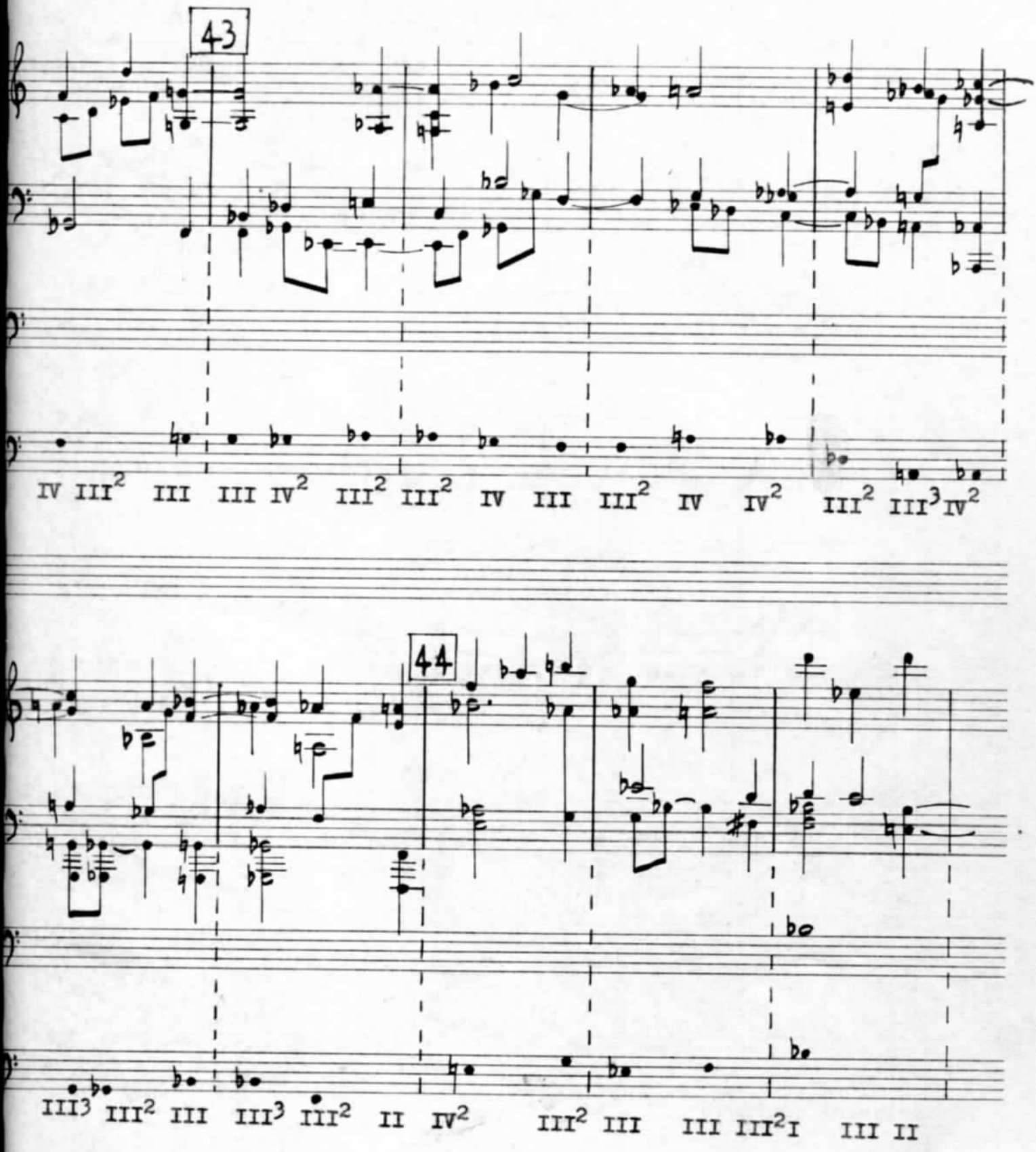
The Rake's Progress, Prelude, Act III, sc.2

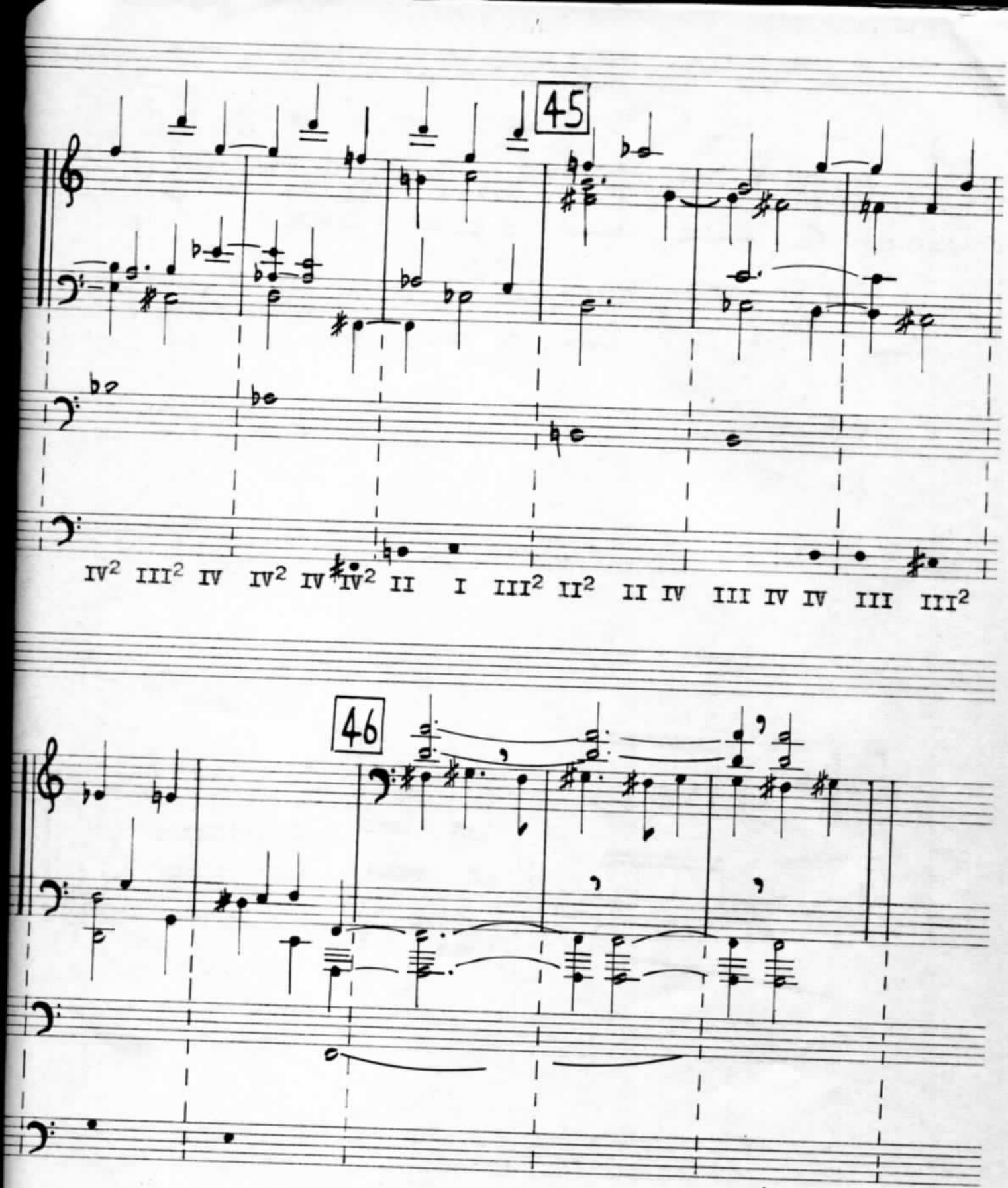
EX.4



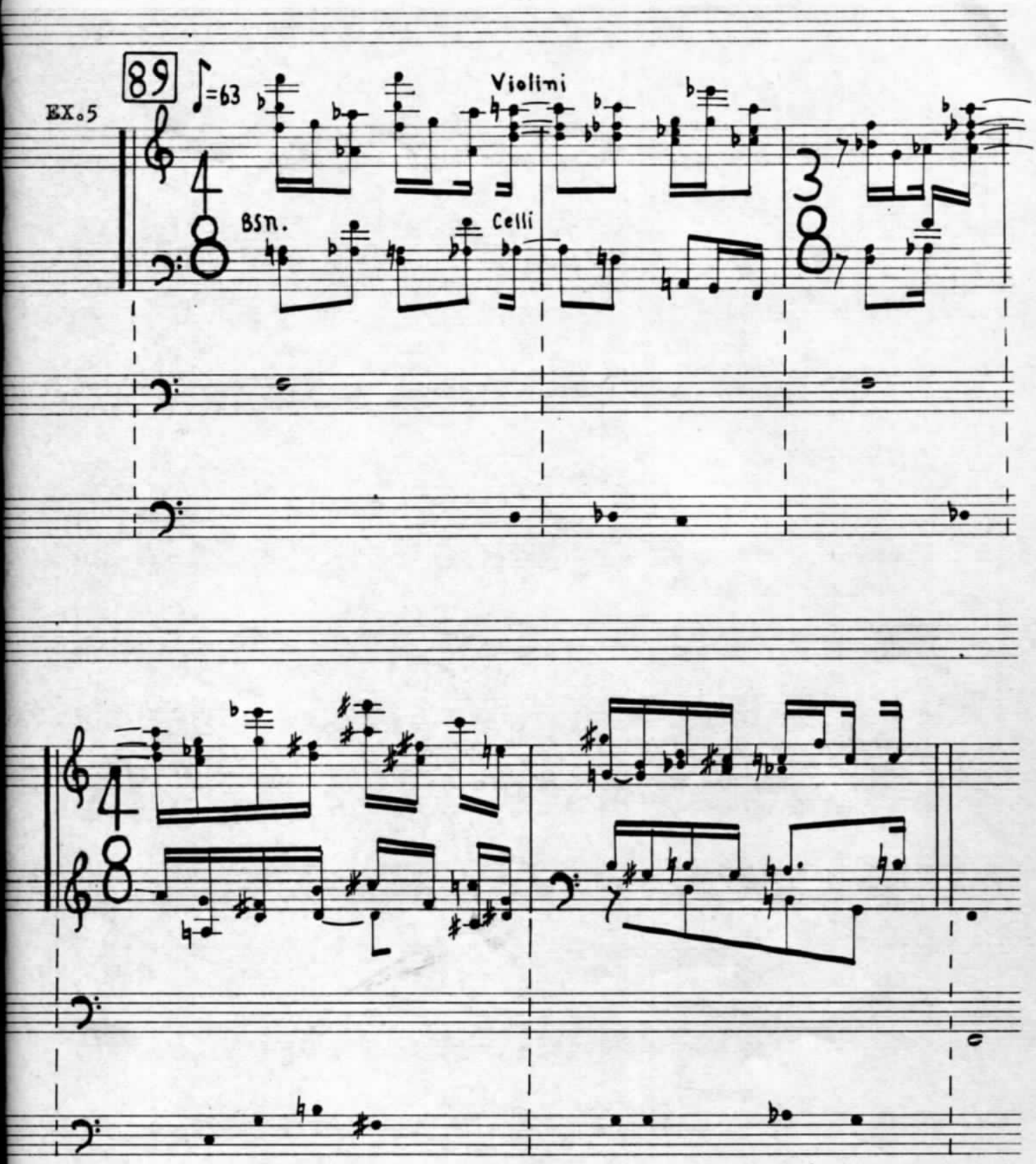
Roman numerals indicate degree of fluctuation and tension




43
IV III² III III IV² III² III² IV III III² IV IV² III² III³ IV²
44
III³ III² III III³ III² II IV² III² III III III²I III II

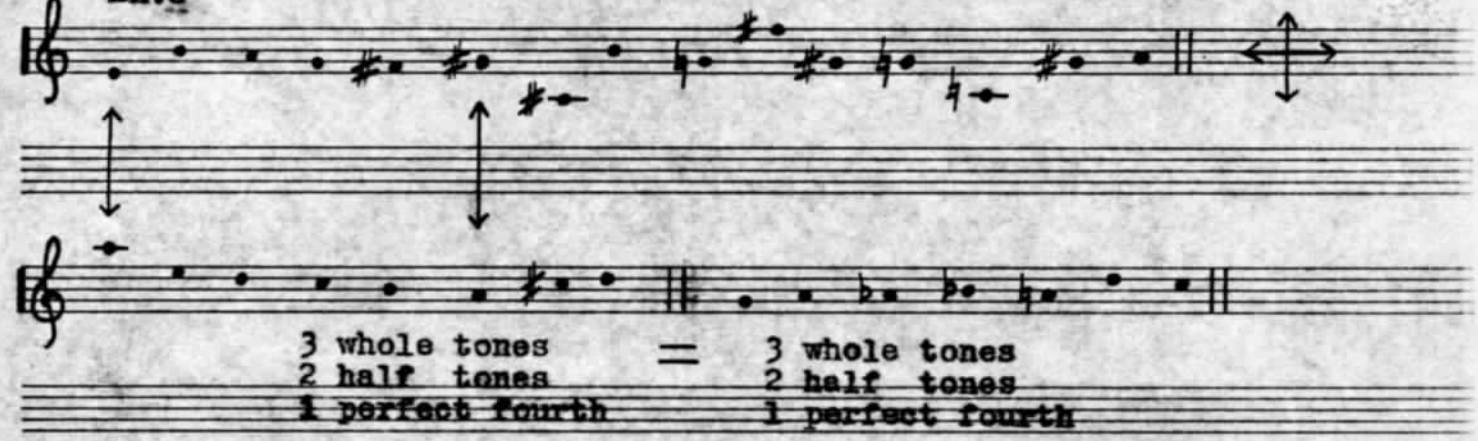


Orpheus, Interlude I.

