CONSONANCE, TERTIAN STRUCTURES AND TONAL COHERENCE IN WLADIMIR VOGEL'S DODECAPHONIC WORLD

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Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

December 2002

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Hale, Jacquelyn, Consonance, Tertian Structures and Tonal Coherence in Wladimir Vogel's Dodecaphonic World. Doctor of Philosophy (Music Theory), August 2002, 173 pp., 130 examples, bibliography.

Wladimir Vogel's (1896-1984) interest in twelve-tone composition began to develop in 1936 after hearing a series of lectures by Willi Reich, a music critic and supporter of the new music of the Second Viennese School. The transition for Vogel from a large-scale orchestral "classical" style, influenced by his study with Ferruccio Busoni in Berlin in the early 1920s, to a new technique involving dodecaphony is apparent in his instrumental writing, the third and fourth movements of the *Konzert für Violine und Orchester* (1937), as well as in his vocal writing, the *Madrigaux* for mixed a cappella choir (1938/39). Vogel's twelve-tone works exhibit tertian structures which are particularly emphasized by triads located as consecutive pitches within the rows. Emphasis on tertian structures are not limited to small-scale segmentation of the rows but can also be seen in the structural and tonal organization of complete movements and works. A primary example is the *Konzert für Violoncello und Orchester* (Cello Concerto) (1955) in which, on a smaller scale, the presentation of the row emphasizes both diminished and minor triads, and at the macro level, the structural triadic relationships unify passages within individual movements as well as the concerto as a whole. Since the work is composed using the twelve-tone method, consideration is given to the structure of the serial components. In addition, the concerto is analyzed in terms of its cognitive features—those elements that are demonstrably related to traditional practice—such as tertian melodic/harmonic outlines reinforced by rhythmic features that are

common to eighteenth- and nineteenth-century practice. The compositional features evident from the serial structure of the work are addressed in conjunction with references to traditional practice made evident through the serial technique. The findings in the analysis of the Cello Concerto support the argument that the inclusion of consonant sonorities and tertian structures in Vogel's works results in a certain degree of tonal coherence while the large-scale compositional framework is dodecaphonic.

ACKNOWLEDGMENTS

My sincere thanks go to my advisor, Dr. Graham Phipps, who generously surrendered many hours from his crowded schedule to assist me in the preparation of this study. His rich background of musicological research provided a tremendous source of knowledge.

I wish to also express appreciation to Chris Walton, members of the Hans Schaeuble Stiftung, and the staff at the Zentralbibliothek in Zürich, Switzerland, whose contributions made this study possible.

I have obtained permission to quote examples from: Universal Edition (Vienna) of Arnold Schoenberg's String Quartet No. 3, Op. 30 (1927) and Anton Webern's String Quartet, Op. 28 (1939); Bote & Bock (Berlin) of Vogel's Violin Concerto (1937; 1940); Hug & Co. Musikverlage (Zürich) of Vogel's *Klaviereigene Interpretationsstudie einer variierten Zwölftonfolge* (1972); The Gale Group (Michigan) of Gabriel Fauré's *Dans la forêt de septembre* (1902); and Suvini Zerboni (Milano) of Vogel's *12 Variétudes, sur une série de douze-tons non transposée* (1940) and Cello Concerto (1955).

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VOGEL'S PERSONAL REASONS FOR ADOPTING THE SERIAL METHOD

Introduction

For Wladimir Vogel (1896-1984), the change in composition from a largely classical style to composition with twelve tones related to one another was one of choice, not obligation. His own words best summarize the value he placed on twelve-tone composition in view of modern musicians and modern art music.

> Die Komposition mit zwölf aufeinander bezogenen Tönen ist für mich nur eine Angelegenheit der Technik, des Materiellen, ein kompositorisches Prinzip, aber keine Weltanschauung. Ich komponiere im Zwölftonsystem, weil ich mich in ihm am besten ausdrücken kann, nicht aber, weil ich glaube, ich dürfe als moderner Musiker nicht anders schreiben. Man muß Stellung beziehen der Welt und seiner Kunst gegenüber, sonst laviert man.[1]
>
> [Composition with twelve tones related to one another is for me only a matter of technique, materials, a compositional principle, but not a philosophy of life. I compose with the twelve-tone system because I can express myself best with it, not, however, because I believe that as a modern musician I may only write in this way. One must make it clear where he stands with regard to the world and its art; otherwise one muddles through.]

[1]Wladimir Vogel, *Schriften und Aufzeichnungen über Musik,* Hrsg. Walter Labhart (Zürich: Atlantis Musikbuch-Verlag, 1977), 196. In *Stil und Gedanke,* Schoenberg describes the serial method as *Methode der Komposition mit zwölf nur aufeinander bezogenen Tönen.* Vogel's reference to *Die Komposition mit zwölf aufeinander bezogenen Tönen* omits the critical word *nur* (only) from Schoenberg's description. Also, unlike Schoenberg, Vogel adopts the term *Zwölftonsystem* (twelve-tone system).

Vogel's interest in twelve-tone composition began to develop in 1936 after hearing a series of lectures by Willi Reich, a music critic and supporter of the new music of the Second Viennese School. The transition for Vogel from a large-scale orchestral "classical" style, influenced by his study with Ferruccio Busoni in Berlin in the early 1920s, to a new technique involving dodecaphony is apparent in his instrumental writing, the third and fourth movements of the *Konzert für Violine und Orchester* (Violin Concerto) (1937), as well as in his vocal writing, the *Madrigaux* for mixed a cappella choir (1938/39). Even though Vogel was one of the first twelve-tone composers in Switzerland and championed Arnold Schoenberg's method to his students, through the years as he continued to write in the dodecaphonic idiom, his approach to the method of composing with twelve tones evolved into a mode of expression which was unique and very much his own.[2]

Vogel's Approach to Twelve-Tone Writing

Vogel's turn to composition with twelve tones was stimulated from study of books by Ernst Krenek, Erwin Stein, Josef Rufer and others, and by the music scores of Schoenberg. Vogel began to develop his own ideas and adaptation of the basic concepts of the Schoenberg School. In her dictionary entry on Vogel, Effie Carlson states, "The Schoenbergians, according to Vogel, lacked sufficient concern for the sound quality of their polyphony because of their preoccupation with the motivic character of the polyphonic structure." Therefore, Vogel's modifications to the method involved "utilizing a

[2]Effie Carlson, *A Bio-Bibliographical Dictionary of Twelve-Tone and Serial Composers* (Metuchen, New Jersey: The Scarecrow Press, 1970), 177.

wider range within the tone space, and also representing a loosening of the polyphonic treatment of the series." As further clarification, Vogel expressed that "his philosophy of music approaches the static tone constellation of [Josef] Hauer."[3]

Concerning rhythm, Vogel's use of irregular meter in his twelve-tone works reveals his Russian roots and differs from Schoenberg's more metrically consistent writing. Metric characteristics in Vogel's works are similar to what one finds in the music of Igor Stravinsky, such as in *Les Noces* (The Wedding) (1954).

In his effort to make his musical processes as clear and audible as possible, consonances are not avoided. Tertian structures appear throughout his twelve-tone works and are particularly emphasized by triads located as consecutive pitches within the rows. Emphasis on tertian structures is not limited to small-scale segmentation of the rows but can also be seen in the structural and tonal organization of complete movements and works. A primary example is the *Konzert für Violoncello und Orchester* (Cello Concerto) (1955) in which the presentation of the row, on a smaller scale, emphasizes both diminished and minor triads, but also presents structural triadic relationships that unify passages within individual movements as well as the concerto as a whole. The inclusion of consonant sonorities and tertian structures in Vogel's works results in a certain degree of tonal coherence while the large-scale compositional framework is dodecaphonic.

Biographical Information and Influence

Wladimir Vogel was born in Moscow in 1896 to a German father and a Russian mother. He left Russia in 1918 and moved to Berlin where he studied composition with

[3]Ibid.

Heinz Tiessen (1919-21) and attended Busoni's master classes (until 1924). Vogel's artistic development was influenced not only by Russian elements, particularly the music of Alexander Scriabin, and Busoni's *Junge Klassizität*, but also by Schoenberg's early works and the expressionist movement in Berlin in the 1920s. Being Jewish, Vogel was driven out of Germany by the Nazis in 1933 at a high point in his career and, except for brief stays in France and Belgium, lived in Switzerland until his death. After settling in Switzerland he remained active as a composer and earned a high degree of respect, as is evident from the prestigious awards he received, the frequent performances of his music and the record of performances of his works by renowned conductors.[4] In his article "Dodekaphonie in der Schweiz," Ulrich Mosch reflects on Vogel's active involvement with other Swiss composers in the 1940s and his influence in bringing the "new music" to Switzerland.[5] In my recent visit with Vogel's widow, Idmarie, in her home in Zürich, she also confirmed Vogel's innovative influence among the Swiss composers in her statement, "Without Vogel, the 'new music' in Switzerland would have come much later." Although Vogel ranks among the most interesting composers of his generation, the American public knows little of his important contribution to music through his involvement in pedagogy, his numerous vocal and instrumental compositions, and his writings about his own music as well as about modern music in general.

[4]Hans Oesch, "Wladimir Vogel," *The New Grove Dictionary of Music and Musicians,* 20 volumes, edited by Stanley Sadie (London: Macmillan Publishers Limited, 1980), XX, 56-57.

[5]Ulrich Mosch, "Dodekaphonie in der Schweiz," *Entre Denges et Denezy: Dokumente zur Schweizer Musikgeschichte 1900-2000* (Basel: Paul Sacher Stiftung, 2000), 228-243.

Works	Number of Works
Vocal Works	
Solo Voice(s), Choir/Speechchoir and Orchestra	6
Solo Voice(s) and Orchestra	7
Choir and Orchestra	1
Solo Voices(s), Choir/Speechchoir and one or several instruments	3
Solo Voice(s) and one or several instruments	15
Choir/Speechchoir and one or several instruments	6
Choir/Speechchoir *a cappella*	9
TOTAL VOCAL WORKS	**47**
Instrumental Works	
Works for Solo instrument(s) and Orchestra	5
Orchestral Works	
Orchestra with mixed players	25
String Orchestra (with tympani/percussion)	7
Chamber Music	
Three or more wind instruments (with percussion)	11
Three or more strings	7
Wind instruments and strings	11
Two instruments	4
Works for One Instrument	
Piano	20
String Instrument	2
Plucking instrument	1
TOTAL INSTRUMENTAL WORKS	**93**
TOTAL WORKS	**140**

*total VWV = 126

Fig. 1. Vocal and instrumental works

Vogel's Works

Vogel's *oeuvre*, composed over a 70-year period from 1913 until 1984, includes both vocal and instrumental works (see Fig. 1). In 1978, Vogel arranged for his manuscripts and drafts to be housed at the Zentralbibliothek in Zürich, Switzerland. The curators at the Zentralbibliothek gratefully accepted the generous gift, and the composer's archives have been catalogued and made accessible to music scholars. The publication by Mireille Geering in 1992, *Wladimir Vogel (1896-1984): Verzeichnis der Musikalischen Werke,* lists the works according to assigned VWV (Vogel-*Werkverzeichnis*) numbers, totaling 126.[6]

Use of the twelve-tone method is found throughout both vocal and instrumental works from 1937 until his death. Although the number of instrumental works is considerably larger than the number of vocal works, Vogel is primarily recognized for the magnitude of his vocal works, particularly the dramma-oratorios, and his use of speech in a distinctive manner.

The Vocal Works

Vogel's vocal output includes seven large vocal works composed between 1926 and 1971 (see Fig. 2). Friedrich Geiger's dissertation, "Die Dramma-Oratorien von Wladimir Vogel, 1896-1984" provides an analytical and interpretative study of each of the seven dramma-oratorios and addresses the issues concerning Vogel's exile years.[7]

[6]Mireille Geering and Petra Ronner, *Wladimir Vogel (1896-1984): Verzeichnis der Musikalischen Werke* (Zürich: Amadeus, 1992).

[7]Friedrich Geiger, *Die Dramma-Oratorien von Wladimir Vogel, 1896-1984,* PhD dissertation, Universität Hamburg (Hamburg: von Bockel Verlag, 1998).

Dramma-Oratorios	Years
Wagadus Untergang durch die Eitelkeit	1926-30
Thyl Claes	
Part I: *Unterdrückung*	1937-39
Part II: *Befreiung*	1943-45
Jona ging doch nach Ninive	1957/58
Meditazione sulla maschera di Amedeo Modigliani	1959/60
Flucht	1963/64
Gli spaziali	1969-71

Fig. 2. Vogel's large vocal works (1926 – 1971)

The dramma-oratorios represent a new and original genre. In a synthesis of speech theatre and oratorio, however without scenery, the relationship between sung and spoken word plays a basic role--the latter particularly in the form of the speech choir. Vogel expresses his approach to text and music, "More and more clearly, the mutual relationship between the word as spoken and the word as sung began to stand out in my mind—leading to a type of composition in which the dramatic and the epic-oratorical elements fuse."[8] Hans Oesch credits Vogel's fusion of the spoken and the sung, to an extent conditioned by the text, "a major contribution to the renewal of the relationship between music and language in twentieth-century art."[9]

[8]Vogel, 84.
[9]Oesch, 56.

The Instrumental Works

In contrast to Geiger's detailed work on Vogel's vocal music, scholarly work in the area of his instrumental output is limited. The *Konzert für Violine und Orchester* (1937) has received some attention because of its importance as Vogel's first use of the twelve-tone method, Christoph Kloidt's master's thesis being a primary example.[10] Kloidt compares the 1937 and 1940 versions and provides a colorful diagram of row usage in the twelve-tone third and fourth movements. Since the Violin Concerto exhibits Vogel's first attempt at twelve-tone writing, treatment of the row is limited to linear presentations with each complete row statement confined either to the solo violin or to registral layers within the orchestra (see Fig. 3). Rows are easily identifiable as ordinals

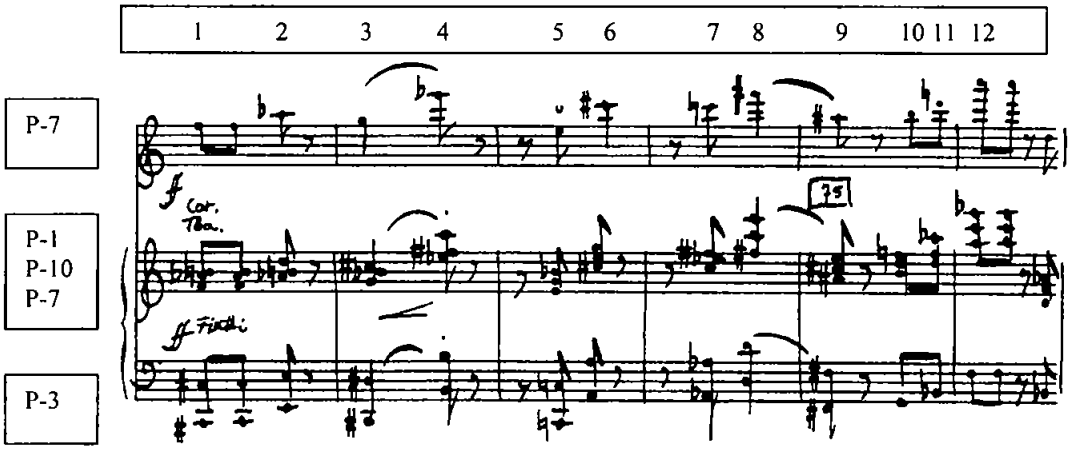


Fig. 3. Linear presentation of rows in the Violin Concerto, Movement III (mm. 71-76)

[10]Christoph Kloidt, *Wladimir Vogels 'Concerto pour violon et orchestre,'* Magisterarbeit, Musikwissenschaftliches Institut der Universität zu Köln, 1998.

appear in strict succession. Therefore, the limited approach to the method used in the Violin Concerto (1937) is not representative of the later adaptations that appear in works such as the Cello Concerto (1955).

The significance of the *12 Variétudes, sur une série de douze-tons non transposée* (1940) for violin, flute, clarinet, and violoncello, lies in the fact that Vogel tested the

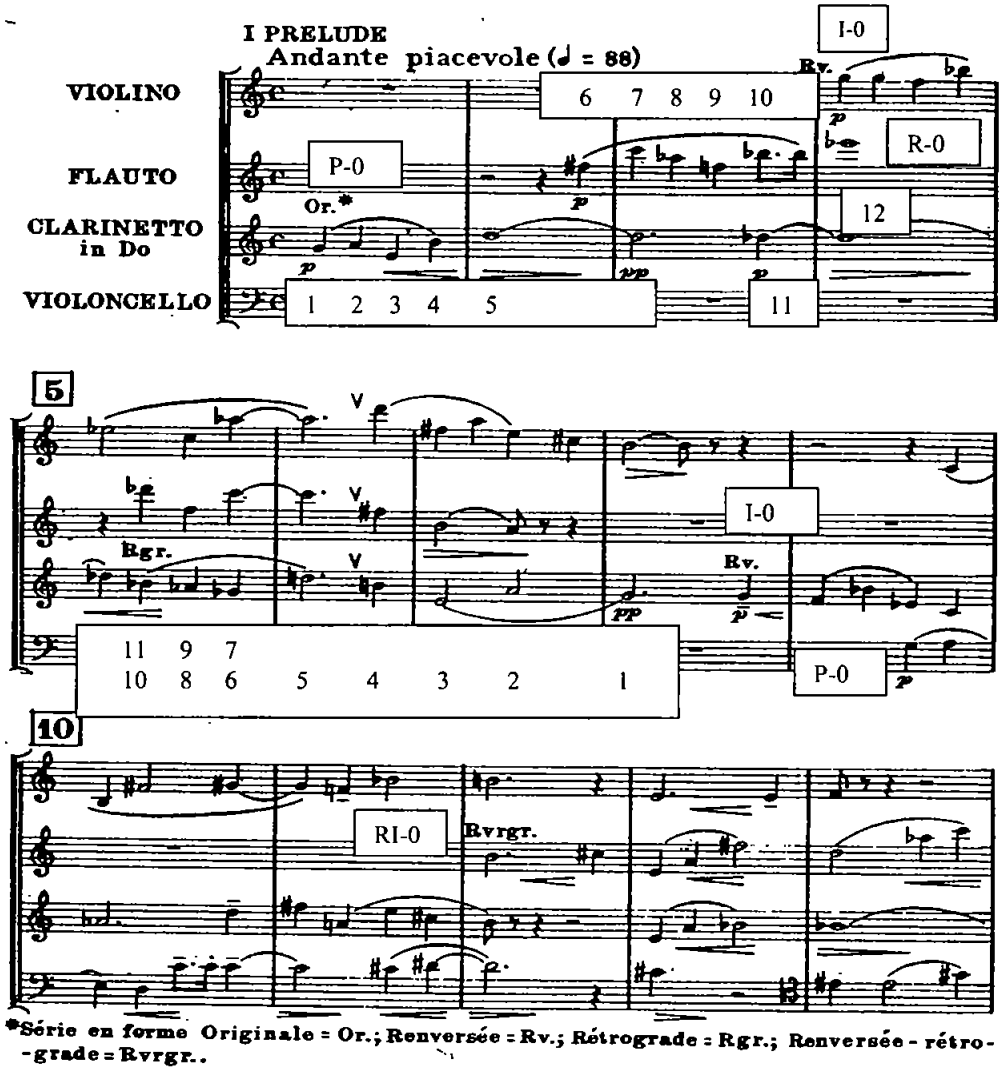


Fig. 4. *12 Variétudes, sur une série de douze-tons non transposée* (1940)

twelve-tone method of composition in a chamber work, a mixed instrumental quartet. The title displays a musical form that combines the principle of the variation with the pedagogical vehicle of the etude. The variations utilize the basic shape of the "0-family" of rows presenting the melodic material in various rhythmic settings, row segmentations and instrumental combinations.[11] The *12 Variétudes,* composed in the same year that Vogel revised the Violin Concerto, features linear treatment of the row and, in this case, the row is "non transposée" (see Fig. 4).

The serial qualities of these two works were anticipated by two earlier piano works of Vogel, the *Variétude* (1931) and the *Epitaffio* (1936). The *Variétude* contains chaconne-like repetitions of the principal theme, suggestive of a rhythmic series. Vogel describes the *Epitaffio,* dedicated to Alban Berg, as a specialized use of row technique, which is not the same as Schoenberg's use of twelve tones related to one another. In the *Epitaffio,* the basic series constitutes the passacaglia theme, consisting of 23 tones using nine pitches derived from the phrase *Alban Berg aufs Grab Friede!* (see Fig. 5). Utilizing a combination of perpetual variation and motivic development, the work is a convincing example of Vogel's application of serial writing to a traditional form.[12]

This example has its precedence in such works as Josquin Desprez's *Missa Hercules Dux Ferrarie* (Mass Hercules Duke of Ferrara) and Robert Schumann's *Carnaval: scènes mignonnes sur quatre notes* (Carnival: miniature scenes on four notes). In Josquin's mass, the motive that unifies the mass was described by Zarlino as *soggetto cavato dalle vocali di queste parole* (subject carved from the vowels of the

[11]The clarinet and flute present the row P-0 followed by R-0, I-0 and finally RI-0.
[12]Carlson, 178.

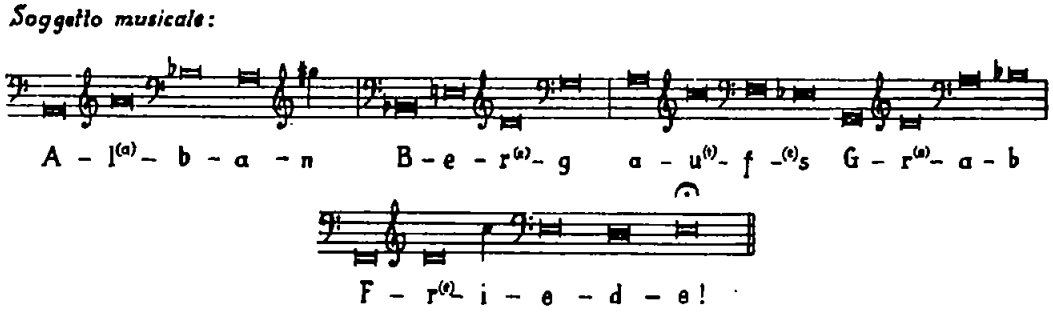


Fig. 5. Passacaglia theme in the *Epitaffio* (1936)

words). From the words "Hercules Dux Ferrarie," Josquin extracted the vowels and translated them into solmization syllables and pitches: *re-ut-re-ut-re-fa-mi-re* became the pitches D-C-D-C-D-F-E-D.[13] In Schumann's *Carnaval*, the four notes used for the scenes are derived from the letters ASCH, the name of the town in which Schumann's friend Ernestine von Fricken lived. The theme is stated in long note values in a section titled *Sphinxes*.[14]

Additional examples can be found in several works by Alban Berg. Thematic material for the *Kammerkonzert* (Chamber Concerto), a three-movement serial work, is derived from the letters of musical pitches in the names Arnold Schoenberg, Anton Webern, and Alban Berg, a technique resembling the *soggetto cavato* used by Josquin.[15] In the *Lyrische Suite* (Lyric Suite), the number of measures in each movement and the

[13] K. Marie Stolba, *The Development of Western Music: A History*, 3rd ed. (New York: McGraw-Hill, 1998), 162.

[14] Ibid., 473.

[15] Ibid., 600.

metronome markings are multiples of either 23, Berg's number (based on his intuition that he would die on December 23), or 10, the number of Hanna Fuchs (based on ten letters in her name). In addition, row topography exhibits minor triads as ordinals 2-3-4 and 9-10-11, and a complete cycle of fifths is presented by the cello (mm. 7-9): Bb-Eb-Ab-Db-F#-B-E-A-D-G-C-F. In *Wozzeck* (Act I, Scene 4, The Doctor's study), Berg places markings in the score to indicate a passacaglia theme and 21 variations. Berg's *Violinkonzert* (Violin Concerto) begins with arpeggiations of perfect fifths. The soloist presents the row, which consists principally of four arpeggiated triads (alternately minor and major), plus a whole-tone tetrachord, all joined conjunctly. Similarly, the Violin Concerto ends with the violin soloist sustaining a high G while the orchestra softly plays a downward arpeggiation of the six perfect fifths that began the concerto.[16] Of the four examples from Berg's repertory just discussed, the Lyric Suite and the Violin Concerto exhibit features most closely related to the Cello Concerto. In all three works, triadic figures are presented as successive pitches within the tone row allowing for the possibility of tertian structures and fifth relationships within a dodecaphonic framework.

After the *Epitaffio*, Vogel turned to mediums other than solo piano for his compositions. Between 1936 and 1972, during which time Vogel revised the Violin Concerto (1940), wrote his first twelve-tone chamber work, *12 Variétudes* (1940), and composed the Cello Concerto (1955), he wrote only a single work for the piano ("Ad usum nativitatis" in *Dai tempi più remoti*). His piano works prior to 1936, influenced

[16]Ibid., 600.

primarily by Scriabin and Busoni, were larger works for concert use and expressionistic pieces that make great, at times virtuoso, demands on the performer. Additional sources of insight into Vogel's style can be derived from the late piano works. By 1972 when Vogel returned to writing for the piano, he had adopted a different approach to composition—his own unique manner of expression through dodecaphony.

Representative examples of late twelve-tone piano works are *Klaviereigene Interpretationsstudie einer variierten Zwölftonfolge* (1972) and *Vier Versionen einer Zwölftonfolge* (1973). With the modifications of his compositional style since his early piano works, Vogel faced new challenges in writing for the piano. In his writing about *Klaviereigene Interpretationsstudie,* Vogel expresses an intent to capture the resonance of the piano from its "internal sound," the reverberation of the strings.[17] As shown in Fig. 6, the pedal markings, the use of tied notes and the wide range of register all contribute to the aural presentation of P-0.

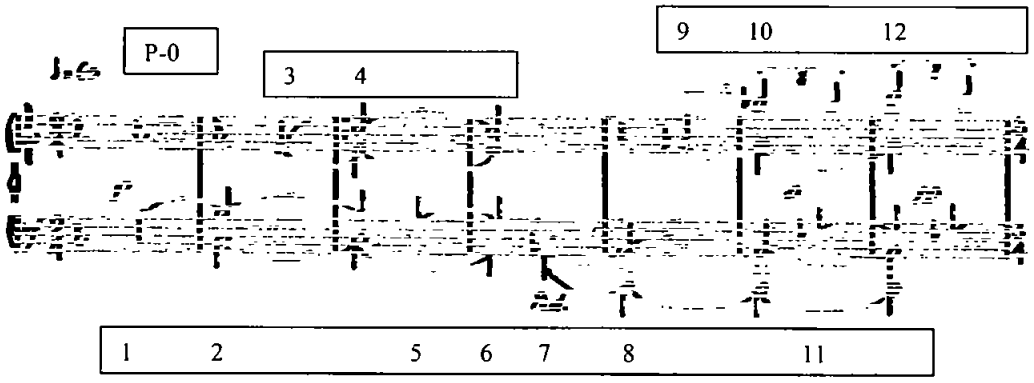


Fig. 6. *Klaviereigene Interpretationsstudie einer variierten Zwölftonfolge* (1972)

[17]Vogel, 143.

Vogel uses an original row and three additional derived rows for the *Vier Versionen einer Zwölftonfolge* (1973) in a similar manner in which Alban Berg used derived rows in the *Lyric Suite*. Rows are derived by switching hexachords or manipulating pitches within hexachords. Walter Labhart states, "It is important to know that this composer's [Vogel's] *oeuvre* for the piano—an instrument familiar to him since childhood—is one of the most outstanding contributions modern music has made to this field."[18]

Focus of this Study

Vogel only composed two concertos yet both are significant works in his *oeuvre*. As already mentioned, the *Konzert für Violine und Orchestra* (1937) holds significance as Vogel's first twelve-tone composition. The focus of this study is the second concerto which follows the first by eighteen years, the twelve-tone *Konzert für Violoncello und Orchester* (1955). Since Vogel wrote in the dodecaphonic idiom from 1937 on, the Cello Concerto, written during the middle period of his dodecaphonic output, is a representative work of his own adaptations to the method of composing with twelve tones. In an effort to assess the nature of Vogel's twelve-tone musical style, a detailed analysis of each movement of the concerto identifies specific compositional features that not only differentiate the individual movements but also those features that unify the work as a whole. Consideration is also given to the relationship of the Cello Concerto to selected works by Schoenberg and Webern comparing the compositional

[18]Wladimir Vogel, *Lyrische Miniaturen für Klavier*, Hrsg. Walter Labhart (Winterthur: Amadeus Verlag, 1982), Preface.

features in these works to Vogel's particular means of twelve-tone operations. An analytical study of the Cello Concerto as a representative twelve-tone instrumental work presents information in an area of Vogel's output that has not been done in the past.

Sources

Materials for this study was made available to me by a generous grant from the Hans Schaeuble Stiftung which allowed me to spend three months researching source documents at the Zentralbibliothek in Zürich, Switzerland. My study was not restricted only to the works of Hans Schaeuble, allowing research into the works of several Swiss composers. Wladimir Vogel was of particular interest because of his high regard among the Swiss and his substantial contribution to modern music, and with his *Nachlaß* housed at the Zentralbibliothek, materials were easily accessible. The fact that little has been written on Vogel in the English language makes an analytical study of his twelve-tone instrumental music a valuable source for scholarship.

CHAPTER II

VOGEL, SCHOENBERG AND WEBERN: A COMPARATIVE STUDY

Konzert für Violoncello und Orchester (1955) by Wladimir Vogel

The *Konzert für Violoncello und Orchester*, completed in 1955, contains three movements, all written in the twelve-tone method. In his study of Wladimir Vogel, Hans Oesch, a Swiss musicologist, speculates that the idea that led to the creation of the cello concerto resulted from a personal request by the renowned cellist, Gaspar Cassado. According to Oesch, Cassado set the conditions for Vogel to compose a concerto that made no concessions either in regard to the tradition or in the demands placed upon the soloist. The results, as described by Oesch, is a proper "concerto" in the sense of the genre. The old cyclic formal scheme has been validated by Vogel in regard to his own personal style as the first movement presents a stylization (not a parody) of a pre-classical *Allegro*, the second movement is a lyrical-expressive character piece, and the third movement is an Etude (see Fig. 7).[19]

Oesch states the row for the Cello Concerto as G-D-F#-Eb-A-G#-E-F-Bb-Db-C-B.[20] The segmentation of an eight-note melody supported by a four-note

[19]Hans Oesch, *Wladimir Vogel: Sein Weg zu einer neuen musikalischen Wirklichkeit* (Bern: Francke Verlag, 1967), 161.

[20]Ibid., 161. Oesch orders the row as "acht Töne (2 bis 9) der Reihe g-d-fis-es-a-gis-e-f-b-des-c-h in der Violoncello-Stimme, die übrigen vier in der Begleitung" [eight tones (2 through 9) of the row G-D-F#-Eb-A-G#-E-F-Bb-Db-C-B in the solo violin part, the remaining four in the accompaniment]. He states the row correctly but incorrectly assigns ordinals 2 through 9 to the solo violin part, which are ordinals 2 through 8 and 10.

Movement I	*Allegretto*	Stylization (not a parody) of a pre-classical allegro
Movement II	*Andante*	Lyrical-expressive character piece
Movement III	*Allegretto moderato*	Etude

Fig. 7. Hans Oesch's formal outline of Vogel's Cello Concerto

accompanimental group found in the initial rows of the Introduction prohibits a clear identity of the prime row used for the concerto (see Fig. 8).

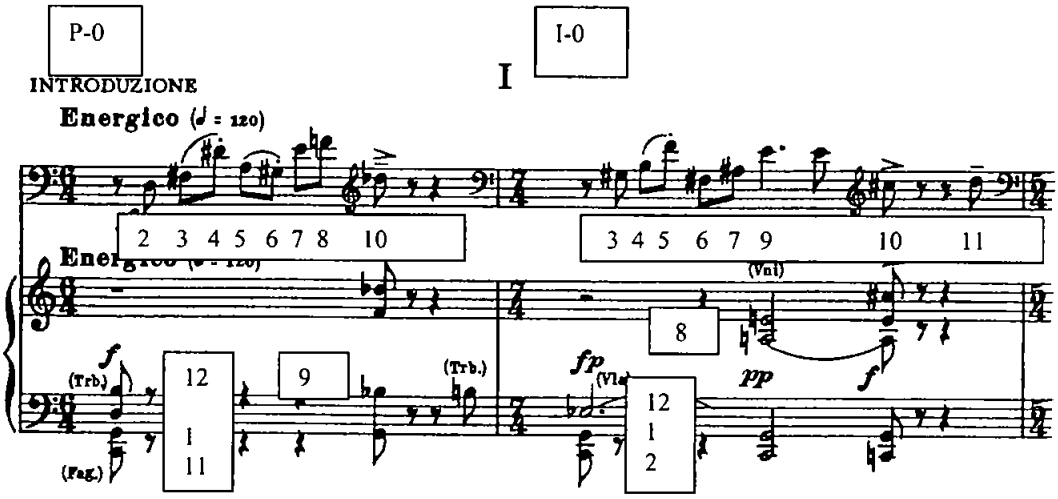


Fig. 8. Introduction (mm. 1-2) with 8 + 4 row segmentation

However, the rows that begin the A Section of the *Allegretto* (m. 19), as well as the return at the A^1 Section (m. 68), provide sufficient linear treatment to confirm Oesch's prime row form (see Fig. 9).

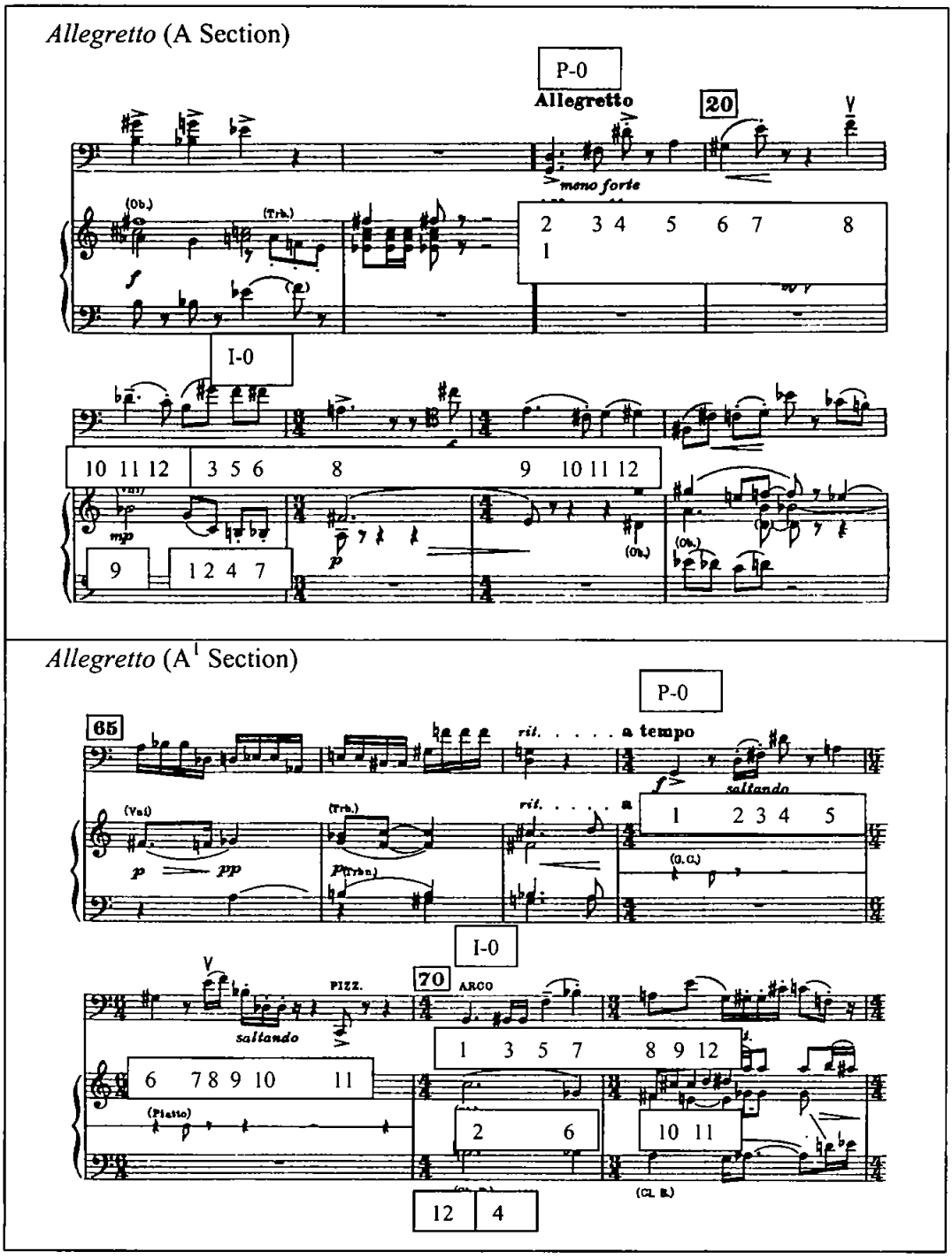


Fig. 9. *Allegretto* (A and A¹ Sections)

An analysis of the Cello Concerto substantiates Vogel's unique manner and approach to Schoenberg's method through clear presentation of tertian structures which emphasize consonant formations. Vogel's use of the row supports identification of two levels of tertian structures (see Fig. 10).

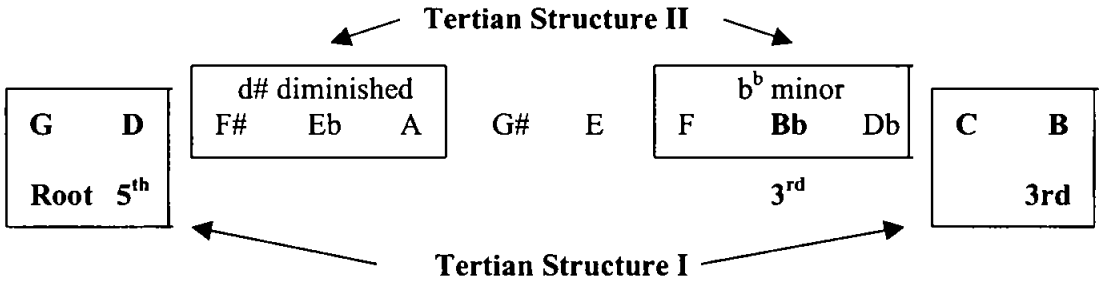


Fig. 10. Tertian structures in the concerto's prime row

The first structural level (Tertian Structure I) is represented by Vogel's use of ordinals 1, 2, 11, and 12. The consistent arrangement of ordinals 1-2-12 in close relationship, horizontally and particularly vertically, privileges the major triad, G-B-D in P-0. Another common combination presents a relationship of fifths with ordinals 1-2-11, C-G-D in P-0. At times, the two scenarios are combined to form a four-note group, ordinals 1-2-11-12. Adding ordinal 9 to the 1-2-12 sonority presents the split third since 1-2-9 forms the minor triad, G-Bb-D in P-0.[21] The second structural level (Tertian Structure II) is the presence in P-0 of a d# diminished triad (3^{rd}, root, 5^{th}) as ordinals 3-4-5 and a b^b minor triad (5^{th}, root, 3^{rd}) as ordinals 8-9-10.

[21]The term "split third" refers to the simultaneous or successive sounding of major and minor thirds with the root and perhaps the fifth of the chord.

Row typography, then, provides two levels of tertian structures with each promoting tonal coherence. At the same time, however, structural levels exist within the dodecaphonic framework as well (see Fig. 11).

Dodecaphonic Structure I

G	G	Eb	B
P-0	**I**-0	**R**-8	**RI**-4

Fig. 11. Four-row structural group in Movement I

The essential constructive element in the first movement is a successive presentation of four row forms, a dodecaphonic structure normally consisting of each of the possible row presentations P, I, R, and RI. The four-row group that begins the first movement and that recurs throughout the movement, either in exact row ordering or with modifications, is identified as **P-0, I-0, R-8, and RI-4** (Dodecaphonic Structure I).

Since the same row is used for all four movements of the concerto, the tertian structures inherent through row topography are not limited to the first movement. An analysis of the concerto's second and third movements also exemplifies constructive elements at both tertian and dodecaphonic levels.

The appearance of traditional features, such as tertian structures, within a dodecaphonic work is not new to twentieth-century repertory and certainly not new to Vogel. Both Arnold Schoenberg and Anton Webern composed works using the twelve-tone method which exhibit features common in works of the nineteenth-century. As a means

of establishing a link between Vogel's use of traditional features in his Cello Concerto and the earlier practice of the Second Viennese School, two works will be examined, Schoenberg's String Quartet No. 3, Op. 30 (1927) and Webern's String Quartet, Op. 28 (1939).

String Quartet No. 3, Op. 30 (1927) by Arnold Schoenberg

The Third String Quartet, Op. 30, is consistent with Schoenberg's practice of stating a basic series as a principal melody, although through segmentation and instrumentation, and his conception of a basic idea or "germ" that is stated at the beginning of the work and further developed as the work progresses. While the quartet exhibits clear dodecaphonic structure, elements of traditional practice are also demonstrated through passages involving canonic treatment with fifth relationships and tertian structures, such as augmented triads, stated both melodically and harmonically. Traditional features in the quartet are directly related to the work's dodecaphonic structure and support the formal organization of the work as well.

Nearly two decades after the completion of his String Quartet No. 2 in f# minor, Op. 10 (1907/08), Schoenberg completed String Quartet No. 3, Op. 30 (1927). Although a relationship can be found in the Third String Quartet to classical codes in the four-movement structure and in the character of each movement, the style and form deviates far from the classic examples. The themes hardly ever recur in the recapitulation in their original form, and even if the original rhythm is retained, the melodic line is generally altered, often inverted. In the preface to the score, Erwin Stein offers a brief formal

outline of the twelve-tone work with the qualification "quasi" before each section of the *sonata allegro* movement (see Fig. 12).[22]

Movement I	*Sonata Allegro* quasi Exposition (mm. 1-94) quasi Development (mm. 95-173) quasi Recapitulation (mm. 174-277) quasi Coda (mm. 278-341)
Movement II	Double Variations
Movement III	Minuet and Trio
Movement IV	*Rondo*

Fig. 12. Analysis by Erwin Stein of Schoenberg's Third String Quartet

Schoenberg was more cautious in his use of standard labels to identify the movements, particularly in regard to the first and second movements. This is evidenced by the following remarks:

> ...the first and second movements of the third string quartet...resemble catalogued forms in only a few respects. Not only does the order of appearance of their functional constituents (themes, melodies, units, motives and other structural elements) differ from the conventional, but also whether they are repeated, elaborated or abandoned seems to depend on different factors. The methods which provide for coherence and comprehensibility...also depend on different factors. Thus, there is no key to an analysis tracing these forms to traditionally developed organizations. This fact entitles one to question an author: What made him do this?[23]

[22]Arnold Schoenberg, *String Quartet No. 3, Op. 30* (London: Philharmonia Partituren in der Universal Edition, 1927), Preface.

[23]Arnold Schoenberg, *The String Quartets: Schoenberg, Berg, Webern,* ed. by Ursula v. Rauchhaupt, trans. by Eugene Hartzell (Hamburg: Deutsche Grammophon Gesellschaft mbH., 1971), 51.

Nevertheless, the idea of "quasi" in relation to classical form is relevant to both Schoenberg's Third String Quartet, according to Stein, and Vogel's Cello Concerto, according to Oesch.

In addition to formal considerations, other similarities can be found in the two works regarding their placement within each composer's *oeuvre*. Schoenberg's five string quartets fall into three different phases of his compositional development. His earliest works, written between 1897 and 1900, achieved a degree of acceptance, especially the string sextet *Verklärte Nacht* (1899). Many of his early works remained within the chromatic tonal sphere of Wagner but, by 1905, marked changes began to occur in his compositional style. In his String Quartet No. 1 in d minor, Op. 7 (1905), and the *Kammersymphonie, Op.9* (1906), a delayed tonal resolution is felt within more complex and dense contrapuntal textures. Even though the musical language of both works is still referable to functional tonality, extreme chromaticism and the departure from traditional treatment of harmonies perplexed audiences in Vienna and Dresden in 1906-07.[24] Schoenberg's own comments regarding the String Quartet No. 2 in f# minor, Op. 10 (1907/08) further confirm the change in his compositional style:

> This quartet played a great role in my career. However, the decisive progress toward so-called atonality was not yet carried out. Every one of the four movements ends with a tonic, representing the tonality. Within, one finds many sectional endings on more or less remote relatives of the key. That those endings renounce traditional cadential harmonies, does not justify the strict condemnation it had to endure.[25]

[24]Elliott Antokoletz, *Twentieth-Century Music* (New Jersey: Prentice-Hall, 1992), 3-4.

