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SOME USES OF ANALYSIS TOWARDS A PERFORMANCE OF WEBERN'S OP.22 MOVEMENT I

IN MEMORIAM RUDOLF KOLISCH

by RICHARD HERMANN

(Editor's Note: This article will be presented in two issues of WINDS QUARTERLY. The current issue contains Section I - "An overview and Misconceptions of Webern's Style" and the first part of Section II - "An Analysis of the First Movement of Quartet, op. 22". The next issue of WINDS QUARTERLY, (Summer 1981), will contain the conclusion to the analysis contained in Section II and address performance problems in Section III. It will be helpful to have at one's disposal a copy of the score (UE 10050) while reading this article.)

SECTION I
AN OVERVIEW AND AN EXPLANATION OF THE MISCONCEPTIONS ABOUT WEBERN'S MUSICAL STYLE

Webern's Quartet Op. 22, a chamber music piece of importance, has attracted the attention of some of today's major theorists. The Quartet perhaps initially owed this interest to its position as the second work of Webern's last stylistic period which started with his "path-breaking" Symphony Op. 21.

While the symphony created a new and rather simple syntax along with new and further developments of musical space, time and use of timbre from the new vocabulary of Schoenberg, the Quartet appears to be an even stronger affirmation that Webern's later musical ideas were closely alligned with the Austro-German heritage of the preceeding centuries. In a sense, this work clearly shows Webern as a traditionalist.

In view of Webern's background, his thorough German late romantic compositional training with Arnold Schoenberg, his studies in musicology with Dr. Guido Adler at the Universtiy of Vienna leading to his doctoral dissertation on Heinrich Isaac's (ca. 1450-1517) Choralis Constantinus, his work as an editor for Universal Edition, and his career as a conductor, this idea of affirming the new aspects of his compositional technique with the past should not seem strange at all. Perhaps in the confusion of our initial rush to meet the musical challenges of Webern in our roles as performers, composers, theorists, and teachers, we have missed the traditional aspects of Webern. Instead we have substituted misconceptions born from our views of Webern as the "revolutionary".

Before turning to the question of Webern as a traditionalist by way of an analysis of the first movement of Op. 22, a brief examination of three common misconceptions about Webern are in order. These misunderstandings are his use of "pointillistic" technique, the use of an extensive "precompositional" technique, and character assasination. Each misconception shall be discussed in turn.

In David Cope's book New Directions in Music we have a common pairing of Webern with pointillism."Webern's pointillism had already infected the European younger generation...".[1]

Due to the limitations of space, I will not attempt a definitive essay on "pointillism"; however, by using two quotes the common understanding of the term will be clear. First I quote the Pocket Dictionary of Art Terms revised edition edited by Julia M. Ehresmann.

> Neo-Impressionism: An outgrowth of Impressionism pioneered by Georges Seurat and based on scientific juxtaposition of touches or dots of pure color. The eye blends the colors automatically in the involuntary process of optical mixing. Also called Pointillism, Divisionism.[2]

Pointillism is most commonly represented by the above mentioned artist, whose Sunday Afternoon on the Grande Jatte (1886) in the permanent collection of the Art Institute of

Chicago, is perhaps his most famous work. The second quote which applies to this painting, is from Art Through the Ages by Helen Gardner.

> Thus he transformed the illusion of natural appearance into a precise organization composed of people and objects that are solid and arranged with mathematical precision in a deep space filled with sunlight and air; and yet which, paradoxically, form an extraordinarily effective pattern. Such is La Grand Jatte whose pattern is based upon the verticals of the shadows and the shore line, each of which contributes to the psychological effect inherent in the character of its movement.[3]

Seurat, through the use of his "dots", created new subtle shadings of color and light which were unavailable by other means. These shadings in turn were used to describe the various shapes of realistic subject matter which were compositionally very carefully and precisely balanced.

A hasty inspection of Op. 22 appears to confirm the assertion that Seurat's "dot" forming the shape and Webern's timbrally differentiated pitch, dyad or trichord forming a melody in hocket manner, seem analogous. So does Seurat and Webern's careful balancing of the elements of the compositions. However, Seurat's "dot" combines with other nearby "dots" to form a single shape which with other nearby shapes describe a configuration which is in turn balanced with other configurations. Thus each "dot", shape, and configuration have one meaning in relationship to its own structural level and to the other levels of the work's structural hierarchy. Webern's "dots" unlike Seurat's can have more than one meaning on one structural level. This statement will become clearer when the analysis of the first movement reveals several simultaneous canons created from the same few "dots". Therefore the term "pointillistic" when applied to Webern distorts and slights the richness that his music contains.

Precomposition may be defined as 1) consideration by the composer of the possibilities inherent in some musical material in the abstract, apart from the musical gesture. (or unfortunately as it has come to mean) 2) an activity in which the composer rigidly defines all aspects of the piece on paper via graphs and formulas and then merely mechanically copies out the score from them. Being accused of this mechanical process is the albatross that has been hung around the neck of Webern and other similarily abused composers. After precomposition in the first definition supplied, comes composition which deals with the musical gestures. The musical gesture automatically limits some of the abstract possibilities and it also reveals unforeseen as well as foreseen musical relations which in turn affect the further progress of the piece. In a precomposed piece, using the second definition, no adjustments for the organic and unforeseen can occur, which weakens the piece's musical logic from the perceptual point of view. The listener is left out!

In his article "Webern's Twelve Tone Sketches" from Musical Quarterly Jan. 1971, George Perle, upon examining Webern's sketch books containing the Quartet, makes the following statements about his compositional procedures:

> The first sketches consist only of an initial melodic idea and the row itself, both repeatedly revised. (p. 14)

> The eight and a half pages of sketches, dated Aug. 10 to Sept. 12, 1930, are all discarded versions of the movement and vary in length from about seven to about thirteen measures. (p. 17)

This is a working method similar to that found in Beethoven's sketch books. The fact that the set of Op. 22, quite unlike that of the symphony Op. 21, is not symmetrical, is an interesting observation on the extent to which Webern used precomposition. In short, these facts suggest a technique in which Webern looked for structural possibilities implied by the musical gesture and its set via a continuous shaping of the materials. (The first definition of precomposition.) In addition, this view coincides with Webern's development as a composer interested in themes, motives and their transformations rather than the use of a new extensive precompositional technique. (As used in the second definition of the term).

Finally, no master composer has been subjected to such virulent and sustained attack upon his character. Reginald Smith Brindle in a concise statement from his book The New Music, provides us with a sample of this rhetoric.

> The tenuous, abstract, timeless almost supernatural music of Webern had therefore not only a strong appeal as sound, it also had an intellectual attraction particularly suited to the inclinations of the post-war generation of composers. But though Webern's influence has lasted long, his musical language, so deliberately limited in emotive scope...[4]

The force and directness of measures seventeen to twenty-three of the first movement of Op. 22, played correctly, should belie the contention of tenuousness on the part of Webern! As to being abstract, without reopening the issue of program music, I venture to say that all music is abstract. Of course music moves many people to extramusical as-

sociations; however, unless some agent (perhaps the composer himself) declares an association through written, spoken, or sung language, the same piece of music may well elicit several different extramusical associations in listeners of which none may reflect those of the composer's original inspiration! Incidently, some of Webern's "program" may be gleaned from George Perle's observations on the first movement of Op. 22 in Webern's sketch books. The following quote is from the afore mentioned article.

> The composer, a devoted mountain climber, associates place-names of villages and mountains in the Alps of southeastern Carinthia and Styria and the different flowers that appear as one ascends 'into the highest regions' with projected large- scale formal components of the work. (p.14)

The word timeless in music may mean chaos created by the massive lack of affirmation of meter (or other organization of time) by elements which define meter, such as rhythm, pulse, and attack density (number of voices attacking simultaneously), and the patternings they cause (secondary or cumulative rhythm) as well as pitch oriented groupings of time. A brief rhythmic analysis presented in Section II of this article shows the fallacy of this "timeless" contention.

If composers, theorists, and performers have long praised Bach and Beethoven's intellectual contributions to music, then Webern should also be parised for his offerings. Great music has as one of its attributes intellectual attraction. Perhaps then, those who label Webern's music "intellectual" actually mean that his compositions are not musical. When properly presented, Webern's work is also very attractive on musical grounds quite transcending the mere "a strong appeal as sound...". While it seems improbable to us today, Webern sincerely thought that in twenty years even the postmen in Vienna would be whistling his "tunes".[5]

Brindle's last comment, that Webern's music is of limited emotional scope, implies that Webern was emotionally limited. If Webern were emotionally limited, then we may suspect that his range and depth of the stimuli needed to develop in life were also limited. Reviewing his interests will then provide us with an excellent insight into weighing the truth of this criticism.

Webern was an avid gardener and Alpine hiker. In this last activity he frequently included his family. He was also fond of literature as evidenced by the fact that about half of his creative output was vocal music. Among his favorite authors were: Shakespeare, Trakl, Kant, Rilke, Jone, Goethe and the Bible. In the Arts he most enjoyed the drama of Strindberg, the painting of Segantini and Jone, the sculpture of Humplik and the architecture of Loos. He fathered three children and his marriage was a long and sound one. He also served in the Austrian army. His conducting was noted for its great attention to detail and its musicality, frequently inspiring amateur groups to exceptional performances of difficult works. If anything, we see an abundance and depth of intellectual, artistic, and emotional stimuli. The reader is directed to the composer's biography by Hans Moldenhauer in collaboration with Rosaleen Moldenhauer, Anton von Webern for additional information.

With such a variety of life experiences, we must be suspicious of the charge that Webern had a limited emotional range. We can however, appreciate the factors which caused this erroneous perception of emotional limitation. During and just after World War II few of his scores were published, almost no recordings were available and the composer had died. Futhermore, many of the performers who had worked closely with Webern did not record. Lastly, the scores due to their unusual appearance and reliance on an extensive hocket technique, proved difficult for the musicians of that day to perform and musically grasp. It should not be surprising then that many performances of Webern in the late 1940's through the 1960's were poor both in technical execution and in musicality. All of these factors combined to produce poor "performance practices" for Webern's music and therefore caused some musicians to evaluate his art as "intellectual" and by implication "unmusical". Fortunately, through the efforts of performers who worked with him, composers' efforts, and the general development of performance techniques, these obstacles are being overcome. Several recordings have emerged in the 1970's which do justice to Webern's musical art.

