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PARALLELISM AND SYMMETRY IN THREE DEBUSSY PRELUDES

by

CYNTHIA MILLER

A dissertation submitted to the Graduate Faculty in Music
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy, The City University of New York

2000

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This manuscript has been read and accepted for the Graduate Faculty in Music in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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Abstract

PARALLELISM AND SYMMETRY IN THREE DEBUSSY PRELUDES

by

Cynthia Miller

Adviser: Professor Joseph Straus

This dissertation is concerned with parallelism and symmetry and how they are deployed and utilized in three Debussy preludes: "Le vent dans la plaine," "Les sons et les parfums tournent dans l'air du soir," and "Des pas sur la neige." The dissertation addresses three questions. First, what types of parallel and/or symmetrical collections appear in each of these preludes, and where do they occur? Second, what kinds of processes give rise to these collections? Third, what is the larger significance of these collections in the overall structure of the pieces in which they appear?

The first chapter defines parallelism and symmetry and presents examples of each from several preludes, including the three mentioned above. In subsequent chapters, the three preludes are analyzed in detail to show the importance of parallelism and symmetry in their details and overall structures.

Parallelism and symmetry in both pitch space and pitch-class space are considered. Parallelism in pitch space involves two or more voices moving in parallel motion. Parallelism in pitch-class space involves pc collections that can be produced by combining two or more transpositionally related subsets, what Cohn has termed "transpositional combination." The parallelism of such collections may be more or less obvious depending on the musical context.

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Symmetry in pitch space occurs when a collection of pitches is symmetrical around a central pitch or pitches. Several kinds of pitch symmetry are discussed, including ordered pitch symmetry, unordered pitch symmetry and registral symmetry. Symmetry in pitch-class space refers to inversionally symmetrical pitch-class sets. Whereas pitch symmetry is usually fairly explicit in the music, pc symmetry is more abstract and may not always be obvious in the musical context.

In addition to the analysis of local instances of parallelism and symmetry, processes that involve parallelism and symmetry over the long range are examined. The processes include accretion, mutation, expansion and contraction, projection, and planar shifts. These processes are defined and are shown to control progressions over large musical spans.

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PREFACE

This essay began with an interest in exploring possible sources of cohesion in Debussy's piano preludes. One notable feature of these pieces is the pervasiveness of parallel motion of various kinds. This type of motion is characteristic of much of Debussy's music, and especially of his piano music. Further analysis also turned up interesting examples of different types of symmetry. It seemed worthwhile to undertake an analysis of some of the preludes focussing on their parallel and symmetrical features. I have analyzed three preludes from the first book: "Le vent dans la plaine," "Les sons et les parfums tournent dans l'air du soir," and "Des pas sur la neige."

The obvious instances of parallelism and symmetry in the preludes happen in so-called pitch space; they are very clear on paper and to the ear. In addition, there are examples of parallel and symmetrical construction that are not as obvious on the surface, because they occur not in pitch space but in pitch-class space.

Both of these types of parallelism and symmetry--those that occur in pitch space and those that occur in pitch-class space--form a web of short-and long-range connections in the music. Many of these connections can be traced to the initial material in each piece, and they seem basic to the way the music is put together.

Two essential points emerge from the analyses that follow. The first is that parallelism and symmetry occur on both a large and small scale and that there are important connections between the large- and small-scale occurrences. The second point is that parallel and symmetrical collections (such as the whole-tone scale) usually come about as the end result of one or more transformational processes.

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Both of these phenomena--the relationship of small-and large-scale events and the organic generation of parallel and symmetrical collections--are examples of what Richard Parks might call kinetic processes. They are ways in which the music develops and changes over time. In this paper, I have tried to show how these processes unfold during fairly large sections of music and how they inhere in the structure of the three preludes.

I would like to thank my adviser, Joseph Straus, for his advice and support during the writing of this dissertation. His encouraging comments and thoughtful criticisms at every stage of the project have been immensely valuable. Philip Lambert and David Olan also read drafts of the manuscript and offered many helpful suggestions. Special thanks are due also to Elizabeth Leeore, who generously gave of her time and professional expertise in the preparation of the musical examples.

I feel particular gratitude toward my husband, Raphael Crystal, who provided both emotional and financial support throughout this project. In addition, he read several drafts of the manuscript, on which he brought to bear his keen musical intelligence and editorial prowess, much improving the final product.

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CHAPTER 1

Introduction

The music of Claude Debussy presents special problems for analysts. Debussy comes on the cusp of the nineteenth and twentieth centuries and is important both as a transitional figure and as a highly original and innovative composer. Many prominent composers of the twentieth century, including Stravinsky and Bartók, have acknowledged Debussy as an important influence on their work.[1]

The particular analytical problems presented by Debussy's music arise partly from the fact that it is moving away from tonal procedures and toward more contextual types of organization, while at the same time constantly making reference to the very tonal vocabulary it is in fact abandoning.[2]

All music is of course contextual to some extent. But as the tonal system weakened, contextual relationships became more centrally important in the organization of a musical work. Contextuality is more easily recognizable in music that has an "atonal sound." The early atonal works of Schoenberg are an example of this. In this music there are very few triadic harmonies and other tonal references. Schoenberg was very explicit that he was trying to compose music that was more contextual and that did not depend on the tonal system for its meaning and cohesion.

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[1] Stravinsky commented,"...the musicians of my generation and I myself owe the most to Debussy" in Igor Stravinsky and Robert Craft, *Conversations with Stravinsky* (New York: Doubleday, 1959) 50. In an autobiographical essay on his musical developmentBartók wrote of the impression made by Debussy on him and other Hungarian musicians and comments on "the significance with which they beheld Debussy's appearance." See Benjamin Suchoff, ed., *Béla Bartók Essays* (New York: St. Martin's Press, 1976), 518.

[2] Straus makes this point eloquently when he writes, "Traditional sonorities, forms, and musical gestures...evoke the traditional musical world in which they originated, even as they are subsumed within a new musical context." See Joseph Straus, *Remaking the Past* (Cambridge: Harvard University Press, 1990), 1.

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In Debussy's music, by contrast, there are many triadic harmonies and tonal-sounding progressions. These progressions generally do not proceed by root movement of chords, however, and the relationships of harmonic areas within a piece are not established by the structural functions of the tonal system. Thus, although Debussy's music frequently has a "tonal sound," it is in fact highly contextual in its organization.

In the absence of the traditional structural functions of tonality, other ways of establishing coherence must be found. One way in which coherence is achieved is by the use of identical note groupings, where identity is taken to mean the replication of interval structure, in original or inverted form. The two processes that produce such replication are transposition and inversion, and the use of these processes results in parallelism and symmetry.

In the present study, we shall be considering parallelism and symmetry as manifested in three preludes from Debussy's first book of preludes for piano. The analysis will be concerned with several types of parallel and symmetrical transformations, ranging from literal parallel and/or symmetrical motion through more abstract transpositional and inversional relationships between pitch-class collections.

Debussy's preludes are highly interesting as the focus for this type of analysis. Parallel voice-leading is especially evident in these pieces, as is the use of parallel and symmetrical collections (e.g., the whole-tone collection). And, as will be discussed below, there has recently been considerable analytic interest in the kinds of relationships established by parallel voice-leading and inversionally symmetrical constructions in Debussy's music.[3]

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[3] See David Lewin, "Some Instances of Parallel Voice-Leading in Debussy," *19th Century Music* 11 (Summer1987). Also see David Lewin, "A Transformational Basis for Form and Prolongation in Debussy's 'Feux d'artifice'," in *Musical Form and Transformation* (New Haven: Yale University Press,1993), 97-159.

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Debussy's piano music is a significant part of his output and the preludes are an especially important component of his piano music. The first book was composed in 1909-10, well into Debussy's career, when his style was fully developed. As their title indicates, Debussy's preludes follow in the tradition of the preludes of Bach's *Well-Tempered Clavier* and the preludes of Chopin, and thus represent a significant musical statement.

I have chosen for analysis three preludes from Book I: "Le vent dans la plaine," "Les sons et les parfums tournent dans l'air du soir" and "Des pas sur la neige." The "sound world" of each prelude is quite different from the others. "Le vent dans la plaine" has a strong pentatonic flavor; "Les sons et les parfums tournent dans l'air du soir" is octatonic in sound; and "Des pas sur la neige" has a more diatonic character than either of the other two. In addition, the tempo and texture of each prelude make a strong contrast to the other two. In spite of these differences, all three preludes contain numerous instances of parallelism and symmetry.

Some readers may take issue with the description of this music as "not tonal." As was noted above, the preludes have many outward appearances of tonality, including key signatures. Some Schenkerian analysts have in fact treated this music as an extended form of tonality, and that approach, though valid in some respects, will not be followed here.[4] What is fascinating is that this music, because of its historical position, lends itself to analysis from various points of view.

Another avenue of approach to the preludes, and one that has perennial appeal, is their relationship to the poetic and pictorial ideas expressed in their titles.[5] Although these matters are touched upon, they are not the primary focus

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[4] Schenkerian analyses of Debussy's works have been undertaken by a number of writers, including Adele Katz in *Challenge to Musical Tradition* (New York: Alfred A. Knopf, 1945) and Felix Salzer in *Structural Hearing: Tonal Coherence in Music* (New York: Dover, 1962).

[5] Siglind Bruhn attempts to analyze the preludesfrom the point of view of their programmatic

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of this paper. It would be interesting to pursue that line of thought in another type of study, one that would stress the place of the preludes in the interesting history of French programmatic keyboard music going back to the seventeenth century.

The analyses to come will for the most part be narrowly focussed on the function of parallelism and symmetry. They will attempt to answer several questions. First, which parallel and/or symmetrical collections appear in each of these preludes, and where do they occur? Second, what kinds of processes give rise to these collections? Third, what is the larger significance of these collections in the overall structure of the pieces in which they appear?

Before embarking on detailed analyses of these three preludes it is necessary to define more clearly the terms parallelism and symmetry. In this discussion, examples will be drawn from a number of preludes in Book I, including the three to be analyzed in greater detail in the chapters to come. In addition, we shall define several types of musical processes that result in parallel and symmetrical collections. These processes often control progressions over large musical spans.

Definition and Kinds of Parallelism

In the present study, the term parallelism denotes several related phenomena. Overall, the types of parallelism found in the preludes fall into two categories: parallelism in pitch space and parallelism in pitch-class space. Parallelism in pitch space designates actual parallel voice-leading. Parallelism in pitch-class space involves collections that can be formed by combining two or more transpositionally related pc sets. This is what Cohn has termed

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content in *Images and Ideas in Modern French Piano Music: The Extra-Musical Subtext in Piano Works by Ravel, Debussy, and Messiaen.* Aesthetics in Music No. 6, Edward Lippman, Gen. Ed. (Stuyvesant, NY: Pendragon Press, 1997).

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"transpositional combination."[6] While parallelism in pitch space is always made explicit in the music, instances of parallelism in pitch-class space show some variability in the extent to which parallel relationships are delineated in the musical presentation. In other words, collections that can be produced by transpositional combination may sometimes be presented in such a way as to highlight their parallelism, but not always. Nevertheless, there is usually a good reason, having to do with motivic or other connections in the music, why it is interesting or enlightening to view such a collection as resulting from parallelism. Let us examine some instances of parallelism in pitch space and pitch-class space as they appear in the preludes.

Parallelism in pitch space can take place in p-space or u-space.[7] P-space is a pitch space in which successive adjacent pitches are separated by the same interval. In u-space, by contrast, successive adjacent pitches are separated by different intervals. The most straightforward instance of p-space parallelism occurs when every pitch in a collection is transposed in the same direction by the same number of semitones. This might be termed strict parallelism. An example of strict parallelism is found in measures 23-24 of "Danseuses de Delphes," as shown in Example 1-1A.

In measure 23, three major triads, Bb major, Db major and F major, are presented in parallel motion. There is a transposition of T_3 between the Bb major and Db major triads, and of T_4 between the Db major and F major triads. The entire progression spans an interval of a perfect fifth. In measure 24, the progression of measure 23 is reiterated at T_{11}, resulting in an A major triad, a C major triad, and an E major triad.

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[6] See Richard Lawrence Cohn, "Transpositional Combination in Twentieth-Century Music." Ph.D. dissertation, Eastman School of Music, 1986, v.

[7] The terms p-space and u-space are among the terms coined by Robert Morris to designate various types of pitch space. See his *Composition with Pitch-Classes* (New Haven: Yale University Press,1987), 23.

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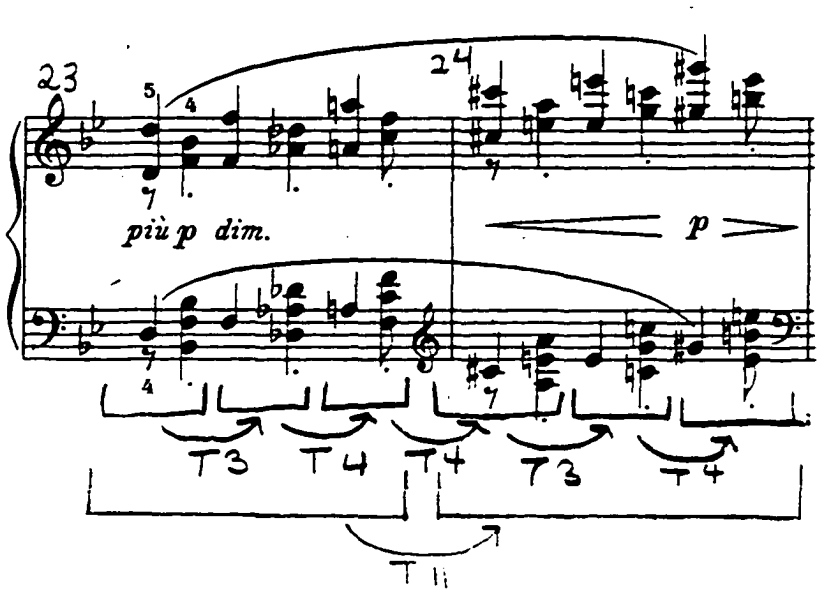
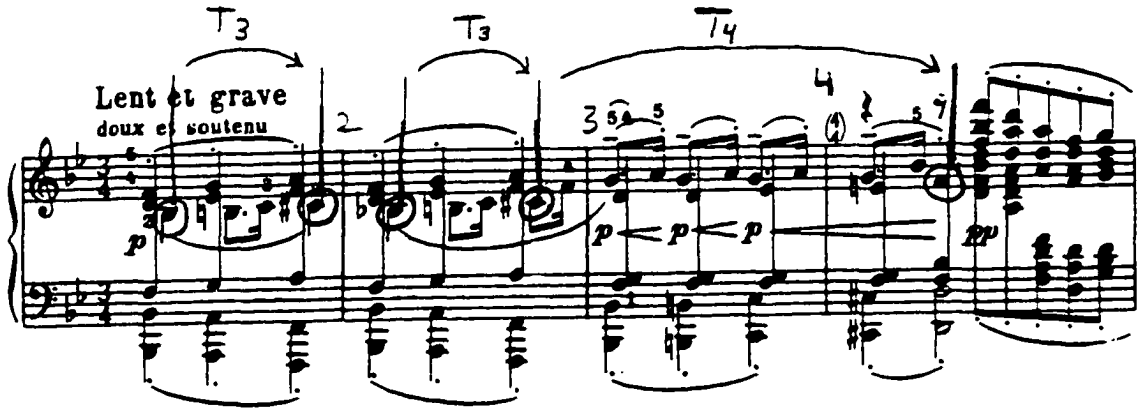


EXAMPLE 1-1A "Danseuses de Delphes" - Strict parallelism

Although we shall analyze similar passages in greater detail in the chapters to come, it is appropriate to point out here that the parallel chords in measures 23-24 have a close connection to the opening measures of the prelude (see Example 1-1B).



EXAMPLE 1-1B Motivic source for parallel triads in Example 1-1A

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In Example 1-1B the inner voice that begins on Bb3 in measure 1 rises chromatically to reach F4 in measure 4, an interval of a perfect fifth. Along the way, C#, to which the Bb moves twice, is particularly emphasized. The pcs Bb, C# (Db), and F are the most important notes in this chromatic line, and these same pcs are the roots of the triads in measure 23.[8]

This type of parallelism is frequently termed "coloristic" in that it has no strictly tonal function and seems almost ornamental. But parallelism of this kind is rarely (if ever) merely decorative in Debussy's music. In the example just discussed, there is a clear structural connection between the parallel triads of measures 23-24 and the important inner voice of the opening measures. As Lewin has pointed out, it is important to analyze each instance of parallelism within its own particular musical context.[9]

The second type of pitch-space parallelism involves parallel motion in u-space. There are many types of u-spaces; one type of u-space is made up of the pitches of a particular diatonic collection. In parallel motion through a diatonic u-space, every pitch in a collection moves in the same direction by the same number of scale steps, so that, for example, if a triad is moving in parallel motion through the pitches of a major scale, major, minor and diminished triads will appear as part of the parallel motion. This type of parallel motion might be termed tonal parallelism. A good example of tonal parallelism is found in measures 29-31 of "Des pas sur la neige" (see Example 1-2). Here the left hand plays a series of triads, all of which belong to the Gb major collection.

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[8] Michael L. Friedmann analyzes two parallel triads in the coda of "Ondine" in relation to the pc content of the opening measures. See Michael L. Friedmann, "Approaching Debussy's 'Ondine,' *Cahiers Debussy*, n.s. 6 (1982): 35.

[9] David Lewin, "Some Instances of Parallel Voice-Leading in Debussy," *19th Century Music* 11 (Summer1987): 72.

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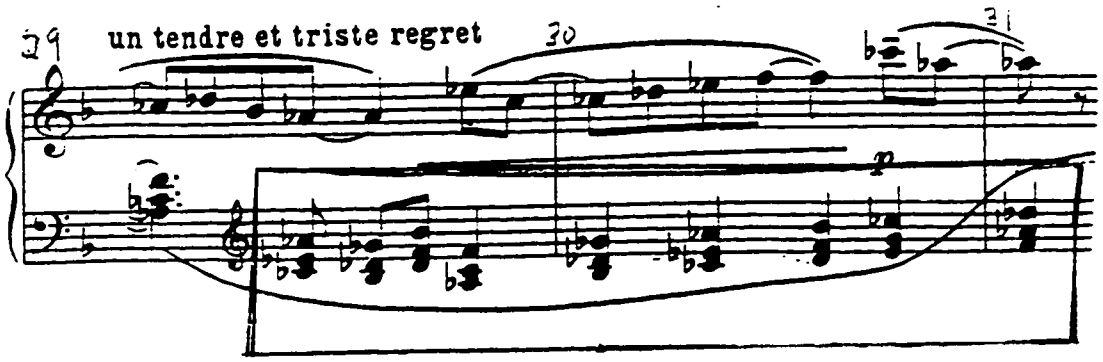
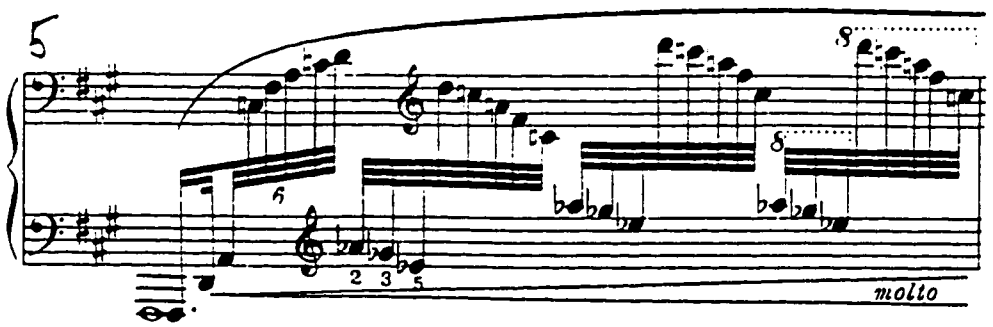
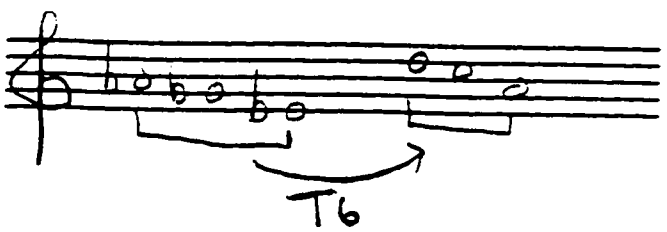


EXAMPLE 1-2 Tonal parallelism in "Des pas sur la neige"

The preludes exhibit numerous instances of pitch-class parallelism, or transpositional combination. As was noted above, there is some variability in the way parallelism of this kind is reflected in the musical presentation. The following examples illustrate this.



EXAMPLE 1-3A Transpositional combination in "Ce qu'a vu le vent d'Ouest



EXAMPLE 1-3B Pcs of Example 1-3A

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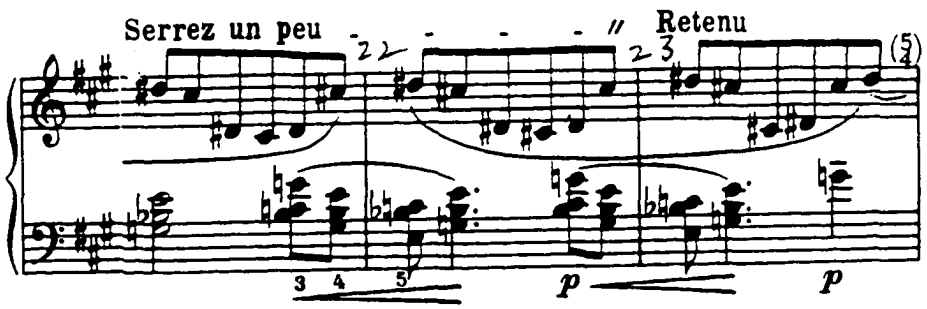
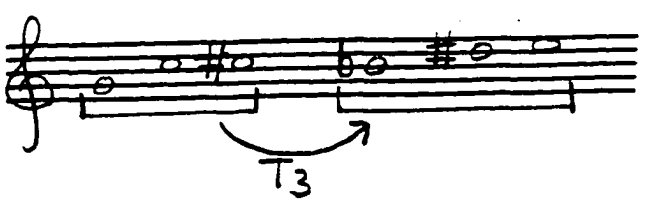
Example 1-3A, cited by Cohn, shows an excerpt from "Ce qu'a vu le vent d'Ouest."[10] The example shows measure 5, which contains all of the pcs of the first six measures. Example 1-3B shows that the hexachord made up of these pcs can be generated by transpositional combination. It can be partitioned into two trichords, each of which can be transposed by an interval of 6 to produce the complete six-note collection, which is an octatonic subset. Here there is a strong pitch-space emphasis in the musical presentation. The T_6 relationship between the two trichords is clearly highlighted as they are successively transposed up through three octaves.

Example 1-4A shows an excerpt from "Les sons et les parfums tournent dans l'air du soir." This is an example of parallelism in pc space in which p-space parallelism is not especially prominent.



EXAMPLE 1-4A Transpositional combination in "Les sons et les parfums tournent dans l'air du soir



EXAMPLE 1-4B Pcs of Example 1-4A

[10] Richard Cohn, "Properties and Generability of Transpositionally Invariant Sets," *Journal of MusicTheory* 35/1-2 (Spring/Fall 1991): 21, 24.

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As Example 1-4B shows, the pcs in this passage can be generated by combining the trichord G-C-C# with its transposition at T_3, Bb-D#-E. Both of these trichords are themselves transpositions of the motive which begins the piece, E-A-Bb. In this passage, the parallelism is much less obvious than in the previous example, but the fact that the pcs involved are transpositions of an important motive makes it analytically relevant to view the passage as an example of parallelism.

Definition and Kinds of Symmetry

Like parallelism, symmetry can take place in pitch space or pitch-class space. Symmetry in pitch space occurs when a collection of pitches is symmetrical around a particular pitch axis. We shall also be considering instances in which a pair of pitches serves as an axis of symmetry.[11] In such cases, the two pitches will be symmetrically placed in relation to other pitches in the collection, and these pitches will have an importance justifying their designation as the symmetrical axis. Several kinds of pitch symmetry will be considered here, including ordered pitch symmetry, unordered pitch symmetry and registral symmetry. Overall, symmetry in pitch space is less common in the preludes than pitch-space parallelism. Nevertheless, pitch-space symmetry does occur and is of analytical interest. Like pitch-space parallelism, pitch-space symmetry is explicitly presented in the music.

Symmetry in pitch-class, or pc, space, by contrast, refers to inversionally symmetrical pitch-class sets and thus involves a higher level of abstraction than pitch symmetry. Because the location of pitch-classes in registral space is not specified, the realization of inversionally-related sets does not necessarily, or

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[11] It is sometimes of analytical interest and importance to think of two pitches rather than one as a center of symmetry, as Jonathan Bernard notes in *The Music of Edgard Varèse* (New Haven: Yale University Press, 1987), 44-45.

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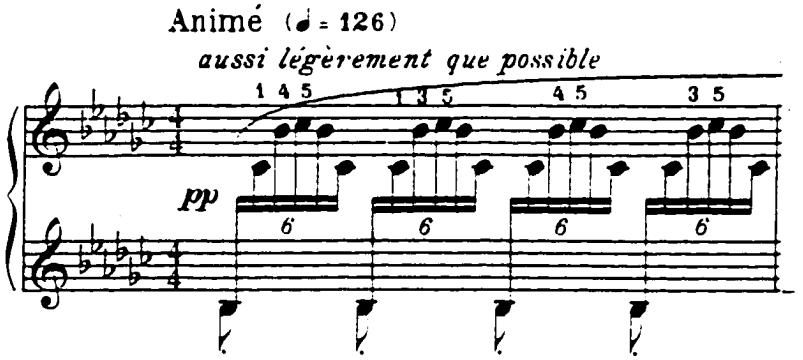
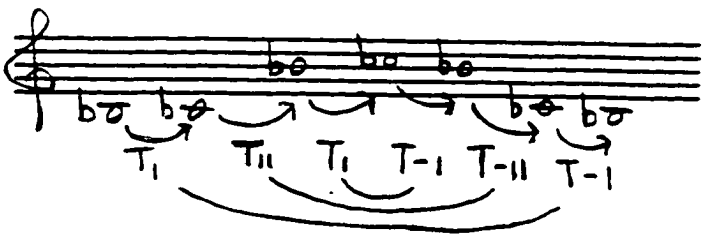
even usually, delineate their symmetrical relationships. Any inversionally symmetrical pc collection has at least two axes of symmetry a tritone apart.

Let us examine some instances of both pitch-space and pitch-class symmetry. The first of type of pitch-space symmetry is ordered pitch symmetry. Ordered pitch symmetry occurs when a series of pitches is presented symmetrically in time. An example of ordered pitch symmetry can be found in the third prelude, "Le vent dans la plaine" (see Example 1-5).



EXAMPLE 1-5A Pitch-symmetrical ostinato of "Le vent dans la plaine"

Example 1-5A shows the ostinato that pervades much of this prelude. The ostinato is composed of the pitches Bb3-Cb4-Bb4-Cb5. These pitches are organized to create a figure that turns back on itself, forming a palindrome, a series that is retrograde symmetrical, as shown in Example 1-5B.



EXAMPLE 1-5B Pitches of Example 1-5A showing their retrograde symmetry

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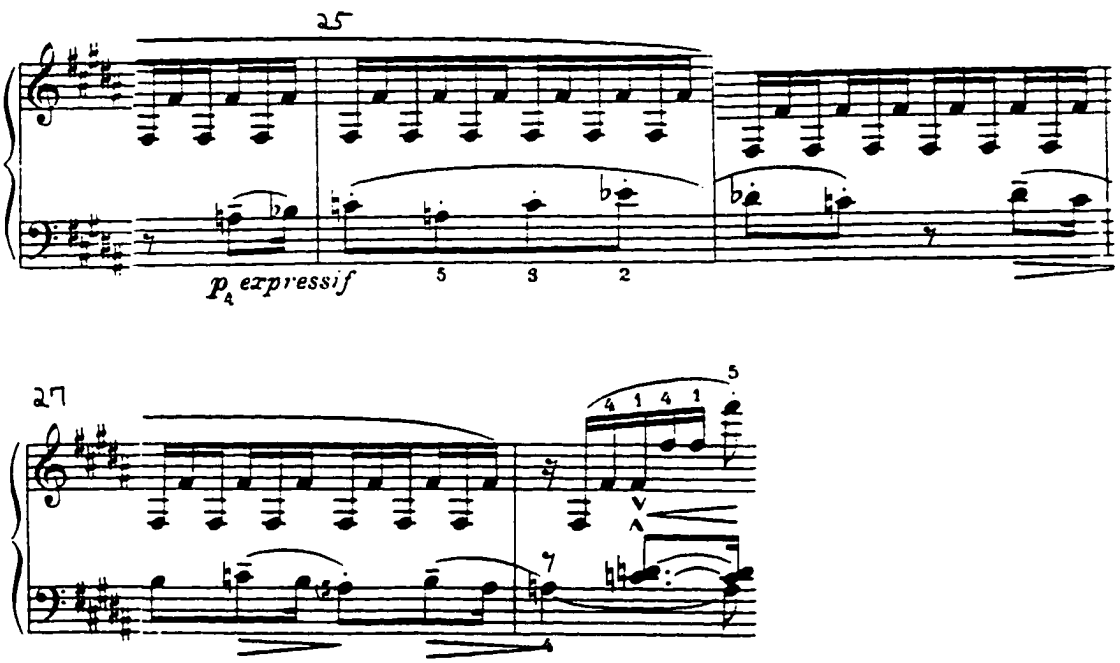
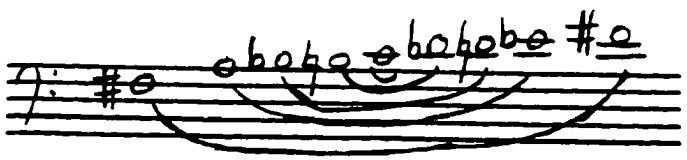
Of course, this ostinato can also be interpreted as a parallel construction made up of parallel octaves or parallel semitones. As we shall discuss in more detail later, many pitch and pitch-class collections in the preludes are both parallel and symmetrical. In the case of this ostinato, the order presentation emphasizes its symmetrical character.

An example of unordered pitch symmetry in pitch space may be found in the excerpt from "Les collines d'Anacapri" shown in Example 1-6A.



EXAMPLE 1-6A Pitch-symmetrical passage in "Les collines d'Anacapri"



EXAMPLE 1-6B Pitches of Example 1-6A showing their symmetrical relationship to F#3 and F#4

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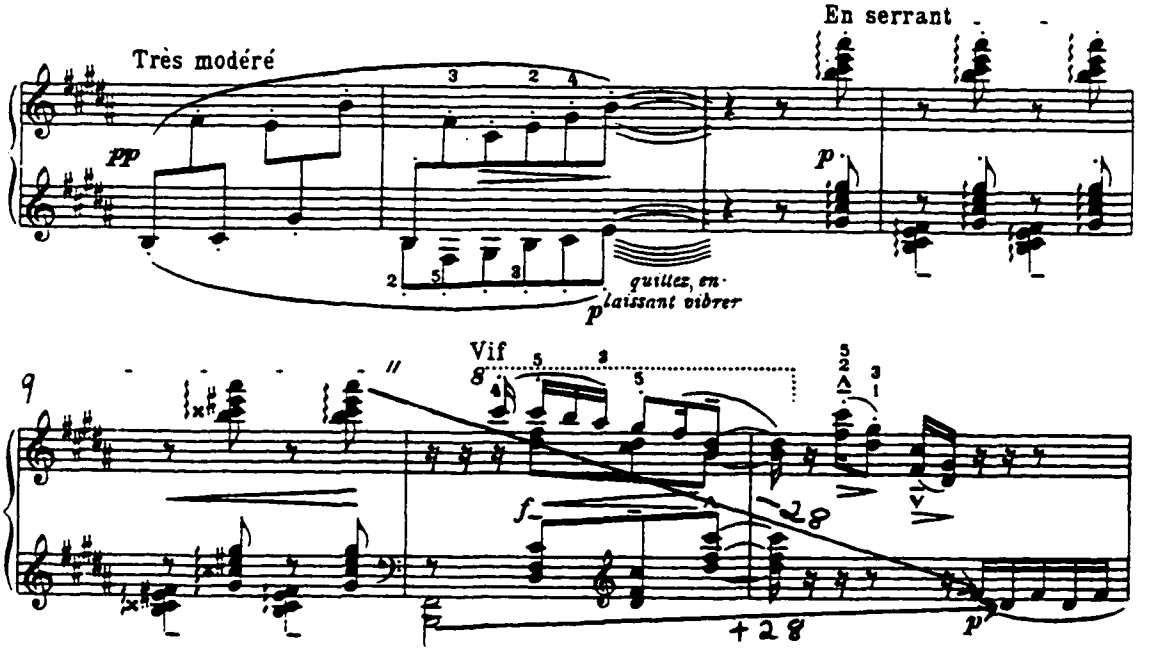
In this passage a melody is presented together with an ostinato. All of the pitches of the melody can be arranged symmetrically within the alternating pitches of the ostinato, F#3-F#4, even though the order of their presentation does not explicitly delineate their symmetrical relationship to the ostinato (see Example 1-6B). The pitch-space symmetry of the passage is made clear because the diminished triad A-C-Eb, which is symmetrical in relationship to the ostinato is presented in measure 25 and subsequently filled in chromatically.

Yet another type of pitch-space symmetry found in the preludes is registral symmetry. Registral symmetry is a special case of pitch-space symmetry in which only the boundary pitches at the registral extremes participate. In registral symmetry, the boundary pitches are arranged at equal intervallic distances above and below some central pitch or interval.

Registral symmetry typically emphasizes great differences in register, that is, the intervallic distance between the boundary pitches is usually very large. Example 1-7 shows an instance of registral symmetry from "Les collines d'Anacapri."



EXAMPLE 1-7 Registral symmetry in "Les collines d'Anacapri"

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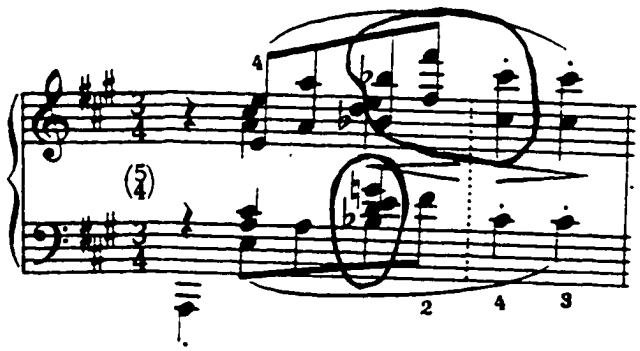
In measure 5, a pentatonic motto is heard in the middle register. In measures 7-9, there is an upward expansion in register, and chords in which A#6 is the highest note are repeated several times. Then in measure 10, the left hand moves to B1, the lowest note thus far. In measure 11, the registral span contracts, leading to a convergence on D#4-F#4. A#6 and B1 are symmetrical around the ostinato D#4-F#4.

In this study, the term registral symmetry will also be used in a more general sense to refer to contexts in which different registers are contrasted and balanced in relation to a central ostinato. We shall see an instance of the latter use of register in "Des pas sur la neige." In that prelude, the ways in which the music is disposed above and below the ostinato are clearly related to the overall form of the piece.

Numerous instances of pitch-class symmetry occur in the preludes. One important example can be found in "Les sons et les parfums tournent dans l'air du soir" (see Example 1-8).



EXAMPLE 1-8A Pitch-class symmetrical collection in the opening gesture of "Les sons et les parfums tournent dans l'air du soir"

Example 1-8A shows the opening gesture from this prelude. The circled notes in measure 2 compose a dominant-seventh chord and its inversion, a

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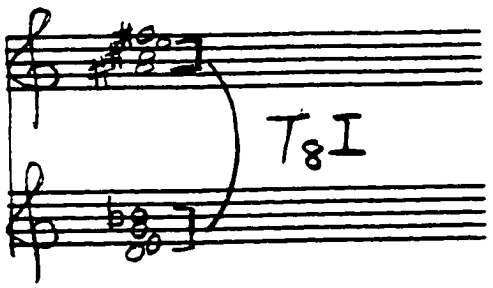
half-diminished seventh chord. This is a distinctive sonority that is heard throughout the piece. In Example 1-8B, these notes are arranged to show how they are symmetrically related as a pitch-class collection; the pcs are symmetrical around E or Bb.



EXAMPLE 1-8B Pcs of EXAMPLE 1-8A

In the analysis of this prelude in Chapter 3 we shall see the significance of this symmetrical relationship for the piece as a whole.

Relationship of Parallelism and Symmetry

There is a close relationship between parallelism and symmetry in the preludes. Parallelism and symmetry in pitch space frequently go hand in hand, as we shall see in the examples below. Debussy also makes use of many pitch-class collections that are both parallel and symmetrical, that is set classes that can be produced by either transposition or inversion. Cohn has discussed such set classes in his writings on Bartók's music.[12] Cohn identifies set classes that can be produced by either transpositional combination or inversion. He notes that a total of seventy-two set classes can be produced by either transposition or inversion. These include "the thirteen tetrachord-types which

[12] See Richard Cohn, "Inversional Symmetry and Transpositional Combination in Bartók," *Music Theory Spectrum* 10 (1988): 24-25.