[25]Schoenberg, 1971, 42.

A large span of time separates the Second and Third String Quartets which accompanies a change in Schoenberg's compositional style from extreme chromaticism and non-traditional treatment of harmonies within a tonal sphere to a method of composing with twelve tones. Paul Griffiths speculates "perhaps for him standard genres were incompatible with the exceedingly non-standard language of free atonality" and "such genres became possible again only after he had restored order with the twelve-note method he developed in the early twenties."[26]

The Third and Fourth String Quartets, written in 1927 and 1935, respectively, are representative works of Schoenberg's later period utilizing the twelve-tone method (see Fig. 13).

Early	1897	String Quartet	(no opus no.)	D major
Middle	1905 1907/08	String Quartet No. 1 String Quartet No. 2	Op. 7 Op. 10	d minor f# minor
Late	1927 1936	String Quartet No. 3 String Quartet No. 4	Op. 30 Op. 37	12-tone 12-tone

Fig. 13. Schoenberg's string quartets

Vogel's two concertos certainly fall within different phases of his compositional development as well. In the case of the Violin Concerto completed in 1937, Vogel had

[26]Arnold Schoenberg, *String Quartets Nos. 1, 2, 3 and 4, Opp. 7, 10, 30 and 37,* Arditti Quartet and Dawn Upshaw (London: British Broadcasting Corp., 1993), Program Notes, 26.

only been introduced to Schoenberg's method the previous year; therefore, it was his first attempt at composition using the twelve-tone method. It appears he was "testing the water" as he retained his proven approach to composition for the first two movements and reserved his new method of writing with twelve tones for the third and fourth movements. During the eighteen-year span between the first and second concerto, Vogel's adaptation of Schoenberg's method is refined allowing him to produce an entire concerto using the method of composing with twelve tones (see Fig. 14).

Early	1937	*Konzert für Violone und Orchester*	12-tone Movements III and IV
Middle	1955	*Konzert für Violoncello und Orchester*	12-tone All three movements

Fig. 14. Vogel's concertos

While Schoenberg's Third String Quartet is composed using the twelve-tone method, the appearance of tonal relationships and chord qualities common to nineteenth-century practice exists within the harmonic fabric of the work, which leads to a third point for comparison. In both Schoenberg's Third String Quartet and Vogel's second concerto for cello, tertian structures reminiscent of nineteenth-century practice allow for a certain degree of tonal coherence within the dodecaphonic framework. The first 61 measures of Movement I of Schoenberg's String Quartet No. 3 provide a suitable section of the movement for illustration. Considering tempo markings, changes in

instrumentation, changes in instruments' roles as melody or harmony, and contrapuntal procedures as clues to sectional divisions, an outline of the opening section can be derived (see Fig. 15).

Melody (M) and Accompaniment (A) (mm. 1-32)

Phrase 1 (mm. 1-18) [Row segmentation 5 + 5 + 2]

Violin I	(M)
Violin II	(A)
Viola	(A)
Cello	(M)

Phrase 2 (mm. 19-32) [Row segmentation 5 + 5 + 2]

	(19 – 25)	(25 – 27)	(27 – 32)
Violin I	(A)	(A)	(M)
Violin II	(M)	(M)	(A)
Viola	(M)	(A)	(M)
Cello	(A)	(M)	(A)

Canon in contrary motion (mm. 33-43)

Phrase 1 (mm. 33-36) [Row segmentation 5 + 5 + 2]
Phrase 2 (mm. 36-43) [Row segmentation varies]

Melody (M) and Accompaniment (A) (mm. 43-61)

Phrase 1 (mm. 43-51) [Row segmentation 5 + 5 + 2]
Melody in Violin I or Cello

Phrase 2 (mm. 51 – 61) [Row segmentation 4 + 4 + 2 + 2]

Violin I	(M)
Violin II	(A)
Viola	(A)
Cello	(M)

Fig. 15. Outline of String Quartet No. 3 (mm. 1-61)

The movement begins with four introductory measures that establish a "germ" that is found throughout the movement. Schoenberg referred to the eighth-note figure as the "one figure which almost never fails to appear in this first movement and which might provide a unifying connective for all the remotely related characters and moods."[27] The figure states the first five pitches of the twelve-tone row.[28] The remainder of the row is easily found in Violin I in measures 5-8 (pitches 8-12) and the Cello in measures 8-9 (pitches 6-7). The first nine measures of the quartet are shown in Fig. 16.

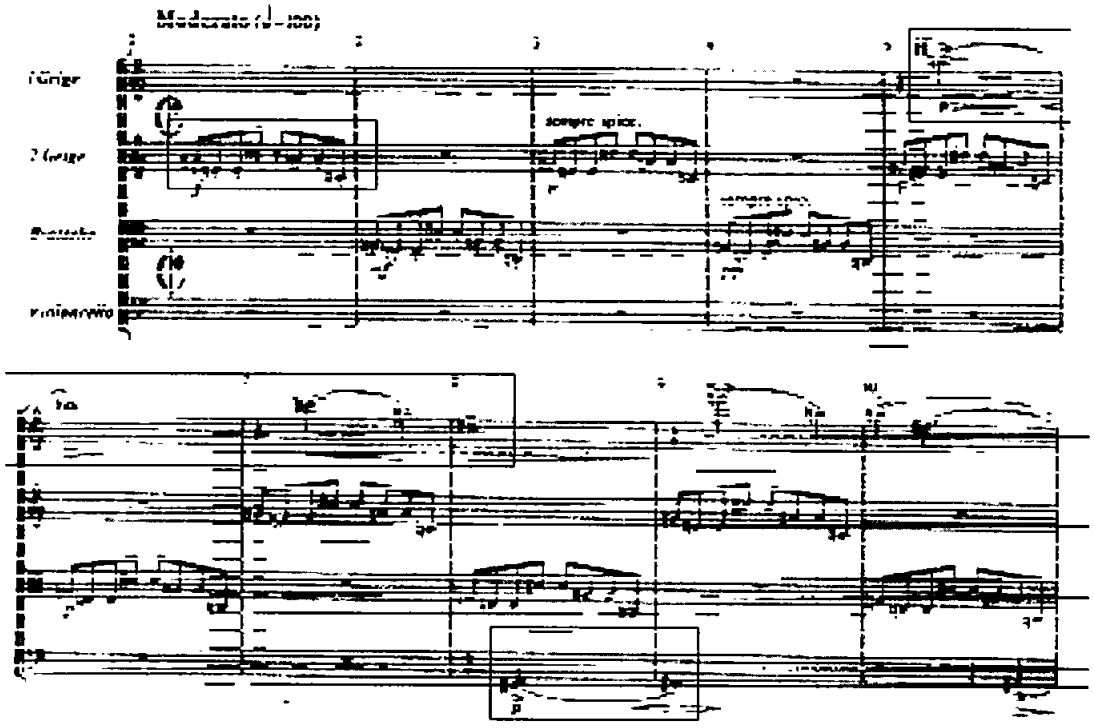
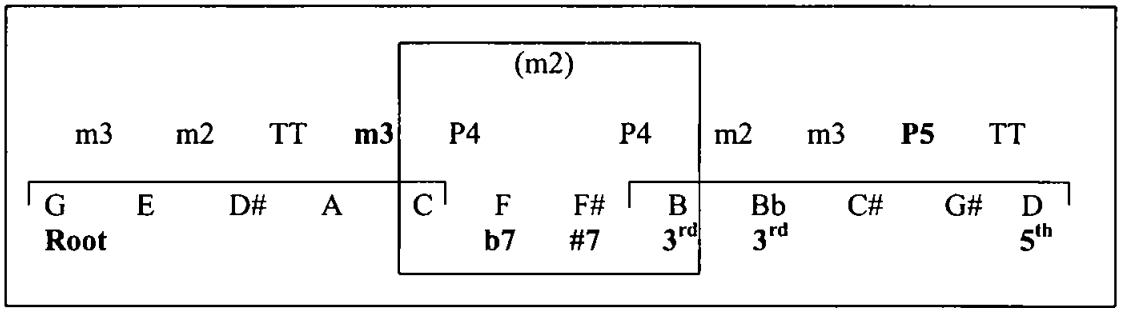


Fig. 16. P-0 in String Quartet No. 3 (mm. 1-9)

[27]Schoenberg, 1971, 52.

[28]The row P-0 is stated in Movement III in the Viola, measures 1-3.

Segmentation of row P-0 into 5 + 5 + 2 is directly related to row topography, ordinals 1-5, 6-7 and 8-12 (see Fig. 17).



*each hexachord contains a m3, m2, tritone, and P4
*the m3 in the first hexachord is replaced by a P5 in the second hexachord

Fig. 17. Segmentation of Row P-0 in String Quartet No. 3

The four-row dodecaphonic structure used in the first movement of Vogel's Cello Concerto can be compared to the "germ" represented by the five-note rhythmic figure in Schoenberg's Third Quartet. The four-row dodecaphonic structure, first seen in its original grouping in the first four measures of the concerto, supports the formal organization and provides opportunities for variation as well as participates in the harmonic implications of the movement. The fact that the original four-row group, which appears at the beginning of the movement, also appears at other significant places in the movement suggests that the structure serves as a *Grundgestalt* in a similar function of the five-note "germ" in Schoenberg's Third String Quartet.

Distinction between melody and accompaniment in the opening section of the string quartet is evident by the melodic phrases consisting of longer note values with

clear articulations and the rhythmic eighth-note accompanimental figures. However, the middle section with the canon in contrary motion presents a different scenario (m. 33). Fig. 18 diagrams the segmentation of rows P-8 and I-11 into 5 + 5 + 2 (ordinals 1-5, 6-10, and 11-12) and demonstrates the fifth relationships (C# - Ab) between the Cello and Viola on ordinal 5 to end the first group and the Violins I and II on ordinal 6 as the second group begins. Fig. 19 provides the musical example for the beginning measures of the canon.

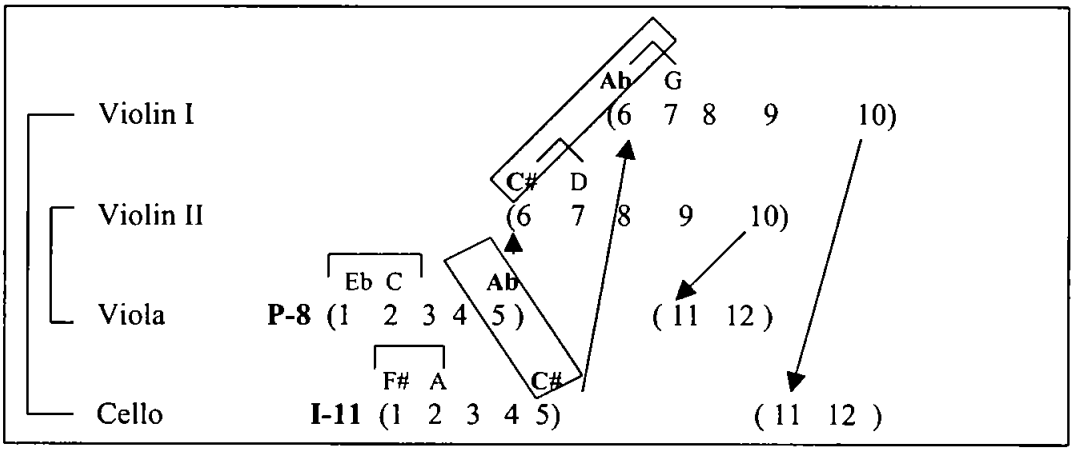


Fig. 18. Fifth relationships in the canon in String Quartet No. 3 (mm. 33-36)

The canon pairs the two inner parts with P-8 and the two outer parts with I-11. The canon involving the first group of five pitches begins in the Viola, P-8, with a descending minor third, Eb – C and is answered by the Cello, I-11, with the ascending minor third, F# - A (m. 33). The second group of five pitches begins with C# - D in the Violin II, P-8, and is answered by Ab – G in the Violin I, I-11 (m. 34). The pairing of P-8 and I-11 results in a canon in contrary motion with pairs of perfect fifths formed at

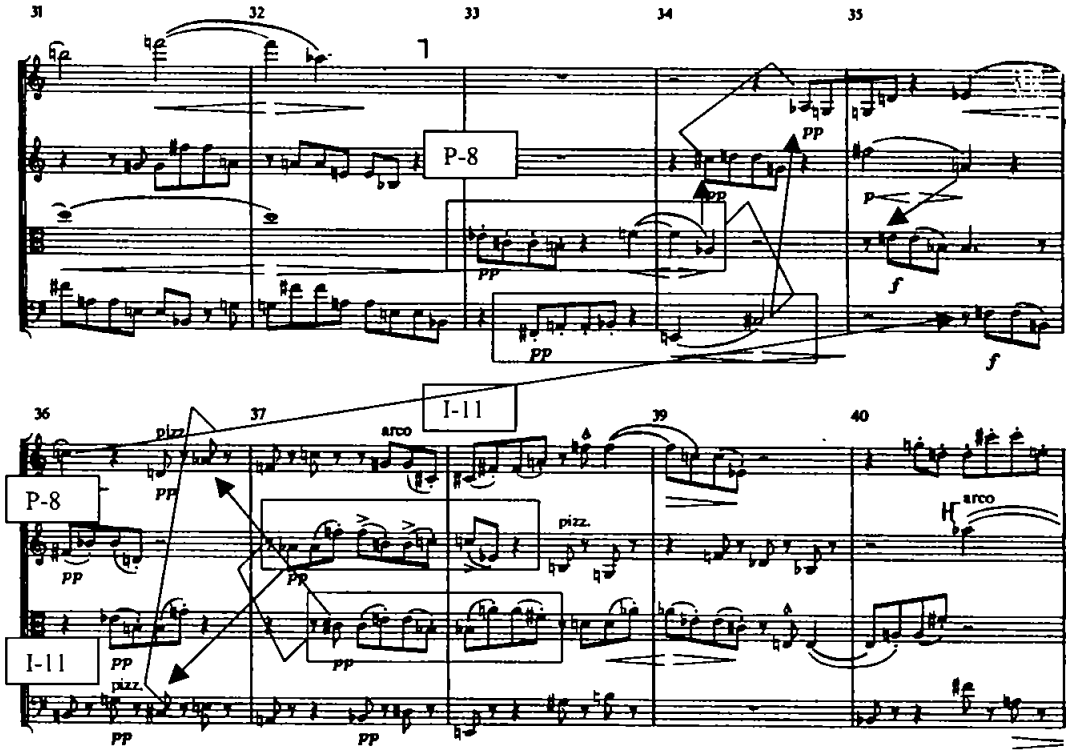


Fig. 19. Canon in String Quartet No. 3 (mm. 33-39)

ordinal 5 of both rows (Ab of P-8 and C# of I-11) and ordinal 6 (C# of P-8 and Ab of I-11).

The rows P-8 and I-11 appear again as a canon in contrary motion (m. 36). In this instance, however, P-8 pairs the Violin II and Cello and I-11 pairs the Viola and Violin I. The rows are now segmented as 3 + 4 + 5 represented by ordinals 9-12-7 (an augmented triad), ordinals 8-6-11-10, and ordinals 5-4-3-2-1. As in the previous measures, perfect fifth relationships appear at the pairing of ordinal 5 of both rows as

Ab-F (ordinals 5-4 of P-8) in the Violin II is answered by C#-E (ordinals 5-4 of I-11) in the Viola. The perfect fifth formed by the pairing of ordinal 6 of P-8 and I-11 is slightly obscured, however, since ordinal 6 is now part of a tetrachordal figure, 8-6-11-10.

In addition to tonal relationships, chord qualities common to nineteenth-century practice are also found in the quartet. Augmented triads are formed from pitches 7, 9 and 12 of various rows. In measure 36, the pitches of the augmented triads are stated as melodic intervals (Violin II and Viola), but in measures 48 – 51 the pitches appear as harmonic intervals (see Figures 20 and 21).

Measure	Instrument	Ordinals	Row
36 36	Violin II Viola	9-12-7* 9-12-7*	P-8 I-11
48 49	Viola Violin II	9-12-7 9-7-12	P-10 I-1
50 51	Viola Violin II	9-12-7 9-7-12	P-2 I-5

*melodic

Fig. 20. Augmented triads in String Quartet No. 3

The structural significance of tertian structures in Vogel's Cello Concerto can be compared to the manner in which Schoenberg uses fifth relationships and augmented triads in the structure of the Third String Quartet. In Vogel's concerto, the tertian structures are accomplished in several ways including row topography, relationship of row forms within both small-scale and large-scale harmonic outlines, and tetrachordal

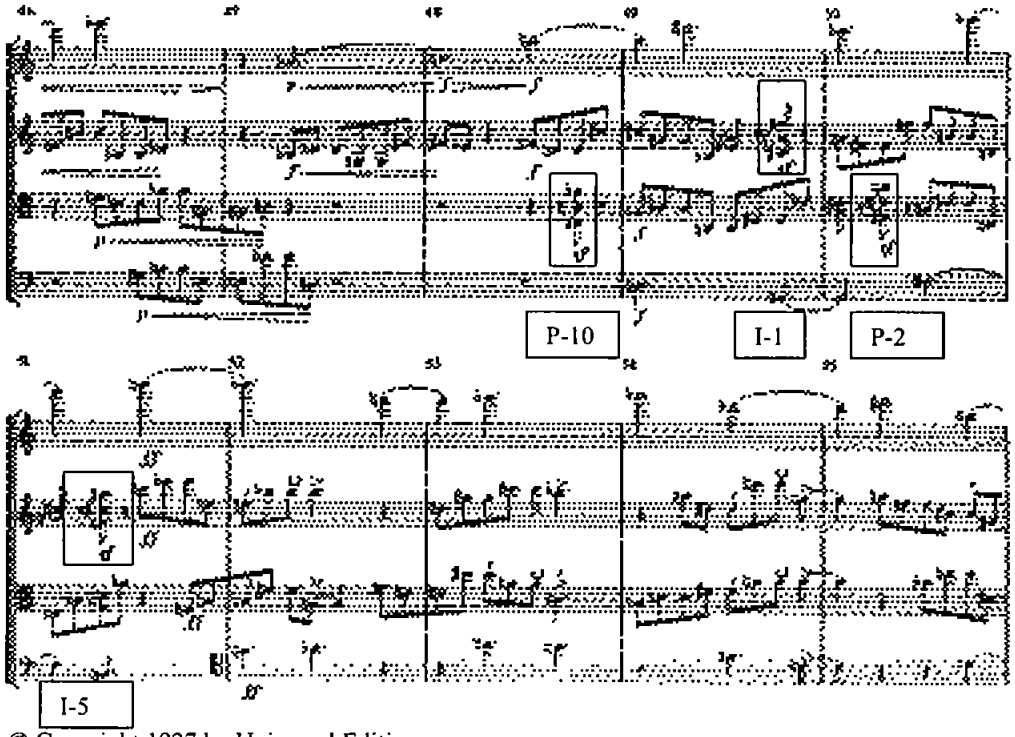


Fig. 21. Augmented triads (ordinals 7-9-12) in String Quartet No. 3 (mm. 48-51)

segmentation of the row, a triad with both major and minor thirds or three notes of a triad plus an additional fifth relationship.

Through the organizing principle of the *Grundgestalt* involving dodecaphonic structures and traditional compositional techniques reminiscent of nineteenth-century practice involving tertian structures, Vogel's Cello Concerto expands on compositional traits already in the repertory. Vogel not only adapts Schoenberg's twelve-tone method to his own personal compositional style, but also continues to explore traditional ideas from tertian harmony in a manner similar to Schoenberg's approach in the Third String Quartet.

String Quartet, Op. 28 (1939) by Anton Webern

Webern's String Quartet, Op. 28, contains constructive elements of serialism while, at the same time, exemplifies features from traditional repertory. The twelve-tone row (Db C Eb D F# G E F A G# B Bb) is derived from the first four notes of the series. The initial four notes, the *BACH* motive, are the same as the next four notes, when inverted and transposed up five semitones (I_5), and are the same as the final four notes, when transposed up eight semitones (T_8). Use of a derived row not only provides symmetry, six pairs of semitones, but also provides many possibilities for motivic relationships within the work. In the third movement of the String Quartet, Webern uses the series as the subject of a scherzo and utilizes the tetrachordal design of the series to create a new subject for the fugue. However, while subjects are formed from twelve-tone rows, the formal designs evident in the movement are representative of traditional forms such as scherzo and fugue with examples of canonic treatment as well. Phrases exhibit a traditional two-part design of antecedent and consequent, and harmonic outlines of tertian structures are evident at beginning and endings of phrases. Thus, analytical discussion of the String Quartet involves both dodecaphonic and traditional approaches.

The String Quartet, Op. 28, was the last of Anton Webern's works to be printed in his lifetime. Political conditions in Austria necessitated its publication abroad, but nevertheless, Webern was immensely gratified as he felt that, with this work, he had achieved a most important step on the ascent of his own Parnassus. This was recognized by Theodor Wiesengrund-Adorno who wrote:

> To the String Quartet, Op. 28, in particular, he (Webern) attached the greatest importance. He expected from it no less than that it would bridge the gap in the development of Occidental music, the gap between objectivity and the subject, which he deemed codified in the historic types of fugue and sonata.[29]

It is the third movement of the quartet that Webern considers "the 'crowning fulfillment'...of the 'synthesis' of 'horizontal' and 'vertical' construction...I strove for already in the first and second movements." He continues to state:

> As is known, the classical cyclic forms—sonata, symphony, and so forth—evolved on the basis of the former, while "polyphony" and its associated practices (canon, fugue, and so on) derived from the latter. And now, here I have attempted not only to comply with the principles of both styles in general but also specifically to combine the forms themselves: as already through the use of "canons" in the preceding movements, so here in this movement through the "fugue"![30]

Webern's description makes clear the intent of synthesis in the third movement. As shown in Fig. 22, the movement is primarily a scherzo form (subject/development/ reprise). In this respect, the principles of "horizontal" style are made clear by the three-part formal organization. However, the middle section, the development, is a double fugue consisting of two fugal expositions alternating with two episodes, both of which are in strict four-part canon, thereby supporting principles relating to the "vertical."[31]

The complexity of the synthesis occurs in the reprise of the scherzo subject which serves a dual role: as the reprise of the scherzo subject, fulfilling the horizontal requirements, and as the third exposition of a double fugue, in compliance with the principles of

[29]Hans Moldenhauer and Rosaleen Moldenhauer, *Anton von Webern: A Chronicle of His Life and Work* (New York: Alfred A. Knopf, 1979), 494.

[30]Ibid., 753

[31]Although Webern himself designates the development section as a fugue, from a constructive point of view, measures 16 through 26 can be explained as a canon with two voices with *dux* (RI-1) and *comes* (R-0).

A	B	A^1
Scherzo	Development	Scherzo
Antecedent/Consequent	DOUBLE FUGUE Exposition I/Episode I Exposition II/Episode II	Antecedent/Consequent Exposition III

*Scherzo (horizontal construction) *Fugue (vertical construction) *Scherzo subject (Reprise) = Fugue subject (Exposition III)

Fig. 22. Formal features of Webern's String Quartet (Movement III)

vertical construction. Referring to Beethoven's connection to the scherzo and Bach for the fugue, Webern asks the question, "Now then is this or is this not a synthesis of the two styles?"[32]

To obtain a synthesis of horizontal and vertical through the use of a scherzo form and a fugue, a connection must be made between the "scherzo" subject and the "fugue" subject. The fugue subject (RI-1) is derived from the scherzo subject (P-0) (see Figures 23 and 24). The pitches are identical, however, the tetrachords appear in a different order and in retrograde within the tetrachord in two instances. Whereas the scherzo subject (P-0) divides into tetrachords 1, 2, and 3, respectively, the fugue subject (RI-1) reorganizes these tetrachords using the same pitch content into the order: retrograde of 2, retrograde of 3, and 1. Webern also connects the scherzo and fugue through rhythmic configuration. The rhythm of the countersubject in the fugal section has a retrograde

[32]Ibid., 754.

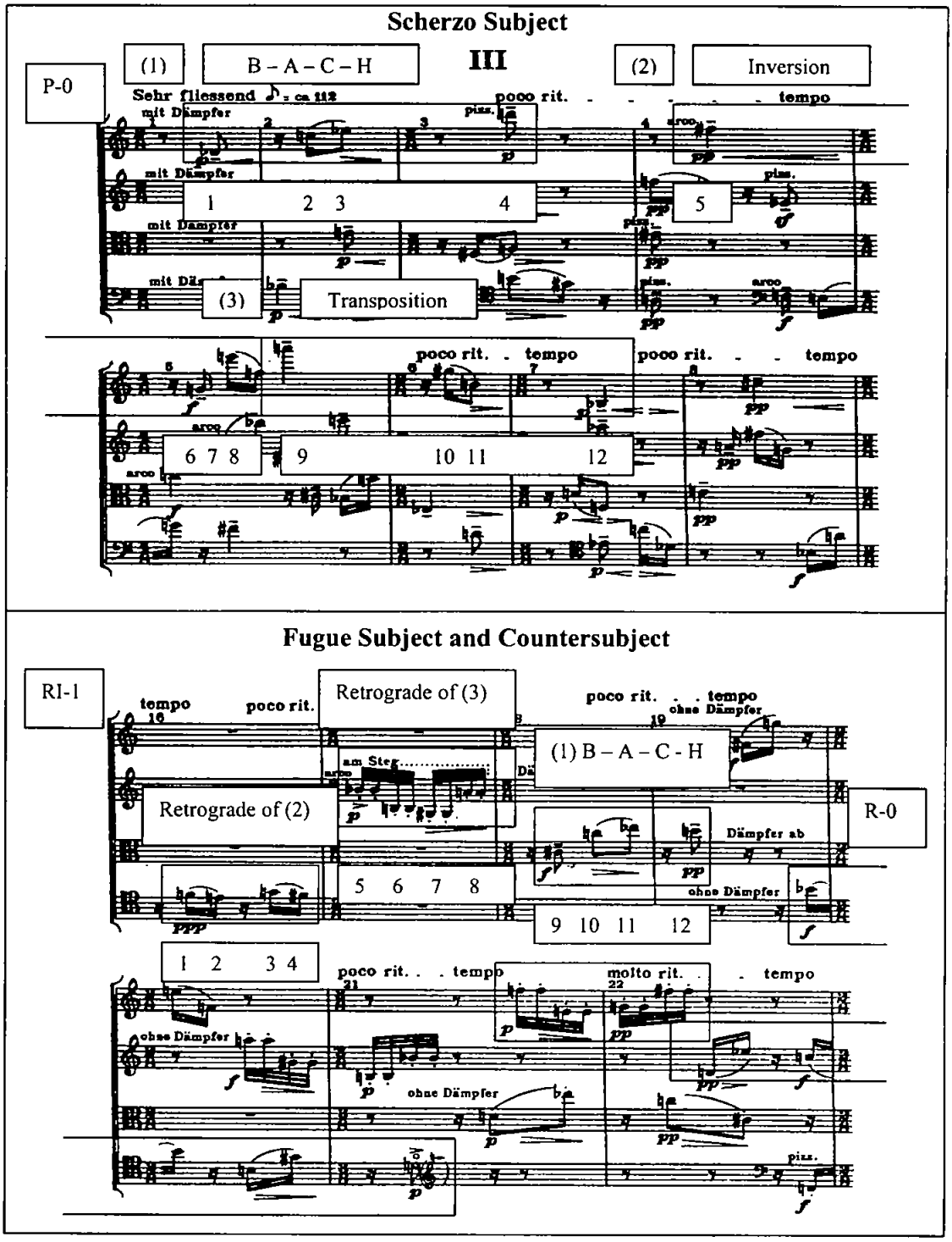


Fig. 23. Tetrachords in Scherzo subject and Fugue subject and countersubject

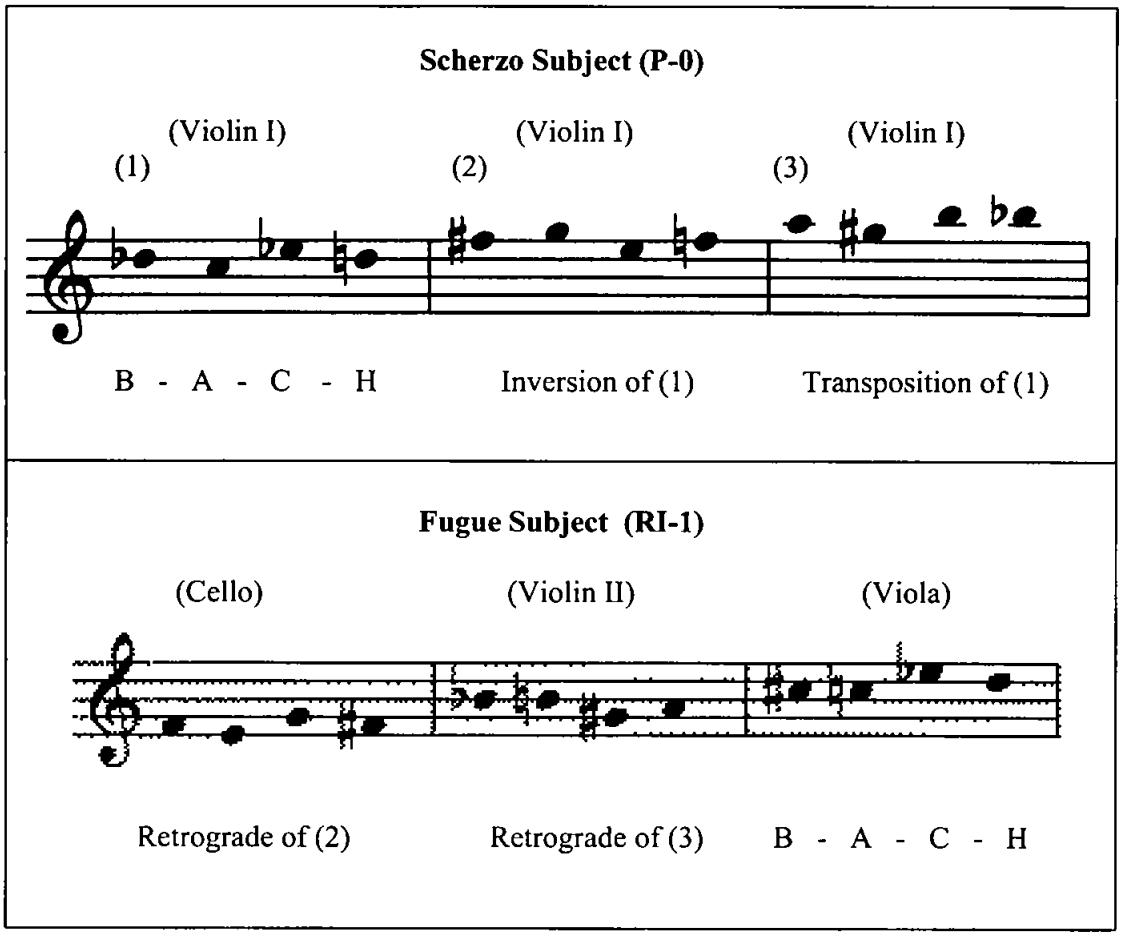


Fig. 24. Derivation of Fugue subject (RI-1) from the Scherzo subject (P-0)

relation to that of the fugue subject. Further the retrograde of the rhythm in the fugue subject is a variant of the rhythm in the prime row at the opening section of the scherzo.

In addition to references to the past through formal organization of the String Quartet's third movement (sonata form, ternary form and fugue), reminiscence to earlier traditions are evident through implied tertian harmonies and treatment of dissonance and consonance within the row and within the movement as a whole.

The opening scherzo section is a strict four-part canon with the section dividing into antecedent (mm. 1-8) and consequent (mm. 8-15) phrase structure. The instruments are paired as Violin I/Viola and Cello/Violin II (see Fig. 25). In both cases, the interval between the *dux* and *comes* is a tritone (Db – G and Bb - E). The four beginning pitches spell the c# diminished-seventh chord (C# - E – G – Bb). The diminished-seventh chord is not resolved in this opening section as the final pitches of each of the two phrases also spell the c# diminished-seventh chord (see Fig. 26).

Antecedent (beginning) (m. 1)			Consequent (beginning) (m. 8)		
Instrument	Row	Ordinal 1/12	Instrument	Row	Ordinal 1/12
Violin I	P-0	Db	Violin I	I-0	C#
Violin II	R-6	E	Violin II	RI-0	E
Viola	P-6	G	Viola	I-6	G
Cello	R-0	Bb	Cello	RI-6	Bb

Fig. 25. The $c\#^{o7}$ chord formed by antecedent/consequent beginnings

Antecedent (ending) (m. 8)			Consequent (ending) (m. 15)		
Instrument	Row	Ordinal 1/12	Instrument	Row	Ordinal1/12
Violin I	P-0	Bb	Violin I	I-0	E
Violin II	R-6	G	Violin II	RI-0	C#
Viola	P-6	E	Viola	I-6	Bb
Cello	R-0	C#	Cello	RI-6	G

Fig. 26. The $c\#^{o7}$ chord formed by antecedent/consequent endings

The c# diminished-seventh sonority constructed through row relationships can also be found within the construction of row P-0. Row topography demonstrates a symmetrical structure allowing for a connection between pitches that outline a c# diminished-seventh chord (ordinals 1-6-7-12 in P-0) and the interval that would be the normal resolution , D – A (ordinals 4-9 in P-0). The split third represented by F# and F (ordinals 5-8 in P-0) allows for ambiguity in the resolution with the bimodal suggestion of both D major/minor (see Fig. 27).

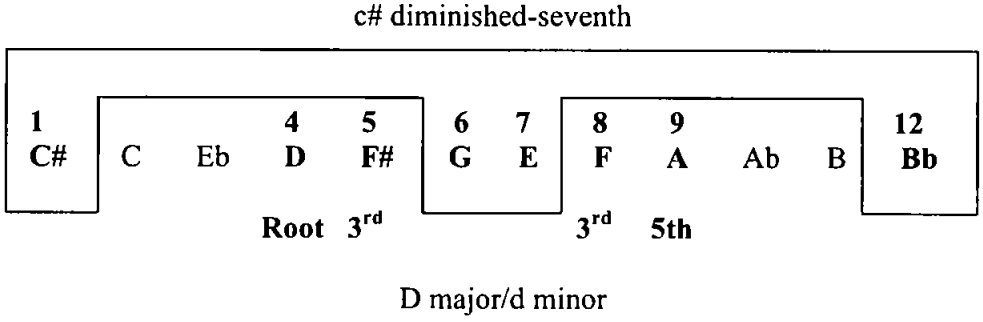


Fig. 27. Scherzo subject (P-0) in Movement III

Since the fugue subject (RI-1) is derived from the scherzo subject (P-0), a similar arrangement can be found in the row RI-1 (see Fig. 28). In the fugue subject, however, the chord is e# diminished-seventh and the interval of resolution is the fifth, F#-C#. Once again, the split third, A# and A, presents ambiguity in the resolution, suggesting both F# major and f# minor.

The relationship between the beginning of the Scherzo (m. 1), with the potential resolution of a c# diminished-seventh resolving to D major/d minor, and the beginning of

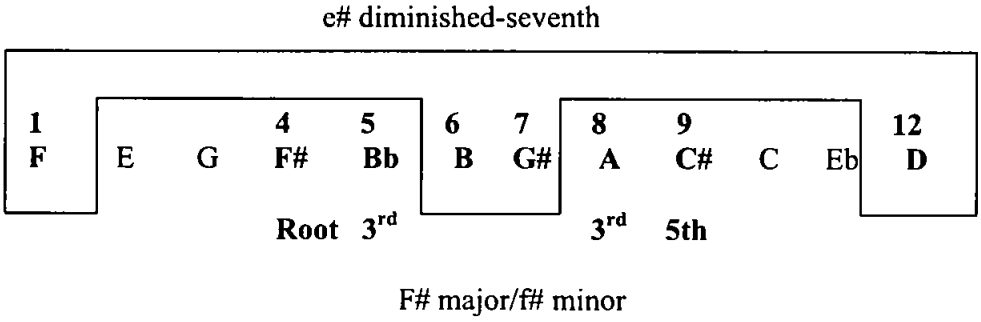


Fig. 28. Fugue subject (RI-1) in Movement III

the fugue (m. 16), with the potential resolution of an e# diminished-seventh resolving to F# major/f# minor, places particular importance on the interval of a major third, D – F#, which is suggestive of a harmonic motion from tonic to mediant at the level of D major.[33]

Through instrumentation, tetrachordal division of the row is evident throughout the development section of the scherzo (fugue) with several examples of mapping. In the fugue's first exposition (mm. 16-25), the beginning pitches of each tetrachord that represents statements of subject, answer and countersubject present a series of major and minor triads on pitches Bb, D and F# (see Fig. 29). For all three roots, the split third is also present suggesting simultaneous major/minor triads. The addition of the pitch Bb to the major third, D – F#, creates an additional third relationship, D – Bb, which is suggestive of a harmonic motion from tonic to submediant at the level of d minor.

The final section, complex with its dual role as both the reprise of the scherzo as well as a third exposition for the fugue, retains the four-part canon with formation of c#

[33]The appearance of D and F# as possible structural harmonies within a movement can also be found in Schoenberg's String Quartet No. 4, Op. 37 (1936).

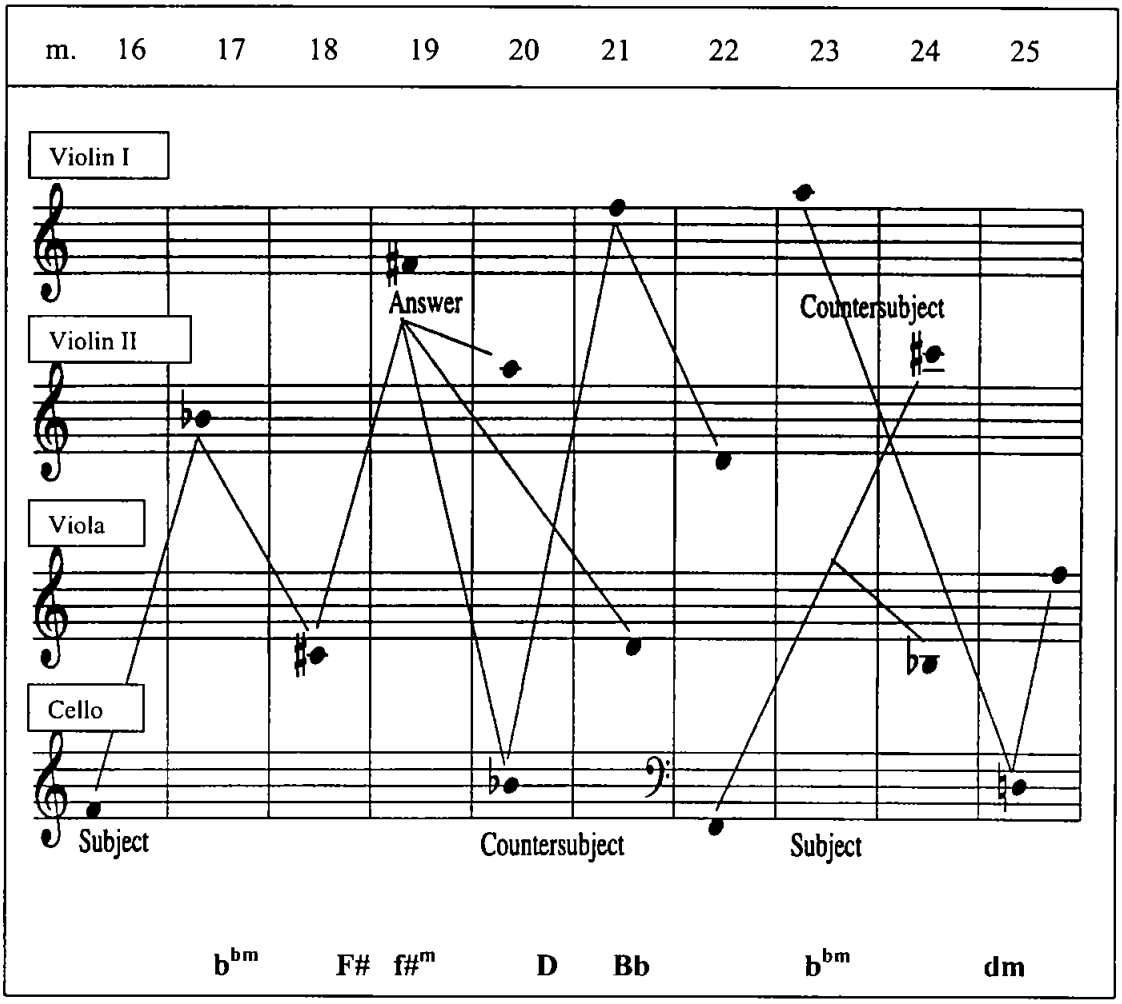


Fig. 29. Major and minor triads outlined through tetrachordal segmentation

diminished-seventh chords on both beginning and ending ordinals of the rows that participate in the antecedent and consequent phrases. Once again, the row pairs present tritone relationships, Bb - E and C# - G. Therefore, just as the opening section of the movement presents a dissonant diminished-seventh sonority that lacks resolution, the closing section also offers dissonance and fails to offer resolution.

However, within outer boundaries of a dissonance nature, consonance is provided in the middle of the movement, the first episode in the development section (mm. 26-37). The episode is also a four-part canon, but unlike the scherzo, the intervals between the *dux* and *comes* are not the tritone, but intervals of a perfect fourth, representing consonance through a perfect interval rather than dissonance through a tritone (see Fig. 30).

Episode I (m. 26)		
Instrument	Row	Ordinal 1/12
Violin I	P-5	F#
Violin II	RI-6	Bb
Viola	RI-11	Eb
Cello	RI-7	B

Fig. 30. Perfect fourth relationships in the four-part canon

The meter for ten measures of the twelve-measure episode is 3/32, a single occurrence of this meter in the movement and the longest section that remains with the same time signature.

The presentation of perfect fourths in the four-part canon at the first episode of the fugue, presents a ternary harmonic design for the movement (see Fig. 31). The musical excerpts from the String Quartet that illustrate the ternary harmonic design are shown in Fig. 32.

Scherzo (m. 1)	Development (Episode I of Fugue) (m. 26)	Scherzo (m. 54)
Dissonance	Consonance	Dissonance
Four-part canon (tritone)	Four-part canon (perfect fourth)	Four-part canon (tritone)

Fig. 31. Ternary harmonic design for Movement III

A precedent for Webern's use of a diminished-seventh chord as the frame around a more stable harmony can be found in Song No. 11, "*Die Stadt*" of Franz Schubert's *Schwanengesang* (1828). In "*Die Stadt*," an f# diminished-seventh chord surrounds c minor harmony. Webern draws on music of the past to achieve a continuous path from the old to the new. Even though his compositional approach is that of a twentieth-century method, the elements of form and pitch relationships relating to the past are also a part of the present.