The next section of this article analyzes the first movement of Op. 22, the so called "saxophone quartet", (see Moldenhauer p. 402) with the subsequent section applying the analysis toward a performance interpretation.

SECTION II

AN ANALYSIS OF THE FIRST MOVEMENT OF QUARTET, OP.22

We may expect from the thorough training Webern received in composition and musicology from Schoenberg and Guido Adler respectively, to find some challenging rethinking of older principles of formal and time relations as well as of pitch organization. A prominent feature

of Webern's rethinking of pitch relations is his adoption of Schoenberg's method of composing with twelve tones or the twelve tone row technique. In this article I will use the term set instead of row and it will be considered ordered (serial) unless otherwise specified. Those relations which Webern exploits however, are quite different in emphasis from those of his teacher-friend and additionally, are profound. This precompositional feature is called Invariance.

Three aspects of this feature may be found in this movement and they will be informally described below. This discussion is indebted to Milton Babbit's work and formal definitions may be found in his article "Twelve-Tone Invariants as Compositional Determinants." [6] The first feature concerns the relationship that occurs between successive set forms. In the antecedent set form the pitch-class content of some adjacent order pairs (dyads) will be retained with different but adjacent order numbers, in the consequent set form of the same type at some transpositional level. This "melodic" or horizontal feature between sets in Op. 22/I is shown in Fig. 1. The broken line shapes surrounding pitch-class letters indicate some of those dyads whose pitch-class content may potentially be made explicit in the consequent set. Similar unbroken shapes surrounding dyads show this invariance principle made compositionally and perceptually explicit in the piece. This technique serves as an admirable device for maintaining immediate horizontal continuity. Superscribed numbers to the immediate right of the pitch-class letters indicate the register in which the note occurs, thus describing the exact pitch in the piece. The registral numbering system is that suggested by the Acoustical Society of America. In this system middle C up to but not including the next C is called register 4. Each successive ascending register adds one to the register number and each successive descending register subtracts one from the register number. The results of Fig. 1 should be confirmed with the score.

The second feature is the vertical or "harmonic" aspect of simultaneously sounding set forms. Informally, simultaneously sounding set forms will be called a set group. This term is not used with the exact meaning as defined by Milton Babbitt who introduced this term from mathematics into music. The somewhat looser usage is dictated by the need at hand and the reader is again directed to his article[7] for a formal discussion of these matters. Smaller subsets may be formed from the set group by selecting the pitch-classes that have the same order number in each of the simultaneously sounding sets. This can be viewed as a possible vertical or "harmonic" aspect of the set group. By carefully selecting the set forms and their transposition numbers these subsets' pitch-class content can be retained. The succession of these subsets however, will be rearranged. Fig. 2 shows those "harmonic" invariants of the set group which are retained and made compositionally and perceptually explicit by the repetition of the pitch-classes in the same register (exact pitch) of the consequent set group as they appeared in the antecedent set group. These musically significant vertical invariants are displayed in the graph by circles. Beneath the pitch letter names are a series of numbers which indicate the rotation of these vertical invariant subsets in subsequent set group presentations.

The last facet of invariants is a special case of the preceeding vertical subset idea. In this case simultaneously presented sets can be precompositionally designed to have some vertical invariant subsets which will have pitch-classes that are duplicated. This may be exploited so as to give certain pitch- classes more emphasis. In this movement the pitch-classes f# and C are given importance in this manner. They are also compositionally made important as specific pitches ($F\#^4$ C^4 and C^5) that rarely move registrally. They form the exact middle of the registral space this movement occupies. Many important motions in the piece are initiated, terminated or climax upon these pitch-classes.[8] The pitch-classes E and Bb also share this precompositional bias; however, in the context of this movement, the precompositional importance of these pitch-classes is frequently denied. It sould be noted that the dyadic vertical invariant subsets can and frequently are symmetrically placed around $F\#^4$, Fig. 3 shows this in detail with precision. It reproduces pitch on the horizontal axis each square equaling a semitone, duration on the horizontal axis each square equaling an absolute value (rest or sound) of a sixteenth note, and by the way the square is filled in, timbre. This figure helps to correct some distortions inherent in the score which is after all a kind of tablature. The graph is particularly helpful in view of the frequent clef changes and voice crossings of this piece. The precompositionally weighted vertical invariants, pitch-classes F#, C, E and Bb, are shown in Fig. 2 with broken circles.

The important invariants, those which retain their specific register within each large section as divided by the repeat marks, can be thought of as a large scale "harmonic progression" which spans the entire movement. The "harmonic progression" of the subdivisions of each large section can also be found by similar means. This is a powerful tool for vertical coherence. Fig. 4 displays these "progressions" in the abstract as simultaneous verticalities ("harmonies"). By consulting Fig. 3 and the score it will be seen that these are presented

not as simultaneous "harmonies" but are staggered in time similar to arpeggiations in time of important harmonies embellished by non-chord tones and less important harmonies in tonal music. In this piece the embellishments (pitch classes which move frequently in register) are usually in their totality within a section of the piece, symmetrical around F#[4].

It may be observed with interest the parallel development of figured bass theory, which measures intervals from the bottom voice up describing aspects of tonality, with Newton's elucidation of the principles of gravity in the seventeenth century. Also note the twentieth century parallel of Neils Bohr's concept[9] that electrons, depending upon various conditions, move back and forth between several orbits each of which has a characteristic amount of energy, and that they move around an atom's central core of protons and neutrons, with Webern's use of invariants placed around a central location in musical space. These various electron orbits may be loosely compared with the way in which musical space (register), duration, and density (simultaneous attacks) create varying sonic waves around the central F#[4]. This can readily be seen from Fig. 3 and is easily heard in the piece.

Webern's rethinking of formal schemata and devices in this movement will be briefly commented on before the main focus of the paper is discussed. This first movement's rhetoric is analogous to a monothematic Sonata-allegro form. It's principal divisions are as follows: introduction measures one to five, exposition measures six to fifteen, development measures sixteen to twenty-seven, recapitulation measures twenty-eight to thirty-seven, and coda measures thirty-eight to forty-one. Op. 22/I may at a lower level, be thought of as a series of canons. The only elements not participating in these are: the "theme" presented exclusively by the saxophone[10], a brief passage in the "development section" from measures twenty-one to twenty-four, and the "theme" as it returns in the "recapitulation" presented as a "Klangfarbenmelodie" by the three single line instruments. With the exceptions of the presentations of the "theme" the rest of the piece which has frequent voice crossings and rapid change of timbre, does not employ "Klangfarbenmelodie" or changing timbre merely for some "gimmicky coloristic" effect. In addition to canons formed by the sets as totalities, timbre is used to differentiate several more canons simultaneously nested within one another. An interesting observation can be made on the precision of the canons in the "exposition" and "development" in time, register and pitch and the slight imperfection (rhythmically only) in the canons of the "introduction," "development,"[11] "retransition"[12] and "coda." The correlation in the rather divisive traditional view of sonata form, in which the "exposition" and "recapitulation" are considered more stable and complete than the other fantasia-like unstable areas, with the perfection or slight imperfection of canonic devices is striking. These canons can be found in Fig. 3. In addition, please note in Fig. 3, that the top and lower staves of the piano part frequently have different "voices" in these canons. Perhaps we have grounds to think of this movement as a sonata for a quintet played on four instruments.

Another facet of this "neoclassical" analog to the sonata form is in the precompositional set selections and the prominent compositional display[13] of some of these set terminals in the "introduction," "exposition," "recapitulation," and "coda" which emphasize pitch-class Db/C# and the emphasis of these forces in the "development" on the pitch-class F#/Gb. These emphases create the exact inversional motion of the prominent terminals down a perfect fifth then up a perfect fifth, compared with the typical long range motion of harmonic areas in a sonata, up a perfect fifth (e.g.I-V) then down a perfect fifth (e.g. V-I). Refer to Fig. 1 for a quick overview of the set structure and the score for details.

The rethinking of classical sonata form, the resemblance of the voice crossing and "Klangfarbenmelodie" to medieval hocket textures, and the extensive nested canonic technique[14] recalling the Netherlanders, marks the excellence of his compositional and musicological training.

(To be continued in WINDS QUARTERLY, Summer 1981.)

FOOTNOTES

1. David Cope, New Directions in Music, Wm. C. Brown Co., Dubuque, Iowa, 1971, p. 1.

2. Julia Ehresmann, Editor, The Pocket Dictionary of Art Terms, New York Graphic Society, Boston, Ma., 1971.

3. Helen Gardner, Art Through The Ages, Revised Edition, Harcourt, Brace, & Co., N.Y., N.Y., 1926, pp. 714-715.

4. Reginald Smith Brindle, The New Music, Oxford University Press, N.Y., N.Y., 1975, pp. 14-15.

5. Hans & Rosaleen Moldenhauer, Anton Von Webern: A Chronicle of His Life and Work, Alfred A. Knopf, N.Y., N.Y., 1979, p. 543.

6. Milton Babbit, "Twelve-Tone Invariants as Compositional Determinants" reprinted in Problems of Modern Music, Ed. by P.H. Lang, Norton, N.Y., 1960, pp. 108-121.

7. Ibid.

8. An example of the importance of pitch-class C is its role as the registral extremes C^4 and C^2 of the piece which cap the main climactic moment of the piece in measures twenty-one through twenty-three. The importance of pitch-class $F^{\#}$ will be demonstrated soon.

9. Charles E. Dull, H. Clark Metcalf and John E. Williams, Modern Physics, Holt, Rinehart and Winsten, N.Y., 1964, p. 153.

10. The saxophone is the only instrument which exclusively presents two sets successively in the piece (see Fig. 1 and the score). Later pages in this article will discuss certain unique rhythmic properties that it also possesses.

11. Note that this section is the only one which contains a small area without canons (see Fig. 3).

12. The "retransition" starts when the winds introduce R_0 and RI_0 in measure twenty-four and extends through measure twenty-eight. Its function is in preparing the return of the theme and so is analogous to the retransition reintroducing the main theme and the tonic harmony as the main vertical focus, by way of a prolonged dominant.

