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The lamento motif: Metamorphosis in Ligeti's late style

Taylor, Stephen Andrew, D.M.A.

Cornell University, 1994

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THE LAMENTO MOTIF:
METAMORPHOSIS IN LIGETI'S LATE STYLE

A Dissertation
Presented to the Faculty of the Graduate School
of Cornell University
in Partial Fulfillment of the Requirements for the Degree of
Doctor of Musical Arts

Part Two

by
Stephen Andrew Taylor
May 1994

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BIOGRAPHICAL SKETCH

Stephen Andrew Taylor was born in Murray, Kentucky on 16 August 1965, and grew up in Taylorville, Illinois (no relation to the family). He received a Bachelor of Music degree with distinction from Northwestern University in 1987, majoring in Composition, and that fall enrolled at Cornell, where he received a Master of Fine Arts degree in 1990.

His main composition teachers have been Steven Stucky, Karel Husa, Alan Stout, and M. William Karlins; he has also studied conducting, horn, and piano.

In the spring of 1992, he was an Affiliate Artist at Syracuse University; that fall he accepted a position as Assistant Professor of Theory, Composition, and Horn at Pittsburg State University in Pittsburg, Kansas, where he presently teaches. His music has been recognized by ASCAP and the Conservatoire Américain de Fontainebleau, among others; among his commissions are pieces for Northwestern University and the Syracuse Society for New Music.

to Steven Stucky

ACKNOWLEDGEMENTS

First I must thank the members of my committee: Kofi Agawu, whose knowledge of African music and insight into everything else has inspired me ever since he arrived in 1989; Edward Murray, who has shared with me many wonderful experiences, musically and intellectually; and Steven Stucky, who has helped me grow in more ways than I can say. I must also thank William W. Austin and Karel Husa for sharing their time and insight with me. In late spring and fall of 1993 I spent a couple of invaluable afternoons with Roberto Sierra, a composer and former student of Ligeti, who now teaches at Cornell. Thanks are due to the following publishers for permission to reproduce excerpts of their copyrighted works: HarperCollins Publishers, Cambridge University Press, and B. Schott's Söhne and European American Music Distributors Corporation, their sole U.S. and Canadian agent.

The title of this essay was inspired by a short but, for me, important conversation I had with Dr. Louise Duchesneau, Ligeti's assistant. I am also indebted to Henri Freyburger for help in translating German; and to David Feurzeig, Tung-Lung Lin, Brian Robison, Matt Whittier, my brother Bob, and my sister Susan, for reading (or listening to me read) ideas and drafts of this paper. And most of all to my parents, who have encouraged me since I was a child.

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INTRODUCTION: THE LAMENTO MOTIF AND LIGETI'S LATE STYLE

When György Ligeti's harpsichord pieces *Hungarian Rock* and *Passacaglia ungherese* appeared at the end of the 1970s, many listeners noticed something new. These small, ironic pieces, so directly recalling Ligeti's heritage, sounded nothing like the experimental composer of *Atmosphères* and the Chamber Concerto—although they inhabited, perhaps, the same bizarre world as *Le Grand Macabre*. With his next piece, the four-movement Trio for Horn, Violin, and Piano of 1982, it became apparent that this new style was neither a fluke nor a joke. Like the harpsichord pieces, the Trio embraced traditional forms. It was even inscribed "Hommage à Brahms," whose own Trio, Ligeti wrote, "hovers in the musical heavens as an unequaled example of this genre."[1] What had caused such a drastic change in his music?

In a 1983 interview with István Szigeti, the composer speaks of a "stylistic caesura":

> . . . the works of my youth were composed under the powerful influence of Bartók, and gradually . . . even before 1956, a change came about. I began to write what I call surface music and micropolyphonic music. Then I gradually arrived at a point where I felt this could no longer go on, I wanted to remain myself. I did not want to follow any kind of fad, not even the

[1] György Ligeti, liner notes, trans. Sid McLauchlan, Erato Compact Disc ECD 75555.

> fashion of turning back to romanticism, but I knew I would have to change something in my own music as well.[2]

The result of this turning point was a new musical style, announcing itself fully with the Horn Trio:

> I could say that my earlier pieces are crystalline in nature, and that these [new works] are much more vegetative and proliferating pieces. Let me say that this Horn Trio is the first piece in this new Ligeti style. . . . I am myself, but let us call this my last period, the period of my old age, I do not know how long it will last (209-10).

With this second turning point, Ligeti's career can be divided into three stylistic periods, each separated by a compositional pause. The first, marked by the influence of Bartók, ended when Ligeti escaped to Germany in 1956; his next major work, *Apparitions,* did not appear until 1959. Then followed many pieces, culminating in his opera *Le Grand Macabre* of 1977. The Horn Trio appeared five years later, after another long silence.