Both formal and harmonic features described in Webern's String Quartet are apparent in the Cello Concerto by Vogel. The constructive features of the String Quartet, though complex, present a clear formal design that also relates to the harmonic features of the quartet. The formal design of Vogel's concerto, made clear primarily through tempo designations, instrumentation, melodic material and conservative use of row presentation in linear fashion, is also closely related to the concerto's harmonic design as well. Just as tertian harmonies are formed by Webern's choice of rows in the

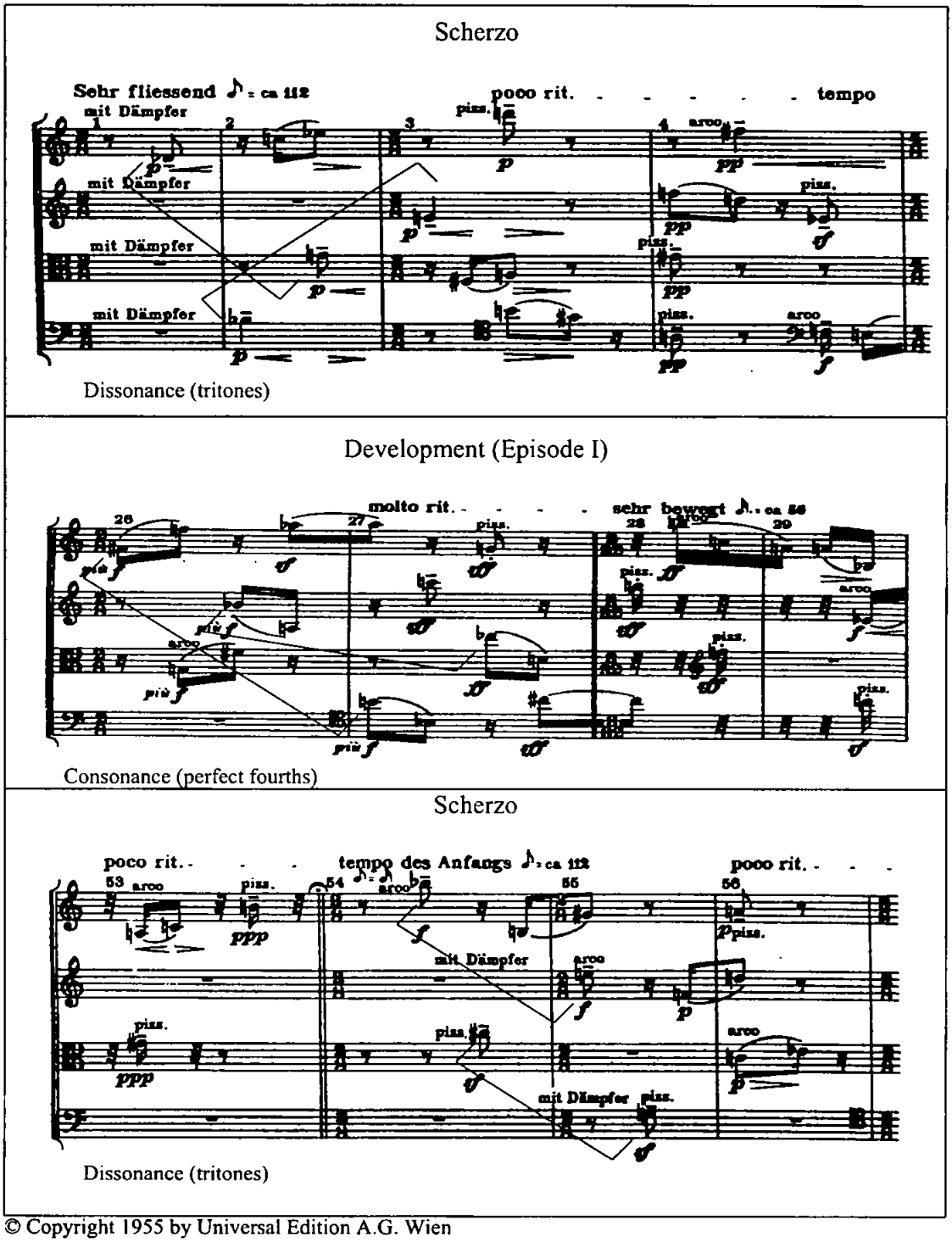


Fig. 32. Scherzo – Development (Episode I) – Scherzo

four-part canon of the Scherzo, triadic structures occur throughout Vogel's concerto as part of both small- and large-scale designs. In both Webern's quartet and Vogel's concerto, references to past traditions are easily identifiable and present opportunities for application of analytical procedures common to nineteenth-century practice.

Conclusion

Although Vogel was never a pupil of Schoenberg, he was familiar both with the twelve-tone method and with compositions by Second Viennese School composers. When comparing Vogel's compositional techniques in the concerto to both Schoenberg's and Webern's approaches to twelve-tone writing, many similarities may be found, particularly in the appropriation of nineteenth-century structures and techniques within a twentieth-century method. Despite these similarities, Vogel's own unique approach to writing with twelve-tones led to some distinctive differences from the music of Schoenberg, Berg and Webern. As the following analytical chapters will illustrate, these differences are evident in the Cello Concerto.

CHAPTER III

KONZERT FÜR VIOLONCELLO UND ORCHESTER (1955) BY WLADIMIR VOGEL MOVEMENT I

Introduction

Analytical discussion of the Cello Concerto can be approached legitimately in two different ways. Since the work is composed using the twelve-tone method, one approach to analysis includes consideration of the structure of the serial components. The serial approach involves row identification throughout the work and recognition of dodecaphonic structures that support the overall design of each movement and/or the entire work. Another approach to analysis, however, involves discussion of the concerto in terms of its cognitive features--those elements that are demonstrably related to traditional practice. The traditional approach includes discussion of tertian melodic/harmonic outlines reinforced by rhythmic features that are common to eighteenth- and nineteenth-century practice. Analytical discussion of the three movements of the Cello Concerto, provided in this chapter as well as Chapters IV and V, utilizes both approaches. The compositional features evident from the serial structure of the work are addressed in conjunction with references to traditional practice made evident through the serial technique.

From the beginning of the first movement, there are a number of features that recall musical practice of the past. The listener's attention may be drawn to melodic

shapes and harmonic combinations that outline harmonies common to music of the previous century. But it is more than merely the pitch outlines that may be referred to past practice; the rhythmic figures that support these outlines are old friends from the repertory of the Classic and Romantic eras. Thus, for example, the movement opens with a series of rhythmic melodic passages in the solo cello, each beginning on an upbeat. The orchestra provides clearly articulated chordal sonorities occurring on the initial down-beats of the introductory measures that not only present sonorities constructed of thirds and fifths, but also a bass line that could easily be found in the beginning of a tonal work of a previous century.

The C to G motion in the bass is emphasized by two occurrences in the first phrase of the Introduction. In the opening four-row dodecaphonic structure, the bass line prolongs C before moving directly to G. A second motion from C to G brings the first phrase to conclusion, but this time arrives on G by way of F# and Ab, double neighbor tones to G. In the tonal realm, a bass line motion of C-F#-Ab-G would be suggestive of scale degrees 1-#4-b6-5 at the level of C major implicating a harmonic motion of tonic to dominant with an intermediate harmony of predominant function.

Another easily recognizable sonority is the four-note tertian structure that concludes the Introduction. The rhythmically emphasized f# diminished-seventh chord resolves into row P-0 (G) to begin the Allegretto in a similar manner that a dominant chord resolves to tonic in an authentic resolution in tonal music. Although the listener might first be inclined to hear "C" as the tonic figure, the arrival on "G" at the *Allegretto* by way of an f# diminished-seventh chord causes one to re-evaluate the relationship of C

and G and consider the possibility of "G" as the tonic figure with bass line movement from C to G representing a plagal motion.

In addition to the traditional bass line motion and harmonies, the listener might also perceive rhythmic gestures evident in the introductory section of the first movement. In the opening measures, the solo cello consistently begins melodic passages on the upbeat of beat one and concludes with an alternation of emphasis on beats five and six. Vogel also uses rhythmic reiteration to emphasize a single pitch or sonority. As the Introduction's first phrase comes to a close, the pitch Bb is repeated in a rhythmic pattern commonly found in Bruckner's music: eighth rest/note [quarter], two eighths, four sixteenths (see Fig. 33).

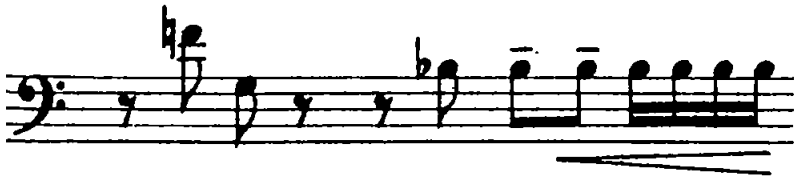


Fig. 33. Rhythmic pattern for the pitch Bb (m. 6)

Vogel uses another classic rhythmic pattern for the f# diminished-seventh chord which concludes the second phrase: eighth, two sixteenths, eighth (see Fig. 34).

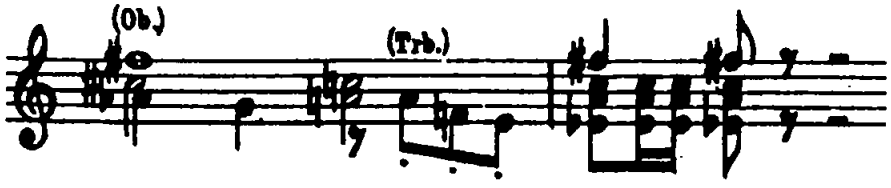


Fig. 34. Rhythmic pattern for the f# diminished-seventh chord (m. 18)

Tonal gestures arise from the presentation of tertian structures such as the diminished and major or minor triads inherent in the row, particularly when presented in linear fashion or as vertical sonorities. In the first two measures, the linear melodic presentation of ordinals 3-4-5 and the vertical harmonic setting of ordinals 8-9-10 are suggestive of melodic and harmonic gestures found in tonal repertory. Another tonal feature of the first movement is the appearance of both major and minor thirds of a given sonority. Both thirds (B natural and Bb) of the G-D fifth are provided in the accompanimental figure of the first measure. In the second measure, both thirds of the C-G fifth are presented as Eb is part of the accompanimental figure and E is emphasized through duration in the solo cello and doubling in the Violin.

Of particular interest, however, is not just the fact that traditional rhythmic, tonal, and harmonic features appear in the movement, but, more importantly, that Vogel utilizes the twelve-tone method to accomplish not only a coherent twelve-tone work but also one that exhibits classical design. Row topography certainly enhances the possibilities of presenting tertian structures with third and fifth relationships through ordinals 3-4-5, 8-9-10, and 1-2-11-12. In regard to formal considerations, the most significant factor is row usage. Very commonly, phrases begin with either P-0 or I-0, "G" rows, and end with row pairs that represent cadential motion, such as P-7 (D) to P-0 (G), an authentic resolution, or P-7 (D) to P-8 (Eb), a deceptive resolution. Although Vogel's approach to dodecaphonic writing is primarily of a harmonic nature, he occasionally presents rows in linear fashion. Linear treatment, however, is generally reserved for formal divisions and is often accompanied by a change in tempo.

Row usage is also the primary tool for identification of tonal plans for the concerto, or more precisely, ordinal one of each row used. For example, P-0 and I-0 both begin with "G" as ordinal one. A pairing of any of the "zero" family of rows (P-0, R-0, I-0, RI-0) with any row that begins with "D" as ordinal one (P-7, R-7, I-7, RI-7) suggests a tonic and dominant relationship, "G" as "I" and "D" as "V." In addition, the rows that begin with "F#" (P-11, R-11, I-11, RI-11) represent the leading-tone of "G" and serve as dominant function as well. Thus, tonal references to chordal outlines and cadential treatment within the phrase structure of the concerto are based on the relationship of pitches that represent ordinal one of the serial rows.

The recognizable traditional features of the Cello Concerto coincide with certain elements of the serial structure. For example, the rhythmic and tonal aspects of the opening measures of the first movement coincide with the first presentation of the four-row dodecaphonic structure. Traditional features are not confined to the Introduction but are evident throughout the first movement. The *Allegretto* simply expands the structure of the Introduction and the *Allegretto's* dodecaphonic structure returns in the movement serving as a "refrain." As the movement progresses, additional connections between the traditional and serial features project a formal design for the movement. Of primary importance are the various presentations of Dodecaphonic Structure I, either exact or modified, which support a formal organization of the first movement as a compound "extended" ternary design, A B A^1 B^1 A (see Fig. 35).

The Introduction and all three A Sections begin with either an exact or modified four-row structure. A larger constructive plan exists, however, in the B Sections of the

	A	B	A^1	B^1	A
*	*	**	*	**	*
Introduzione **(1-18)**	***Allegretto*** **(19-86)**	***Poco più mosso*** **(87-104)**	***Tempo I*** **(105-225)**	***Più mosso-Pesante-Sostenuto*** **(226-257)**	***Primo Tempo*** **(258-300)**
Phrase a G B **P-0 – RI-4** Bb **RI-3** Phrase a^1 G G# **P-0 – RI-1** A **I-2**	A Section G Bb **P-0 – RI-3** B Section F F# **P-10 – RI-11** A Section G C **P-0 – P-5**	F# G **P-11. . .RI-0**	A^2 Section G F#/E **I-0 -(RI-11/9)** F# Bb **P-11 – RI-3** A^3 Section G B **P-0 – RI-4** A^4 Section G F#/Bb **I-0 – R-11/3** G B **P-0 – I-4**	F# G **P-11. . .I-0**	A Section G A **P-0 – RI-2** B Section F A **P-10 - RI-2** A Section G B **P-0 – RI-4**
I	**I**	**V**	**I**	**V**	**I**

*denotes the first and fourth rows of the structural four-row groups
**denotes the first and last rows of the section

Fig. 35. Compound design of Movement I

extended ternary plan in which the first and fourth rows of the four-row structures are placed at the beginning and end of the sections, the first and last rows, respectively. The use of P-0, with ordinal 1 as G, to begin the Introduction and A Sections and P-11, with an initial pitch of F#, to begin the B Sections presents "tonal" reference pitches. The alternation between G and F# as tonal references is reminiscent of the alternation

between tonic and dominant in earlier repertory. However, the tonic figure, G, is bimodal in that it privileges neither B natural nor B flat. The question of G major or g minor remains unclear since the RI forms which end the four-row structures make use of both B natural (RI-4) and B flat (RI-3).

In order to comprehend fully the analytical features of the Cello Concerto, one must have a knowledge and understanding of both Schoenberg's twelve-tone method as well as traditional tonal and formal concepts of the past. As the listener attempts to comprehend the music, all of the features of traditional repertory are at his disposal to assist with phrase structure, musical and rhythmic gestures, or cadential treatments, while, at the same time, the musical context is taking shape from a dodecaphonic compositional foundation. The dodecaphonic and traditional features clearly evident in the concerto's Introduction continue not only into the remainder of the first movement, but also throughout the entire concerto providing unity to the work as a whole.

Analysis of Movement I

Introduzione (mm. 1 – 18)

The primary constructive elements for the first movement are the tertian and dodecaphonic structures described in the previous chapter. Both tertian structures formed by ordinals 1-2-11-12 and ordinals 3-4-5 and 8-9-10 are clearly identifiable in the opening dodecaphonic structure of the movement, **P-0, I-0, R-8 and RI-4** (mm. 1-4) (see Fig. 36).

The introductory section of the first movement, even though only eighteen measures in length, contains several features that are fundamental to the first movement

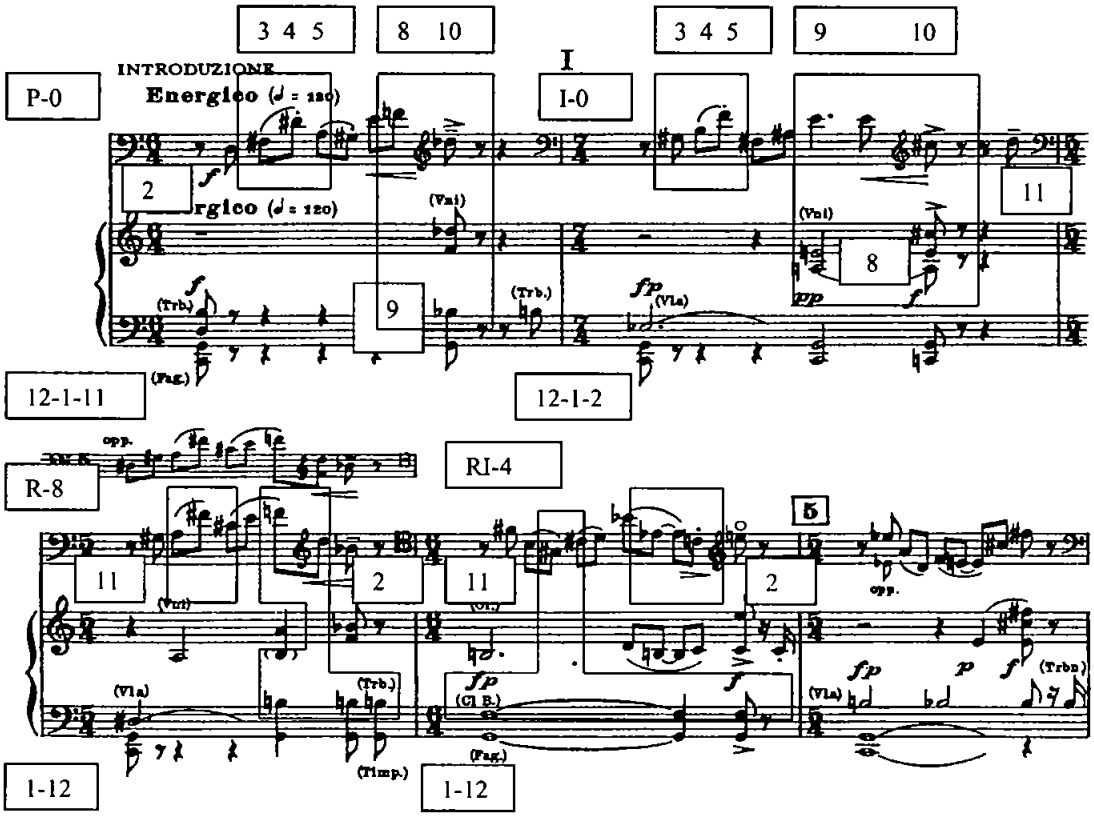


Fig. 36. Tertian and dodecaphonic structures in the opening measures (mm. 1-4)

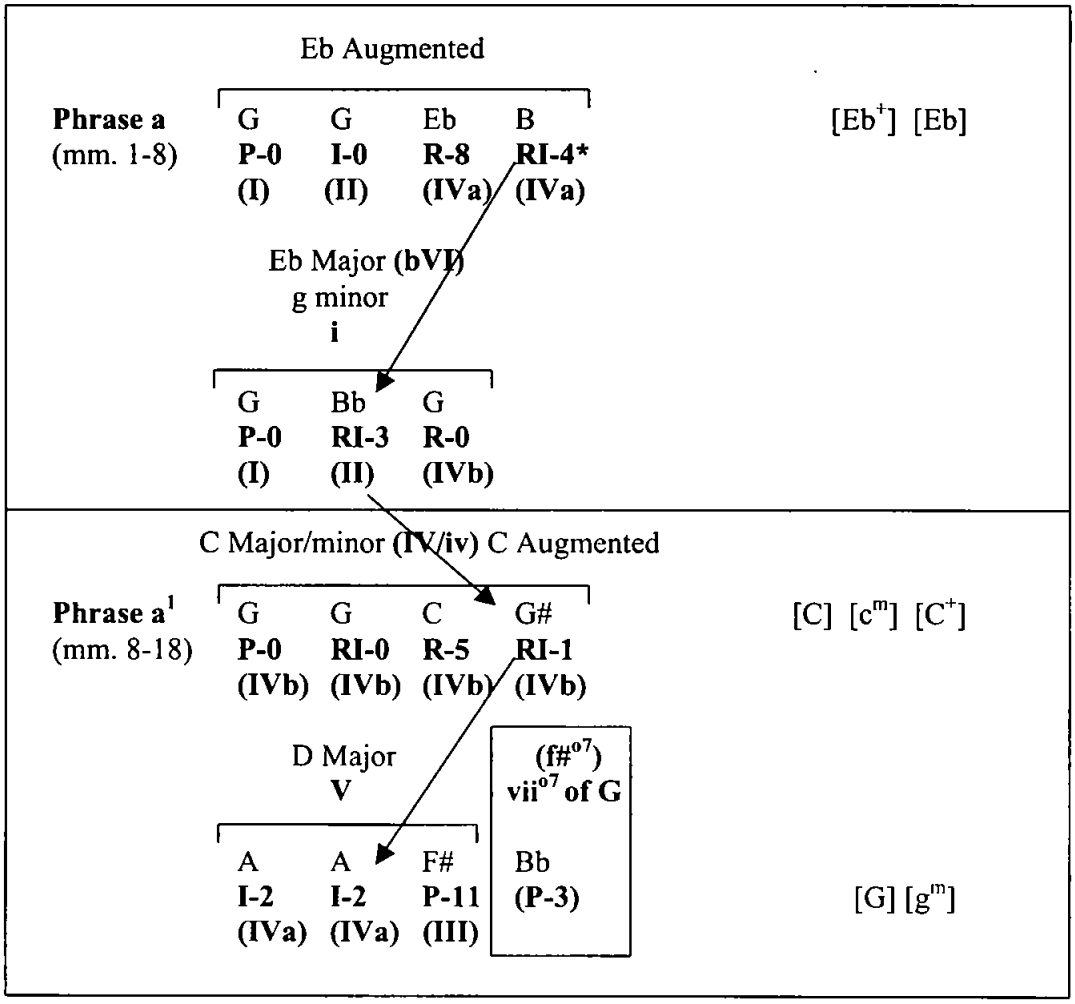
and are evident in the second and third movements, as well. The brief section exhibits both tertian structures, Tertian Structure I (fifths and a major triad utilizing ordinals 1-2-11-12) and Tertian Structure II (diminished and minor triads represented by ordinals 3-4-5 and 8-9-10), as well as Dodecaphonic Structure I (the four-row structural group).

Ordinals from Tertian Structure I are presented in four different scenarios in the Introduction providing a triad (complete or incomplete) and fifths (one or two). Fig. 37 outlines the primary examples of the 1-2-11-12 settings found in the Introduction and compares each row used with the prime form.

I (1-11-12)	**II** (1-2-12)	**III** (1-2-11)	**IV** (1-2-11-12)
(m. 1) **P-0 G** C B	**(m. 2)** **I-0 G** C Eb *the triad is minor in the I form	**(m. 17)** **P-11 F#** C# B	**(m. 3)** **R-8 D#** Bb G# G **(m. 4)** **RI-4 B** E F# G *the cycle of fifths descends in the RI form
P-0 G C B Fifth C - G G major triad (root, 3rd)	**P-0 G** D B Fifth G - D G major triad (root, 3rd, 5th)	**P-0 G** D C Fifths C – G – D G major triad (root, 5th)	**P-0 G** D C B Fifths C – G - D G major triad (root, 3rd, 5th)

Fig. 37. Arrangements of ordinals 1-2-11-12 in relation to P-0

The formal organization of the Introduction divides the section into two parallel phrases, labeled a and a^1 (see Fig. 38). Each phrase subdivides into a "head", the four-row structural group, and a "tail," three additional row statements. In Phrase a, the harmonies implied by the initial pitches of each row in the four-row structures are Eb augmented and Eb major and, in Phrase a^1, C major/minor and C augmented. The addition of implied augmented chords to the already mentioned diminished, minor, and major chords, completes the four possible triad qualities. The concluding f# diminished-seventh vertical sonority, ordinals 3-4-5-11 of P-3, adds the implication of G (major or minor) and completes a large-scale harmonic structure in the Introduction that outlines the third, root and fifth of a c minor triad. The pitch "Eb" serves multiple roles in the



*RI-4, RI-3, RI-1, I-2 (B, Bb, G#, A) = (0123)

Fig. 38. Formal organization of the Introduction (mm. 1-18)

introductory section: in the beginning as the root of an implied Eb harmony; in the conclusion as the seventh of an f# diminished-seventh chord, and in the large-scale harmonic structure, as the third of a c minor triad.

The implied harmonic motion of Phrase a is from Eb to G. The phrase begins with P-0 as a member of an implied Eb harmony in the "head" and the motion toward

RI-3 (Bb) and R-0 (G) in the "tail" suggests g minor. Phrase a^1 also begins with P-0 but is now part of an implied C harmony which progresses toward I-2 (A) and P-11 (F#), implying D major, followed by a final vertical f# diminished-seventh chord. The prevalence of P-0 and R-0 (G rows) as the boundaries of the first phrase and P-0 (G) and P-11/P-3 (F# and an $f\#^{o7}$ chord) as the outer rows of the second phrase, suggests the same tonic-dominant relationship found in observing the extended ternary design of the first movement as a whole.

The structural position of the RI (or I) rows in the "head" and "tail" of each phrase presents a series of half steps (see arrows in Fig. 36): RI-4, RI-3, RI-1 and I-2, representing B, Bb, G# and A, PC set (0123). Adding two other RI rows which are also prominent throughout the movement, RI-11 and RI-0, creates the superset (0123456) with overlapping subsets (0123) (see Fig. 39).

The initial four measures of the Introduction contain significant constructive elements in relation to tertian and dodecaphonic structures as well as patterns in rhythmic treatment (see Fig. 40). In all four measures, the row is segmented as an eight-note melody supported by a four-note accompaniment. In the first measure, P-0, three pitches of the four-note accompaniment, G-C-B, are presented as a vertical sonority, ordinals 1-11-12 (Arrangement I of Fig. 37). The close proximity of ordinal 2 as the initial pitch in the cello completes the 1-2-11-12 grouping. The second measure is presented in similar fashion but now utilizes the inversion of the prime row, I-0. The three vertical pitches of the four-note accompaniment now present G-C-Eb (a c minor triad), ordinals 1-2-12 (Arrangement II of Fig. 37), and the additional ordinal 11 is stated last in the cello. The

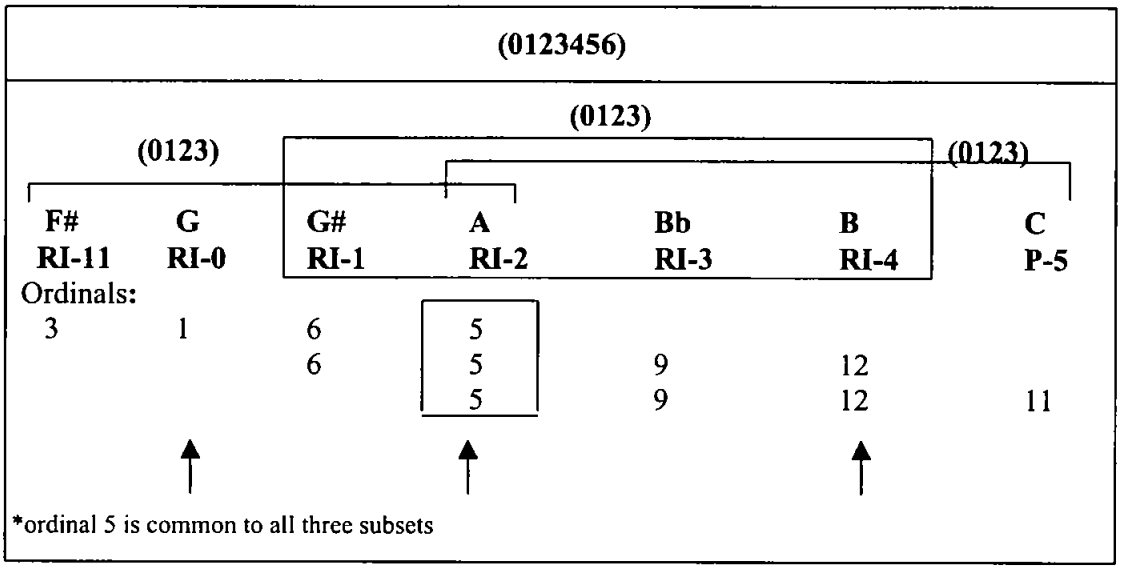


Fig. 39. PC superset and subsets

third and fourth measures present R-8 and RI-4 with a slightly revised approach. The eight-plus-four segmentation remains but with a slight change in the setting of the 1-2-11-12 grouping (Arrangement IV of Fig. 37). In these two settings, ordinals 1 and 12 remain as members of a vertical sonority in the accompaniment and ordinals 2 and 11 serve as boundary pitches for the cello.

The vertical sonorities of the accompaniment in the first three measures place the fifth C-G as the lowest sounding pitches: ordinals 1-11 in P-0, ordinals 1-2 in I-0, and ordinals 7-12 in R-8. The "C" bass line moves up to "G" in the fourth measure where ordinals 1 and 12 are members of a G major triad suggesting a possible plagal motion of C to G in the first dodecaphonic structure. The significant placement of the pitch "D" as

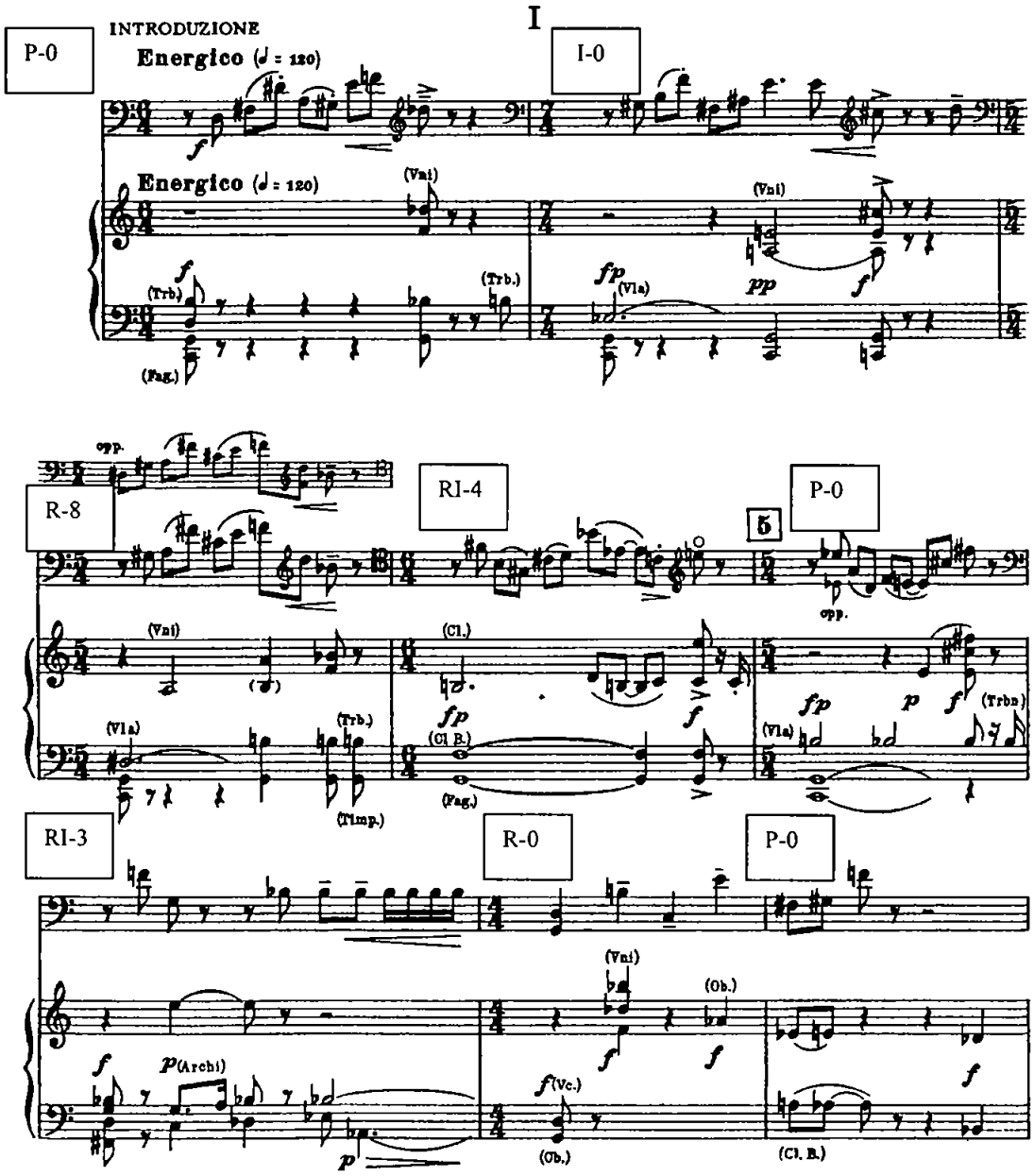


Fig. 40. Introduction (mm. 1-8)

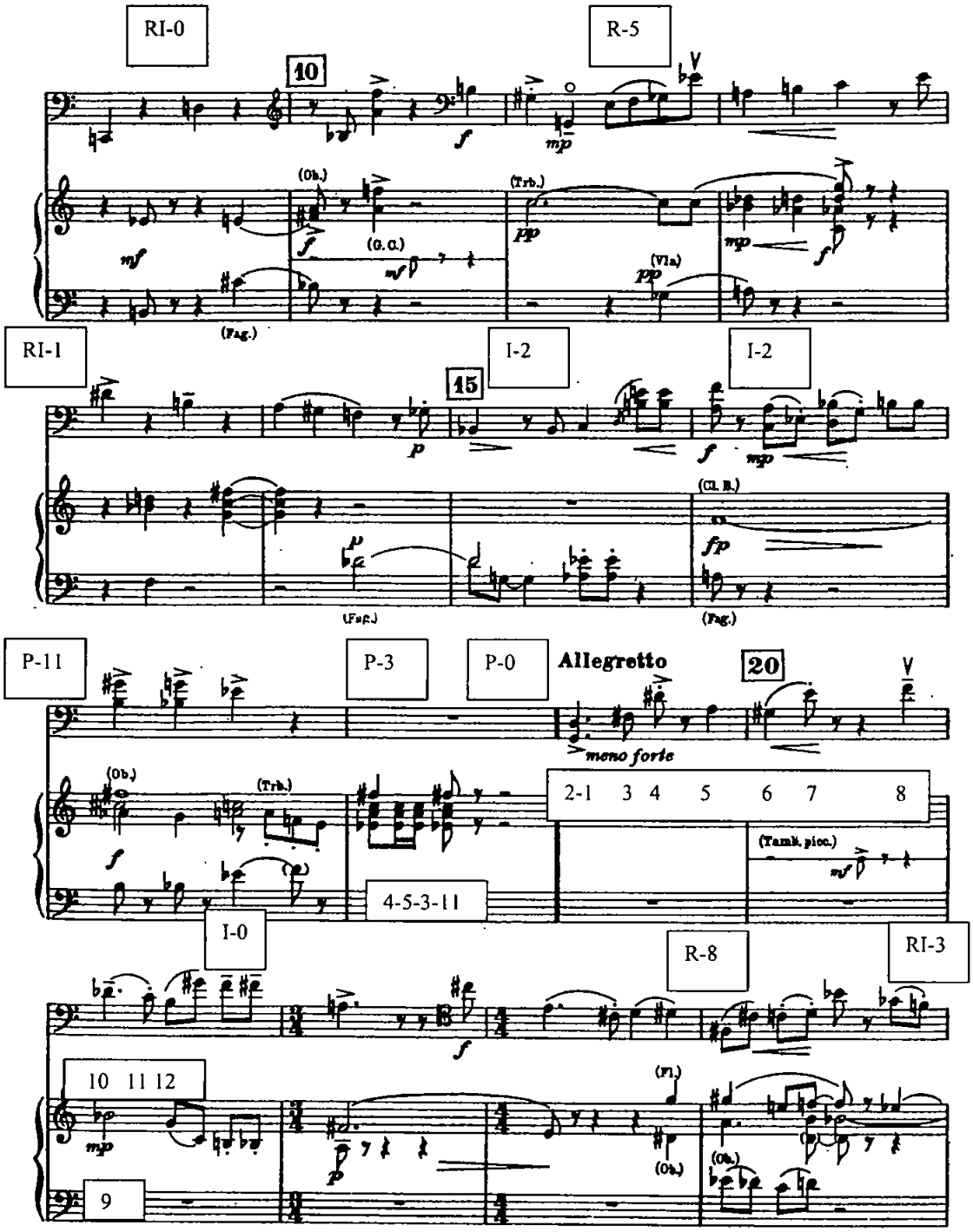


Fig. 41. Introduction (mm. 9-18) and beginning of the *Allegretto* (mm. 19-24)

ordinal 2 in P-0 (m. 1) and ordinal 11 in I-0 (m. 2) and the pitch "F#" as ordinal 11 in RI-4 (m. 4), strongly supports an argument for G as a tonic figure. However, the ambiguity of G major or g minor is evident even in the first measure as both B natural and B flat are stated in the accompaniment. The vertical setting of a c minor triad in the second and third measures foreshadows the importance of both "C" as an implied harmony and "Eb" as an important harmony or pitch, ideas already explored in discussion of the Introduction's overall formal organization and large-scale harmonic plan.

In regard to rhythm treatment, a pattern is created even though each of the four measures represent a different meter. As the meters change from 6/4, 7/4, 5/4, and back to 6/4, the eight-note melodic figure ends on beat 5, beat 6, beat 5, and beat 6, respectively.

Additional support for "G" as a representative tonic, is found in the closing measures of the Introduction with a complete statement of P-11 and a partial statement of P-3 (see Fig. 41) At measure 17, the cello states the final three pitches of the melody, G#-G-Eb, ordinals 5-6-7 of P-11. In the accompaniment, a vertical sonority F#, C#, B is followed by Bb, a 1-2-11-12 grouping (Arrangement III of Fig. 37). In the final measure of the Introduction, the extraction of ordinals 3-4-5-11 from P-3 forms a vertical f# diminished-seventh chord solidifying the notion of a pre-compositional plan for row topography and also confirming the suggestion of a tonic-dominant relationship at the level of G. The concluding vertical "leading-tone diminished-seventh chord" is followed by P-0 to begin the *Allegretto* section providing an authentic cadence-type.

Diminished and minor triads, ordinals 3-4-5 and 8-9-10, are structurally placed throughout the movement. Even though found in a variety of horizontal and vertical settings, the triad pitches are typically presented in a coherent fashion and serve as a primary tool in row identification. Ordinals 3-4-5 form a diminished triad in both the P and I row forms; however, ordinals 8-9-10 form a minor triad in the P row forms and a major triad in the I row forms. In the two opening measures of the Introduction, both diminished triads (ordinals 3-4-5 of P-0 and I-0) are presented in a linear melodic fashion but the minor or major triad (ordinals 8-9-10 of P-0 and I-0, respectively) is formed as a combination of pitches from the melody and accompaniment. The concluding measure of the Introduction presents the vertical 3-4-5 forming an f# diminished-seventh triad, also including ordinal 11 which adds the seventh.

In summary, the Introduction foreshadows several significant features that are exploited throughout the movement and the entire work. Certainly, the tertian structures (triads and cycle of fifths) and the dodecaphonic structures (four-row groups) presented in the Introduction are evident in the formal organization of the movement; secondly, the pairing of row P-0 (G) with row P-11 (F#), the leading-tone row, or with row P-3 (vii^{o7} of G) is significant in providing a tonal plan of I-V-I-V-I for the movement. Thirdly, concerning set theory, the PC set (0123), established in the Introduction, is considered a subset of the superset (0123456) when the half-step group G#-A-Bb-B is expanded to include F#, G, and C in the remainder of the movement. Fourthly, regarding phrase structure, the two phrases of the Introduction are directly related to the A and A^1 Sections, respectively, at the *Allegretto, Tempo I,* and *Primo Tempo* markings of the

movement. Lastly, the large-scale harmonic plan of the *Allegretto*, c minor, is derived from the Introduction's emphasis on harmonies relating to Eb, C, and G and is a working out of those same pitches first presented in the bass line of measures one and two. The *Allegretto* is a prime example of how material presented in the Introduction is developed.

***Allegretto* (mm. 19-86)**

The *Allegretto* is presented in ternary form (A B A^1) with A and B sections of comparable length and a shortened A^1 section. The harmonic implications and structural elements of the A and A^1 Sections of the *Allegretto* prove merely to be an expansion of Phrases a and a^1, respectively, from the Introduction. The first phrase of the Introduction is expanded to form the A Section of the *Allegretto*, and the second phrase becomes the A^1 Section. As shown in Fig. 42, the large-scale harmonic structure is again c minor and the motion from Eb to C with a goal of G can be viewed as a downward third harmonic motion from ^{b}VI to iv/IV within the framework of G major/minor.

Introduction: (Phrases a and a^1) **Allegretto:** (A and A^1 Sections)	[Eb$^+$] [Eb]	[C] [c^m] [C$^+$]	[G] [g^m]
	[Eb] [Eb$^+$]	[c^m] [C$^+$] [C]	[G] [g^m]

Fig. 42. Harmonic content of the Introduction and the *Allegretto*

The expansion now allows for a three-part division into "head" (the four-row structural group), "middle", and "tail"(the arrival on G major for the A Section and D Major for the A^1 Section) (see Fig. 43). In addition, each of the two A Sections close

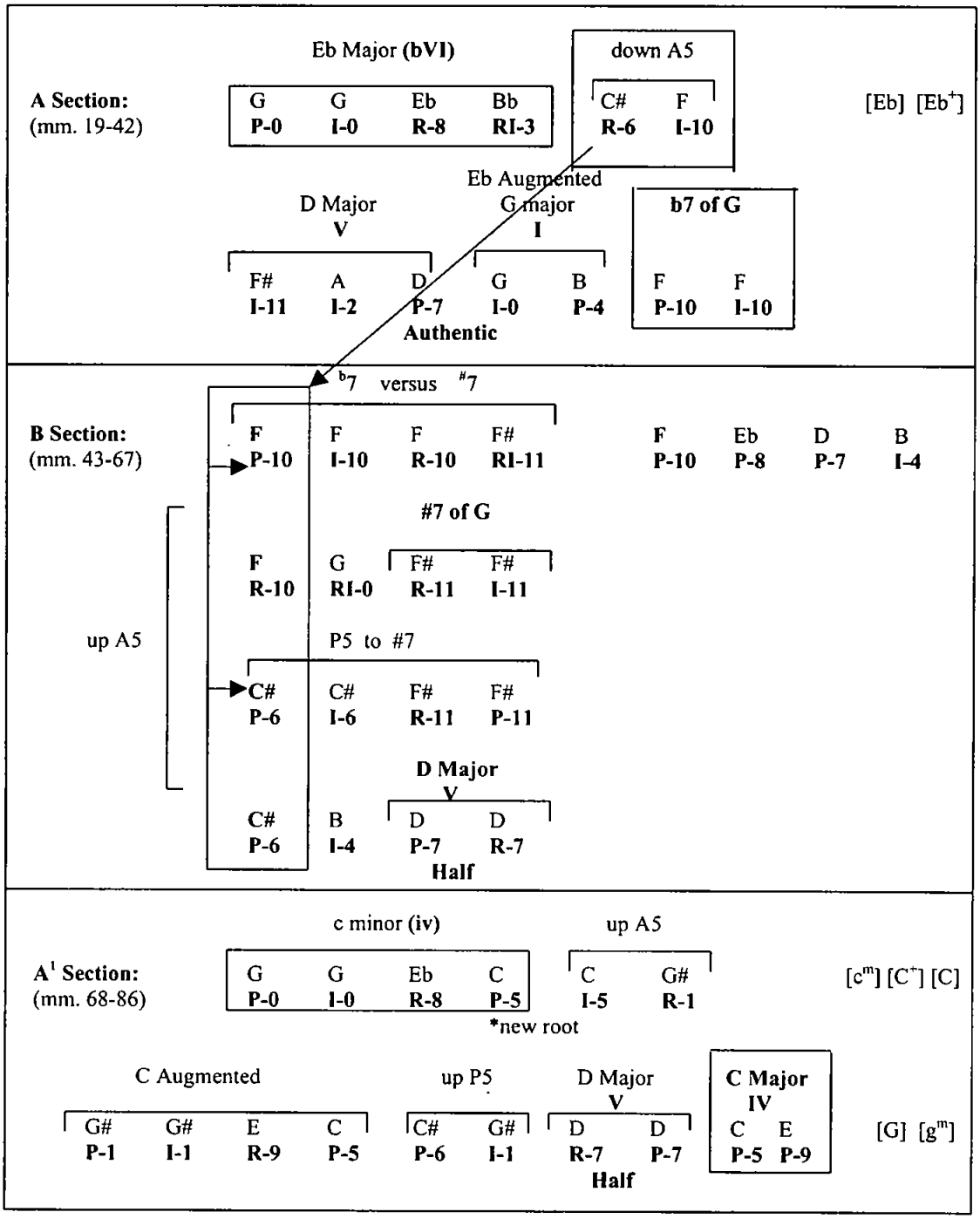


Fig. 43. Formal organization of the *Allegretto* (mm. 19-86)

with two row statements acting as a "tag." The A Section concludes with F, b7 of G, and the A^1 Section ends with C-E, the subdominant of G.

The contrasting middle section of the *Allegretto* is an expansion of material presented in the fifth and sixth row statements of the A Section (see arrows in Fig. 41). The pitches C# and F, a downward augmented fifth represented by R-6 and I-10 in the A Section, are expanded, in reverse order, over the course of the 24-measure B Section, with three phrase groups beginning on "F" represented by rows P-10 or R-10 , and two phrase groups beginning on "C#" represented by row P-6. The first half of the section concludes with F#, #7 of G and the second half ends with D, the dominant of G, reminiscent of a "half" cadence.

***Poco più mosso* (mm. 87-104)**

The use of row P-11 (F#) to begin the *Poco più mosso* represents both a shift to the level of the dominant (V of G) and a presentation of contrasting material (the B Section in the large-scale design). The short section consists of two phrases (b and b^1), each nine measures in length and each beginning with a statement of P-11. The section features the accompaniment with vertical presentations of the rows, however a limited amount of participation by the cello exists in the first phrase. A diagram of the formal organization for both phrases of the *Poco più mosso* is provided in Fig. 44.