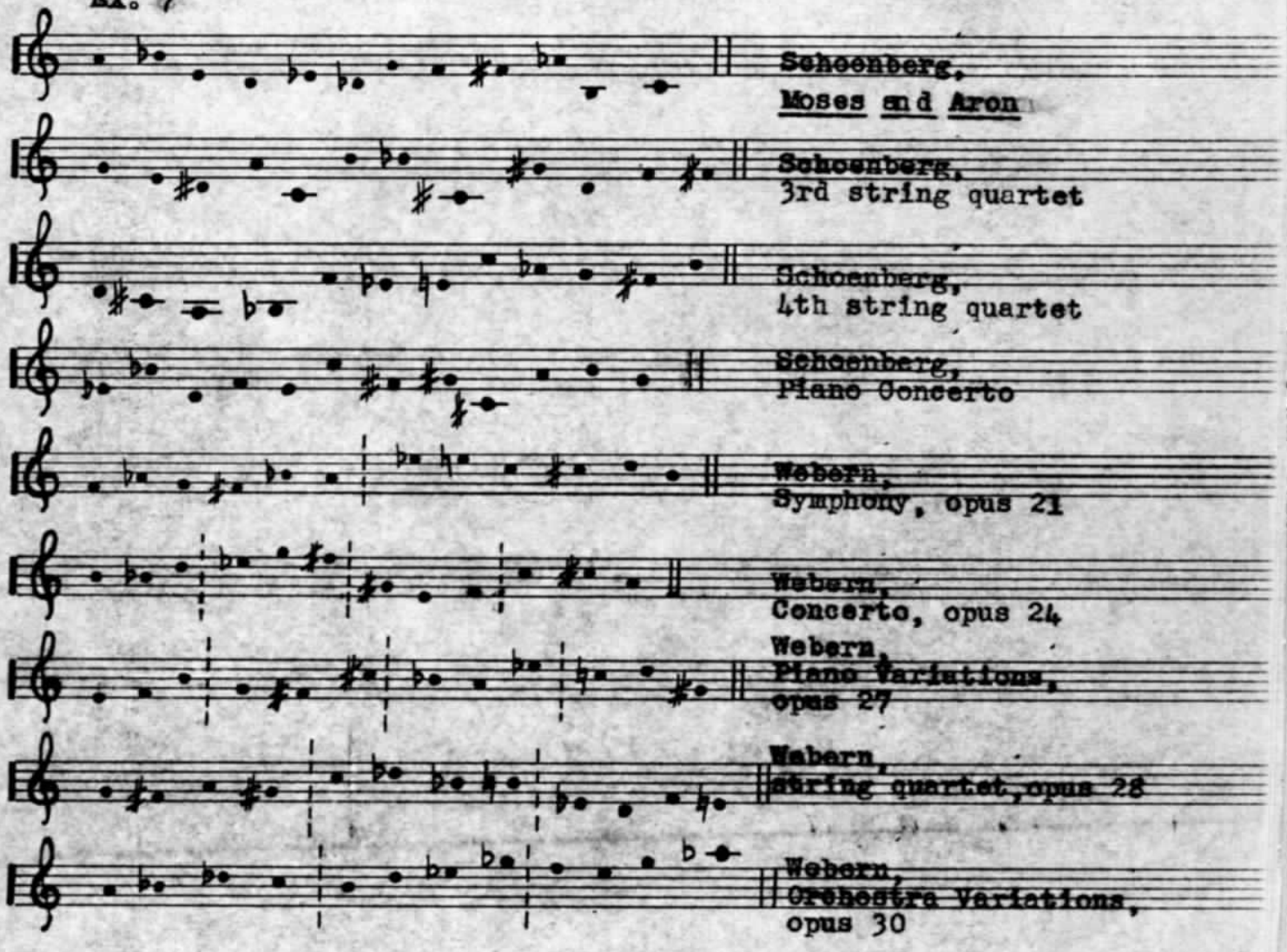


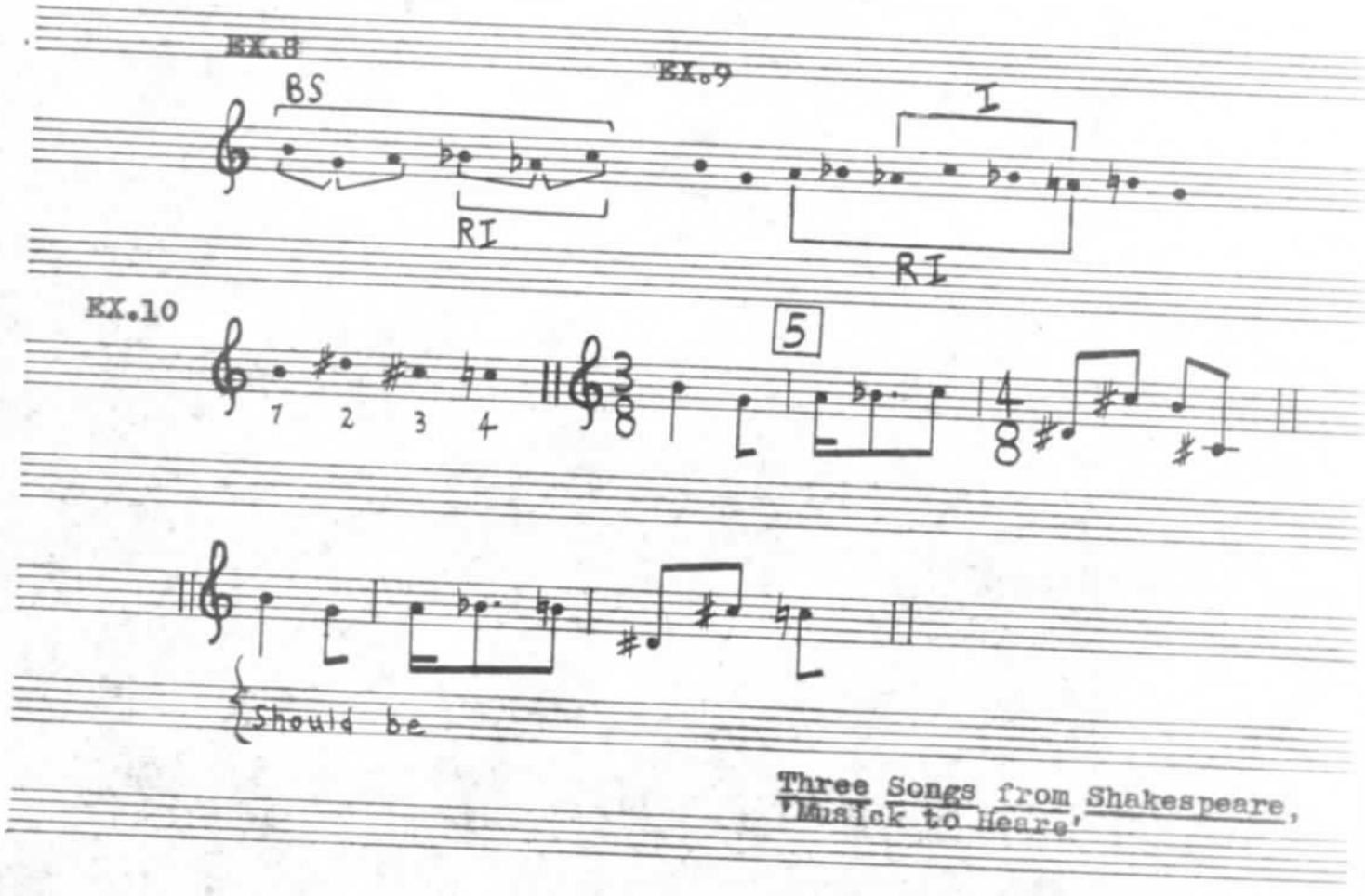
Orpheus, Interlude II

EX.6


3 whole tones
2 half tones
1 perfect fourth
=
3 whole tones
2 half tones
1 perfect fourth

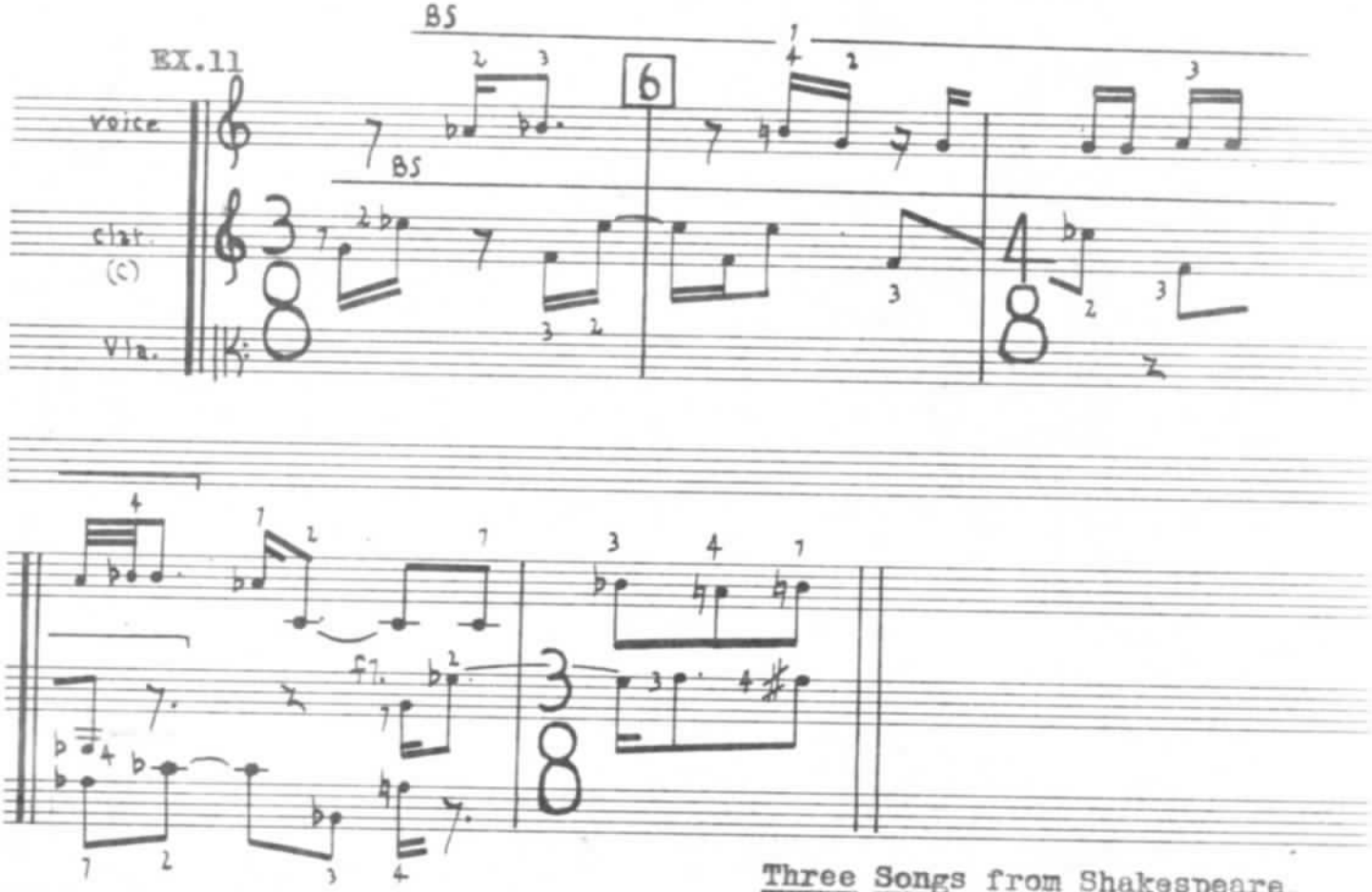
EX. 7


Schoenberg,
Moses and Aron
Schoenberg,
3rd string quartet
Schoenberg,
4th string quartet
Schoenberg,
Piano Concerto
Webern,
Symphony, opus 21
Webern,
Concerto, opus 24
Webern,
Piano Variations,
opus 27
Webern,
string quartet, opus 28
Webern,
Orchestra Variations,
opus 30