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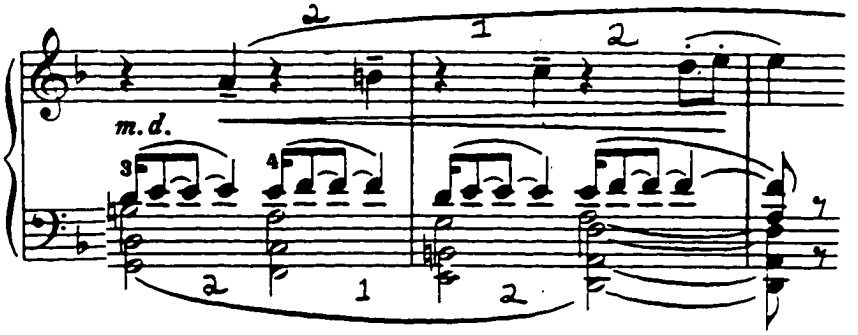
can be realized as inversionally-symmetric structures of exactly four pitches; all of the partial and complete interval-cycles, including chromatic, diatonic, and whole-tone sets; and all of the Tn-invariant sets such as the octatonic collection and the '1:3 model.'"[13]

In the preludes, the pitch-space presentation of such collections is often designed to point up both their parallel and symmetrical features. Such is the case in the excerpt from "Des pas sur la neige," shown in Example 1-9.



EXAMPLE 1-9 Parallel and symmetrical features in measures 5-7 of "Des pas sur la neige"

Here the D dorian collection, which as a diatonic collection is both parallel and symmetrical, unfolds over measures 5-7. The two outer voices in this passage move in contrary motion by the same intervals, emphasizing the symmetry of the collection. The parallelism of the collection is pointed up by the descending parallel fifths in the two lowest voices, as well as by the parallel duplication of the intervals of the ostinato by the top voice in its motion from A to C.

In the next example, an excerpt from the seventh prelude, "Ce qu'a vu le vent d'Ouest", an octatonic collection results from a series of triads moving in strict parallel motion (see Example 1-10).

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[13] Ibid., 25.

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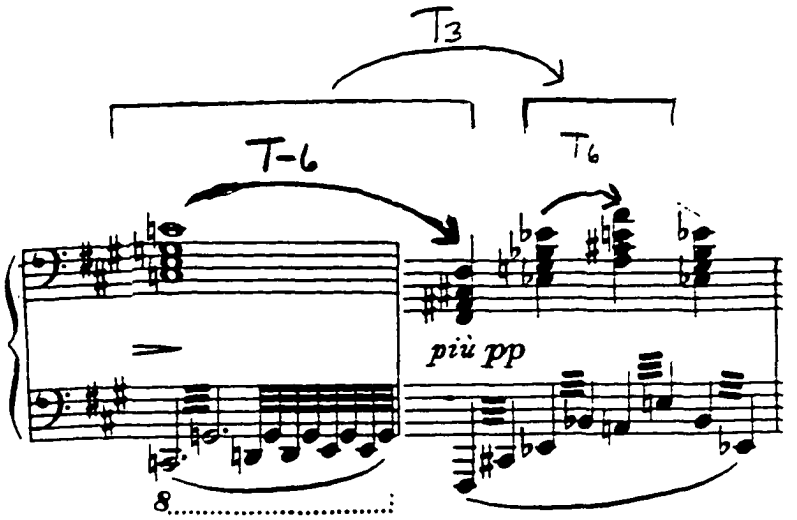
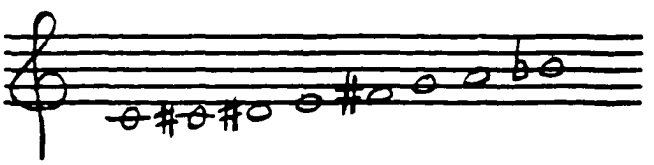


EXAMPLE 1-10A Parallel triads giving rise to an octatonic collection in "Ce qu'a vu le vent d'Ouest

Example 1-10A shows measures 61-62. Four major triads are heard in parallel motion. At the same time, the symmetry of the collection is suggested by the way in which the pairs of triads are presented. The C major triad is transposed down by 6 to the F# major triad, and the Eb major triad is transposed up by 6 to the A major triad. The pairs of triads are related at T_3, and all four triads combine to produce a complete octatonic collection (see Example 1-10B).



EXAMPLE 1-10B Octatonic collection formed by the parallel triads in Example 1-10A

An interesting example of parallelism disguised as symmetry can be found in "Les collines d'Anacapri." Example 1-11 shows two excerpts from that prelude.

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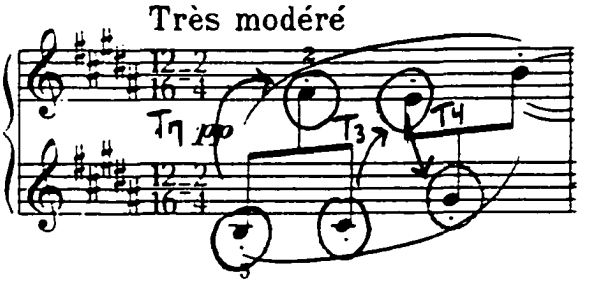
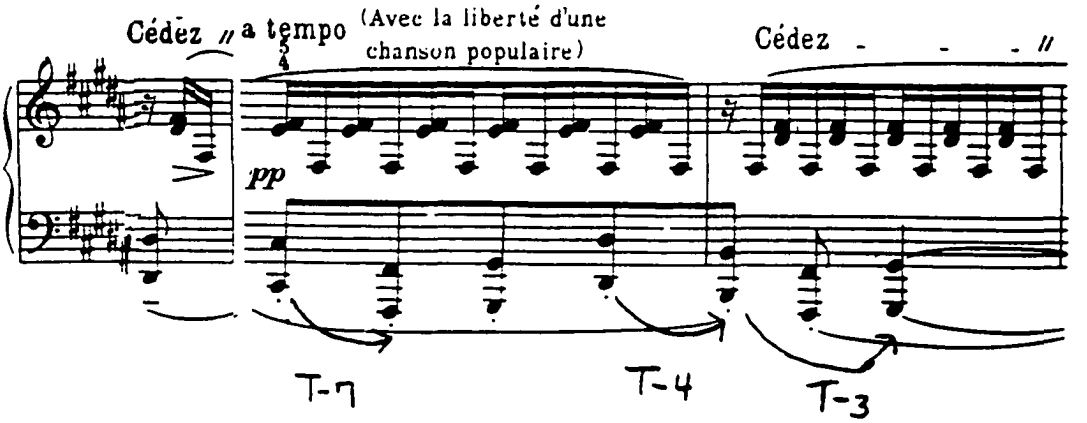
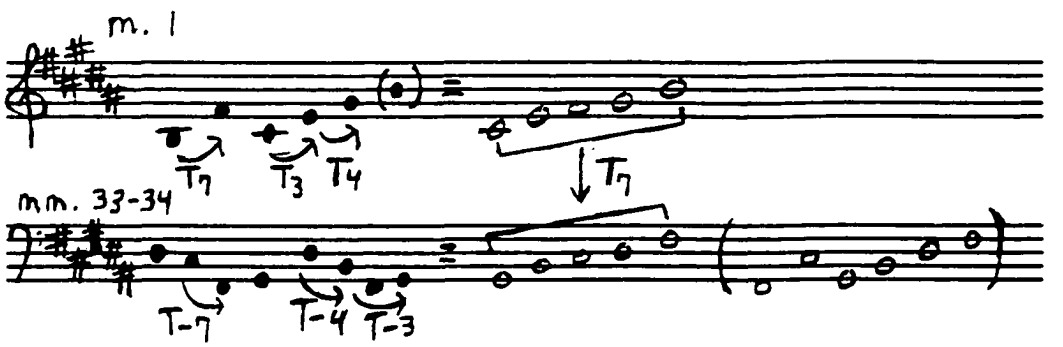


EXAMPLE 1-11A Opening motto of "Les collines d'Anacapri"



EXAMPLE 1-11B Measures 32-34 of "Les collines d'Anacapri"



EXAMPLE 1-11C Parallel/symmetrical relationships between Examples 1-11A and 1-11B

Example 1-11A shows the motto that begins the piece; Example 1-11B shows measures 33-34, where a related melody is heard in the bass. The

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collections of the opening motto and the bass melody are pentatonic subsets of the B major scale; each collection is both a transposition and inversion of the other, as shown in Example 1-11C.[14] The collections are in a T_7 transpositional and a T_7I inversional relationship.

In this instance, the contrast in contour between the two melodies leads the listener to hear an inversional relationship between them. The motto begins with a prominent ascending perfect fifth and contains an ascending major third and two ascending minor thirds; the bass melody, by contrast, contains those intervals in descending form.

However, as Example 1-11C shows, the bass melody is actually a transposition of the motto, with the intervals presented in retrograde order. This retrograde relationship suggests that the bass melody is the inversion of the motto. In this fascinating example, the melodies are in a transpositional relationship, but the relative ordering of the transpositionally related notes alludes to the symmetrical relationship between the two collections.

The Structural Role of Parallelism and Symmetry

Now that we have defined parallelism and symmetry, we shall examine some dynamic processes, many of which shape larger sections of music and in which parallelism and symmetry play a part. The processes include the following:

Accretion. This is a multi-step process in which the operations of transposition and inversion (and, in the example we are about to see, retrogression and rotation) are applied to a motive to create a larger collection. The end result of the process is a new collection that is parallel, symmetrical, or

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[14] An interesting discussion of the interaction of pentatonic and diatonic collections in this prelude can be found in David Kopp, "Pentatonic Organization in Two Piano Pieces of Debussy," *Journal of Music Theory* 41.2 (Fall, 1997): 261-287.

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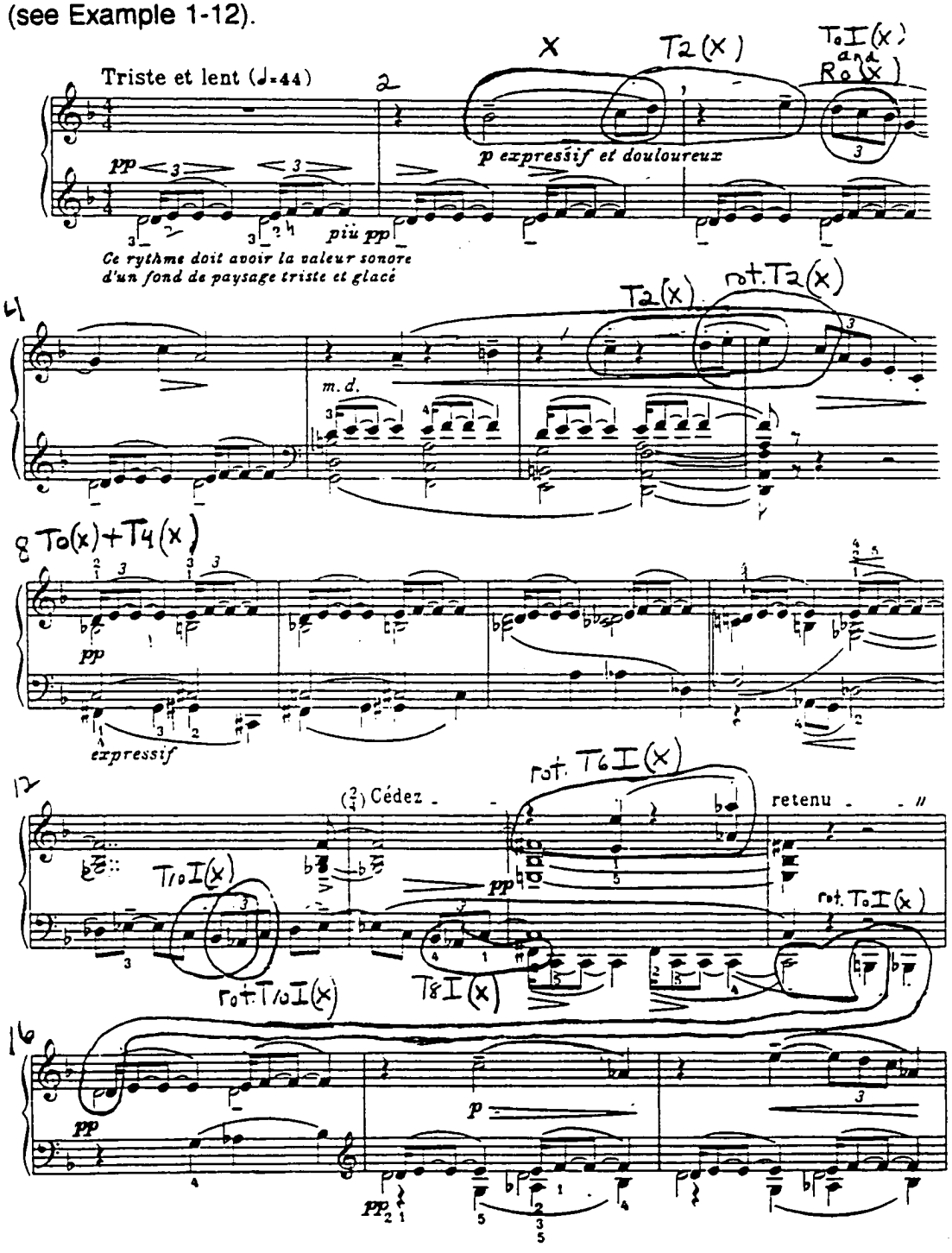
both. A good example can be found in the first half of "Des pas sur la neige" (see Example 1-12).



EXAMPLE 1-12A Successive transformations of a three-note motive in "Des pas sur la neige"

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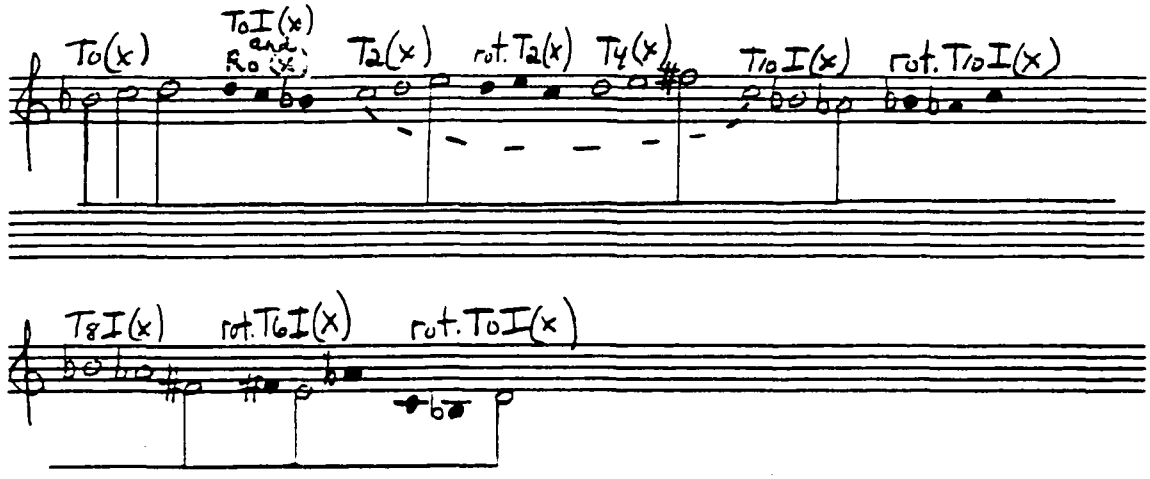
The circled notes in Example 1-12A are the initial three-note motive, Bb-C-D, labelled X, and its successive transformations by transposition, retrogression, inversion and rotation. Example 1-12B shows how these transformations expand the initial whole-tone motive until a complete whole-tone collection is heard in measures 14-16.



EXAMPLE 1-12B Reduction of Example 12A, showing the process of accretion resulting in a complete whole-tone collection

The transposition of X by T2 adds an E to the inital three-note motive. Likewise, T4(X) adds an F# to the collection, so that five notes of the emerging whole-tone collection are heard in measure 8. In measure 12, $T_{10}I(X)$ is followed by rot. $T_{10}I(X)$, and in measures 13-16 three more forms of X, $T_8I(X)$, rot. T6(X), and rot.$T_0(X)$ produce a complete whole-tone collection.

Mutation. In this process an existing collection is gradually modified to create a new parallel and symmetrical collection.[15] This process is shown as it occurs in "Le vent dans la plaine" (see Example 1-13).

[15] Richard Parks makes use of the term *mutation* to describe pc changes that occur when one pc genus is transformed into another. See *The Music of Claude Debussy* (New Haven: Yale University Press,1989), 66-74. However, Parks generally describes mutation as occuring rather abruptly, whereas in this study we shall be mainly interested in mutation as a multi-step process.

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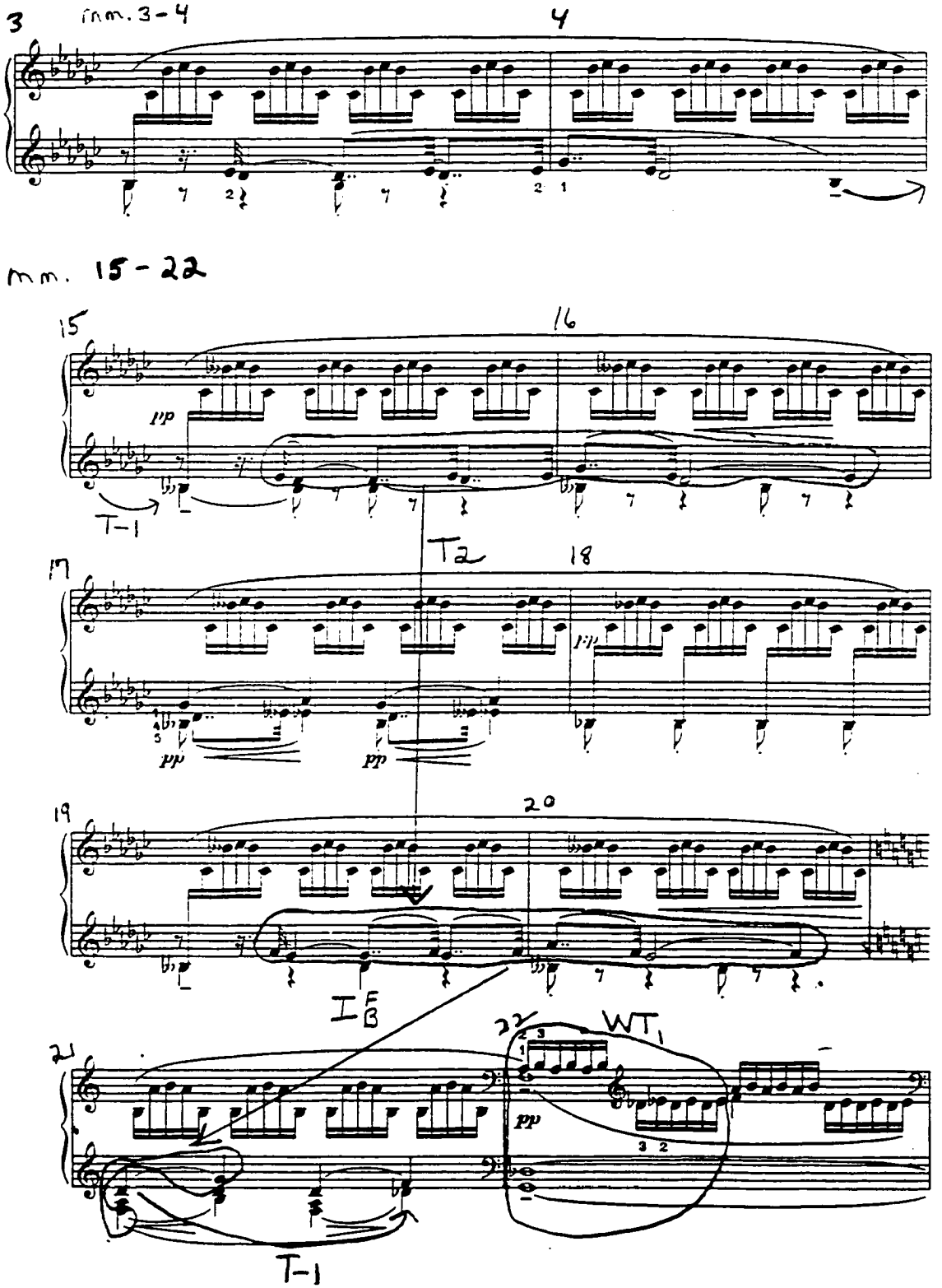

EXAMPLE 1-13A Process of mutation in "Le vent dans la plaine"

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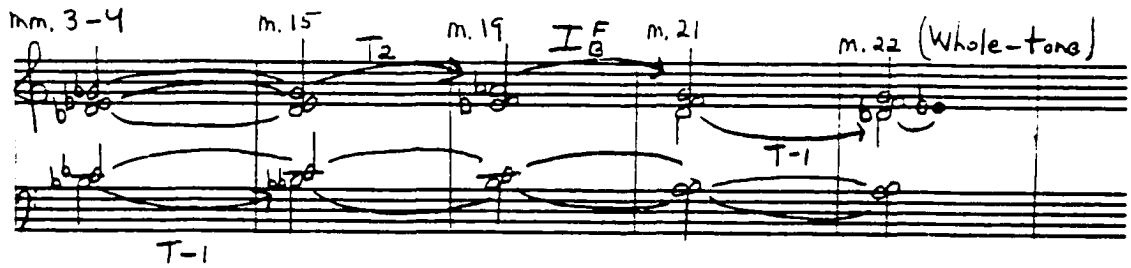
Example 1-13A shows measures 3-4 and 15-22. The initial collection is heard in measures 3-4, and the mutation process takes place over measures 15-21, resulting in a complete whole-tone collection in measure 22. Example 1-13B is a reduction of Example 1-13A and shows the steps in this mutation.

The first step occurs in measure 15 when the Bb in the lowest voice moves by T_{-1} to Bbb; the other pcs remain unchanged. In measure 19, the notes Db-Eb-Gb move by T_2 to Eb-F-Ab. In measure 21 Eb-F-Ab are inverted around F/B to produce G-F-D; at the same time, Bbb and Cb are respelled as A natural and B natural. Finally, in measure 22, D moves to Db; with the addition of Eb as an upper neighbor to Db, a complete whole-tone collection is heard.[16]

As Example 1-13B shows, in each step in this process of mutation some pcs remain the same while others are changed by the operations of transposition and inversion.



EXAMPLE 1-13B Reduction of Example 1-13A

[16] In this process of mutation, the voice-leading exemplifies the principle of *parsimony*, as discussed by a number of writers on Neo-Riemannian Theory. Here the original collection, heard in measures 3-4, while not a "chord" in the traditional sense, is nevertheless established as the most important referential collection in the piece. Each change in the collection in this passage involves one or more voices moving by half or whole step. The process eventually produces a whole-tone collection, a completely symmetrical division of the octave. See Adrian Childs, "Moving Beyond Neo-Riemannian Triads: Exploring a Transformational Model for Seventh Chords," *Journal of Music Theory* 42/2 (Fall, 1998): 181- 193, and Jack Douthett and Peter Steinbach, "Parsimonious Graphs: A Study in Parsimony, Contextual Transformations, and Modes of Limited Trnasposition," *Journal of Music Theory* 42/2 (Fall, 1998): 241-263.

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Expansion and contraction. These are processes in which the upper and lower registral boundaries of a segment of music move in contrary motion outward from or in towards a central pitch or interval.[17] Expansion and contraction involve registral symmetry, which was discussed above in relation to "Les collines d"Anacapri" in Example 1-8.

In that example, the pentatonic motive heard in measure 5 spans the octave B3-B4. In measure 7, the upper register expands to A#6, and in measure 10 the lower register expands to B1. Then in measure 11, there is a registral contraction to D#-F#4. B1 moves up by 28 semitones to D#4 and A#6 moves down by 28 semitones to F#4.

Projection. This is a process in which the intervals of an important motive determine intervals of transposition over large spans of music.[18] Such a motive will be referred to as a "projected set."[19] We saw in our discussion of "Danseuses de Delphes" (Example 1-1 above) that the transpositions of triads moving in parallel motion on a local, relatively small scale was determined by the intervals of an important melodic line in the opening measures of the piece. Projection is a similar organizing process applied on a large scale and occuring in pc-space rather than in p-space.

The initial motive of "Les sons et les parfums tournent dans l'air du soir" is treated as a projected set which organizes transposition levels of pitch-class collections throughout the piece. One instance of this is shown in Example 1-14.

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[17] Jonathan Bernard has used these terms in his discussion of similar processes in the music of Varèse. See *The Music of Edgard Varèse*, 50-51.

[18] I am using this term in a somewhat different sense than that meant by Jonathan Bernard. See Ibid., 48-49.

[19] I am using this term in a somewhat different sense than that used by Paul Wilson to describe a phenomenon in Bartók's music. He defines it as "the emphasized simultaneous statement of a particular pc set, followed or preceded by the emphasized separated statement of each of its members in turn."

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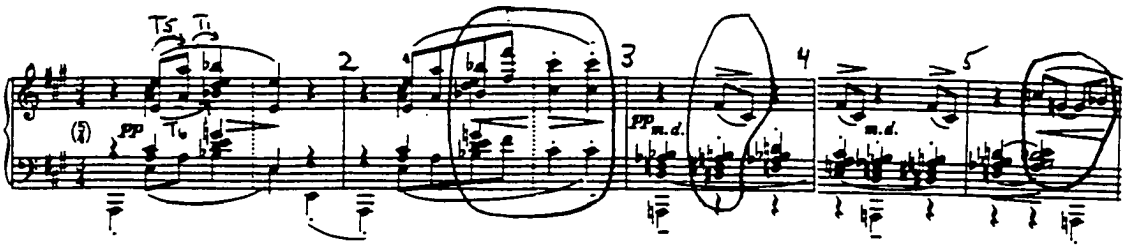
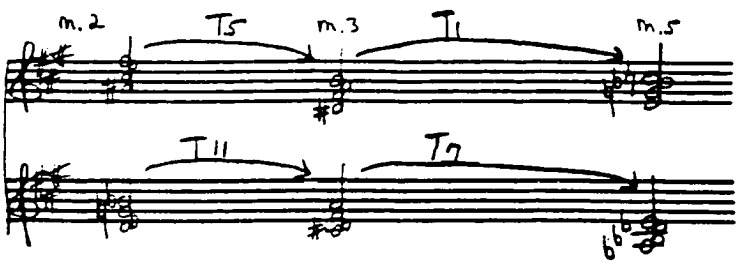


EXAMPLE 1-14A Opening motive and symmetrical collections in "Les sons et les parfums tournent dans l'air du soir"

Example 1-14A shows measures 1-5 of the prelude. The initial motive, E-A-Bb, is heard in measure 1. Its intervals are 5, 1 and 6. In measures 2-5, each group of circled pcs forms a symmetrical collection whose transpositions are determined by the intervals of the motive.

In Example 1-14B, each symmetrical collection is partitioned so that its inversionally symmetrical subsets are aligned on two staves. As this example shows, the subsets on the upper staff project the prime form of the motive, $T_5+T_1=T_6$. The subsets on the lower staff project the intervals of the motive in retrograde, $T_{11}+T_7=T_6$. Here the transpositions over several measures of inversionally related collections project the intervals of the initial motive.



EXAMPLE 1-14B Reduction of Example 1-14A showing process process of projection

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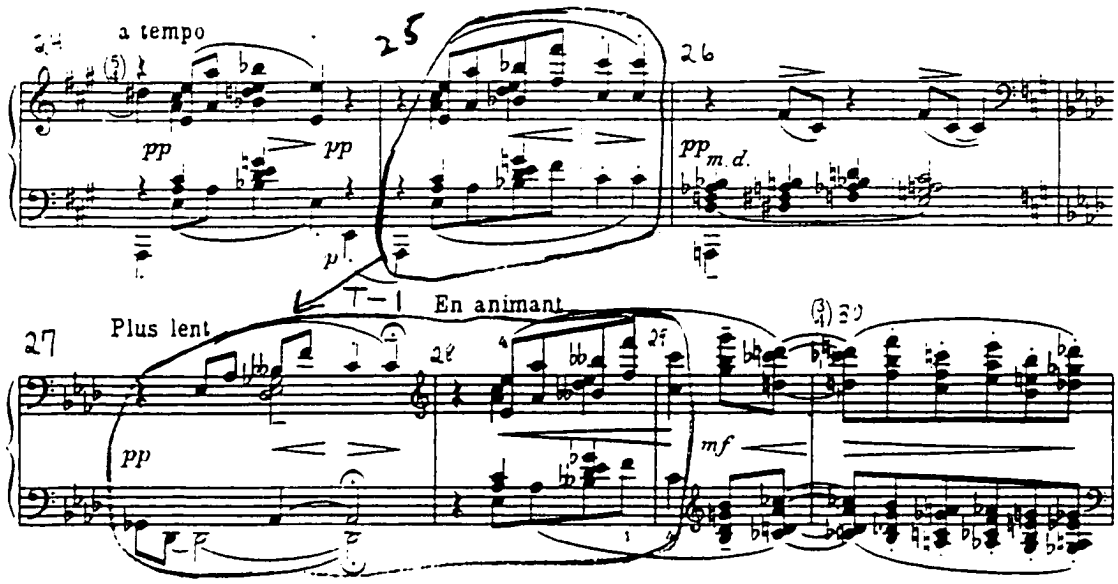
Planar shift. This is a process of parallelism, somewhat akin to the traditional meaning of transposition, in which a passage is presented and then repeated, either immediately or later, at another pitch level, usually a semitone above or below the original. The transposed repetition may be exact or slightly modified. An interesting example of this process occurs at the beginning of the second section of "Les sons et les parfums tournent dans l'air du soir" (see Example 1-15).



EXAMPLE 1-15 Example of planar shift in "Les sons et les parfums tournent dans l'air du soir"

In this passage, the music heard in A major in measure 25 is transposed down a semitone and heard, in slightly altered form, in Ab major in measures 27-28. Like so many elements in these preludes, this process seems to allude to processes in the natural world. The effect reminds one of the motion of a geologic plate which suddenly shifts from higher to a lower plane.

As we shall see in the analyses to come, the processes just described are capable of organizing large sections of music. They have a profound influence

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on the overall form and structure of the preludes. Before moving on to the analyses, we shall review some of the analytical literature that bears on our study of parallelism and symmetry in the preludes.

Relevant Analytical Literature

Many of the analytical writings about the music of Debussy (as well as much other music of the twentieth century) can be broadly grouped into two categories. On the one hand there are analyses that focus on identifying sets and set classes that play a prominent role in the music. In the music of Debussy these sets frequently include collections that are parallel and/or symmetrical, e.g. whole-tone, pentatonic, octatonic and diatonic sets and subsets. This type of analysis is exemplified most clearly in the work of Allen Forte and Richard Parks.[20]

More recently, there has been an analytical trend that focuses more on processes that result in particular collections. This type of analysis takes a transformational approach, in which a particular collection is viewed not so much as an *a priori* given, but rather as the logical outcome of the operations of transposition, inversion, rotation and other processes. The work of David Lewin has been highly important for this type of analysis.[21]

The analytical stance of the present writer might be described as a combination of these two approaches, with perhaps somewhat more emphasis on the transformational approach. As Richard Cohn has commented, "it is often difficult to distinguish whether the identity of the collection is of primary importance...or is secondary to the transformational design...a conjunction of

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[20] See Richard Parks, *The Music of Claude Debussy*, and Allen Forte, "Debussy and the Octatonic," *Music Analysis* 10/1-2 (1991): 125-169.

[21] See especially Lewin, "A Transformational Basis for Form and Prolongation in Debussy's 'Feux d'artifice'," in *Musical Form and Transformation*.

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collectional and transformational perspectives may ultimately achieve the most desirable results."[22]

Analytical Writings on Parallelism

Both pitch-space and pitch-class parallelism have been discussed in analyses of Debussy's music. What we have termed pitch-space parallelism is referred to in most analyses as parallel voice-leading. Arthur Wenk cites parallel voice-leading as one of the major features of Debussy's style, and he relates this characteristic to Debussy's avoidance of functional harmony.[23] In a section of his monograph devoted to Debussy's style, Wenk discusses examples of progressions that are "parallel within the limits of a diatonic scale or strictly parallel invoking the entire chromatic scale"[24]

Lewin has also analyzed examples of pitch-space parallelism. Lewin is particularly critical of "the traditional view that parallel voice-leading was for Debussy a method of elaborating monophonic ideas, the extra voices being added for acoustic coloration or for poetic effect of some sort."[25] Lewin makes a convincing case for looking at each occurrence of parallel voice-leading as an individual instance, with its significance and function to be determined by the context of the piece.

Lewin's article suggests that parallelism is not simply a way of avoiding traditional harmonic structure, but that it is itself a positive element in creating structure. This is an appealing view because, given the fact that parallel motion

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[22] Cohn, "Properties and Generability of Transpositionally Invariant Sets," 9.

[23] Arthur Wenk, *Claude Debussy and Twentieth-Century Music* (Boston: G. K. Hall, 1983), 10. Wenk cites a conversation Debussy had with Ernest Guiraud, during which he played several progressions of parallel chords and commented,"Il faut noyer le ton," suggesting that he was "drowning" the sense of a tonal center in such passages. The complete conversation is quoted in Edward Lockspeiser, *Debussy: His Life and Mind*, 2 vols. (New York: The Macmillan Company, 1962), 1: 204-208.

[24] Ibid., 94.

[25] Lewin, "Some Instances of Parallel Voice-Leading in Debussy," 65.

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is so pervasive in Debussy's music, it seems reasonable to assign it a significant structural importance.

Pitch-class parallelism is encompassed by Cohn's theory of transpositional combination, which we have discussed above in connection with Examples 1-3 and 1-4. Transpositional combination is a far-reaching theory of post-tonal music, and Cohn's main focus is not the music of Debussy. Nevertheless, his discussion of the ways in which larger sets can be generated by combining transpositionally related subsets is especially relevant to the analysis of the preludes undertaken in the present study.

Analytical Writings on Symmetry

Most discussions of symmetry in Debussy's music involve pitch-class rather than pitch-space symmetry. The aspect most often discussed is Debussy's use of symmetrical collections such as the whole-tone, pentatonic, and octatonic collections.

In an article on symmetry in the quartets of Bartok, George Perle discusses symmetry in the works of earlier composers, including Debussy. Perle analyzes "Voiles" from the point of view of the symmetry of its two primary collections--the whole-tone scale Bb-C-D-E-F#-G# and the pentatonic scale Eb-Gb-Ab-Bb-Db. He notes particularly that a strong connection is established between these two collections by virtue of the fact that they share the pcs Gb-Ab-Bb and the two axes of symmetry, D/Ab.[26] Antokoletz also discusses symmetry in *Voiles* in his monograph on the music of Bartók.[27]

An exhaustive survey of the types of collections found in Debussy's music, including inversionally symmetrical pc collections, has been made by Richard

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[26] George Perle, "Symmetrical Formations in the String Quartets of Béla Bartók," *Music Review* 16 (November, 1955): 301.

[27] Antokoletz, 6-7.

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Parks.[28] Parks bases his analyses of Debussy's works on the concept of "pc set genera." He identifies four genera: the diatonic, whole-tone, octatonic, and chromatic, and he notes the symmetrical properties of many of the sets and subsets of these genera.[29]

Forte has surveyed a large number of Debussy's pieces and discovered many passages containing octatonic sets and subsets.[30] Forte makes a number of interesting observations about the many ways in which octatonic collections are configured in Debussy's music. He notes that the "octatonic set is everywhere in the music of the two volumes of preludes for the piano" and cites a number of passages to illustrate his point, including excerpts from "Les sons et les parfums tournent dans l'air du soir."[31]

In a recent analysis, Lewin has noted the many inversional relationships in Debussy's "Feux d'artifice."[32] In a fascinating article, Lewin explores the role of inversion, as well as many other transformational processes, in shaping a work that he sees as expressing Debussy's nationalism at a crucial point in history, immediately before the outbreak of World War I. In particular, Lewin finds a number of transformations involving the notes C-D. For him, the dyad C-D signifies Debussy's nationalism as a French musician. It spells out the initials of Debussy's name and is also prominent in the fragment of *La Marseillaise* quoted at the end of the prelude.[33]

In addition to studies of pc symmetry, there has been some interest by certain writers in registral symmetry in Debussy's music. Cogan and Escot have

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[28] Parks, *The Music of Claude Debussy*.
[29] Ibid., 58.
[30] Forte, "Debussy and the Octatonic."
[31] Ibid., 147-148.
[32] Lewin, "A Transformational Basis for Form and Prolongation."
[33] Lewin's analysis is highly interesting. However, the idea that the notes C-D stand for Debussy's initials seems questionable. In France, the notes are designated by solfège syllables, not letters. It seems unlikely that in identifying himself as a French musician Debussy would have used German nomenclature.