The goal of the first phrase is Bb (I-3), the relative major of g minor, and the second phrase provides a cadential motion of dominant (P-11 and P-7) to tonic (RI-0). The first phrase concludes with all twelve pitches of row I-3, the same row that ended the Introduction (m. 18). However, in the Introduction only four pitches of the row were

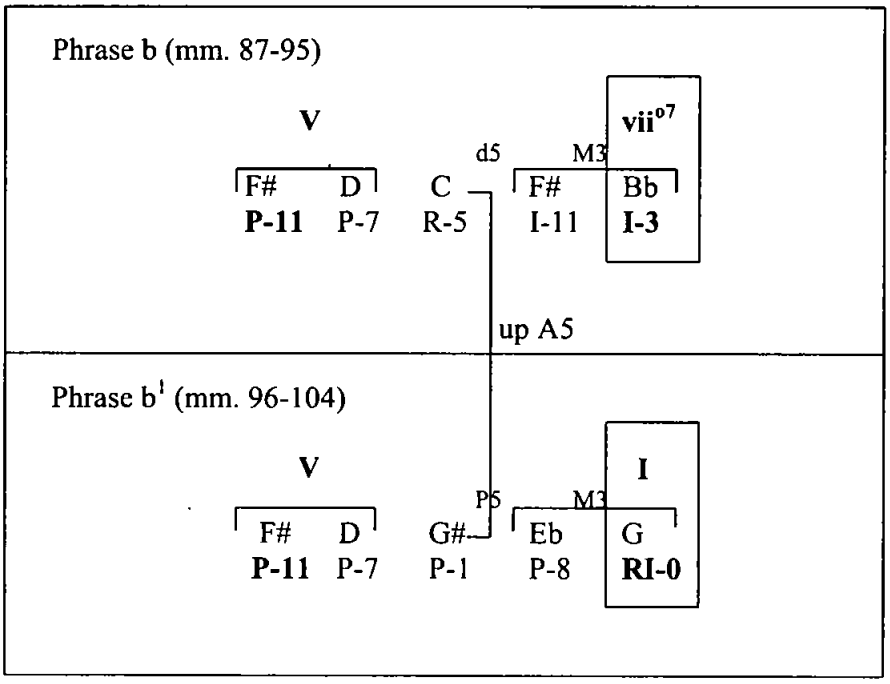


Fig. 44. Formal organization of the *Poco più mosso* (mm. 87-104)

found in the form of a vertical f#^{o7} chord, suggesting vii^{o7} of G major/minor. An adjustment occurs in the second phrase on the third row statement to move up by augmented fifth from "C" (R-5) in the first phrase to "G#" (P-1) in the second phrase. Another adjustment occurs as the second phrase then proceeds upward by perfect fifth, whereas the first phrase moved forward by a tritone.

Just as the first phrase (b) relates to the Introduction with motion to Bb, row P-3, the second phrase (b^{1}) relates to the *Allegretto* section. The *Allegretto* suggests a "half cadence" by closing with a pair of "D" row statements (R-7 and P-7) which are followed by two row statements of transition (P-5 and P-9), a motion down by step to C Major.

The second phrase of the *Poco più mosso* section ends with an authentic cadence with motion of the leading tone resolving to the tonic, a conclusive ending to the *Allegretto's* half cadence. Fig. 45 illustrates the harmonic connection that exists between the Introduction and *Allegretto*, the *Poco più mosso*, and the *Tempo I* that follows.

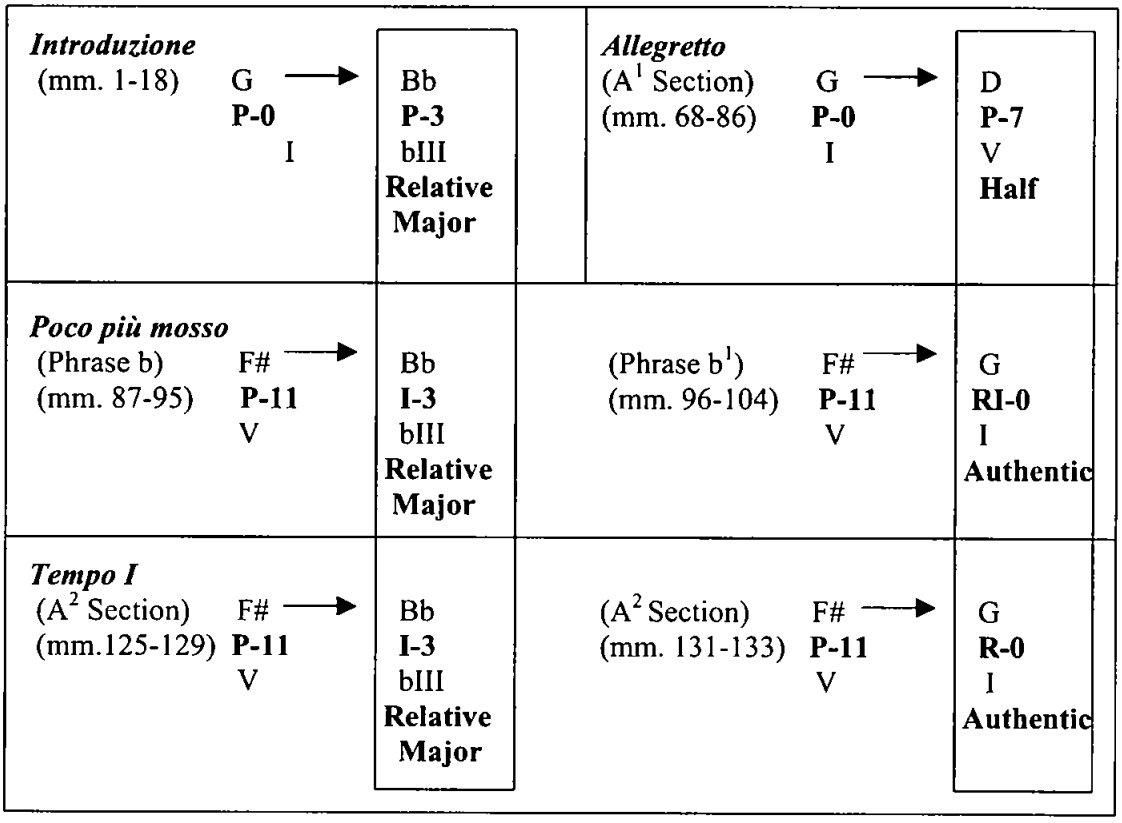


Fig. 45. Comparison of harmonic motion in the opening sections

Just as the harmonic motion from the Introduction and *Allegretto* is directly related to the two phrases that form the *Poco più mosso* section, a further connection can be found in the *Tempo I* as the A^2 Section concludes (mm. 125-133). A structural

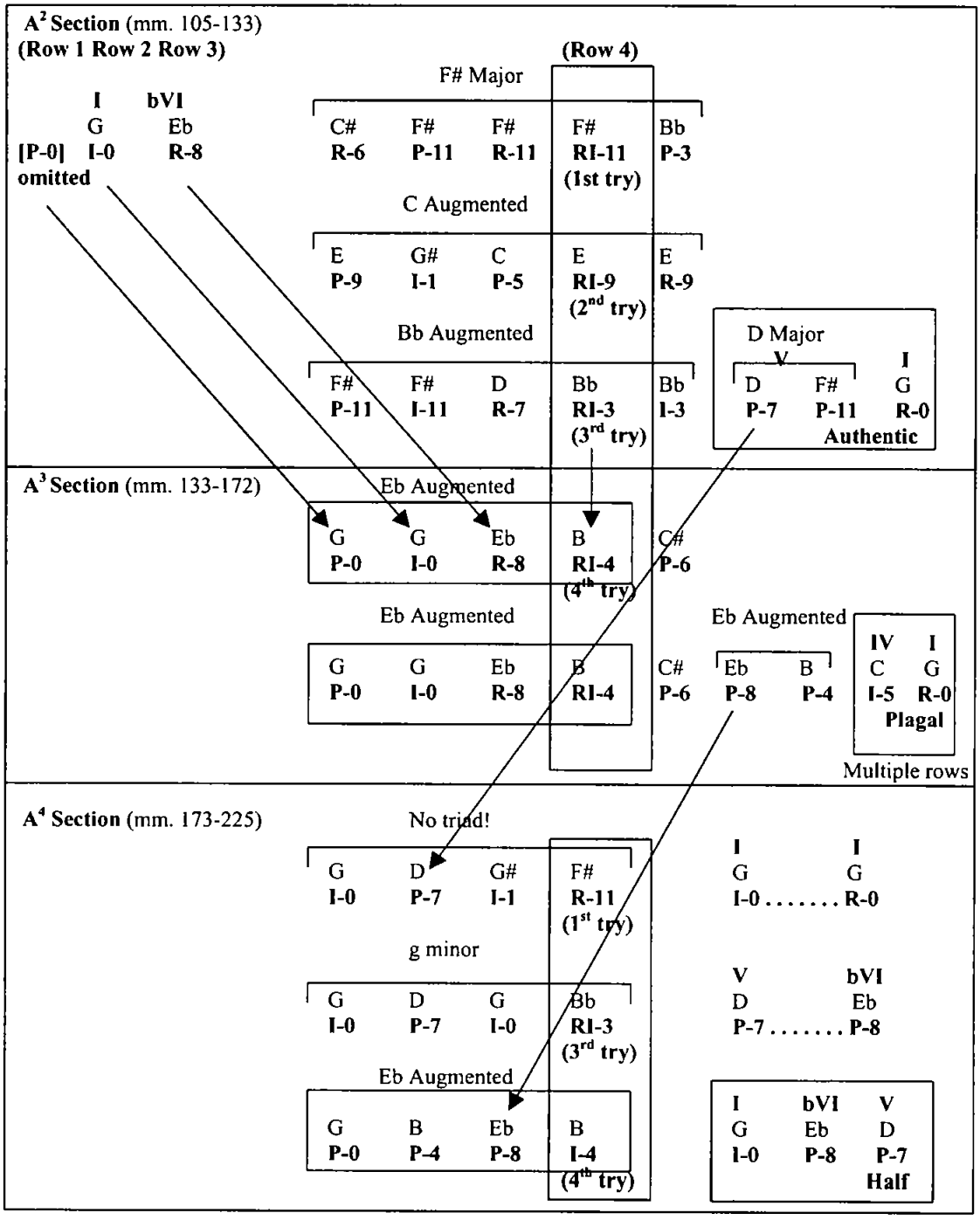


Fig. 46. Formal organization of *Tempo I* (mm. 105-225)

four-row group moves P-11 (F#) toward RI-3, I-3 (Bb), as in Phrase b of the *Poco più mosso*, and is followed by a cadential motion P-7, P-11 (D, F#) to R-0 (G), as found in Phrase b^1.

***Tempo I* (mm. 105-225)**

The designation *Tempo I* (m. 105) suggests a return to thematic material presented at the beginning of the *Allegretto* (m. 19). In fact, the material from the initial section of the *Allegretto* is used at *Tempo I* to present three variations in the form of A^2, A^3 and A^4 (see Fig. 46). Each of the A sections has a unique harmonic plan and each ends with a different cadence-type: authentic, plagal, and half.

At Tempo I, the A^2 section begins with the second and third rows of the structural four-row group, I-0 and R-8, omitting the initial row P-0 and with three possibilities for a fourth row, first on RI-11, then RI-9, and finally RI-3. With the insertion of three four-row structures, various levels of harmony are explored, F# major, C augmented, and Bb augmented, before closing with a V-I authentic cadence-type. The A^3 section contains two statements of the four-row group P-0, I-0, R-8 and RI-4, an exact setting of Dodecaphonic Structure I, outlining an Eb augmented triad, and is followed by a IV – I plagal cadence-type. The A^4 section combines the boundaries of the two earlier sections as two four-row groups conclude with R-11 and RI-3 (as in A^2) and a third ends with I-4 (as in A^3). The A^4 Section closes with three rows that are structurally important to all three divisions of *Tempo I*, I-0, P-8, and P-7, providing an ending with a half cadence-type.

The large-scale harmonic motion for the *Tempo I* section can be reduced to a simple motion from a suggested tonic (G) to its split third (Bb/B) (see Fig. 47).

				split 3rd	
A^2 Section (mm. 105-133)	G **[P-0]**	G **I-0**	Eb **R-8**	Bb **RI-3**	g minor
A^3 Section (mm. 133-172)	G **P-0**	G **I-0**	Eb **R-8**	B **RI-4**	G major
A^4 Section (mm. 173-225)	G **[P-0]**	G **I-0**	Eb **P-8**	B **I-4**	G major

Fig. 47 Large-scale harmonic plan for Tempo I (mm. 105-225)

***Più mosso* (mm. 226-252) – *Pesante* (m. 253) – *Sostenuto* (mm. 254-257)**

The intervening measures of *Più mosso – Pesante – Sostenuto*, between the *Tempo I* and the final *Primo Tempo* section of the movement, can be viewed as a single phrase. Although concluding with authentic motion, the transition to the *Pesante* demonstrates another cadence-type, deceptive (see Fig. 48). Since the material that begins the *Più mosso* is similar to material from a previous section, *Poco più mosso* (m. 87), the phrase is labeled b^2 and represents a second B Section in the large-scale organization of the movement.

The section begins with two linear presentation of rows P-11 and P-0, and moves toward a partial row P-11 (mm. 251-252). The almost identical settings of the "leading-tone" and "tonic" rows again pairs F# and G, dominant and tonic. Row identification for

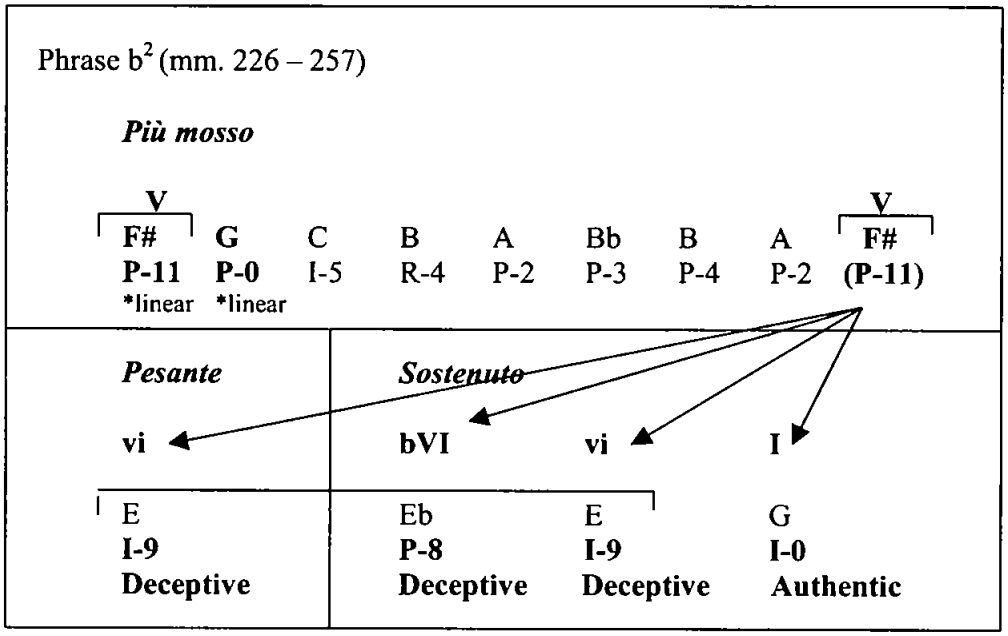


Fig. 48. Formal organization of the *Più mosso–Pesante–Sostenuto* (mm. 226-257)

the partial row P-11 is assisted by the presence of pitches 1-2-11-12 as four of the 7 pitches presented as well as the vertical alignment of pitches 1 and 12. The phrase that begins at *Più mosso* does not end at the expected cadential point (m. 252) but continues deceptively into the *Pesante – Sostenuto*. A resolution from a prolonged P-11 (F#) into I-9 (E) followed by P-8 (Eb) and I-9 (E) is reminiscent of a deceptive resolution V – vi/bVI at a tonic level G. The fact that both E and Eb are set as neighboring rows and represent the split submediant, hints at both levels of deceptive resolution, V – vi in G major and V – bVI in g minor. The deceptive resolution is eventually "corrected" by the final row, I-0 (G), which provides a leading-tone to tonic authentic resolution (see Fig. 49).

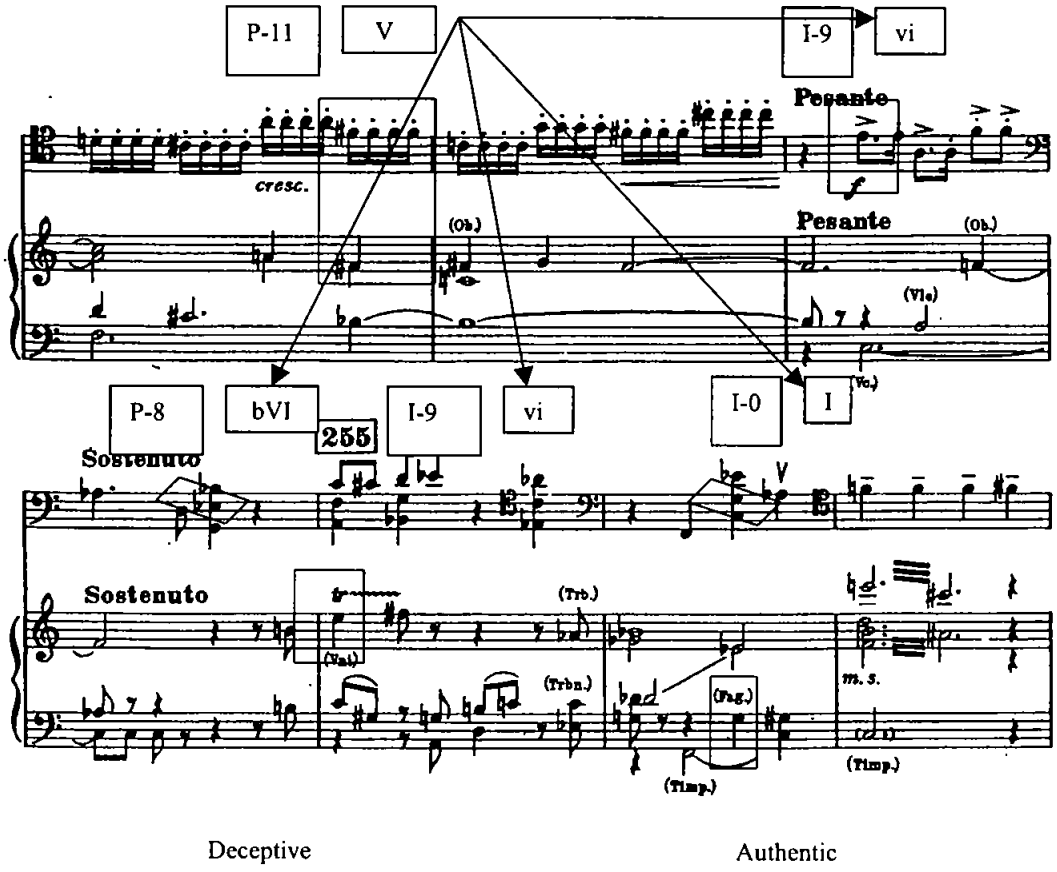


Fig. 49. Cadence-types in *Più mosso–Pesante–Sostenuto* (mm. 251-257)

***Primo tempo* (mm. 258-300)**

The large-scale ternary design of the movement is fulfilled by the final section, *Primo tempo* (mm. 258-300). Stability is achieved not only by a return to the earlier tempo, but also by thematic means with a return of material from the *Allegretto* (mm. 19-86). Even though shortened and with some adjustments in the harmonic plan, the basic structure of the *Allegretto* is apparent in both A Sections as well as the contrasting B Section (see Fig. 50).

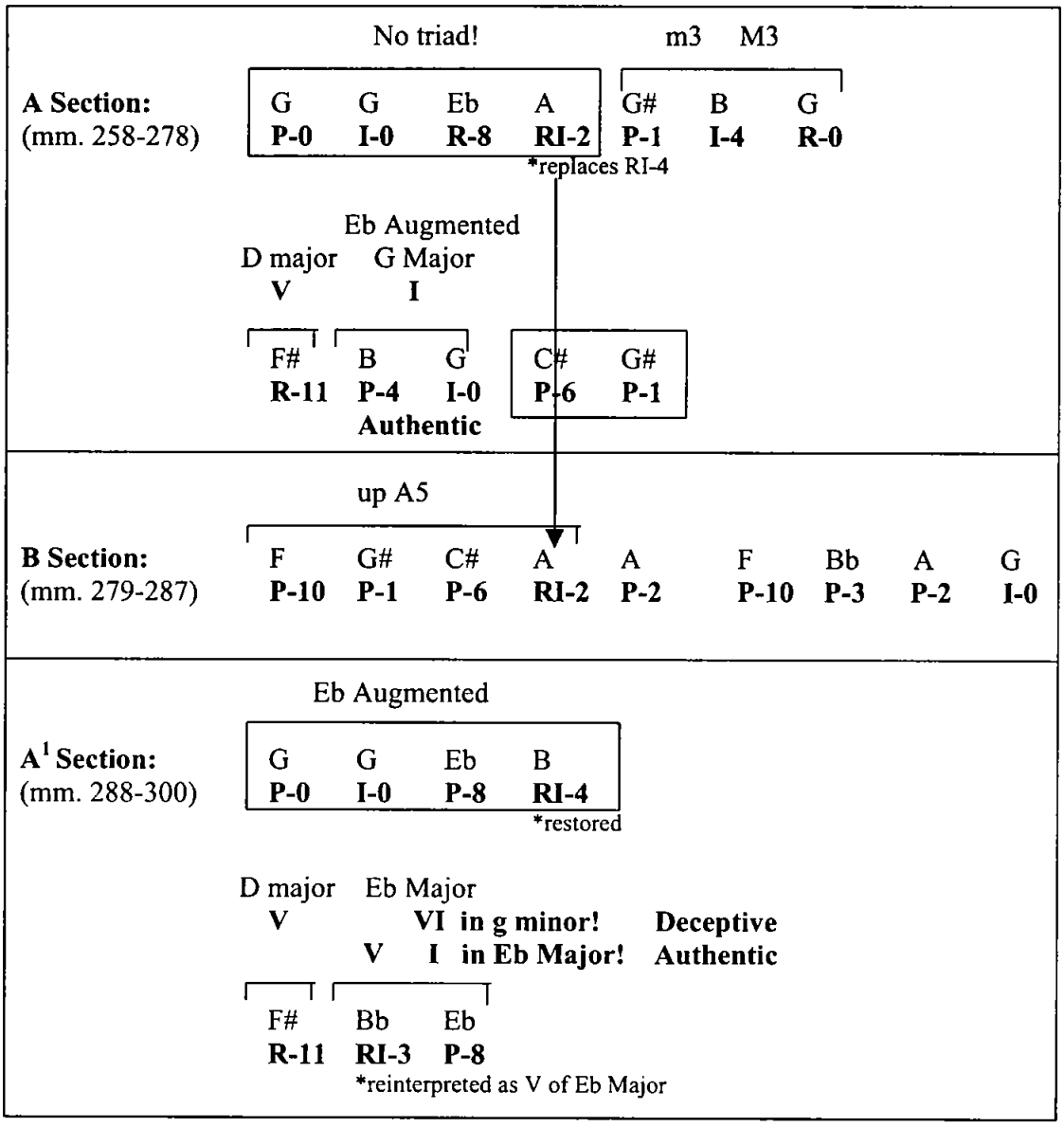


Fig. 50. Formal organization of *Primo tempo* (mm. 258-300)

Several observations can be made regarding the final section. First, the most obvious change is the presence of RI-2 as the fourth row in the first structural four-row group. The substitution of RI-2 in place of the original RI-4, creates a dilemma. The

grouping of **P-0, I-0, R-8, and RI-2,** pitches G – G – Eb – A, no longer suggests a triad! Even though the contrasting middle section continues to place RI-2 as row four of the dodecaphonic structure, the closing A^1 Section, reinstates the "proper" row with the original grouping, **P-0, I-0, P-8 and RI-4,** which leads to a second observation.

The dodecaphonic structure of the original four-row group can be considered as a *Grundgestalt* for the first movement.[34] The original formation, **P-0, I-0, P-8 and RI-4,** is only found in three locations within the movement, but placement exhibits structural significance of beginning, middle, and end (see Fig. 51).

G G Eb B **P-0 I-0 R-8 RI-4**		
Introduzione	**A^1** ***Tempo I***	**A** ***Primo Tempo***
Phrase a (mm. 1-4)	A^3 Section (mm. 133-139) (mm. 142-149)	A^1 Section (mm. 288-294)
Beginning	**Middle**	**End**

Fig. 51. Dodecaphonic Structure I as a *Grundgestalt*

A third observation concerns the final four measures of the movement which reveals an ambiguous analysis (see Figures 52 and 53). Although the vertical

[34]Arnold Schoenberg, "New Music, Outmoded Music, Style and Idea," Style and Idea, ed. by Leonard Stein, trans. by Leo Black (Berkeley: University of California Press, 1985), 113-124. (In Schoenberg's 1946 article, he states "An idea is born; it must be moulded, formulated, developed, elaborated, carried through and pursued to its very end." He considered "the totality of a piece as the idea" with the *Grundgestalt* being the foundational material that is fundamental to the work.

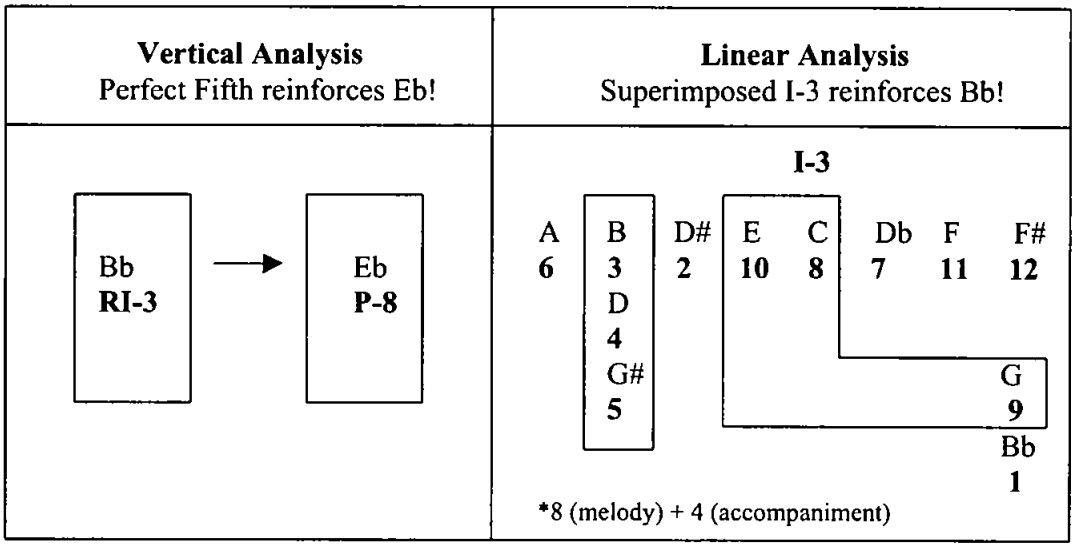


Fig. 52. Ambiguous harmonic goal of the final measures (mm. 297-300)

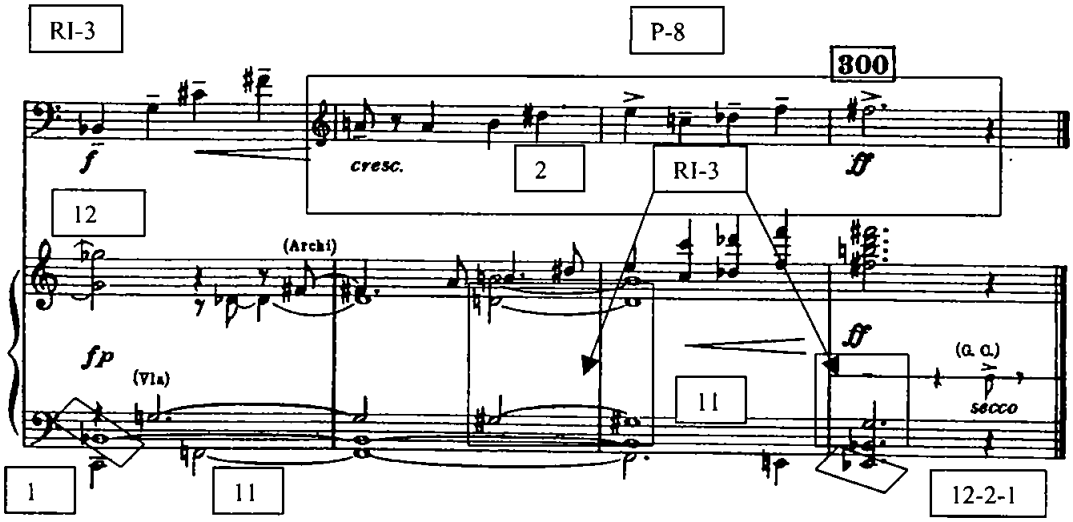


Fig. 53. Vertical and linear analysis of the final measures (mm. 297-300)

presentation of the rows can be viewed as RI-3 followed by the concluding P-8, a linear presentation similar to the first two measures of the movement can be superimposed since the cello states an eight-note melody of row I-3 supported by the remaining notes of the row in a four-note accompanimental grouping.

In terms of set theory, the final row P-8 represents symmetrical groups of pitches (see. Fig. 54). The six-note vertical sonority of the final measure is a hexachord (014589) and the remaining pitches, found in measure 299, form a hexachord of the same set, except for the omission of pitch "A".

Hexachord 1 (m. 299) (01458[9])	C-Db	E-F	G#-[A]	
Hexachord 2 (m. 300) (014589)	D-Eb	F#-G	Bb-B	

Fig. 54. Hexachords in the final two measures (mm. 299-300)

The special treatment of the pitch "A" has been consistent throughout the movement. The first reference to "A" is in the Introduction with the row I-2 in a progression of half steps, B - Bb – G# - A. The row RI-2 holds no special significance throughout the movement until the beginning of the *Primo tempo* section (m. 258) when the appearance of RI-2 in a four-row group prevents the outline of a triad. The significance of the pitch "A" in G major or g minor is simply as a passing tone between the tonic (G) and split

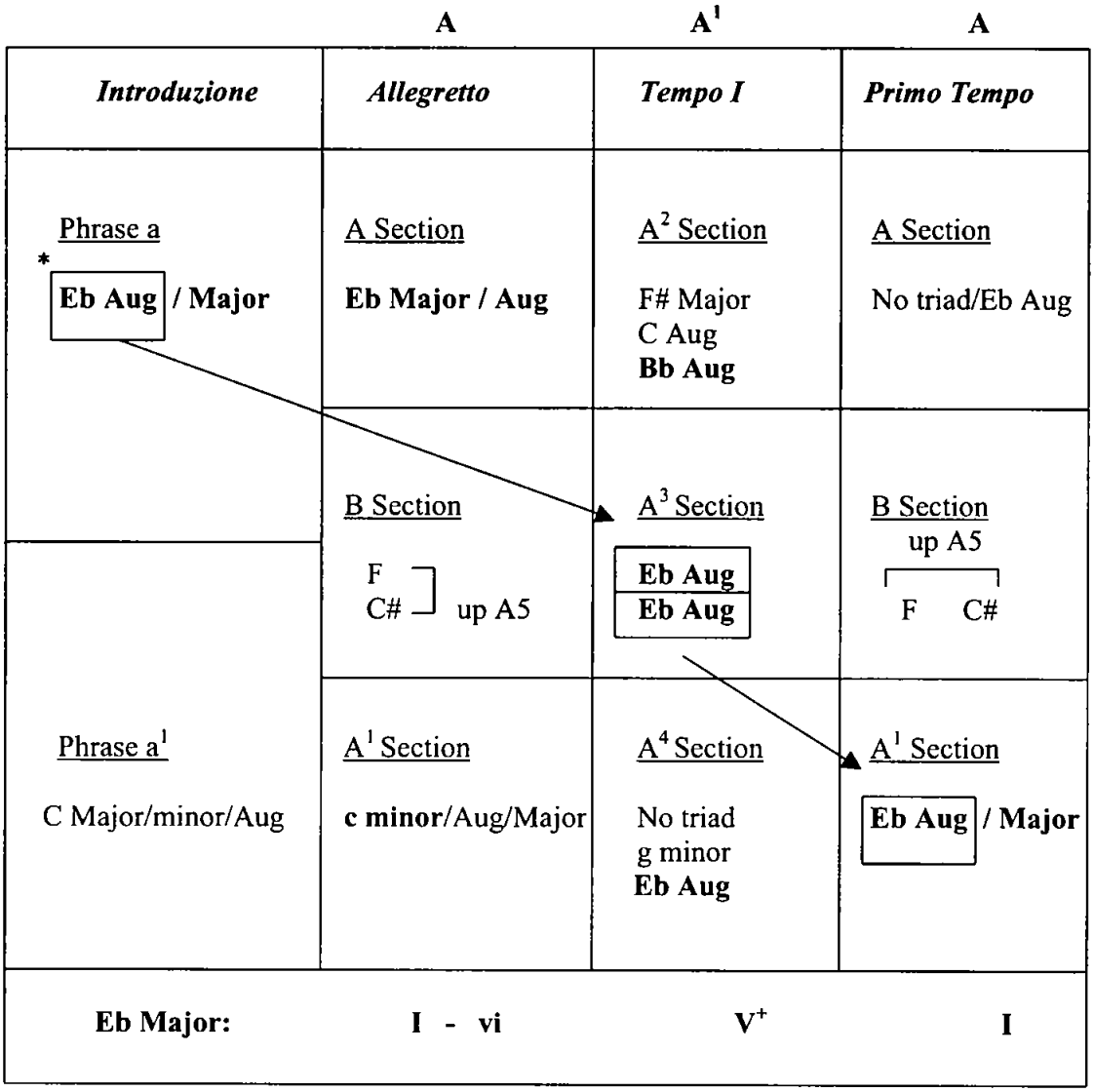
mediant (Bb/B) and as a member of the dominant triad (D-F#-A). Yet, the final A^1 Section places a normally weak-beat passing idea into a spotlighted position.

Finally, a comparison of the harmonies suggested by the four-row groups in the Introduction, *Allegretto*, *Tempo I* and *Primo tempo* sections of the movement reveals a dual tonality (see Fig. 55). The tonic-dominant relationship explored thus far has focused on G as the tonic figure, whether major or minor, and connections with its leading-tone and dominant. A tonic-dominant relationship can also be seen at the level of Eb with a harmonic plan of I – vi – V+ - I (Eb major, c minor, Bb augmented, Eb major). The flaw is in the presence of the F# creating an augmented dominant chord of Eb major, yet the F# is necessary as the leading-tone of the prominent key suggested in the movement, G major/minor.

Conclusion

The placement of row P-0 (G) to begin the Introduction and A Sections and P-11 (F#) to begin the B Sections clearly suggests a tonic – dominant alternation for the first movement, or simply a I – V – I overall harmonic plan (see Fig. 56). Although the tonic figure is obviously "G", the ambiguity of the mode is also present even from the beginning of the movement with the appearance of the split third of G in the opening measure.

The struggle between RI-3 (Bb) and RI-4 (B) as split thirds of "G" is somewhat reconciled in the final cadential motion of the movement, however, the closing measures are ambiguous, not only concerning the mode of G but also between G and Eb as possible tonic figures. As the R-11 (F#), suggesting D Major harmony, resolves deceptively to



*indicates the three locations of P-0, I-0, R-8, RI-4

Fig. 55. Dual tonality (Eb Major as well as G major/g minor) in Movement I

Eb Major (by way of its dominant, Bb), both a deceptive V-VI motion in g minor and a V-I authentic motion in Eb Major can be argued!

	A	B	A'	B'	A	
Introduzione	*Allegretto*	*Poco più mosso*	*Tempo I*	*Più mosso–Pesante–Sostenuto*	*Primo Tempo*	
G **P-0**	G **P-0**	F# **P-11**	G **I-0**	F## **P-11**	G Bb **P-0...RI-3**	Eb **P-8**
I	**I**	**V**	**I**	**V**	**I**	bVI
	Tonic	Dominant	Tonic	Dominant	Tonic	

Fig. 56. Harmonic plan for Movement I (I–V–I)

Dual references to G and Eb as possible tonic figures, with ambiguities regarding mode, are made possible by dodecaphonic means, as well as are all references to tonality in the first movement. Formal organization, phrase structure and cadential treatment are also directly related to the underlying twelve-tone compositional design as the first ordinals of rows used determine such connections. In some instances, a single harmony is implicated by the reiteration of row forms containing a common pitch as ordinal one. In other cases, harmonies are implied through a combination of rows whose first ordinals form a chordal outline. In the case of dominant function, both P-7 (D) and P-11 (F#) often serve in a similar manner to both authentic and deceptive resolutions at the level of G. Whether outlining the beginning and ending of phrases or entire sections, the twelve-tone method provides pitch content and row treatment that allows organization of the first movement into a traditional formal design.

Harmonic outlines on the larger scale, such as found in the Introduction and *Allegretto*, are also provided by dodecaphonic means. Vogel combines harmonic

concepts from the tonal world with dodecaphonic structures to emphasize particular sonorities. The same c minor sonority that is outlined by the phrase structure in the Introduction is apparent in the *Allegretto*, although expanded through additional row presentations. A variety of harmonies is explored in the middle of the movement as three variations of material from the *Allegretto* present a series of four-row dodecaphonic groups. A primary example of combining tonal gestures with dodecaphonic structures is found in the final measures of the movement as both Eb and Bb can be argued as the final harmony depending on whether a vertical analysis of RI-3 (Bb) to P-8 (Eb) or a linear analysis with an 8 + 4 arrangement of I-3 (Bb) is supported. The ensuing discussion of the second and third movements of the Cello Concerto, provided in Chapters IV and V, will clarify the "tonal" meaning of Eb major as well as address how both small- and large-scale harmonic goals are accomplished through Vogel's method of twelve-tone operations.

CHAPTER IV

KONZERT FÜR VIOLONCELLO UND ORCHESTER (1955) BY WLADIMIR VOGEL MOVEMENT II

Introduction

The middle movement of the Cello Concerto, marked *Andante*, shares constructive elements critical to the first movement. Both types of tertian structures are significant in the presentation of row forms throughout the middle movement and, although linear treatment of the row is more apparent than in the first movement, the diminished and minor/major tertian structures often appear in vertical combinations to provide "sound forms" of a harmonic nature.

With the exception of the slower tempo, the second movement opens somewhat like the first. Whereas the first movement opens with melodic passages of quick-moving eighth-note patterns beginning on upbeats, the second movement's melody is more lyrical and consists of longer note values. The homophonic texture is similar to the *Allegretto* in that the solo cello presents the melody above a light orchestral accompaniment. The opening 26 measures of the movement serve an introductory purpose to the *Più mosso's* linear row presentation of R-7 (D) in a similar manner that the opening 18 measures of the first movement serve to introduce the *Allegretto's* linear statement of P-0 (G). The orchestral cello even introduces the arrival of the *Più mosso* with pitches that outline a

c# diminished-seventh chord resolving to D (R-7) in a similar fashion to the way the f# diminished-seventh chord resolves to G (P-0) at the *Allegretto*.

Just as the first movement opened with Dodecaphonic Structure I, P-0, I-0, R-8, and RI-4 with emphasis on the pitch "G" and outlining an Eb Augmented triad, the second movement opens with a variation of the four-row structure, R-8, P-8, I-5 and P-0 with emphasis on the pitch "Eb" and outlining a c minor harmony. However, the four-row structure that opens the *Andante* does not serve the same fundamental role as found in the *Allegretto*. Rather, the driving structural principle in the *Andante* appears to be the diminished and minor/major triads formed from ordinals 3-4-5 and 8-9-10 and the 1-2-11-12 tertian structure.

In the first movement, the four-row Dodecaphonic Structure I serves as a *Grundgestalt* with invariant occurrences in the beginning, middle, and end of the movement. In the *Andante*, the four-row structure at the beginning only recurs once, in the middle, and with a revised setting. In the *Calmo* (mm. 85-94), a subdominant c minor harmony is outlined with the rows R-0, R-8, P-5, and P-8, thereby placing the emphasis on the pitch "G" rather than "Eb" by positioning R-0 (G) at the beginning of the structure. Like the *Allegretto*, the concluding measures of the *Andante* share the motion to Eb for another deceptive closure but lacks the emphasis on Eb as a possible tonic by substituting I-4 (B) in place of the *Allegretto's* RI-3 (Bb).

Identification of the diminished and minor or major triads in both of the first two movements of the concerto provides definition of the row forms used. Since the diminished triad is formed by ordinals 3-4-5 in both P- and I- row forms, the additional minor

triad signals a prime form of the row and the major triad indicates an inverted form. Any number of arrangements of the triads are possible, however the close textural setting of the three triadic ordinals either in horizontal or vertical fashion are generally evident enough to significantly aid row identification. For example, in the four-row structure that opens the movement, row R-8 sets the minor triad with ordinal 9 just below a horizontal setting of ordinals 10-8 and sets the 3-4-5 diminished triad as a vertical sonority. Row P-8 follows suit with ordinal 8 below a linear 10-9 and a vertical diminished sonority is formed as ordinal 5 is added to the already sounding ordinals 3 and 4. Similar close arrangements of the triads appear in the I-5 and P-0 rows that complete the first four-row structure as well.

Very often, row presentations involve variations of ordinals 1-2-11-12, particularly at the very beginning or ending of row statements. Whether in a primarily vertical or horizontal arrangement, the close vicinity of ordinals 1-2-11-12 provide relationships of fifths and thirds to a setting of a dodecaphonic row. In many cases, both the 3-4-5 and 8-9-10 groups as well as some structure involving the 1-2-11-12 group are used in row segmentation.

In addition to constructive and formal connections, the second movement is also related to the first through harmonic means. The basic tonic – dominant – tonic harmonic outline of the *Allegretto* is now expanded in the *Andante* through harmonic motion reminiscent of deceptive resolutions and through emphasis on the Neapolitan. The discussion that follows identifies the specific dodecaphonic and traditional features of the second movement and explains the tonal plan more fully.

Analysis of Movement II

***Andante molto ed espressivo* (mm. 1 – 26)**

Although beginning with rows that outline c minor harmony, the goal of the first 26 measures of the second movement is RI-0 (G), achieved by moving through a simple iv – V – I harmonic progression. Overall, the rows appear in a much more linear fashion than in the first movement and are, therefore, more easily identifiable. The prominent structural feature evident in the *Andante* is the placement of ordinals 3-4-5, the diminished triad, and ordinals 8-9-10, the minor/major triad, in close vertical or horizontal arrangements, a structural feature of the first movement. The c minor triad as a subdominant harmonic level involving the pitch Eb is also an extension of ideas previously discussed. As early in the concerto as the second measure, the c minor triad is presented as ordinals 1-2-12 of I-0. Also, a c minor triadic outline is found in the large-scale harmonic plan of the Introduction to the first movement. Thus, a common feature of the first two movements is the emphasis on the subdominant early in the movement. Fig. 57 outlines the rows involved in the subdominant – dominant – tonic harmonic plan.

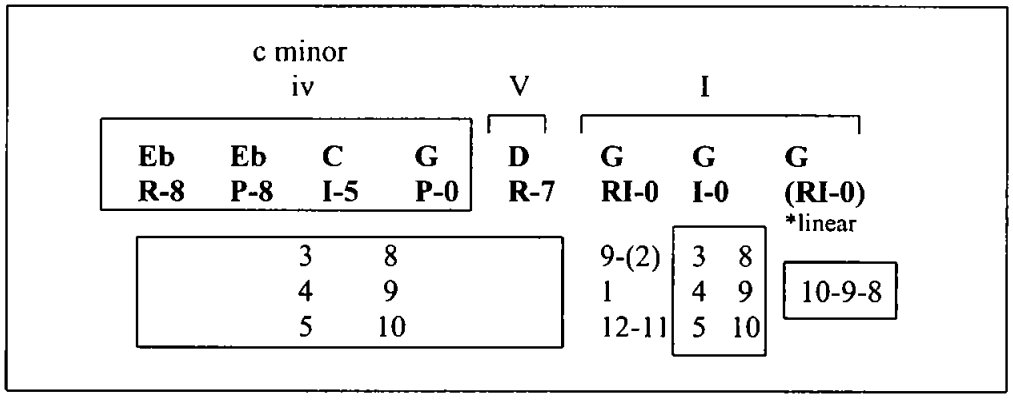


Fig. 57. Harmonic outline of the *Andante* (mm. 1-26)

The opening dodecaphonic structure, R-8, P-8, I-5 and P-0, can be viewed as a variant of the Dodecaphonic Structure I that begins the first movement, P-0, I-0, R-8 and RI-4. The c minor triad formed by the opening dodecaphonic structure in the *Andante* is presented as third (Eb), root (C) and fifth (G) just as the Dodecaphonic Structure I in the *Allegretto* presents the Eb Augmented triad as third (G), root (Eb) and fifth (B). The *Andante's* dodecaphonic structure, however, lacks the structural significance of Dodecaphonic Structure I in the first movement. The only other appearance in the *Andante* of the four-row group occurs in the *Calmo* section (mm. 85-94) and with a variation in row positions: R-0, R-8, P-5 and P-8. Unlike the first movement, the second appearance of the dodecaphonic structure falls within a section rather than designating the beginning of a new section. The c minor harmonic outline in the *Calmo* merely serves as a subdominant harmony between bVI and I.