Three Songs from Shakespeare,
'Musick to Heare'

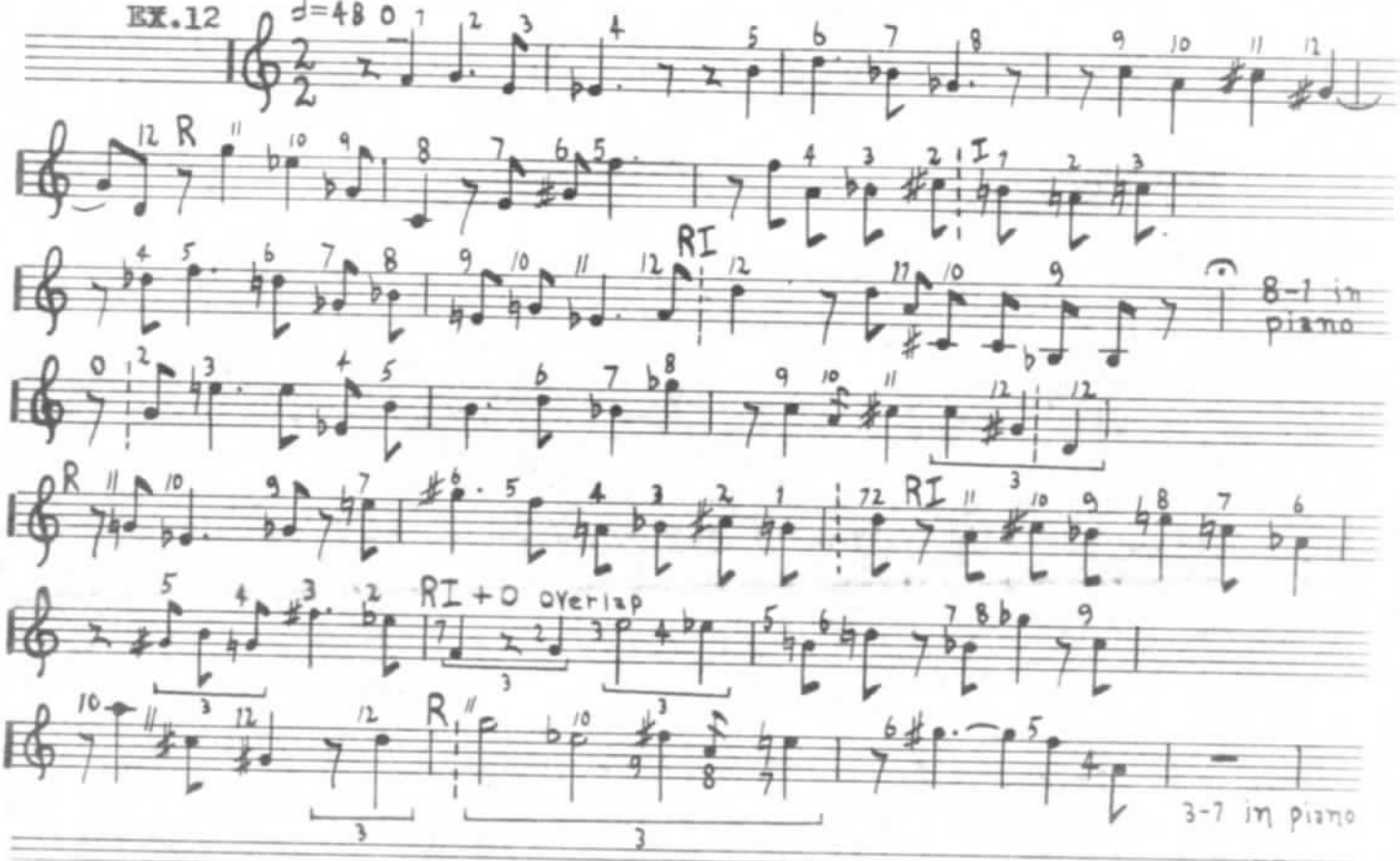
EX.11

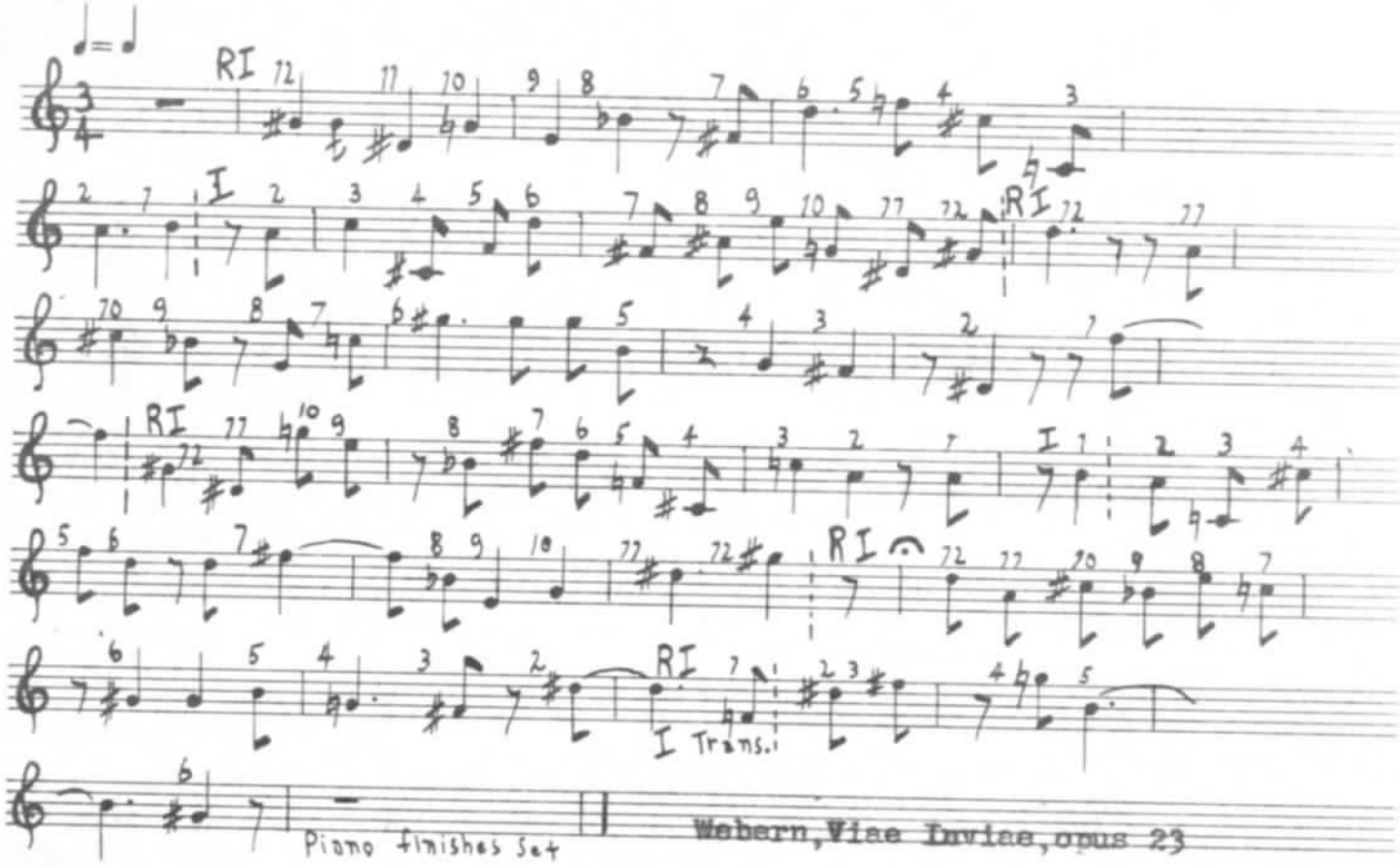


Three Songs from Shakespeare,

'Musick to Heare'