These creative silences coincide with personal turning points for Ligeti. His life in Hungary ended with his traumatic escape to Germany; at the same time, he symbolically escaped the influence of Bartók. A different crisis brought on the second turning point, as he describes in the same interview:

> [The Horn Trio] is important for me, because after my opera, which I completed in 1977, I composed only two harpsichord pieces in 1978. A four-year gap followed which had two causes. One of them was that when a man approaches sixty, that is in itself an illness. To put it bluntly, I had been gravely ill for some time, and this meant a pretty big break in my life (209).

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[2] István Szigeti, "A Budapest Interview with György Ligeti," *The New Hungarian Quarterly* 25 (1984) 205.

As the composer says, even though these crises have marked stylistic shifts, at the same time his music has continuously evolved. There is a striking visual parallel in the M. C. Escher print, *Metamorphosis II:* although the changes from moment to moment are subtle, over a distance the images are dramatically different (but by the end, they have come full circle).

Musically, the shift to the late style has embodied a change in compositional techniques. The middle style could be characterized by different "Ligeti signals," such as a major second and minor third appearing as a chord, the pitch-class set [0, 2, 5] near the end of *Lontano;* a single interval spread out over wide registers (tritones and octaves are especially prominent); "clocks," or ticking, machine-like music; and "clouds," the micro-polyphonic webs of *Atmosphères* and the Requiem. This repertory of signals appeared freely from piece to piece as Ligeti developed and experimented with his techniques.

Perhaps the most important characteristic of the late style is the development of a new palette of "Ligeti signals," which both replaces and appears alongside the old techniques. At the same time, this new palette recalls many elements of Bartók's style, bringing about a synthesis of old and new. This essay will examine the late style by focusing on one of the most prominent ideas in this new compositional palette: a repeated, falling, chromatic scale fragment which Ligeti calls the "Lamento motif," shown below in Figure 1.1.[3] It appears first in the final movement of the Horn Trio (1982); then in the sixth Piano Etude,

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[3] Dr. Louise Duchesneau, Ligeti's secretary and assistant, mentioned Ligeti's term in a conversation with the author, 28 February 1993.

Automne à Varsovie (1985); then in the second and third movements of the Piano Concerto (1985-87).[4] Although the motif remains substantially the same, its use and context change from piece to piece, showing how Ligeti's musical thought (or at least one strand of it) changes over these five years. The Lamento motif offers us a window onto Ligeti's late style.

This chapter surveys the elements of the new style, comparing them with Ligeti's earlier music. The following three chapters are analyses of specific works. Chapter two discusses the final movement of the Horn Trio; chapter three, the sixth Piano Etude, *Automne à Varsovie;* and chapter four, the second and third movements of the Piano Concerto. A fifth chapter summarizes the separate analyses, and examines the new style's affinity to Ligeti's early style, influenced by Bartók.

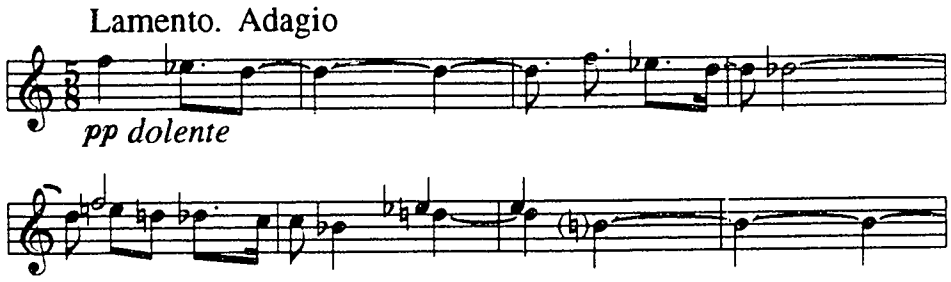

Figure 1.1 The Lamento motif as it appears in the last movement of the Trio for Horn, Violin and Piano (1982), mm. 6-13, piano (sustaining notes are left out). © B. Schott's Söhne, Mainz, 1984. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

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[4] Ligeti added the fourth and fifth movements later, finishing the entire piece in early 1988.

The Lamento motif was inspired partly by the funeral songs of the women of Transylvania.[5] Denys Bouliane mentions other likely sources, including the end of Purcell's *Dido and Aeneas*; he also points out that falling lines (such as the sigh motive) almost universally express grief.[6] In this regard Deryck Cooke in *The Language of Music* describes (somewhat debatably) certain scale tones, especially when they appear as an appoggiatura, falling from dissonance to resolution, as "a burst of anguish."[7] As later chapters will show, Ligeti's Lamento motif is similar.