A musical excerpt, shown in Fig. 58, designates the opening dodecaphonic structure and illustrates how the diminished and minor/major triads are used as structural elements in the presentation of each of the first four row statements.

After the initial four-row group, the *Andante's* Introduction concludes with a dominant to tonic resolution, R-7 resolving to RI-0, I-0 and a partial RI-0. The dominant row statement, R-7, is constructed with clear 10-9-8 and 5-4-3 tertian structures. The first appearance in the *Andante* of a vertical setting of the 1-2-11-12 group occurs in the RI-0 tonic arrival (m. 19). The vertical alignment of ordinals 1-7-9-12 (m. 19, beat 1) provides dual roots, Eb and E, for the third and fifth, G and Bb, forming both Eb major and e diminished triads. In addition to vertical alignments in the presentation of RI-0, the

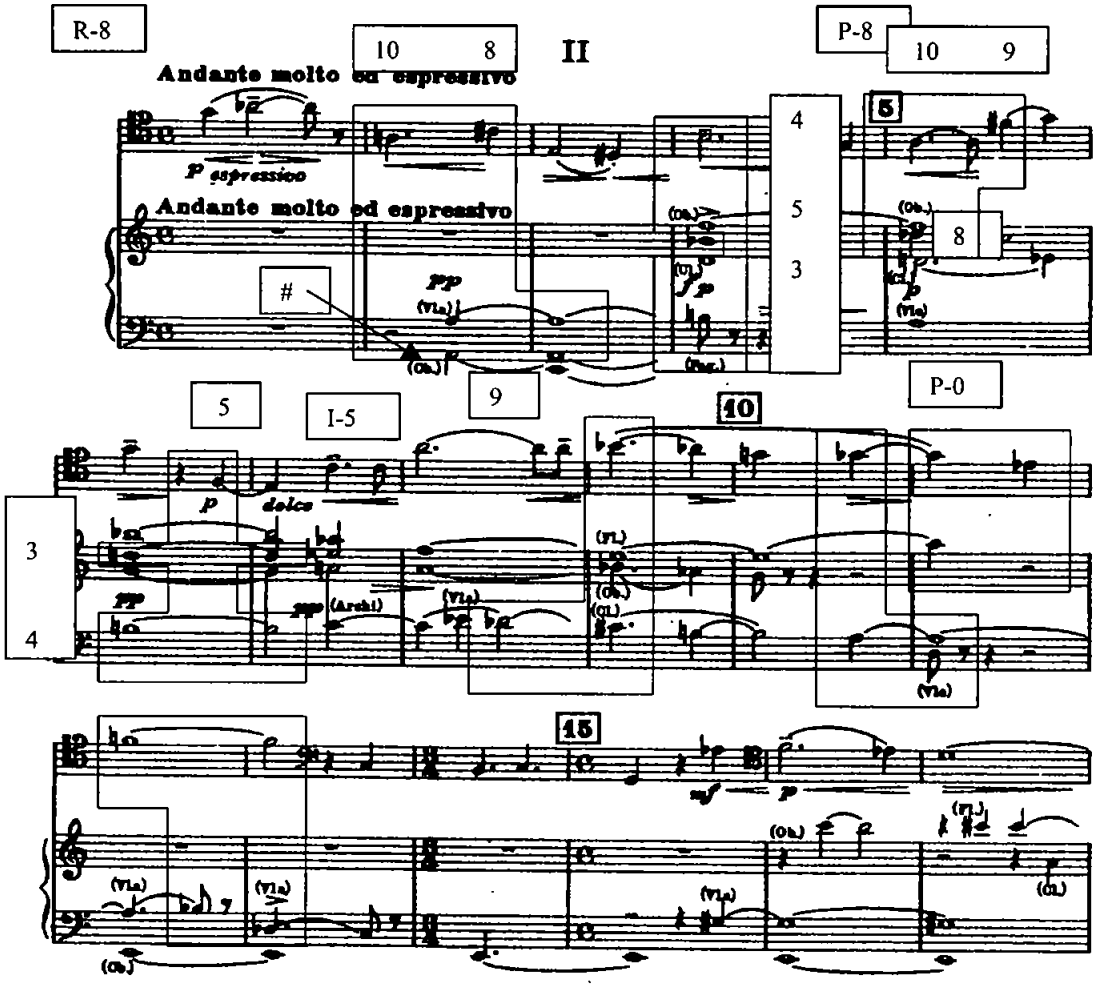


Fig. 58. Rows R-8, P-8, I-5 and P-0 at the beginning of the *Andante* (mm. 1-14)

solo cello presents a linear eighth-note melody which is supported by a four-note accompaniment, ordinals 1-7-11-12, creating an 8 + 4 arrangement. In the I-0 row that follows, the emphasis shifts back to the vertical 3-4-5 and 8-9-10 diminished and major triads. The final RI-0 row is a partial statement consisting of ordinal 11 in the solo cello which is sustained while linear statements of ordinals 10-9-8-7 are played by the cello and viola.

The partial RI-0 row serves to prepare the arrival of the *Più mosso* on R-7 (D) in a similar manner to the f# diminished-seventh chord that prepares the arrival of P-0 (G) at the *Allegretto* in the first movement. While ordinal 11 of RI-0 sustains the pitch "D", ordinals 10-9-7, pitches "C#-E-Bb", provide a horizontal outline of the root, third and seventh of a c# diminished-seventh chord setting up an arrival at the level of the dominant to begin the *Più mosso*. Fig. 59 illustrates the dominant to tonic progression that concludes the introductory section and the c# diminished-seventh resolution into the *Più mosso's* row R-7 (D).

***Più mosso* (mm. 27-67)**

Linear row treatment continues in the *Più mosso* but to a lesser degree. The five-measure expanded linear statement of R-7, which begins the section, closes with a *ritard.* Thus, the *a tempo* marking at measure 32 (indicated above the solo cello part), along with the 1-2-9-12 sonority, signals the beginning of the first phrase proper, a nine-measure idea moving from D to G or V – I. A short orchestral interlude consisting of two R-8 row statements sets up the second phrase which begins *piano* and *calmo* on I-5 (C) with closure on P-0 (G) for a motion of IV to I. A third phrase begins at measure 51 as I-1 moves through P-8 for an implied half cadence. In the I-11 (F#) row, a linear statement of ordinals 3 thru 12 in the solo cello, marked *rallentando*, is supported by a vertical 2-1 fifth (B – F#). The final phrase begins with another *a tempo* marking, this time indicated within the score, making up the last nine measures and an extended dominant to sub-mediant deceptive resolution, P-7 to P-8.

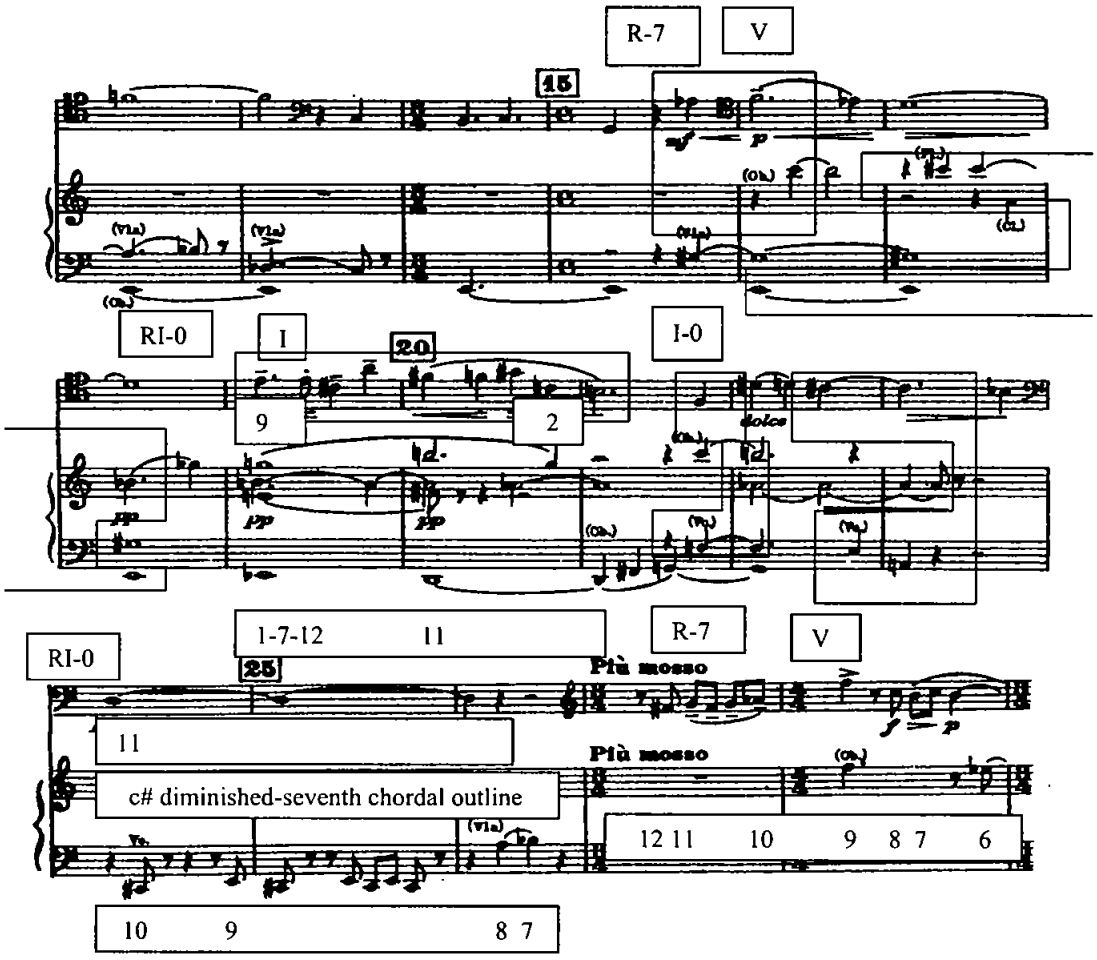
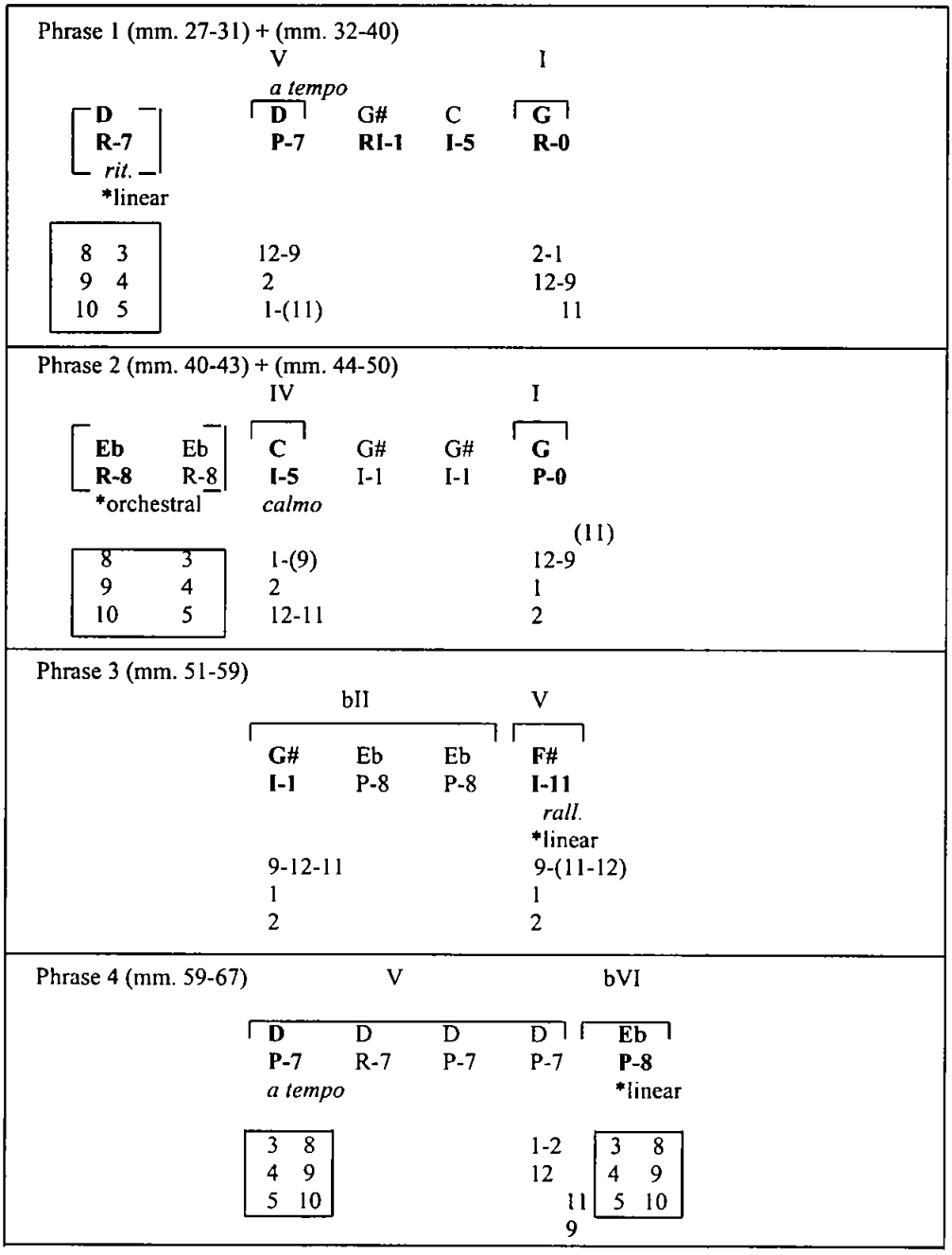


Fig. 59. Introduction and beginning of the *Più mosso* (mm. 15-28)

In Fig. 60, which illustrates row content and phrase structure for the *Più mosso*, row statements that spread over three to five measures with ordinals in near-perfect order are indicated as "linear." The primary structure of the row is indicated either as ordinals 3-4-5 and 8-9-10, the diminished and minor/major triads, or a 1-2-9-11-12 structure, since all five ordinals appear in close vicinity. The five-note group projects three



*dominant function (V) of G = D (the actual V) or F# (the leading tone as a representative of V)

Fig. 60. Formal organization of the *Più mosso* (mm. 27-67)

scenarios: 1-2-12 as the major triad, 1-2-9 as the minor triad, and 1-2-11 as the cycle of fifths. It should be noted that the linear statements sometimes include vertical subsets of the 1-2-9-11-12 group and, likewise, the rows structured by the five-note group are, in some cases, somewhat linear and stress the 3-4-5 and 8-9-10 structures as well. In each case, the most obvious structure is designated.

Considering all four phrases, the harmonic progression at the level of G is dominant – tonic – pre-dominant – dominant – deceptive tonic (see Fig. 61).

V	–	I – (IV) – I	–	bII	–	V	–	bVI
Dominant		Tonic (prolonged)		Pre-dominant		Dominant		Tonic (deceptive)

Fig. 61. Harmonic plan for the *Più mosso* (mm. 27-67)

***Calmo* (mm. 67-94)**

The *Calmo* section divides into two parts with the first part consisting of five melodic phrases and the second part of a much more rhythmic and disjunct nature. In the initial part, measures 67-85, the solo cello's melody is formally organized as five phrases that could be labeled a a^1 b c d. Up to this point in the concerto, much of the solo cello's melodic material has been extremely rhythmic and disjunct requiring much from the performer. The melody in the cello at the *Calmo* is very lyrical, organized into measures of 4 + 4 + 3 + 4 + 4, and the rhythmic patterns are also very organized. The same uneven strong-weak rhythmic pattern is supplied at three different levels: 1) the dotted

half/quarter note pairing in 4/4 time; 2) the half/quarter in 3/4 time; and 3) the dotted quarter/eighth in 4/4 time. The five melodic phrases are transcribed in Fig. 62.

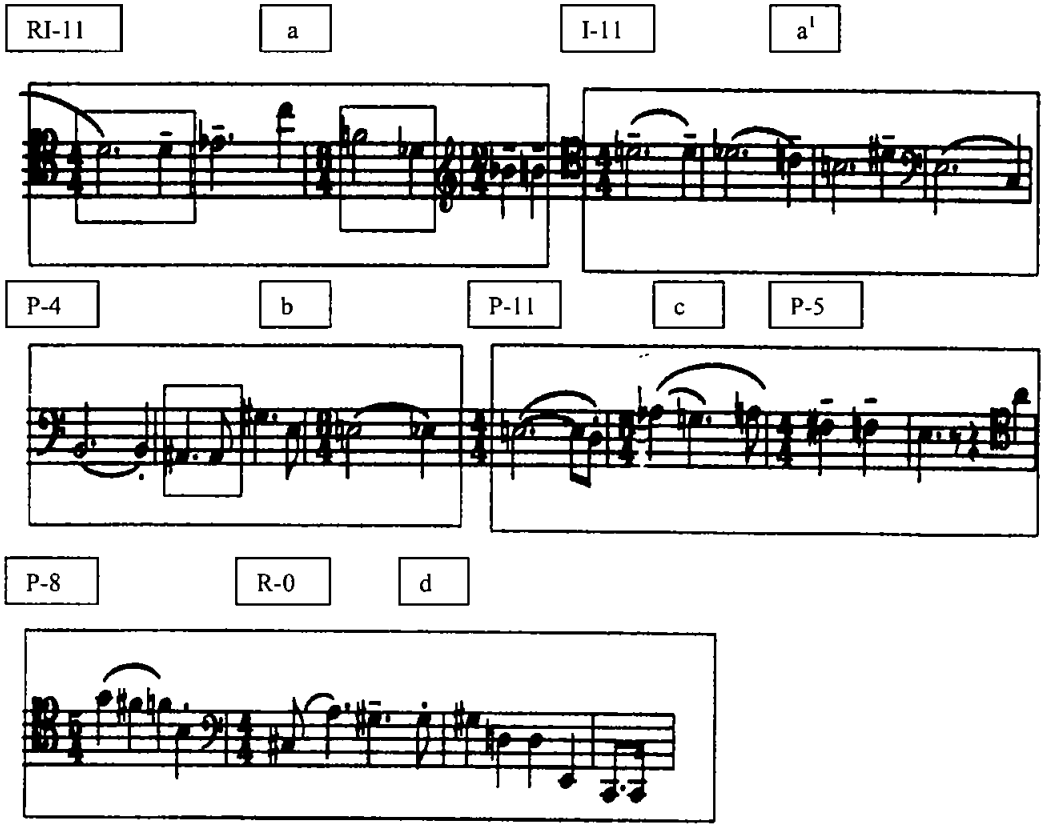


Fig. 62. Melodic phrases in the *Calmo* (mm. 67-81)

In the measures that follow, the second part of the section turns from the lyrical melodic character back to the quicker rhythmic patterns and disjunct melodic intervals. The section closes with an emphasis, through repetition, on the pitch "G" as the third of

an Eb major triad in the row P-8. As the *Più mosso* begins on P-0, the "G" is reinterpreted as the root of a G major/minor triad with the vertical setting of 11-12 and 9-1.

A row graphing for the two parts of the *Calmo* section illustrates the implied harmonic progression V – bVI – iv with a resolution to I on the P-0 row at the beginning of *Più calmo* (see Fig. 63).

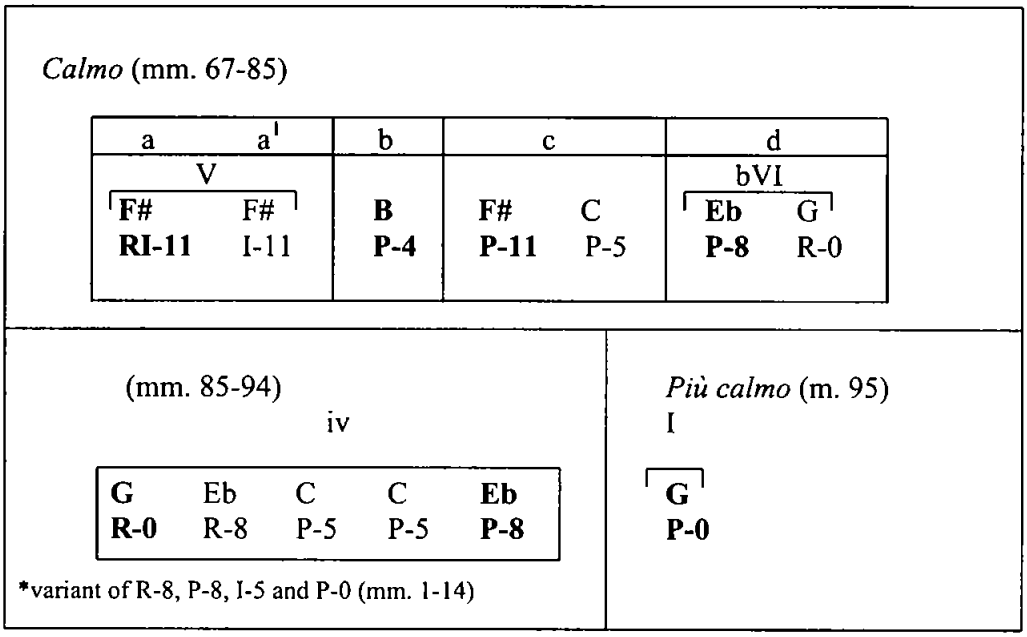


Fig. 63. *Calmo* (mm. 67-94) – *Più calmo* (m. 95)

***Più calmo* (mm. 95-103)**

The presentation of row P-0 at the *Più calmo* is somewhat unusual for the concerto thus far. The solo cello, with a sustained ordinal 3, is supported by a linear 2-4-5-6-9-1 in the strings and a linear 7-8-10-11-12 in the winds. The 1-2-9-11-12 structure is accomplished as ordinals 11-12 in the winds are in vertical alignment with ordinals 9-1 in

the strings, with ordinals 1 and 2 serving as boundary pitches for the strings. Not unusual for the movement, however, within a row that structurally places ordinals 1-2-9-11-12, the 3-4-5 and 8-9-10 triads are also clearly presented. Row P-0 at measure 95 is an excellent example of how Vogel combines structural elements and accomplishes major, minor, and diminished triads as well as a cycle of fifths within a dodecaphonic setting (see Fig. 64).

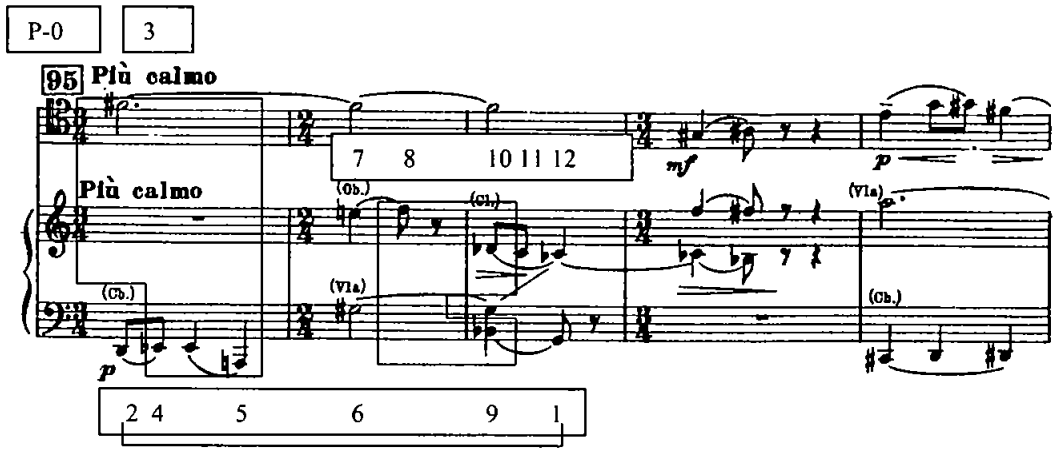


Fig. 64. P-0 at the beginning of the *Più calmo* (mm. 95-98)

The four rows that make up the *Più calmo* section are diagrammed in Fig. 65.

I			
G	A	C#	C#
P-0	P-2	P-6	P-6
3 8 11-12 and 4 9 (2) – 9 – 1 5 10	2 1 12-11	11-2-1 8 3 9 and 9 4 12 10 5	

Fig. 65. *Più calmo* (mm. 95-103)

***Largo* (mm. 104-118)**

The *Largo* also begins with P-0 and, again, contains some unusual features. Ordinals 8 and 9 in the first two rows, P-0 and P-2, are formed by a notated ordinal 8 in the solo cello and its harmonic to add vertical ordinal 9. In both cases, ordinal 10 completes the triad with a long note value given to the brass (see Fig. 66).

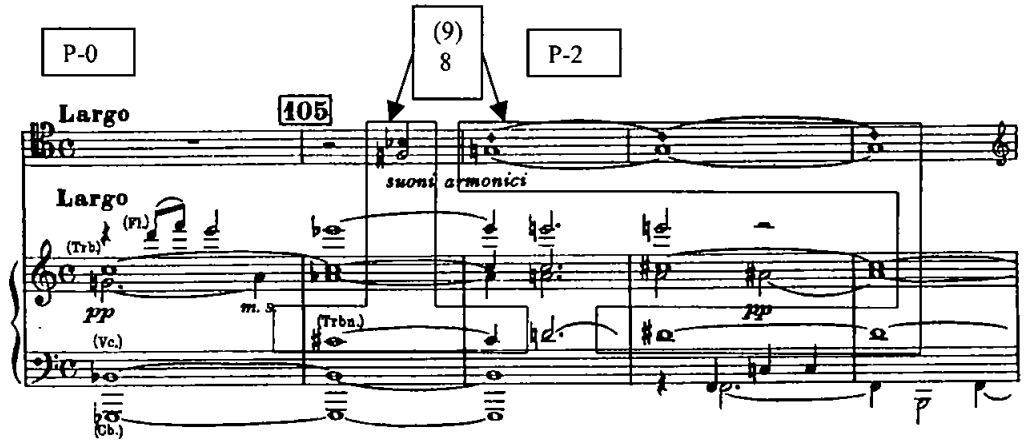


Fig. 66. Tertian structure (8-9-10) in the *Largo* (mm. 104-108)

The 1-2-9-11 vertical sonorities in these two rows place a lesser importance on ordinal 12, the major third. The importance of ordinal 12 is not brought back until the end of the *Largo* in the closing I-4.

Another unusual feature to the second movement is found in a partial statement of row P-7 in measure 109. The vertical alignment of ordinals 3-4-6-8 foreshadows a tetrachordal structure that is crucial to the dodecaphonic organization of the concerto's third movement. The tetrachord consisting of two pairs of ordinals, 3-4 and 6-8, appears vertically just prior to a 2-1 bass motion.

In viewing the six rows of the *Largo*, a G major triad is outlined as root, fifth and third, implying I – V – I (see Fig. 67).

Root I		Fifth V			Third I
G	A	**D**	C#	C#	**B**
P-0	P-2	**P-7**	P-6	(P-6)	**I-4**
2	9	3	1-11 (9-12)		12
11	2	4	2		9
1	1	6			1
9	11	8 2-1			2
*cycle of fifths/minor triad		*tetrachord used in Etude			*major/minor triad

Fig. 67. Row forms in the *Largo* (mm. 104-118)

***Più mosso* (mm. 119-160)**

The brevity of the first *Più mosso* (mm. 119-134), along with the lack of an implied harmony to unify the measures and the lack of a cadential gesture, suggests that the two *Più mosso* divisions should be considered as one section. The rows in the first *Più mosso* are constructed using either the 1-2-11-12 ordinal group or the 3-4-5 and 8-9-10 triadic structures (see Fig. 68).

After a *ritard*, the second *Più mosso* begins with double row statements that form palindromes in the melodic material of the solo cello. The palindrome treatment is

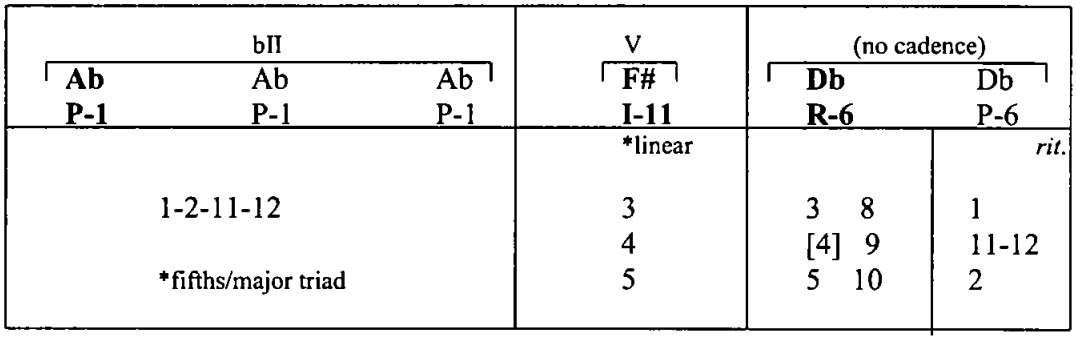


Fig. 68. Row forms in the first *Più mosso* (mm. 119-134)

clearly evident at five levels but breaks down on the sixth. The first three palindromes are PC sets (0147), (0147), and (036). The next three levels indicate slight changes as the PC sets are (014$\underline{6}$), (014$\underline{6}$), and (0$\underline{2}$6). The pattern of PC sets allows for labeling the six levels as a, a^1, b and c, c^1, d. Half-step relationships exist between levels one and two and levels three and four with the two half-step pairs a perfect fifth apart. Fig. 69 illustrates the rows used for each level of the palindrome chain as well as the PC sets.

The first three levels use ordinals 5-4-11-7 in the ascending melodic line, however the third level (b) is shortened by omitting ordinal 7. Double row statements of P-3, I-6 and P-7 present palindromes that begin with a diminished fifth interval followed by either major sixth and major third, as in (a), or their inverted minor third and minor sixth, as in (a^1). The third level (b) returns to the intervals of level one (a) but omits ordinal 7, therefore omitting the major third.

The next three levels, rows P-8, P-2 and P-7, contain varied interval structure and therefore varied ordinal numbers. However, the diminished fifth is represented by

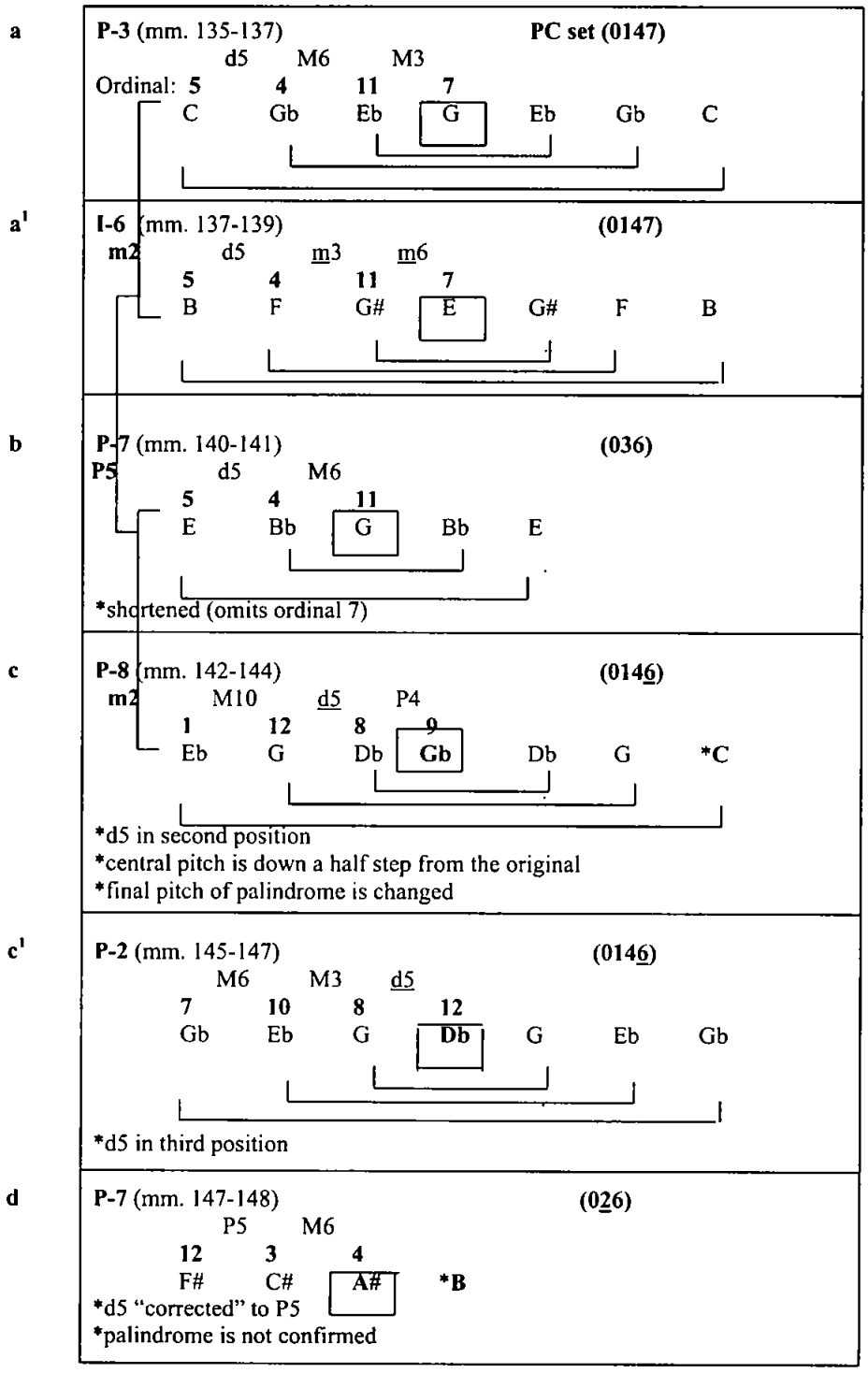


Fig. 69. Palindromes in the second *Più mosso* (mm. 135-148)

ordinals 12 and 8 in both the fourth and fifth levels (c and c^1) and the perfect fifth, in the sixth level (d), is furnished by ordinals 12 and 3.

Strict palindrome treatment, as found in levels a and a^1, gradually declines. Initially with only minor adjustment in level b, shortened by omitting an ordinal, in level c, the palindrome ends with an "incorrect" pitch, "C" instead of the expected "Eb". The central pitch is now Gb and the diminished fifth has been shifted to the second position. The fifth level (c^1) returns to strict treatment of the palindrome and the expected number of intervals. The diminished fifth now appears in the third position. In the sixth and final attempt, the ascent is accomplished but the immediate return to an "incorrect" pitch indicates that the possible sixth palindrome has been denied. A connection between the sixth level (d) and the original level (a) can be found in the interval structure. The diminished fifth – major sixth in first and second position of the original level (a) is "corrected" to perfect fifth – major sixth in the final attempt (d). The remainder of the *Più mosso* (mm. 148-160) consists of several four-note sets to end the solo cello's melodic material. The features of the very conclusive P-8 row that ends the section include use of harmonics, long note values, extension of the row over four measures, extended orchestral harmonic support over four measures, and the *fermata* on the final sonority. The strongly articulated closing anticipates a return to previous material, confirmed by the *Tempo I* indication in the measure that follows.

A row graphing for the entire *Più mosso* is shown in Fig. 70. The harmonic progression derived from the *Più mosso* presents still another deceptive resolution (see Fig. 71).

<table>
<tr><td colspan="3">(mm. 119-134)
bII
Ab Ab Ab
P-1 P-1 P-1</td><td>V
F#
I-11</td><td colspan="2">(no cadence)
Db Db
R-6 P-6</td></tr>
<tr><td colspan="3">1-2-11-12
*fifths/major triad</td><td>*linear
3
4
5</td><td>3 8
[4] 9
5 10</td><td>rit.
1
11-12
2</td></tr>
<tr><td colspan="6">(mm. 135-148)</td></tr>
<tr><td>Palindrome:
a</td><td colspan="2">a¹</td><td>b</td><td>c</td><td>c¹</td><td>d</td></tr>
<tr><td>i
Bb Bb
P-3 P-3</td><td colspan="2">Db Db
I-6 I-6</td><td>D D
P-7 P-7</td><td>Eb Eb
P-8 P-8</td><td>A A
P-2 P-2</td><td>V
D
P-7</td></tr>
<tr><td colspan="6">(mm. 148-160)
V bVI
D A E Eb E Eb
P-7 R-2 P-9 P-8 P-9 P-8
*fermata</td></tr>
</table>

Fig. 70. Row forms for the entire *Più mosso* (mm. 119-160)

bII –	V -	I -	V -	bVI
Pre-dominant	Dominant	Tonic	Dominant	Tonic (deceptive)

Fig. 71. Harmonic plan for the *Più mosso* (mm. 119-160)

***Tempo I* (mm. 161-246)**

Tempo I (mm. 161-175)

Just as there were two *Più mosso* markings, there are also two *Tempo I* indications. The first *Tempo I* at measure 161 lasts only a few measures before being interrupted by a solo *cadenza*. The fifteen measures that lead to the *cadenza* imply harmonic motion from V – bVI (see Fig. 72).

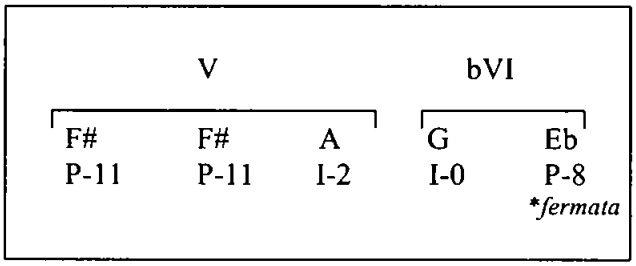


Fig. 72. Row forms in the *Tempo I* (mm. 161-175)

In the measures prior to the *cadenza,* the solo cello is silent until entering with a trill on B and A# leading into the *fermata* at measure 175. Measure 161 opens with a vertical setting of ordinals 1-2-12 (F# major triad in P-11) followed by outlines of 3-4-5 and 8-9-10 triadic outlines (d diminished and a minor in P-11). When the C# (ordinal 2), in the uppermost part, moves to B (ordinal 11), the 1-2-11-12 group is complete adding the relationship of fifths (B – F# - C# in P-11). The second P-11 statement verticalizes ordinals 1-9-11-12, providing the split third of the F# triad, therefore adding the minor triad. Thus, in the first five measures of the *Tempo I*, all scenarios have been reintroduced from the 1-2-11-12 group (1-2-12 major triad; 1-9-12 minor triad; 1-2-11 cycle of

fifths) and from row topography (3-4-5 diminished triad and 8-9-10 minor triad). The primary structural element of the remaining three rows is the 3-4-5 and 8-9-10 sonorities.

Cadenza (mm. 175-189)

The *cadenza* is delineated by *fermatas*, just before the *cadenza* begins and to signal the end. Harmonically, the rows imply a simple tonic and dominant alternation (see Fig. 73). As far as length, the *cadenza* is rather short, fourteen measures plus an orchestral extension. Vogel's intention for the concerto, as a whole, to be a virtuosic work and a challenge for the soloist eliminates the need for a lengthy *cadenza* to serve this purpose. A chance to "show-off" the soloist is certainly accomplished in the *cadenza* but, in reality, is a continuing process throughout the work.

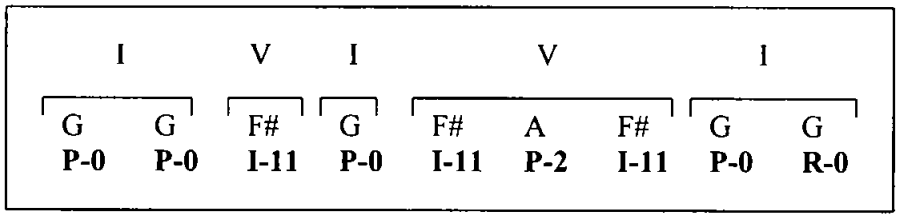


Fig. 73. Row forms in the *Cadenza* (mm. 175-189)

Tempo I (mm. 190-209)

The solo cello's five-note linear passage, ordinals 7-11-1-6-2 which begins at the *tranquillo* marking, reintroduces the *Tempo I.* The *a tempo* after a *ritard* continues the cello's linear treatment for the remaining pitches of the row. The dramatic ascent of the five notes is reminiscent of the ascending portion of the palindromes in the *Più mosso* (m. 135), however the descent does not confirm a return to previous pitches to complete

the palindrome. An argument could be made that the ascent at the *tranquillo* forms the seventh attempt (e) at a palindrome since there are similarities, particularly to the sixth level (d) in the *Più mosso* (see Fig. 74).

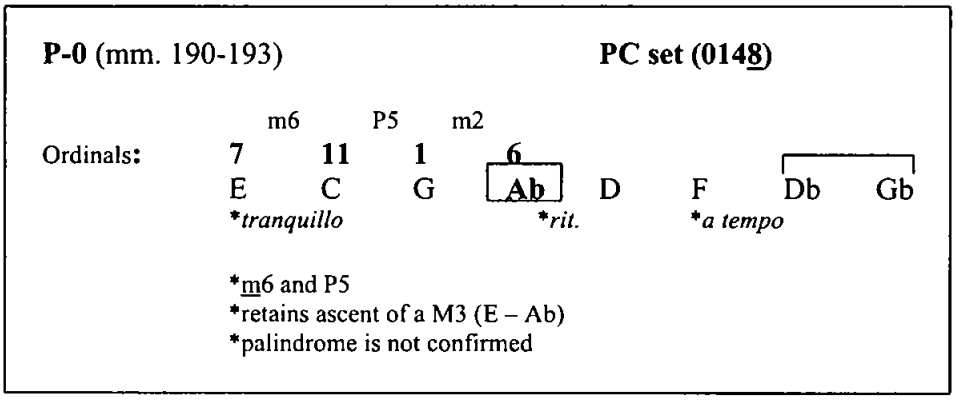


Fig. 74. Ascent at the *tranquillo* (mm. 190-193)

First of all, the PC set (0148) continues the chain established in the palindromes of the *Più mosso* (see Fig. 75).

Più mosso (mm. 135-148)						*tranquillo* (mm. 190-193) [*Tempo I*]
a	a^1	b	c	c^1	d	e
(0147)	(0147)	(036)	(0146)	(0146)	(026)	(0148)

Fig. 75. Palindrome treatment

Secondly, the minor sixth – perfect fifth is a reversal of the major sixth – perfect fifth of the sixth attempt (d). Thirdly, the ascent of a major third from pitch one to the climax is

retained from the sixth level. The F#-A# is now transposed down a whole step to E – Ab. And finally, a palindrome is, once again, set up but not confirmed.

The ascending and descending melodic contour of melodic fragments continues in the solo cello throughout the *tranquillo* passage and even into the beginning of the *calmandosi*. Four melodic ascent/descent passages are transcribed in Fig. 76: rows P-0, R-0 and P-7 at the *tranquillo* and row P-0 at the *calmandosi*.