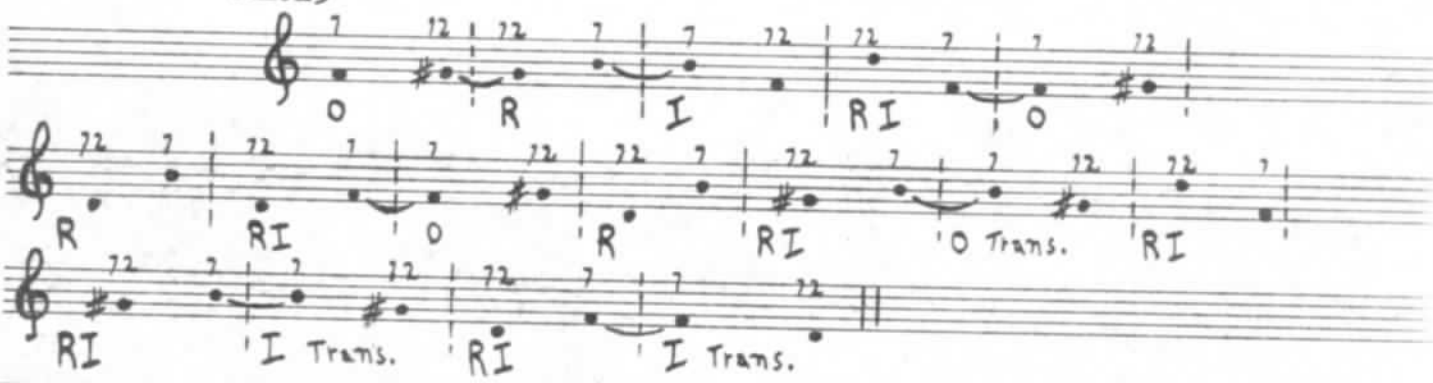
EX.12



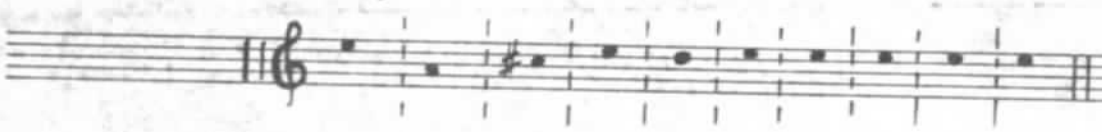


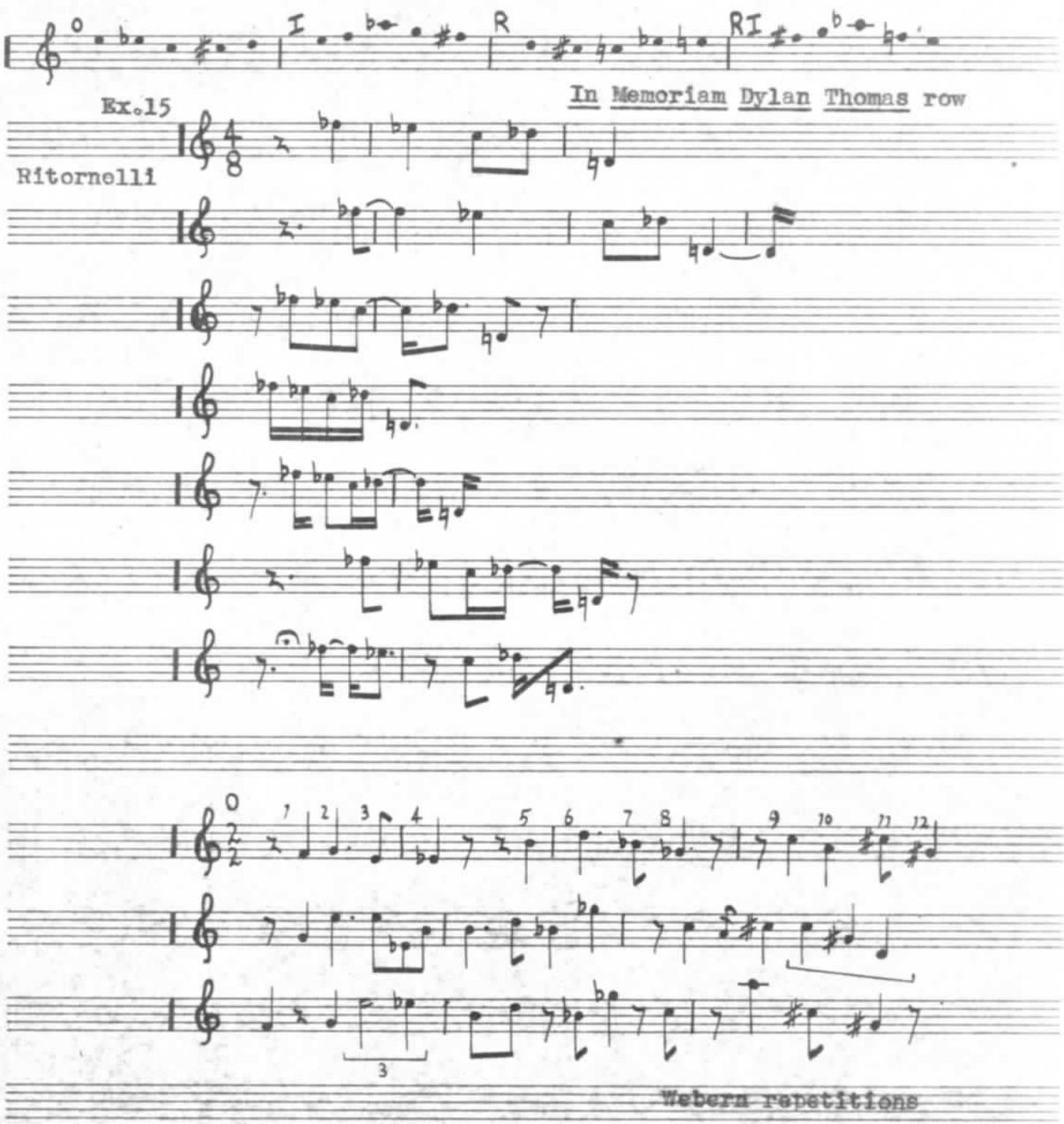
Webern, Viae Inviae, opus 23

EX.13

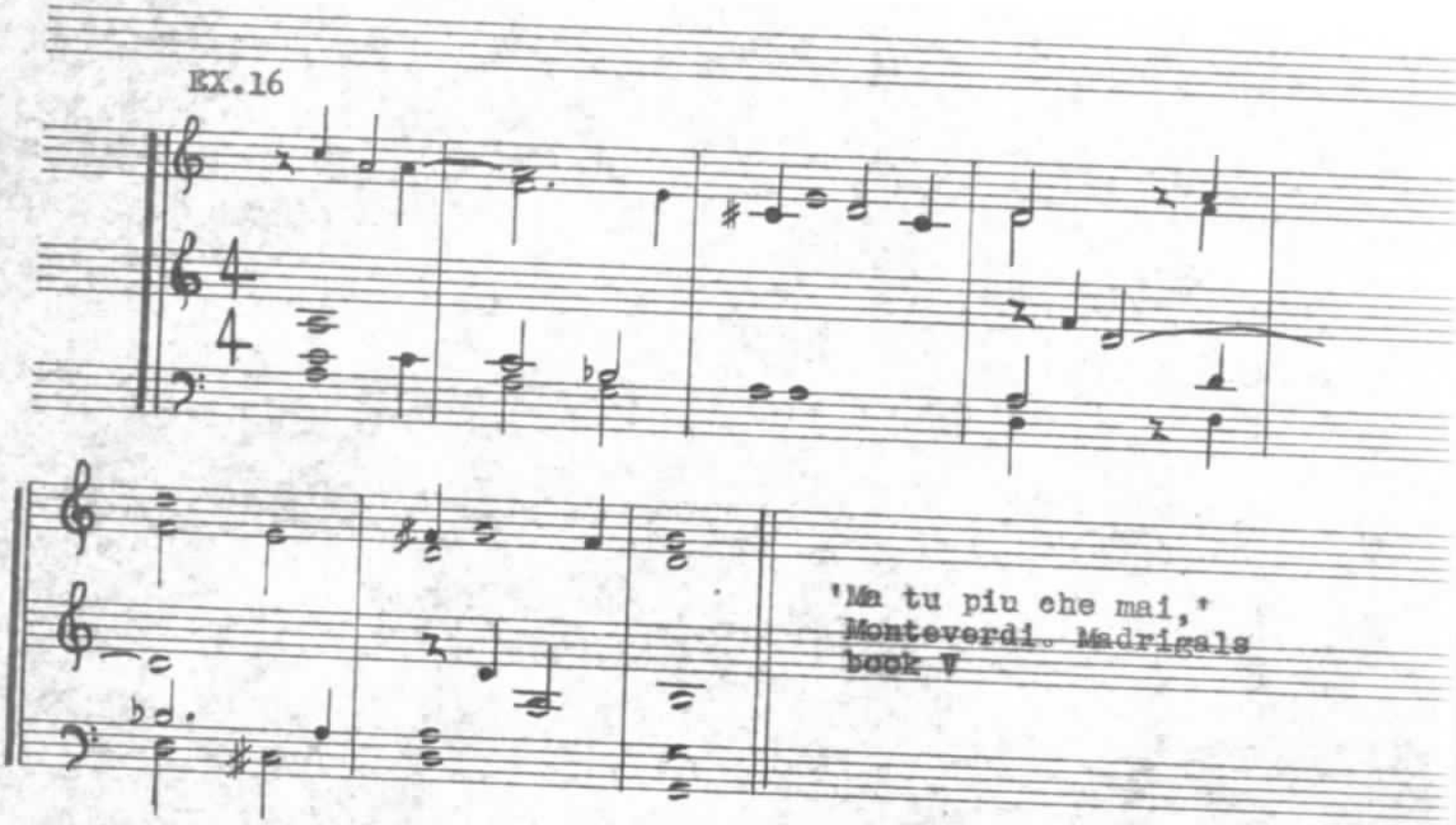


EX.14

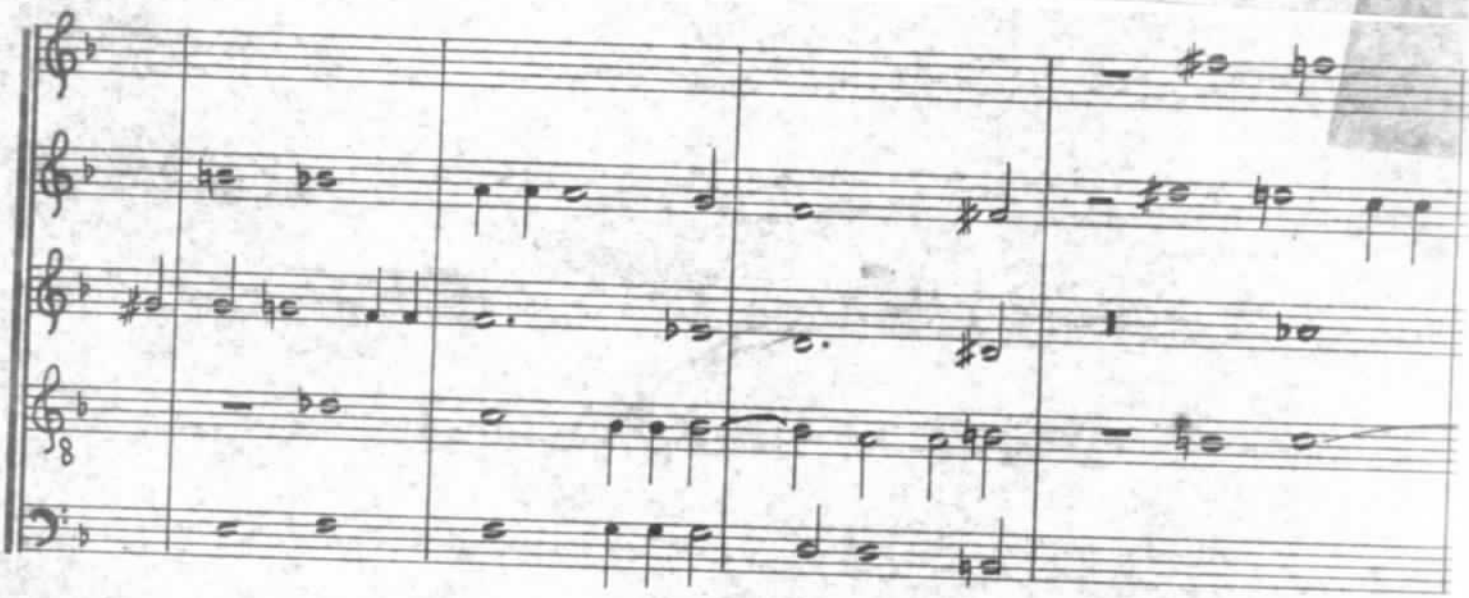


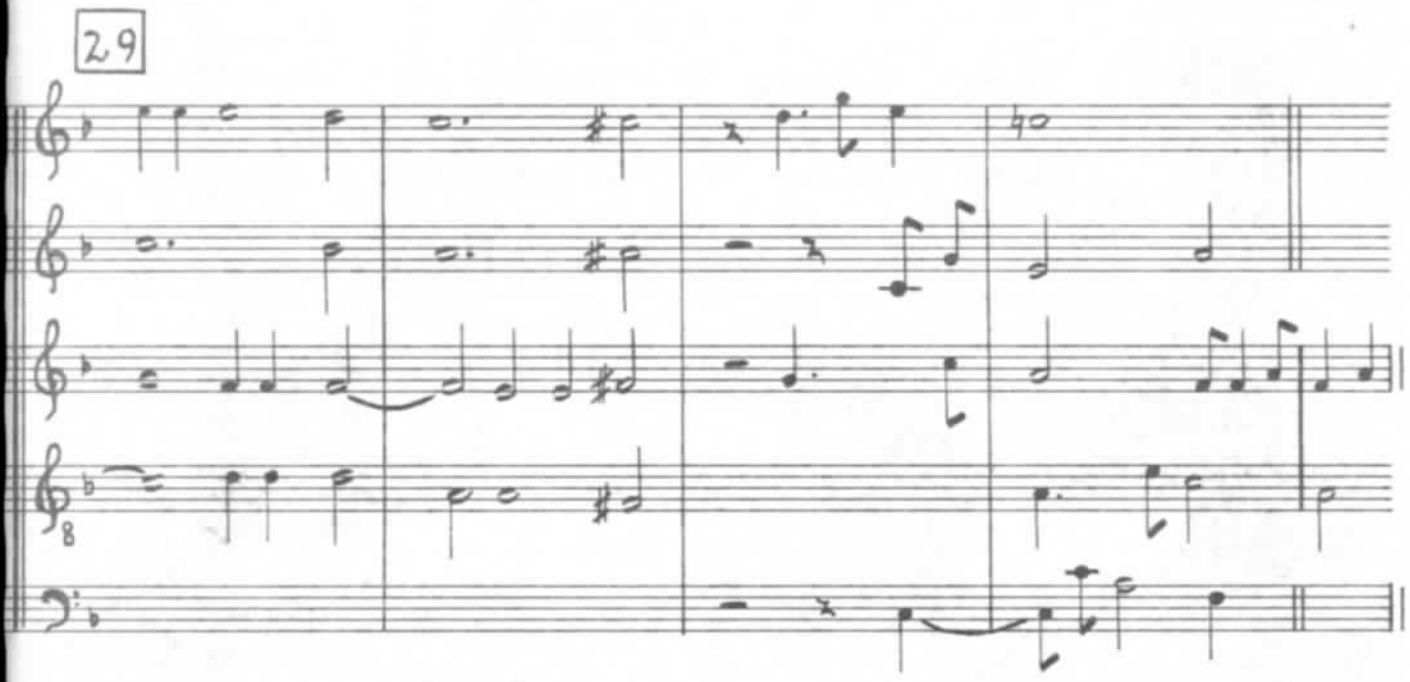

0
I
R
RI