Of course, it used to be exceptional for a Ligeti piece to use a theme at all. The return of recognizable themes is one characteristic of the new style. To understand this development, as well as others that led to the Horn Trio and beyond, we need to compare briefly the elements of the new style with the earlier music.

At the start of the 1980s Ligeti discovered new influences, as he relates in an essay on the Piano Etudes:

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[5] Jeffrey Bossin, "György Ligeti's New Lyricism and the Aesthetic of Currentness: The Berlin Festival's Retrospective of the Composer's Career," *Current Musicology* 37/38 (1984) 237.

[6] Denys Bouliane, "Six 'Etudes' pour piano de Ligeti," *Contrechamps* 12/13 (1990) 98-132. This article is based on a radio lecture by Bouliane.

[7] Deryck Cooke, *The Language of Music* (London: Oxford University Press, 1959) 66-69, 76-78. Cooke differentiates between two intervals: "whereas the minor sixth is an expression of anguish in a context of flux, the minor second is an expression of anguish in a context of finality; in other words, the minor sixth expresses an active anguish, the minor second a hopeless anguish" (78). Cooke's ideas are questionable, especially outside the context of common-practice Western European music, but they are intriguing nevertheless. Ligeti's appoggiaturas are closer to the minor-second type.

> While I was writing [my] pieces for two pianos in 1976, I was unaware of Nancarrow's music and that of sub-Saharan Africa. However, I have always had an interest in picture-puzzles, paradoxes of perception and ideas, for certain aspects of the shaping and building of form, of growth and transformation and for the distinction between various levels of abstraction in thought and language. Furthermore, I am very partial to the works of Lewis Carroll, Maurits Escher, Saul Steinberg, Franz Kafka, Boris Vian, Sándor Weöres, Jorge Luis Borges and Douglas R. Hofstadter and my way of thinking is strongly marked by the views of Manfred Eigen, Hansjochem Autrum, Jacques Monod and Ernst Gombrich. Since the beginning of the 1980s this list of stimulating interests has been extended to include the highly complex music for mechanical piano of Conlon Nancarrow, recordings from Simha Arom's collections of Central African music and Benoit Mandelbrot's fascinating "fractals," which Manfred Eigen brought to my attention in 1984 by showing me the computer-generated pictures of Heniz-Otto Peitgen and Peter H. Richter.
>
> It would however be inappropriate to assume that my *Piano Etudes* (1985) are a direct result of these musical and extra-musical influences. By revealing my interests and inclinations I am merely indicating the intellectual environment in which I work as a composer. Moreover, in my music one finds neither that which one might call the "scientific" nor the "mathematical," but rather a unification of construction with poetic, emotional imagination.[8]

Typically, the influences Ligeti notes since the beginning of the 1980s are diverse: the polyrhythmic music of the Pygmies of the Central African Republic (recorded and analyzed by Simha Arom); the rhythmically complex player piano music of Conlon Nancarrow; and the beautiful, infinitely detailed images of deterministic chaos captured in the Mandelbrot set. A common link between these influences is their

---

[8] Ligeti, "On my *Etudes* for Piano," trans. Sid McLauchlan, *Sonus* 9/1 (1988) 3-4.

extreme complexity. Ligeti's music, which has always tended to extremes, embraces these new, complex forms, turning them to his own ends.

One way in which this complexity appears is in a new idea of harmony, amounting to what could be called a rebirth of voice-leading; Gavin Thomas describes it as "simultaneously [reinventing] conventional harmony while turning it on its head.[9] Harmonically, it is especially difficult to draw a line between an "old" and "new" style, because of the gradual change spanning Ligeti's career; nevertheless, we can name a turning point, *Le Grand Macabre* (1974-77). The opera sums up many of Ligeti's earlier ideas, and at the same time introduces new ones—particularly the strange sense of harmonic succession at the end described by Paul Griffiths:

> In the concluding passacaglia the harmonic objects are mostly thirds, sixths and triads, but they are arranged so as not to fit into any coherent tonal pattern, and therefore to suggest a world in which the features are recognisable but the rules are entirely altered. Moreover—and this only makes the alterations more disquieting—there is no sense of a desperate avant-garde flouting of tradition but rather a blank forgetting of how things used to be.[10]

In the Horn Trio as well (especially in the first and third movements), there is a semblance of diatonic harmony, reinforced by the rhythm and character of the lines. But the lines never approach a cadence; harmonically, the ending of one phrase could just as easily

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[9] Gavin Thomas, "New Times: New Clocks," *Musical Times* (July 1993) 376-79. The author is indebted to Edward Murray for some of the ideas regarding voice-leading.