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analyzed *Nuages*, pointing out that the boundary pitches of the English horn solo that occurs several times throughout the piece are exactly midway between the highest and lowest pitches of the piece.[34]

Parks devotes a chapter of his book to register, and focuses particularly on the use of register in Debussy's piano music. Although he does not specifically discuss symmetry in registral treatment, Parks notes that "register does serve as a source of structure in Debussy's music, both independent of and in conjunction with other elements."[35] His consideration of register includes a discussion of "Des pas sur la neige," where he finds four successive phases of registral expansion that help give shape to the piece.[36]

In addition to the studies of Debussy's music mentioned above, Jonathan Bernard's discussion of various types of symmetry found in the music of Varèse has been especially relevant to the present study.[37] Bernard considers symmetry not only as a characteristic of particular collections, but also as "the manifestations of musical process." He is interested in showing "how the principles of symmetry...control the workings of process."[38] Bernard's insights into Varèse's use of registral symmetry and exact pitch symmetry are especially applicable to a consideration of symmetry in Debussy's preludes.

These writings, particularly those of Lewin, Cohn, and Bernard, inform the discussion in the chapters to come. The analyses in these chapters will examine local instances of parallelism and symmetry in three preludes, as well as the relationship of parallelism and symmetry to the form of each piece.

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[34] Robert Cogan and Pozzi Escot, *Sonic Design* (Englewood Cliffs, NJ: Prentice-Hall, Inc. 1976), 394.
[35] Parks, *The Music of Claude Debussy*, 303
[36] Ibid., 309-311.
[37] Jonathan Bernard, *The Music of Edgard Varèse*.
[38] Ibid., 48.

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CHAPTER 2

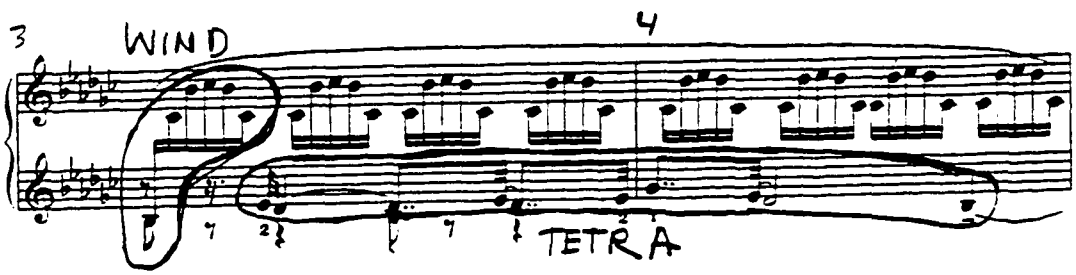
"Le vent dans la plaine"

The third prelude of Book I, "Le vent dans la plaine" displays ingenious uses of parallelism and symmetry that have great ramifications for the piece's texture, form, and continuity.

There are four main aspects of parallelism and symmetry to be considered in the following analysis:

1. Parallel and symmetrical aspects of the two main motives of the piece, WIND and TETRA.
2. WIND and registral expansion and contraction.
3. Transformations of WIND and TETRA by mutation and accretion.
4. Projections of TETRA.

The two motives on which the piece is based appear at the outset (see Example 2-1).



EXAMPLE 2-1 The two principal motives of "Le vent dans la plaine": WIND and TETRA

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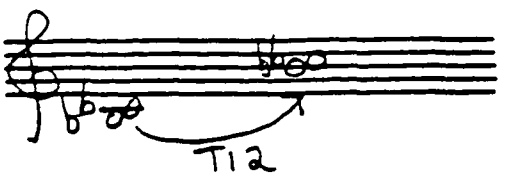
The first motive is a whirling, circular ostinato that seems to represent the wind. We shall refer to that motive as WIND. The second motive is the tetrachordal melody on the black keys, heard for the first time in measures 3-4. That motive is labelled TETRA on the example. Let us examine these motives, noting their parallel and symmetrical characteristics.

WIND

As a pitch collection, WIND is parallel. It can be understood as an octave transposed by a semitone (see Example 2-2A), and as a semitone transposed by an octave (Example 2-2B).

EXAMPLE 2-2A WIND as an octave transposed by a semitone



EXAMPLE 2-2B WIND as a semitone transposed by an octave

WIND is symmetrical as an unordered pitch collection and an ordered pitch collection. As an unordered pitch collection, Bb3-Cb4 and Bb4-Cb5 are symmetrical around E4/F4 (Example 2-2C). Finally, as an ordered pitch collection (the way it is presented here), WIND is retrograde symmetrical (Example 2-2D).

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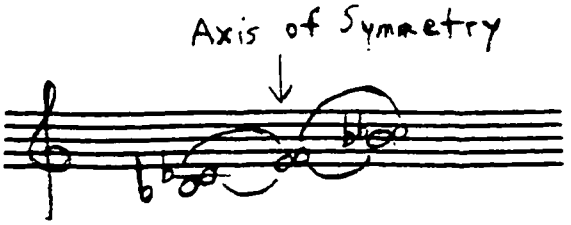
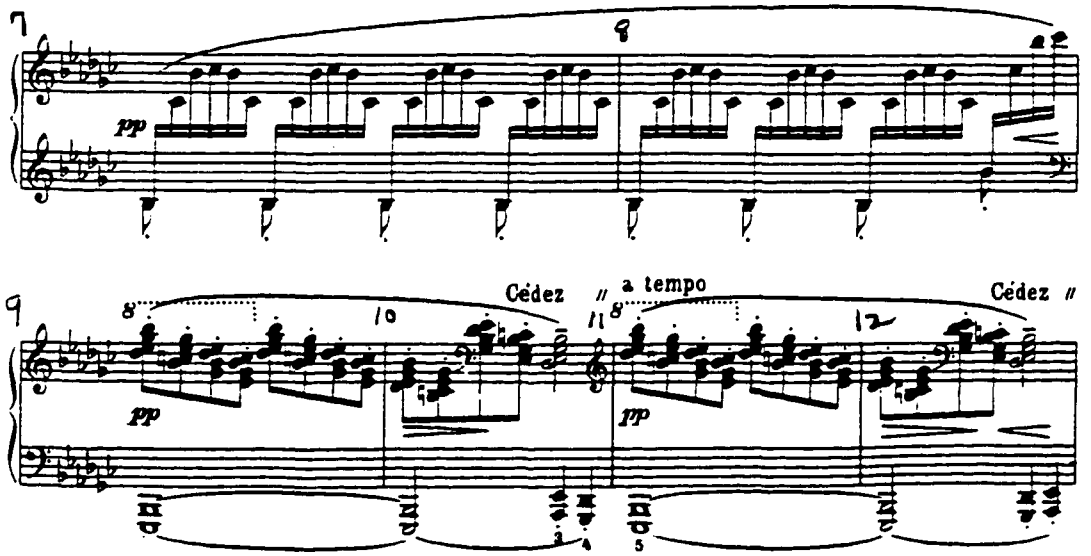


EXAMPLE 2-2C WIND - pitch symmetry

EXAMPLE 2-2D WIND - order symmetry

Alternation of two pcs is a characteristic feature of WIND, and that feature is prevalent throughout the piece in various transformations. One such transformation occurs in measures 9-12 (see Example 2-3).



EXAMPLE 2-3A Passage containing WIND and an inversion of WIND

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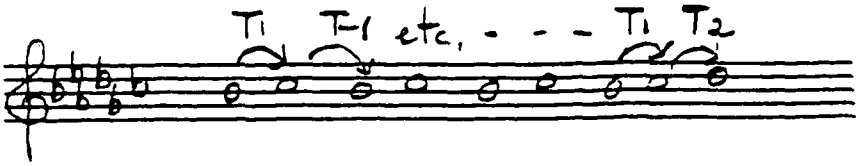
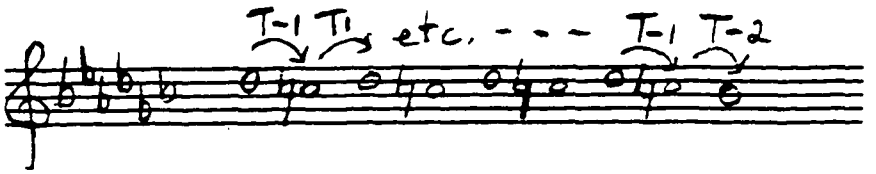
Here, for the first time in the piece, the headlong rush of sixteenth notes stops, and the shortest note value becomes an eighth note. Nevertheless, WIND is present in these measures, albeit in an altered form.

Example 2-3A shows measures 7-12. The alternating pcs Bb-Cb of WIND are heard in measures 7-8. On the last beat of measure 8 and the first beat of measure 9 there is a large registral shift. The right hand moves up, attaining Bb6 on the first beat of measure 9. At the same time, there is a stepwise motion from the Bb5-Cb6 on the last beat of measure 8 to the Db6 in the inner voice of the chord on the first beat of measure 9. The pcs of this passage are shown in Example 2-3B.



EXAMPLE 2-3B Pc order in WIND



EXAMPLE 2-3C Pc order in the inversion of wind

In measures 9-12, the right hand plays a series of chords, each of which contains the notes Eb, Gb and Bb. The fourth note in each chord is either a Db or a C. As the chords move down through three octaves, Db alternates with C as the "added note" in each chord. The pc alternation of Db and C duplicates, in inverted form and in augmentation, the alternation of the Bb-Cb of WIND. In

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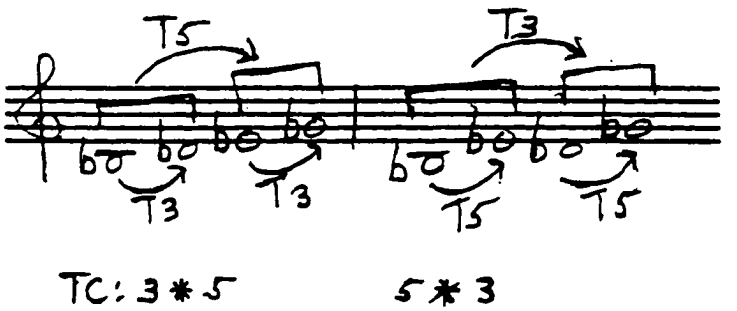
measures 10 and 12 there is a reversal of motion from inner to outer voice as the Db and C return to Bb. This is likewise an inversion of the Bb-Cb-Db of measure 8. (see Example 2-3C). In registral range, rhythmic motion and texture, this passage balances and contrasts with measures 1-8.

TETRA

TETRA, the second basic motive of this prelude is the tetrachordal melody on the black keys, first stated in the left hand in measures 3-4. TETRA has a pentatonic sound, and needs only an Ab to make it a complete pentatonic collection. (The Ab will be supplied as the piece progresses.)

Like WIND, TETRA is both parallel and symmetrical. TETRA is parallel as a pitch collection and as a pc collection: it is made up of two transpositionally related dyads. This is an example of what Cohn refers to as "transpositional combination."[39] TETRA may be construed as two T_3 intervals related at T_5, or as two T_5 intervals related at T_3 (see Example 2-4A).



EXAMPLE 2-4A TETRA generated by transpositional combination

As a pitch collection, TETRA is symmetrical around D4; it can be interpreted either as the symmetrical dyads Bb-D and Gb-Eb or as two symmetrical trichords--Bb-Db-Eb inverts around D4 into Gb-Eb-Db (Example 2-4B-C).

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[39] Cohn, "Inversional Symmetry and Transpositional Combination in Bartók," 23.

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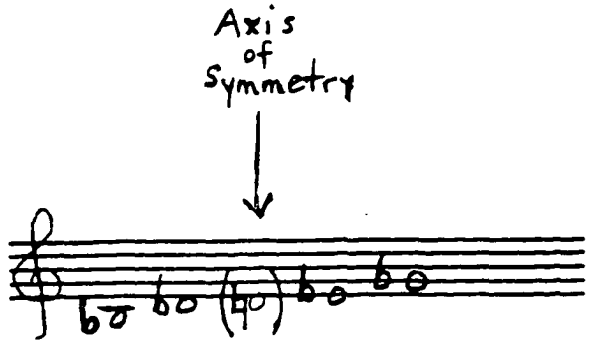
TETRA can also be thought of as a symmetrical pitch-class class collection invertible around D or Ab.



EXAMPLE 2-4B Symmetrical dyads of TETRA

EXAMPLE 2-4C Symmetrical trichords of TETRA

The parallel and symmetrical characteristics of both WIND and TETRA play an important part in the progression of the music. We shall now examine each motive in turn and show some of the ways in which it is manipulated and expanded. We shall also discuss the interaction of the two motives and the processes set in motion by their interaction.

WIND and Registral Symmetry

Registral symmetry and the processes of expansion and contraction play an important role in the overall texture and form of "Le vent dans la plaine." One of

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the most interesting features of the piece is the way in which the symmetrical structure of WIND engenders symmetry in registral treatment.

At the outset, WIND establishes the Bb3-Bb4 octave (with Cb4 and Cb5 as upper neighbors) as a central reference interval for registral events in the piece. Up until the last beat of the eighth measure, all the events take place within this octave, and expansion and contraction in register occur in relation to this central octave.

The registral centrality of WIND seems closely related to the title of the piece. It suggests that the central octave is like the "eye of a storm," a static area from which violent winds are radiating.

Example 2-5A is a diagram showing the overall form of the piece. Let us examine the form particularly as it relates to registral treatment. In total, the piece is 59 measures long. At the center of this span are seven measures of climactic registral expansion, measures 28-34.

There are 27 measures preceding and 25 following this climactic section. Measures 1-14 can be viewed as an exposition, which is balanced by the recapitulation and coda, measures 44-59, and each of these sections contains a large registral expansion. Measures 15-27 constitute a transitional section that builds toward the climactic middle section of the piece, which occurs in measures 28-34. This is balanced by a retransition in measures 34-43, which recedes from the highpoint to the initial registral level of the piece.

In measure 9, the energy that has been generated by WIND propels the music outward in both directions. The right hand leaps up and the left hand down two octaves. Example 2-5A shows how the two hands move symmetrically to the upper and lower registers of the piano. The right hand moves up an interval of +24 to Bb6, and the left hand moves down by an

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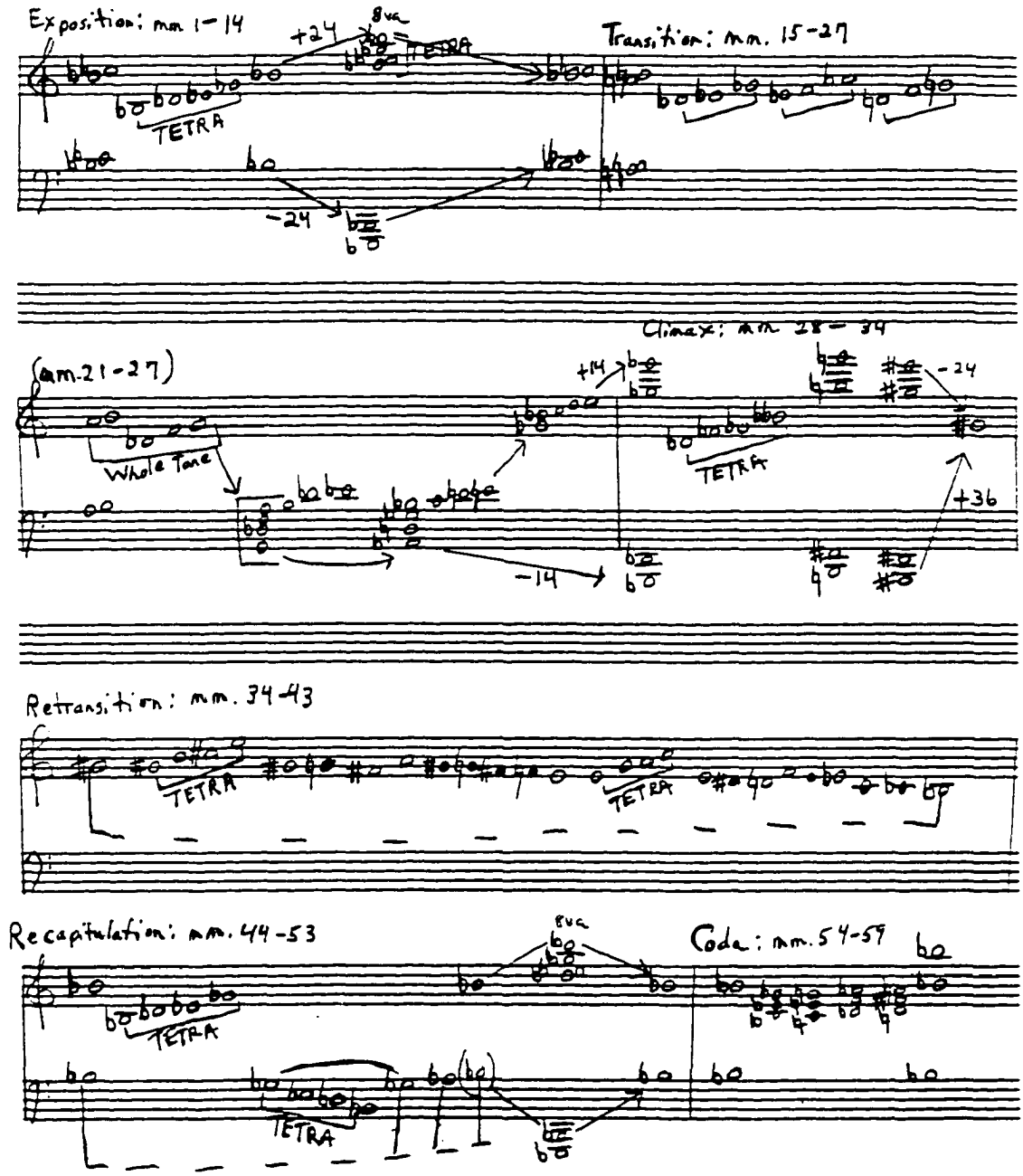

EXAMPLE 2-5A Diagram showing registral symmetry in "Le vent dans la plaine"

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interval of -24 to Bb1. Bb1 is supported by the Eb a fifth lower, so that in this particular instance, the registral symmetry does not involve the lowest note in the texture. Nevertheless, the two-octave displacement, in contrary motion, of Bb3 and Bb4 creates clear sense of symmetrical expansion. This great registral expansion is a dramatic moment in the music and establishes an important principle of motion for the entire piece. In measure 13-14, the music returns to its "steady state," the central octave outlined by WIND.

The return to the central octave in measures 13-14 completes a large-scale alternation in register. In the first section, the registral boundaries are delineated by the central octave. In measure 9, the music abruptly expands in register by two octaves in each direction, and then contracts, returning to the central octave in measure 13. This alternation in register parallels on a large scale the alternation from Bb3Cb4 to Bb4Cb5 and back that is characteristic of WIND. Thus, the first 14 measures of the piece exhibit a large-scale symmetry in registral movement.

The next great registral expansion occurs in measure 28, the beginning of the climactic middle section of the piece. Here, the hands again move symmetrically to the high and low registers of the keyboard. The Ab2 in the left hand in measure 27 moves to Gb1 in measure 28, a distance of -14. The right hand moves an interval of +14, from the E5 to Gb6.

At the end of this climactic section, in measure 34, everything converges for a moment on G#4. This motion is not completely symmetrical; the top voice moves down by -24, but the lowest voice moves up by +36 instead of +24. This begins a section (measures 35-44) during which the lowest voice in the texture moves chromatically from G#4 to Bb3. Throughout the section, the register below Bb3 remains inactive.

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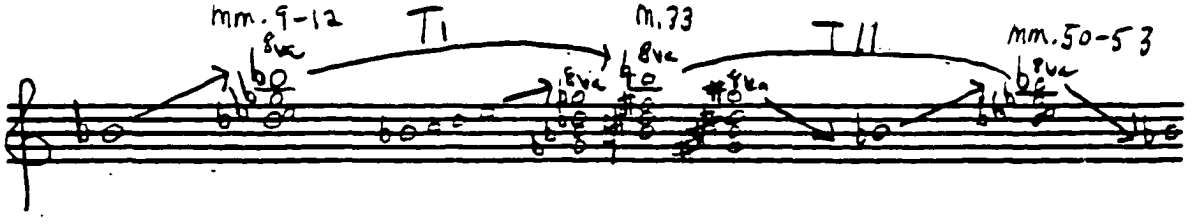
In measures 46-49, a statement of TETRA in the octave below WIND reactivates this octave. The statement of TETRA is concluded by a cadential motion Gb3-Ab3-Bb3. The Ab3 fills in the interval between the Gb and Bb and can also be understood as finally supplying the Ab3 that was withheld in measure 34.

A slightly varied repetition of measures 9-12 occurs in measures 50-53, with symmetrical expansion and contraction around the central octave. Then in the coda, four ascending major triads fill in the central octave chromatically. This chromatic ascent balances the chromatic descent of measures 34-43, and both of these chromatic motions are transformations of the T_1-T_{11} relationships in WIND.

The pcs of WIND are also heard at the registral highpoints of the piece (see Example 2-5B), which are the Bb6 heard in measures 9-12, the B natural a semitone above that in measure 33, and the Bb6 in measures 50-52.



EXAMPLE 2-5B Registral highpoints controlled by WIND

The symmetrical use of register as a form-building element in this prelude is highly interesting and significant. The establishment of a central octave as a registral center with expansion and contraction taking place on either side in symmetrical fashion presages the kinds of procedures found in some later

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twentieth-century music. In his fascinating discussion of Varèse's use of symmetry in organizing register, Jonathan Bernard cites a number of musical examples that bear a striking resemblance to Debussy's use of register in this prelude.[40]

TETRA, WIND and Whole-Tone Collections

There are two transitional sections in the piece, measures 15-27 and 34-43, and both sections involve the eventual presentation of the two complete whole-tone collections. In the first section, the process of mutation gives rise to the whole-tone collections, and in the second section these two collections come about through the process of accretion.

Turning to the first transitional section, measures 15-27, we find a complete whole-tone collection taking shape gradually, through a series of transformations applied to the collection formed by WIND and TETRA. Example 2-6A shows measures 3-4, where WIND and TETRA appear in their original form, and measures 15-26, in which the transformation takes place. Example 2-6B condenses these measures into a sketch showing how the collection of WIND + TETRA slowly mutates into a whole-tone collection.

The original collection of WIND + TETRA, as heard in measures 3-4, is Bb-Cb-Db-Eb-Gb. In measure 15, the Bb moves by T_{11} to Bbb. This motion grows logically out of the T_1/T_{11} alternation of WIND. The Cb of WIND does not change, and the T_1 relationship between Bb-Cb of WIND is thus transformed into a T_2 relationship. The upper trichord of TETRA (Db-Eb-Gb) also does not change, and the lowering of Bb to Bbb creates the whole-tone subset Bbb-Cb-Db-Eb.

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[40]Bernard, *The Music of Edgard Varèse*, 50-51. Bernard notes that Debussy was an important influence on Varèse (5 and 31). Debussy's use of register may well have set the stage for Varèse's own procedures.

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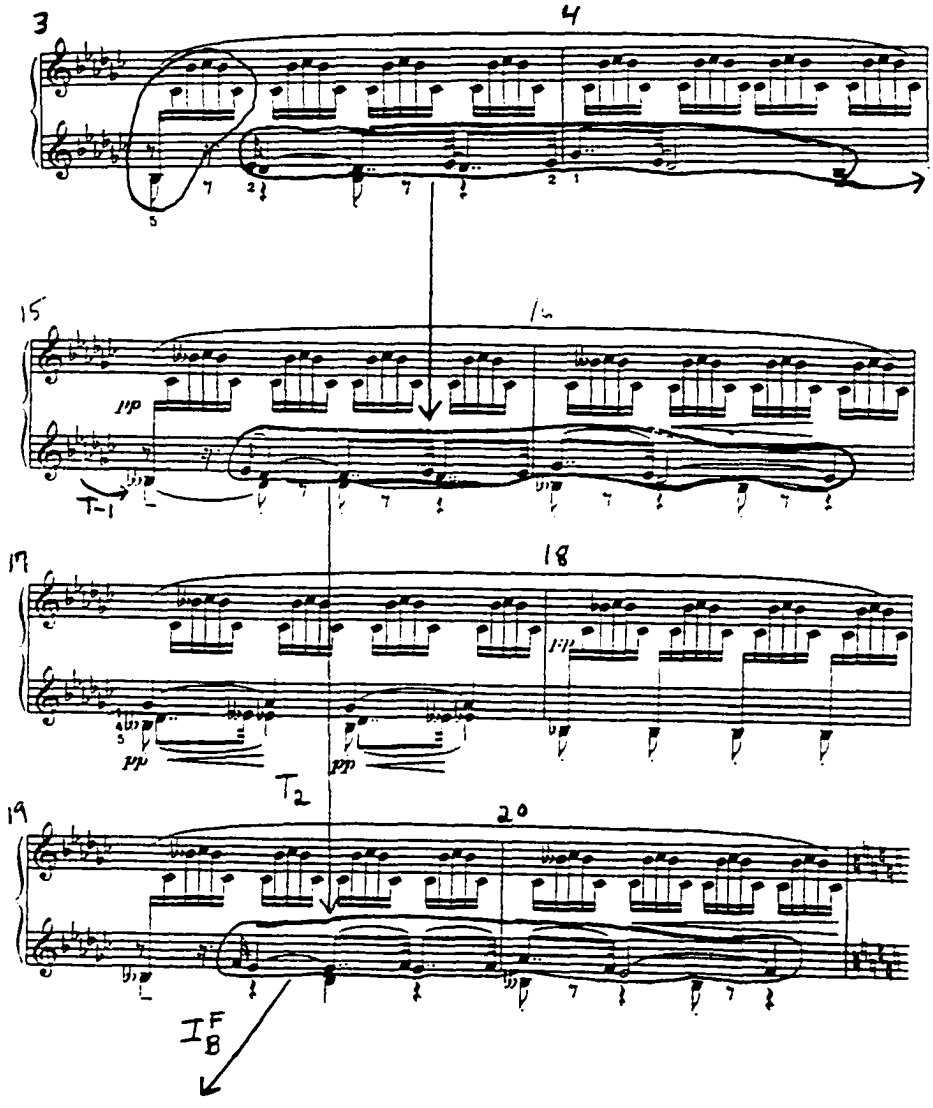
In measures 19-20, the upper trichord of TETRA is transposed by T_2: Db-Eb-Gb is transposed to Eb-F-Ab. This transposition adds another note, F, to the growing whole-tone collection.



EXAMPLE 2-6A Transformation of WIND and TETRA by mutation

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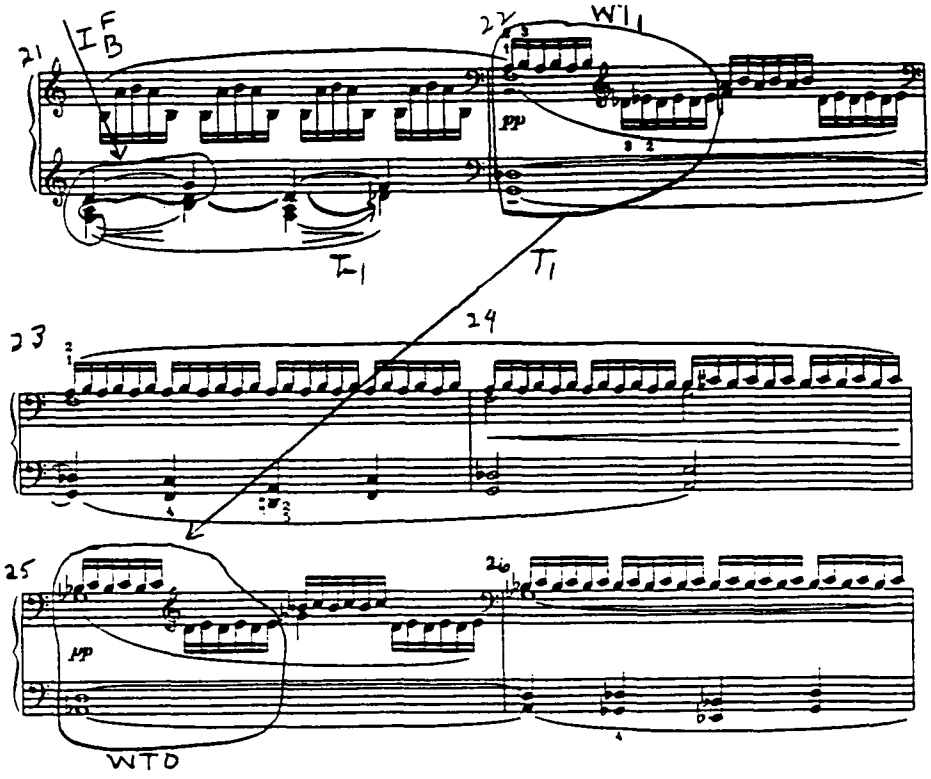
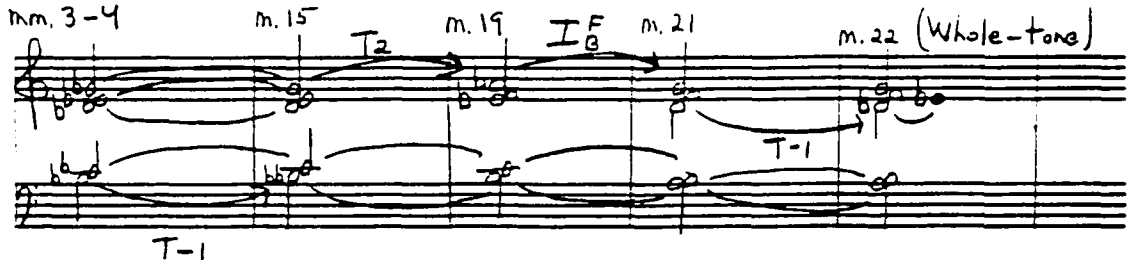
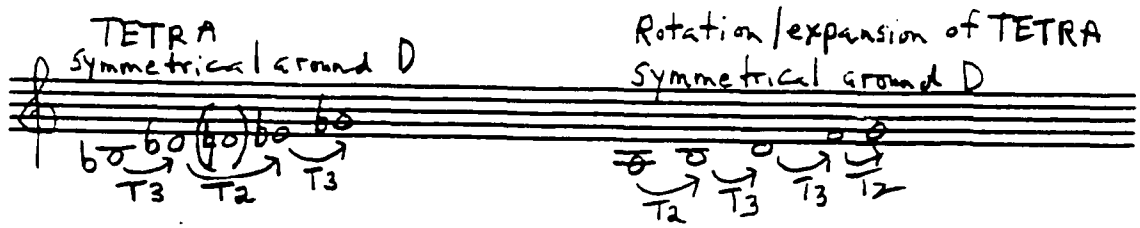


EXAMPLE 2-6A (continued)



EXAMPLE 2-6B Transformation of WIND and TETRA by mutation in measures 15-26



EXAMPLE 2-6C TETRA and its rotation and expansion in measure 21

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In measure 21, Bbb and Cb remain unchanged but are respelled as A and B. At the same time, the T_2 transformation of the upper trichord of TETRA (Eb-F-Ab) is inverted to produce G-F-D. The collection A-B-D-F-G is an expanded form of TETRA in which the order of the intervals is rotated (see Example 2-6C). The trichords A-B-D and G-F-D are in an inversional relationship; like the original form of TETRA, this new form is symmetrical around D4. D is the only note in this collection that is not a member of WT1.

On the last beat of measure 21, D moves by T_{11} to Db, completing the whole-tone collection (WT1) that has been evolving over measures 15-21. WT1 is heard in measure 22. In measure 25, this collection is transposed up a semitone, producing WT0.

The T_1 transposition of WT1 to WT0 returns A3 to Bb3, reversing the T_{11} motion from Bb3 to Bbb3 that occured in measure 15. The two whole-tone collections are of course in a T_1/T_{11} relationship, and this direct T_1 transpositon of WT1 to WT0 ultimately refers back to the T_1/T_{11} relationship of WIND.

The kind of transformation that takes place in this passage is especially illuminating in thinking about continuity and progression in this piece and in the other preludes we shall be discussing. Here we see the whole-tone collection coming about as the result of a process. In this instance, the process, which we have termed mutation, involves a kind of voice-leading comparable to the process of tonicization in tonal music. Tonicization comes about through a voice-leading process that establishes a new key. It is a process that often takes place over several measures, during which we usually hear the music as being in a transition stage. Such transitions frequently are among a composition's most dynamic and exciting passages, and composers have often highlighted these passages through their use of dynamics, orchestration and other elements.

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The mutation in measures 14-27 also involves a transition that comes about through voice-leading, but with a different "slant" from tonal voice-leading. Instead of hearing the voice-leading as creating motion from one key to another, we hear one collection--WIND + TETRA--gradually mutating, first to WT1 and then to WT0.

In using the term "voice-leading" I in no sense mean to imply that this piece exhibits a hierarchical structure of the kind indicated by that term in Schenkerian analysis. In this regard, Straus's discussion of tonal versus atonal voice-leading is especially instructive.[41]

In the second transitional section of the piece, measures 34-43, the appearance of whole-tone collections is less overt. Rather, the two whole-tone collections constitute the middleground structure underlying an almost completely chromatic foreground.

After the arrival of the G# major triad in measure 34, T_{10}(WIND) is heard in measures 34-35. Over measures 36-44, this transformation of WIND is transposed down chromatically in parallel motion, punctuated by statements of TETRA (see Example 2-7A). The chromatic motion in this passage is generated by the semitone interval of WIND.

In measures 36-37, WIND and TETRA are presented at T_{10}. In measure 38, a descent by T_{-1} and T_{-1} again, G#-G-F#, is followed by an upward leap via T_3 to A. Both the F# and the A are emphasized, F# because it is the pitch where the chromatic descent first stops, and A because it is reached by leap.

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[41]Joseph N. Straus. "Voice Leading in Atonal Music," in *Music Theory in Concept and Practice*, ed. James M. Baker *et al.* (Rochester: University of Rochester Press, 1997) 237-274. Straus notes that because in post-tonal music there is no clear hierarchy of consonance and dissonance, it is not possible to make the kinds of voice-leading connections that can be made in tonal music. Nevertheless, we do hear connections between notes: "Anytime we say that two chords are related by transposition or inversion, we are also saying that each note in the first chord maps onto a corresponding note in the second, thus creating a network of linear connections between the chords." 243.

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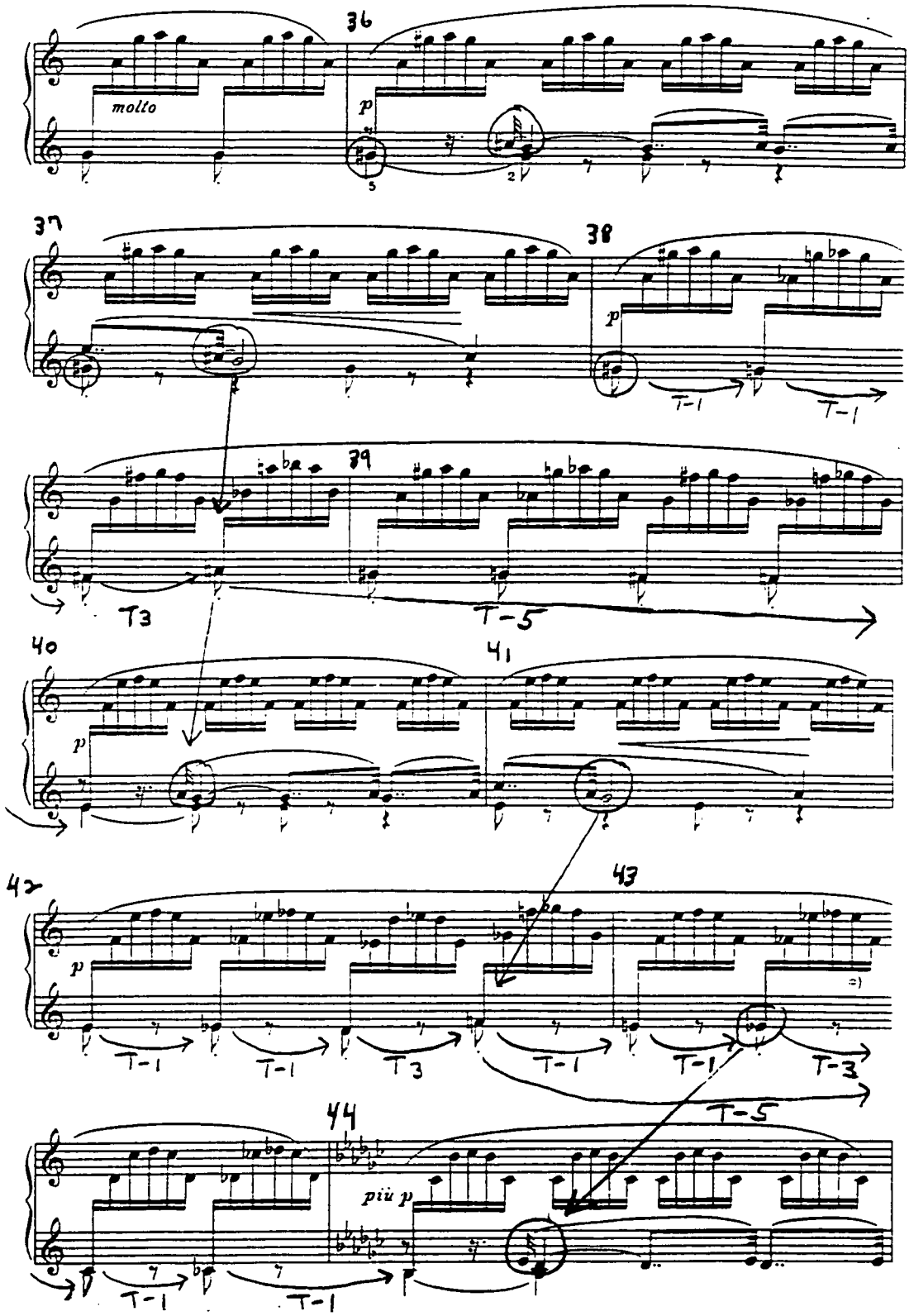

EXAMPLE 2-7A Transformation of WIND and TETRA in measures 36-44

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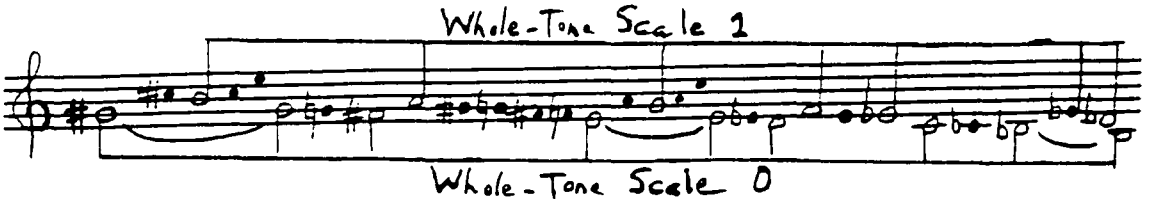
Now the descending chromatic motion resumes, starting on A and moving an intervallic distance of -5, arriving on E in measure 40. Here TETRA is restated at T_6.