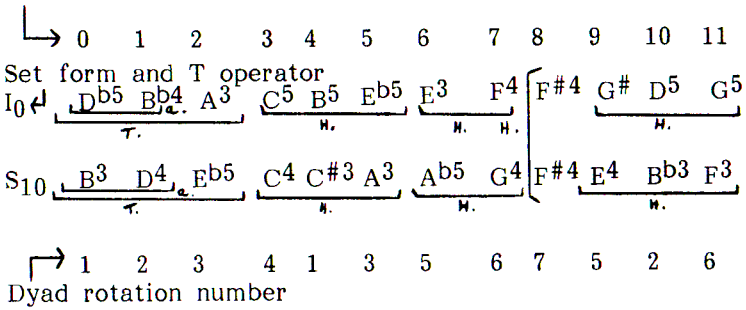
13. An obvious example is the very beginning and ending of the piece in which the pitch-class $C^{\#}$ terminals are put in a preferential (end position) placement over the pitch-class B terminals.

14. Another early music feature, some of the nested canons' audability is concealed from the unintiated.

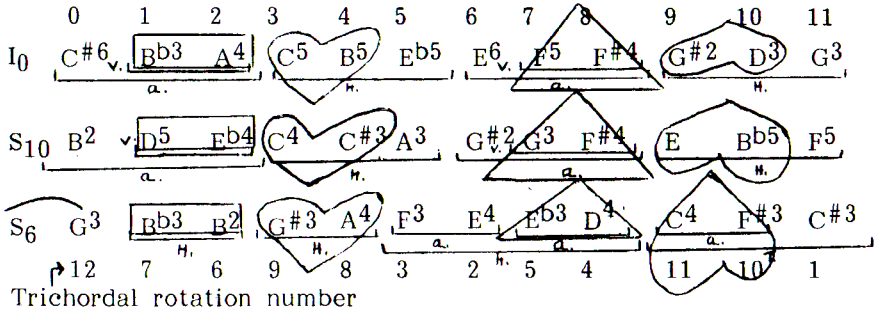
EXPLANATION FOR FIGURE 1 appearing on the next 2 pages

The broken line shape indicates a potential invariant pitch relationship not yet presented in an easily audible manner. The same shape made by a solid line shows that the potential pitch invariant is made clearly audible in the piece at that point.

"Intro." m1-5



"Expo." m6-15 cont.



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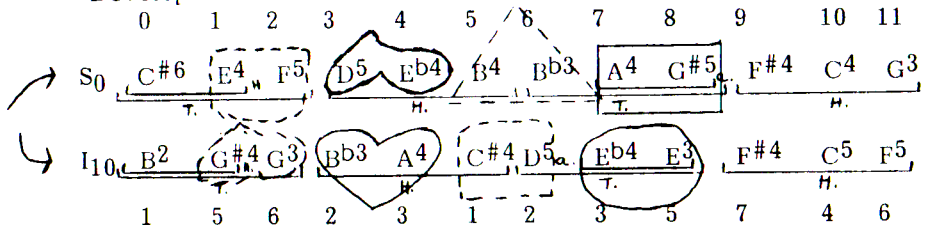
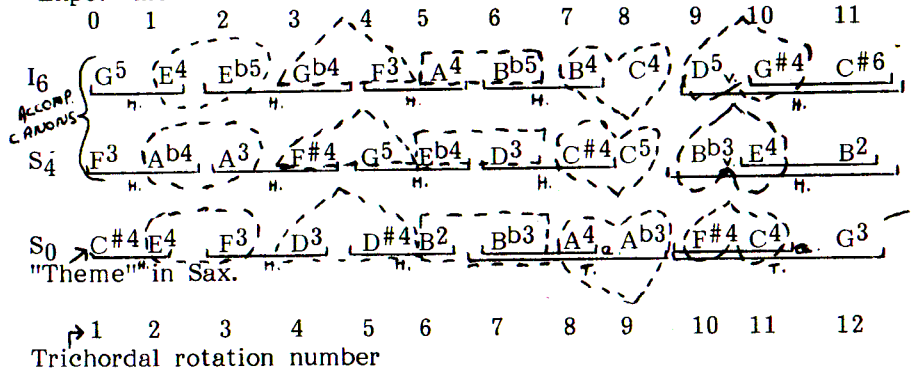


"Expo." m6-15



"Develop." m17-24

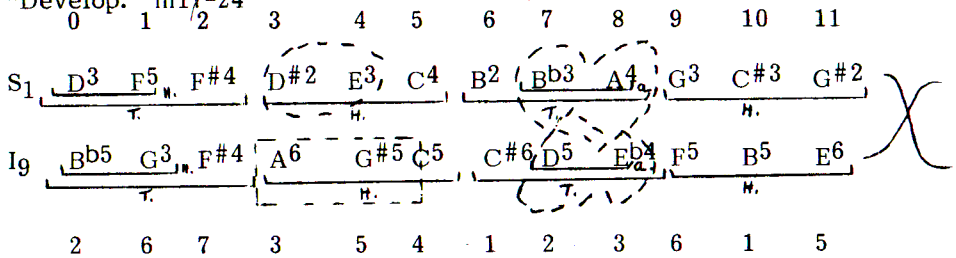


FIGURE 1

└──┘ = a compositional partition of the set ("phrasing")

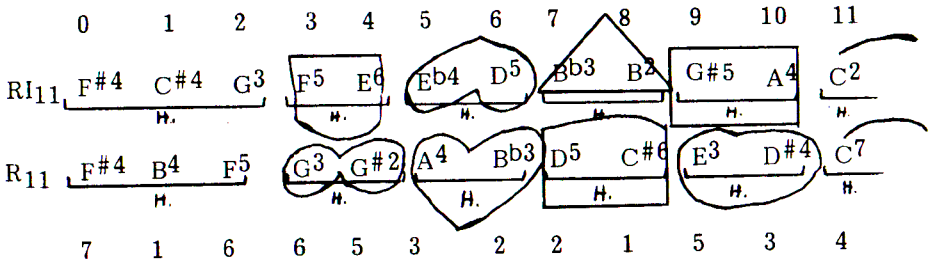
Criteria for compositional partition:

H = Horizontally contiguous, same timbre

V = Verticality in piano, same stave

a.= Similar articulation, close proximity

t.= Same timbre, close proximity



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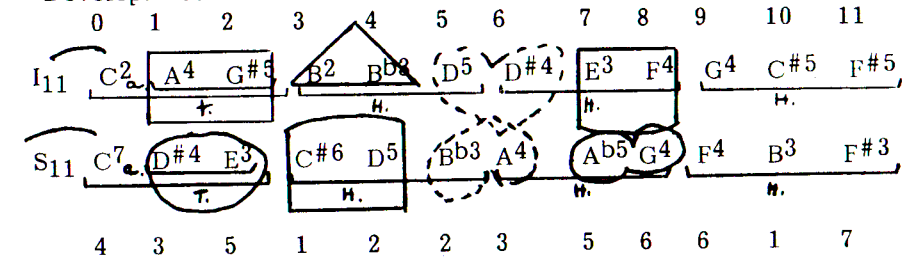
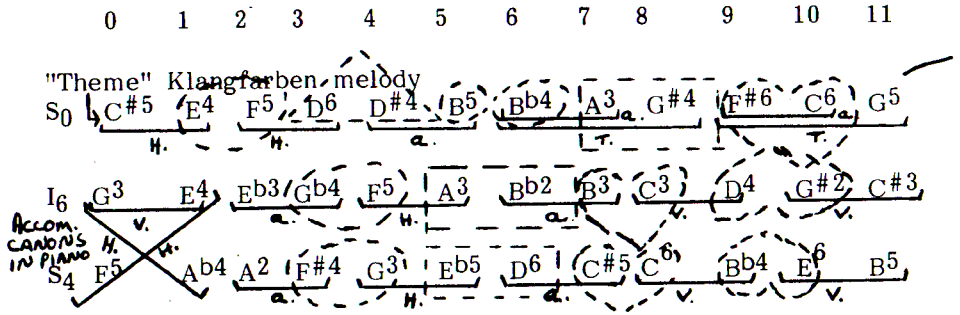
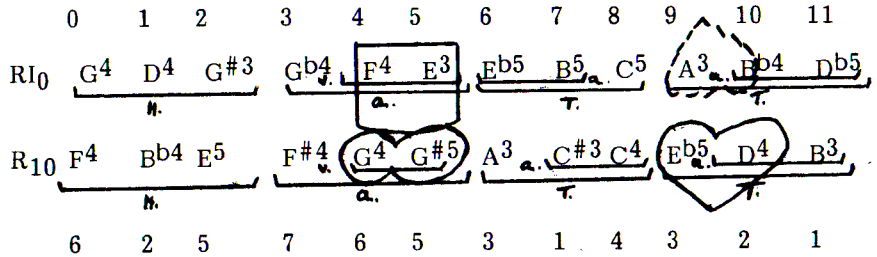


"Recapitulation" m28-37

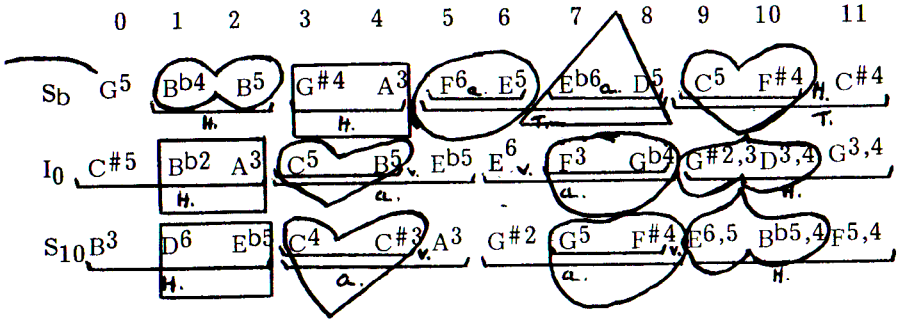


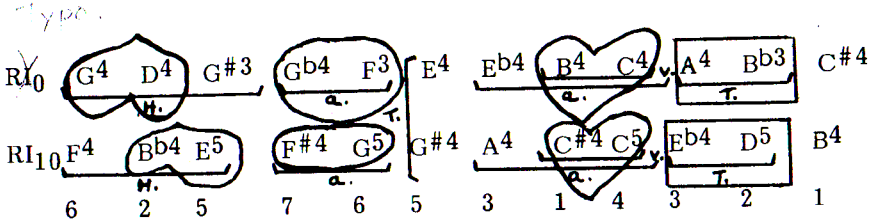
Trichordal rotation the same as in the "Expo."