In Memoriam Dylan Thomas row
Ex.15
Ritornelli
0
1
2
3
4
5
6
7
8
9
10
11
12
3
Webern repetitions

EX.16

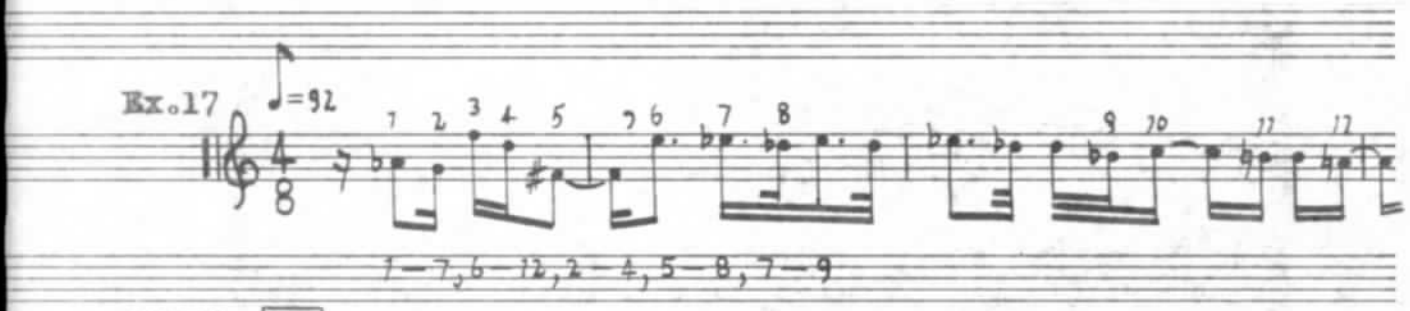


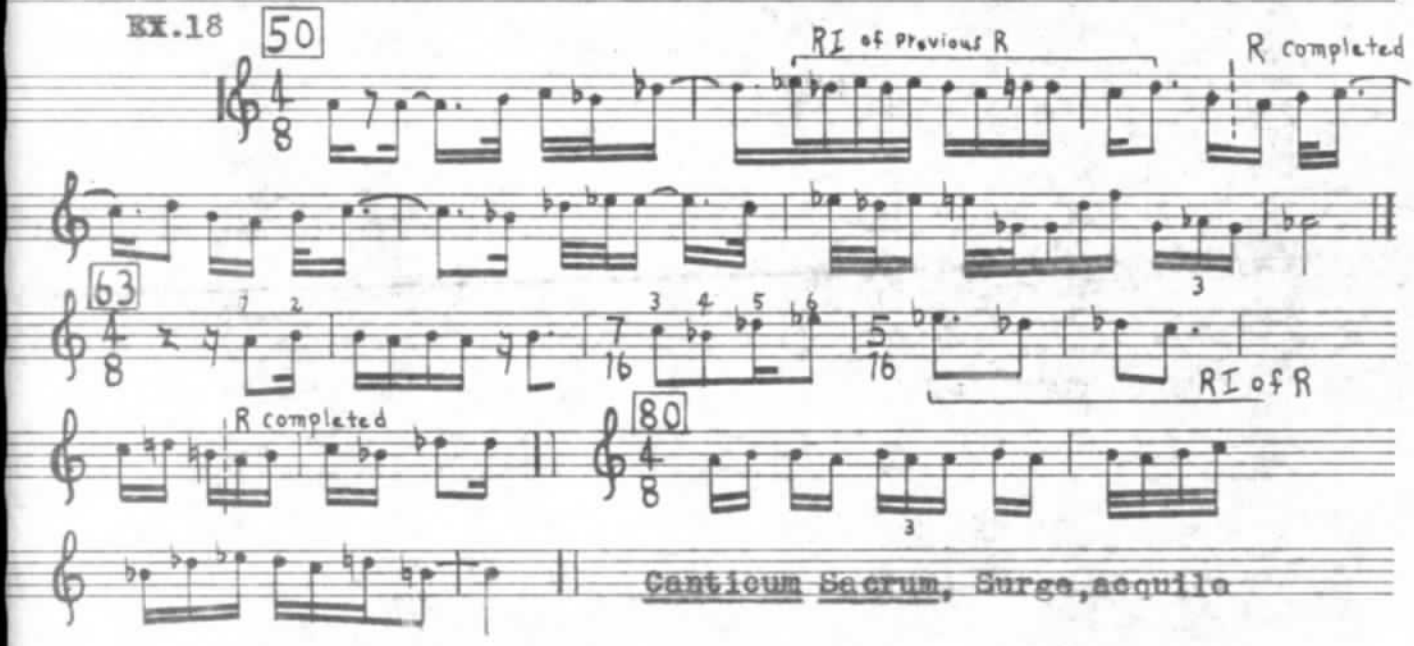
'Ma tu piu che mai,'
Monteverdi. Madrigals
book V





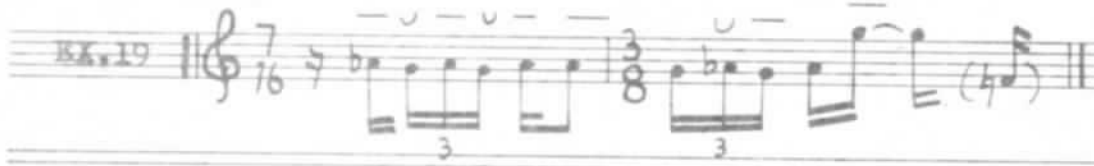
'Tu piangi O Filli mia,'
Gesualdo, Madrigales book VI