[10] Paul Griffiths, *György Ligeti.* The Contemporary Composers (London: Robson Books, 1983) 106.

begin the next. Resolutions are created in other ways, through rhythm, dynamics, or register. One way Ligeti achieves this "non-diatonic diatonicism" is through his handling of the tritone. At a V^7-I cadence in tonal music, a tritone is part of the dominant seventh chord immediately before the tonic; it must resolve in contrary motion. In Ligeti's new harmonic language, though, music often approaches and leaves the tritone through similar or even parallel motion. Figure 1.2 shows several instances of tritone voice-leading in Ligeti's music since 1980. As this example also shows, sixths, thirds, fifths and triads abound.[11] The harmonic richness and ambiguity of the works of the 1980s is greatly removed from the clusters of *Atmosphères*, or even the "Ligeti signals" of *Lontano* and the Chamber Concerto.

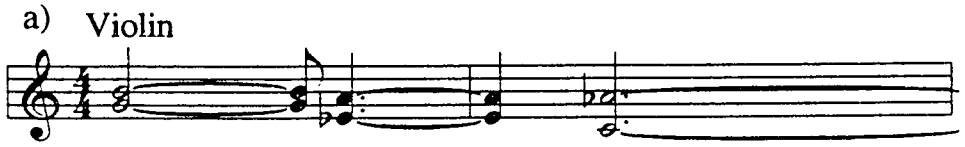

Figure 1.2 Tritone voice-leading in Ligeti's music of the 1980s: a) Horn Trio, I, mm. 1-2, violin; b) Horn Trio, III, mm. 1-2; c) Piano Etude No. 1, *Désordre*, mm. 1-4; d) Piano Etude No. 4, *Fanfares*, mm. 211-16; e) Piano Etude No. 5, *Arc-en-ciel*, m. 11; f) Piano Concerto, I, mm. 1-3, vn 1-2 *(continued on next page).* © B. Schott's Söhne, Mainz, 1984, 1986. Used by permission of European American Music Distributors Corporation, sole U. S. and Canadian agent for B. Schott's Söhne, Mainz.

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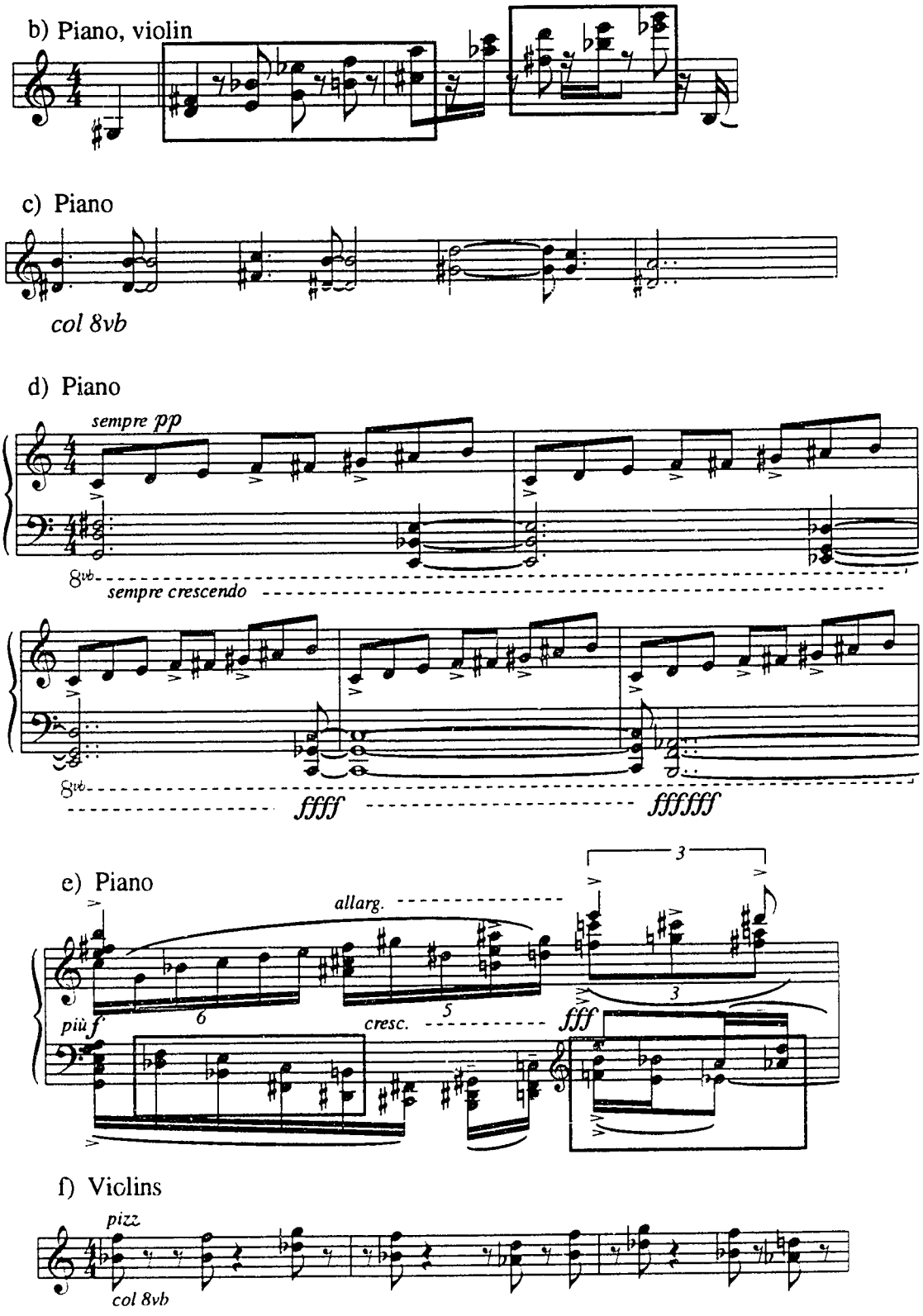
[11] In his interview with Pierre Michel, Ligeti gives a fascinating "inventory" of the intervals he has favored at different times. See Pierre Michel, *György Ligeti: Compositeur d'aujourd'hui* (Paris: Minerve, 1986) 170-72.