"Retransition" m24-27

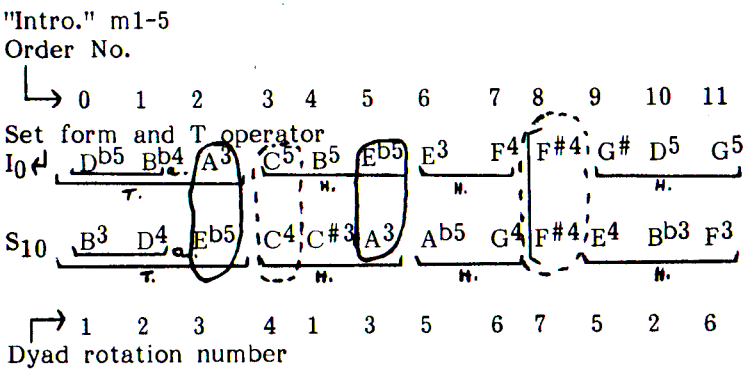


"Coda" m38-41





"Intro." m1-5



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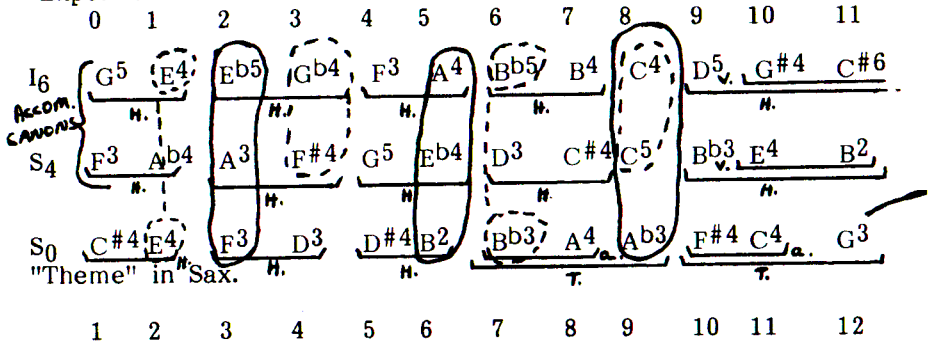

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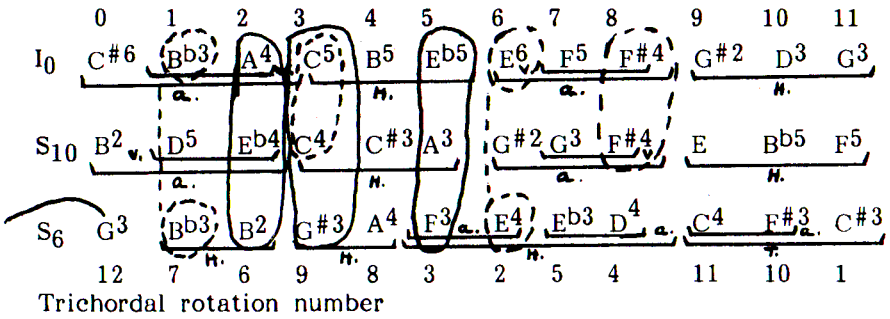
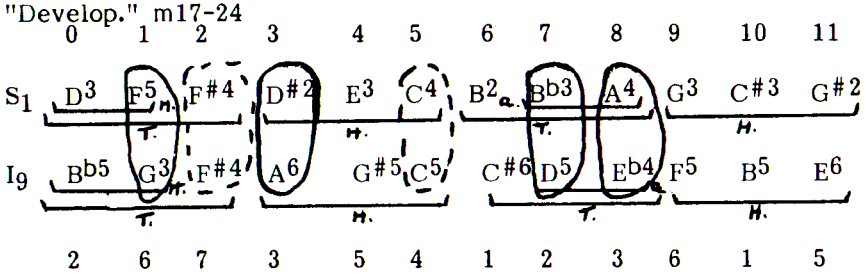


"Develop." m17-24



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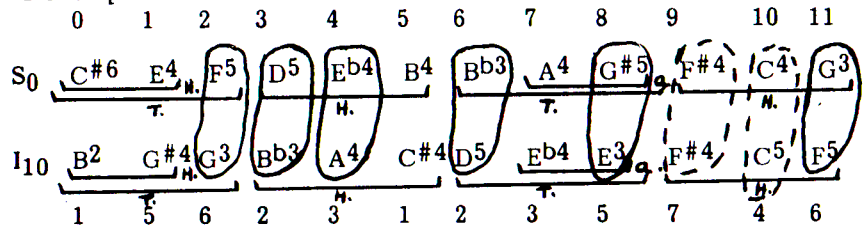

FIGURE 2

⌊——⌋ = a compositional partition of the set ("phrasing")

Criteria for compositional partition:

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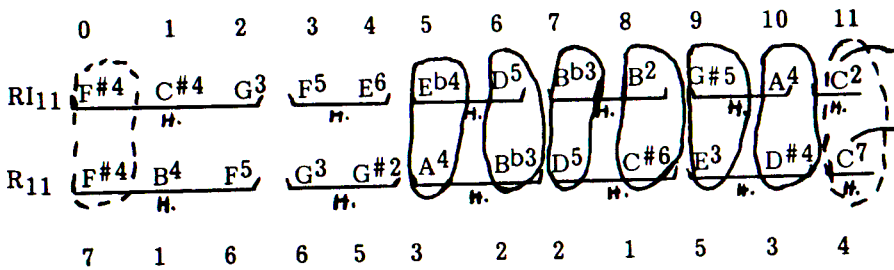
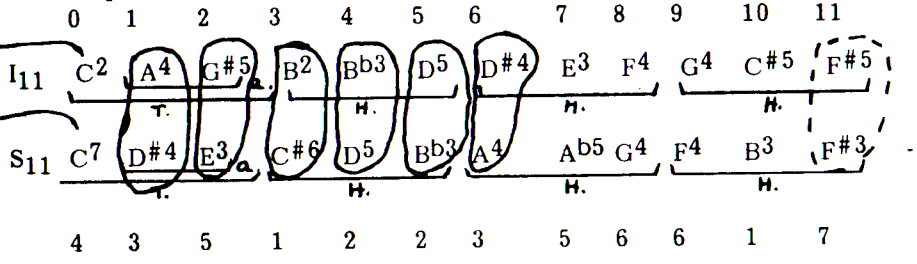
V = Verticality in piano, same stave

a.= Similar articulation, close proximity

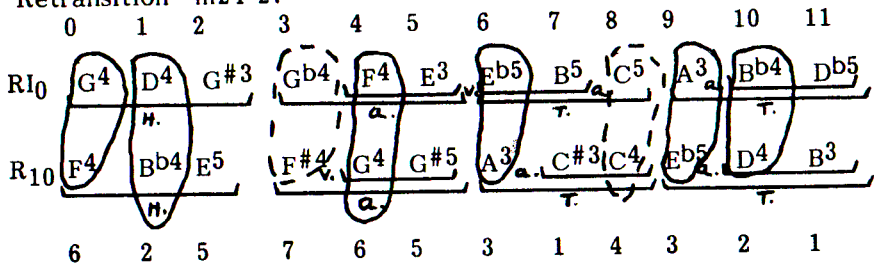
t.= Same timbre, close proximity



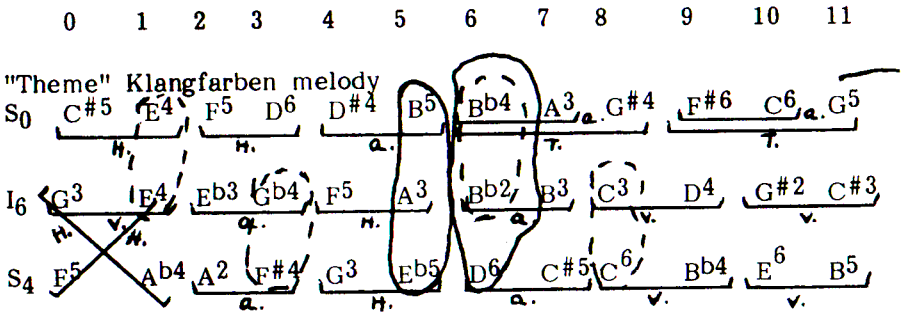
"Develop." cont.



"Retransition" m24-27

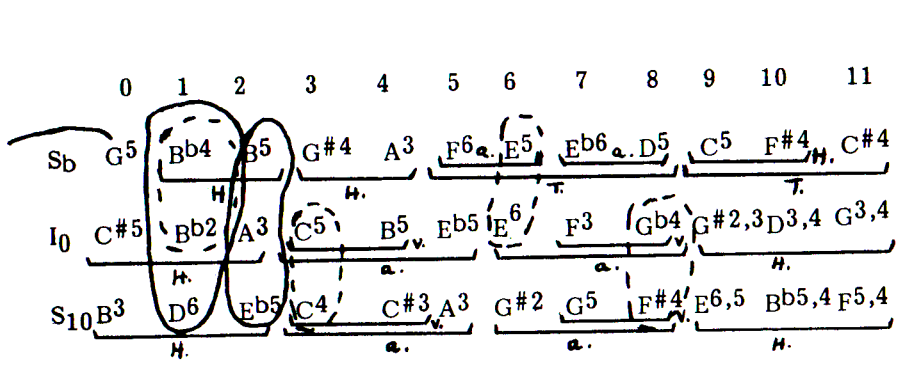


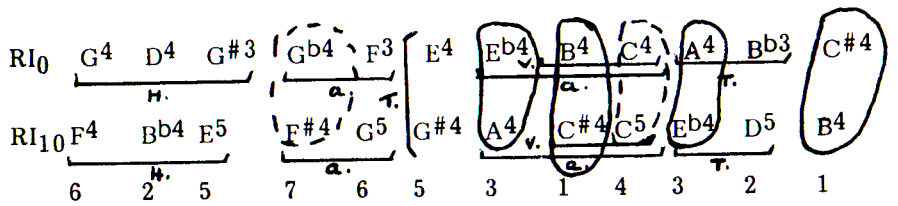
"Recapitulation" m28-37



Trichordal rotation the same as in the "Expo."