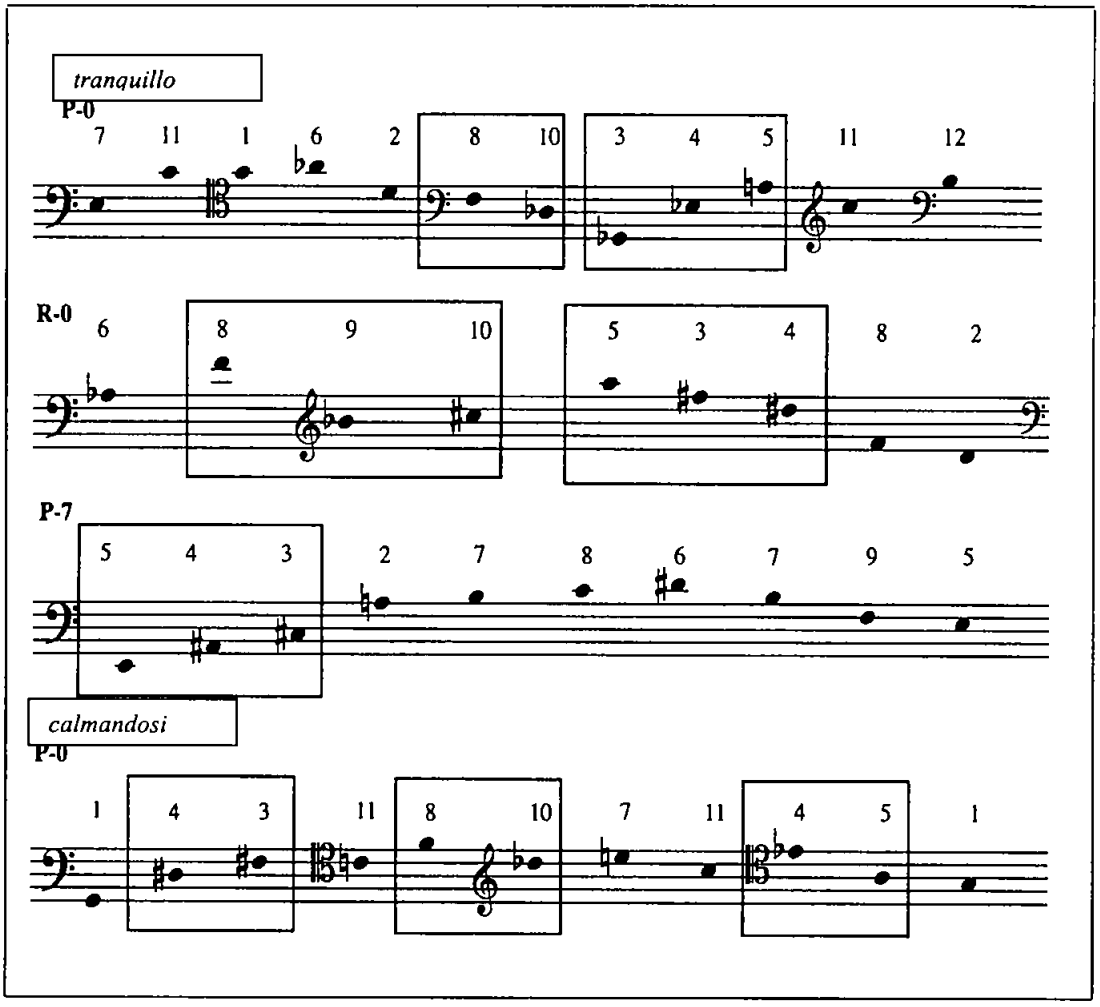


Fig. 76. Melodic ascents/descents in the second *Tempo I* (mm. 190-203)

The *calmandosi* concludes with several two- or three-note rhythmic figures that gradually dissolve into longer note values for a three-measure solo by the cello.

Fig. 77 illustrates all rows used in the *tranquillo* and *calmando*si of the large *Tempo I* and reflects a simple I – V – bVI progression.

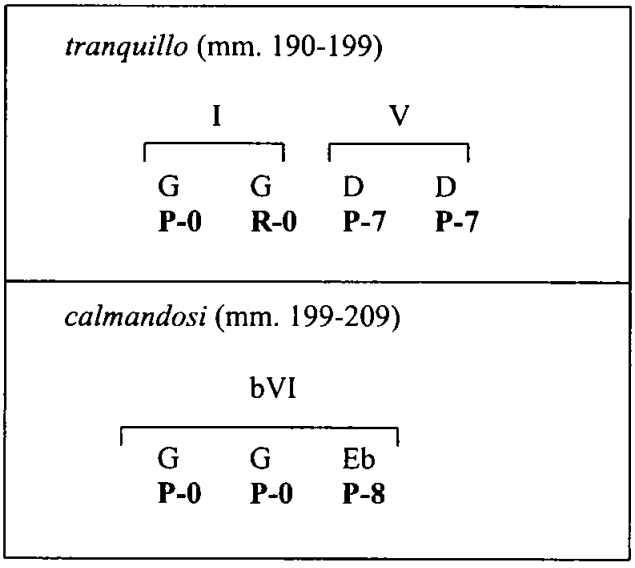


Fig. 77. Deceptive resolution in the *tranquillo* and *calmandosi* (mm. 190-209)

Tempo I – Andante (mm. 209-246)

Row P-0 begins with a linear presentation of ordinals 1-2-12-9 (split third) and continues with the remaining pitches of the row over the next four measures. The *Tempo I - Andante* marking is placed in the middle of the five-measure row statement, a confirmation that these measures are part of a larger *Tempo I* section that began before the *cadenza* at measure 161. The pitch G could not be more emphasized as a series of P-0

rows is followed by a series of I-0 rows and then a return to a pair of P-0 rows, a total of ten "G" rows (see Fig. 78).

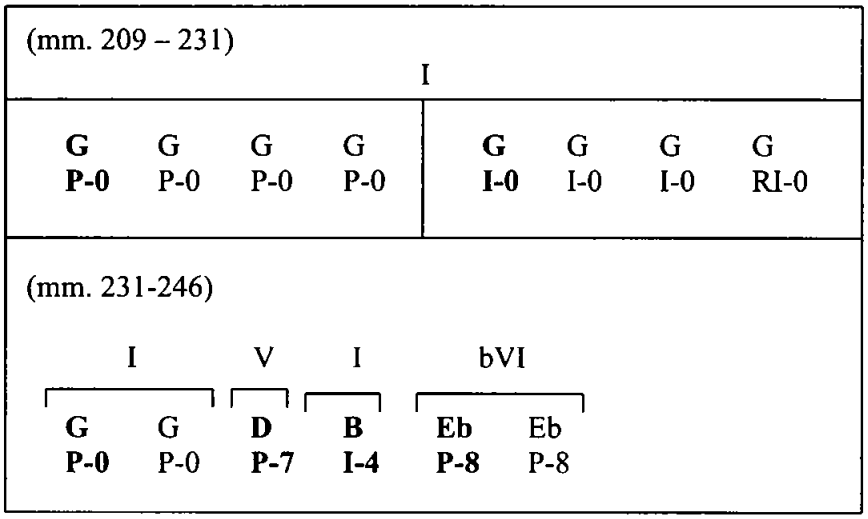


Fig. 78. Emphasis on "tonic" in *Tempo I* (mm. 209-246)

As the conclusion of the *Andante* is approached, the "G" rows move through P-7 (D) and I-4 (B) toward the final double statement of P-8 (Eb). Whereas the first movement ends with RI-3 (Bb) and P-8 (Eb), the second movement ends with I-4 (B) and P-8 (Eb). As the first movement concludes, the pitch Bb is ambiguous as to whether it serves as the third of g minor or the fifth of Eb. Since the pitch "B" at the end of the second movement does not fit into Eb tonality, the implication is simply G major. Perhaps knowledge about the cadential treatment of the *Andante's* conclusion sheds light on the respective measures of the *Allegro*. A similar treatment of V – i/I – bVI (D –g/G – Eb) is shown in the comparison of the two movement's closing measures and their harmonic implications (see Fig. 79).

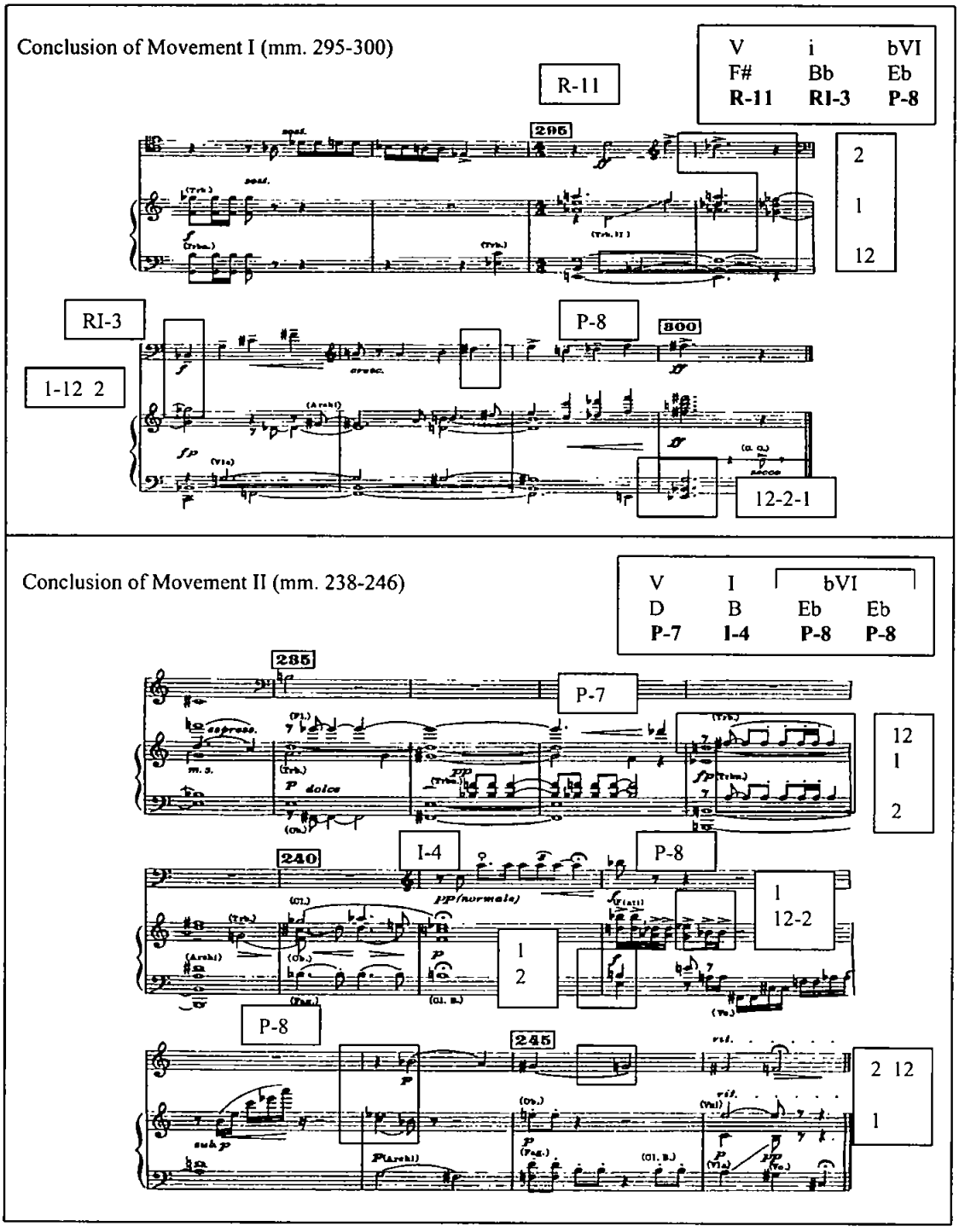


Fig. 79. Comparison of final measures of Movements I and II

The final measure "looks back" to a previous idea within the movement as well as "looks forward" to the third movement. The vertical sonorities consist of pitches F#-E-C-A, ordinals 9-6-7-10 of P-8, followed by pitches F-E-B-G#, ordinals 5-6-4-11, and finally F and C#, ordinals 5-8. The PC sets represented by these sonorities are (0258) and (0147) and then interval class 4 for the major third. The PC set (0147) of the second vertical sonority is recognizable from the ascending intervals of the first two palindromes in the *Più mosso* section at measure 135. The PC set used for the fourth and fifth palindromes, (014$\underline{6}$), can also be derived from the final pitches of the *Andante*. If the E and B were held into the final beat with the F in the solo cello, the sonority formed would be F-E-B-C#, PC set (014$\underline{6}$).

The bass line's descending fifth in the final measure from G# to C# anticipates the ostinato pattern that begins the Etude. As the *Andante* closes with G# - C#, ordinals 11 and 8 of P-8, the Etude begins with the same pitches, enharmonically spelled as Db and Ab, ordinals 1 and 2 of P-6.

Conclusion

Considering both Vogel's tempo markings and the implied harmonic progression within each section, a formal design of A B C B^1 A^1 can be derived. The basic I – V – I progression of the first movement has been expanded to I – V – I – bII – V – I. As in the conclusion of the first movement, the cadential row is the penultimate row with the final row statement, P-8 (Eb), suggesting an added Coda. Fig. 80 illustrates the formal organization and harmonic plan for the *Andante*.

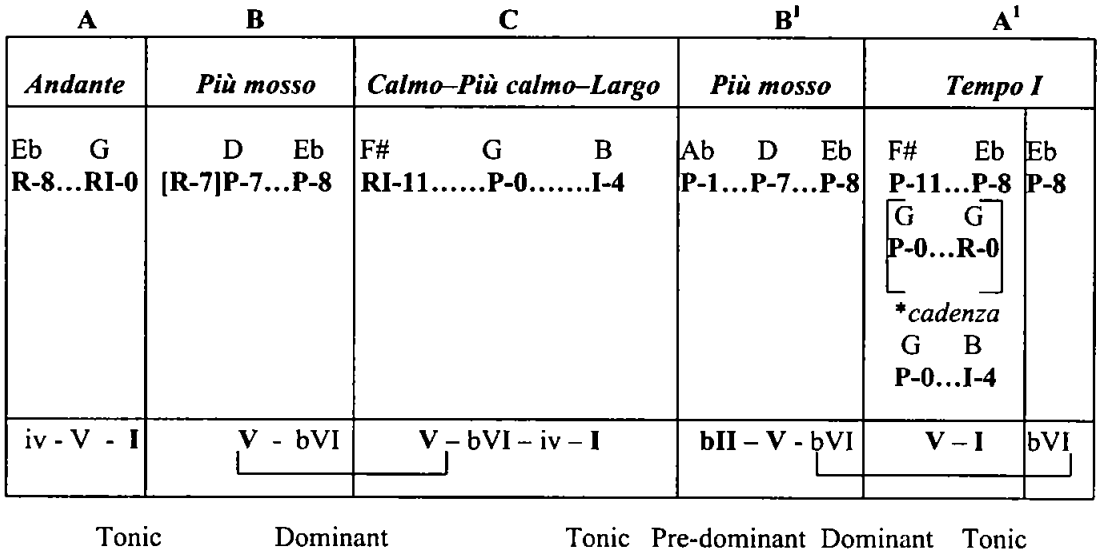


Fig. 80. Harmonic plan for Movement II (I –V–I–bII–V–I)

In both the first and second movements, the formal design is directly related to the tonal properties within the overall dodecaphonic structure. Traditional formal designations arise out of classification of "0" row forms as tonic (G) and "7" and "11" row forms as dominant (D and F#) as well as consideration of row P-8 (Eb) as submediant involving deceptive resolutions. Vogel's use of rows related by fifth along with designated changes in tempo divides the movement into units that are related to each other by tonal means.

Other features that support the formal design involve rhythmic and textural modifications at major divisions within the movement. Sectional divisions often accompany a change in rhythmic complexity, particularly in the solo cello; a change in orchestral density; a change from a more polyphonic texture to one that is more homophonic; and a much clearer row presentation through linear setting, whether in the solo cello or orchestra.

Although the third and final movement exhibits many of the tonal properties found in the concerto thus far, the Etude also introduces additional features unique to the movement. While the Etude serves to fulfill large-scale connections that unite the concerto as a whole, the shift to P-6 (Db) to begin the final movement, rather than a continuation of P-8 (Eb) that closes the *Andante*, contributes to a certain level of independence as well.

CHAPTER V

KONZERT FÜR VIOLONCELLO UND ORCHESTER (1955) BY WLADIMIR VOGEL MOVEMENT III

Introduction

Vogel composed each of the three movements of the Cello Concerto with specific ideals in mind as he explained in *Schriften und Aufzeichnungen über Musik* (1977). The first movement provides an opportunity to show off not only the skilled soloist's ability to perform twelve-tone music but also the instrument's capability. The lyrical second movement allows the performer to expand an open form and stands in contrast to the closed form and monothematic first movement. The third movement, titled "Etude," begins very simple and gradually increases in complexity, eventually to the point of requiring a masterly technique for performance.[35] Regarding the Etude, Hans Oesch states:

[35]Vogel, 1977, 129-130. (Original German: *Im ersten Satz will ich zeigen, was ein guter Violoncellist auch bei der Wiedergabe zwölftöniger Musik wie der meinen alles aus seinem Instrument herausholen kann. Im Gegensatz dazu habe ich für den zweiten Satz, damit sich der Solist in breiten Lyrismen entfalten kann, eine offene Form gewählt. Dieses Andante espressivo steht damit in einem starken Gegensatz zum Kopfsatz, der eine geschlossene Form aufweist und fast monothematisch ist. Um dem Solisten, mir selber und, wie ich hoffe, auch dem Publikum Vergnügen zu bereiten, habe ich eine Etüde als Finale geschrieben. Sie beginnt für den Solisten in einer sehr einfachen Art, wie wenn sie für einen Anfänger bestimmt wäre. Der Schwierigkeitsgrad steigt aber, und der Satz stellt schließlich letzte Ansprüche, nicht nur in bezug auf vollständige Beherrschung des Instruments, sondern auch hinsichtlich der Bewältigung ganz neuer musikalischer und spieltechnischer Aufgaben.*)

> Das musikalische Geschehen wird zunehmend komplizierter. Nach Takt 113 ist die Reihe verteilt auf Violoncello und Streicherpart. Die Stretta (Takt 173) verlangt vom Solisten eine letzte Steigerung—eine Passage, die dem Violoncello schwer abzuringen ist. Die Coda schließlich bildet die Reprise des Anfangs der <<Etude>> auf anderer musikalischer Ebene.[36]
>
> [The musical events become increasingly more complicated as the movement progresses. At measure 113, the row is split between the solo cello and the strings. The *stretta* (m. 173) demands of the soloist a final push—a passage that requires much from the soloist. Finally, the Coda is formed by a reprise of the opening of the "Etude," though on a different musical plane.]

The *stretta* occurs in the *Più vivo* section and is the most demanding point in the movement. Row forms are spread among the solo cello and the orchestra. Rhythmic complexity is at a climax with triplets in the orchestra against uneven duple patterns in the solo cello, or vice versa. The reprise is approached by a *ritard* into the *Vivo* section where the simpler tetrachordal segmentation found in the beginning of the movement returns.

The third movement begins *Allegro moderato* thus fulfilling the rounded tempo design of fast – slow – fast for the concerto. As well as similar tempos, the Etude also shares structural and harmonic features found in the first movement. The structural fifths presented by ordinals 1-2-11 are prevalent in the first measure of both Movements I and III. Paired half steps in the accompaniment of the Etude, G – F# (m. 2) and F-E (m. 3) resemble the half steps apparent in the orchestra in the opening measures of the *Allegretto*, B-Bb (m. 1) and Eb-E (m. 2). In addition, the tetrachordal idea, evident in the first movement through the four-note accompanimental figure, is expanded in the Etude through tetrachordal segmentation of the row and use of invertible counterpoint.

[36]Oesch, 1967, 161.

Harmonically, the Etude shares the large-scale I – V – I plan of the first movement but also emphasizes the Neapolitan through prolongation, a significant harmony in the *Andante*. Just as the first and second movements end with a statement of P-8 (Eb) after a cadential gesture on G, the Etude is no different. Rows P-7, P-0 and P-8 provide the harmonic motion D – G – Eb in the final measures of the work.

Analysis of Movement III

Allegro moderato (mm. 1-75)

The opening section of the third movement, marked *Allegro moderato*, consists of 75 measures with a formal outline of A B A^1 B^1. The primary rows for the initial A Section, P-6 and I-1 present the perfect fifth C# - G#. The fifth is then transposed up by half step to D – A for the primary rows of the A^1 Section, P-7 and I-2. The B Sections also participate in the upward half-step sequence by introducing both D and Eb. The ascent by half step from C# to Eb in the *Allegro*, PC set (012), is followed by the opening of the *Più mosso* on C establishing a large-scale motion of a downward half step C# - C (see Fig. 81).

The close connection of the opening of the *Più mosso* to the A and A^1 material of the *Allegro* suggests a continuation in the formal organization rather than presentation of a new formal idea. To confirm, however, the structural principles for each of the three passages labeled as A, A^1 and A^2(?) must be determined and then compared. The role of the B Sections as possible modulatory passages requires further exploration as well.

Tertian structures are evident right from the beginning of the Etude that link the third movement to the first and second. The stacked fifths that begin the Etude

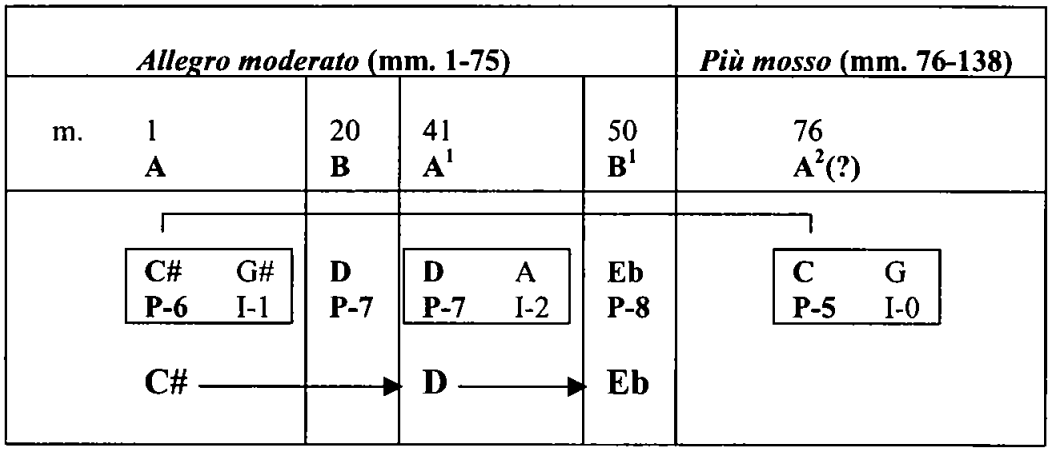


Fig. 81 Chromatic motion in the *Allegro moderato – Più mosso*

(Gb-Db-Ab, ordinals 11-1-2 of P-6) are a transposition of the sonority of fifths that opens the first movement (C-G-D, ordinals 11-1-2 of P-0). However, the fact that the Etude is given a unique title and begins with a new tonal level, made prominent by the pairing of P-6 (C#) and I-1 (G#), rather than continuing the level of Eb at the conclusion of the *Andante*, substantiates a degree of independence for the final movement. Nevertheless, the first two tonal levels explored in the A and A^1 Sections of the beginning *Allegro* measures, P-6 and I-1 (C#-G#) and P-7 and I-2 (D-A), serve as chromatic half steps leading to the arrival on Eb, the "correct" level, with row P-8 signaling the B^1 Section (m. 50). Just as was the case in the previous movements, the first ordinal of each row is used once again to support arguments for tonal levels and formal design. The discussion that follows addresses dodecaphonic and tonal elements in relation to the form of the Etude with consideration of row usage, motivic identity and rhythm.

Formal Organization

Three structural levels are evident right from the beginning of the movement (see Fig. 82). As an upper level, the solo cello moves through a series of melodic intervals in an ostinato-like manner. The middle level consists of the winds which provide a harmonic support with a clear rhythmic pattern and melodic contour in the opening measures that suddenly shifts to longer note values in the sixth measure. Just as prominent as the cello's melodic intervals is the bass line, also ostinato-like, assigned to the strings.

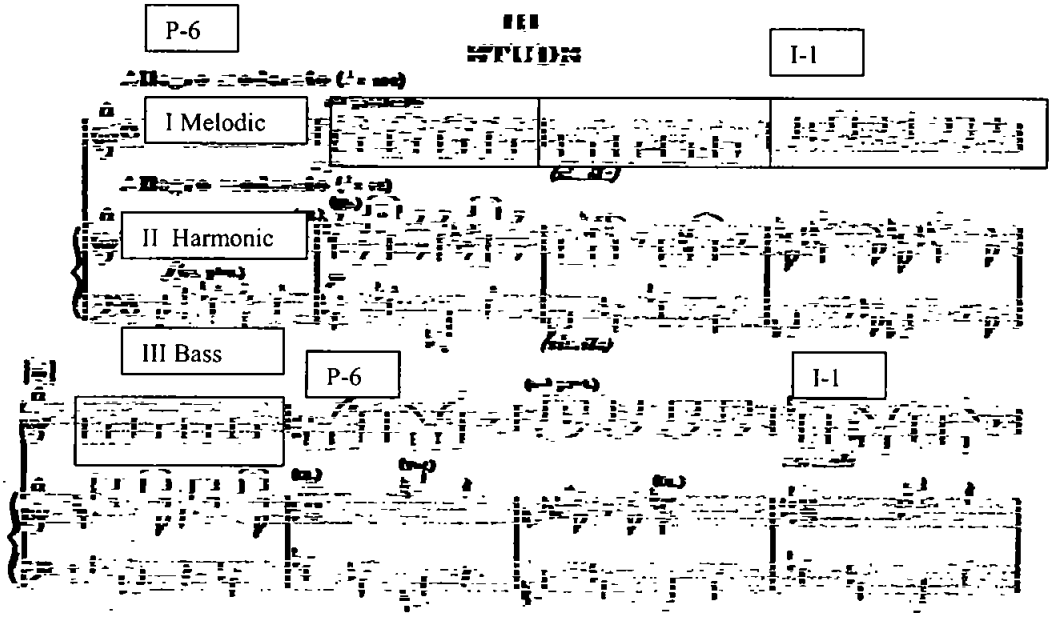


Fig. 82. Beginning of the A Section (mm. 1-8)

In the A Section of the *Allegro* (mm. 1-19), nine row statements, alternating P-6 and I-1, are grouped as follows: three pairs of P-6/I-1, followed by a single statement of

P-6, and closing with a reversal of the pair, I-1/P-6. The pairs are determined by common ordinals within the P and I rows for all three structural levels. As shown in Fig. 83, a ternary design is evident from the ordinals and PC sets for each tetrachordal segmentation.

	a (mm. 1-5)		b (mm. 6-15)	a^1 (mm. 16-19)	
I Melodic	**(0235)**	**m3**	**(0347)**	**(0135)**	**M3**
II Harmonic	(0123)	m2	(0156)	(0127)	P5
III Bass	(0257)	P5	(0156)	(0157)	d5

Fig. 83. PC sets in the A Section (mm. 1-19)

A small adjustment occurs in the PC sets of the a^1 division as the third changes from minor to major in the melodic material, the minor second changes to a perfect fifth in the harmonic, and the perfect fifth becomes diminished in the bass. Fig. 84 reflects the ternary design of the A Section and outlines pitch content for the three structural levels within the dodecaphonic framework.

When the material returns in the A^1 Section (m. 41), the three structural levels are retained but the roles of the solo cello, winds, and strings are changed (see Fig. 85). The A^1 Section is constructed using triple invertible counterpoint, a common compositional tool in contrapuntal music of both the sixteenth and eighteenth centuries.

Whereas the initial A Section presents material in a normal I-II-III ordering, Melodic/Harmonic/Bass, the A^1 Section, now a half step higher on P-7, inverts the order of the lines by assigning the bass material to the solo cello and the melodic and harmonic

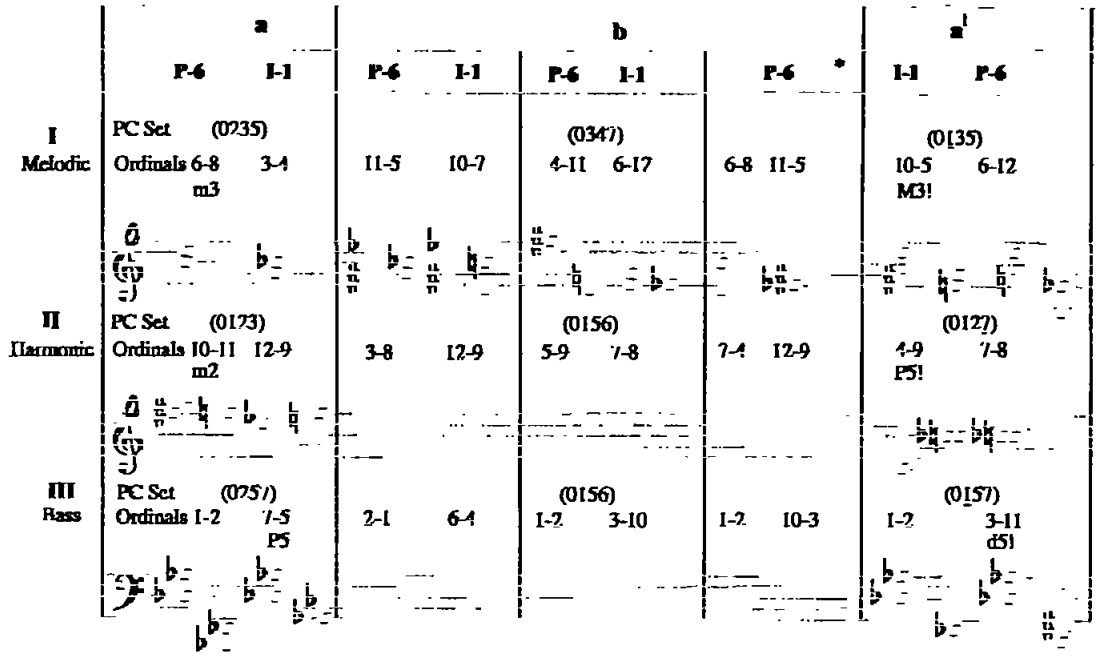


Fig. 84. Structural levels in the A Section (mm. 1-19)

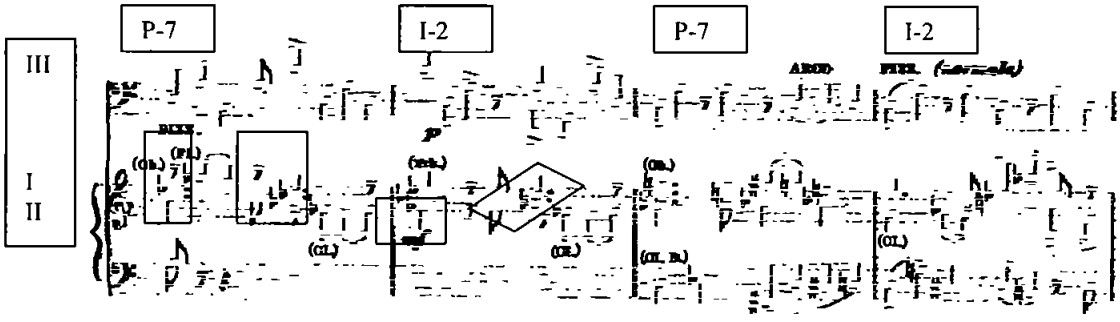


Fig. 85. Beginning of the A^1 Section (mm. 41-44)

material to the orchestra. The new ordering of the lines is III-I-II, Bass/Melodic/ Harmonic (see Fig. 86). Fig. 87 reflects the shift up by half step in the A^1 Section and demonstrates Vogel's use of triple invertible counterpoint.

	a (mm. 41-42)	b (mm. 43-47)	a^1 (mm. 48-49)
III Bass	(0257) P5	(0156)	(0157) d5
I Melodic	**(0235) m3**	**(0347)**	**(0135) M3**
II Harmonic	(0123) m2	(0156)	(0127) P5

Fig. 86. PC sets in the A^1 Section (mm. 41-49)

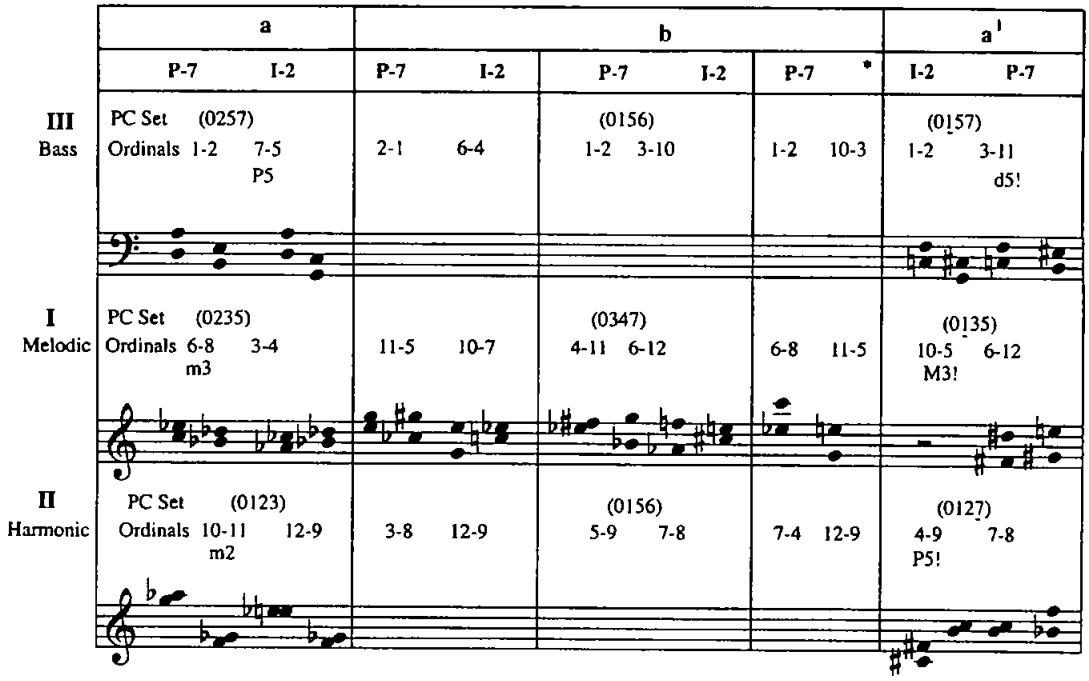


Fig. 87. Structural levels in the A^1 Section (mm. 41-49)

One additional compositional feature of the A^1 Section should be noted. The nine row statements now appear in diminution. Each row is confined to one measure rather than the two-measure unit of the earlier section. Whereas the A Section contains nineteen measures, one introductory measure plus nine two-measure units, the A^1 Section is merely nine row statements in nine measures.

Several of the compositional features of the A Sections also appear in the contrasting B Sections of the *Allegro*. First, tetrachordal row segmentation is again used throughout all 42 row statements. The tetrachords and PC sets are now 2-4 10-11 (0123), 12-9 1-3 (0145), and 5-6 7-8 (0145). Even though the melodic material is identified with the 2-4 10-11 assigned to the solo cello, a distinction between the other two tetrachords as to harmonic or bass function is not as clear in these contrasting sections. The two tetrachords 12-9 1-3 and 5-6 7-8 in many cases intertwine with each other and are often set in very close range. Perhaps the fact that these two "non-melodic" tetrachords represent the same PC set (0145), as is the case with PC set (0156) in the middle of the A Sections, contributes to their similar function.

Secondly, with one passage as an exception, each row statement occupies one measure, as occurred with the diminution in the A^1 Section. The exception is the final eleven measures of the B^1 Section (mm. 65-75) which contain only six row statements. A slowing down toward the "cadence" is apparent at measure 65 where the row is spread over four measures! Two chordal sonorities support a sparsely linear 10-4-11-2 melodic statement (see Fig. 88).

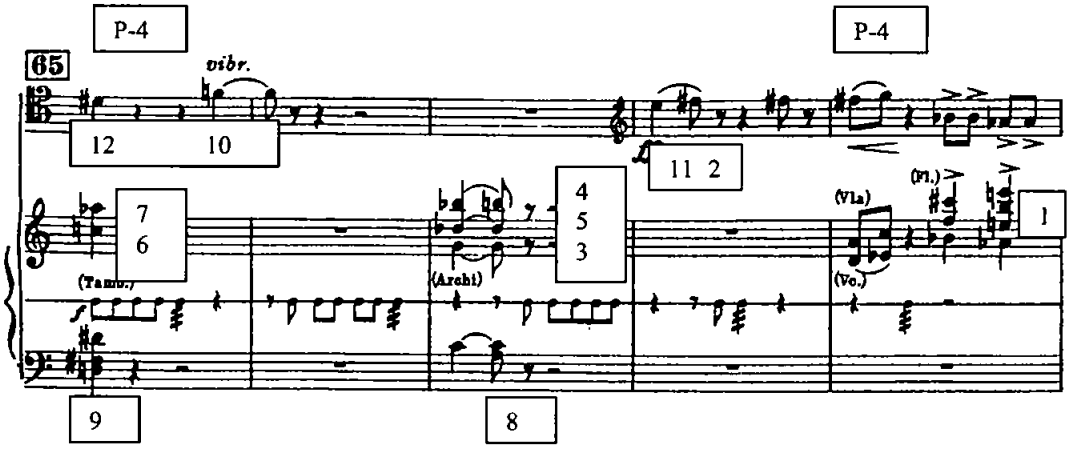


Fig. 88. A slowing down toward a "cadence" (mm. 65-68)

Thirdly, Vogel once again attempts to invert the contrapuntal lines. The melodic 2-4 10-11 tetrachord, which is primarily assigned to the solo cello in the B Section, is shifted to the orchestra in the B^1 Section and the 12-9 3-1 is the most common tetrachord performed by the solo cello. A comparison of the opening measures of both B Sections illustrates the use of triple invertible counterpoint (see Fig. 89).

Thus far, the comparisons of the A and B Sections have dealt with similar compositional features. Areas that offer differences are in the number of different rows used and phrase structure. The alternation of only two rows a perfect fifth apart suggests one prolonged "tonic-dominant" idea that finally rests on tonic P-6 in the A Section and tonic P-7 in the A^1 Section. In the B Sections, however, when considering row usage, the phrase structure is much more evident. The use of the prime row plus nine transpositions (P-0 thru P-8 and P-11) not only suggests G major/g minor as a tonic figure but also emphasizes the Neapolitan, P-1 (Ab). Closing gestures of P-7 (D) to P-0/P-3 (G/Bb) are

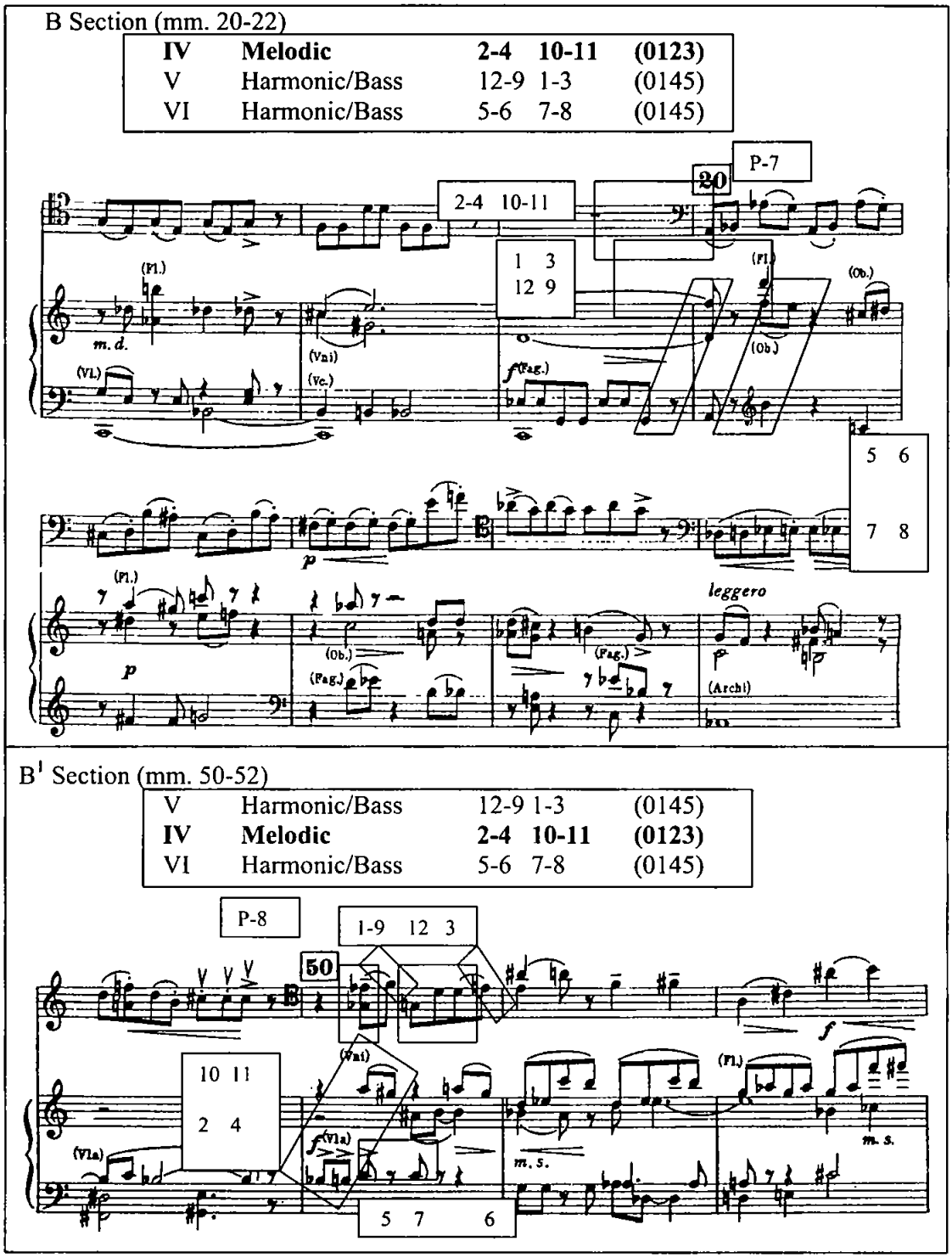


Fig. 89. Comparison of openings of B and B' Sections

reminiscent of an authentic cadence and of P-7 (D) to P-0/P-8 (G/Eb) suggests a deceptive resolution at the level of g minor. Fig. 90 compares the phrase structure for the two B Sections.

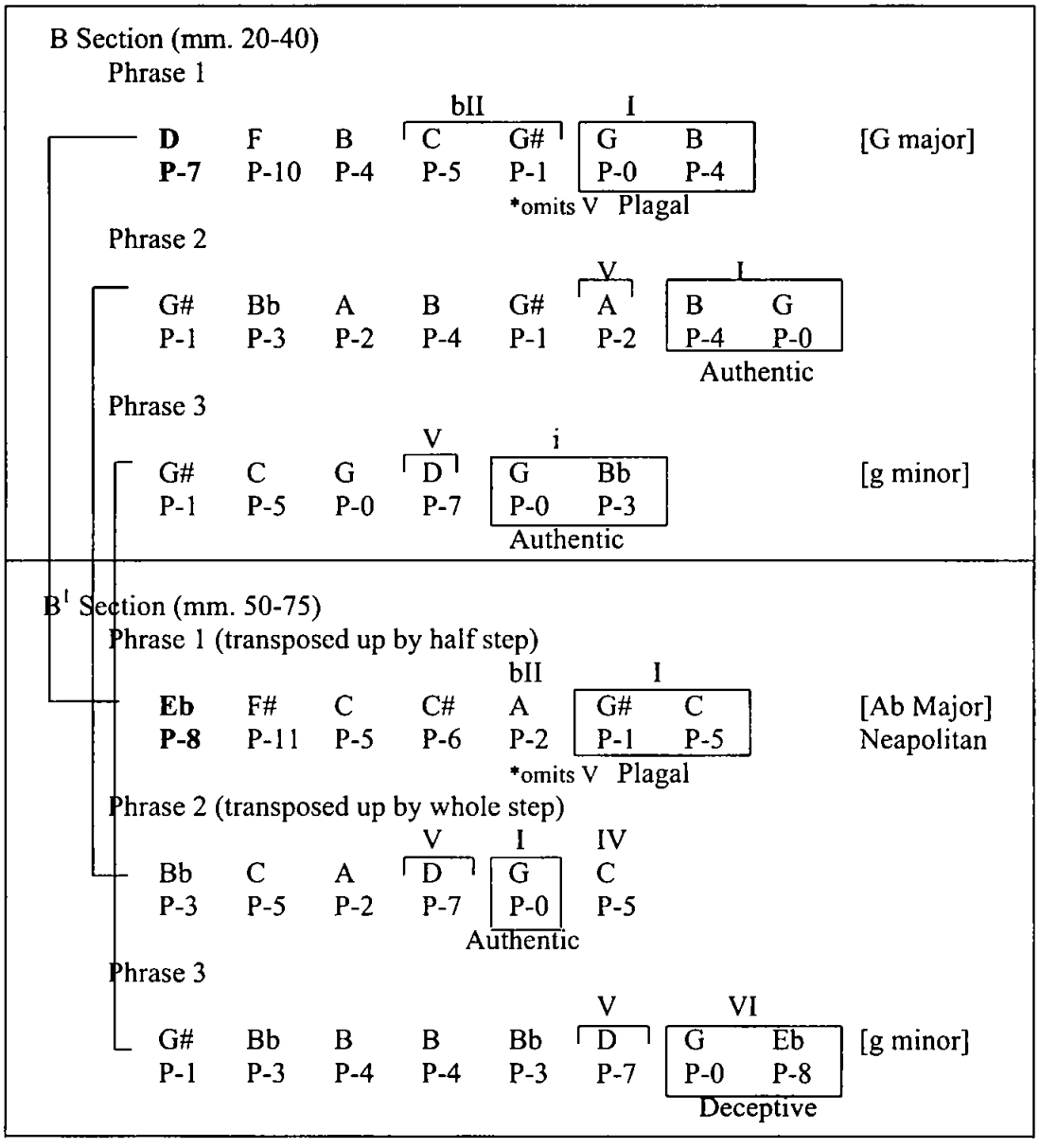


Fig. 90. Comparison of phrase structure in the B and B' Sections

After considering the compositional features of each section of the *Allegro*, a large-scale organization of the first 75 measures reflecting PC sets and invertible counterpoint can now be diagrammed (see Fig. 91).