In measures 42-43 the chromatic descent of WIND continues, moving down chromatically from E to Eb to D and then by T_3 to F. From here, the pattern is varied somewhat: the -5 interval from F to C is not completely filled in chromatically. F moves chromatically to Eb followed by a leap of -3 to C. Here again, Eb and C stand out from the chromatic voice-leading because of the -3 interval between them. Finally, C moves chromatically to Bb in measure 44, the beginning of the recapitulation. Here WIND and TETRA are heard at T_0.

Example 2-7B is a sketch showing how in measures 36-44, the combined statements of WIND and TETRA delineate the two whole-tone collections. The dotted line above the staff connects the notes of WT1; the dotted line below the staff connects the notes of WT0.



EXAMPLE 2-7B Whole-tone collections formed by the transformation of WIND and TETRA in measures 36-44

This transitional passage gradually unfolds the two whole-tone collections presented in aT_3 relationship. We can view this progression as an interval cycle: an interval of 3 successively transposed by T_{-2} (see Example 2-7C). The

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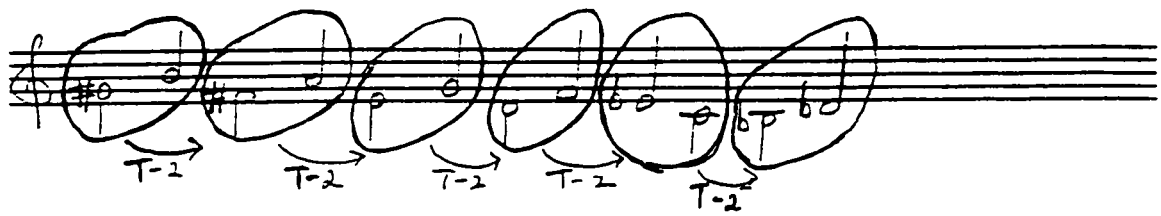
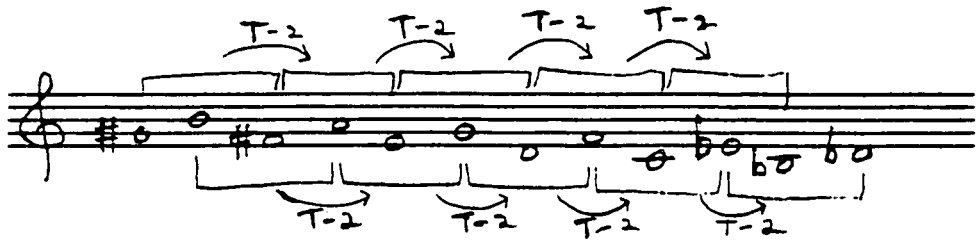
progression can also be heard as interlocking trichords of TETRA transposed recursively by T_{-2} (see Example 2-7D).



EXAMPLE 2-7C Interval cycle generated by the transformation of WIND and TETRA in measures 36-44



EXAMPLE 2-7D Overlapping trichords of TETRA in measures 36-44

Both the transitional sections discussed above--measures 15-27 and 36-44--involve gradually evolving whole-tone collections. The processes from which these collections result are quite different. In the first transitional section, the collection consisting of WIND+ TETRA is subjected to a process of gradual mutation, resulting in the eventual presentation of both whole-tone collections, which are heard in the foreground.

In the second section, the process can be described as one of accretion. By successively transposing a trichord of TETRA by T_2, the two whole-tone collections are "accumulated" bit by bit. And whereas in the first section the

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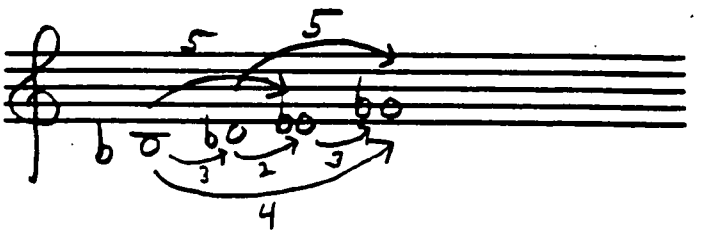
whole-tone collections are heard in the foreground, here the whole-tone collections unfold in the middleground.[42]

Projections of TETRA

As noted above in Example 2-1, TETRA is first heard in measures 3-4. TETRA is composed of two inversionally symmetrical trichords; each trichord contains the intervals 2, 3 and 5 (see Example 2-8A). We shall see that these intervals of TETRA determine important transpositions in the piece.



EXAMPLE 2-8A Intervals of TETRA

TETRA is a pentatonic subset; adding an Ab to TETRA would result in a complete pentatonic collection (and a complete "black-note" collection). This occurs in measures 9-12, as shown in Example 2-8B.

In this passage TETRA is reconfigured. The way in which this happens is reminiscent of Schoenberg's idea about the unity of vertical and horizontal musical space. In the right hand, two chords alternate as the music descends through three octaves. The first of these chords, and every alternate chord, is made up of the pcs of TETRA.

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[42] Forte finds an ascending whole-tone scale unfolding at middleground level in measures 1-22 of "La cathédrale engloutie." See Allen Forte, "Schenker's Conception of Musical Structure," *Journal of Music Theory* 3 (1959): 28-29.

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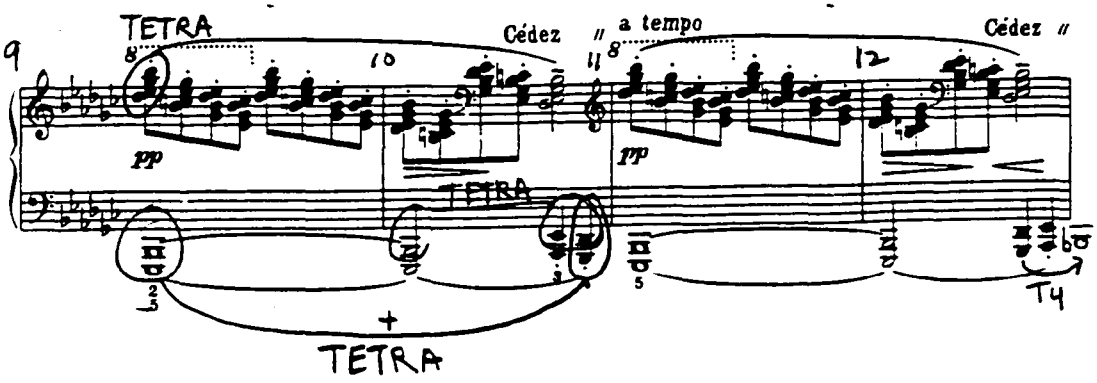
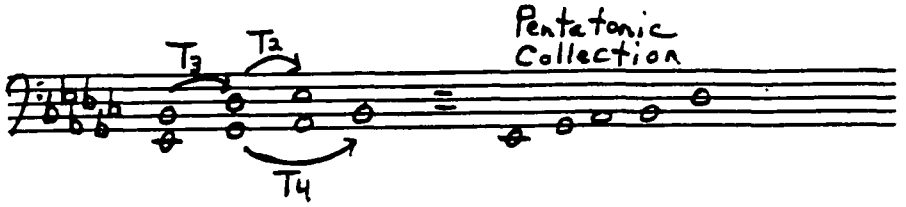


EXAMPLE 2-8B TETRA reconfigured as a chord and parallel fifths

In the left hand, TETRA is presented as "parallel fifths," Eb-Bb and Gb-Db. At the same time, the top voice of the fifths presents the pcs of one of TETRA's trichords, Bb-Eb-Db. Each of these pcs is doubled at an interval of 5. The doubling results in supplying the Ab needed to complete the pentatonic collection (see Example 2-8C).



EXAMPLE 2-8C TETRA extended to form a pentatonic collection in measures 9-12

The interval between the Gb and Bb of TETRA is now filled in stepwise by Ab, creating a cadential motion Gb-Ab-Bb. (The Bb is heard in measure 13.[43])

Parallel fifths presented in the two lowest voices now become a motif that figures prominently in the climactic section of the piece, measures 28-34 (see Example 2-9A).

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[43] Lewin, "Some Instances of Parallel Voice-Leading," 62-64. Lewin makes a convincing case for hearing the Bb, rather than Eb, as the structural cadential note in this passage. He also notes that the progression from Gb through Ab to Bb "expands to govern larger-scale structural melodic activity over the rest of the piece." (64)

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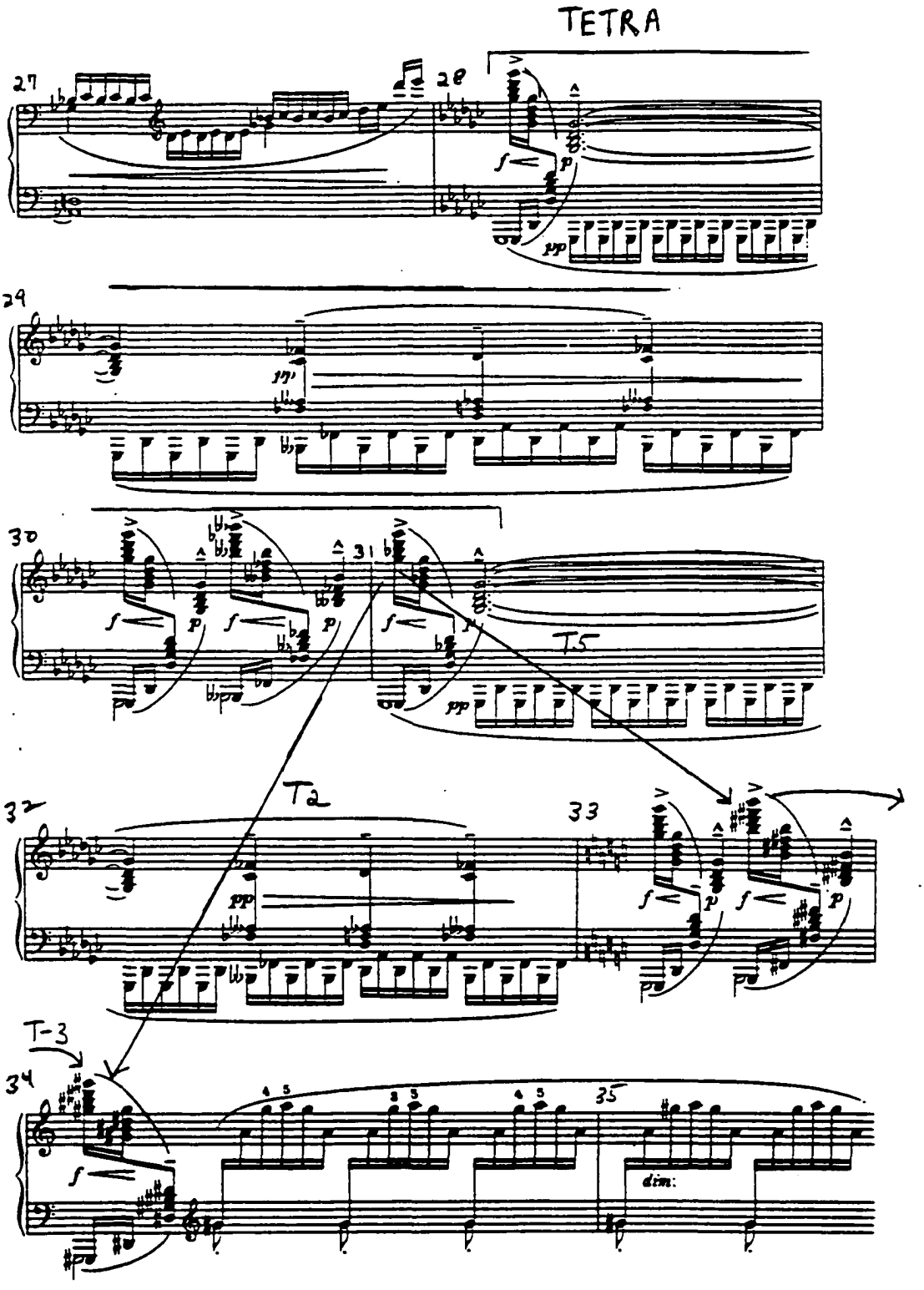

EXAMPLE 2-9A Projection of intervals of TETRA in measures 28-34

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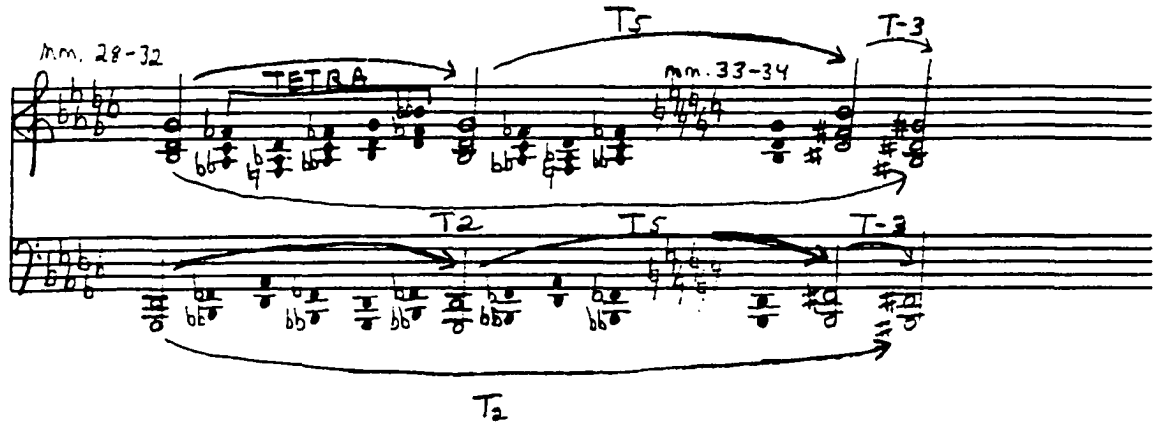
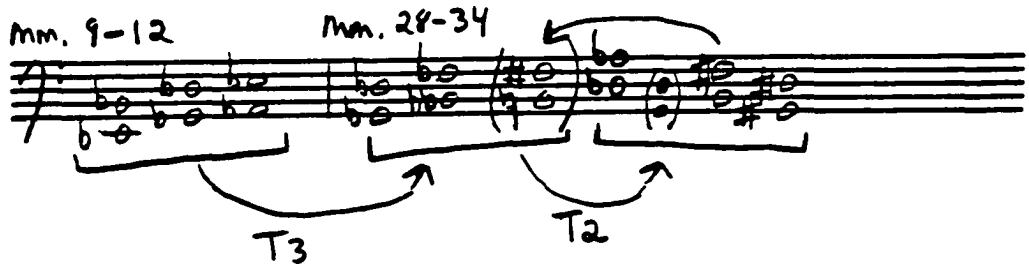
Example 2-9A shows how the progression of triads in measures 28-34 is governed by TETRA. The triads in the right hand are accompanied in the left hand by parallel fifths in the low register.



EXAMPLE 2-9B Reduction of Example 2-9A

Example 2-9B shows a reduction of measures 28-34. Over these measures the Gb major triad in measure 28 moves to the B major triad in measure 33, and finally to the G# major triad in measure 34. The overall motion of this passage is the T_2 motion from Gb in measure 28 to G# (Ab) in measure 34. The roots of these triads project the intervals of each of TETRA's trichordal subsets: 2, 3 and 5. Thus, TETRA is functioning here as a projected set. Its intervals control the progression of parallel triads on a large scale. Folded into this large-scale projection is a more localized statement of TETRA at T_3, heard in the top voice in measures 28-32.



EXAMPLE 2-9C Intervals of TETRA as projected by three groups of parallel fifths in measures 9-12 and 28-34

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The left-hand parallel fifths in measures 28-34 recall those of measures 9-12. Example 2-9C shows the relationship of the fifths in these two passages.

The fifths in measures 9-12 form a complete pentatonic collection, and those in measures 28-34 form two more collections. Each collection is marked by a bracket. The arrow indicates that the B-F# fifth that occurs in measure 33 participates in two collections.

As Example 2-9C shows, the second collection is the T_3 transposition of the first group, and the third group is the T_2 transposition of the second. Together, the three groups of parallel fifths project the intervals 2, 3 and 5 of TETRA.

The analysis above shows a fascinating example of the process of projection. In this instance, intervals of the trichordal subsets of TETRA control the transposition levels of parallel triads during the climactic section of the piece. Likewise, the transpositions of a pentatonic collection over a large section of music are governed by TETRA.

We have seen that the two basic motives of this piece, WIND and TETRA, are both parallel and symmetrical. We have also seen how particular features of these motives give rise to processes in which parallelism and symmetry play a large role. The processes of expansion and contraction, mutation, accretion and projection shape the course of the music over large sections.

Perhaps an important clue to the nature of this music is expressed in the title, which, as always in the preludes, is placed at the end of the piece. "Le vent dans la plaine" conjures up the forces of nature, constantly moving, but with a cyclical character, a pendulum-like alternation. Forms and shapes are repeated and transposed in a continuing parallelism, which is part of a regularly recurring cycle, a grand and awesome symmetry.

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CHAPTER 3

"Les sons et les parfums tournent dans l'air du soir"

The previous chapter dealt with some of the parallel and symmetrical features of the third prelude of Book One, "Le vent dans la plaine." Of particular interest in our analysis were the ways in which two motives were transformed and extended to give rise to parallel and symmetrical structures.

The fourth prelude, to be discussed in this chapter, is "Les sons et les parfums tournent dans l'air du soir." The title is a line from Baudelaire's poem "L'harmonie du soir," a poem that expresses a central concept of Baudelaire's aesthetic--that of the interrelatedness of all sensory experiences.[44] Baudelaire's poem contains many metaphors that link the senses to one another, conveying the idea that a sensory impression is not experienced as a discrete, isolated event, but rather in association with all the other sensations that occur together with it. These related sensations are closely intertwined in the psyche of the person experiencing them in "a state of mind known as synesthesia, the fusion of the senses into a single harmonious sensation."[45] Thus, one might say that there is a kind of parallelism and symmetry in the relationships between the different senses. The use of parallelism and symmetry in "Les sons et les parfums tournent dans l'air du soir" gives musical substance to this poetic idea.

As Allen Forte has noted, this prelude contains many examples of octatonicism.[46] Dominant seventh and half-diminished chords are almost ubiquitous in this prelude, and these collections are transposed by tritones and

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[44] See Paul Roberts, *Images: The Piano Music of Claude Debussy* (Portland, Ore.: Amadeus Press, 1996) 71-74 for an interesting discussion of the relationship of Baudelaire's writings to this prelude.

[45] Ibid., 74.

[46] Forte, "Debussy and the Octatonic," 147-148 and 167.

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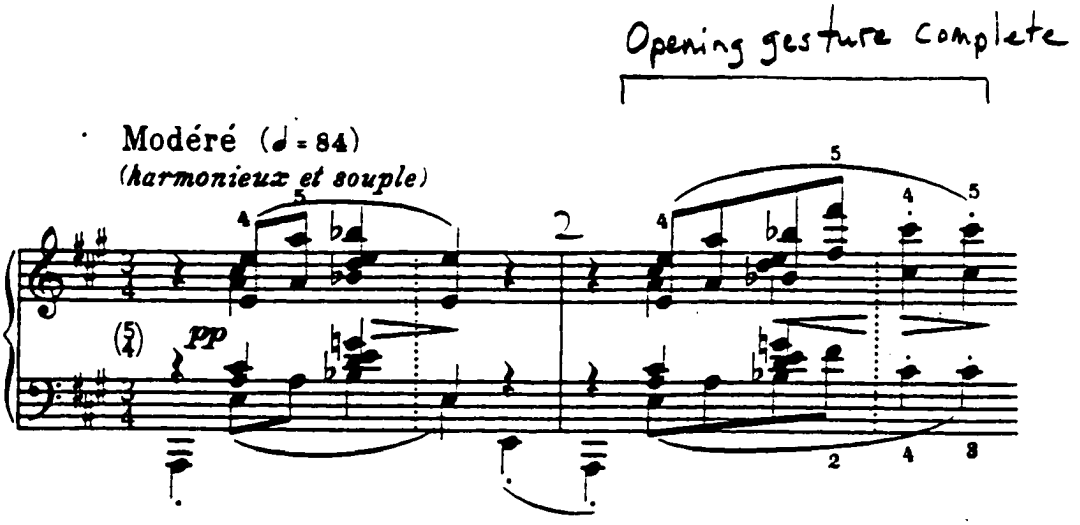
minor thirds. This frequently results in the unfolding over several measures of a complete, or almost complete, octatonic collection.

The opening gesture of the prelude is of the greatest importance in giving rise to many of the parallel and symmetrical features of the piece. Measures 1-2 set forth the opening gesture; the gesture is begun in measure 1 and then heard in complete form in measure 2 (see Example 3-1).



EXAMPLE 3-1 Opening gesture of "Les sons et les parfums"

The opening gesture has a protean quality. It is rich in subsets, each of which participates in parallel and symmetrical structures in the piece. As the piece progresses, one subset comes to the fore and then recedes in importance as another subset emerges. The opening gesture recurs several times throughout the piece, serving as a kind of marker of its large formal articulations.

The prelude falls into three sections: Section 1--measures 1-23; Section 2--24-37; and Section 3--38-54. The beginning of each section (and, in the case of Section 1, the end) is marked by the appearance of the opening gesture. In each section, subsets of the opening gesture are transformed by parallel and symmetrical processes.

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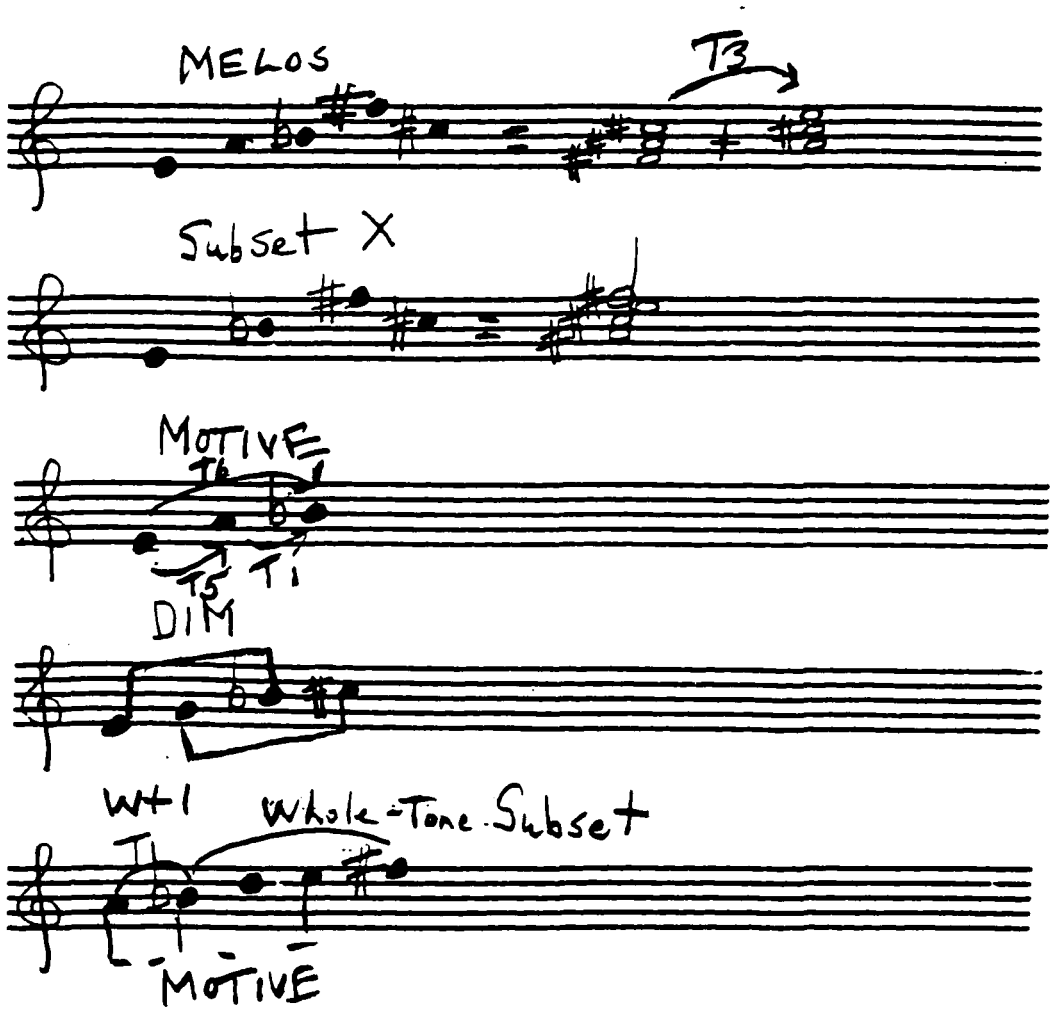
We shall begin by identifying the subsets of the opening gesture and then discuss the role of each subset as it relates to parallelism and symmetry. There are five important subsets of the opening gesture. They are shown in Example 3-2.



EXAMPLE 3-2 Subsets of the opening gesture

The melody of the opening gesture, presented in the topmost voice and doubled in two octaves below, is the first subset; it will be referred to as MELOS. MELOS is heard as a melody throughout the piece. It also has a harmonic

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function. MELOS is a subset of Octatonic Collection 3, and Example 2 shows that it can be heard as two major triads related at T_3. Among other things, transpositions of MELOS will eventually give rise to a complete octatonic collection.

MELOS also appears in a modified version, which we shall call subset X, or simply X. X is the four-note collection F#-E-C#-Bb (0258); it is MELOS without the pc A. X and its transpositions and inversions determine the harmonic content in many areas of the piece.

MOTIVE is the three-note cell E-A-Bb that begins MELOS. The intervals of MOTIVE, 1, 5 and 6, are present melodically throughout the piece. In addition, these intervals determine many of the important levels of transposition.

DIM is the diminished-seventh chord E-G-Bb-C#, a completely parallel and symmetrical structure. It is formed by the E-Bb of MOTIVE and its T_3 transposition, G-C#. DIM is a constitutent of the harmony of the opening gesture and then is "filtered out" to become the main harmony in measures 6 and 8. In the course of the piece DIM emerges as an important subset. It is particularly important in determining transpositional levels.

The last subset to be considered is labelled as W+1. W+1 is a gapped whole-tone subset with an added half-step. W+1 also has an important connection with MOTIVE. MOTIVE is embedded in W+1, as indicated on the example, and the semitone in MOTIVE generates the characteristic sonority of W+1--that of a whole-tone subset plus a semitone.

There is a great deal of interplay among these subsets, and, as noted above, a particular subset will sometimes come into sharp focus, then fade in importance as another subset becomes prominent. An overview of the main harmonic areas of the piece will clarify this point (see Example 3-3).

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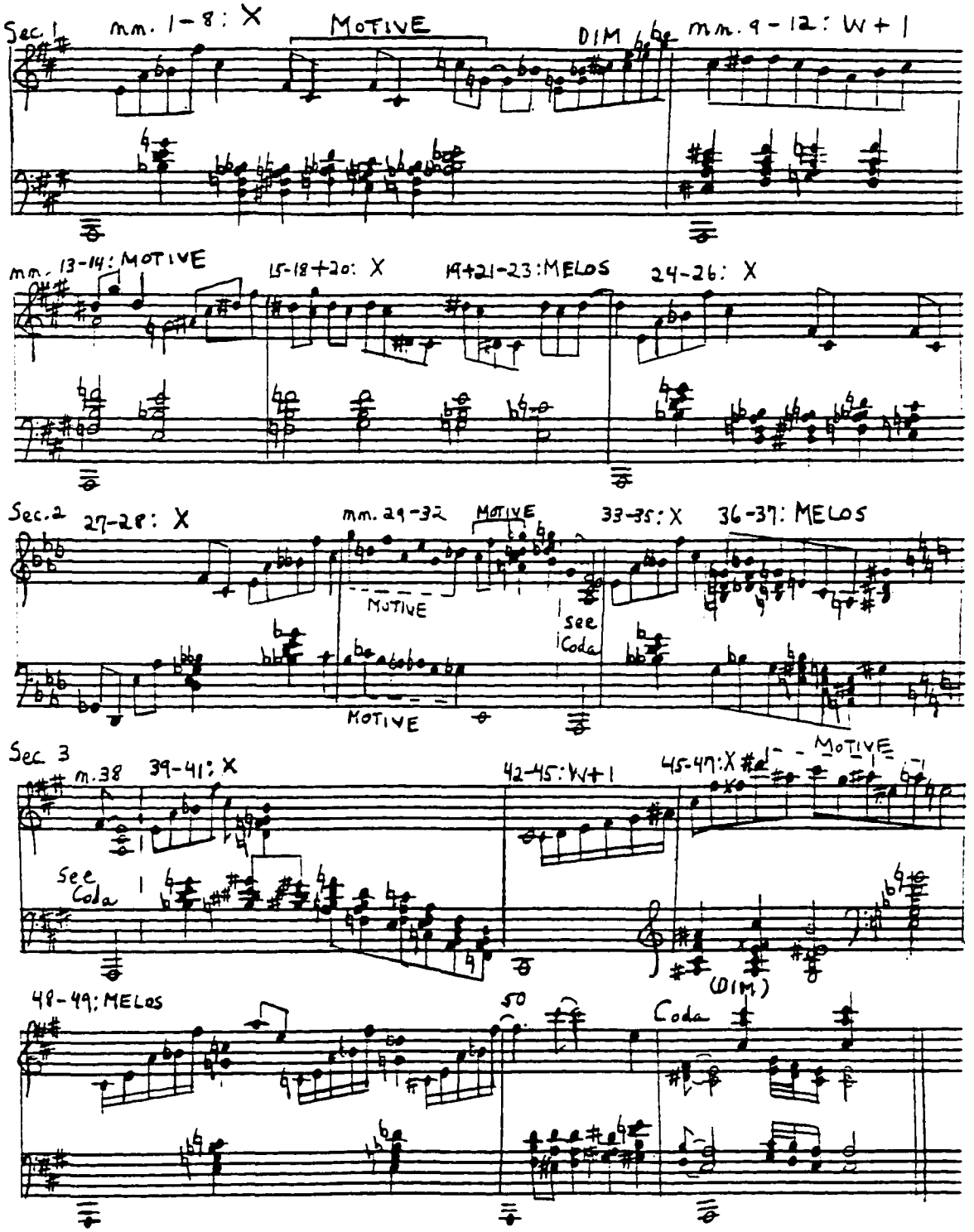

EXAMPLE 3-3 Diagram of "Les sons et les parfums"

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Example 3-3 is a diagram showing the important harmonic areas of the prelude. The measure numbers and subsets listed above the staff show the span of each area and the subset that controls it. Thus a trajectory for each subset can be followed throughout the piece.

Let us examine the part of the diagram that encompasses Section 1. In measures 1-8, transformations of subset X predominate, with DIM coming into play in the final bars.

In measures 9-12, forms of subset W+1 come to the fore, and these measures are dominated by a whole-tone collection. In measures 15-18 and 20, transformations of X again comes to the fore, followed by measures 19 and 21-23 in which forms of MELOS predominate. The end of Section 1, measures 24-26, brings a modified return of measures 1-4 and a re-emergence into prominence of forms of X. The path of each subset can be traced in similar fashion through Sections 2 and 3.

In the discussion to come, we shall examine the transpositions and inversions of each subset in each area, and we shall also consider the kinds of connections that exist between the forms of the subsets across areas. All of these connections will have parallel and/or symmetrical characteristics.

Subset X

We shall begin by examining the role of the subset X and its transformations in each of the three sections of the prelude. We shall define as $T_0(X)$ the form of X shown in Example 2: F#-E-C#-Bb. Transpositions and inversions of X are important in creating many of the parallel and symmetrical relationships in the piece and in establishing harmonic continuity.

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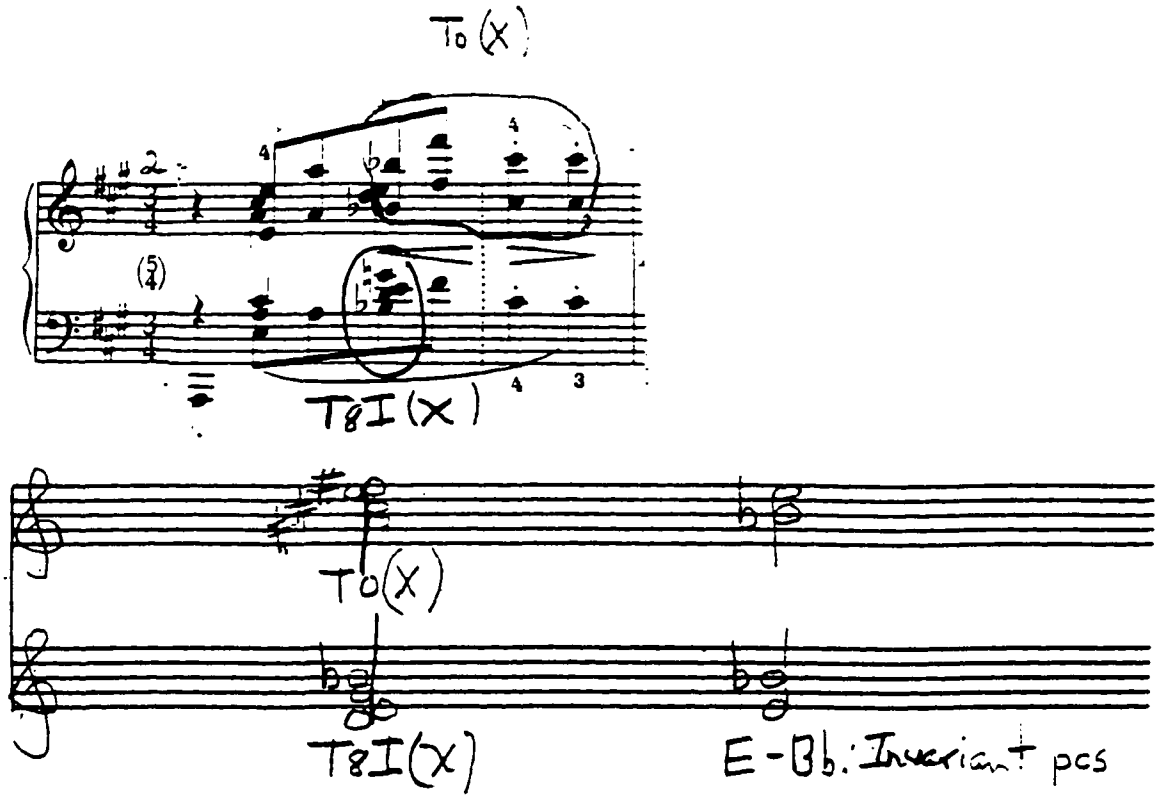
Section 1

The very first inversion of X occurs in the opening gesture itself. As Example 3-4 shows, $T_0(X)$ and $T_8I(X)$ occur here almost simultaneously, in an overlapping configuration. The sonority created by this collection becomes the signature harmony of the piece.[47]



EXAMPLE 3-4 Forms of subset X in the opening gesture

$T_0(X)$ and $T_8I(X)$ share the dyad E-Bb, and the pc collection they form is invertible around E or Bb. Throughout this prelude we shall see that linking transformations of various subsets through invariant pcs is an important strategy

[47] Developments in Neo-Riemannian Theory have led to some interesting ways of thinking about chords that are related by inversion, such as dominant-seventh and half-diminished chords. See Childs, "Moving Beyond Neo-Riemannian Triads."