"Coda" m38-41





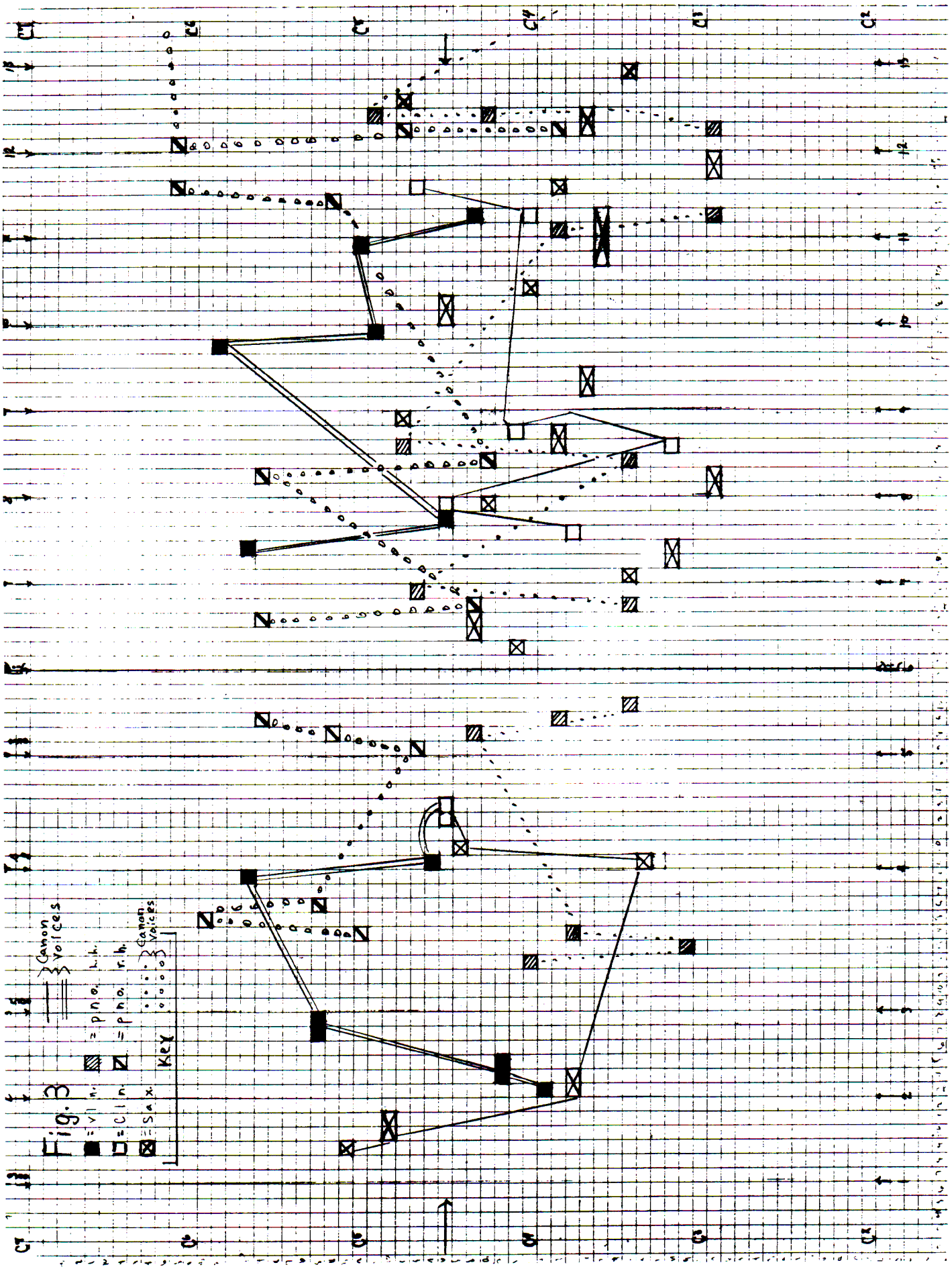
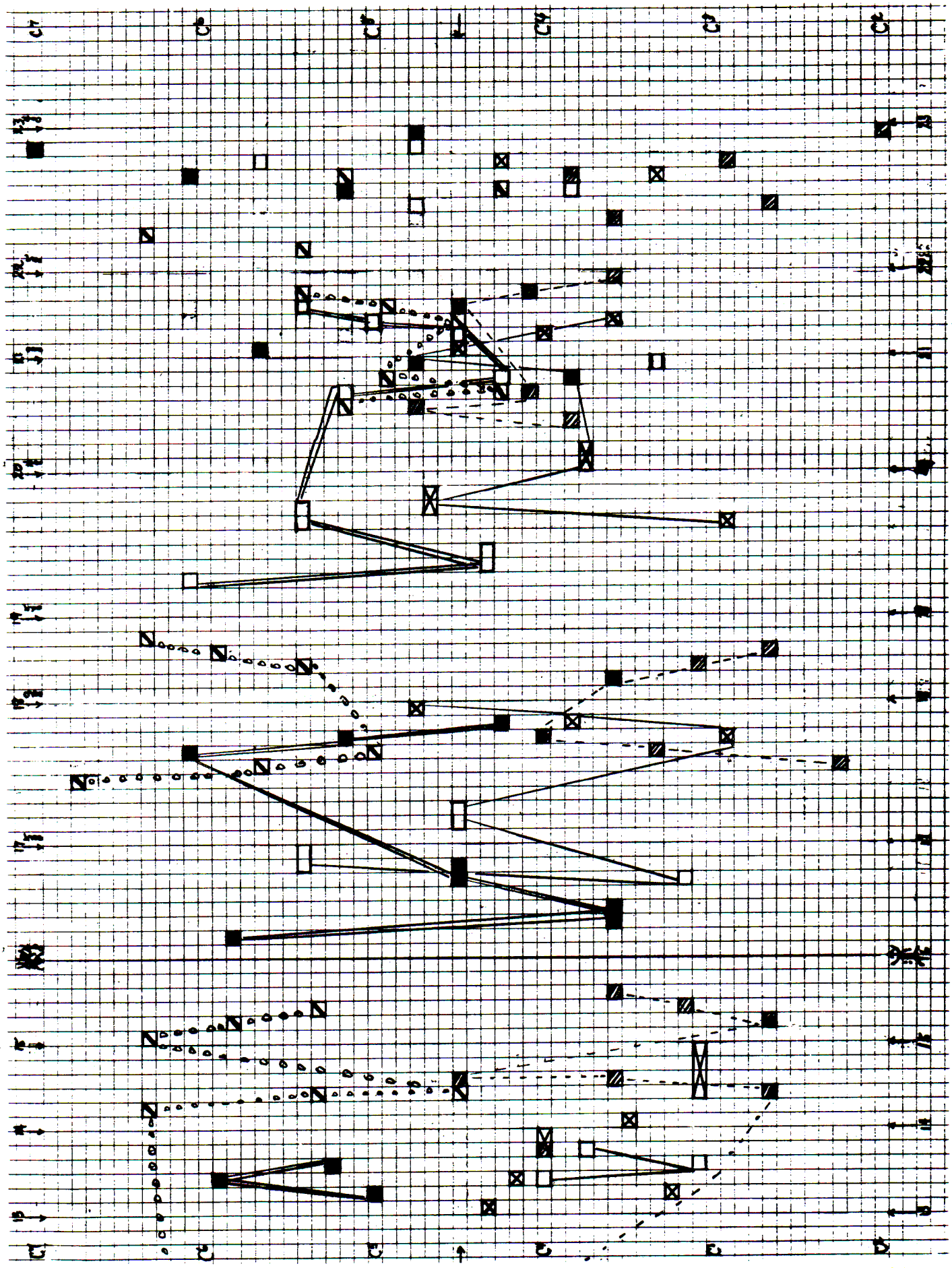
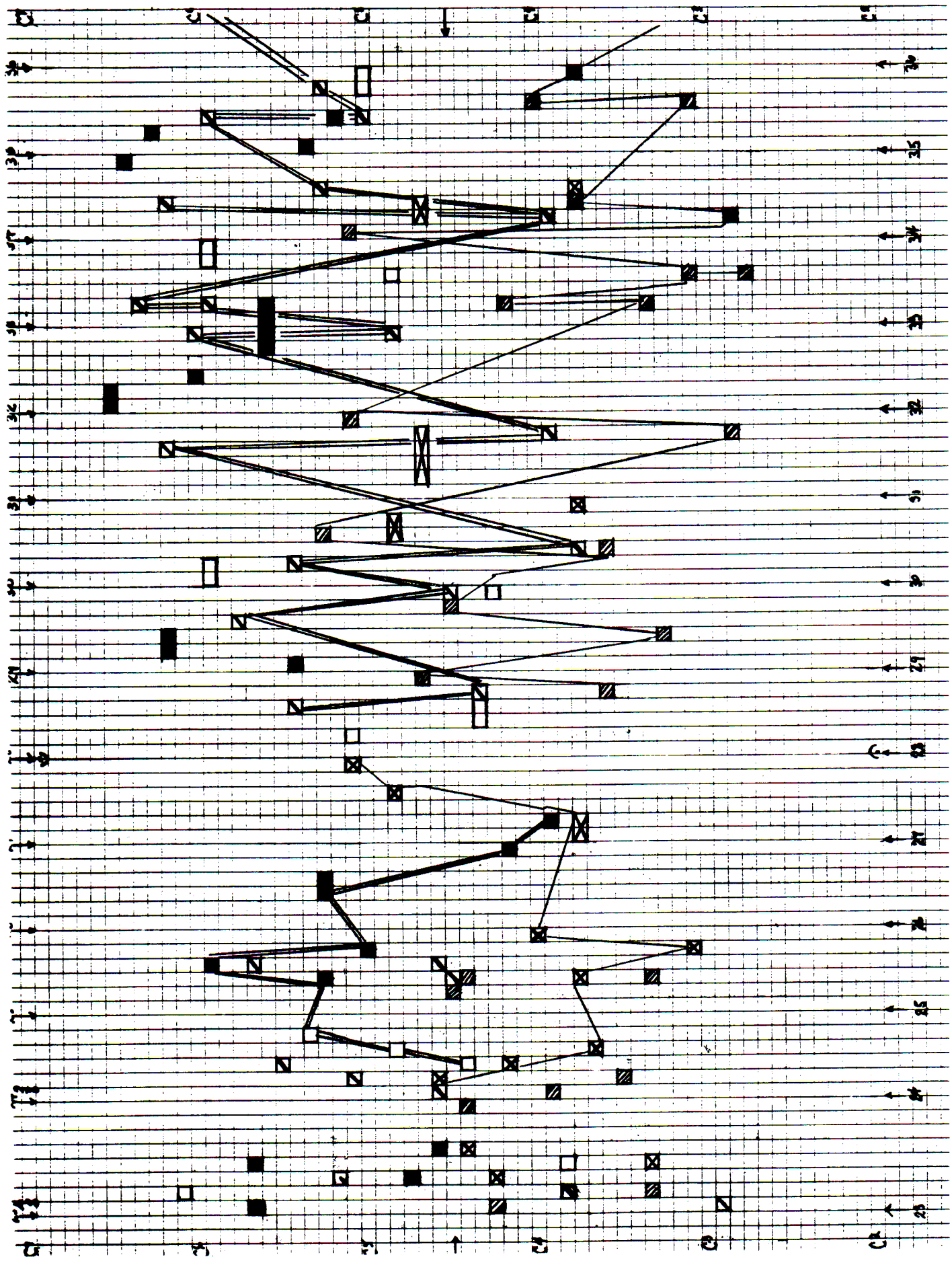