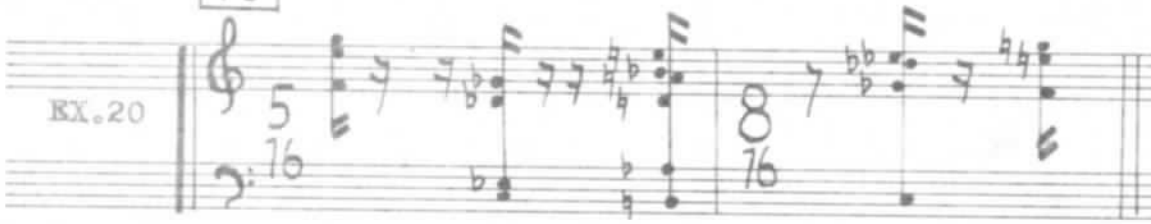
74

Ex.19

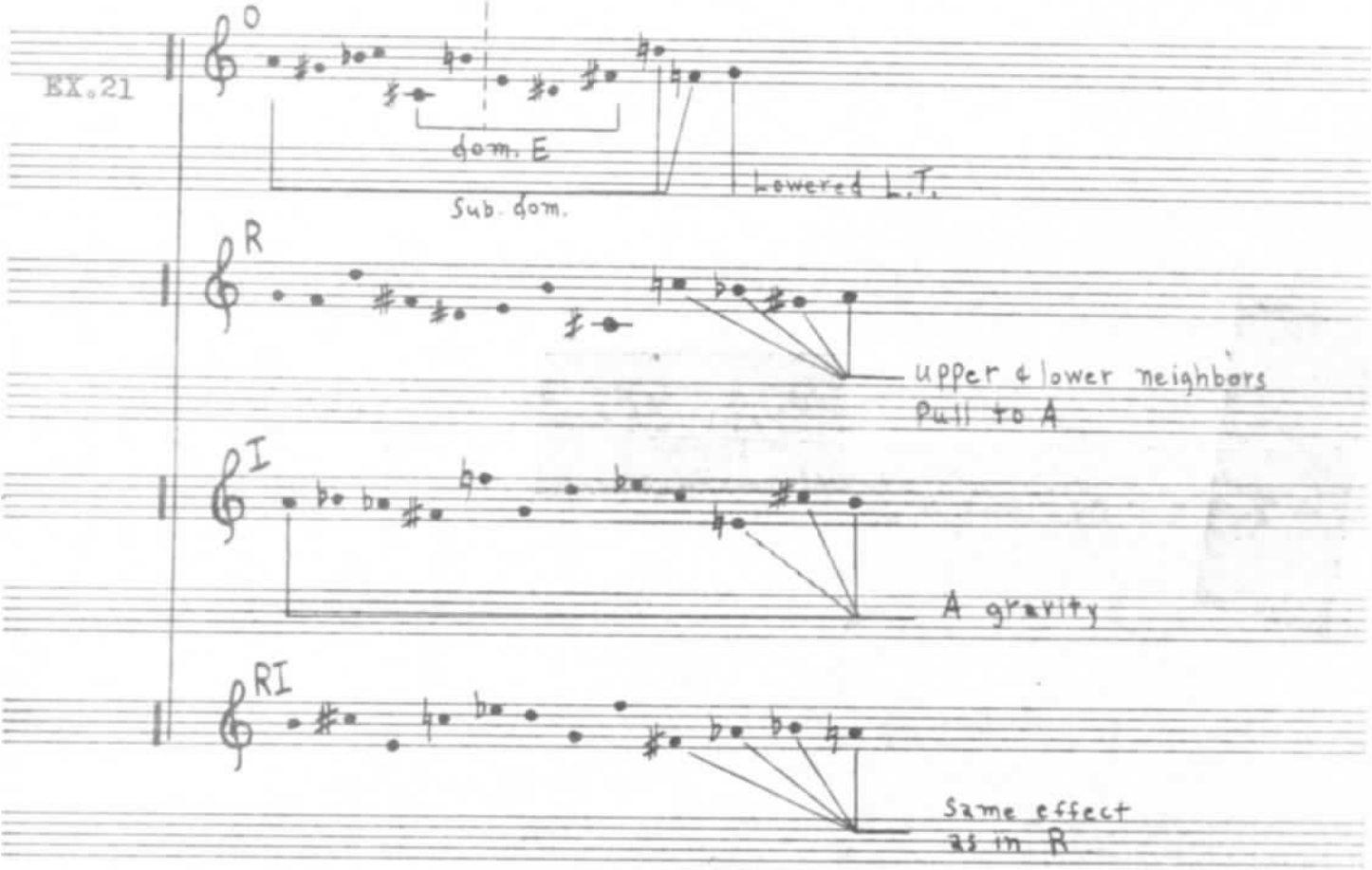


70

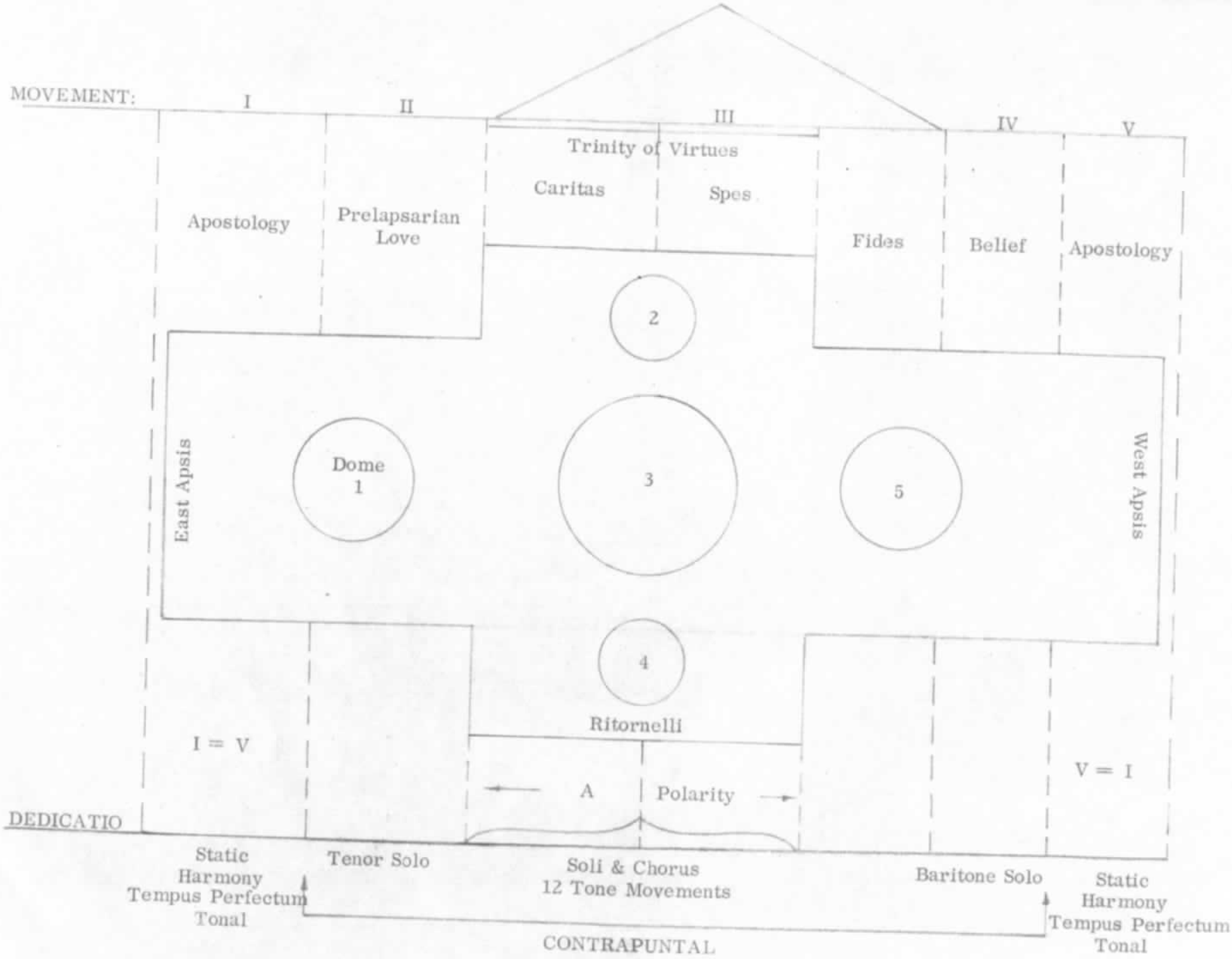
Ex.20



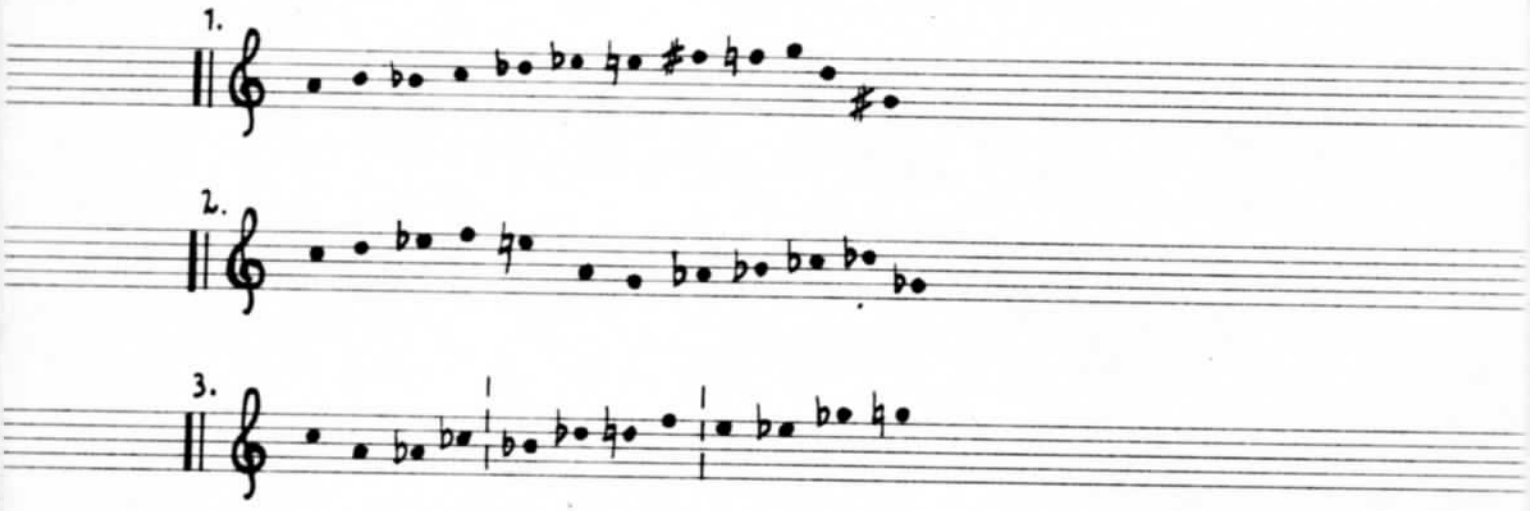
Ex.21



EX. 22

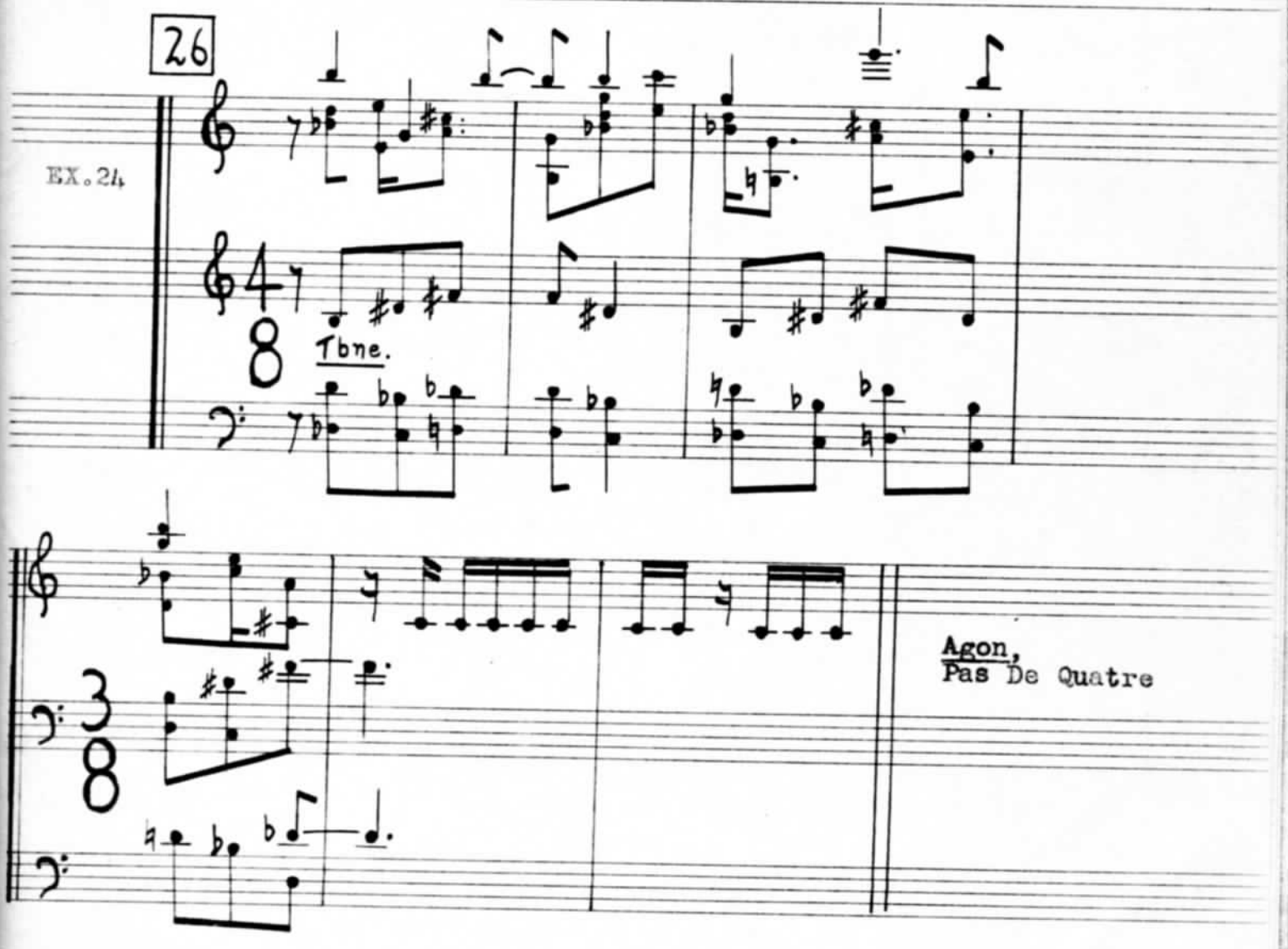

MOVEMENT:
I
II
III
IV
V
Trinity of Virtues
Caritas
Spes
Apostology
Prelapsarian Love
Fides
Belief
Apostology
2
East Apsis
Dome 1
3
5
West Apsis
4
Ritornelli
I = V
A
Polarity
V = I
DEDICATIO
Static Harmony Tempus Perfectum Tonal
Tenor Solo
Soli & Chorus 12 Tone Movements
Baritone Solo
Static Harmony Tempus Perfectum Tonal
CONTRAPUNTAL