Figure 1.2 (Continued)



The second movement of the Horn Trio introduces another new technique, the use of modes. The movement is based on a one-measure ostinato, in a mode favored by Bartók—also identical to Messiaen's sixth mode of limited transposition:

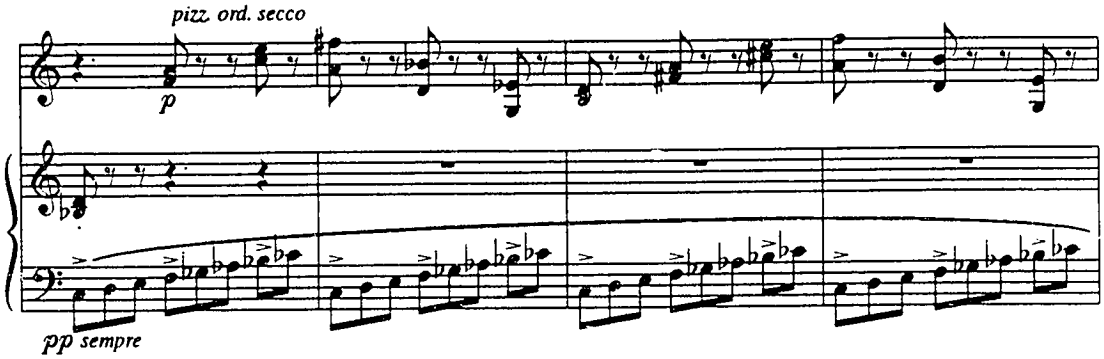


Figure 1.3 Horn Trio, second movement, mm. 11-14. © B. Schott's Söhne, Mainz, 1984. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne.

Ligeti has since combined modal experimentation with his ongoing search for alternatives to equal temperament. In the first Piano Etude, *Désordre,* he splits the total chromatic so that the right hand plays on the white keys of the piano, the left on the black, giving the aural illusion of a different tuning system. All twelve pitches are present, but we hear them in new, unusual combinations.[12] The Piano Concerto uses this partitioning and introduces others, one of which splits the twelve notes

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12 Actually, this partitioning is not completely new. Bartók, Ginastera, and Nicholas Slonimsky, among others, used it in their music. Ligeti is perhaps the first to use it so systematically, but it also recalls the music of Bartók—particularly such pieces as *Boating* and *Diary of a Fly* from *Mikrokosmos* and some of the *Forty-four Duos* for violins.

into two complementary six-note, whole-tone collections, one for each hand. This "super whole-tone" partitioning is also the *raison d'être* for the seventh Piano Etude, *Galamb borong,* which presents the piano in illusory Javanese gamelan tuning:

> The prevalent mode of the piano allows for twelve-tone and six-tone equidistantiality, but not five-note, as in the Javanese *slendro* tuning system, whose intervals cannot be found in equal temperament. Now, however, I thought up another kind of *slendro*-type world of sound, which is neither chromatic nor diatonic, but also not whole-tone; it is present (albeit hidden) in the usual tempered mode of the piano, but prior to *Galamb borong* it could not be heard.[13]

Other pieces introduce another harmonic idea, "open-fifth fields," or chords and melodies made by piling up perfect fifths. Ligeti has used these chords before, but beginning in the second of the choral *Magyar Etüdök* (*Hungarian Etudes,* 1983) they become more prominent. The second and eighth Piano Etudes, *Cordes Vides (Open Strings)* and *Fém (Bright Metal),* are based entirely on fifths; they also appear in the Piano Concerto. Fifths, too, recall Bartók, particularly the second movement of the Piano Concerto No. 2. In the Horn Trio they appear obliquely: the violinist often plays double stops with at least one open string, or plays a melody accompanied by drones on open strings. Ligeti thinks of these pure, violin fifths as another alternative tuning.[14]

In the eighties he began treating the horn (and occasionally the trombone) as collections of differently pitched natural horns, producing

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[13] Ligeti, program note for *Etudes for Piano, Book II*, trans. Eric Wilson, The Green Umbrella: Los Angeles Philharmonic New Music Group, 1 March 1993.