Fig. 3





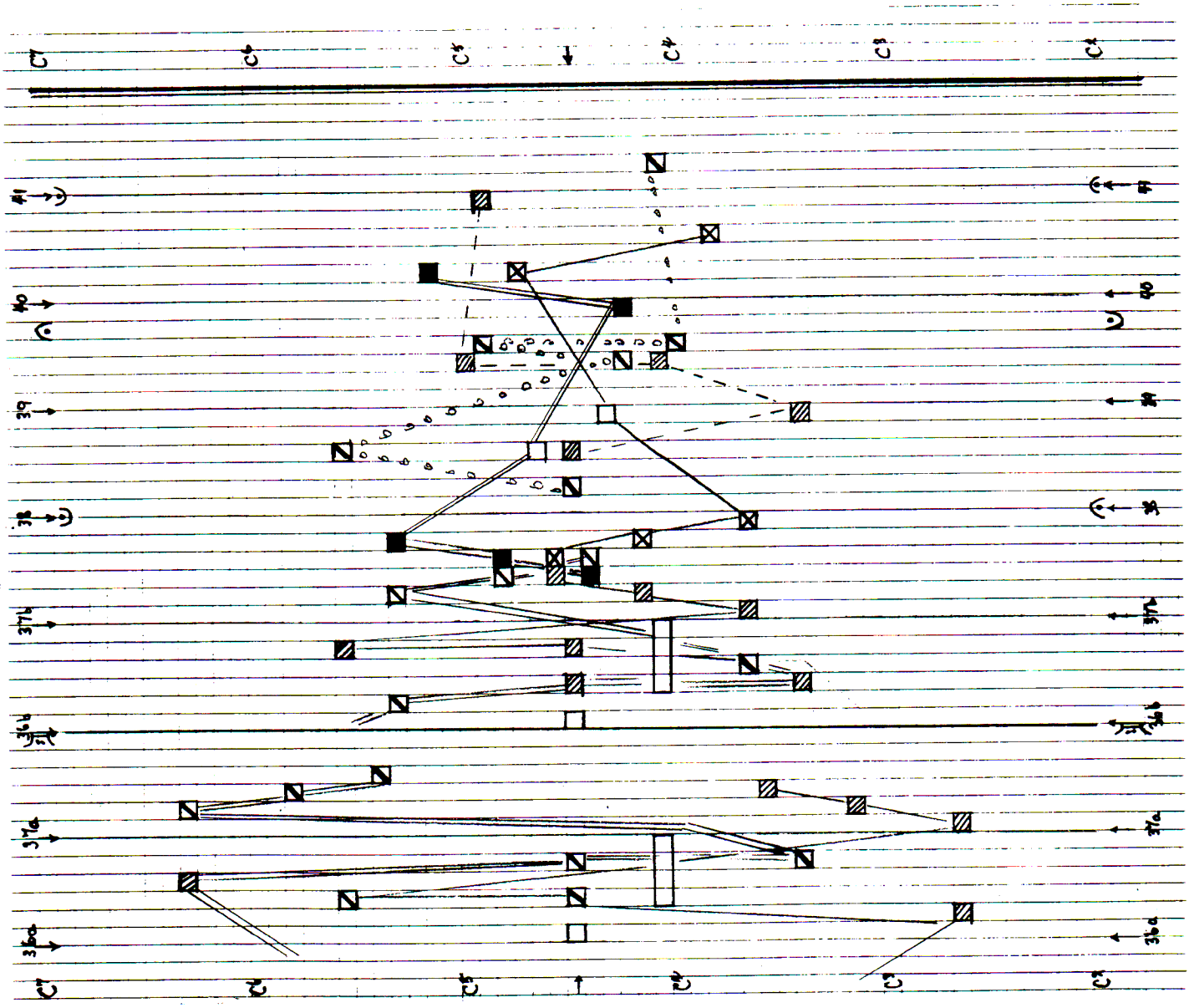
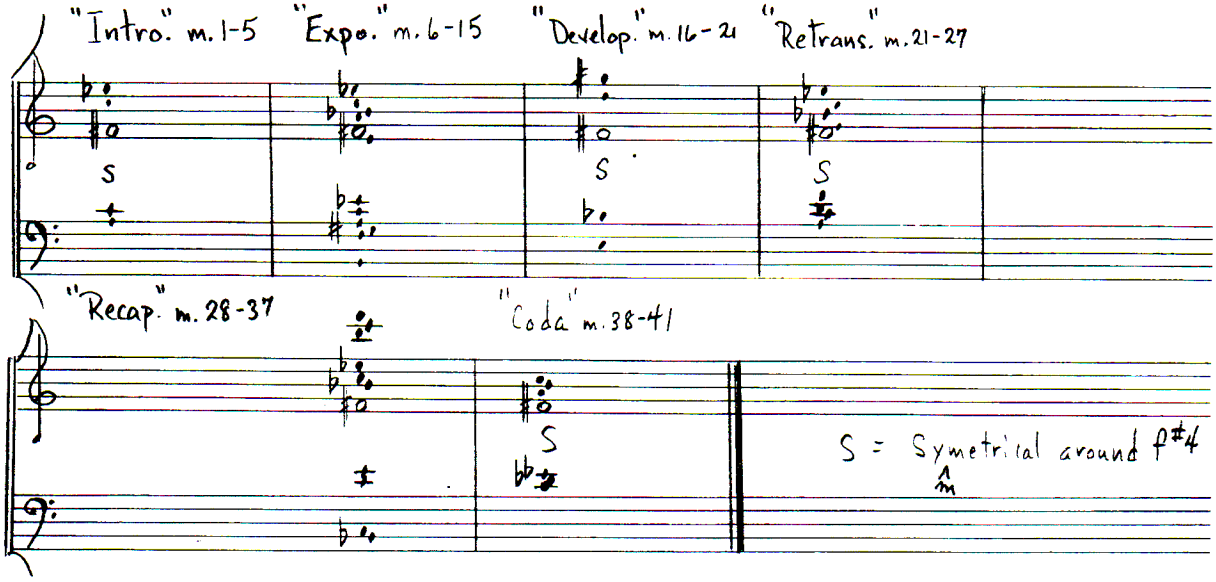


Fig. 4

PRECOMPOSITIONAL VERTICAL INVARIANTS
COMPOSITIONALLY MADE EXPLICIT ("HARMONY")



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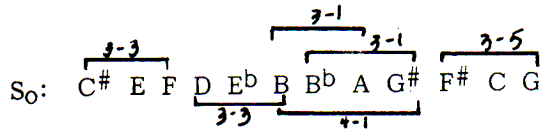
SOME USES OF ANALYSIS TOWARDS A PERFORMANCE OF WEBERN'S OP.22 MOVEMENT I

IN MEMORIAM RUDOLF KOLISCH

by RICHARD HERMANN

(Editor's Note: Part I of this article appears in WINDS QUARTERLY, Spring 1981. It will be helpful to have a copy of the score, UE 10050, while reading this article.)

Upon repeated listenings, associations of specific rhythmic-articulation patterns with portions of the set can be easily heard. These are listed in Fig. 5. The top row consists of duration pattern archetypes. They are presented in musical rhythmic notation and are double circled numbers in the order in which they first appear in the score. The columns beneath each of these archetypes give other closely related rhythmic-articulation patterns hereafter referred to as r-a.p.s. For each r-a.p. entry, the following information read from top to bottom is included: an interpretation of attackpoint rhythms with the influence of legato displayed numerically, (a) proportion(s) derived from that interpretation, a measure number and instrument citation for location of a specific example from the score, and lastly a Forte set[1] (a specific collection of interval-classes) with which it is exclusively associated unless otherwise noted. The following diagram displays the set (set o), and braces show where in its structure these rhythmically associated Forte sets are derived. Needless to say these intervallic collections are transformed (retrograde, transposition etc.) as the set itself is transformed. The Forte set's registral area, rhythmic usage, dynamics, and timbral assignment will vary as the compositional process demands.



R-a.p. (1c) is a retrograde and variant of (1b). These patterns serve as terminals for the set groups for important formal sections of the piece, the "introduction" (measures 1 to 5) and the "retransition" (measures 24 to 27) of the sonata form analogy. R-a.p.s (4a), (4b), (5b), and (6a) occur only in the theme. This fact and the afore mentioned use of timbre, clearly delineate the theme for us aurally and relegate the other parts which are canonic, to an "accompanimental" status in the "exposition" and the "recapitulation". R-a.p. (5b) is exclusively used and r-a.p. (2b) frequently used in "cadential" formations.[2] It is noteworthy to find with few exceptions, how rigorous these associations are.

Figure 6 displays two aspects of the structuring of musical time, the ensemble's attackpoint rhythm (also called secondary rhythm or cumulative rhythm) and density (here meaning number of notes simultaneously attacking or sustaining). Note from the density portion of fig. 6 that a pattern of densities 2-3-3-2 on successive 16ths is gradually formed from component parts and is thereafter transformed. The pattern makes it's last appearance in measure 37b and is then broken apart and dissolved.

The attackpoint rhythm of fig. 6 can be reinterpreted as blocks of sounding time and blocks of silent time (moments when the entire ensemble is at rest). This is done in fig. 7. Modules (patterns) exist on several levels of structure and are labeled in this figure. While much is self evident, some explanation may be necessary. The "d" module is transitional in nature and can be found at the end of the "introduction" and early in the "development" (measure 18 and 19). If the sustained note of the theme is not included, then the "d" module also appears in measures 14 and 15, 36 and 37a, and 36 and 37b. However, their sound-silence modules are not identical. Perhaps this is to allow their inclusion in another organizing pattern. I have named this other organizational means as the weighted durational palindrome.

This is a palindromic structure in which all of the corresponding member pairs of sound or silence modules are displayed around a central pivot module. All except one member pair have a one to one proportional relationship. The other member pair will have a differing proportional relationship. Hence, the meaning of the word weighted. Braces tipped with arrowheads point out member pairs in fig. 7.