EX.23



Agon rows

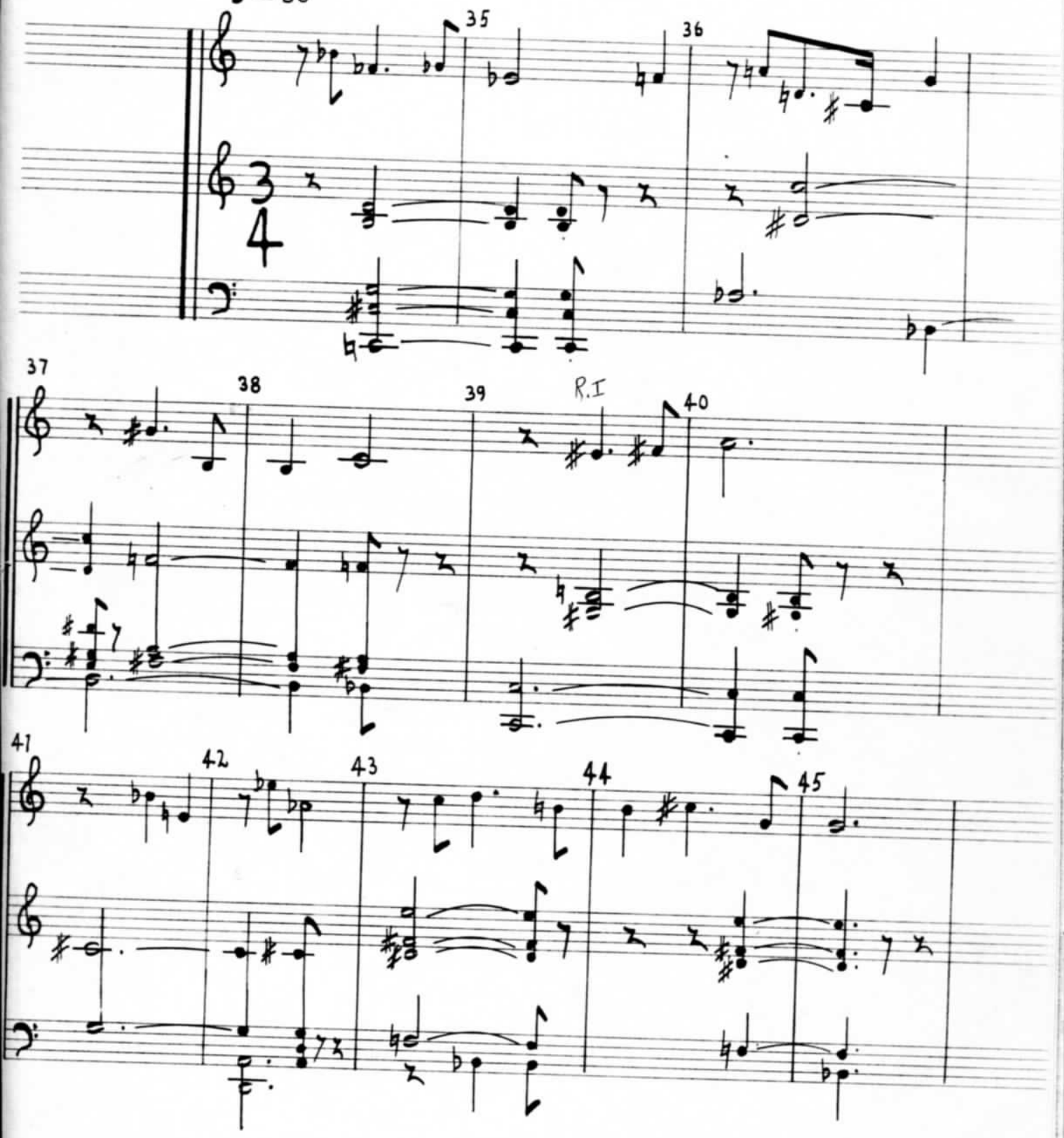
EX.24

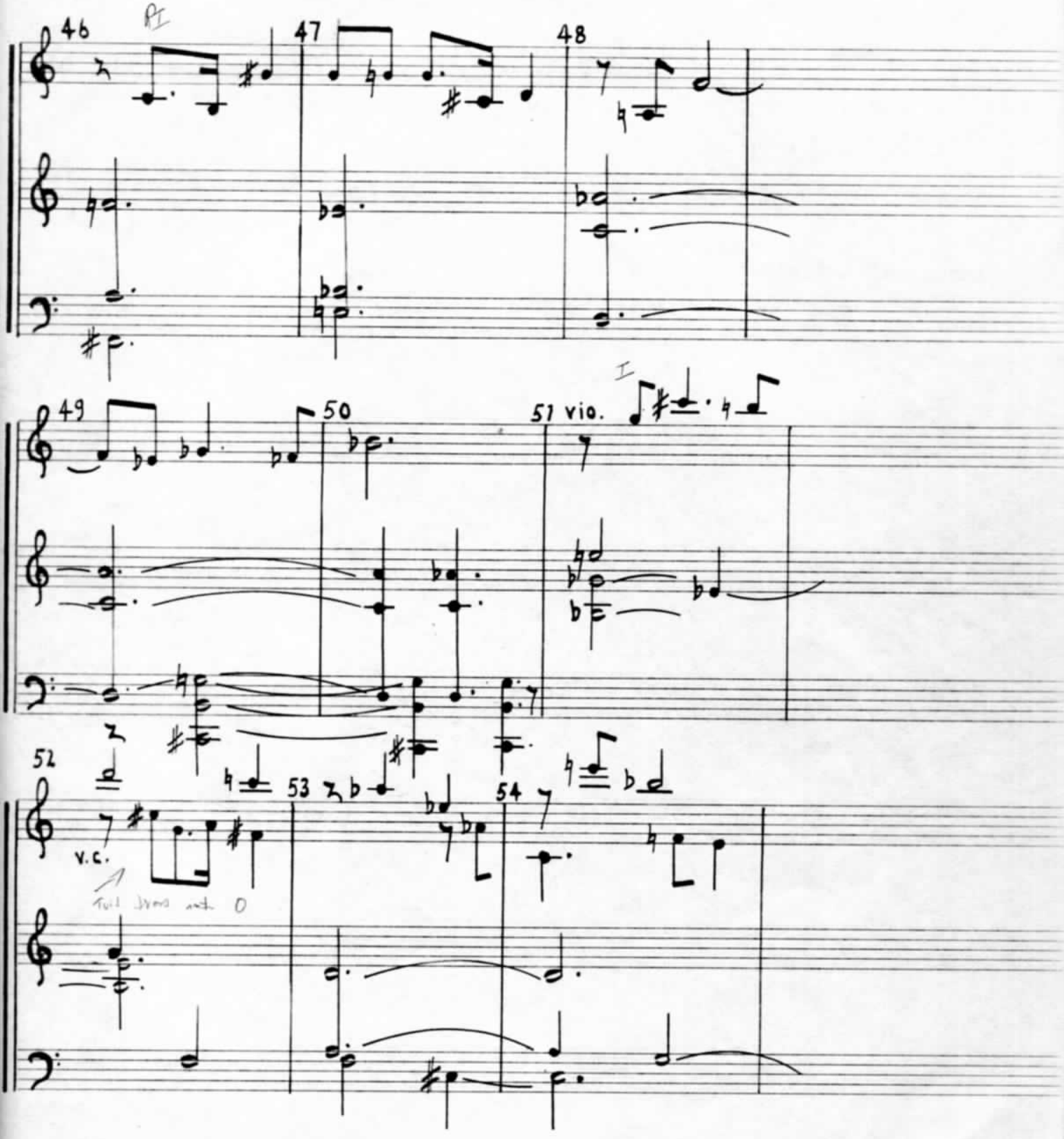


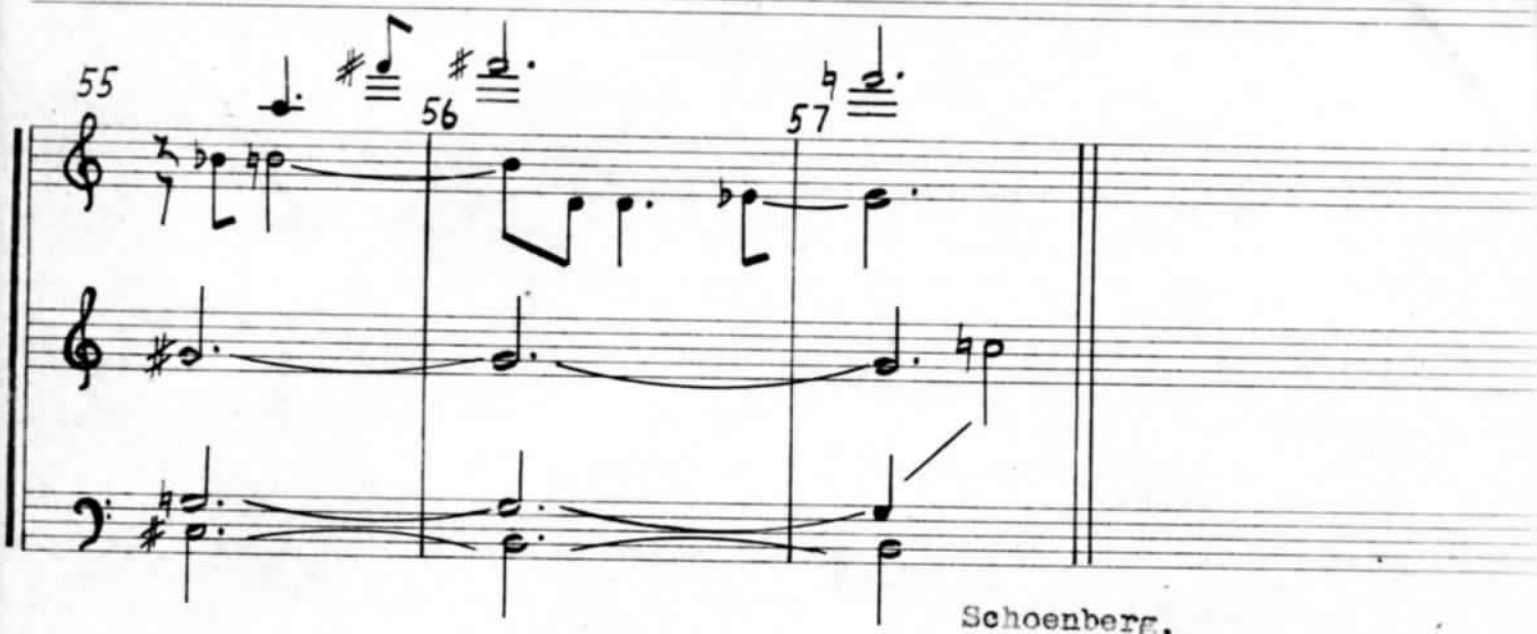
Thema

EX.25

♩ = 88



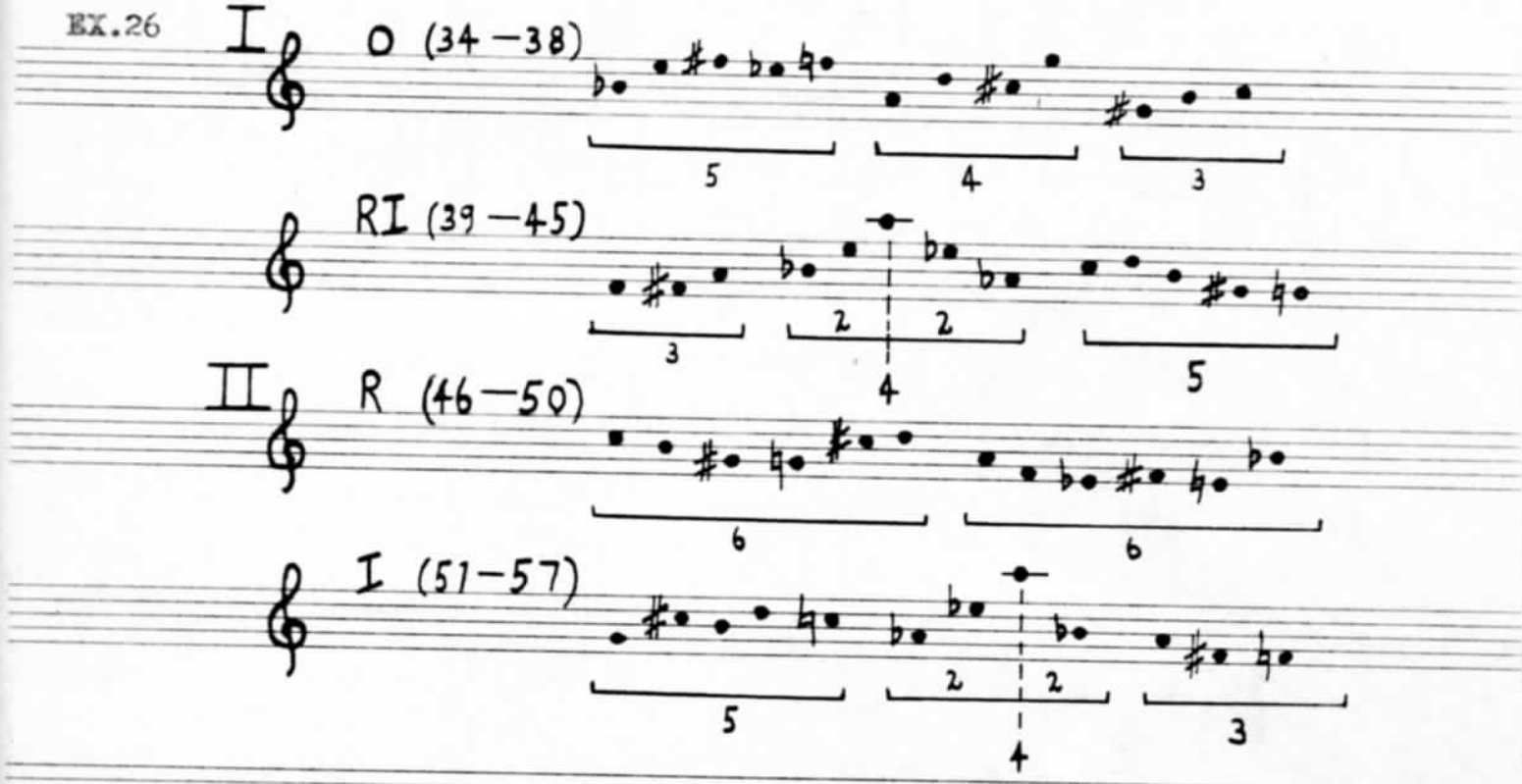

46
47
48
49
50
51 vio.
52
53
54
v.c.