[14] Ligeti, "György Ligeti on His Violin Concerto," program note for the Los Angeles Philharmonic, 18, 19, 21 February 1993, 1.

the harmonic series on different notes. In this way Ligeti obtains flat seventh and thirteenth partials, as well as sharp elevenths. The Horn Trio combines the natural horn tuning with other systems: "In composing the Horn Trio, I deliberately sought alternatives to the tempered system. This is something that had always interested me and the solution I found at that time stems directly from its instrumentation: the piano is tempered, the violin plays pure fifths and, in the first three movements, I wrote for natural horn."[15] These natural tunings reappear in the Piano Concerto, and later in the Violin Concerto; he even experiments with microtones in the a cappella *Drei Phantasien* of 1983, writing chords that are in between a major and minor triad.[16]

Perhaps the most obvious change in Ligeti's style is his new approach to rhythm. Here, as in harmony, he has always been interested in acoustic illusions, which in the rhythmic domain take two main paths: polymeter, and a type of polyrhythm that produces the illusion of simultaneous tempi. Simultaneous meters appear in Ligeti first in the Three Pieces for Two Pianos (1976), in which one piano plays in 4/4, the other in 6/8, producing a microscopic, two-against-three hemiola effect. This technique reappears in the "Mirror-canon" first movement of *Magyar Etüdök* and the Piano Concerto's first movement, and becomes transformed in the Concerto's last movement. Here the time signature is marked in three different ways (shown below in Figure 1.4); since the left hand, though, always plays in duples (dotted eighths and

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[15] Ibid.
[16] Michel 175.

quarters), the effect is of 6/4 (♩♩♩) vs. 12/8 (♩.♩.), an effect which also appears in the first of the *Nonsense Madrigals* (1988).

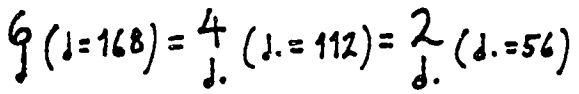

Figure 1.4 Time signature and tempo marking for the fifth movement of the Piano Concerto (1985-88). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne.

The first movement of the Horn Trio uses a variation of this technique: all parts are marked 4/4, but the violin always plays duples, the horn usually plays triplets, while the piano plays in quintuplets. In the second movement, another variation appears: the basic meter $\frac{3+3+2}{8}$ becomes layered with other, asymmetrical divisions of the bar. This effect recurs often in recent Ligeti scores.

Simultaneous tempi first appear in *Poème Symphonique* for 100 metronomes (1962). Ligeti uses the effect in several subsequent pieces, including *Continuum* (1968), *Coulée* (1969), the Chamber Concerto (1969-70), and others. The effect, though, takes on new significance in the 1980s, especially in the sixth Piano Etude and the third movement of the Piano Concerto. In these pieces, a quick, basic pulse is given irregular accents which produce the illusion of separate tempo streams; chapter three describes the technique in detail.[17]

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[17] The third movement of the choral *Magyar Etüdök,* by contrast, has different sections of the chorus singing in different metronomic tempos.

Another difference in the music since 1980 is the above-mentioned appearance of themes, of singable melodies. The Lamento motif of this study, chromatic as it is, is one of Ligeti's more singable tunes, and more of them follow in the Piano Concerto and *Nonsense Madrigals.* Melodies began to reappear in Ligeti scores as early as *Melodien* (1971), and even earlier in the last movement of the Chamber Concerto (1969-70).[18] After *Le Grand Macabre,* though, melody has become steadily more important, as shown in a variety of vocal works Ligeti has composed since 1980: *Drei Phantasien* and *Magyar Etüdök* for unaccompanied chorus, the *Nonsense Madrigals* for the King's Singers, and an opera currently in progress based on Lewis Carroll's *Alice* books.

In form as well as other musical materials, Ligeti's approach has shifted. While earlier pieces invented new forms growing directly out of the musical ideas, the recent works sometimes use ternary patterns or repetitive forms such as the passacaglia. These traditional forms better fit his harmonic language, eerily reminiscent of tonality. Also, especially in the more rhythmically complex pieces, a complex form could overload the listener's perception too easily. Only occasionally does Ligeti use such a traditional form, however; each of the four pieces in this study has a different form, and many others appear in the new works as well.