A	B	A^1	B^1
I (0235) (0347) (0135)	**IV (0123)**	III (0257) (0156) (0157)	V (0145)
II (0123) (0156) (0127)	V (0145)	**I (0235) (0347) (0135)**	**IV (0123)**
III (0257) (0156) (0157)	VI (0145)	II (0123) (0156) (0127)	VI (0145)

I Melodic
II Harmonic
III Bass

IV Melodic
V Harmonic/Bass
VI Harmonic/Bass

Fig. 91. PC sets and invertible counterpoint in the *Allegro* (mm. 1-75)

Not only can conclusions be drawn regarding the formal organization of the *Allegro*, but also concerning harmonic content and tonal coherence. In discussion of the B Sections, the cadential gestures were used to support an argument for G major/g minor as a possible tonic figure. In order to determine how P-6 (C#) and I-1 (G#), the two rows used to construct the A Section, and P-7 (D) and I-2 (A), from the A^1 Section, relate to G major/g minor, further examination in regard to harmonic content is required.

Harmonic Content and Tonal Coherence

If the solo cello's melodic intervals that begin the *Allegro* are viewed apart from the orchestral accompaniment, an appropriate roman numeral analysis can be imposed at the level of G even though the intervals belong to tetrachords within a twelve-tone row. When the tetrachords assigned to the orchestra are viewed apart from the solo, a variety

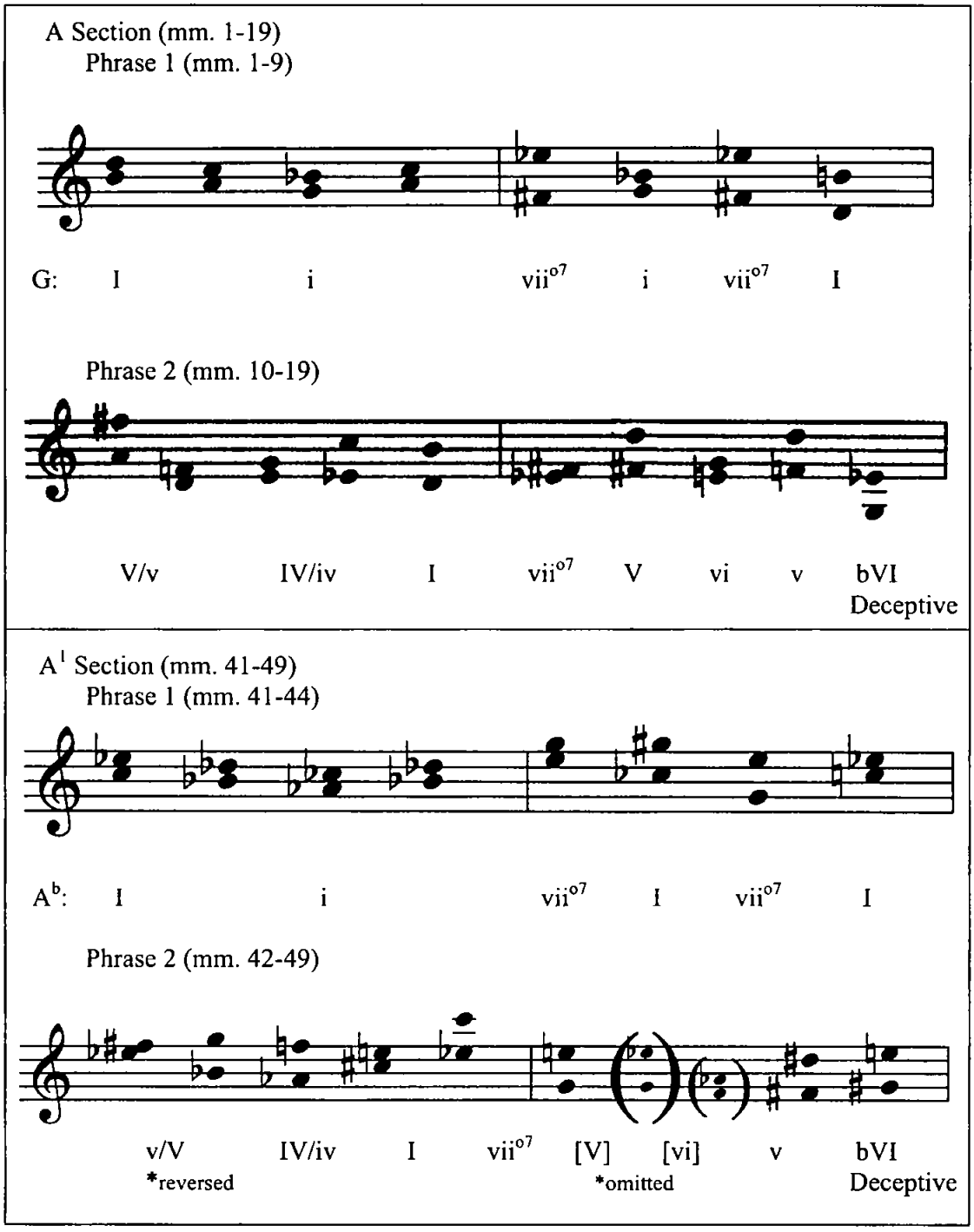


Fig. 92. Tonal analysis of A and A^1 Sections

of possible tonic figures are posed. For example, the first measure with its ordinals 1-2-11 ambiguously suggests Gb or Db as possible tonic figures and is followed by a harmonic tetrachord in the second measure that suggests G major as a third possibility.

First, a closer look at the melodic intervals in the solo cello of the two A Sections is necessary. When viewed in this manner, a different phrase structure becomes apparent than the previously suggested a b a^1 ternary plan which involved a prolonged "tonic-dominant" idea considering tetrachords and PC sets. A tonal analysis applying roman numerals suggests two phrases with the first phrase closing with an authentic resolution and the second phrase ending deceptively. A tonal analysis of the melodic content of both A Sections is provided in Fig. 92.

A definite conflict arises between the structural organization of the dodecaphony and the implied harmonic organization of the melodic material. Figures 93 and 94 illustrate the ternary design implied by the row forms versus the binary design through phrase structure and tonal analysis.

	a					**b**								**a^1**			
m.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	P-6/I-1					P-6/I-1				P-6/I-1				P-6		I-1/P-6			

Fig. 93. Ternary design considering tetrachordal segmentation and PC sets (mm. 1-19)

Secondly, the ostinato-like bass line which begins with stacked fifths, Gb-Db-Ab (1-2-11) also requires close examination. In the first movement of the concerto, the

	Phrase 1									Phrase 2									
m.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
G:	I			I			vii^{o7}	i	vii^{o7} I Authentic	V/v			IV/iv		I	vii^{o7}	V	vi	v bVI Deceptive

Fig. 94. Binary design considering phrase structure and tonal analysis (mm. 1-19)

1-2-11-12 four-note group and its subsets were primary tools for row construction. The use of ordinals 1-2-11 in the first measure of the Etude confirms a continuation of previously used constructive ideas to provide large-scale unity in the concerto. The vertical fifth (Gb-Db) is represented by ordinals 11-1 and the horizontal fifth (Db-Ab), by ordinals 1-2. As the bass line proceeds into the P-6/I-1 row pairs, the vertical 11-1 and horizontal 1-2 is continued as ordinal 11 belongs to the 10-11 12-9 harmonic tetrachord and ordinal 1 is part of the 1-2 7-5 bass line tetrachord. In a unique way, the *Allegro* provides unity to the concerto with a compositional feature derived from the first movement while introducing a new "twist" with the tetrachordal segmentation (see Fig. 95).

Now that all A and B Sections have been viewed from a harmonic perspective, the question of overall tonal coherence for the 75-measure *Allegro* can be addressed. Also, conclusions can be drawn regarding the connection between the chromatic half steps in the rows P-6, P-7, and P-8 and the harmonic implications of the phrase structure. Fig. 96 reflects both dodecaphonic and harmonic treatment in the *Allegro*, including cadential gestures.

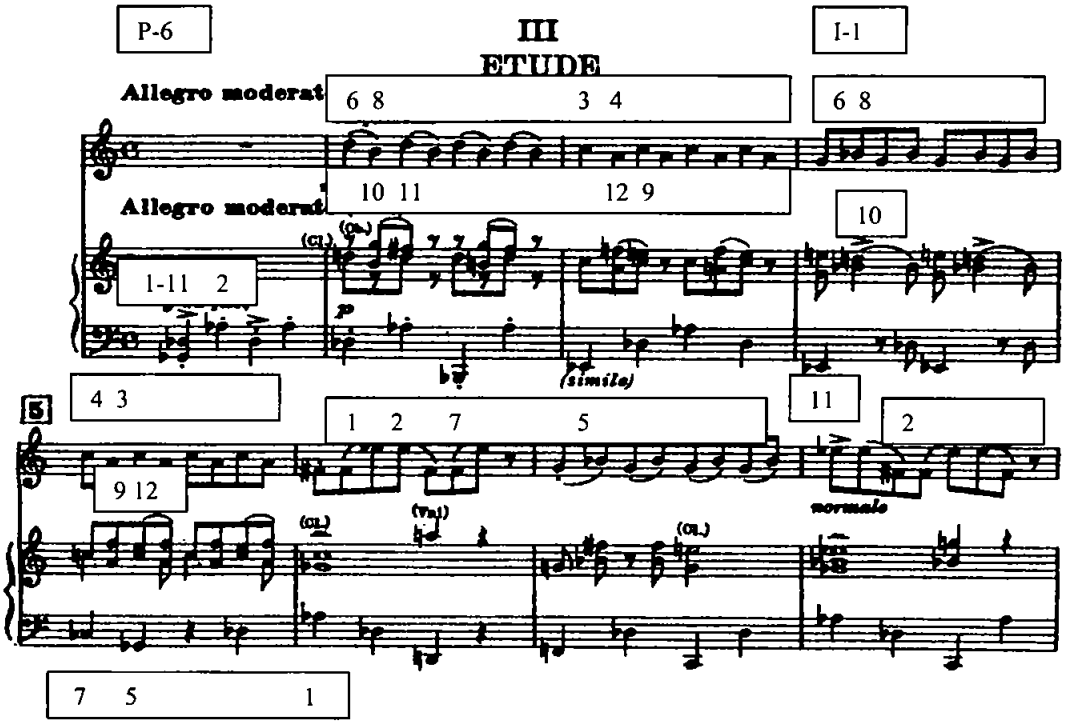
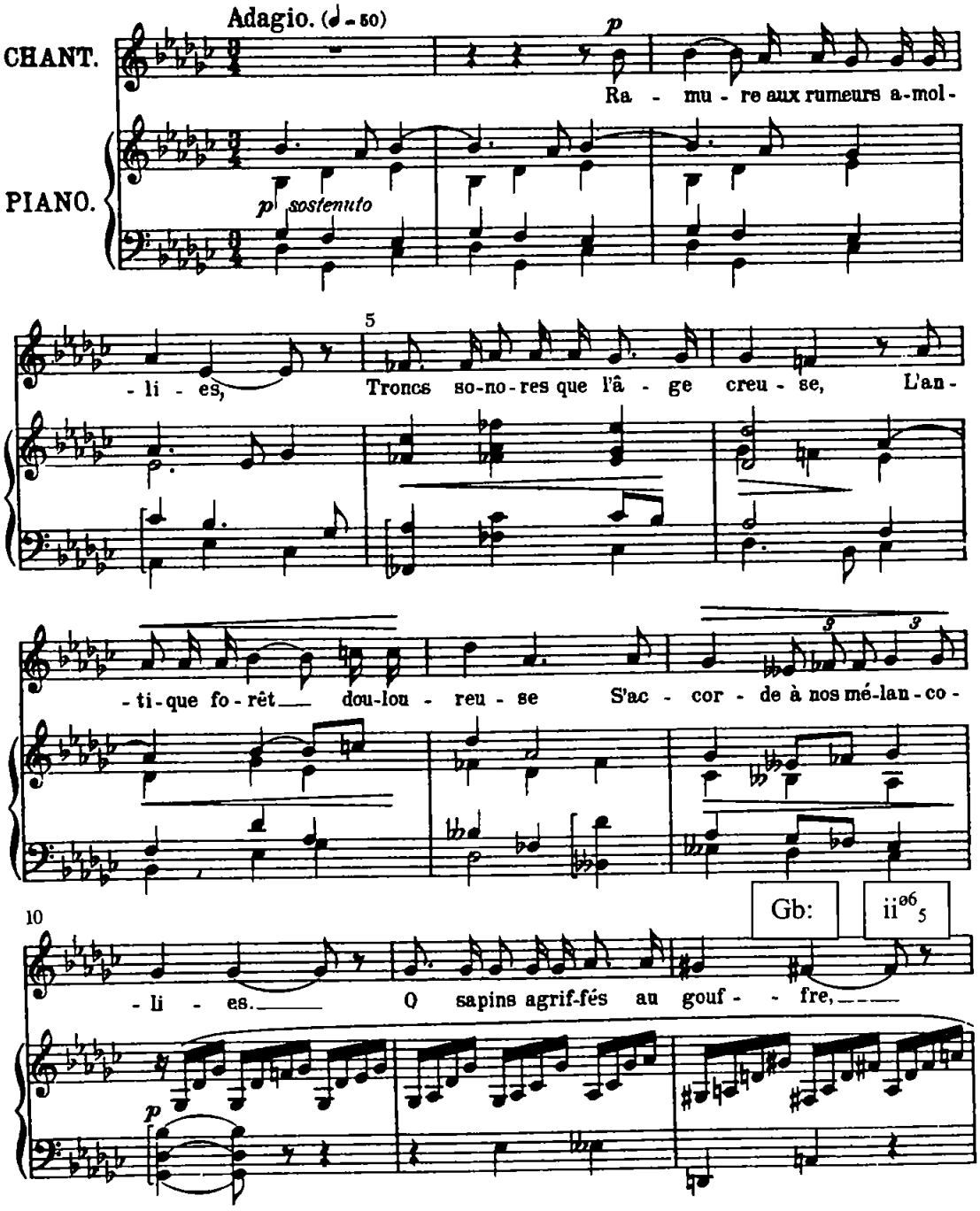


Fig. 95. Tetrachordal segmentation in the opening measures of the Etude

	A	B	A¹	B¹
Row	C# G# **P-6** I-1	V----------VI D Eb P-7	**D** A **P-7** I-2	P-8
Key	G major/minor	G major/minor	Ab major/minor	Ab major G major/minor
Phrase 1 Phrase 2 Phrase 3	I - vii^{o7} – I V------bVI	ends bII - I ends V - I ends V - i	I - vii^{o7} – I V------bVI	ends bII - I ends V - I ends V - bVI
G:	I	I	bII	bII I

Fig. 96. Tonal coherence in the *Allegro* (mm. 1-75)



I

Fig. 97. "*Dans la forêt de septembre*" by Gabriel Fauré with elided cadence at the end of the first stanza

A significant factor in viewing the tonal scheme as an ideal classical design is the missing dominant. The elision of bII moving directly to I, skipping over V, is reminiscent of cadential treatment of the late Romantic composers. An excellent example can be drawn from "*Dans la forêt de septembre*" by Gabriel Fauré (see Fig. 97). The key is Gb major but a clear structural dominant is withheld until much later in the work. In fact, the first stanza ends with an elided cadence, ii half-diminished-seventh to I.

In the Etude, the importance of the rows P-7 (D) and P-8 (Eb) to begin the B and B^1 Sections, respectively, can now be considered from a different viewpoint. Although seemingly to participate in a mere half-step motion from C# to Eb, the rows P-7 and P-8 can be given more structural importance as providing a harmonic motion of V – bVI in G minor, a deceptive resolution. The missing dominant in the tonal plan is implanted within the dodecaphonic structure. The fact that the *Allegro* does not close with a conclusive authentic cadence is not unusual. There are a significant number of measures remaining in the movement to provide appropriate closure.

Certainly, the opening *Allegro* of the Etude serves as a connection to previous compositional structures as well as an introduction to new features such as tetrachordal segmentation, rhythmic and ostinato-like patterns and triple invertible counterpoint. As the second major division of the Etude, marked *Più mosso*, is examined, treatment of phrase structure, row segmentation, rhythmic treatment, and harmonic implications can be further explored.

***Più mosso* (mm. 76-138)**

The second major division of the Etude, marked *Più mosso*, divides into two parts, both with an indication "quarter note = quarter note" and both in common time. The first part (mm. 76-112), designated as the A Section, is 37 measures in length and the second part (mm. 113-138), designated as the B Section, is shorter with only 26 measures. Further consideration of constructive elements of row presentations and phrase structure divides the parts into smaller segments. Fig. 98 illustrates the major divisions as A and B and the subdivisions as a, b, b^1 and b^2.

An ascent from C to Eb by way of D is evident in the large-scale motion as P-5 moves through P-7 to eventually reach P-8. Similarly, the *Allegro* moved from C# to Eb by way of D, thus the span has now increased from a major second (C#-Eb), PC set (012), to a minor third (C-Eb), PC set (023). The pitch Eb, which was emphasized as early as the second measure of the concerto's first movement, is the goal pitch for both the *Allegro* and *Più mosso* even though their starting points are a half step apart.

A Section (mm. 76-112)

The first fourteen measures, labeled a, contain rows P-5 and I-0 which represent the fifth C-G. The tetrachordal segmentation of the row is continued from the previous *Allegro*, even retaining the original setting of ordinals from its A Sections. Although in a much smaller setting, the expected ternary design is found as a single I-0 row statement sandwiched in the middle of six statements of P-5. In similar fashion to diagrams of the *Allegro's* A Sections, Fig. 99 reflects the ternary design of Phrase a and outlines pitch content for the three structural levels within the dodecaphonic framework.

quarter = quarter **A** (mm. 76-112)		quarter = quarter **B** (mm. 113-138)	
a (mm. 76-89) 14	**b** (mm. 90-112) 8 + 15	**b^1** (mm. 113-124) 4 + 8	**b^2** (mm. 125-138) (1 + 4) + (1 + 9)
C **G** **P-5** I-0	**D** F# **P-7** + P-11	**D** E **P-7** + P-9	**D** Bb **D** Eb **P-7** + P-3 + **P-7** + P-8
6-8 3-4 (0235) 10-11 12-9 (0123) 1-2 7-5 (0257)	1-2-11 (fifths) 1-2-12 (M triad) **sul ponticello* **normale*	1-2-9-12 (M/m triad)	1-2-11-12 (fifths/M triad) 1-2-9-12 (M/m triad)
C →		**D** →	**Eb**

Fig. 98. Formal organization of *Più mosso* (mm. 76-138)

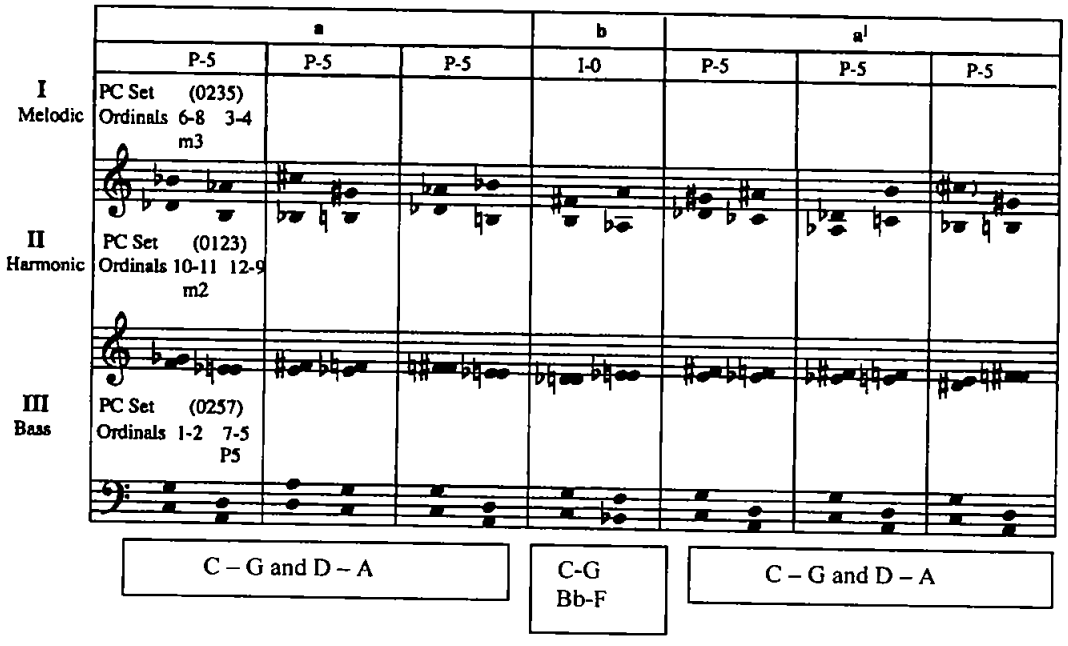


Fig. 99. Structural levels in the *Più mosso* (mm. 76-89)

Since the melodic intervals of the *Allegro's* A Sections stood the test of harmonic analysis, the same procedure should be applied to these measures. The most logical key would be b^b minor (iii of G major). Notice the placement of the Neapolitan on the single I-0 row, mid-point of the passage (see Fig. 100)! The climax on the Neapolitan is appropriate as it was the Neapolitan of G minor that was so prominent in the contrasting B^1 Section of the *Allegro*.

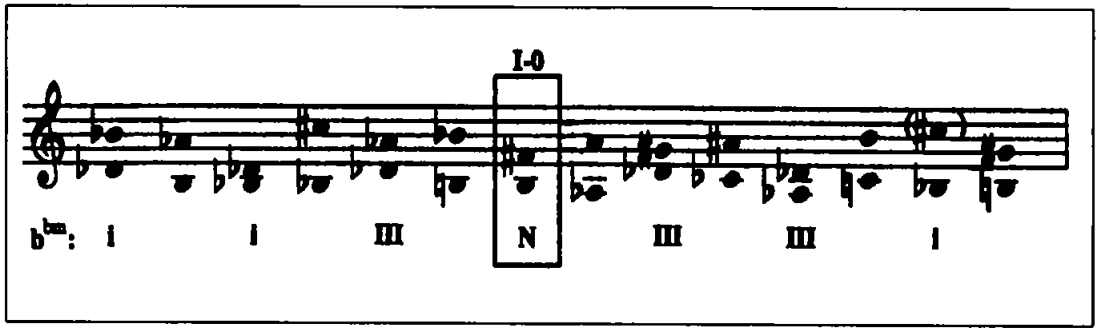


Fig. 100. Neapolitan in Phrase a of the A Section (mm. 76-89)

At measure 90, labeled b, reminiscence to previous material in the movement takes a different turn. A noticeable change occurs in the texture which is confirmed by a change in the compositional structure as well. The solo cello is instructed to play *sul ponticello*, the orchestral parts become more homophonic in nature with longer note values, and vertical structures from the ordinal group 1-2-11-12 become the fundamental constructive feature. Fig. 101 graphs all row statements in the two subdivisions of the A Section and includes the 1-2-11 and 1-2-12 structures.

Phrase a (mm. 76 – 89)

C			G	C		
P-5	P-5	P-5	**I-0**	**P-5**	P-5	P-5

*continues large-scale tonal plan

Phrase b (mm. 90 – 112)

D	G	A	E	**F#**	A	G	G#	A	C	G	C
P-7	P-0	P-2	P-9	**P-11**	P-2	P-0	P-1	P-2	P-5	P-0	P-5
(5)11	11	(5)11	11	1	2	12	1	2	1		
2	1	1	2		12	2	12	12	12	12	12
1	2	2	1	2-12	1	1	2	1	2	1–2	2–1
**sul ponticello*				**normale*							
*1-2-11 (fifths)				*1-2-12 (major triad)							

Fig. 101. Row forms in the A Section of the *Più mosso* (mm. 76-112)

The A Section of the *Più mosso* offers tertian structures from three different perspectives. First, the perfect fifth C-G participates in the large-scale tonal plan for the movement represented by a motion from C#-G# (*Allegro*, A Section) to D-A (*Allegro*, A^1 Section) to C-G (*Più mosso*, A Section). Secondly, the next eight measures, which serve more of an introductory purpose for the fifteen that follow, clearly present vertical 1-2-11 sonorities, or cycles of fifths. At the same time, the four rows that make up the eight-measure passage also present the cycle of fifths G-D-A-E (see Fig. 102).

Ordinals	11	1	2
P-0	C	G	D
P-7	G	D	A
P-2	D	A	E
P-9	A	E	B

Fig. 102. Cycle of fifths in the A Section of the *Più mosso*

Thirdly, the final 15 measures privilege the major triad with consecutive sonorities of the 1-2-12 ordinal group either in a completely vertical presentation or close a combination of vertical and horizontal.

The trills (mm. 111-112) signal the end of the first major division of the *Più mosso*. As the B Section begins, common time returns with a reminder that "quarter note = quarter note." Since measure 113 does not return to the cycle of fifths design of measure 76 (the beginning of the *Più mosso*), the second major division must be designated as contrasting B rather than A^1. Instead, the 1-2-12 group, so prominent in the previous measures, is continued but expanded to include ordinal 9 as well. The split third is now present in the four-note sonority as the inclusion of ordinal 9 adds the minor triad to the existing major triad. For example, in P-0, ordinals 1-2-9-12 provide the pitches G-D-Bb-B which forms both the G major and g minor triad. References have been made throughout the work to the ambiguous nature of G major and g minor, therefore the grouping of these pitches in a structural way seems quite appropriate.

B Section (mm. 113-138)

The first twelve measures (mm. 113-124) have a 4 + 8 design, with the first four measures introductory to an eight-measure idea. The 1-2-9-12 structure is prevalent in the P-7 and P-5 rows in the introductory measures as well as in the P-9 rows that follow. A musical excerpt of measures 113 – 118, shown in Fig. 103, illustrates the 1-2-9-12 structures in P-7 and P-5 and the linear presentation of row P-9.

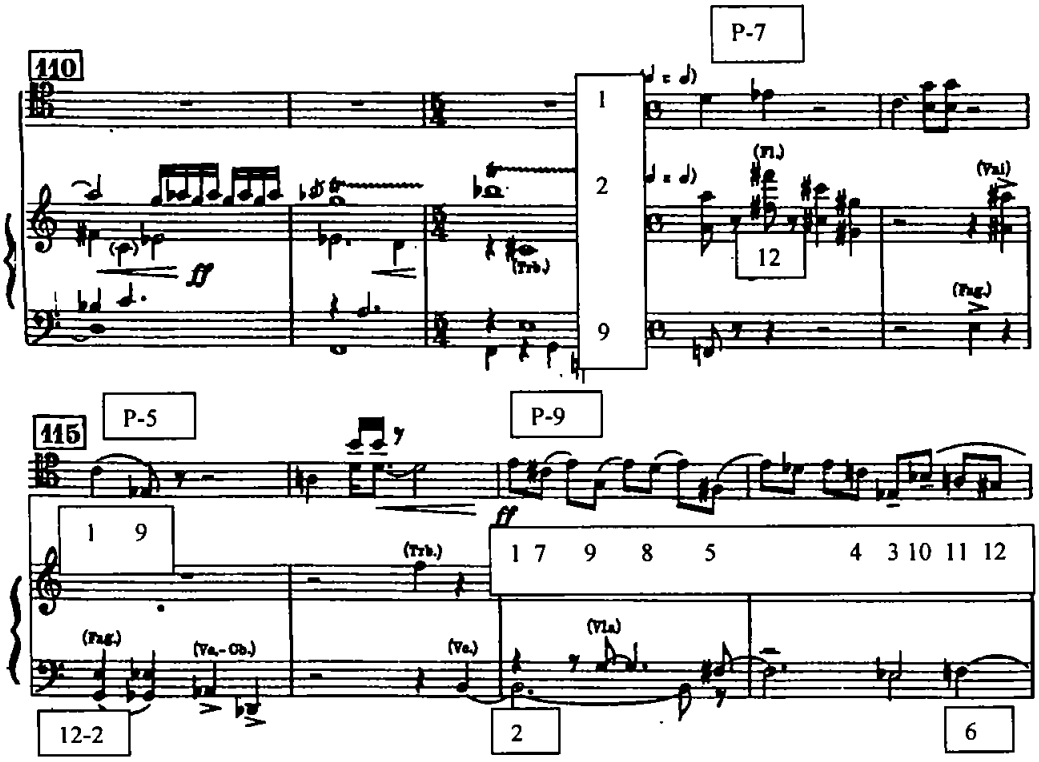


Fig. 103. Beginning measures of the B Section (mm. 113-118)

Three major/minor triads are prominent as P-7 moves thru P-5 to reach P-9, D major/minor - C major/minor – E major/minor, before closing with P-3, Bb major/minor (see Fig. 104).

	Introductory		Main Idea	
	P-7	P-5	P-9	P-3
G:	D major/minor V	C major/minor IV	E major/minor vi	Bb major/minor bIII

Fig. 104. Major/minor triads in Phrase b^1 (mm. 113-124)

The last fourteen measures have a (1 + 4) + (1 + 9) design with only one measure, P-7, serving in an introductory capacity to each main idea. The *ritard* (m. 128-129) and *tempo* (m.130) substantiates a level of independence to the final nine measures. Three major/minor triads are prominent as the first P-7 moves to P-3 and the second moves to P-8, D major/minor - Bb major/minor – Eb major/minor (see Fig. 105).

	Introductory	Main Idea	Introductory	Main Idea
	P-7	P-3	P-7	P-8
G:	D major/minor V	Bb major/minor bIII	D major/minor V	Eb major/minor bVI

Fig. 105. Major/minor triads in Phrase b^2 (mm. 125-138)

The phrase labeled b^1 uses the 1-2-11-12 (fifths/major triad) structure but the 1-2-9-12 (major/minor triad) structure returns for the b^2 phrase. Fig. 106 graphs all row statements in the two subdivisions of the B Section and includes the 1-2-9-12 and 1-2-11-12 structures.

Phrase b^1 (mm. 113-124)

Introductory - Main Idea

D	C	E	E	E	Bb
P-7	P-5	P-9	P-9	P-9	P-3
1	1-9	1–12	2	12-9-1-2	9
2-12	12	9	1 – 12		1-12
9	2	2	9		2

*1-2-9-12 (major/minor triad)

Phrase b^2 (mm. 125-138)

Intro - Main Idea

D	Bb	D	D
P-7	P-3	P-7	P-7
12	12-11	2-12	(8)2
1-2	2	11	1
11	1	1	12-11

*1-2-11-12 (fifths/major triad)

Intro - Main Idea

rit.	*tempo*				
D	Eb	Eb	Bb	C#	E
P-7	P-8	P-8	P-2	P-6	P-9
9	9-12	9	2-9	1	9-11
1-12	1	1	1	12	1
2	2	2	12	2	2
		12		9	

*1-2-9-12 (major/minor triad)

Fig. 106. Row forms in the B Section (mm. 113-138)

***Più mosso* (mm. 139-173)**

The indication *Più mosso* at measure 139 formally marks a new section, however, the fact that the tempo designation remains the same as for the previous section raises the question of whether the next 35 measures should be considered as an independent unit or as a continuation of the previous section. To be consistent with the analytical procedure followed thus far in the concerto, the section will be considered independently.

The *Più mosso* section lends itself to division into two parts with the first part consisting of measures 139-161 and the second part, measures 162-173. Several interesting details are evident in the initial part. First, the primary constructive feature quickly shifts from the familiar vertical major/minor sonorities to an ostinato bass line (see Fig. 107). Introduced by a single statement of I-9, the ostinato rests on I-11 (F#) where nine consecutive measures present the bass line pattern F#-B-F-C, two perfect fifths a tritone apart. The ordinal numbers represented by the bass pattern are 1-2-6-10, PC set (0167).

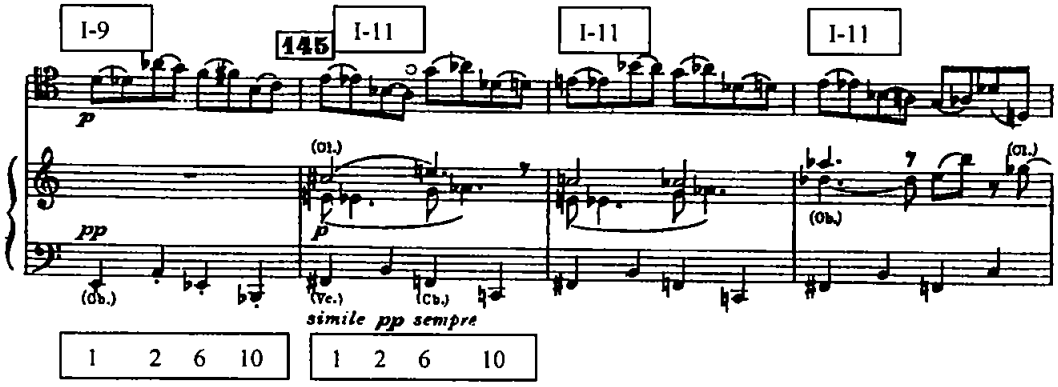


Fig. 107. Ostinato 1-2-6-10 in the *Più mosso* (mm. 144-147)

Once the 1-2-6-10 pattern runs its course, a new bass pattern of 1-2-7-12 takes over, two perfect fifths a minor third apart (see Fig. 108). The tritone (B – F) is "corrected" by the minor third (Bb-Db). Although the 1-2-7-12 pattern is shifted through five different rows, a pair of P-11 row statements are placed mid-point supplying a resting point on the leading-tone row in the second ostinato grouping as well.

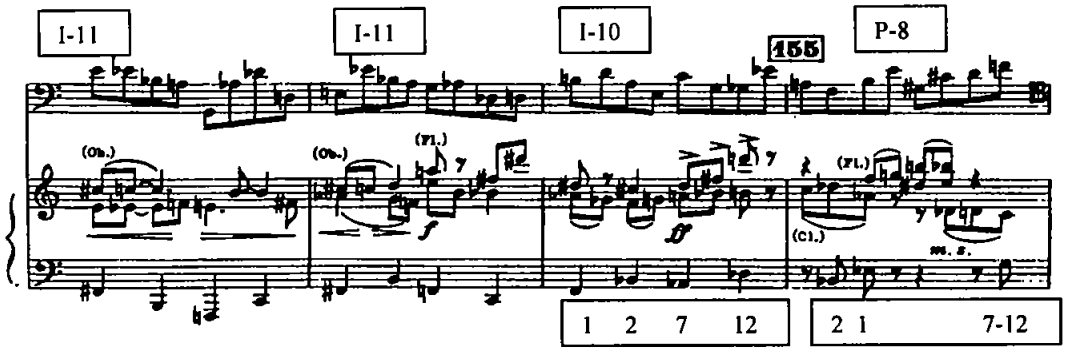


Fig. 108. Bass pattern 1-2-7-12 in the *Più mosso* (mm. 154-155)

A row graphing for the initial part of the *Più mosso* is shown in Fig. 109.

Eb **P-8**	**A** **P-2**	A P-2	E I-9	**F#** **I-11**	**F** **I-10**	Eb P-8	G P-0	**F#** **P-11**	**F#** **P-11**	A P-2	A P-2	**Eb** **P-8**
2	12	9	(9 times)									
12	2	2-12	**1-2-6-10**					**1-2-7-12**				
1	1	1										
			*tritone fifths					*minor third fifths				
G: bVI			**#vii**		**(bVII)**			**#vii**				**bVI**

Fig. 109. Row forms in the first part of the *Più mosso* (mm. 139-161)

Secondly, the perfect fifth A and E is represented by a logical pairing P-2/I-9 following in line with the previous pairs of P-6/I-1, P-7/I-2 and P-5/I-0. However, placement of the P-2/I-9 pair is different than the location of the previous pairs. In the *Più mosso*, a single statement of P-8 is placed before the P-2/I-9 pair, thus the section

begins on P-8 (Eb) rather than the expected P-2 (A). Also, the P-2 and I-9 rows reflect a difference in their structure in that the two P-2 rows do not exhibit the 1-2-6-10 bass ostinato.

Thirdly, the emphasized tritone through repetition is a unique feature of the movement as well as for the concerto. No other examples exist in the concerto where the dissonant tritone is stressed in this manner through exaggerated repetition. In fact, extreme repetition of the same row in the concerto is reserved for cadential dominant or tonic pitches. It should be noted, however, that the appearance of PC set (0167) is not uncommon in twelve-tone works of the twentieth century.

A fourth significant feature is the placement of the remaining eight pitches of the row in the solo cello (see Fig. 110). The 8 + 4 arrangement is similar to the beginning measures of the first movement and the first announcement of the dodecaphonic structure P-0, I-0, R-8 and RI-4.

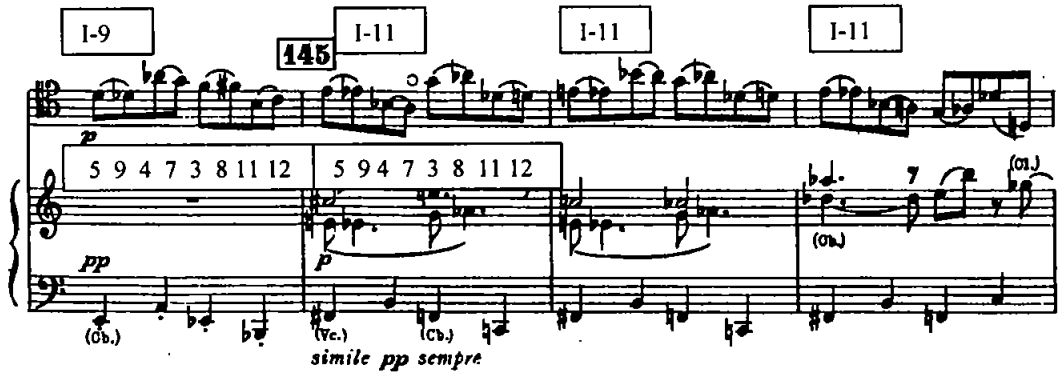


Fig. 110. Arrangement of 8 (melody) + 4 (ostinato bass) (mm. 145-146)

The c# diminished-seventh sonority constructed through row relationships can also be found within the construction of row P-0. Row topography demonstrates a symmetrical structure allowing for a connection between pitches that outline a c# diminished-seventh chord (ordinals 1-6-7-12 in P-0) and the interval that would be the normal resolution , D – A (ordinals 4-9 in P-0). The split third represented by F# and F (ordinals 5-8 in P-0) allows for ambiguity in the resolution with the bimodal suggestion of both D major/minor (see Fig. 27).

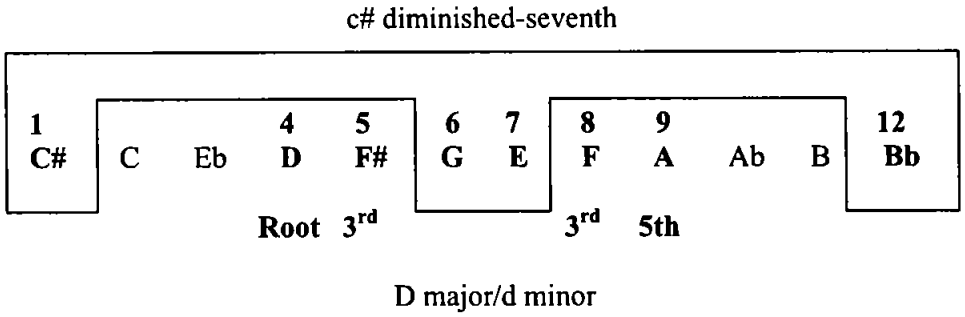


Fig. 27. Scherzo subject (P-0) in Movement III

Since the fugue subject (RI-1) is derived from the scherzo subject (P-0), a similar arrangement can be found in the row RI-1 (see Fig. 28). In the fugue subject, however, the chord is e# diminished-seventh and the interval of resolution is the fifth, F#-C#. Once again, the split third, A# and A, presents ambiguity in the resolution, suggesting both F# major and f# minor.

The relationship between the beginning of the Scherzo (m. 1), with the potential resolution of a c# diminished-seventh resolving to D major/d minor, and the beginning of

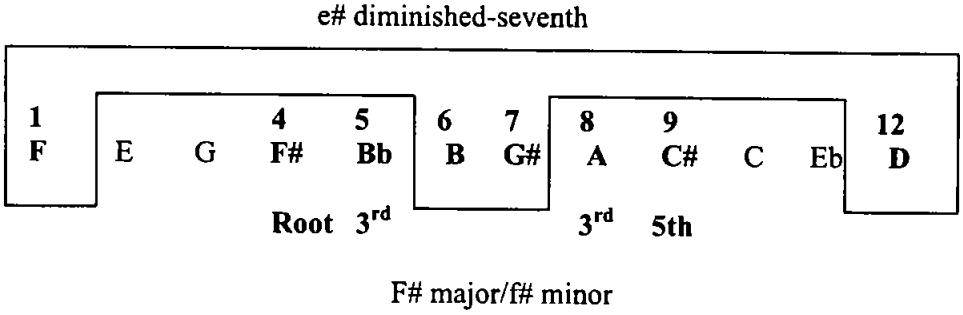


Fig. 28. Fugue subject (RI-1) in Movement III

the fugue (m. 16), with the potential resolution of an e# diminished-seventh resolving to F# major/f# minor, places particular importance on the interval of a major third, D – F#, which is suggestive of a harmonic motion from tonic to mediant at the level of D major.[33]

Through instrumentation, tetrachordal division of the row is evident throughout the development section of the scherzo (fugue) with several examples of mapping. In the fugue's first exposition (mm. 16-25), the beginning pitches of each tetrachord that represents statements of subject, answer and countersubject present a series of major and minor triads on pitches Bb, D and F# (see Fig. 29). For all three roots, the split third is also present suggesting simultaneous major/minor triads. The addition of the pitch Bb to the major third, D – F#, creates an additional third relationship, D – Bb, which is suggestive of a harmonic motion from tonic to submediant at the level of d minor.

The final section, complex with its dual role as both the reprise of the scherzo as well as a third exposition for the fugue, retains the four-part canon with formation of c#

[33]The appearance of D and F# as possible structural harmonies within a movement can also be found in Schoenberg's String Quartet No. 4, Op. 37 (1936).

triplets creates a final push toward the end of the work. The brief *Più largo*, a pre-cadential gesture, sets up the return to a quick tempo at *Vivo* which provides a prolonged cadential gesture, P-7 (D) to P-0 (G). The work could certainly end with the arrival on G with a strong confirmation of a tonic figure being preceded by such an expanded dominant presentation, six P-7 row statements! However, Vogel chooses to turn once again to P-8 (Eb) in the form of a two-measure Coda. Figures 112, 113, and 114 reflect the dodecaphonic and implied harmonic structure of the closing measures of the concerto.