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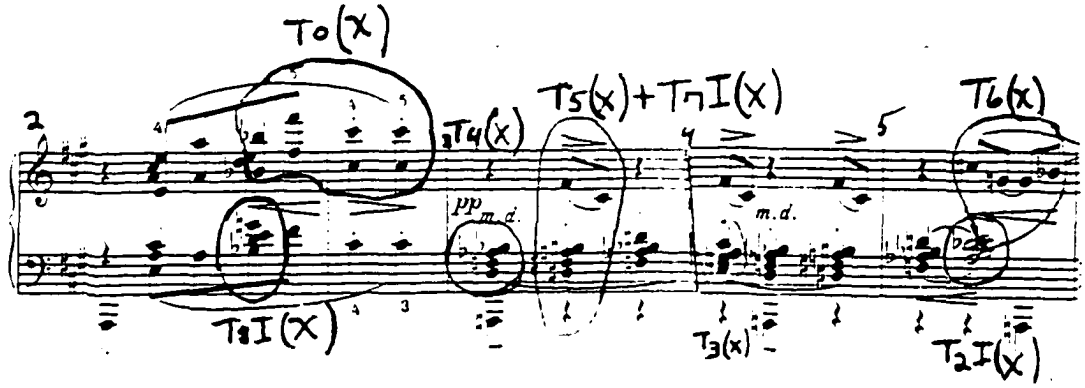
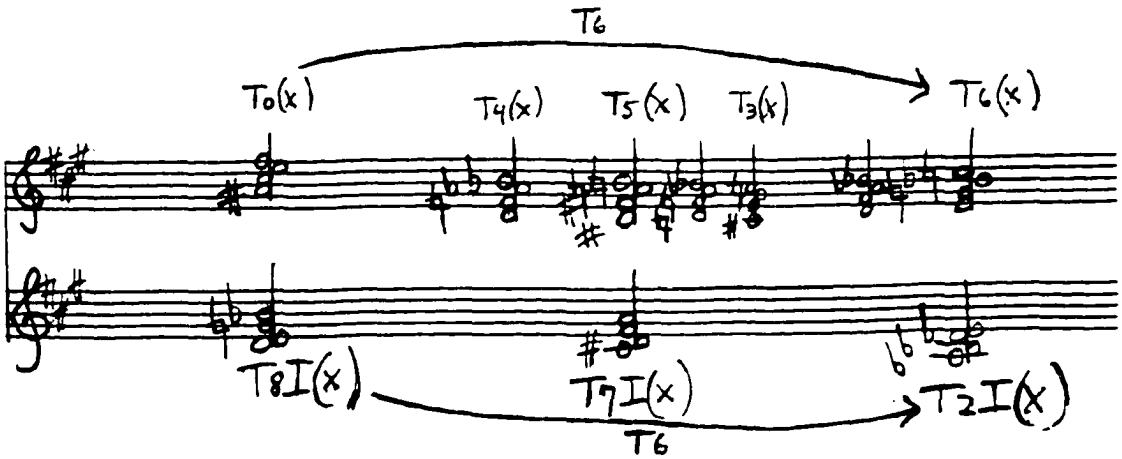
in establishing and maintaining continuity. We shall also note the importance of T_6 as an interval of transposition.

Parallel and symmetrical relationships created by transformations of X continue following the opening gesture. Example 3-5A shows measures 2-5; transpositions and inversions of X are circled on the example. Example 3-5B is a reduction of measures 2-5 in which the pcs of X and its transpositions are shown on the top staff and inversions of X on the bottom.



EXAMPLE 3-5A Forms of subset X in measures 2-5



EXAMPLE 3-5B Reduction of Example 3-5A

Let us first inspect the transpositions of X in this passage. In measures 3-5 there are four transpositions of X: $T_4(X)$, $T_5(X)$, $T_3(X)$ and $T_6(X)$. There are fewer inversions of X than transpositions in this passage. In measures 3 and 4, $T_7I(X)$

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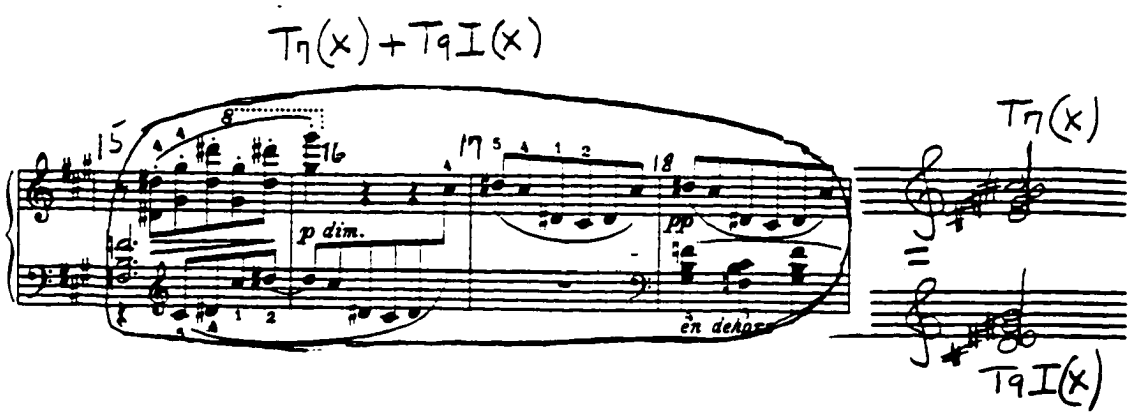
is heard twice, and in measure 5 $T_2I(X)$ appears. $T_7I(X)$ is heard together with $T_5(X)$. This is an interesting combination. These two inversionally related sets have three pcs in common, whereas $T_0(X)$ and $T_8I(X)$ share only two pcs.

In measure 5, $T_6(X)$ and $T_2I(X)$ appear. Together these two forms of X are the T_6 transposition of $T_0(X)$ and $T_8I(X)$. So the entire "signature harmony" of the opening gesture is transposed by T_6. In this transposition, the pcs of DIM, E-G-Bb-C#, are invariant, so that the presence of that subset is repeated and reinforced.

Transformations of X determine the pc content of measures 15-18 (see Example 3-6).



EXAMPLE 3-6 Forms of subset X in measures 15-18

All of the pcs in this passage can be construed as $T_7(X)$ combined with its inversion around G#/D, $T_9I(X)$. This collection is the T_2 transposition of that formed by $T_5(X)$ and $T_7I(X)$ in measures 3 and 4.

Measures 24-26 bring Section 1 to a close with a modified reprise of measures 1-4.

There are some important relationships among the various forms of X found in this first section. These relationships will be discussed in greater detail below. For the moment it is sufficient to point out again the importance of

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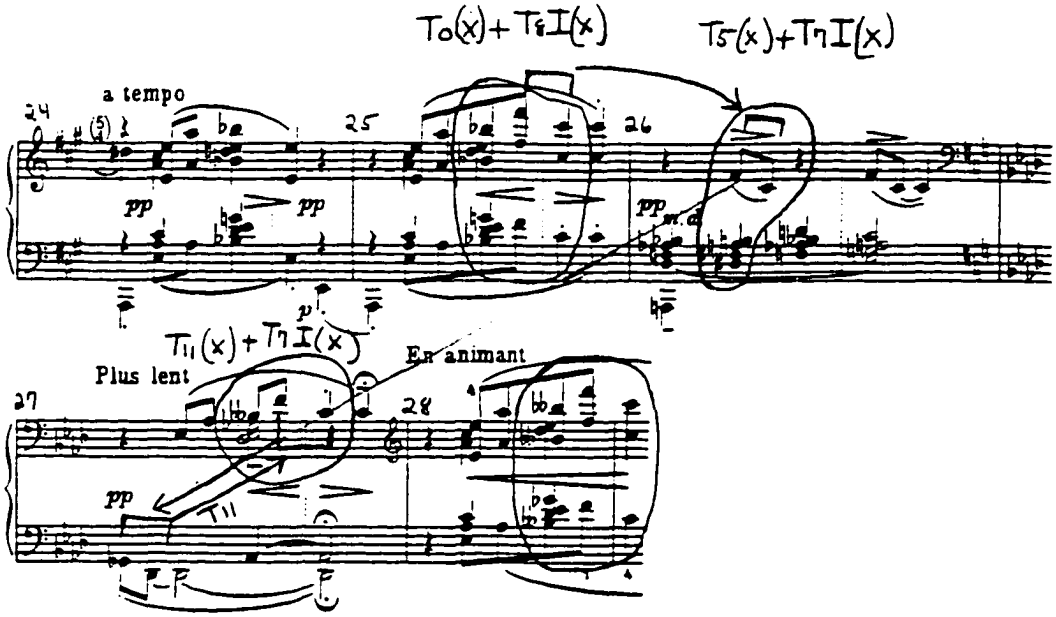
transpositions and inversions of X in determining much of the pc content of Section 1.

Section 2

Section 2 presents a tonal contrast with Section 1: Section 1 is in "A major" and Section 2 is in "Ab major." So there is an overall T_{11} relationship between the first and second sections of the piece. Example 3-7 shows the transition between Sections 1 and 2.



EXAMPLE 3-7 Transformations of subset X in the transition between Sections 1 and 2

Section 1 concludes with measures 24-26, which are identical to measures 1-3. The F#-C# that is part of $T_0(X)$ in measure 25, is inverted in measure 26 to become part of $T_7I(X)$, which is heard with $T_5(X)$. In measure 27, F#-C# is respelled as Gb-Db and heard with a new symmetrical partner, $T_{11}(X)$. A very clear T_{11} relationship between the F#-C# and the F natural-C natural is heard in the presentation of $T_{11}(X)$. $T_{11}(X)$ and $T_7I(X)$ are heard again in measure 28 as part of a complete statement of the opening gesture at T_{11}.

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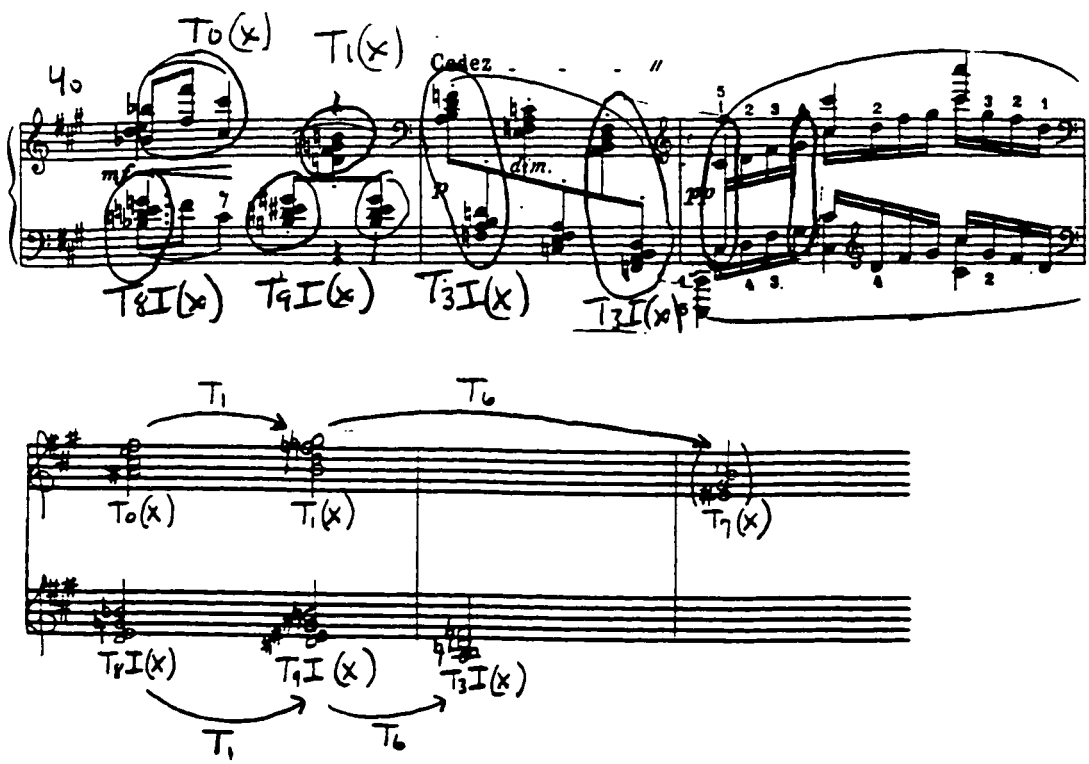
This transition is an instance the type of parallelism we have termed a planar shift. At the beginning of Section 2, there is a very clear semitone shift when the opening gesture is heard first at T_0 and immediately afterward (in somewhat modifed form) at T_{11}, creating the sense of the music moving between two parallel planes.

This is an especially interesting example of the close relationship between parallelism and symmetry in these preludes. The process by which the opening gesture in "A major" arrives at its parallel statement at T_{11} involves both transposition--parallelism--and inversion--symmetry.

Section 3

$T_0(X)$ and $T_8I(X)$ of the opening gesture return at the beginning of Section 3. Example 3-8 shows the transformations of X that take place in measures 40-42.



EXAMPLE 3-8 Forms of subset X in measures 40-41

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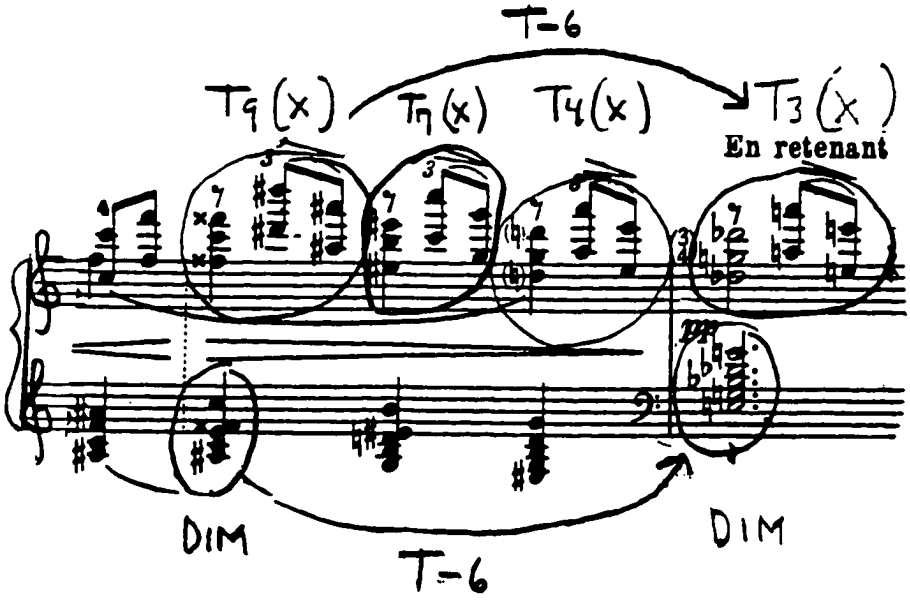
In measure 41, $T_9I(X)$ is transposed by T_6 to $T_3I(X)$. The expected symmetrical partner of $T_3I(X)$ is $T_7(X)$. $T_7(X)$ is not heard in measure 41, but the F-B tritone, so prominent in measures 40-41, can be heard as combining with the C# and G# in measure 42 to form $T_7(X)$. Although this latter analytical connection may seem slightly forced to some readers, it is reinforced by a couple of important factors. First of all, we have by this time become accustomed to the many T_6 relationships in the piece. Second, we have already heard $T_7(X)$ in measure 40, when the C# there combines with $T_9I(X)$ to form $T_7(X)$ and $T_9I(X)$. The C# and G# of measure 40 are connected to and reiterated by the C# and G# of measure 42. In the interim, in measure 41, $T_9I(X)$ is transposed by T_6, so we hear $T_7(X)$ and two of its symmetrical partners, $T_9I(X)$ and $T_3I(X)$.

The extended C# pedal in measures 42-45 prepares a somewhat modified presentation of the opening gesture at T_9 in measure 46 (see Example 3-9).



EXAMPLE 3-9 Forms of subset X and DIM in measures 46-47

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In this presentation, $T_9(X)$ is not accompanied by an inversion of itself, but by DIM, the diminished-seventh chord E-G-Bb-C#. Here DIM is substituted for the expected complement of $T_9(X)$,$T_5I(X)$. In fact, DIM differs from $T_5I(X)$ by only one note: a Bb is substituted for a B natural. $T_5I(X)$ has been transformed into DIM. This transformation will be discussed later in the chapter.

In measure 47, the collection formed by $T_9(X)$ and DIM is transposed by T_{-6}, resulting in $T_3(X)$ plus DIM. (Since this particular transposition takes place in p-space it seems appropriate to mention its direction.) DIM of course remains invariant under transposition by T_{-6}. Between T9(X) and T3(X), two additional transpositions of X occur, T7(X) and T4(X), together with associated transformations of DIM.

The T_{-6} transposition of $T_9(X)$ to $T_3(X)$ and the T_{-6} transposition of DIM in measure 46 is the counterpart of the T_6 transposition of $T_0(X)$ and $T_8I(X)$ to $T_6(X)$ and $T_2I(X)$ that occurs over measures 2-5 (compare Example 3-9 with Example 3-5). The invariant pcs of all of these transpositions and inversions are those of DIM: E, G, Bb, C#.

The above examination of the forms of X is as yet incomplete. In a subsequent discussion, we shall show how the various forms are organized over the course of each section of the piece.

MELOS

The next subset to be considered is MELOS. MELOS is the melody of the opening gesture, as shown in Example 3-2. It occurs throughout the piece with each appearance of the opening gesture. Transpositions of MELOS also occur in two other parts of the piece, measures 21-24 and 46-48. The first of these passages occurs toward the end of Section 1 (see Example 3-10).

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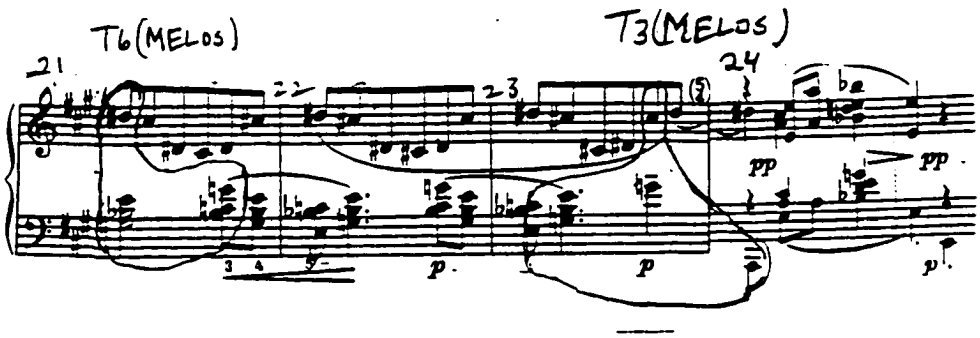
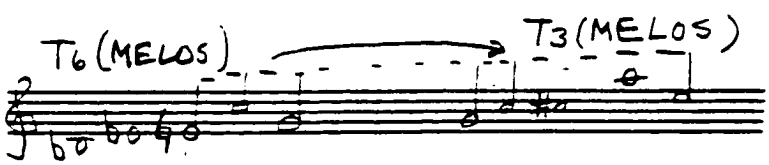
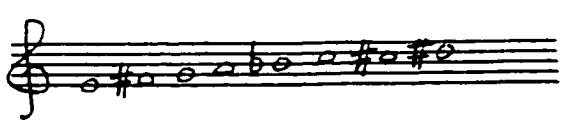


EXAMPLE 3-10A Transpositions of MELOS in measures 21-24

The pcs of measures 21-23 consist of T_6(MELOS) plus a partial statement of T_3(MELOS). T_3(MELOS) is completed with the entrance in measure 24 of the A that ushers in a restatement of the opening gesture. These two forms of MELOS are shown in Example 3-10B. They share the pcs E, G and C. Taken together, they form a seven-note subset of octatonic collection 3 (see Example 3-10C).



EXAMPLE 3-10B Invariant pcs in two forms of MELOS



EXAMPLE 3-10C Octatonic collection produced by two forms of MELOS

As Example 3-10B shows, T_6(MELOS) and T_3(MELOS) have three pcs in common; in fact, any two forms of MELOS separated by interval class 3 share

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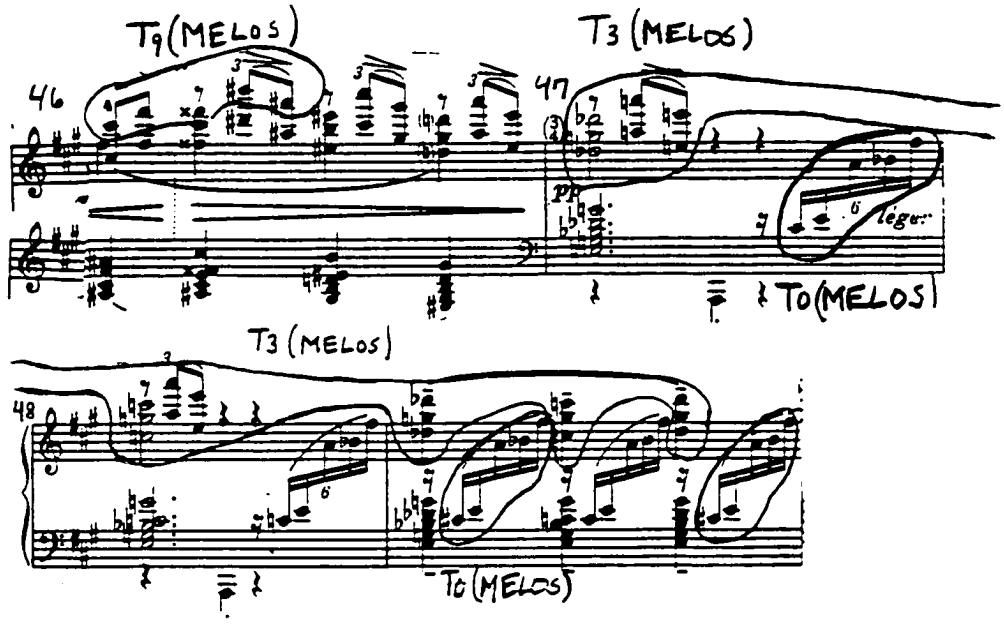
three pcs. Invariant pcs in T_3-related forms of MELOS are especially important in measures 46-49, shown in Example 3-11.



EXAMPLE 3-11A Transpositions of MELOS in measures 46-49

EXAMPLE 3-11B Octatonic collection produced by three forms of MELOS

In measure 46 MELOS is presented at T_9, and in measures 47-49, T_3 (MELOS) and T_0 (MELOS) are heard. These three transpositions of MELOS result in a complete octatonic collection. As Example 3-11B shows, T_3 (MELOS) and T_0 (MELOS) share the pcs A, C#, E, the "tonic" triad of the piece. These forms of MELOS lead smoothly into the cadential material of the piece.

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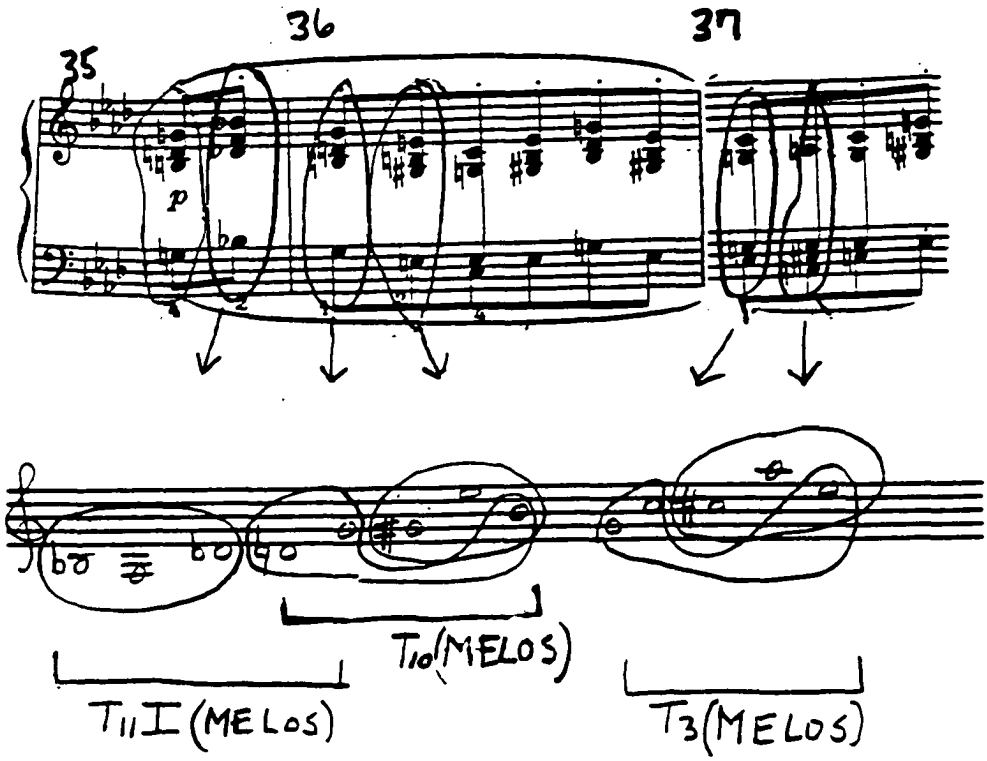
In addition to its importance in generating octatonic collections in the passages discussed above, MELOS is the source of the parallel triads found in measures 35-37 (see Example 3-12).



EXAMPLE 3-12 Parallel triads produced by forms of MELOS

We noted in discussing Example 3-2 that MELOS can be heard as two major triads, A major and F# major, in a T_3 relationship. That relationship comes into play in measures 35-37.

T_{10} (MELOS) and T_{11}I (MELOS) give rise to the first three triads in this passage: G major, Bb minor and E major. As Example 3-12 shows, T_{10} (MELOS) and T_{11}I (MELOS) are linked through their common pcs D and G. T_3 (MELOS) produces the C major and A major triads. T_3 (MELOS) is linked to T_{10} (MELOS) and T_{11}I (MELOS) through G, the pc all three forms hold in common.

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Example 3-12 presents an especially interesting example of parallelism and symmetry. All of the parallel triads in the passage are the result of an inversion and two transpositions of MELOS, and these forms of MELOS are linked by shared pcs.

These kinds of parallel chords, found so frequently in Debussy's music, are often viewed as merely "coloristic" and thus are analytically slighted. In this instance we see that these chords result from transformations of MELOS, a subset of the opening gesture. Far from being incidental, these chords fit logicially into the structure of the piece.

MOTIVE

We turn now to the subset MOTIVE. MOTIVE is the three-note cell, E-A-Bb, that begins MELOS. It contains the intervals 5, 1 and 6.

MOTIVE is significant because it becomes a projected set. As we noted in Chapter 1, a particular set is defined as a projected set when its intervals determine important transpositional levels. In this prelude, the intervals of MOTIVE control the transpositional levels of two principal subsets, X and DIM. The phrase "projections of MOTIVE," will be used to refer to transpositions of these subsets by the intervals of MOTIVE.

We have already noted the many transformations of subset X. These forms of X are organized and connected to one another, sometimes over a number of measures, through the ways in which they project the intervals of MOTIVE. We shall examine each of the three sections of the piece in turn to discover how the transpositional levels of X and TI(X) are governed by MOTIVE.

Example 3-13 shows how the intervals of MOTIVE are projected during the first section of the prelude, in measures 1-27.

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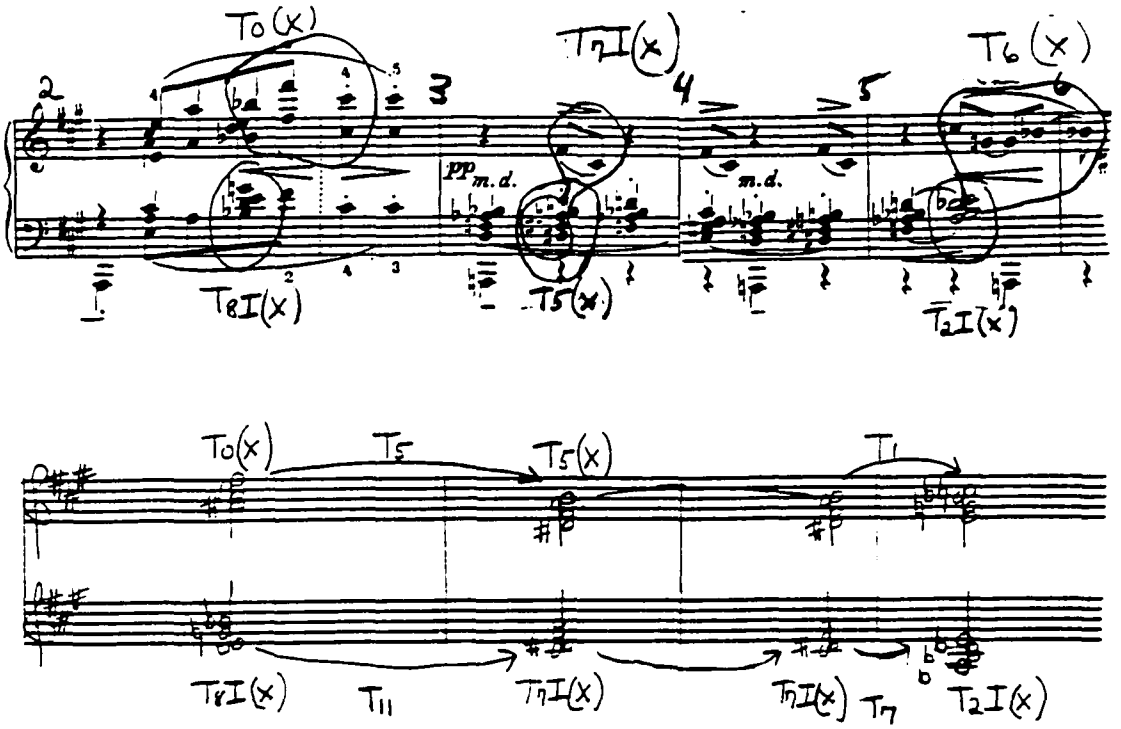
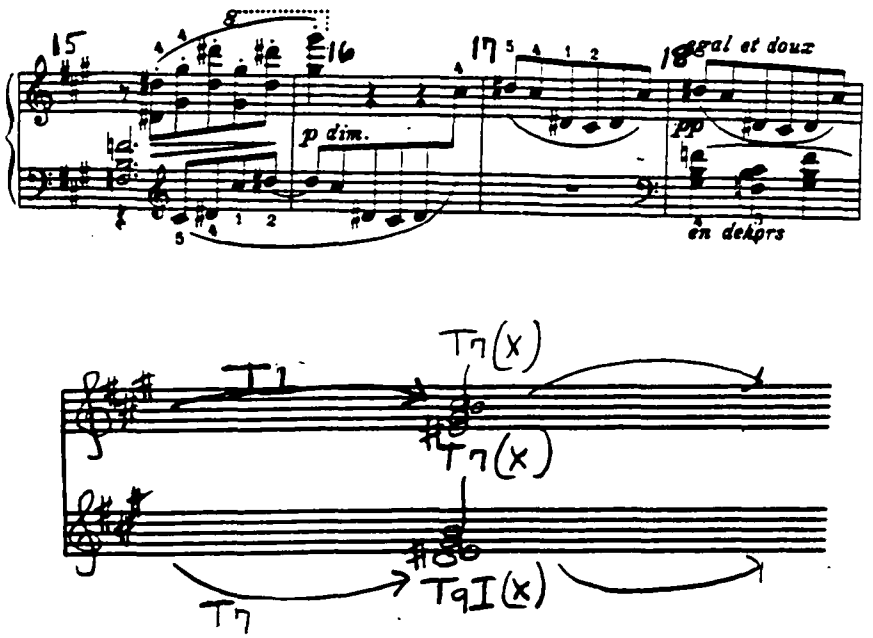


EXAMPLE 3-13 Projections of the intervals of MOTIVE by forms of subset X



EXAMPLE 3-13 *(Continued)*

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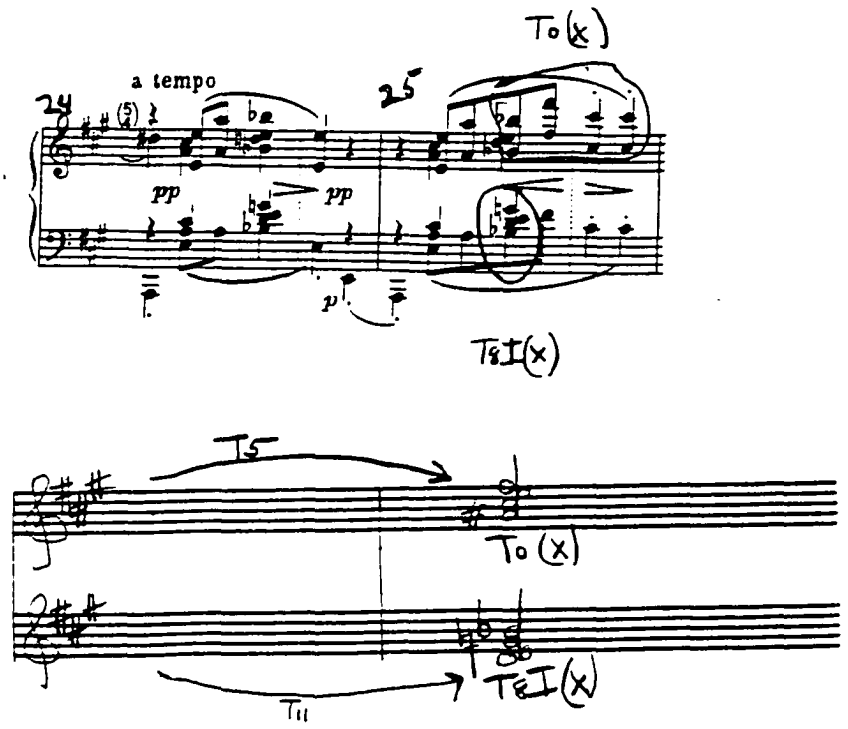

EXAMPLE 3-13 *(Continued)*

Beginning with measures 2-7, transpositions of X project the prime form of MOTIVE, $T_5 + T_1$. $T_0(X)$ in measure 2 moves to $T_5(X)$ in measure 3, and $T_5(X)$ moves to $T_6(X)$ in measures 5 and 7.

At the same time, the transpositions of TI(X) project a retrograde form of MOTIVE: $T_{11} + T_7$. $T_8I(X)$, heard in measure 2, moves to $T_7I(X)$ in measure 3; $T_7I(X)$ then moves to $T_2I(X)$ in measures 5 and 7.

The next transformations of X occur in measures 15-18; all of the pcs in these measures combine to produce T_7X) and $T_9I(X)$. In making the connection between measure 7 and measure 15, $T_6(X)$ of measure 7 moves an interval of 1 to $T_7(X)$. Then, when the opening gesture recurs in measure 25, $T_7(X)$ moves to $T_0(X)$, an interval of 5. Here is an instance in which transpositions of X project a retrograde inversion of MOTIVE: T_1+T_5.

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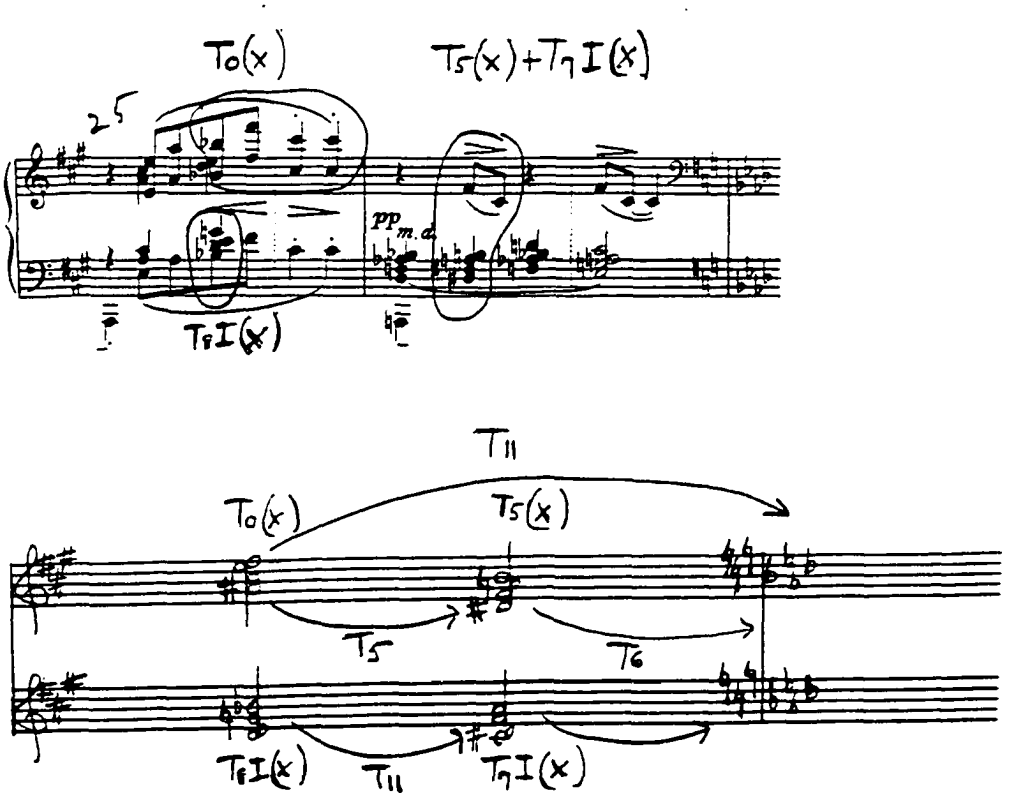
Over these same measures, transpositions of TI(X) project an inversion of MOTIVE: T_7+T_{11}. $T_2I(X)$ of measures 5 and 7 moves via T7 to $T_9I(X)$ in measures 15-18. $T_9I(X)$ moves via T11 to $T_8I(X)$ in measure 25.