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[18] Michael Searby discusses these melodies in his article, "Ligeti's Chamber Concerto: Summation or Turning Point?" *Tempo* 168 (March 1989) 30-34.

One of the most interesting structural ideas involves schemes of complex ostinatos, working in an almost mechanical fashion. Pieces such as *Monument* (the first of the Three Pieces for Two Pianos), the first movement "Mirror Canon" from *Magyar Etükök,* the first Piano Etude, *Désordre*, and to some extent, the first and fourth movements of the Piano Concerto elevate the mechanical quality that has characterized some of Ligeti's earlier music (*Poème Symphonique* et al.) to a pre-compositional principle.[19] Just as in the earlier music, though, the machines do not run perfectly: they run in two speeds at once, or their gears become misaligned, as in *Désordre.*[20] Ligeti himself sometimes refers to these pieces as "vegetative" or "genetic," since the entire structure, like the DNA of an organism, is contained within any one measure.[21]

Despite all of these new techniques, Ligeti's works remain instantly recognizable. As we have seen, many of his interests and preoccupations have remained the same since he emigrated to the West in 1956, and even before: the differences, mostly, are new solutions to

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[19] See in this regard Jane Piper Clendenning, "The Pattern-Meccanico Compositions of György Ligeti," *Perspectives of New Music* 31/1 (Winter 1993) 194-234; this article is drawn from her dissertation, "Contrapuntal Techniques in the Music of György Ligeti" (Yale University, 1989).

[20] Even in "Monument," which some writers (Griffiths 1983, Bouliane 1990) have compared to Boulez's *Structures 1a,* each individual line expands and contracts rhythmically, like a wheezing engine. Besides giving the impression of a machine not working properly, this changing rhythm makes the piece more complex.

[21] Ligeti, "My Position as a Composer Today," *Contrechamps* 12/13 (1990) 8-9.

the same compositional problems. He describes his goals in an essay on the Piano Concerto:

> I favor musical forms that are less process-like and more object-like. Music as frozen time, as an object in an imaginary space that is evoked in our imagination through music itself. Music as a structure that, despite its unfolding in the flux of time, is still synchronically conceivable, simultaneously present in all its moments. To hold on to time, to suspend its disappearance, to confine it in the present moment, this is my primary goal in composition.[22]

He has always been fascinated, as he writes above (p. 6), by illusions and puzzles; since 1980 he has discovered new ways of fashioning aural illusions.[23] Ligeti writes about the first movement of the Piano Concerto: "When this music is properly performed, that is at the given speed and with the given accentuation within the separate levels, after a certain time it will 'lift off' like an aircraft: the rhythmic events, too complex to be perceived in detail, hang in a suspended state."[24] *Continuum* and the sixth Piano Etude both produce an effect of audible, slower lines (or "super-signals," as Ligeti calls them) rising from a single line of very fast notes. This technique is perhaps the opposite of the micropolyphony of the early sixties, in which many individual lines join together to produce a single, shifting web of sound.

Harmonically, Ligeti's interest in simple intervals and chords remains constant. The tritone and octave, which stand out so strikingly

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[22] Ligeti, "On My Piano Concerto," trans. Robert Cogan, *Sonus* 9/1 (1988) 13.
[23] On this subject see Lois Svard's dissertation, "Illusion in Selected Keyboard Works of György Ligeti" (Peabody Conservatory of Music, 1990).
[24] Ligeti, "On My Piano Concerto," 9.

in works like *Lontano* and the Chamber Concerto, figure no less importantly in the newer pieces. Chords which feature tritones prominently, such as the pitch-class set [0,1,6], still form an essential part of the sound. The chromatic clusters of the early sixties are gone, for the most part; their function has been replaced, perhaps, by the chromatic scales of the Lamento motif. The diatonic, tonally ambiguous sonorities—[0,2,5], for example—have been replaced by even more consonant sounds such as sixths, thirds, triads, and "open-fifth fields."

Ligeti has also continued to pursue contrapuntal construction, including canon; for two decades, the micropolyphonic writing has become less microscopic, even as early as *Melodien* (1971). The choral works of the eighties (especially the *Drei Phantasien* and *Magyar Etüdök*) show this interest most clearly, although one can find canons and even a fugue (albeit a "tempo fugue") in the Concerto and Etudes.