The analogy of development from the tonal sonata takes on another facet viewed through these purely durational organizational ideas shown in Fig. 7. The modular play at the beginning of the development appears to be a repetition of the modules "a", "b", and "c" of the introduction. It is only the last moment, the second term of the "F" module, that we realize it is not identical. Next is an interruption ((6) [1]) similar to that found in the introduction followed by the transition module "d". The same play is begun again; however, this time its last term links into the first term of a doubly weighted durational palindrome. This may be considered a variation on that structual idea found in the "exposition". A retrograde and variant of module "E" is presented which completes the development section. Thus, these analytical results can be understood as another manner in which all that went before is transformed. An interesting observation upon the central member of the recapitulation's weighted durational palindrome is its non-retrogradable rhythm (see measure thirty-two and thirty-three of Fig. 6) in the ensemble's attackpoint rhythm. It is also the only time this particular rhythm partitioned off by rests, is found in the ensembles attackpoint rhythm. The observant reader will notice that I have included the fermatas over the measure lines in the score into the silent terms adjacent to those measure lines. This analysis gives grounds for the approximate amount of time each of the fermatas is to be held in order. To retain the proportional relationships uncovered. It can be readily seen that on each time through a repeated section, the fermatas will need to be held differing amounts!

On the basis of duration alone, the modular interplay along with the weighted palindromes provide the entire movement with an organization of the temporal flow of sound.[3] Additionally, on the basis of pitch relationships, an analogy to tonal sonata form organizes the movement. Bridging these at the surface level of the piece are the rhythmic-articulation patterns which possess strong Forte set (intervallic) relationships. Thus we can make a case for two distinct but complementary structures operating simultaneously in this movement. This is certainly a novel idea for that period of time. (1930) But, in view of Webern's training and accomplishments in musicology and composition, this is hardly an unthinkable achievement.

TOWARDS A PERFORMANCE OF OP. 22 mvt. 1

Developing a sense of how tonal music "ought to go" is made much easier for performers for at least two reasons. The first is a great familiarity with its sounds from birth. The second is that a great deal of agreement exists between composers of tonal music on basic materials (scales, specific harmonic structures etc.) and on organizing concepts (melody, cadences, form etc.). Therefore, performers can reasonably transfer knowledge and hearing capabilities developed from learning one tonal piece to different tonal pieces. As the above mentioned advantages for the performance of tonal music do not exist for serial music or so called "atonal" music, it is therefore not always obvious how knowledge previously gained can be applied. The preceding section's analysis and the following suggestions should assist in creating some musical understanding that may not only be applied to this piece, but perhaps also to other serial pieces (or at least those of Webern's).

Learning only the individual parts is not overly difficult and can result in great surprise at the first rehearsal for those uninitiated in Webern's style. As mentioned before, the instruments are related by hocket, a technique not frequently used in western music since the middle ages. It is vital that you know all of the other parts and therefore must play either from score or from memory (including memorization of the other's parts). Clarinetists and saxophonists who choose to play from score and are not adept at transposition at sight (the score is notated at sounding pitch) should carefully paste in their parts, suitably transposed. Care should be taken to preserve the rhythmic alignment of all the parts in the score.

Once each player has learned his own part, I suggest the following sequence of tasks for the creation of a fine ensemble performance:

1) Learn the ensemble's rhythm and your role in it.
2) Discover and rehearse phrases and semi-phrases.
3) Discover the audible canons and drill the individual voices which are in hocket, then assemble so that they can be clearly heard.
4) Discover which notes in each of the parts belong to the "harmonic" succession of invariants and learn to hear their "arpeggiation" and succession. They tie the entire piece together.
5) Work on the various tempo modifications (such as rit, accel., and atempo).
6) Lastly work on creating a flowing whole that has an improvisatory feeling to it.

One of the aspects of the rhythmic life of this piece is an ambiguity concerning the beat in some sections of the piece such as the "introduction". Frequently motives are stated

on the notated beat and then answered off the beat or vice versa. Peter Stadlen, who was coached by Webern for the premiere of the Op. 27 piano variations, makes the following comment on this rhythmic idea.

> In the 2nd Movement, I too, have added some conventional accents, either to show that Webern wanted the emphasis on the second of the two accented chords in bars 3/4 and 8/9, or again that he meant to draw attention to the metric shift in the group of 8 compared with bars 2/3.[4]

While at first this rhythmic idea may prove confusing to the coordination of parts, a careful study of the ensemble's attack rhythm in fig. 6 as well as fig. 7 for sound-silence modules will keep the ensemble rhythmically well oriented. It should also be clear from studying fig. 7 that the ensemble rests (places where everyone is silent) must be well executed so that the sound-silence modules can be clearly heard and their organizing effect clearly felt.

Mr. Stadlen vividly relates another problem in performance and Webern's reaction to it.

> "A high note, a low note, a note in the middle-like the music of a madman!" - thus Webern described to me his impressions after Otto Klemperer had performed the Symphony op. 21, in Vienna, on the 16th of October 1936.[5]

Balancing the ensemble's dynamic output is one of several ways of helping the listener's ear create coherent lines out of the small motives presented in hocket. The saxophonist will set the level of pp as he is the least capable on the lower end of the dynamic range. On the other hand, the clarinetist will set the level for f based on how loudly he can play the throat register written f# of measure 17 without spreading the tone or playing out of tune.

Phrasing is another obvious way of avoiding sounding "... like the music of a madman!" Locate the cadences (see footnote 2). Notice that frequently there are indications of tempo modification at the beginnings and endings of phrases. Often the start of a phrase has a rit. which is followed by an atempo. It propels the phrase forward. The cadence area frequently contains a rit. which if not present, should be added. Listening to the recording of Webern conducting his transcription for orchestra of some Schubert dances for piano is very informative on the amount of rit. that is appropriate here.[6] These fluctuations of time at the terminals of the phrase are very common to the late romantic German musical interpretation style; however, it is at least debatable in applying this to the music of an early German romantic such as Schubert! Radical changes of dynamics separated by ensemble rests no matter how brief, delineate semi-phrases. These represent sharp emotional contrasts. It is clear now to those who have done the counting and labeling acts with the sets that the beginnings and endings of phrases do not always coincide with those of the sets or set groups.

Figure 3 (from WINDS QUARTERLY, Spring 1981, pps. 34-37.) displays those canons which can be easily made audible and how the various motives that make up each voice of the canons are distributed in hocket style. This figure removes the visual distortion of the score's quick clef changes. It may be helpful to make a piano reduction of figure 3 with color codes for each instrument employed. The pianist must resist the temptation to redistribute his part to facilitate playing because the hand crossings cause subtle and minute differences in articulation and dynamics which sonically preserve the voices of the canons confined to the piano part.[7]

Pianists may be quick to note the absence of pedal markings in this movement. Peter Stadlen says the following;

> Webern entered only a fraction of the colouristic and the legato pedaling which he so frequently either indicated or else silently tolerated,...[8]

It is quite clear that pedaling is to be used and through careful study of Webern's markings in Mr. Stadlen's score for Op. 27 and the analysis of this movement several guidelines for pedaling emerge.

> 1) Passages marked with tenuto slashes should be connected with pedal.
> 2) Single notes marked f should be reinforced with pedal.
> 3) Except for passages marked staccato, "colouristic" pedaling may be used as long as the afore mentioned ensemble silences are not violated.

Before moving on to two more general questions about serial music that relate to this piece, an enlargement and reminder of the poetics of Webern's style are in order. It is important that each radical change of dynamics and articulation which delineate the semi-phrase and that each phrase marked off by cadential formation and tempo alteration, have a clear characterization or image in the minds, hearts and ears of the performers.

Should the performer have a knowledge of the set structure of the piece? Peter Stadlen remarks on Webern's feelings on this question:

> ... he never once referred to that aspect during our meeting which continued for several weeks. Even when I asked, he

refused to talk about it -what mattered, he said, was for me to learn how the piece ought to be played, not how it is made. And indeed, he never tired conveying to me the poetics of the work down to the minuetest, most delicate detail - conducting, gesticulating, singing (he never played).[9]

While the composer is alive and coaching performances of his music, certainly this attitude is fine; however, in several places in this article I have pointed out the problems we encounter in learning to play these pieces properly without the composer or a clear performance tradition. Passages from a letter by Arnold Schoenberg to Rudolf Kolisch (who incidentally took part in the premier of Op. 22 under Webern's direction) dated Berlin 27 July 1932 shed more light on this question.

> I can't utter too many warnings against overrating these analyses, since after all they only lead to what I have always been dead against: seeing how it is done; whereas I have always helped people to see: what it is! I have repeatedly tried to make Wiesengrund understand this, and also Berg and Webern.
>
> It goes without saying that I know and never forget that even in making such investigations you never cease to live with what is actually the source of your relationship to this music: its spiritual, auditory musical substance. Still I can't refrain from speaking out against such an analysis, since I've always done so. E.g. in the Theory of Harmony. The only sort of analysis there can be any question of for me is one that throws the idea into relief and shows how it is presented and worked out. It goes without saying that in doing this, one must not overlook artistic subtleties.[10]

The remaining question is: Should I be able to hear the set and follow it throughout the composition? The set should be thought of as a matrix of possible relationships. In this piece fragments of the set projected by timbre and rhythmic-articulation linkages create motives which provide local coherence through recall of identity. Longer term pitch coherence is provided by the succession of invariants. The succession of invariants was the result of at least four choices by the composer: the first was the construction of the set, the second was the simultaneous combination of set forms into a set group, the third was the selection and succession of set groups and the last was the compositional usage of the preceding in a coherent and audible form. The only time the listener is given a clearly audible presentation of the set is in the "theme" from the "exposition" and "recapitulation." This also contributes to the intelligibility of the movement. Obviously, the quotes of Stadlen and Schoenberg from above apply to this question too. In short, my primary goal in sharing this analysis was not to show how the piece was made, but rather, to show how the piece may be played and heard.

I leave you with the following from a letter by Alban Berg to Webern dated 19 August 1932.