What is of extraordinary interest here is how parallel and symmetrical transformations of X give shape to much of the first section by their projection of the intervals of MOTIVE. It is clear that MOTIVE plays an important role in organizing transpositional levels and is a major source of coherence in the structure of this section.

Projections of the intervals of MOTIVE continue to provide a strong sense of cohesion in the second section of the piece. Example 3-14 shows the transformations of X from the statement of the opening gesture in measure 25 to its recurrence in measure 39, at the beginning of the third section.



EXAMPLE 3-14 Projections of MOTIVE in measures 25-39

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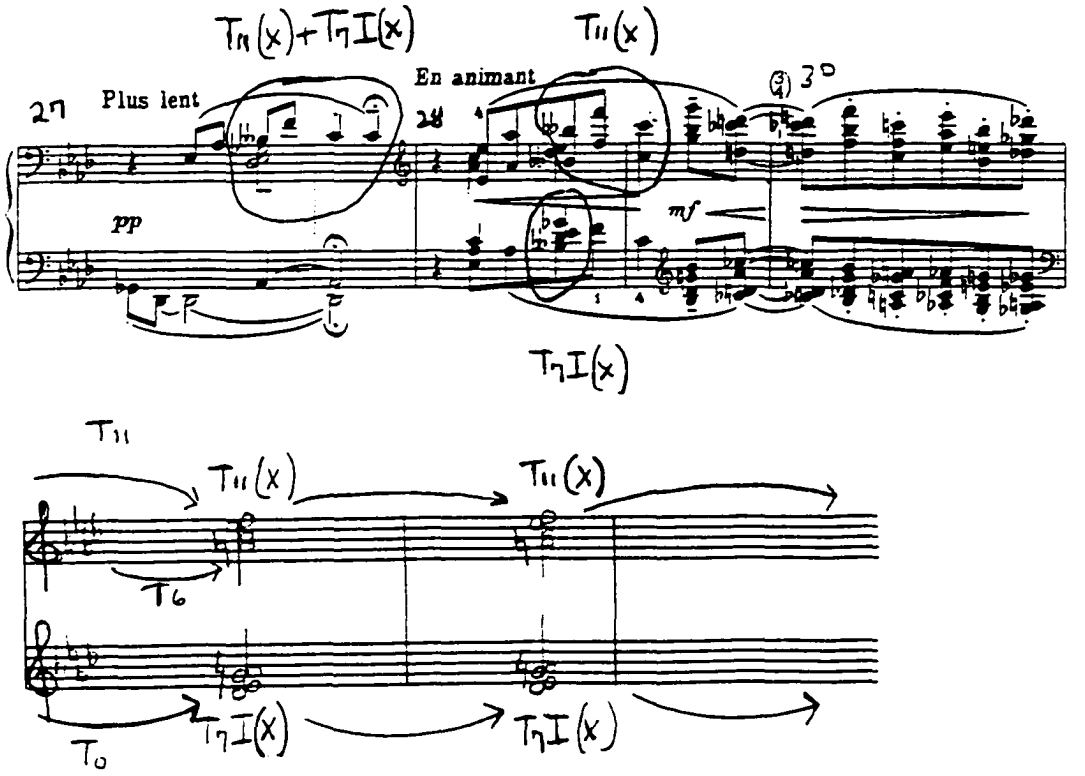
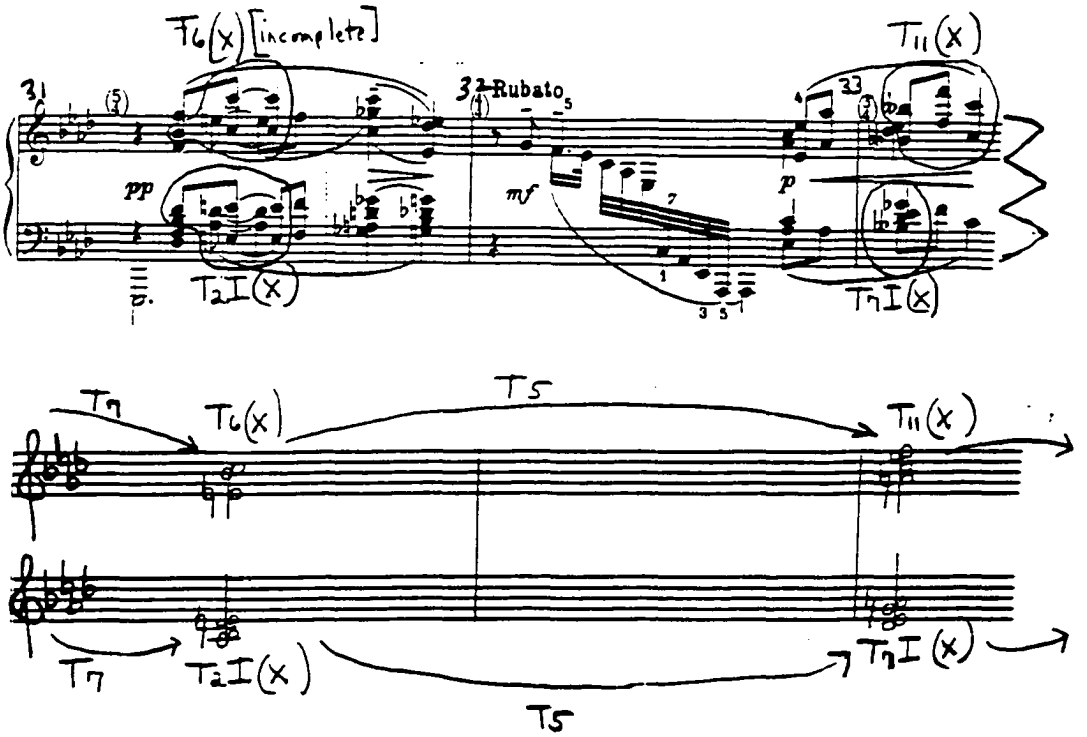


EXAMPLE 3-14 *(Continued)*



EXAMPLE 3-14 *(Continued)*

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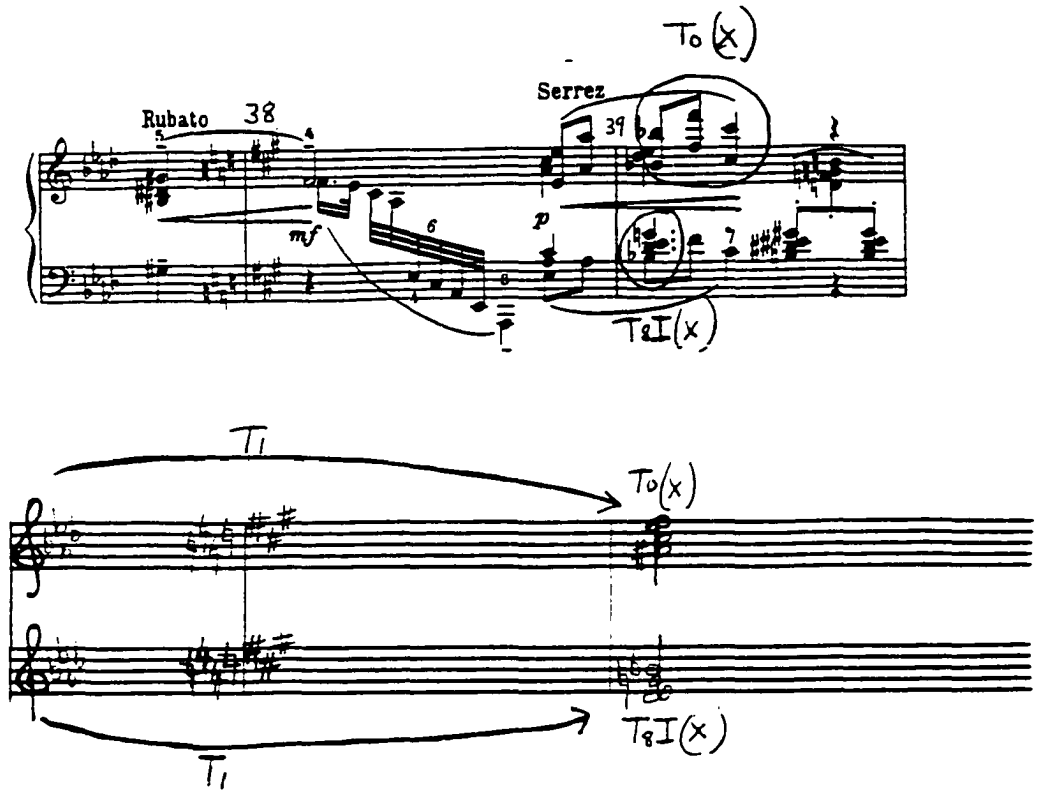

EXAMPLE 3-14 *(Continued)*

In measures 25-26, $T_0(X)$ is followed by $T_5(X)$. Then, in measure 28, the opening gesture is transposed down a semitone resulting in $T_{11}(X)$. These transpositions of X create a permutation of the intervals of MOTIVE: $T_5+T_6=T_{11}$. This adds up to an overall transposition of X by T_{11} over measures 25-28. The interval 11 then becomes part of a larger projection of MOTIVE. Over these same measures, $T_8I(X)$ is also transposed by T_{11} to $T_7I(X)$.

In measure 31 an incomplete form of $T_6(X)$ [missing the pc G] appears together with $T_2I(X)$. From $T_{11}(X)$ in measures 28-29 to $T_6(X)$ in measure 31 is an interval of 7, as is the interval from $T_7I(X)$ to $T_2I(X)$. Overall, in measures 25-31, transformations of X project a retrograde of the intervals of MOTIVE: $T_{11}+T_7=T_6$.

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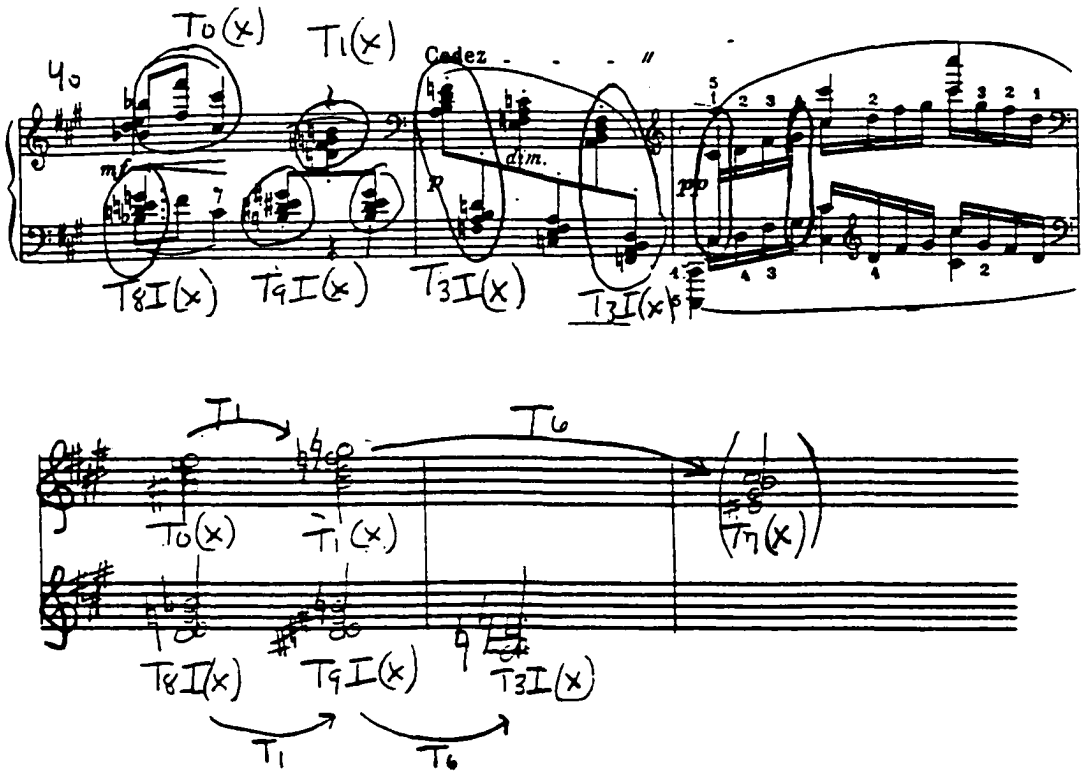
This retrograde form is then reversed over measures 31-39. Here the transpositions and inversions of X both project a prime form of MOTIVE. $T_6(X)$ in measure 31 moves back to $T_{11}(X)$ in measure 33, and $T_2I(X)$ moves to $T_7I(X)$. At the beginning of the third section, in measure 39, $T_{11}(X)$ returns to $T_0(X)$, and $T_7I(X)$ returns to $T_8((X)$. These forms of X project $T_5+T_1=T_6$.

We shall now examine projections of MOTIVE in the third and last section of the piece, beginning with measures 40-42 (see Example 3-15).



EXAMPLE 3-15 Projections of MOTIVE in measures 39-41

In measure 40, $T_0(X)$ and $T_8I(X)$ are heard and transposed by T_1 to $T_1(X)$ and $T_9I(X)$. $T_9I(X)$ then moves an interval of 6 to $T_3I(X)$. As we noted earlier the B-F tritone of $T_3I(X)$ combines with the C#-G# of measure 42 to form $T_7(X)$. Over these measures, both the transpositions and inversions of X project a permutation of MOTIVE: $T_1+T_6=T_7$.

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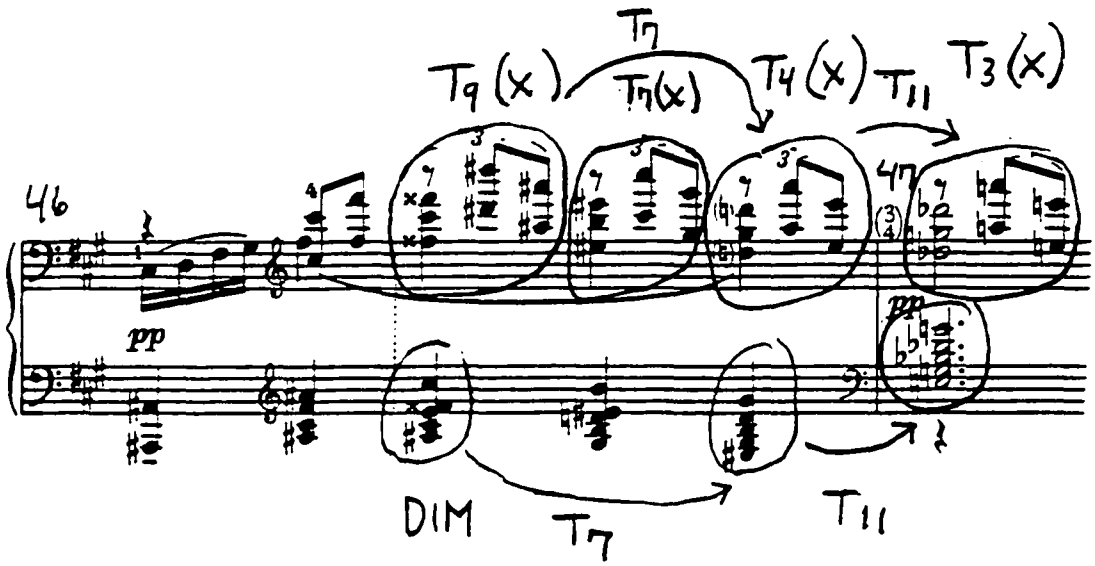
Projections of MOTIVE also shape the music in measures 46-47 (see Example 3-16).



EXAMPLE 3-16 Projections of MOTIVE in measures 46-47

Notice that in this passage forms of TI(X) do not appear. MOTIVE is projected by transpositions of X and transpositions of the diminished-seventh chord DIM. As Example 3-16 shows, the transpositions of X and DIM project an inversion of MOTIVE. $T_9(X)$ moves via $T_7(X)$ to $T_4(X)$ in measure 46, an interval of 7 and then to $T_3(X)$ in measure 47, an interval of 11. $T_9(X)$ and $T_3(X)$ are in a T6 relationship. DIM is likewise transposed by these same intervals. The transpositions of both X and DIM project an inversion of MOTIVE: $T_7+T_{11}=T_6$.

DIM and Its Relationship to MOTIVE and Subset X

We have had occasion to refer to DIM several times in the course of the discussion so far. DIM is the diminished-seventh chord E-G-Bb-C#. DIM is a subset of the opening gesture and is prominent as a pitch-class collection in

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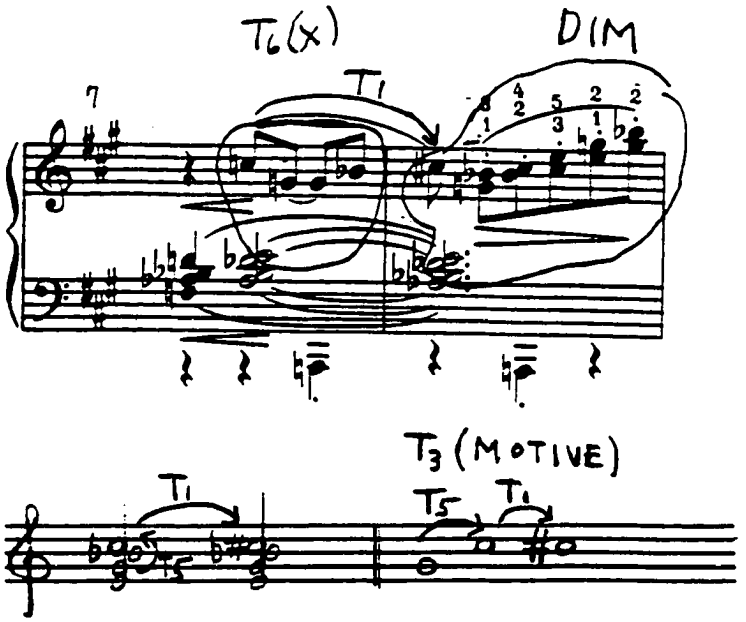
measures 6 and 8, as well as in measures 46-49, as we saw above in Example 3-16. An interesting transformation gives rise to these occurences of DIM. In these passages, DIM comes about when MOTIVE acts as a transforming agent, changing forms of subset X into DIM. Let us see how this happens.

DIM and X are very similar in structure. Moving the F# in X by T_1 produces DIM, as shown in Example 3-17A.

EXAMPLE 3-17A The relationship of DIM to subset X

In similar fashion, any form of X containing three pcs of DIM can be transformed into DIM by moving one note either up or down by a semitone. Example 3-17B shows measures 7-8, where $T_6(X)$ is transformed into DIM.



EXAMPLE 3-17B MOTIVE generating the transformation of subset X to DIM in measures 7-8

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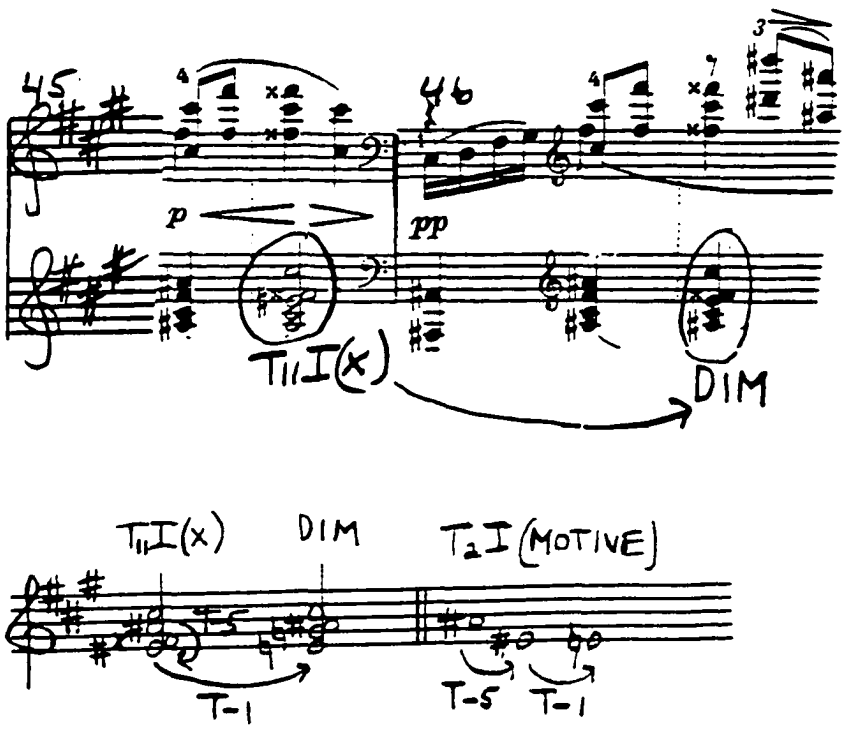
$T_6(X)$, made up of the pcs C-Bb-G-E, is heard in measure 7; in measure 8 the C of $T_6(X)$ moves up a semitone to C#, producing DIM.

The transformation of $T_6(X)$ into DIM is generated by MOTIVE. G and C of $T_6(X)$ are in a T_5 relationship. Then C moves via T_1 to C#, completing a presentation of MOTIVE at T_3. The intervals of MOTIVE thus generate the transformation of $T_6(X)$ into DIM.

A similar transformation takes place in measures 45-46 (Example 3-17C).



EXAMPLE 3-17C MOTIVE generating the transformation of subset X to DIM in measures 45-46

$T_{11}I(X)$ appears in the left hand in measure 45. $T_{11}I(X)$ contains the pcs A#-E#, which are in a T_5 relationship. In measure 46, the E# moves via T_{11} to E-natural,

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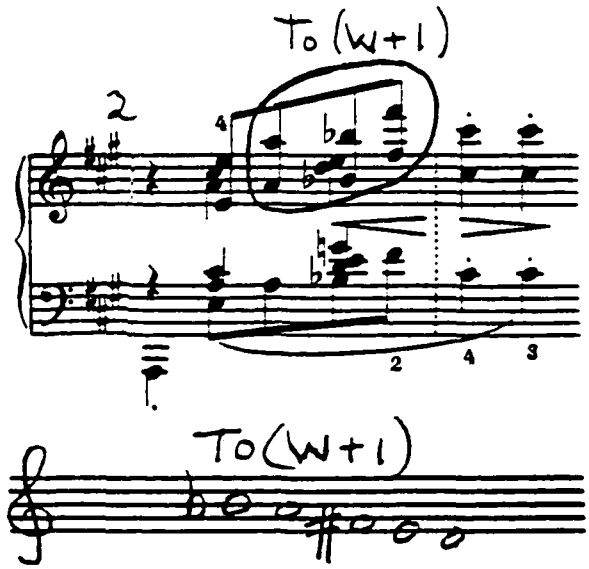
creating an inversion of MOTIVE: A#-E#-E natural. In this instance, $T_{11}I(X)$ has been transformed into DIM by an inversion of MOTIVE.

The transformation of X into DIM is a mutation similar to what we saw in "Le vent dans la plaine," when the semitone interval of WIND set in motion the transformation of a quasi-pentatonic collection to a whole-tone collection.

Subset W+1

Finally, we turn to the subset designated as W+1, which is made up of the notes circled in Example 3-18A. W+1is a gapped whole-tone collection plus a half step.



EXAMPLE 3-18A W+1 shown as a subset of the opening gesture

T_0 (W+1) comprises the pcs Bb-A-F#-E-D. The pcs of MOTIVE, E-A-Bb, are embedded in W+1. The E and Bb belong to the whole-tone subset D-E-F#-Bb The A is the "odd note;" it is the only pc in the collection that does not belong to that whole-tone subset. The T_1 relationship between A and Bb is thus especially highlighted. That relationship remains prominent throughout

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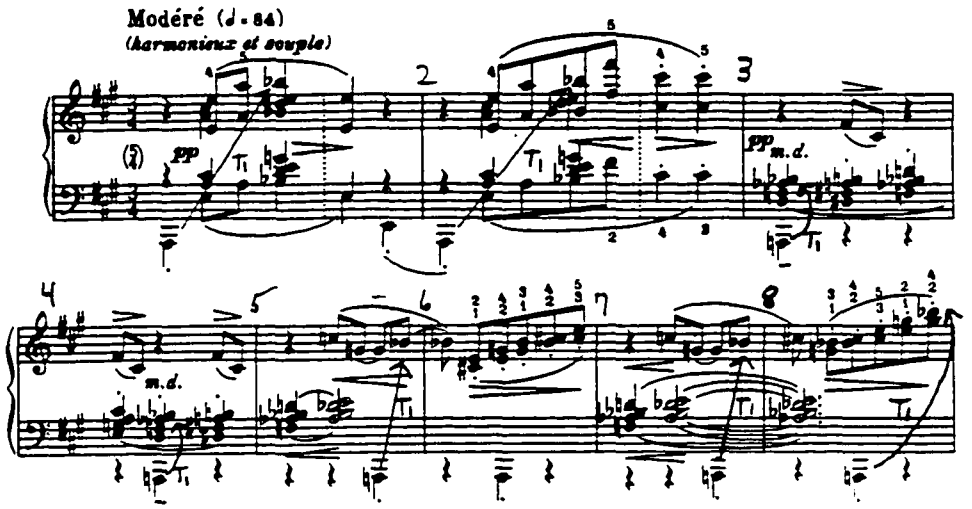
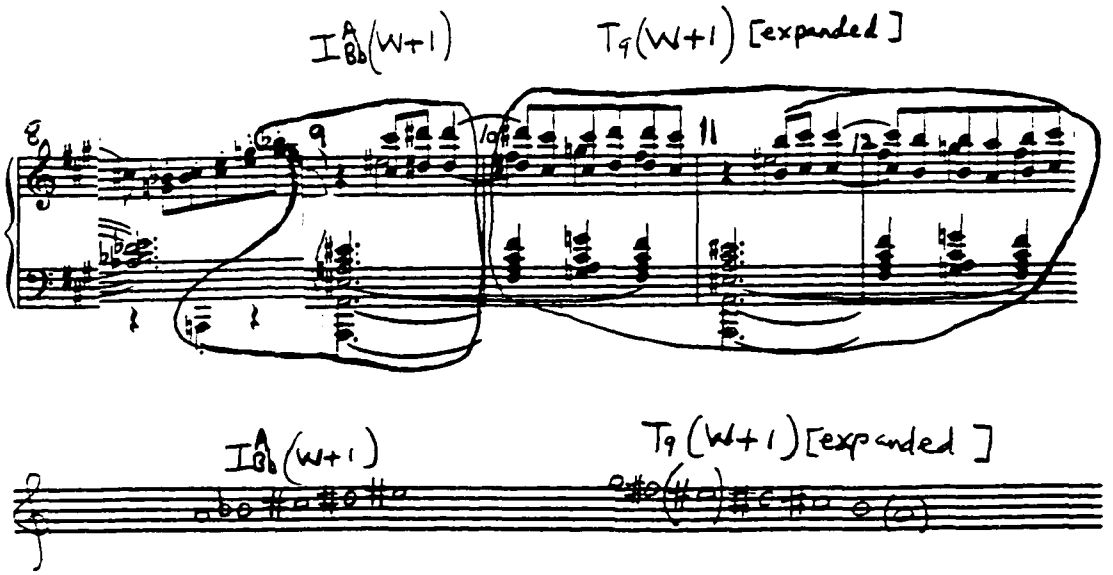
measures 1-8: A and Bb are frequently juxtaposed, with A in the bass and Bb in the highest voice, as shown in Example 3-18B.



EXAMPLE 3-18B Prominence of A-Bb in measures 1-8

Measures 9-12 present a contrast with measures 1-8. Four pcs of the other whole-tone collection A-C#-D#-E#, appear in measure 9. The Bb of measure 8 combines with this new whole-tone subset to form an inversion of W+1 around A/Bb (in pc-space), as shown in Example 3-18C.



EXAMPLE 3-18C Forms of W+1 in measures 9-12

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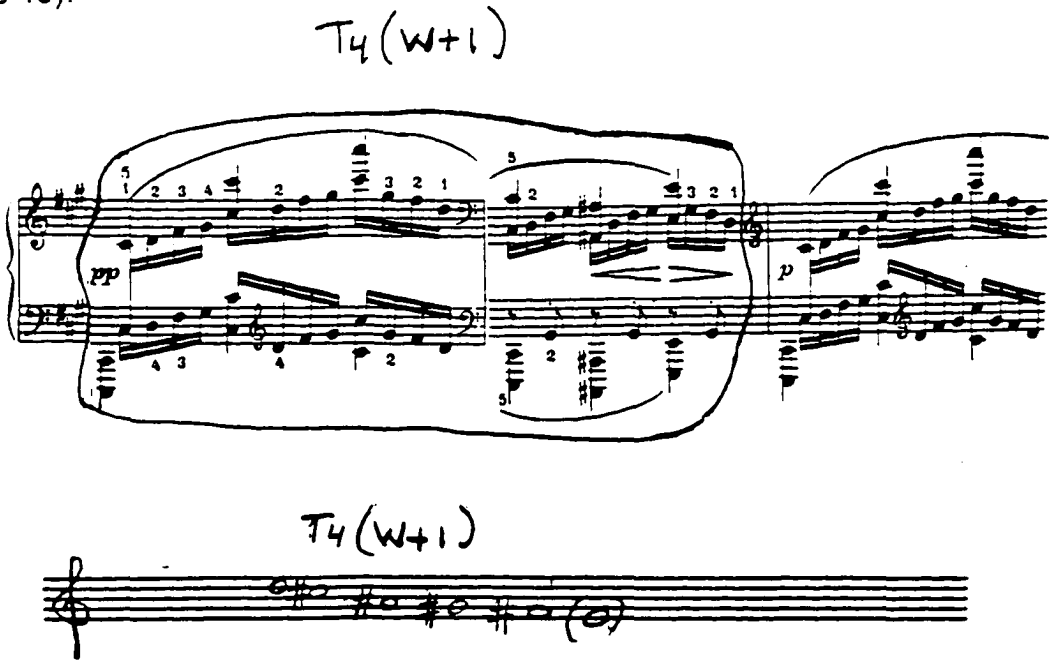
In this inversion the pcs A/Bb, the axis of the inversion, are invariant. Bb is the "odd" note in relation to the new whole-tone subset. The A/Bb axis of symmetry, as well as the invariance of A and Bb in the inversion, makes a strong connection between the first eight measures of the piece and the contrasting section that begins in measure 9.

In measures 10-12, the whole-tone subset of measure 9 is extended to form a complete whole-tone collection, as shown in Example 3-18C. The collection unfolds over measures 10-12 and is heard together with an F#. The total collection of these measures is an expanded form of W+1 at T_9. The collection comprises the pcs G-F#-E#-D#-C#-B-A.

W+1 emerges into prominence again in measures 42-45 (see Example 3-19).



EXAMPLE 3-19 T_4 (W+1) as presented in measures 42-43

Example 3-19 shows that measures 42-43 present T_4 (W+1), with the added note E, which extends the whole-tone segment to five notes. The T_1

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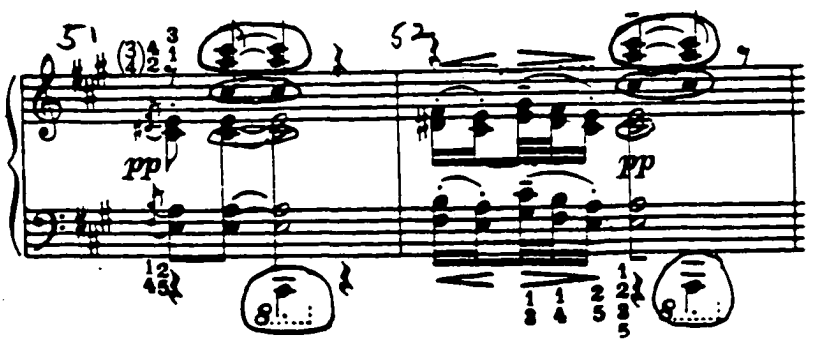
relationship between C# and D is strongly emphasized and heard as parallel to the A-Bb interval of $T_0(W+1)$.

Especially interesting is the fact that A has the same position in $T_0(W+1)$ as C# has in $T_4(W+1)$. This points up the particular importance of the pcs A and C# in this piece. A is a constant pedal note throughout measures 1-19, and returns as a pedal note from measure 47 to the end of the piece.

The importance of C# is also clear from the outset. C# is the only repeated note in the opening gesture and is strongly positioned on a downbeat. In measures 9-12, C# is the first and last note in the top voice, as well as the note to which the other notes in the top voice are heard as neighbors. Then, in measures 42-44, C# is heard doubled in octaves throughout the entire range of the piano.

In the coda, A and C# are the principal notes in the cadential A major chord (see Example 3-20A).



EXAMPLE 3-20A Prominence of A and C# in the coda

Here, A is heard in the bass, and C# is doubled in three octaves. A and C# are also the two highest notes in the closing measures.

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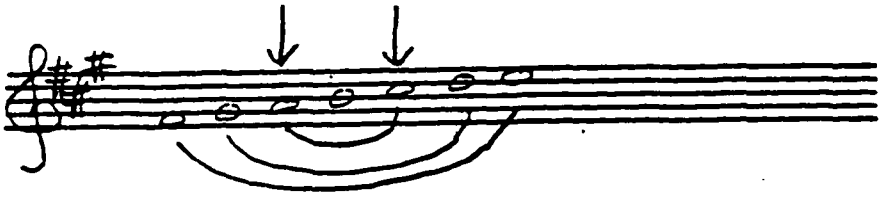
The prominence of A and C# is of course especially appropriate. The key signature of the piece is A major, and as Example 3-20B shows, A and C# are symmetrically related to one another within the A major collection.[48]



EXAMPLE 3-20B Symmetry of A major collection around A and C#

One of the most fascinating features of this prelude is the richness of the opening gesture and the ways in which it is interpreted and reinterpreted. Its five subsets are the seeds from which the piece develops, with parallel and symmetrical elaboration of these subsets playing a crucial role in the structure of the music.

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[48] It will be noted that B is the actual center of symmetry in the A major collection. Nevertheless, it is sometimes of analytical interest and importance to think of two notes rather than one as a center of symmetry, as Jonathan Bernard notes in *The Music of Edgard Varèse*. See pp. 44-45 in that monograph. Although Bernard is discussing pitch symmetry and here we are talking about pitch-class symmetry, his idea neverthe less seems pertinent. The prominence, as noted in the analysis above, of A and C# as pitch classes as well as their importance in signifying "A major," makes it analytically relevant to emphasize the symmetrical centrality of these two pitches.

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CHAPTER 4

Des Pas Sur La Neige

We have been looking at various manifestations of parallelism and symmetry in selected preludes of Debussy. The common thread running through these pieces is the use of parallel and symmetrical transformations to generate both local and long range events. In a sense these contextual processes function in the same way that tonality and tonal harmony functioned in earlier music. And yet we are constantly reminded that Debussy's art looks in two directions: the echoes of the past are always with us, and the sonorities, the "perfumes" as Debussy's beloved symbolists might say, of tonal music are constantly present. But the actual structure of the music seems to have very little to do with tonality or tonal functions. It seems rather to have much more in common with the type of contextualism espoused by the more obviously revolutionary successors to Debussy, such as Stravinsky and Schoenberg.

Turning to the sixth prelude, "Des pas sur la neige," we find a world in which the smallest musical unit, the "step" as indicated by the title, is highlighted. This prelude is about steps, whole steps and half steps, and about stepwise motion. These tracks across the musical landscape evoke "*un fond de paysage triste et glacé*." We are put in mind of a lonely individual in transit over vast, bleak distances, and this is aptly characterized by the intense scrutiny of small intervals and their relation to the uncharted musical space around them.

In contextual terms, this prelude deals with the ways in which seconds can generate, and function within, larger structures. The smallest musical units, minor and major seconds, are put into the kaleidoscope, and as the mirrors are rotated a multitude of patterns appears. Seconds are grouped together to form

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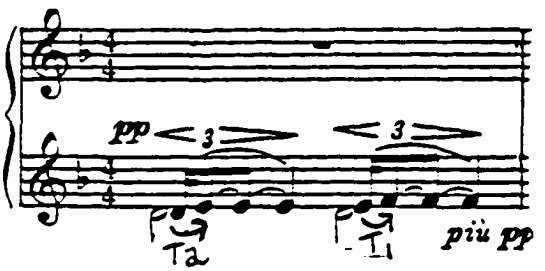
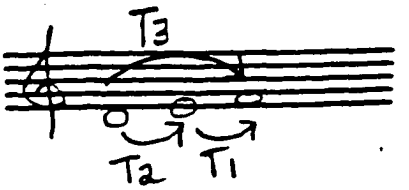
motives, tetrachords and complete scales. The same seconds are shown to belong to different collections, and may function as pivots between those collections. In these thirty-six measures an entire universe unfolds, but we never lose sight of the atoms from which it is built.