Schoenberg,
Variations for Orchestra,
opus 31

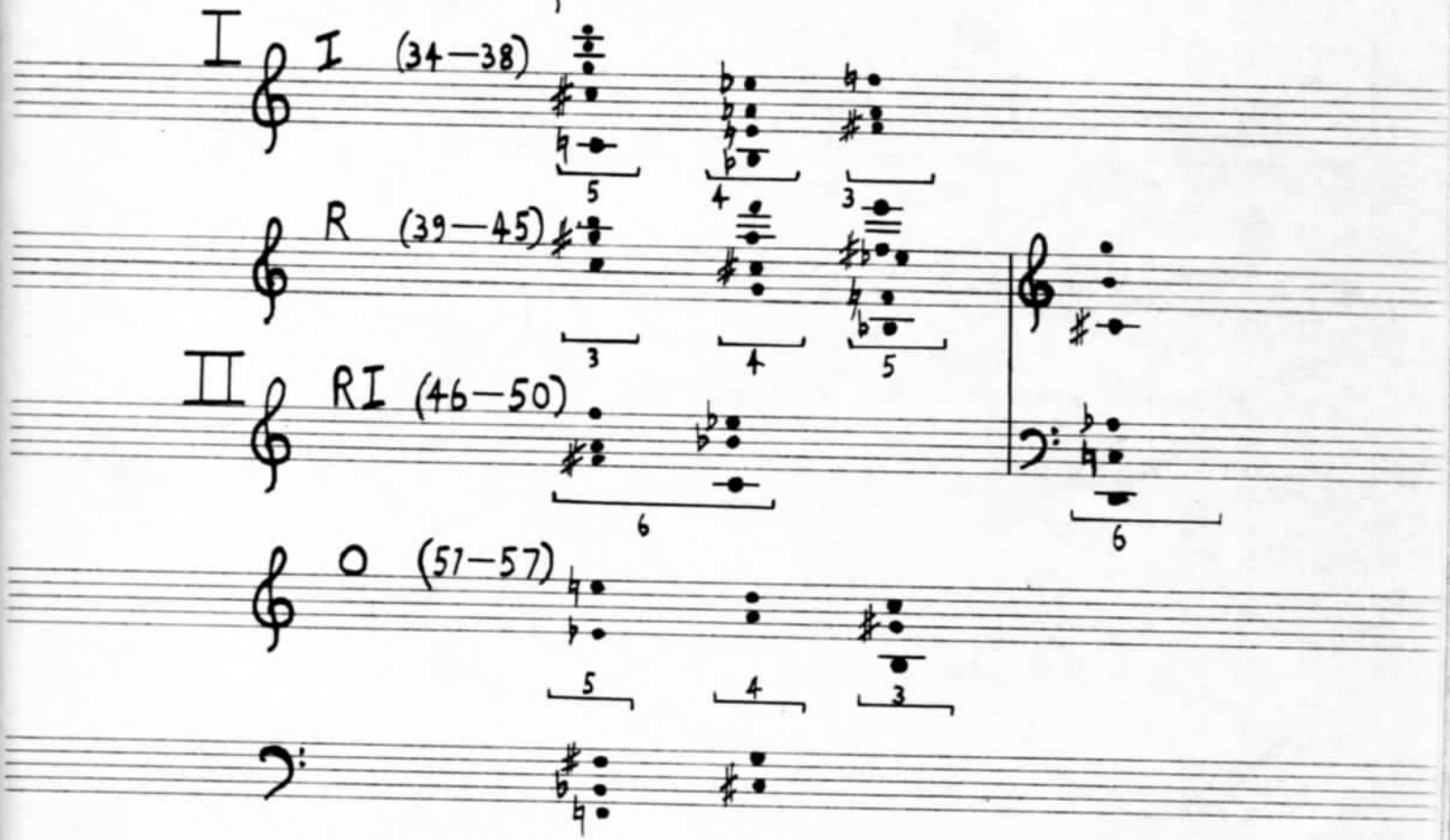
melodic plan

EX.26



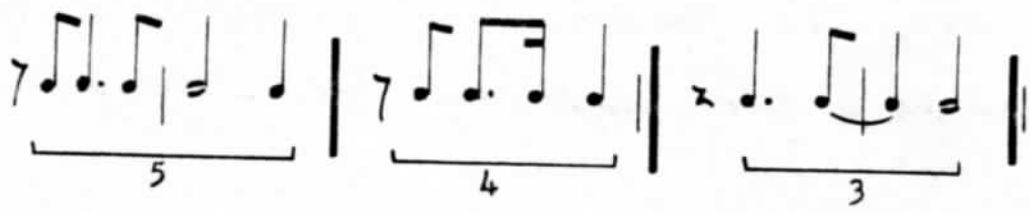
EX.27

Harmonic plan

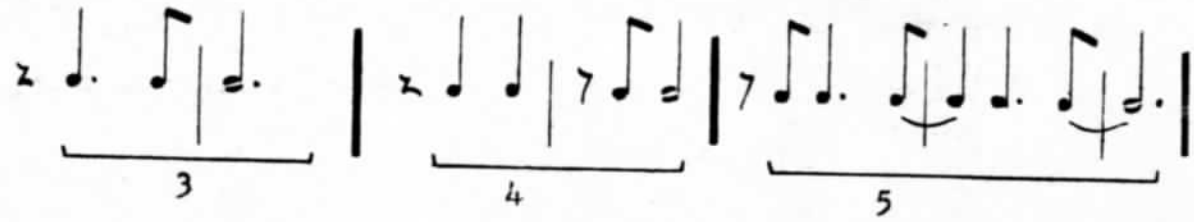


Ex. 28 Rhythmic plan

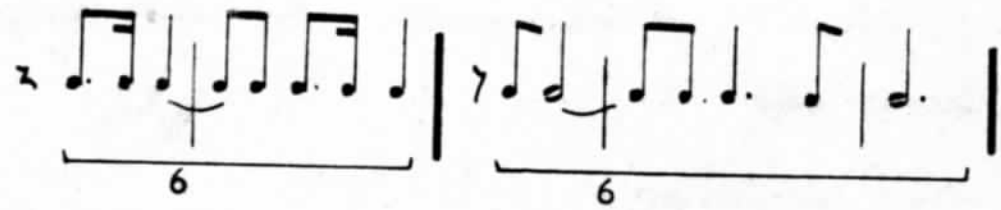
I
(34-38)



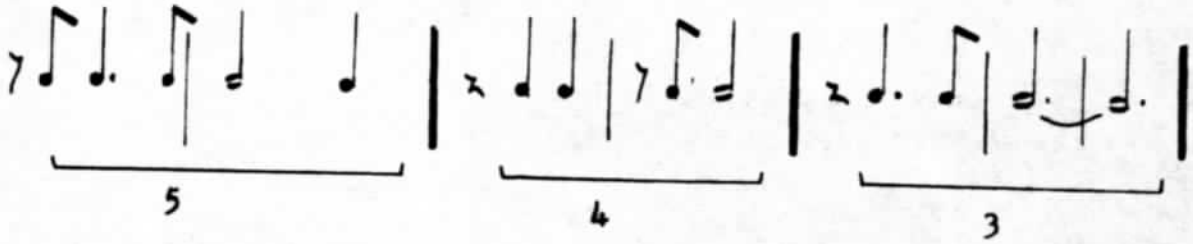
(39-45)



II
(46-50)

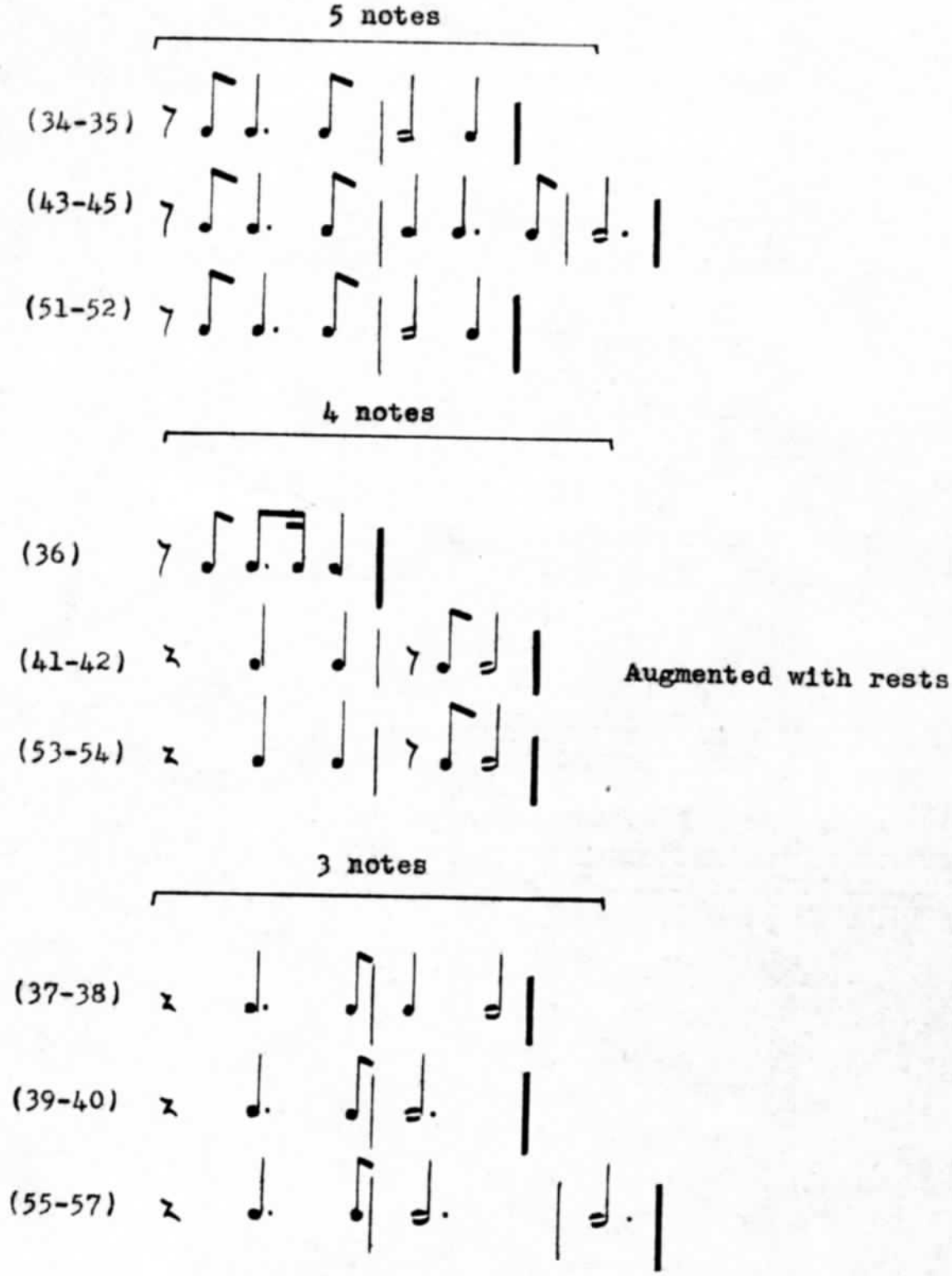


(51-57)



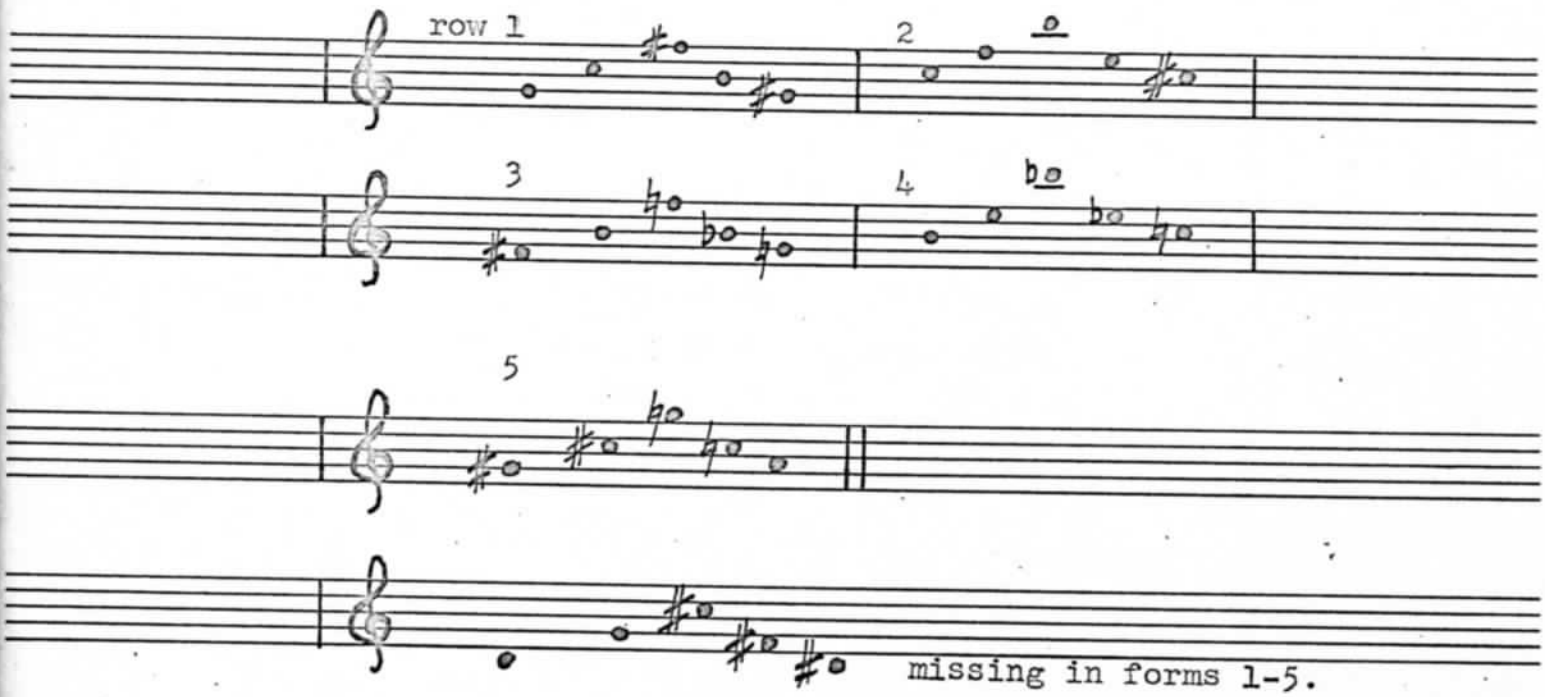
Variations for Orchestra, opus 31

Ex. 29



Variations for Orchestra, opus 31

EX.30



missing in forms 1-5.

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5. Composition with Twelve Notes by Josef Rufer; Rockliff, London, 1954.
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8. Schoenberg and his School by Rene Leibowitz; Philosophical Library, New York.
9. Tonality Atonality Pantonality by Rudolph Reti; Rockliff, London, 1958.
10. A Definition of Culture by T.S. Eliot; Harcourt, Brace and Company, New York.
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Schoenberg's Tone rows and the Tonal System of the Future, by R.S. Hill.

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Is the Twelve Tone Technique on the Decline ? Ernst Krenek.

15. Musical Quarterly, vol.XLVI, no.2, April, 1960.
The Extents and Limits of Serial Techniques, Ernst Krenek.

All Stravinsky scores are published by Boosey and Hawkes, with the exception of the Three Japanese Lyrics, Editions Russe de Musique, Paris.

The Webern and Schoenberg scores are published by Universal Edition, Vienna.