> Yes, this Quartet is a miracle. What staggered me above everything else was its originality.[11]

FOOTNOTES

1. See Allen Forte The Structure of Atonal Music part 1 for more information. Yale University Press © 1973.

2. The analogy with tonal cadence in this piece is a product of several factors. In the realms of pitch and rhythm, the R-a.p.s (5b) and (2b) and their association with the Forte set 3-5 (found at one of the terminal areas of any of the set forms of this piece) is one factor. The last three pitches of any S or I set forms and the first three items of any R or RI set forms contain a 3-5 Forte set. These, however, must be presented so that the following intervals, the tritone and the perfect fourth are moving in the same direction, either all up or all down. Another factor is the separation of the cadence area from the following music by an ensemble rest which may be as brief as a 16th note rest. And lastly, disruption of the evenness of the pulse by ritardando is also used with the above to clearly mark out the cadential area.

3. Note the similarities to some medieval music in which temporal organizational devices such as isorhythm are the prime formal shapers.

4. Stadlen, Peter editor Anton Webern Variationen fur Klavier op. 27 Universal Editions No. 16845 © 1979 p. VI This edition contains Webern's penciled marking guide for the premier performance and Peter Stadlen's annotations based on his memory of their coachings.

5. Op. cit. p.V.

6. Boulez, Pierre musical supervisor The Complete Works of Anton Webern Vol. I Columbia Masterworks M495193 © 1978 side 8 band 3 Frankfurter Funkorchester recorded live at the Frankfurter Funkhaus 12/29/32.

7. Stadlen op. cit. The following is a quote of Webern on a measure of his op. 27 which requires hand crossing.

   The difficulty of playing these four notes in tempo produces just the right character; impossible if comfortably distributed. p. 12.

8. op. cit. p.VII.

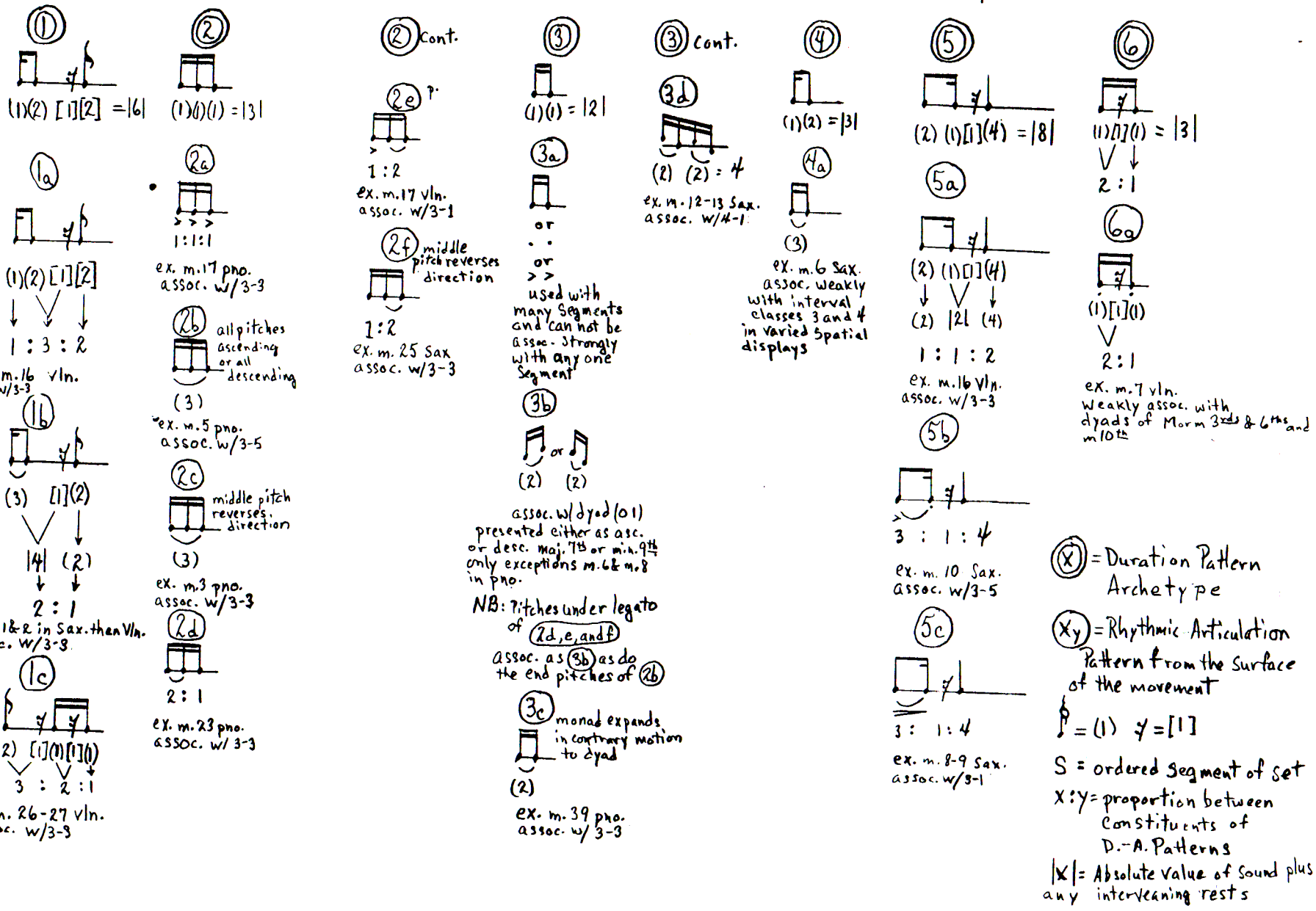
9. op. cit. p. VII.

10. Stein, Erwin editor Arnold Schoenberg Letters trans. by E. Wilkins and E. Kaiser Faber and Faber © 1958 p. 164-165.

11. Kolneder, Walter Anton Webern An Introduction to His Works trans. Humphrey Searle Univ. of Calif. Press © 1968 p. 121.

Fig. 5

Association of Rhythmic-Articulation Patterns (noncomposite) with Ordered Segments of the Set or Dyads



(X) = Duration Pattern Archetype

(Xy) = Rhythmic Articulation Pattern from the Surface of the movement

𝄢 = (1) 𝄽 = [1]

S = ordered Segment of set

X:Y = proportion between Constituents of D.-A. Patterns

|X| = Absolute value of Sound plus any interveaning rests

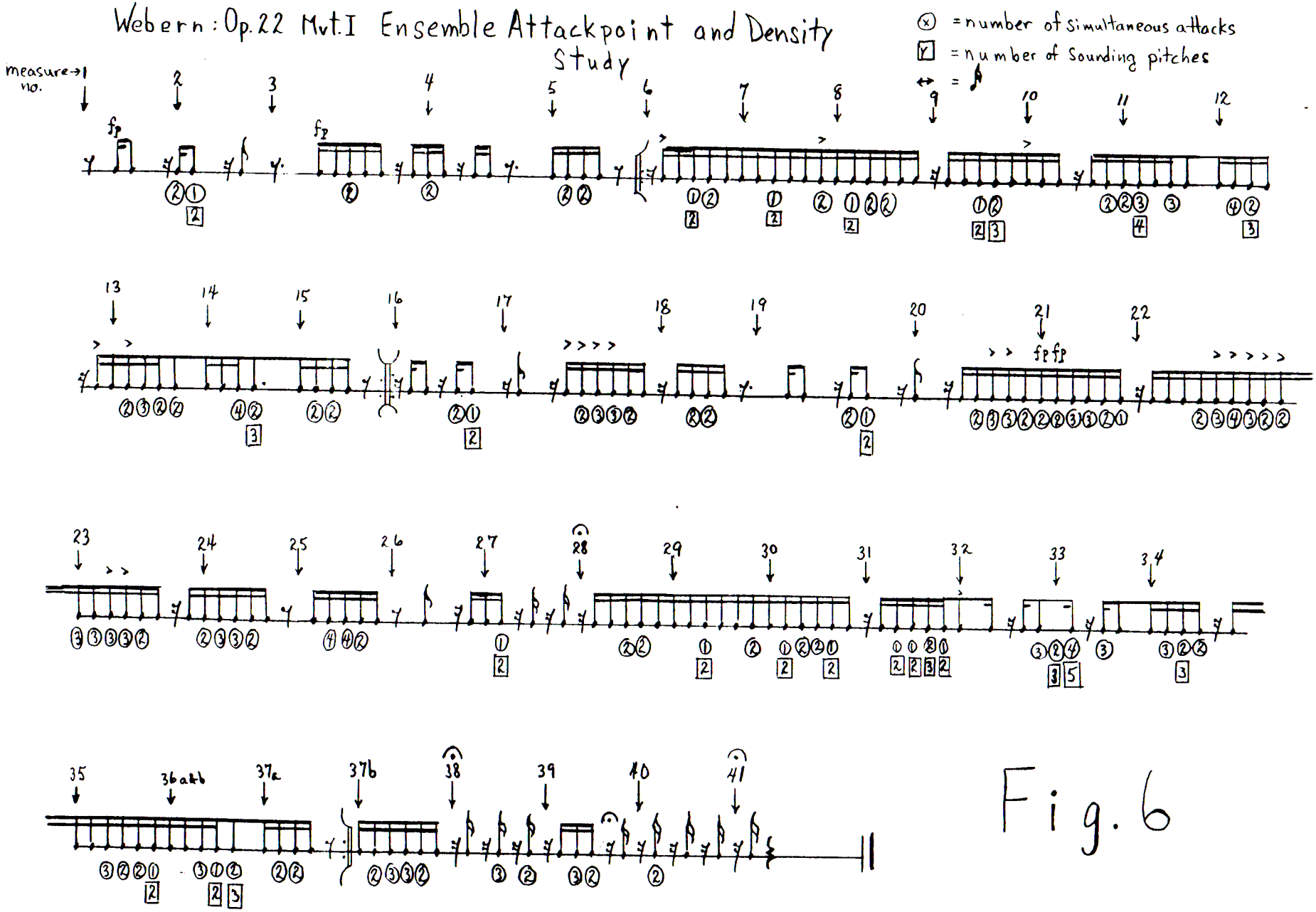

Webern: Op. 22 Mvt. I Ensemble Attackpoint and Density Study
⊗ = number of simultaneous attacks
[ ] = number of sounding pitches
↔ = 𝅗𝅥
measure → 1
no.
2
3
4
5
6
7
8
9
10
11
12
fp
fp
13
14
15
16
17
18
19
20
21
22
fp fp
23
24
25
26
27
28
29
30
31
32
33
34
35
36a tab
37a
37b
38
39
40
41

Fig. 6

Webern: Op. 22/I Module and Proportion Study of Sound and Silence Successions

$\int_{or}(4)=1$

(x) = Sound for x number of sixteenths

[y] = Silence " y " " "

Fig. 7