The ostinato that begins the work and is an almost constant presence throughout establishes the principle of stepwise motion. The ostinato appears in the middle range of the piano and is present in all but seven of the thirty-six measures of the piece. The ostinato, shown in Example 4-1, comprises the pitches D4, E4 and F4.



EXAMPLE 4-1A The ostinato of "Des pas sur la neige



EXAMPLE 4-1B Intervallic relationships in the ostinato

The ostinato gives rise to many kinds of motion and collections. The opening major second is expanded to a whole-tone tetrachord, ultimately to a complete whole-tone scale, and gives rise to collections that sound like dominant-seventh chords. The semitone of the ostinato gives rise to chromatic motion and the transposition of entire collections by half step. These two intervals together generate many symmetrical collections, diatonic tetrachords and complete

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diatonic scales, as well as chromatic and octatonic collections. All of these generative products of the ostinato are arrived at by symmetrical and parallel operations. Needless to say, the various categories of activity mentioned above take place simultaneously, and interact on many levels.

The registral placement of the ostinato is also of notable importance. The ostinato is in the middle register of the piano and serves as a pivotal reference point in the center of the texture. As the music proceeds, other material occurs above, below, or above *and* below the ostinato. This process is one of the ways in which symmetry is projected and is an important formal element of the piece.

We noted a similar use of an ostinato in "Le vent dans la plaine." In that prelude, the large-scale organization of the piece is based in part on the registral placement of material above and below the central octave span, Bb3-Bb4.

As pitch classes, the D and F of the ostinato function as important axes of symmetry in "Des pas sur la neige." In spite of the fact that this prelude is not organized in a traditional tonal way, it is filled with tonal allusions: "D minor" is heard as the home base of the piece, and the use of D and, to a less important extent, F as centers of symmetry is one of the ways in which a feeling of "key area" is established without the use of functional harmonies.

In the sections to come, we shall discuss all of these aspects of the ostinato and their relationship to parallelism and symmetry. The topics will be covered in the following order:

1. Registral placement and large-scale form.
2. D/Ab and F/B symmetry.
3. Collections generated by the ostinato.
4. Transformations resulting in whole-tone collections.
5. Transformations resulting in octatonic collections.

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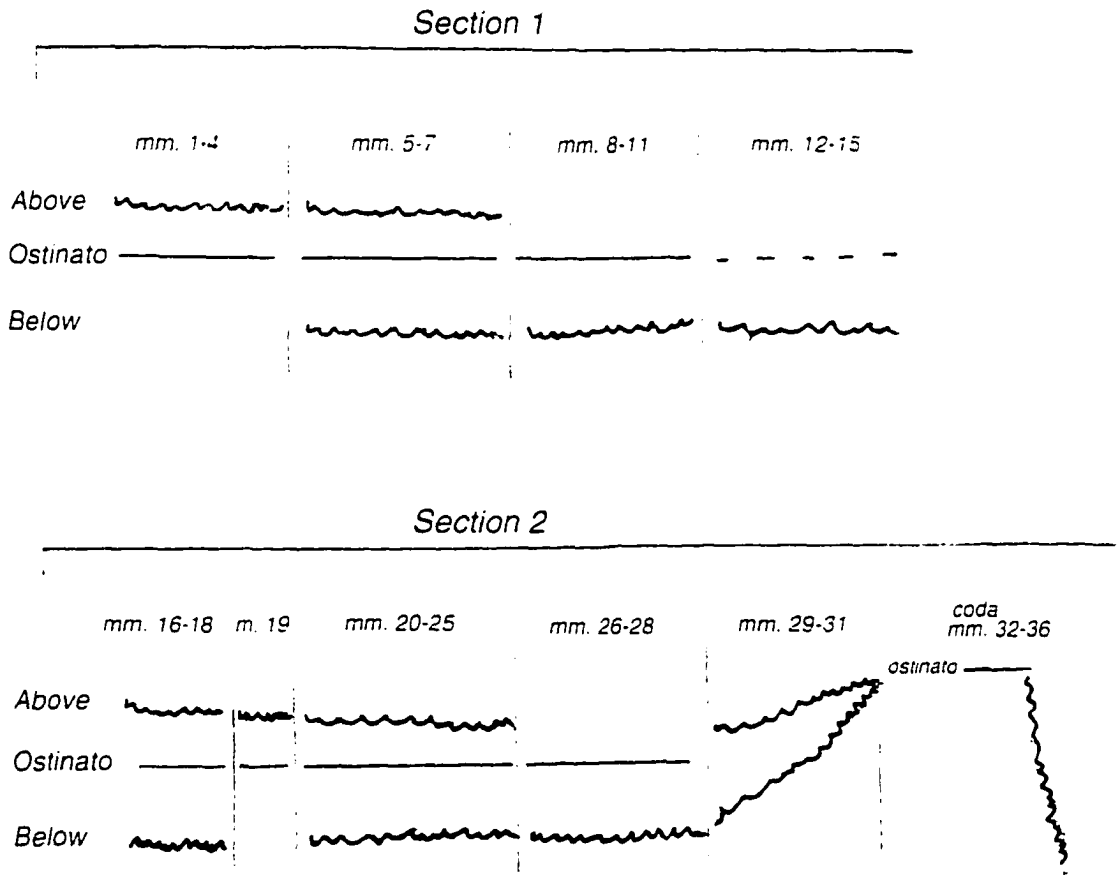
Registral Placement and Large-Scale Form

In "Des pas sur la neige," the placement of material in relation to the ostinato is one of the factors delineating the form of the piece.[49] Overall, the piece falls into two sections of almost equal length, plus a coda. Section 1 comprises measures 1-15, Section 2 measures 16-31, and the coda measures 32-36. The placement of music in relation to the ostinato helps to organize the music within each section and to establish connections between the two sections. The chart in Example 4-2 shows the placement of music above and below the ostinato in each section.



EXAMPLE 4-2 Placement of music in relation to the ostinato

[49] Parks has an interesting discussion of this prelude from the point of view of registral expansion and contraction. See pages 309-311 in *The Music of Claude Debussy*.

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In the first section measures 1-4, in which the music is above the ostinato, are mirrored by measures 8-11, in which the music is below the ostinato. These two subsections are separated by measures 5-7 in which there is music both above and below the ostinato. In measures 12-15, the ostinato is not heard, although the F of the ostinato is held for two and a half measures, thus remaining as a kind of "place marker," below which the other music occurs.

Turning to Section 2, we find that there are clear correspondences between Sections 1 and 2, although Section 2 is somewhat more complex. Measures 16-19 constitute a varied repetition of measures 1-4. In measures 1-4, music appears only above the ostinato, but in measures 16-18, a retrograde inversion of the intervals of the ostinato appears in the lowest voice, below the ostinato itself. In measure 19 this voice drops out, so that for one measure the music remains above the ostinato.

Measures 20-25 begin exactly like measures 5-7, but then move to a new tonal area. Throughout this passage there is music both above and below the ostinato. In measures 26-28, music occurs only below the ostinato, and these measures correspond to measures 8-11.

Measures 29-31 correspond to measures 12-15, in that the ostinato is not heard. But whereas in measures 12-15 the F of the ostinato serves as an upper boundary above which no music occurs, in measures 29-31 the ostinato drops out completely, and this seems to unmoor the music, which floats upward, so that when the ostinato enters again, in measure 32, it is two octaves above its original level. The coda, measures 32-36, begins in this high register and then expands downward to the lowest D on the piano. Interestingly, the music reaches its point of greatest registral dilation only in the last measure of the piece, with the right hand sounding the highest F on the piano and the left hand the lowest D.

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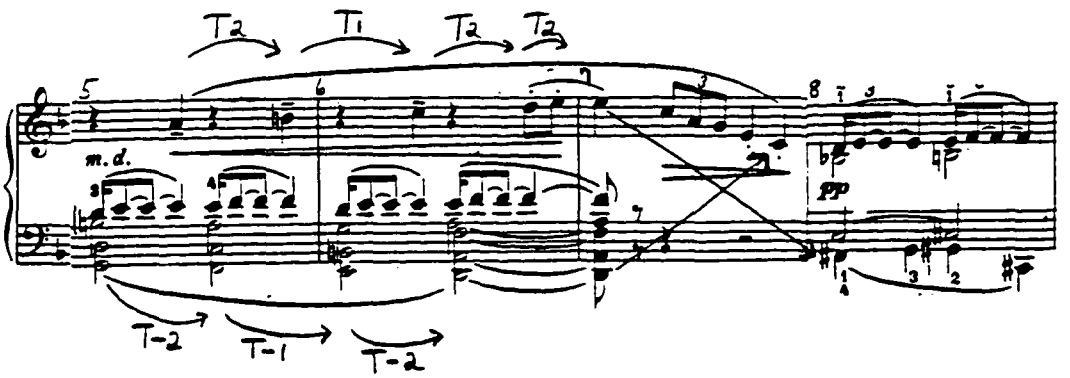
As Example 4-2 shows, the registral placement of music in relation to the ostinato is one means of articulating the formal sections of the piece. The ostinato serves as a registral reference point, a boundary line between registers. And the portions of Sections 1 and 2 that correspond to one another in registral placement are related in other ways as well, as we shall see below.

The placement of the ostinato at the center of the texture is an ingenious way of projecting symmetry and is consistent with the contextual approach to tonal relationships so characteristic of the preludes we have discussed. In traditional tonal music, the bass line serves as the main point of reference, and harmonies are built upon their bass notes. In this prelude, however, there is no functional bass line. Rather, the music fans out from the central ostinato. This is one way in which Debussy overturns traditional harmonic practice in pursuit of his particular expressive goals.

D/Ab Symmetry

The D dorian and Gb major collections play a central role in this prelude, and their mutual symmetry around D and around Ab is an important element in the structure of the piece. There are a number of instances of D/Ab-symmetry in the piece; the first of these occurs in measures 5-8 (see Example 4-3).



EXAMPLE 4-3A Symmetrical contrary motion in outer voices in measures 5-8

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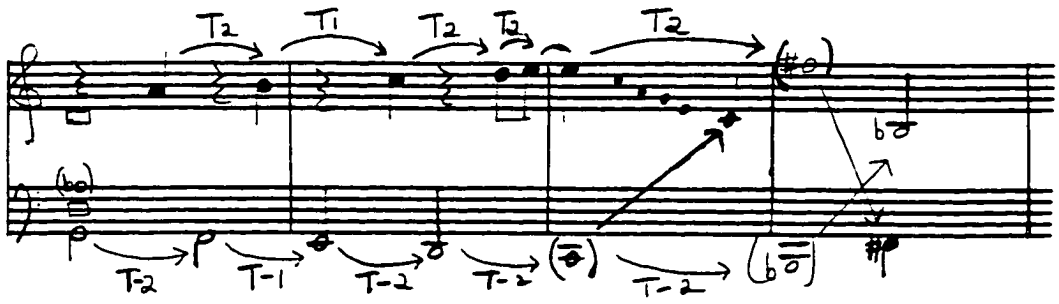

EXAMPLE 4-3B Reduction of Example 4-3A

In this passage, the ostinato generates parallel and symmetrical motion by step. The pcs in the passage are all of the "white notes," organized to project the D dorian collection. The top and bottom voices move in contrary motion and they are symmetrical around the octave D3-D4. (The fact that Ab3 is the actual axis of symmetry even though it is not heard is of some interest, since Ab will enter the piece later when the Gb major collection becomes prominent.) In measures 5-6 both the top voice and the two bottom voices present the intervals of the ostinato. The ostinato is heard in the the alto voice; above the ostinato, the top voice presents the notes A-B-C, the T_7 transposition of the ostinato. The two bottom voices present the mirror image of the ostinato. This large-scale, fan-like manifestation of symmetry might be described as symmetry in diatonic u-space.

In measure 6, the bottom voice descends to D. Then in the top voice, the octave transpostion of the first two notes of the ostinato D and E are heard, rather like an echo of the ostinato itself. The symmetrical partner of E is C, and although C does not appear in the bass, it occurs as the last note of the melody in measure 7. Extending the symmetrical motion by an interval of 2 would take E to F# in the soprano and C to Bb in the bass. These notes appear in measure

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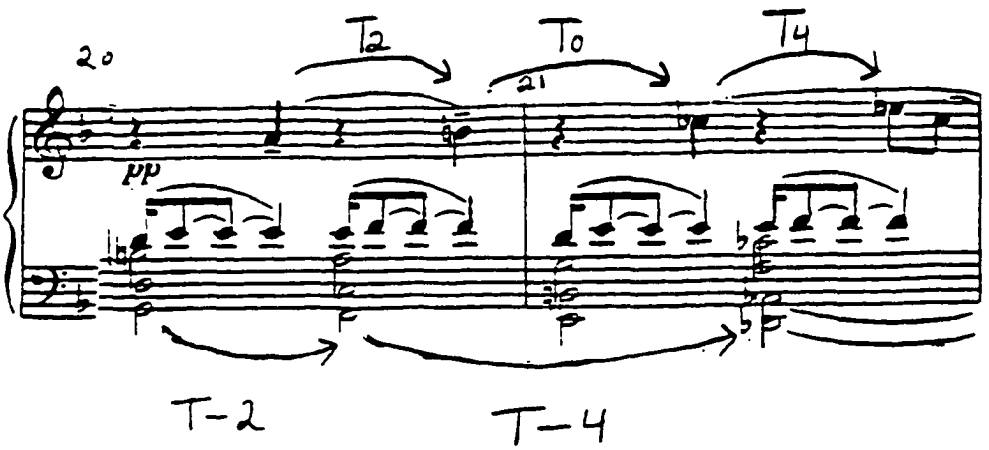
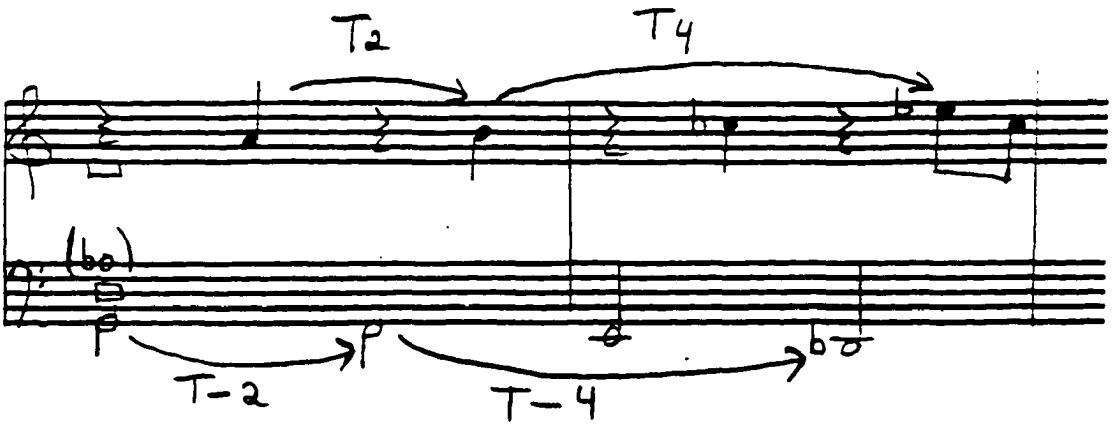
8, but there is a voice exchange: the F# is in the bass and Bb is in the alto, as shown in Example 4-3B.

In the continuation of the symmetrical motion, the music has moved out of the white-note collection and has added two black notes, Bb and F#. Bb has appeared before, as part of the melody in measures 1-4, but this is the first appearance of F#. Example 4-3B summarizes the symmetrical motion of this passage.

A similar symmetrical motion takes a different direction in measures 20-21 (see Example 4-4A).



EXAMPLE 4-4A Symmetrical contrary in outer voices in measures 20-21



EXAMPLE 4-4B Reduction of Example 4-4A

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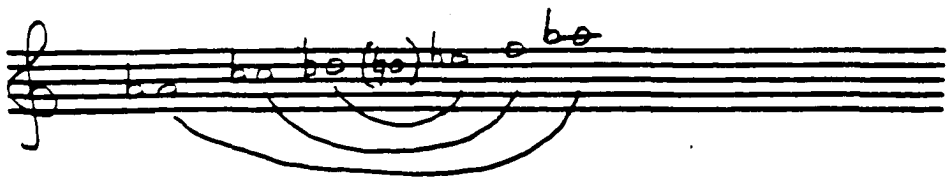
Measure 20 is identical to measure 5; measure 21 begins like measure 6, but on the second beat, the top voice, instead of moving to C, remains on the B of the previous measure, respelled as Cb. Here B/Cb serves as the pivot note between D dorian collection and a new tonal area, a Db dominant-ninth chord, the dominant of Gb major.

The pattern of stepwise motion is now broken. The bass moves down to Db and the top voice leaps up to Eb, so the outer voices remain symmetrically arranged around D3-D4 and Ab3.

The Db and Eb are interpreted as the root and major ninth of a Db dominant-ninth chord, the predominant harmony in the second half of measure 21 and measure 22. As a pitch-class collection, this chord is symmetrical around D/Ab, as shown in Example 4-4C.



EXAMPLE 4-4C D/Ab symmetry of Db dominant-ninth chord

Because Ab is a member of this collection it acquires greater primacy as a symmetrical center. The Db dominant ninth chord in measure 21 is a striking introduction of a new harmonic area. As in measures 5-8, this new area has been reached by the continuation of symmetrical motion.

The pc collection that comprises the Gb major scale is the T_6 transposition of the D dorian collection and thus is also symmetrical around D/Ab. The complete collection is heard in measures 29-31 (see Example 4-5).

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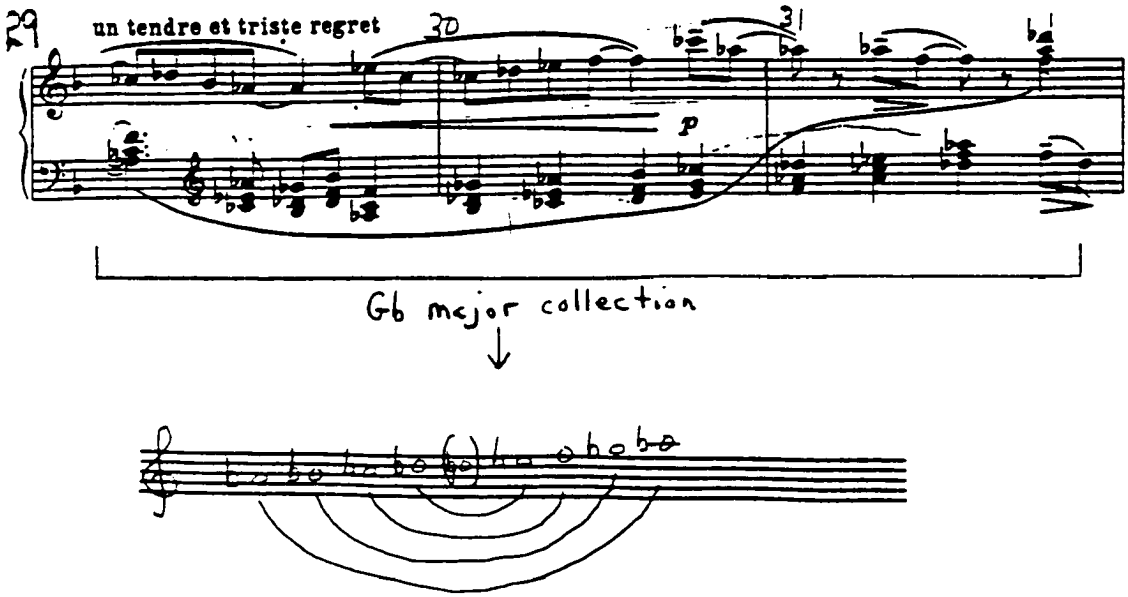

EXAMPLE 4-5 D/Ab symmetry of Gb major collection of measures 29-31

The top voice in this passage is a variant of the melody heard in measures 22-24 and is accompanied by a series of parallel triads in "first inversion."

Examples 4-3, 4-4 and 4-5 show fascinating instances of Debussy's use of symmetrical procedures in this prelude. In measures 5-8 symmetrical motion is used to move through the pcs of the D dorian scale, and then eventually out of that scale. In measures 20-21, the same symmetrical procedure this time leads to a Db dominant ninth chord. And in measures 29-31 we hear a complete Gb major collection, the complement of the D dorian collection.

In the context of traditional tonal relationships, the white-note collection and the Gb major collection are at the farthest remove from one another. In this prelude, a significant relationship between these two tonal areas is established by virtue of their shared symmetrical centers, D and Ab.

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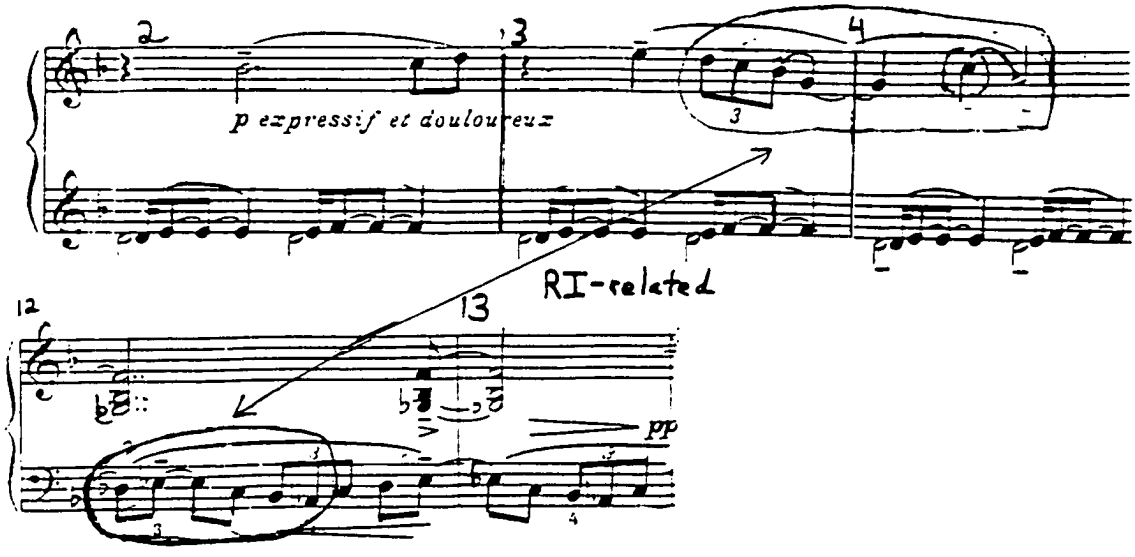
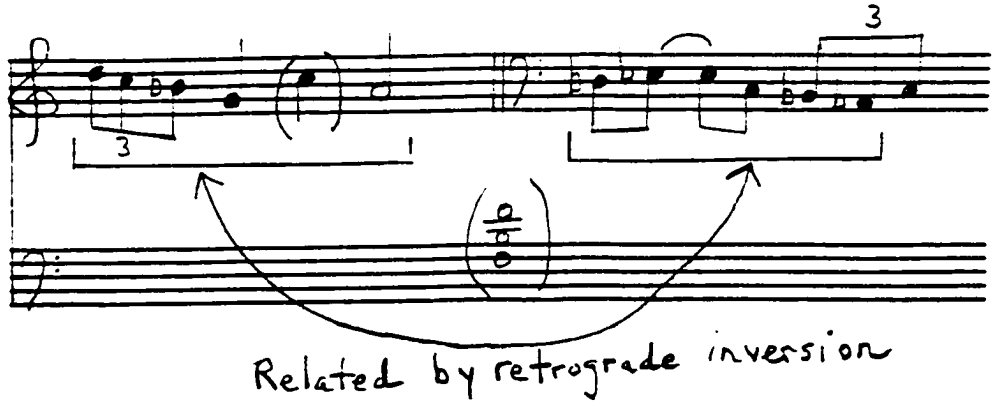
F/B Symmetry

F, the third pc of the ostinato, and B also have some importance as centers of symmetry. One interesting instance of F/B symmetry occurs in the relationship between measures 2-4 and measures 12-13 (see Example 4-6).



EXAMPLE 4-6A RI-related melodies of measures 2-4 and 12-13



EXAMPLE 4-6B Symmetry of melodies around F3-F4 and B3

Examples 4-6A and 4-6B show that the circled portions of the melodies in measures 3-4 and 12-13 are related by retrograde inversion. They are symmetrical around the octave F3-F4 and B3. Of these two possible axes of

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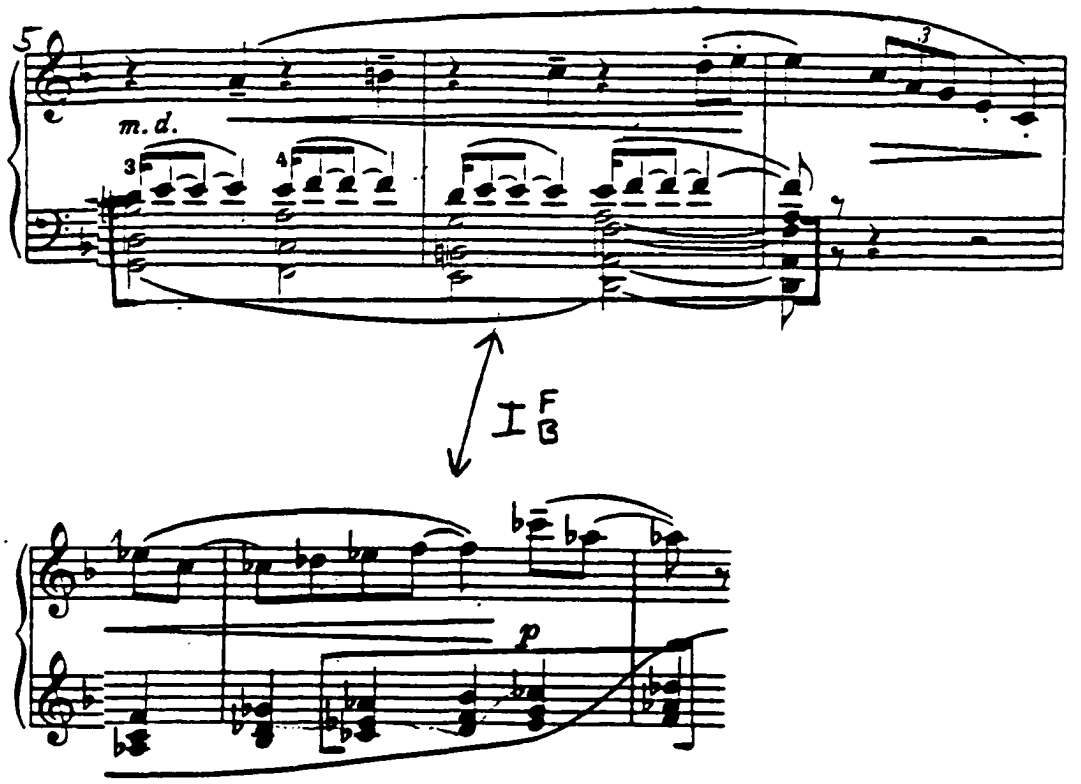
symmetry, the F3-F4 axis would seem to have priority here. F4 is the goal of motion of the ostinato: the ostinato repeatedly rises from D4 to F4. At the end of measure 11, the ostinato arrives on F4 and remains there through measures 12 and 13. In the symmetrical relationship of the two melodies, the F4 of the ostinato "stands for" the octave F3-F4. The structural importance of F4 as a goal of motion by the ostinato is complemented by the function of F3-F4 as an axis of symmetry.

F/B-symmetry also obtains between the music of measures 5-7 and measures 29-30 (see Example 4-7).



EXAMPLE 4-7A Inversionally related triads of measures 5-7 and 30-31

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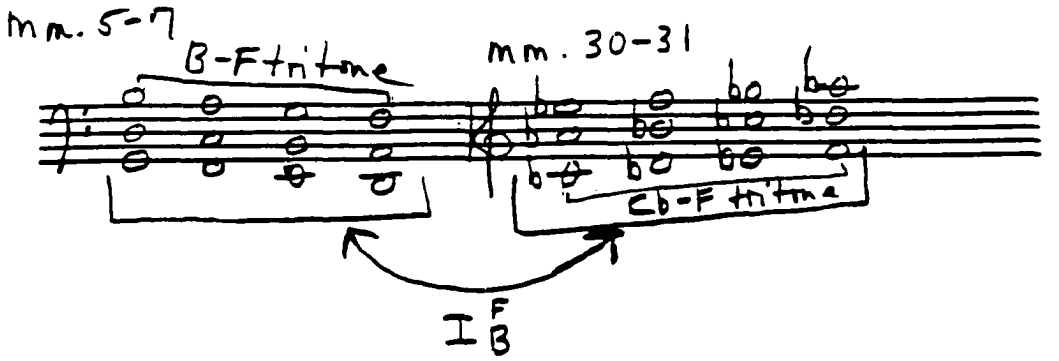

EXAMPLE 4-7B Inversional relationship of triads in measures 5-7 and 30-31

Example 4-7 compares the triads in the three lowest voices in measures 5-7 with the triads in measure 30. These are indicated by the brackets on Example 4-7A and shown in Example 4-7B. In measures 5-7 parallel triads in open root position in the left hand descend through the D dorian scale. In measure 30 parallel triads "in first inversion" ascend through the Gb major collection. (The triads of measures 29-31 are written in open position on the example to facilitate the comparison.) Major triads in one collection correspond to minor triads in the other collection and vice versa; as pc collections, the triads are inversions of one another and symmetrical around F and B. F and B are also the two pcs shared by the D dorian and Gb major collections.

F/B symmetry is reinforced by the musical context. In measures 5-7, the descending tetrachord B-A-G-F is heard in the top voice of the triads, filling in the B-F tritone by whole steps. In measures 30-31 the ascending whole-tone tetrachord Cb-Db-Eb-F in the bottom voice fills in the same tritone with whole steps in the opposite direction. We shall have more to say about the partitioning of tritones in the next section.

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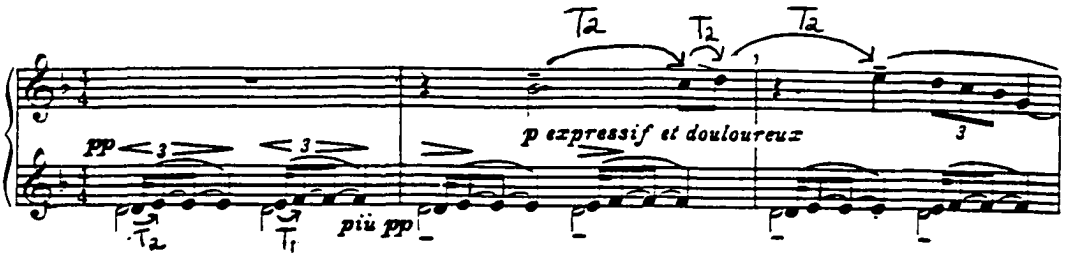
Collections Generated by the Ostinato

As we noted at the beginnning of this chapter, the predominantly stepwise motion in this prelude is generated by the ostinato. The ostinato contains two kinds of steps: a major second and a minor second. Thus the ostinato is capable of generating several different collections. The $T_2 + T_1$ transformation is found in both diatonic and octatonic collections, and the T_2 transformation gives rise to whole-tone collections. The T_1 transformation also plays an important role in that it generates parallel chromatic motion between collections. Of particular interest in the discussion to follow will be the ways in which diatonic collections are transformed into whole-tone and octatonic collections.

During the first seven measures of the piece, the ostinato gives rise to two referential diatonic collections: the D minor and D dorian collections. D minor is heard in measures 1-4 and D dorian in 5-7.

In the first four measures of the piece, the stepwise motion of the ostinato generates a D minor collection (see Example 4-8A).



EXAMPLE 4-8A The ostinato generating stepwise motion in measures 1-3

The ostinato, with its whole step and half step, 2+1, is heard first. When the right-hand melody enters in measure 2, we hear its first three notes, Bb-C-D, as stepwise motion arising from and parallel to the stepwise motion of the ostinato.

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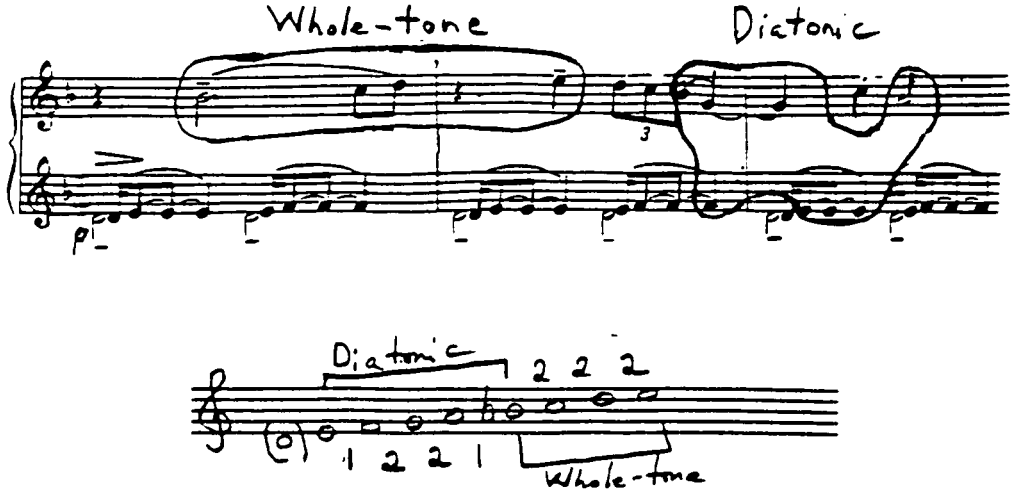
Here, however, the steps are 2 + 2. The melody continues to E in measure 3, filling in the tritone Bb-E with whole tones. The connection of the melody to the ostinato is emphasized by the stepwise motion and by the fact that D5 and E5 in the melody are the octave transpositions of the D4-E4 of the ostinato.

As the D minor collection continues to unfold, the whole-tone partitioning of the Bb-E tritone heard in measures 2-3 is contrasted with the diatonic partitioning of its complement E-Bb heard in measures 3-4 (see Example 4-8B). The importance of this will soon become apparent.



EXAMPLE 4-8B Whole-tone and diatonic partitionings of E-Bb tritone in the D minor collection

In measures 5-7, the mode changes from D minor to D dorian. The crucial feature of this change is the raising of Bb by a semitone to B natural, creating the tritone F-B of the D dorian collection. The F-B tritone is in a T_1 relationship to the tritone E-Bb of the D minor collection. The T_1 relationship between E-Bb and F-B is generated by the semitone interval of the ostinato, and the change from Bb to B natural can be understood as a T_6 projection of the E-F of the ostinato.

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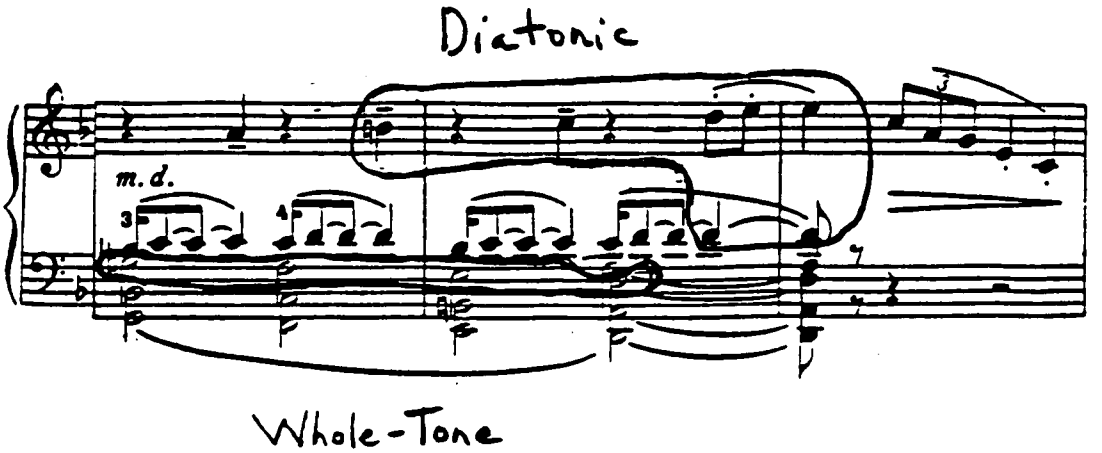
As was the case with the E-Bb tritone, both the whole-tone and diatonic partitionings of the F-B tritone are heard in measures 5-7 (see Example 4-9).



EXAMPLE 4-9 Whole-tone and diatonic partitionings of the F/B tritone in the D dorian collection

The descending line B-A-G-F in the tenor voice immediately below the ostinato fills in the tritone by whole steps; the diatonic partitioning of the tritone is projected by the top voice moving from B to E, with the F heard in the ostinato in measure 6.

Thus, at the conclusion of the first seven measures of the piece two kinds of "D scales" have been heard: the D minor and the D dorian, and both of these have been generated by the stepwise motion of the ostinato. The tritone in the D minor scale is E-Bb, and that in the D dorian, F-B, is a semitone higher. The T_1 relationship between the tritones echoes the T_1 relationship of E-F in the ostinato, and the whole-tone and diatonic partitionings of both these tritones are heard.