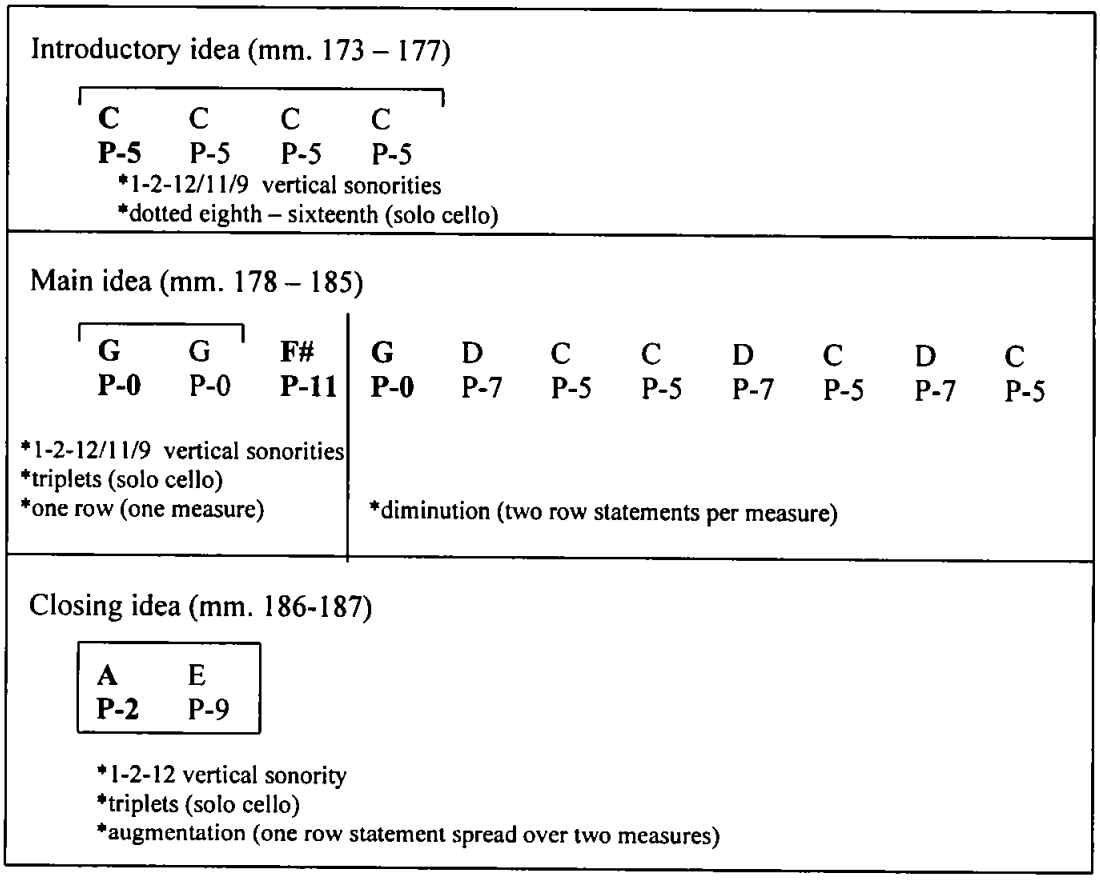


Fig. 112. *Più vivo* (mm. 173-187)

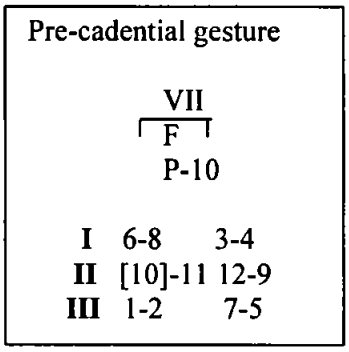


Fig. 113. *Più largo* (mm. 188-189)

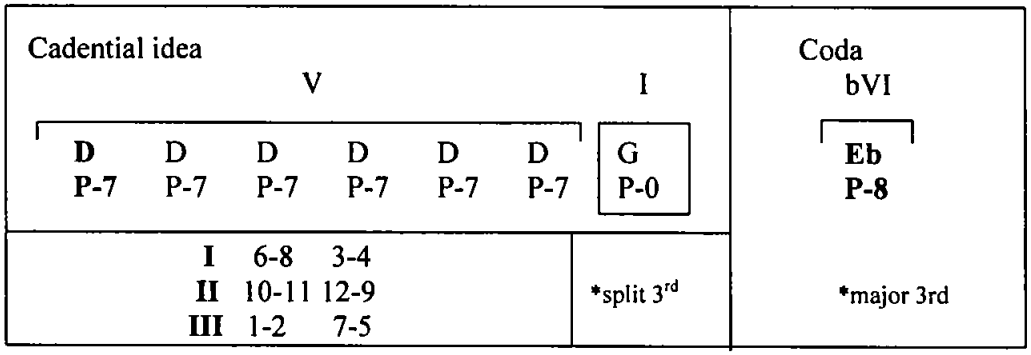


Fig. 114. *Vivo* (mm. 190-205) – *Sostenuto* (mm. 206-207)

The split third of G that was prominently placed linearly as ordinals 12 and 9 of P-0 the first measure of Movement I is not resolved in the final cadential measure of the Etude (m. 205). The vertical placement of both ordinals 9 and 12, Bb and B, with ordinal 1, G, gives equal weight to the major and minor third. At the conclusion of the concerto, the prolonged cadential gesture of D to G certainly substantiates G major/minor but no further distinction as to mode can be determined. The Eb sonority in the two-measure

Coda shares in the ambiguity. The importance placed on the pitch Eb, first found in the second measure of the concerto as the third of a c minor sonority, is once again reinforced with the closing on P-8 (Eb). In the same situation, the mode of Eb cannot fully be determined as the ordinals 1-2-9-12 are in close vertical and horizontal vicinity. Fig. 115 compares the opening and closing measures of the first and third movements, respectively. In this way, the piece ends like it began, yet between beginning and ending, a harmonic scheme unfolds through tertian structures and tonal coherence amidst a dodecaphonic frame.

A few thoughts regarding the harmonic content of the final *Vivo – Sostenuto* are in order. At the *Vivo*, the solo cello begins a series of melodic intervals that brings back material from the A and A^1 Sections of the *Allegro*. The level of Ab major, the Neapolitan of G, is retained from the A^1 Section and the tetrachordal segmentation of 6-8 3-4 for melodic, 10-11 12-9 for harmonic, and 1-2 7-5 for the bass is also retained. The harmonic pattern even begins the same with the major tonic triad moving to the minor tonic by way of a passing third. A change occurs when the minor tonic is reached. Although the harmony is correct, the ordinals are "incorrect." The third is formed from ordinals 7-10 rather than the expected 6-8. From that point, another change transpires as the third that follows moves down rather than the expected upward motion of the previous *Allegro's* A and A^1 Sections.

The solo cello's melodic thirds for the next few measures continue to use ordinals other than 6-8 3-4 until measure 197 when the 8-6 occurs as C and Eb. Since the interval

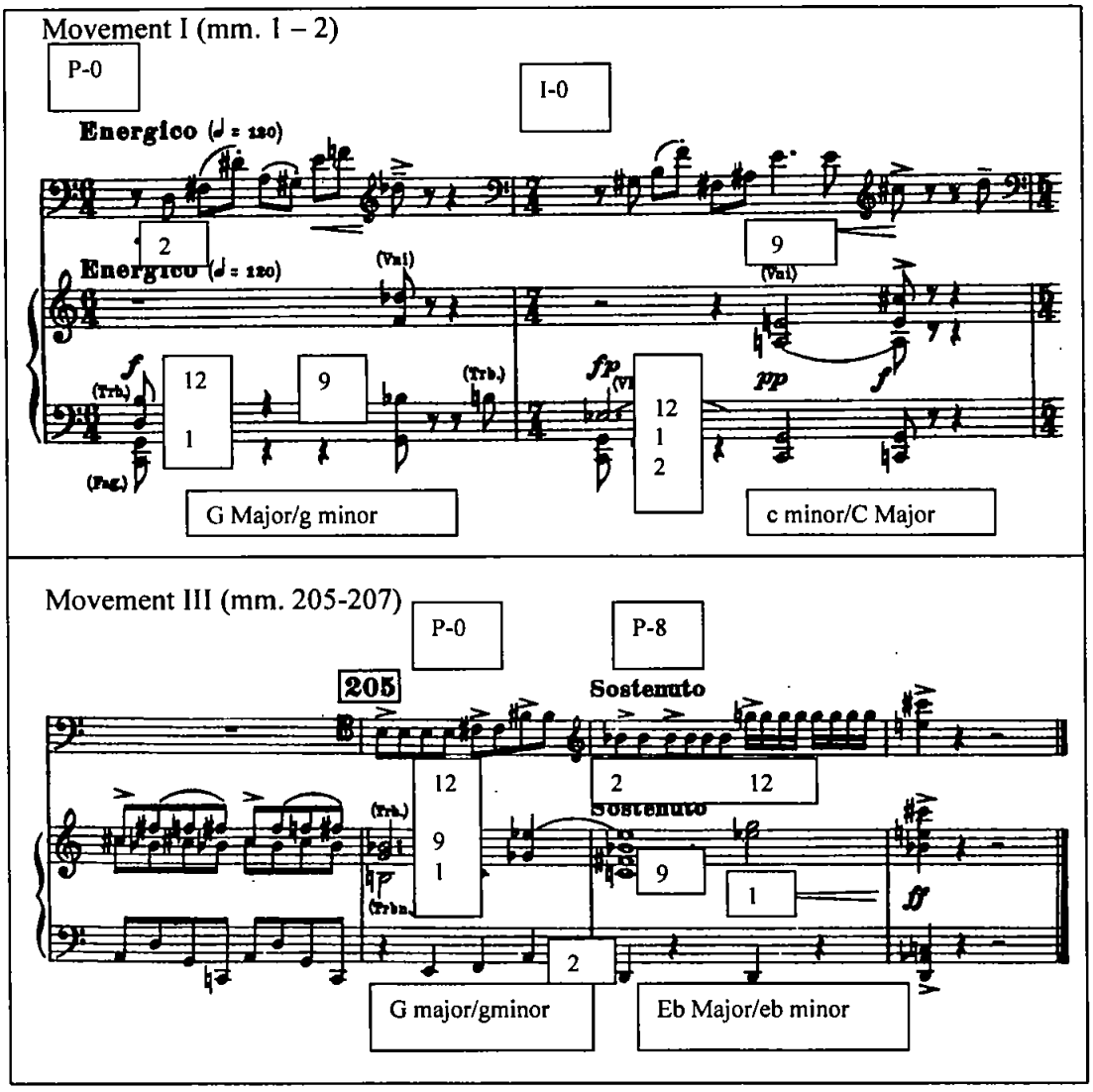


Fig. 115. Opening and closing measures of the concerto

B-F in the cello that precedes the minor third implies V7/iv and the notes that follow are G to D, the C-Eb could function as iv of G participating in a harmonic motion of iv –(I) – V. Thus, the third C-Eb could be reinterpreted as a subdominant of G rather than its

original impression as tonic of Ab. In the previous discussion of the two A Sections of the *Allegro*, the harmonic levels moved from G major for the A Section to Ab major for the A^1 Section, a motion from I to bII. In the tonal analysis of the *Vivo*, the expected tonic harmony at the level of Ab, is likewise reinterpreted as the Neapolitan of G. Thus, the C-Eb could retain the Neapolitan implication rather than change to the minor sub-dominant. In this way, the Neapolitan has been prolonged over much of the movement and is only now resolved.

A tonal analysis of the melodic content of the *Vivo-Sostenuto* is provided in Fig. 116.

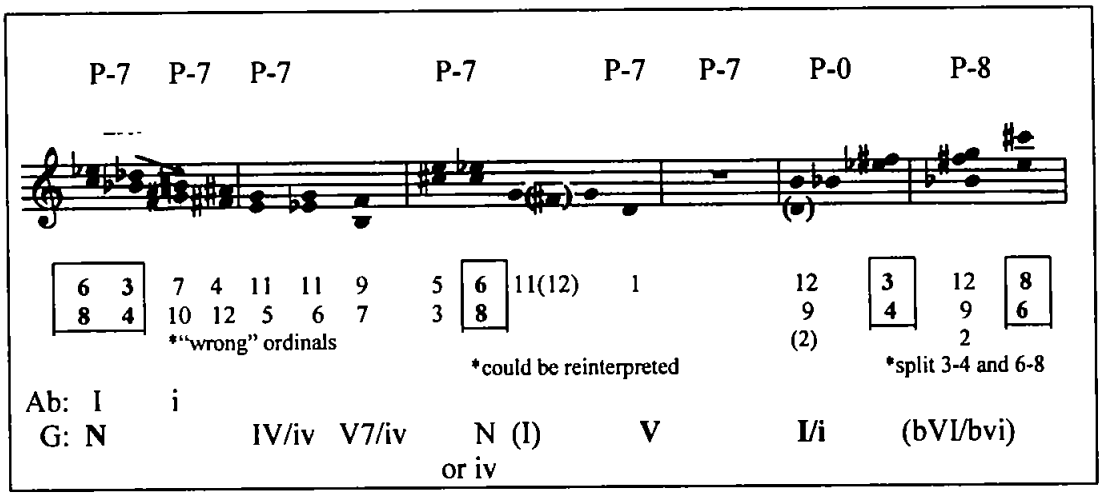


Fig. 116. Tonal analysis of the *Vivo – Sostenuto* (mm. 190-207)

A diagram of the *Vivo – Sostenuto*, Fig. 117, reflects the melodic, harmonic and bass content within the dodecaphonic framework.

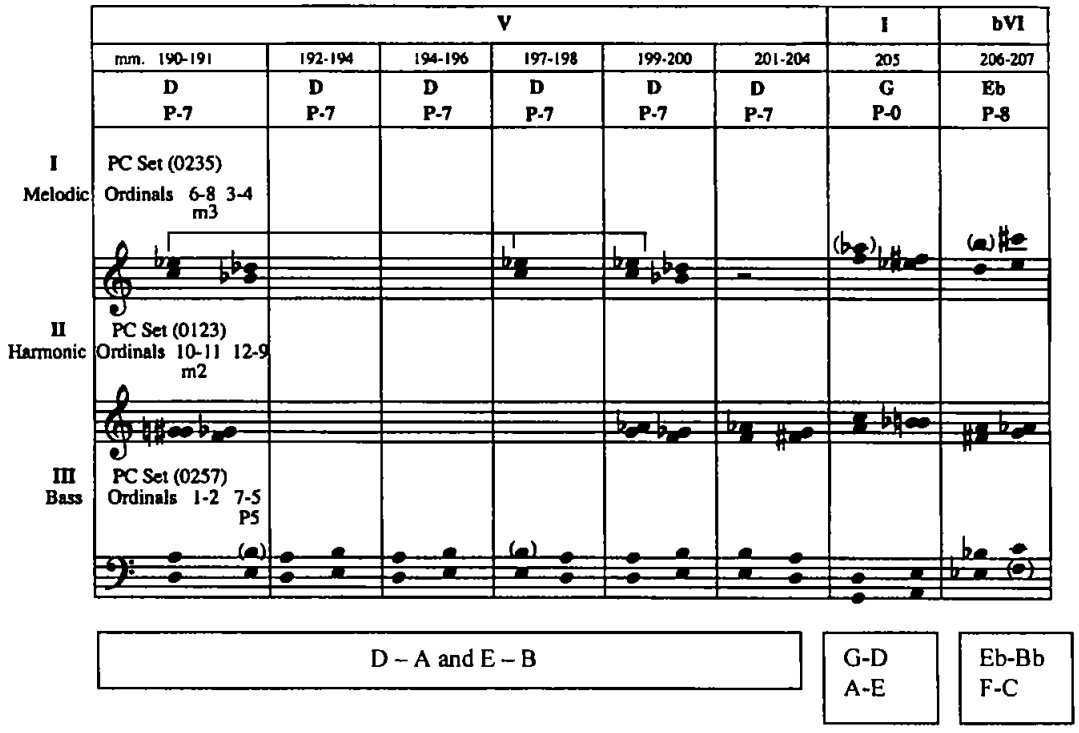


Fig. 117. Structural levels in the *Vivo - Sostenuto* (mm. 190-207)

A connection can be found in the final P-0 and P-8 statements. Although P-0 is the cadential measure representing a formal ending for the work and the P-8 serves as a Coda, the two rows are connected by the 6-8 3-4 melodic tetrachord (see Fig. 118). The pitches Eb and F# are placed vertically on the fourth beat of measure 205 (P-0) and the pitches C# and E are placed on the downbeat of measure 207 (P-8). In both P-0 and P-8 the matching pair needed to complete the tetrachord is missing a member, therefore P-0 borrows from P-8 and vice versa.

P-0 (m. 205)			P-8 (m. 207)		
[6] [Ab]	3 F#		[4] [B]	8 C#	
8 F	4 Eb		3 D	6 E	

Fig. 118. Tetrachord 3-4-6-8 in the closing measures

The final two row statements of the concerto, even though serving two different purposes, cadence and coda, are connected through structural organization. In a similar manner, the first two measures of the concerto are connected through their structure. Rows P-0 and P-8 that conclude the work are connected by a 3-4 (P-0) 6-8 (P-8) tetrachordal structure and the split third presentations for G (P-0) and Eb (P-8). The initial two rows of the work, P-0 and I-0, are connected by the 8 + 4 organization of melody and accompaniment as well as boundary ordinals 2 and 11, respectively. The 1-11-12 + 2 ordinal structure of the first measure is mirrored by the 1-2-12 + 11 ordinal structure of the second measure. Extraction of the first two rows and the last two rows of the concerto offer all the harmonies that are important to the work, G major/minor, c major/minor, and Eb major/minor, within a large-scale outline of a c minor triad. The emphasis on the dominant and leading tone rows of G solidifies G as the tonic figure supported by its subdominant and submediant, C and Eb.

Conclusion

Perfect fifths are prominent in each major section of the Etude. In the *Allegro moderato* (A and A^1 Sections), the first *Più mosso*, and the *Vivo*, containing melodic intervals which provide a logical tonal analysis, the harmonic implications of the melody pre-empt the dodecaphonic fifths. Otherwise, the harmonic level is determined from the dodecaphony. The movement yields a harmonic progression of I – bII – (iii – bVI – IV – VII) – bII – V – I with a continuing coda into bVI, which can be reduced to a basic progression of I – bII – V – I, or tonic – predominant – dominant – tonic.

A ternary formal design emerges primarily from the return of the solo cello's melodic thirds at the level of the Neapolitan, a direct connection of the Vivo to the Allegro moderato. Even though the harmonic purpose is now cadential rather than expository, the return of the melodic thirds rounds off the formal organization. The purpose of the first *Più mosso* is somewhat ambiguous and is best considered "transitional." The third level of fifths, P-5 (C) and I-0 (G) first indicates the beginning of another section of A material. Yet the quick turn to contrasting row structure and a prolonged deceptive resolution suggests a different purpose, a transitional passage to the B Section proper at the second *Più mosso*.

Fig. 119 illustrates the formal organization and harmonic plan for the Etude. The I – V – I harmonic plan of the first movement is expanded in the *Andante* to include I – bII – V – I, which is the exact same harmonic plan of the Etude. As shown in Fig. 120, the *Andante*, then, serves as the harmonic connection for the first and third movements.

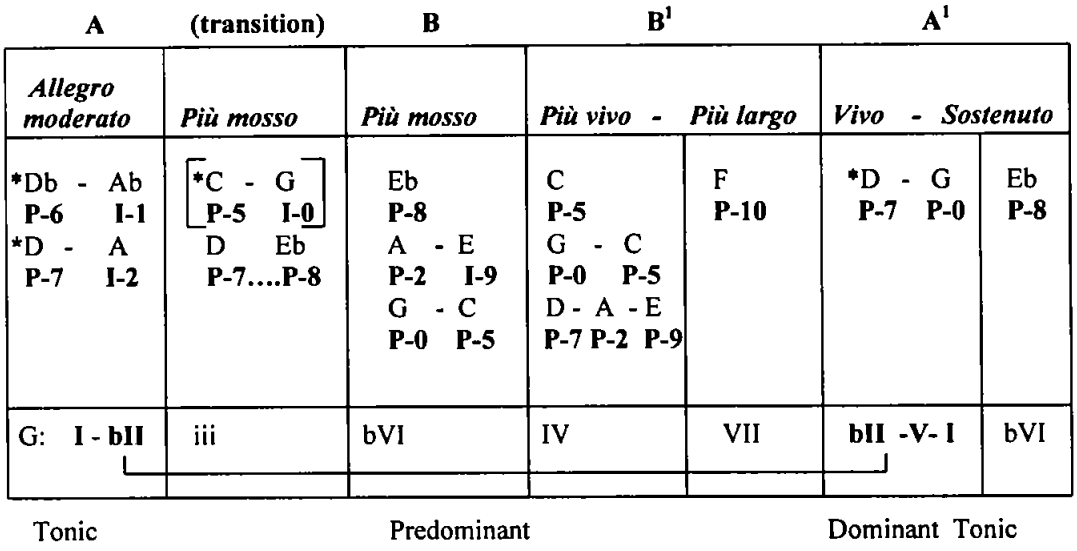


Fig. 119. Harmonic plan for Movement III (I-bII-V-I)

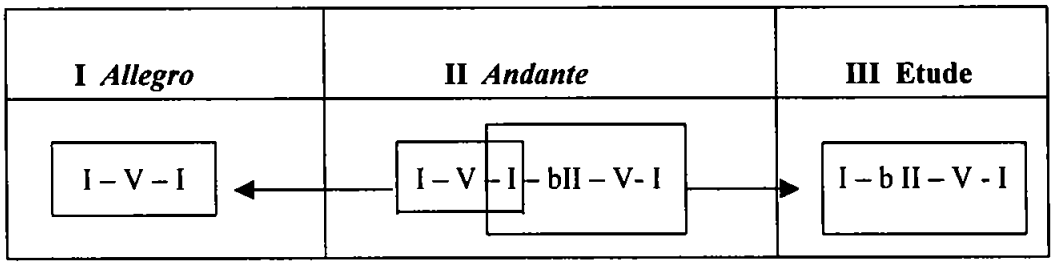


Fig. 120. Harmonic unity in the concerto

Whether considering tonal levels on a small scale or the working out of large-scale harmonic plans, the Etude, like the first and second movements, conveniently follows traditional ideals. The repetition of melodic material at levels a half step apart, prolongation of a harmony such as the Neapolitan, and the concept of simple – complex –

simple (or relaxation – tension – relaxation) are just some of the ways the Etude can be described in relation to concepts already in place from tonal repertory. Although several factors support the formal design of each movement in the concerto, the primary source for connections to tonal properties continues to be the initial ordinal of each row. By considering other factors, such as tempo, texture, rhythm and melodic contour, along with the dodecaphonic compositional design, an analysis emerges for the concerto with a fresh approach to serial music.

CHAPTER VI

LARGE-SCALE UNITY WITHIN THE CELLO CONCERTO

Introduction

Vogel's efforts at unity within the Cello Concerto is evident on a smaller scale in each movement as well as on a larger scale through features that unite all three movements. Throughout the previous chapters, each dedicated to an individual movement, many features have been identified that serve to unify the work through formal organization, row topography, structural ordinal groups, tetrachordal segmentation of the row, PC sets, melodic and accompanimental arrangements, melodic contours, harmonic organization and even rhythm. These features have been addressed sufficiently in relation to the context of each individual movement, however, a summary of some of the most important unifying features for the concerto as a whole is still needed.

Beginnings and Endings within the Concerto

Since the notion that "perfection in all things is attributed to the end, not the beginning"[37] has been around for several centuries, perhaps a closer look at how each movement ends would be beneficial. As shown in Fig. 121, the final three row statements of all three movements provide a dominant – tonic cadential gesture at the level of G followed by a motion to Eb, the submediant. The split third of G is provided through

[37]Franchinus Gaffurius, *Practica musicae,* trans. by Clement A. Miller (Rome: American Institute of Musicology, 1968), 124. Similar views were expressed by other sixteenth-century theorists, such as Gioseffo Zarlino and Pietro Aaron.

the use of RI-3 (Bb) in the first movement and I-4 (B) in the second movement suggesting both g minor and G major. Again, looking to the "ending" by focusing on the closing measures of the entire work, the use of P-0 reinforces G as a tonic figure but remains ambiguous as to the mode.

	Dominant - Tonic		Submediant
Movement I **G minor**	**V** F# RI-11 (leading tone)	**i** Bb RI-3 (minor 3rd)	Eb P-8
Movement II **G major**	**V** D P-7 (fifth)	**I** B I-4 (major 3rd)	Eb P-8
Movement III **G major/minor**	**V** D P-7 (fifth)	**I** G P-0 (root)	Eb P-8

Fig. 121. Comparison of "endings" for all three movements

In an effort to balance the focus on "endings," a closer look at the "beginnings" of each movement is necessary. Comparative measures in Fig. 122 illustrate a path from Eb to C (Eb–C–[Db-D]–C) by presenting augmented and perfect fifths at each pitch level. Throughout the work, c minor, as subdominant of G, is an important harmony both at local structural levels as well as in large-scale triadic outlines. Since g minor and Eb major share two common pitches, as well as c minor and Eb major, Eb major serves as a "pivot" that can turn toward c minor as subdominant or G as tonic.

Movement I Introduction Allegretto	G G **P-0 I-0** G G **P-0 I-0**	Eb B **R-8 RI-4** Eb Bb **R-8 RI-3**	A5 (Eb – B) P5 (Eb – Bb)
Movement II Andante Più mosso	Eb Eb **R-8 P-8** D D **R-7 P-7**	C G **I-5 P-0** G# C **RI-1 I-5**	P5 (C – G) A5 (C – G#)
Movement III Allegro moderato (A) (A^1) Più mosso	Db Ab **P-6 I-1** D A **P-7 I-2** C C **P-5 P-5**	Db Ab **P-6 I-1** D A **P-7 I-2** C G **P-5 I-0**	P5 (Db – Ab) P5 (D – A) P5 (C – G)

Fig. 122. Comparison of "beginnings" for all three movements

The close relationship of c minor (iv), Eb major (bVI), and g minor (i) in the concerto can be confirmed by now looking at "the beginning" and "the ending" of the concerto (see Fig. 123). The first two measures of the first movement present G major/ minor followed by c minor/major. The final measures of the Etude present G major/ minor and Eb major/minor. All of these sonorities are constructed through row technique which utilizes ordinals 1-2-9-12.

Before leaving discussion of "beginnings," one additional comparison of Movements I and III is helpful in understanding the harmonic intent of the introductory

Movement I (mm. 1-2) Ordinals:	**P-0** G major - g minor 1-2-12 9	**I-0** c minor - C major 1-2-12 9
Movement III (mm. 205-207) Ordinals:	**P-0** G major - g minor 1-[2]-12 9	**P-8** Eb minor - Eb major 1-2-9 12

Fig. 123. Comparison of "the beginning" and "the ending" of the concerto

section of the first movement. The 1-9-11-12 ordinal accompanimental group found in the concerto's first measure contains three pitches that belong to the G major/minor triad (G – B – Bb) with an additional fifth relationship (C – G). The choice of G as a potential tonic figure for the concerto is supported in the Introduction by the emphasis on P-0 (G) and I-0 (G) in the four-row dodecaphonic structure as well as the vertical f# diminished-seventh chord that leads into the *Allegretto*. However, the bass line is not so convincing of G as tonic. The prolonged C - G bass motion in the first four measures followed by the bass motion C – F# - Ab – G could be viewed as a I – V motion at the level of C major rather than a IV – I motion in G. Perhaps a closer look at the beginning of the third movement can shed light on Vogel's treatment of the bass in the Introduction of the first movement.

The third movement opens with ordinals 1-2-11 of P-6 (fifths Gb – Db – Ab) and moves immediately into tetrachordal segmentation of the row with ordinals 1-2-7-5

forming the bass line. Thus, in the second measure, the lowest fifth (Gb – Db) from the first measure "disappears" as a structural fifth while the upper fifth (Db – Ab) is retained and paired with an additional fifth, ordinals 7-5 (Bb – Eb). As demonstrated in Fig. 124, fifths are presented on each pitch of a Gb major triad (root, fifth, third). Ordinals 1-11 (Gb – Db) are replaced in the second measure by ordinals 7-5 (Bb – Eb) or, in other words, the root is replaced by its third.

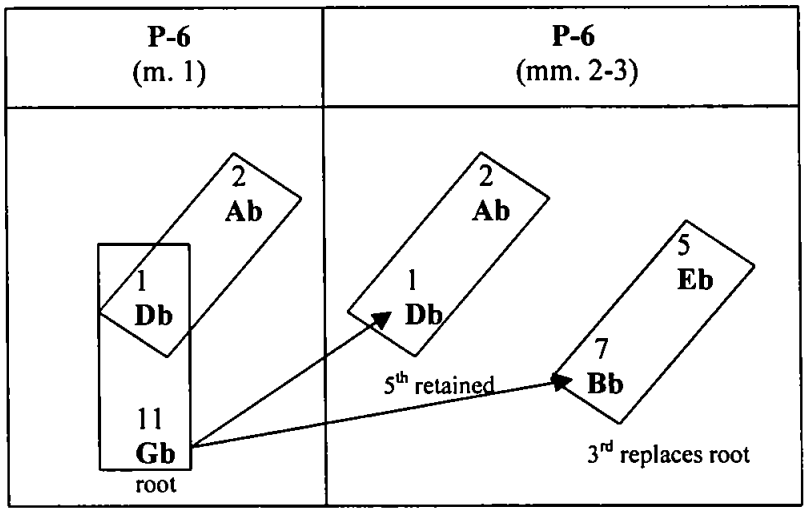


Fig. 124. Fifth relationships in P-6 (Movement III)

The pitch Gb returns in the fifth measure as part of the 1-2-7-5 (Ab-Db-Cb–Gb) bass line for I-1, but now Gb is related by fifth to Cb, not Db! As shown in Fig. 125, in this instance, the pitches Db-Ab are retained as part of the bass ostinato, ordinals 1-2 of I-1, while the lower fifth Gb-Db, ordinals 11-1 of P-6, is replaced by Cb-Gb, ordinals 7-5 of I-1.

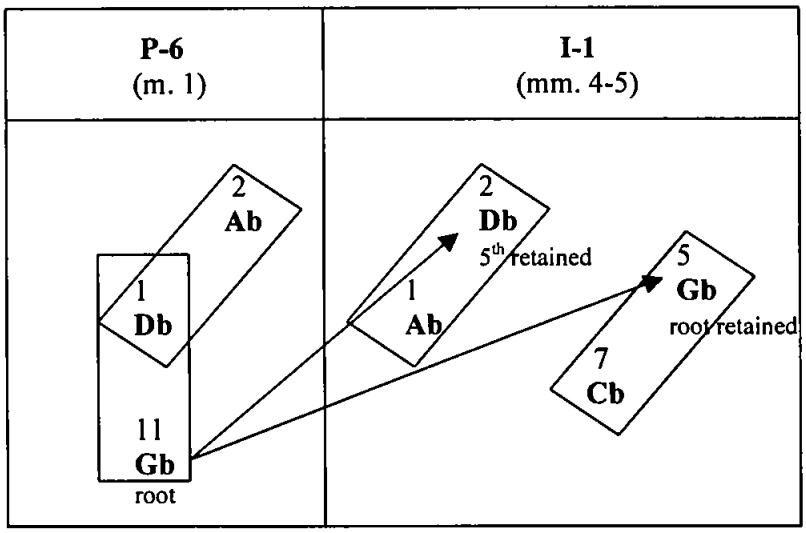


Fig. 125. Fifth relationships in P-6 and I-1 (Movement III)

The fact that, in both examples from Movement III, the initial upper fifth of P-6 is retained in the ostinato while the initial lower fifth of P-6 is replaced suggests that the upper fifth is structurally more significant than the lower fifth. If the same consideration is given to the first measure of Movement I, the upper fifth of the 1-2-11-12 group, G-D (ordinals 1-2 of P-0), would be considered the sustaining fifth while the lower fifth C-G (ordinals 11-1 of P-0) would be of secondary importance. When viewing the fifth relationships in the initial dodecaphonic structure of the first movement, as shown in Fig. 126, in the context of a large-scale connection to the opening measures of Movement III, a further argument can be made to support the upper fifth, G-D, as the more structurally significant fifth, thereby furthering the argument for G as the potential tonic figure.

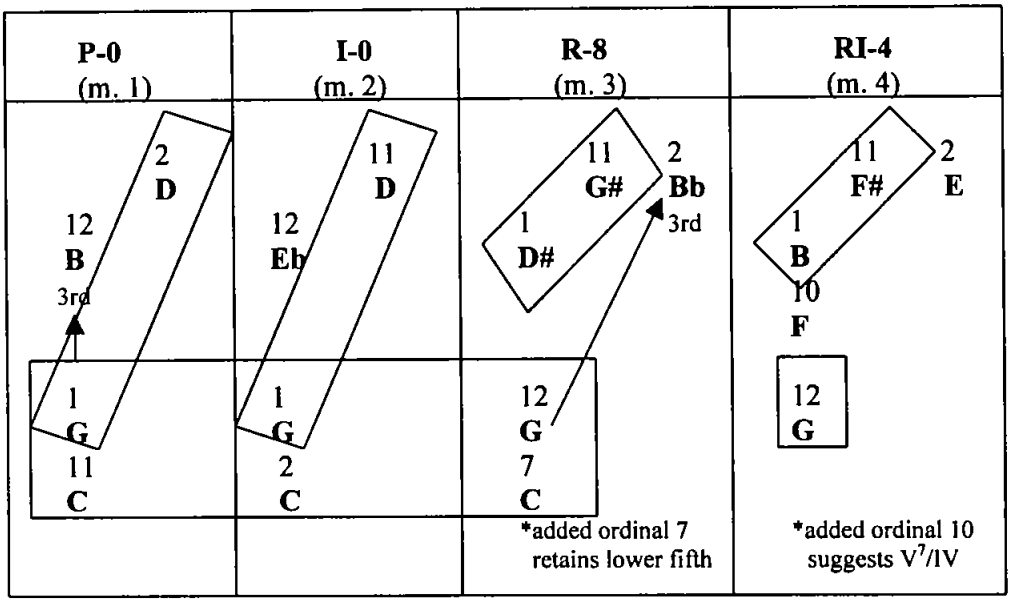


Fig. 126. Fifth relationships in the opening dodecaphonic structure (Movement I)

The vertical positioning of G-D (ordinals 1-2 in R-0) and the vertical placement of G-C (ordinals 1-11 in P-0) at the conclusion of the first phrase of the introductory section in Movement I (m. 7) further emphasizes the structural significance of the fifth formed by ordinals 1-2. Just as was the case in Movement III, ordinals 1-2 remain constant while the fifth formed by ordinals 1-11 is either replaced, as in Movement III, or adjusted, as in Movement I (see Fig. 127).

Harmonic Plans within the Concerto

Each movement of the concerto exhibits a unique, yet basic, harmonic plan. By considering the organization of row presentations and reducing prolonged harmonic implications, harmonic plans for each movement can be formulated and presented as a

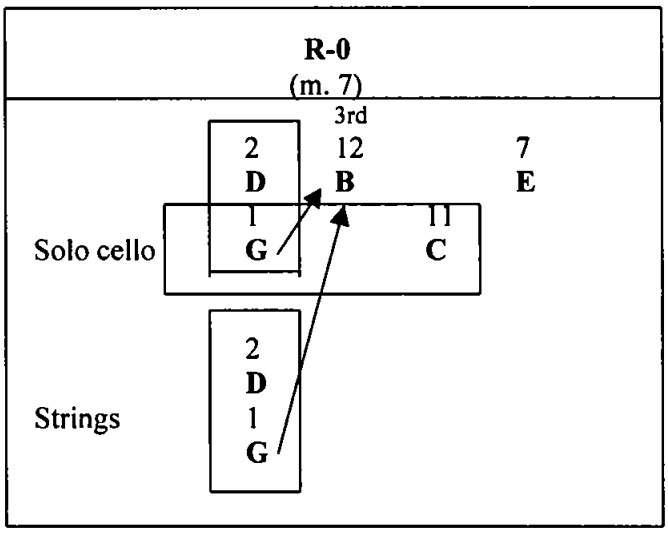


Fig. 127. Fifth relationships in R-0 (Movement I)

basic design of tonic – pre-dominant – dominant – tonic. The complete harmonic plan for the concerto unfolds in the second movement with the progression I – V – I – bII – V - I, two interlocking progressions that are used in the first and third movements. The first movement goes as far as the I – V – I and the third movement completes the progression with I - b II – V – I. Thus, the *Andante* is a "connecting" movement which "reflects on the past" and "anticipates the future." The formal organization and harmonic plan for all three movements of the concerto are shown in Figures 128, 129 and 130.

Conclusion

In the years between 1937, the year the first concerto for violin was composed, and 1955, Wladimir Vogel had refined his use of the twelve-tone method. From initial attempts at dodecaphonic writing in the third and fourth movements of the Violin

	A	B	A¹	B¹	A	
Introduzione	*Allegretto*	*Poco più mosso*	*Tempo I*	*Più mosso–Pesante–Sostenuto*	*Primo Tempo*	
G **P-0**	G **P-0**	F# **P-11**	G **I-0**	F## **P-11**	G Bb **P-0...RI-3**	Eb **P-8**
I	**I**	**V**	**I**	**V**	**I**	bVI
	Tonic	Dominant	Tonic	Dominant	Tonic	

Fig. 128. Harmonic plan for Movement I (I–V–I)

A	B	C	B¹	A¹	
Andante	*Più mosso*	*Calmo–Più calmo–Largo*	*Più mosso*	*Tempo I*	
Eb G **R-8...RI-0**	D Eb **[R-7]P-7...P-8**	F# G B **RI-11.....P-0.....I-4**	Ab D Eb **P-1...P-7...P-8**	F# Eb **P-11...P-8** G G **P-0...R-0** ***cadenza* G B **P-0...I-4**	Eb **P-8**
iv - V - **I**	**V** - bVI	**V** – bVI – iv – **I**	**bII** – **V** - bVI	**V** – **I**	bVI
Tonic	Dominant	Tonic	Pre-dominant	Dominant	Tonic

Fig. 129. Harmonic plan for Movement II (I –V–I–bII–V–I)

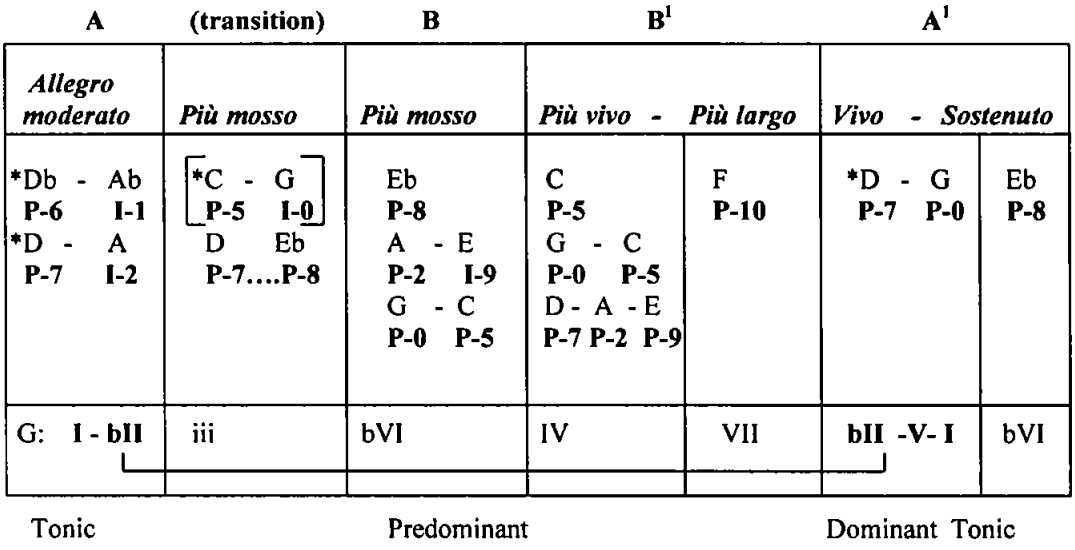


Fig. 130. Harmonic plan for Movement III (I-bII-V-I)

Concerto to a complete, and unified, twelve-tone Cello Concerto for Gaspar Cassado, Vogel had mastered the technicalities of dodecaphonic writing and settled in with his own unique approach to the method.[38] Vogel's choice of "concerto" as the genre for Cassado's virtuosic work is evident in the cyclic formal scheme as well as in the alternation of melodic and accompanimental roles of the solo cello. However, the prevalence of the solo cello throughout the work somewhat obscures the concerto-like features of shifting focus between the *concertino* and the *tutti*. The interplay between the solo and orchestra, therefore, is largely reliant on visual clues only available through a live performance.

[38]Gaspar Cassado was sought after as a cellist in the modern repertory. Before the time of the Cello Concerto, he had commissioned the Italian composer, Luigi Dallapiccola to compose the work, *Ciaccona, Intermezzo e Adagio* (1945).

While Vogel never strays from dodecaphonic writing in the Cello Concerto, tertian structures co-exist with dodecaphony throughout the concerto and participate in both structural and harmonic organization. Although each movement has a unique purpose in the overall design of the concerto, dodecaphony and tertian structures work together to unify individual movements and the entire work. Vogel's combination of a twentieth-century method with traditional tertian ideas not only results in a twelve-tone concerto with a certain degree of tonal coherence, but also a major contribution to art-music of the twentieth century.

APPENDIX

KONZERT FÜR VIOLONCELLO UND ORCHESTER

Konzert für Violoncello und Orchester (1955)
Wladimir Vogel

Matrix

			diminished					minor				
	0	**7**	**11**	**8**	**2**	**1**	**9**	**10**	**3**	**6**	**5**	**4**
0	G	D	F#	Eb	A	G#	E	F	Bb	Db	C	B
5	C	G	B	G#	D	C#	A	Bb	Eb	F#	F	E
diminished												
1	G#	Eb	G	E	Bb	A	F	F#	B	D	C#	C
4	B	F#	Bb	G	C#	C	G#	A	D	F	E	Eb
10	F	C	E	C#	G	F#	D	Eb	G#	B	Bb	A
11	F#	C#	F	D	G#	G	Eb	E	A	C	B	Bb
3	Bb	F	A	F#	C	B	G	G#	C#	E	Eb	D
major												
2	A	E	G#	F	B	Bb	F#	G	C	Eb	D	C#
9	E	B	Eb	C	F#	F	C#	D	G	Bb	A	G#
6	C#	G#	C	A	Eb	D	Bb	B	E	G	F#	F
7	D	A	C#	Bb	E	Eb	B	C	F	G#	G	F#
8	Eb	Bb	D	B	F	E	C	C#	F#	A	G#	G

Konzert für Violoncello und Orchester (1955)
Wladimir Vogel

Row Pairs (Diminished and Minor/Major Triads)

Diminished Triads (3-4-5)	Minor Triads (8-9-10)		Major Triads (8-9-10)	
C#-E-G-Bb				
G-Bb-Db	**P-4**	(D-F-A)	**I-2**	(B-D#-F#)
A#-C#-E	**P-7**	(F-Ab-C)	**I-5**	(D-F#-A)
C#-E-G	**P-10**	(G#-B-D#)	**I-8**	(F-A-C)
E-G-Bb	**P-1**	(B-D-F#)	**I-11**	(Ab-C-Eb)
B-D-F-Ab				
G#-B-D	**P-5**	(Eb-Gb-Bb)	**I-3**	(C-E-G)
B-D-F	**P-8**	(F#-A-C#)	**I-6**	(Eb-G-Bb)
D-F-Ab	**P-11**	(A-C-E)	**I-9**	(F#-A#-C#)
F-Ab-Cb	**P-2**	(C-Eb-G)	**I-0**	(A-C#-E)
C-Eb-Gb-Bbb				
A-C-Eb	**P-6**	(E-G-B)	**I-4**	(Db-F-Ab)
C-Eb-Gb	**P-9**	(G-Bb-D)	**I-7**	(E-G#-B)
D#-F#-A	**P-0**	(Bb-Db-F)	**I-10**	(G-B-D)
F#-A-C	**P-3**	(C#-E-G#)	**I-1**	(Bb-D-F)

Konzert für Violoncello und Orchester (1955)
Wladimir Vogel

Row Pairs (Common Half-Steps)

P Rows	I Rows	(5-6) (7-8)	(7-8) (5-6)	(10-11) (11-10)
C#-E-G-Bb				
P-4	**I-3**	C#-C	G#-A	F-E
P-7	**I-6**	E-Eb	B-C	G#-G
P-10	**I-9**	G-F#	D-Eb	B-Bb
P-1	**I-0**	Bb-A	F-F#	C#-D
B-D-F-Ab				
P-5	**I-4**	D-C#	A-Bb	F#-F
P-8	**I-7**	F-E	C-C#	A-G#
P-11	**I-10**	G#-G	Eb-E	C-B
P-2	**I-1**	B-Bb	F#-G	Eb-D
C-Eb-Gb-Bbb				
P-6	**I-5**	Eb-D	Bb-B	G-F#
P-9	**I-8**	F#-F	C#-D	Bb-A
P-0	**I-11**	A-G#	E-F	C#-C
P-3	**I-2**	C-B	G-G#	E-Eb

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