Transformations Resulting in Whole-Tone Collections

An important process of this prelude involves transforming the diatonic partitioning of each tritone, E-Bb and F-B, into whole-tone partitioning. The first

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half of the piece (measures 1-15) is concerned with transforming the diatonic partitioning of the E-Bb tritone into whole-tone partitioning. In the second half of the piece the diatonic partitioning of the F-B tritone is transformed into whole-tone partitioning. We shall examine each of these transformations in turn.

On Example 4-10A we can follow the operations that transform the diatonic partitioning of E-Bb into whole-tone partitioning. The operations, which include transposition, retrogression, inversion and rotation, are part of a process of accretion in which the whole-tone trichord Bb-C-D in measure 2 is gradually expanded to form a complete whole-tone collection in measures 14-16.

The trichord Bb-C-D is labelled $T_0(X)$ on Example 4-10A. $T_2(X)$ is heard in measures 2-3, and $T_0I(X)$, which is also the retrograde of $T_0(X)$, appears in measure 3. C-D-E, which is $T_2(X)$, appears in measures 6 and 7 and is then rotated to produce D-E-C, labelled rot. $[T_2(X)]$.

In measure 8, the D-E of the ostinato combines with the F# in the bass to produce $T_4(X)$, and this is heard together with $T_0(X)$, extending the whole-tone collection to five notes.

In the bass line of measure 12, we hear $T_{10}I(X)$ and its rotation, rot. $[T_{10}I(X)]$. These forms are the mirror image of the $T_2(X)$ and rot. $[T_2(X)]$ forms heard in measures 6-7. In measures 13-14, the bass line is extended, producing $T_8I(X)$, the mirror image of $T_4(X)$ heard in measure 8. This is followed by rot. $[T_6I(X)]$ in the top voice in measure 14.

The C-Bb in the bass of measure 15, followed by the D of the ostinato in measure 16 produces rot. $[T_0I(X)]$, and this is the ingenious final touch. The transformation rot. $[T_0I(X)]$ brings the music full circle, returning to the D of the ostinato in measure 16 at the beginning of Section 2.

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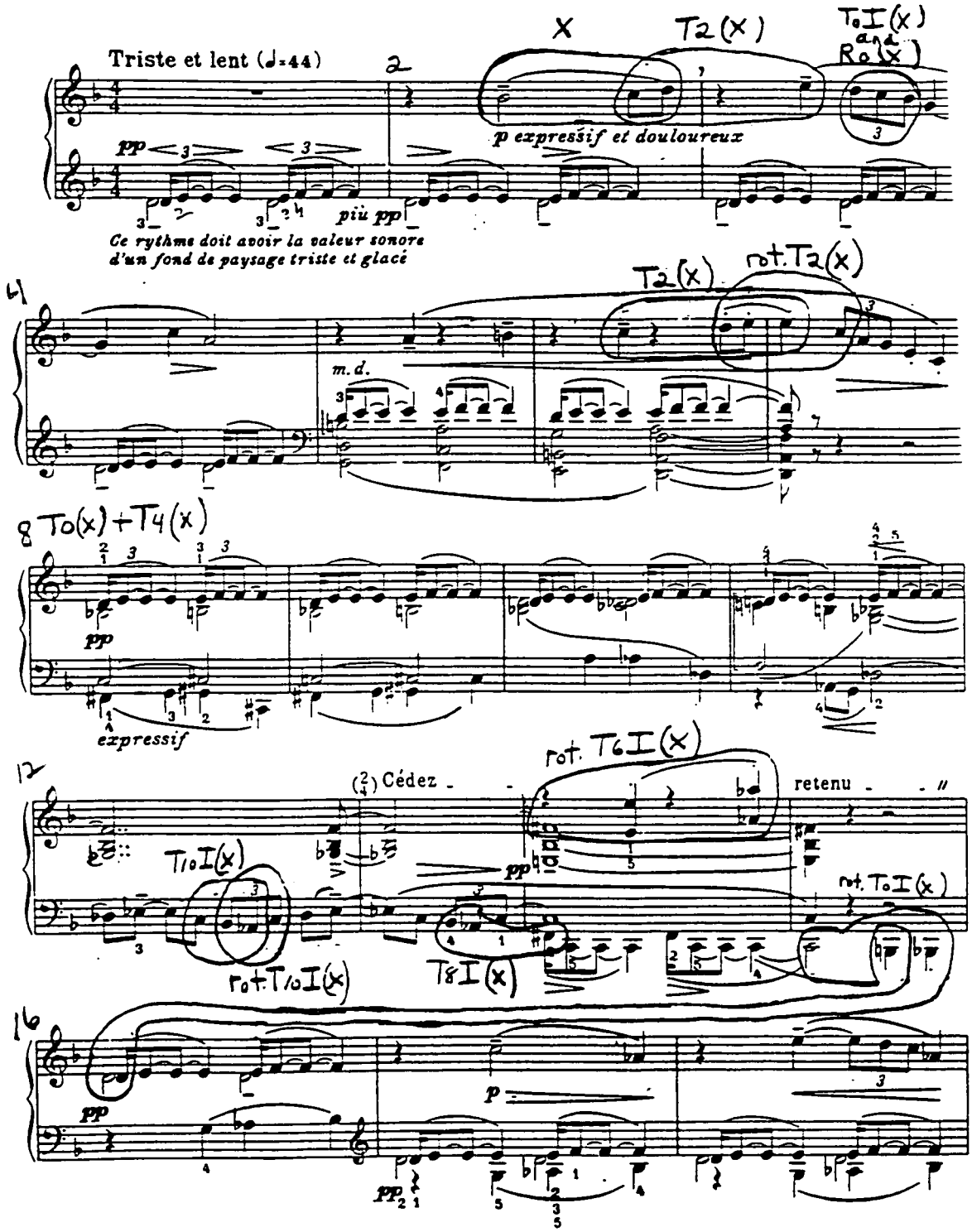

EXAMPLE 4-10A Transformation of a diatonic to a whole-tone collection in measures 1-16

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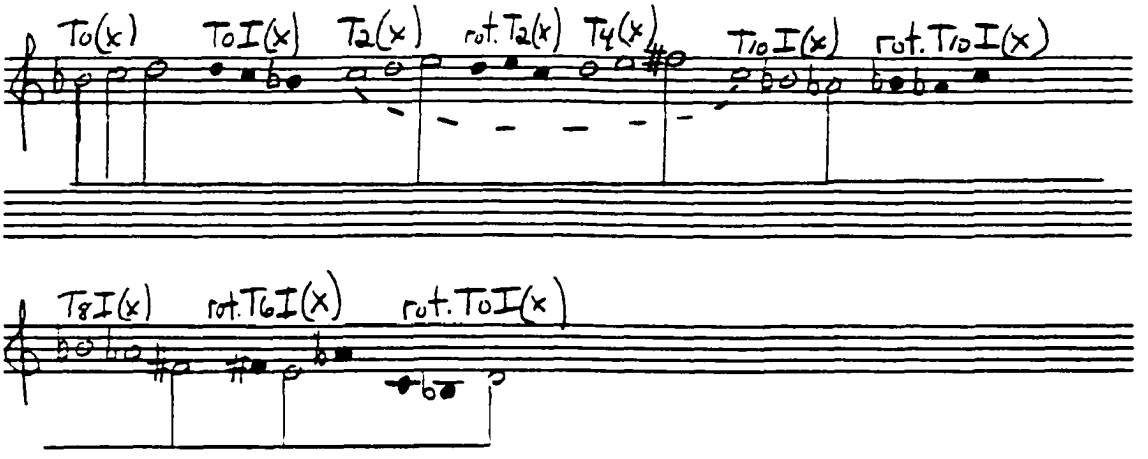
Thus, by the process of accretion, which here includes the operations of transposition, inversion, and rotation, the initial whole-tone subset Bb-C-D has been expanded into a complete whole-tone collection. A summary of this process is shown in Example 4-10B.



EXAMPLE 4-10B Reduction of Example 4-10A

The process is one in which the whole-tone collection becomes increasingly dominant until it eventually saturates the texture completely. In measure 8, for example, five notes of one whole-tone collection are present, but they coexist with other notes. By measure 14, all the notes foreign to that whole-tone collection have disappeared.

Now let us examine the process by which the diatonic partitioning of the F-B tritone of the D dorian scale is transformed into whole-tone partitioning. This transformation is of a different type from that in the previous example and does not result in a complete whole-tone collection (see Example 4-11A).

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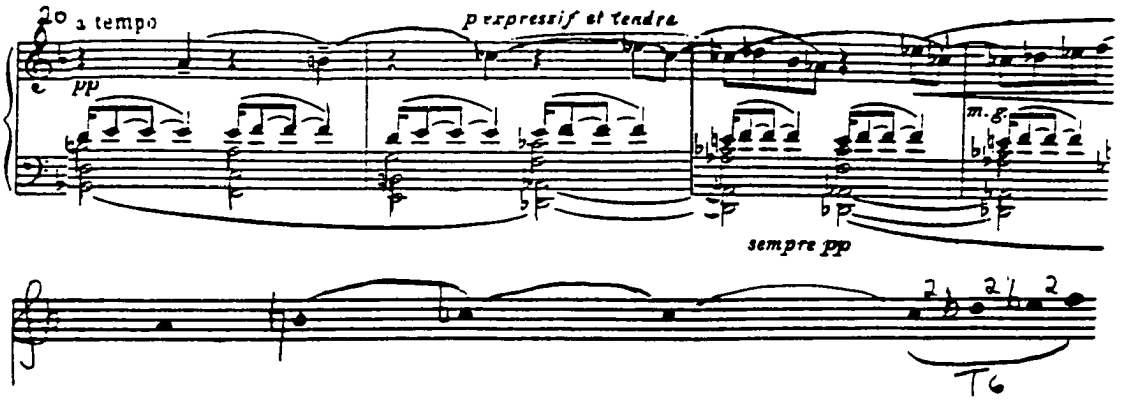
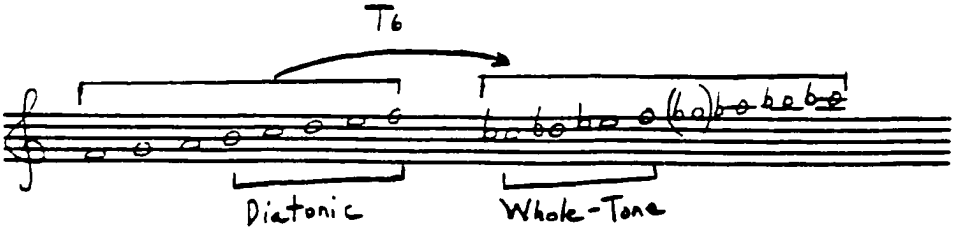


EXAMPLE 4-11A Transformation of diatonic to whole-tone partitioning of B-F tritone in measures 20-23



EXAMPLE 4-11B Relationships between the white-note and Gb major collections

The transformation takes place in measures 20-21. Measure 20 is identical to measure 5. The top voice moves from A to B and the lowest voice from G to F in the symmetrical motion discussed above. But the presentation of the white-note collection is not continued. In measure 21, B is reinterpreted as Cb, part of a new collection, presented in the top voice of measures 21-23 as six notes of the Gb major collection (missing only the Gb), which is a tritone removed from the white-note collection (see Example 4-11B). The tritone B-F, which is diatonically partitioned in the white-note collection, is partitioned into whole tones in the Gb major collection.

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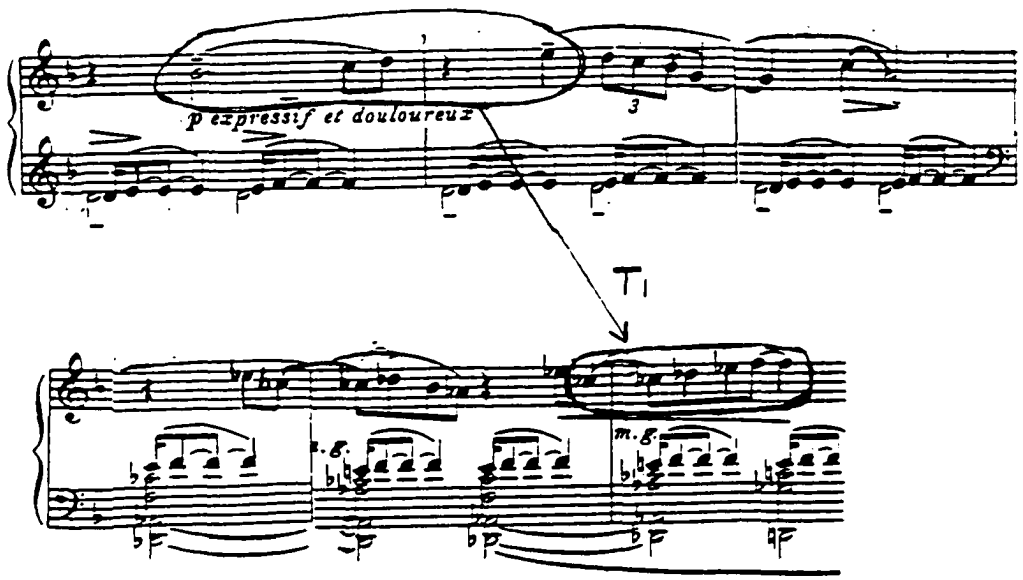
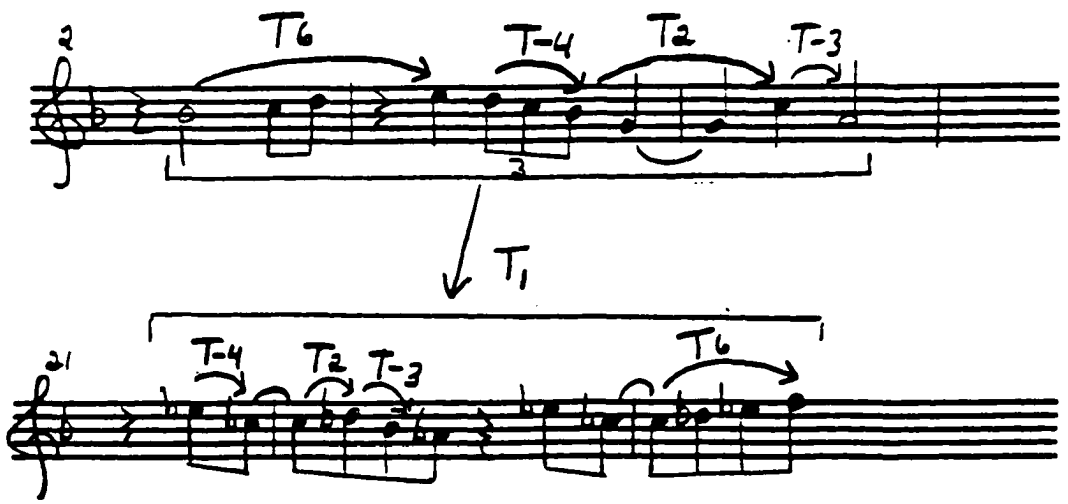
Now an interesting instance of parallelism occurs, one that is heard as an example of what we have called a planar shift. The new whole-tone tetrachord Cb-Db-Eb-F in measure 23 is in the same register as the Bb-C-D-E tetrachord in measures 2-3 (see Example 4-11C). This fact as well as the rising step-wise presentation of both tetrachords lead us to hear the Cb-F tetrachord as the T_1 transposition of the Bb-E tetrachord.



EXAMPLE 4-11C T_1 planar shift between two whole-tone tetrachords



EXAMPLE 4-11D Parallel T1 relationship between measures 2-4 and 21-23

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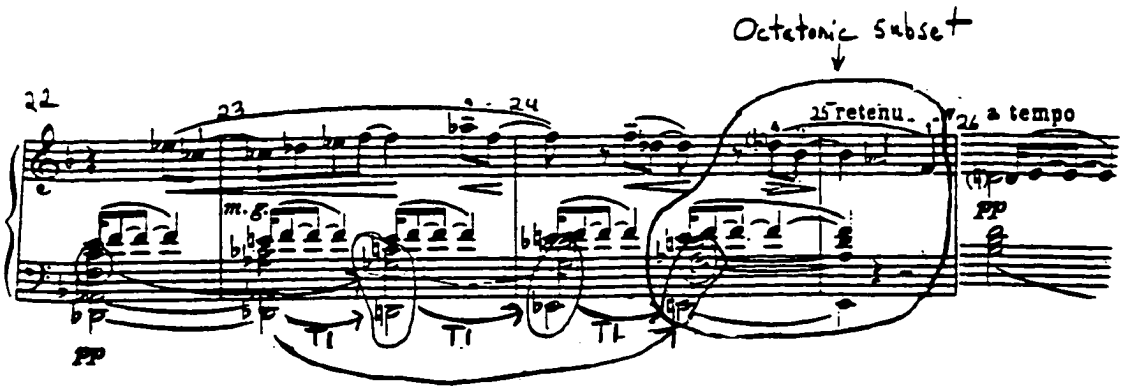
The T_1 relationship between these two whole-tone tetrachords is a kind of elaboration and extension of the T_2-T_1 relationship within the ostinato. This analogy is made even more explicit because the Bb-E tetrachord contains the pcs D-E of the ostinato and the B (Cb)-F tritone contains the F.

The T_1 relationship between these two whole-tone tetrachords is part of an overall T_1 relationship between measures 2-4 and 21-23, as Example 4-11D shows. The T_{-4} relationship between D and Bb in measure 3 corresponds to the same relationship between Eb and Cb in measure 21. Likewise, the T_{-3} relstionship between C and A in measure 4 corresponds to the relationship of Db and Bb in measure 22. And, as noted above, the whole-tone tetrachord from Bb-E in measures 2-3 corresponds to the Cb-F tetrachord in measure 23. Overall, measures 21-23 are parallel to measures 2-4 and in a T_1 relationship generated by the T_1 relationship in the ostinato.

Transformations Resulting in Octatonic Collections

There are two important passages in this prelude in which the transformation of a diatonic collection results in an octatonic collection. These passages occur in the second section of the piece. The first such transformation occurs in measures 24-26 (see Example 4-12).



EXAMPLE 4-12A Chromatic motion culminating in octatonic subset

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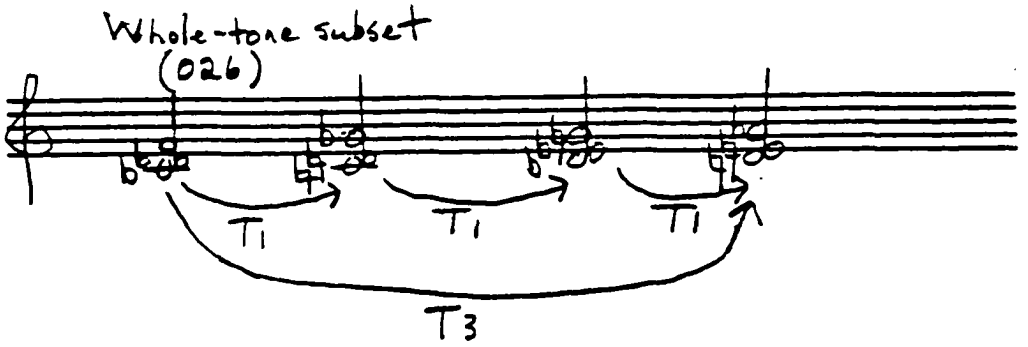
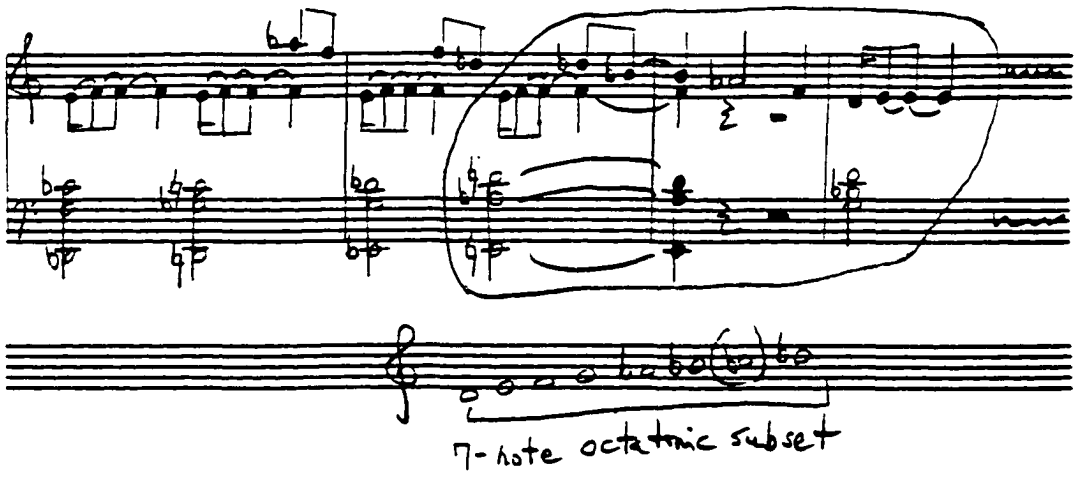
The circled collection on Example 4-12A is a six-note octatonic subset. This collection comes about as a culmination of the chromatic motion in measures 23-24. In this passage, incomplete "dominant-seventh" chords in the three lowest voices move up chromatically.

This progression can be construed as a whole-tone subset moving chromatically (Example 4-12B). The progression is a continuation of the T_1 motion between the Bb-E and B-F whole-tone tetrachords discussed above. Example 4-12B shows that the chromatic motion of measures 23-24 traverses an interval of 3, the total intervallic span of the ostinato.



EXAMPLE 4-12B Chromatic motion by whole-tone subset in measures 22-24 interpreted as a transformation of the ostinato



EXAMPLE 4-12C Seven-note octatonic subset in measures 24-26

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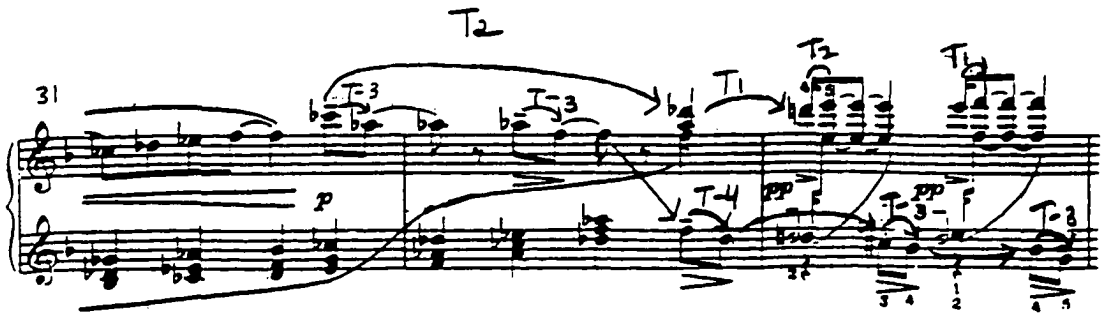
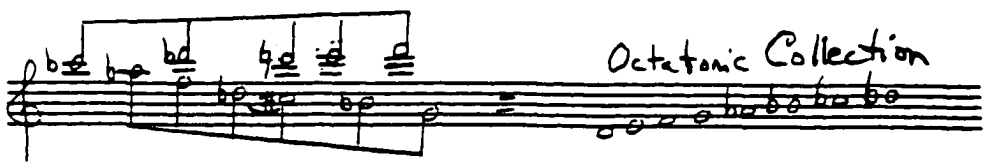
In measure 24, the chromatic ascent reaches its goal. An E is heard in the bass and above that are an Ab and the notes of the ostinato, D-E-F; in the top voice are the notes Db and Bb. Together these pcs form a six-note octatonic subset. The arrival of the G minor triad in measure 26 adds one more note to form the seven-note octatonic subset shown in Example 4-12C.

Toward the end of the piece, a complete octatonic collection is unfolded during the gradual transition from a Gb major collection to the D minor collection of the coda (see Example 4-13A).



EXAMPLE 4-13A Octatonic collection unfolding in measures 31-32



EXAMPLE 4-13B Reduction of Example 4-13A

On the last beat of measure 30, the melody ascends to Cb. Movement from the Cb radiates out in two directions. In the top line, the Cb moves to Db in measure 31 and then to D natural, E, and F in measure 32. The notes Cb-Db-D natural reproduce the ostinato at T_9, and D-E-F is, of course, the ostinato at T_0. Here, an alternating pattern of half and whole steps fills in the tritone Cb-F. This process, if continued, would generate a complete octatonic scale.

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Interestingly, the alternation of half and whole steps is yet a third way to fill in the tritone B (Cb)-F. We have seen whole-tone and diatonic partitioning of this tritone; now as a final twist, Debussy fills in the tritone octatonically.

At the same time that this process is going on in the top voice, a descending voice moves from Cb through Ab-F-Db/C#-Bb-G in measures 30-32. As Example 4-13B shows, the pcs of the ascending top line, together with those of the descending inner voice, form a complete octatonic collection.

Like the other parallel and symmetrical collections that abound in this prelude, the octatonic collection grows out of the principle of stepwise motion established by the ostinato. The diatonic and whole-tone tetrachords that play such an important role throughout the prelude are generated by the stepwise motion of the ostinato. The transpositional and inversional operations applied to these tetrachords, and to the ostinato itself, give rise to the various collections of the piece.

The processes at work in this prelude are similar to those we saw in "Les sons et les parfums tournent dans l'air du soir." In both works, transformational operations applied to an opening musical idea generate the material of the composition.

The significance of the "steps" of the title of this prelude cannot be overemphasized. The close scrutiny of the steps of the ostinato has been all-important. The T2-T1 relationships have been viewed from all possible angles. Through parallel and symmetrical operations those relationships have given rise to several different collections and have generated an entire musical universe. Various contexts--including whole tone, diatonic, octatonic, and chromatic collections--emerge from the initial material. The parallel and symmetrical motion creates those contexts, and also takes place within them. The steps have not so much traversed a space as created it.

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CHAPTER 5

Envoi

Debussy's preludes are remarkable works and constitute a major contribution to what Edward Lockspeiser has called "the golden age of French piano music."[50] Although the uniqueness of each prelude is striking, all three of the preludes discussed here exhibit parallelism and symmetry on both a large and small scale.

As we noted at the beginning of this study, these pieces are contextual in their organization. The initial motives or gestures of all three pieces have parallel and/or symmetrical elements, and these initial ideas are elaborated, generating parallelism and symmetry on a larger scale. In discussing Debussy's music, Luciano Berio speaks of "the repetition and continually transformed return of short elements that constantly change their function...following paths that seem to imitate the spontaneous mechanisms of mental association."[51] This characterization aptly describes what we have observed in analyzing these preludes.

Berio's remarks underline the importance of process and change in these pieces. This study has focussed on processes that are themselves parallel and symmetrical (transposition and inversion), as well as on processes that result in collections that are parallel and symmetrical. For example, the appearance of a whole-tone collection is viewed as the outcome of a multi-step process, such as accretion or mutation, through which the collection gradually evolves.

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[50] Edward Lockspeiser, *Debussy: His Life and Mind.* 2 vols. (New York: Macmillan, 1962) Vol. 2, 40.

[51] Rossana Dalmonte and Bálint András Varga, *Luciano Berio: Two Interviews* (New York and London: Marion Boyars Publishers, 1985), 48-49.

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It is worth remembering that the preludes are not strictly speaking "absolute music." They all have evocative titles, some of which link the pieces to literary works. Others have visual references of various kinds; a few are enigmatic, and their sources have not been traced. The composer placed the titles at the ends of the pieces, in order to let each piece speak for itself, without the prior intrusion of a programmatic title. Nevertheless, it is clear that this music does deal with extramusical ideas, and the music is organized in ways that seem to refer to the meaning of the titles. In some instances, certain parallel and symmetrical elements seem inspired by the title of the prelude.

"Le vent dans la plaine," depicts the wind, an elemental force of nature. The title is a quotation from the eighteenth-century poet Charles-Simon Favart: "Le vent dans la plaine / Suspend son haleine" (The wind on the plain / Holds its breath).[52] These lines were quoted by Verlaine as an epigraph to his poem "C'est l'extase langoureuse," which Debussy had set to music in his *Ariettes oubliées* of 1887.[53]

The force of the the wind, at times subdued and at times violent, is suggested in this prelude by the symmetrical treatment of register, in particular by the symmetrical expansion and contraction of register around the central ostinato WIND. The octave span delineated by WIND is at the center of the symmetrical expansions and contractions that give shape to much of the piece.

The parallel and symmetrical structure of the pentatonic melody TETRA also leaves its imprint on the form and continuity of the piece. TETRA is reconfigured to form chords and parallel fifths and is elaborated to create a complete pentatonic collection. In addition, TETRA becomes a projected set, and its interval classes determine many of the transpositional levels of the piece.

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[52] Paul Roberts, *Images: The Piano Music of Claude Debussy* (Portland, Oregon: Amadeus Press, 1996), 246.

[53] Claude Debussy, *Preludes, Book 1: The Autograph Score*, with an introduction by Roy Howat (New York: The Pierpont Morgan Library in association with Dover Publications, Inc., 1987), viii.

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The processes of mutation and accretion play an important role in this prelude. Both of these processes, applied to the collection formed by WIND and TETRA, give rise to whole-tone collections.

As noted in Chapter 3, the title of the fourth prelude, "Les sons et les parfums tournent dans l'air du soir, " is a line from Baudelaire's poem "L'harmonie du soir." This prelude is perhaps the most complex of the three analyzed in this study. The opening gesture contains several subsets, each of which is transformed by transposition and inversion. In the course of the piece, each subset emerges and recedes in importance, in imitation of the poetic image of sounds and perfumes swirling in the evening air.

One such subset is the melody of the opening gesture, referred to as MELOS in our analysis. MELOS, an octatonic subset, is transposed by minor thirds to produce a complete octatonic collection. Other transpositions and inversions of MELOS are configured as triads moving in strict parallel motion.

A future analysis of this piece might well be undertaken from the point of view of Neo-Riemannian theory. The piece is a veritable treasure trove of parsimonious chords, especially dominant-seventh, half-diminished and diminished-seventh chords that are $P_{2,0}$-related.[54] In fact, the signature harmony of the piece is created by the combination of two such inversionally-related seventh chords.

Transpositions of these seventh chords are controlled by the three-note MOTIVE, which is heard throughout the piece. The projection of MOTIVE, in prime, inversional, retrograde and retrograde-inversional forms, gives shape to the piece on a large scale.

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[54] For an interesting discussion of seventh chords in Neo-Riemannian theory see Childs, "Moving Beyond Neo-Riemannian Triads," and Douthett and Steinbach, "Parsimonious Graphs."

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"Des pas sur la neige" is an especially beautiful and poignant piece. The origin of its title has not been discovered, but the steps of the title are given musical expression by the predominantly stepwise motion throughout the piece. Initially, the steps are depicted by a three-note ostinato, D4-E4-F4.

The ostinato consists of two steps: one whole step and one half step. The transformational processes that take place involve extending the ostinato in both parallel and symmetrical motion. Separately and together, the whole and half steps of the ostinato give rise to diatonic, octatonic and whole-tone collections.

Treatment of register is important in "Des pas sur la neige," as it was in "Le vent dans la plaine." In "Des pas sur la neige" the ostinato serves as the registral midpoint. The way in which music occurs above, below, and above *and* below the ostinato is important in creating formal correspondances between the two sections of the piece.

In his extensive study of Debussy's music, Richard Parks comments that "a key to Debussy's extraordinary originality vis-à-vis his predecessors and contemporaries...is his emphasis in invention on kinetic, processive principles rather than constructs."[55]

We have seen many examples of kinetic processes in the preceding analyses. Parallel triads are generated by transpositions, inversions and other reconfigurations of opening motives. Processes of mutation and accretion applied to small collections eventually produce larger collections that are both parallel and symmetrical. Registral expansion and contraction give shape to large sections of music. And the process of projection extends the power of a motive throughout a composition.

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[55] Parks, *The Music of Claude Debussy*, 318-319.

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In all of these analyses the emphasis has been on discovering parallel and symmetrical features of the processes that shape each piece. Of particular interest has been the ways in which transformations of initial material can be traced throughout the piece on both a small and large scale. And it is interesting to note that many of the transformations seem to metaphorically embody images expressed in the title of each prelude. In this study we have seen that parallel and symmetrical processes link the surface events of a piece with its deeper structure, which enables the entire piece to serve as a kind of *aperçu*, a musical image of a poetic idea.

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Bibliography

Antokoletz, Elliott. *The Music of Béla Bartok.* Berkeley: University of California Press, 1984.

Bernard, Jonathan. *The Music of Edgard Varèse.* New Haven: Yale University Press, 1987.

Briscoe, James R. *Claude Debussy: A Guide to Research.* New York and London: Garland Publishing, 1990.

Brailoiu, Constantin. "Pentatony in Debussy's Music." *Studia Memoriae Belae Bartok Sacra*, 377-417. London: Boosey and Hawkes, 1958.

Bruhn, Siglind. *Images and Ideas in Modern French Piano Music: The Extra-Musical Subtext in Piano Works by Ravel, Debussy, and Messiaen.* (Aesthetics in Music No. 6, Edward Lippman, Gen. Ed.) Stuyvesant, NY: Pendragan Press, 1997).

Childs, Adrian P. "Moving Beyond Neo-Riemannian Triads: Exploring a Transformational Model for Seventh Chords." *Journal of Music Theory* 42/2 (Fall, 1998): 181-193.

Cogan, Robert, and Pozzi Escot. *Sonic Design: The Nature of Sound and Music.* Englewood Cliffs, N.J.: Prentice-Hall, 1976.

Cohn, Richard. "Inversional Symmetry and Transpositional Combination in Bartók." *Music Theory Spectrum* 10 (1988): 19-42.

----------. "Properties and Generability of Transpositionally Invariant Sets." *Journal of Music Theory* 35/1 (Spring 1991): 1-32.

----------. "Transpositional Combination in Twentieth-Century Music." Ph.D. dissertation, Eastman School of Music, 1986.

Dalmonte, Rossana, and Bálint András Varga. *Luciano Berio: Two Interviews.* New York and London: Marion Boyars Publishers, 1985.

Debussy, Claude. *Preludes, Book 1: The Autograph Score*, with an introduction by Roy Howat. New York: The Pierpont Morgan Library in association with Dover Publications, Inc., 1987.

Douthett, Jack, and Peter Steinbach. "Parsimonious Graphs: A Study in Parsimony, Contextual Transformations, and Modes of Limited Transposition." *Journal of Music Theory* 42/2 (Fall, 1998): 241-263.

Forte, Allen. "Debussy and the Octatonic." *Music Analysis* 10: 1-2 (1991): 125-169.

----------. "Schenker's Conception of Musical Structure." *Journal of Music*

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Theory 3(1959): 1-30.

Friedmann, Michael. "Approaching Debussy's 'Ondine'." *Cahiers Debussy,* n.s. 6 (1982): 22-35.

Guertin, Marcelle. *De La Lecture à L'Àudition d'un Texte Musical: Une étude des thèmes dans le Livre I des Préludes pour piano de Debussy.* Montreal: Les Presses de L'Université de Montréal, 1990.

Haimo, Ethan. "Generated Collections and Interval Control in Debussy's Preludes." *In Theory Only* 4/8 (Feb./March 1979): 3-15.

Katz, Adele. *Challenge to Musical Tradition.* New York: Alfred A. Knopf, 1945.

Kopp, David. "Pentatonic Organization in Two Piano Pieces of Debussy." *Journal of Music Theory* 41.2 (Fall, 1997): 261-287.

Lewin, David. *Generalized Musical Intervals and Transformations.* New Haven: Yale University Press, 1987.

----------. *Musical Form and Transformation: 4 Analytic Essays.* New Haven: Yale University Press, 1993.

----------. "Some Instances of Parallel Voice-Leading in Debussy." *19th Century Music* 11 (1987): 59-72.

Lockspeiser, Edward. *Debussy: His Life and Mind.* 2 vols. New York: The Macmillan Company, 1962.

Parks, Richard. "Pitch Organization in Debussy: Unordered Sets in 'Brouillards,' *Music Theory Spectrum* 2 (1980): 119-34.

----------. *The Music of Claude Debussy.* New Haven: Yale University Press, 1989.

Perle, George. "Symmetrical Formations in the String Quartets of Béla Bartók." *Music Review* 16 (November, 1955): 300-312.

Roberts, Paul. *The Piano Music of Claude Debussy.* Portland, Oregon: Amadeus Press, 1996.

Saltzer, Felix. *Structural Hearing: Tonal Coherence in Music.* New York: Dover, 1962.

Straus, Joseph N. *Remaking the Past.* Cambridge: Harvard University Press, 1990.

----------."Voice Leading in Atonal Music." *Music Theory in Concept and Practice*, ed. James M. Baker *et al.* Rochester: University of Rochester Press, 1997: 237-274.

Suchoff, Benjamin, ed. *Béla Bartók Essays.* New York: St. Martin's Press, 1976.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Wenk, Arthur B. *Claude Debussy and Twentieth-Century Music.* Boston: Twayne Publishers, 1983.

----------. *Debussy and the Poets.* Berkeley: University of California Press, 1976.

Whittall, Arthur. "Tonality and the Whole-Tone Scale in the Music of Debussy." *Music Review* 36 (1975): 261-71.

Wilson, Paul. *The Music of Béla Bartók.* New Haven: Yale University Press, 1992.

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