One other constant is Ligeti's fascination with extremes of dynamics, range, articulation, speed, instrumental and vocal technique, texture, simplicity, complexity, etc. Extremes abound in the new pieces: far-flung registers in all the instrumental works; the *fffffff* and *pppppp* dynamics in the string parts of the Piano Concerto; the extremes of tempo in the Concerto and Trio; the virtuosic piano writing in the Etudes and Concerto; the simplicity of a piccolo solo, suspended over a bass drone in the Concerto's second movement; the whirling, complex layers of the Concerto's other movements.

Finally, the personality behind the music has remained the same. The ironic, unsettling juxtapositions of tenderness and violence from the Requiem still erupt. The "wild gesticulations" of *Aventures* and *Le*

Grand Macabre appear still in the Piano Concerto and the *Drei Phantasien.* The "cooled expressionism" of *Lontano* and the Second String Quartet rests beneath the flickering, polyrhythmic surface of the Piano Etudes, as Griffiths writes: it is "as if clouds were being created from great arrays of clocks."[25]

If anything, Ligeti is more personal, less objectively removed in these later pieces. The Horn Trio's Lamento more directly expresses the same emotion that appeared twenty years earlier at the end of *Aventures.* When the siren rises out of the depths at the climax of the Piano Concerto's second movement, extramusical images—perhaps of police states in Eastern Europe—flash before the mind's eye.

Which brings us to a final question: has the new music in fact simply returned to Ligeti's old style, before he left Hungary? Has Ligeti, in spite of all his protestations to the contrary, gone "retro?" The answer is ambiguous; as Griffiths suggested above, he has returned to a similar vocabulary, reminiscent of Bartók, but all the rules have changed. Chapter five examines the question in more detail.

For now, we can note that allusions to the past have played a steadily greater role in Ligeti's music since the horn call at the end of *Lontano. Le Grand Macabre* is filled with references to Beethoven, Rossini, Verdi, Monteverdi, et al. It makes sense for the recent music to refer to the past in a more far-reaching, but totally unpredictable way. Ligeti always manages to avoid the obvious, even when his actions, in retrospect, are obvious: this, perhaps more than anything else, explains the stylistic evolutions that have brought him where he is.

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[25] Griffiths, program note for The Green Umbrella, 1 March 1993.

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The Lamento motif, based on the chromatic scale, has a long list of antecedents in Ligeti's music. As many listeners have noticed, Ligeti's music depends a great deal on the chromatic scale, and one can find examples in almost any piece. One of the most striking is the climax of the Kyrie from the Requiem (1963-65), in which a piercing trumpet marks a long descent, doubled with sopranos. The opposite shape—a gradual ascent—occurs at the beginning of the Chamber Concerto (1969-70). The Cello Concerto (1966) presents a slightly different effect: a single, middle-register E gradually expands outward to be interrupted by B^b, stretched across five octaves. The third movement of the Chamber Concerto contains the negative image: A^b's separated by three octaves gradually collapse into the middle register.[26]

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[26] Many analysts have noted these voice-leading shapes, often transcribing them graphically. See Uve Urban, "Serielle Technik und Barocker Geist in Ligetis Cembalo-Stück *Continuum:* Untersuchung zur Kompositionstechnik," *Musik und Bildung* 5/2 (1973) 63-70; Jonathan W. Bernard, "Inaudible Structures, Audible Music: Ligeti's Problem, and His Solution," *Music Analysis* 6/3 (1987) 207-36, which analyzes excerpts from several works; Charles D. Morrison, "Stepwise Continuity as a Structural Determinant in György Ligeti's *Ten Pieces for Wind Quintet*," *Perspectives of New Music* 24/1 (Fall-Winter 1985) 158-82; and two articles in *Sonus* 9/1 (1988): Pozzi Escot, "Charm'd Magic Casements," 17-37, and Alejandro Pulido, "Differentiation and Integration in Ligeti's *Chamber Concerto*, III," 59-80. See also Svard, "Illusion in Selected Keyboard Works of György Ligeti." Recently, two articles have appeared in *Perspectives of New Music* 31/1 (Winter 1993): Michael Hicks, "Interval and Form in Ligeti's *Continuum* and *Coulée*," 172-90; and Clendenning, "The Pattern-Meccanico Compositions of György Ligeti."

Even before Ligeti left Hungary, he began experimenting with chromatic motion, as the eleventh piece of his *Musica Ricercata* shows.[27]

These two voice-leading techniques—chromatic motion, and two chromatic lines in contrary motion—Ligeti uses in various ways to construct the Lamento motif and its different settings. Although many composers build music using the chromatic scale in some way, Ligeti's claim on it is almost proprietary. Not often can a composer take something as plain as the chromatic scale and turn it into a personal signature.

Many of the new pieces use the chromatic scale in not so obvious a fashion. The second Piano Etude, *Cordes Vides,* built on open fifths, embeds these fifths in a slowly moving, chromatic line in the left hand:

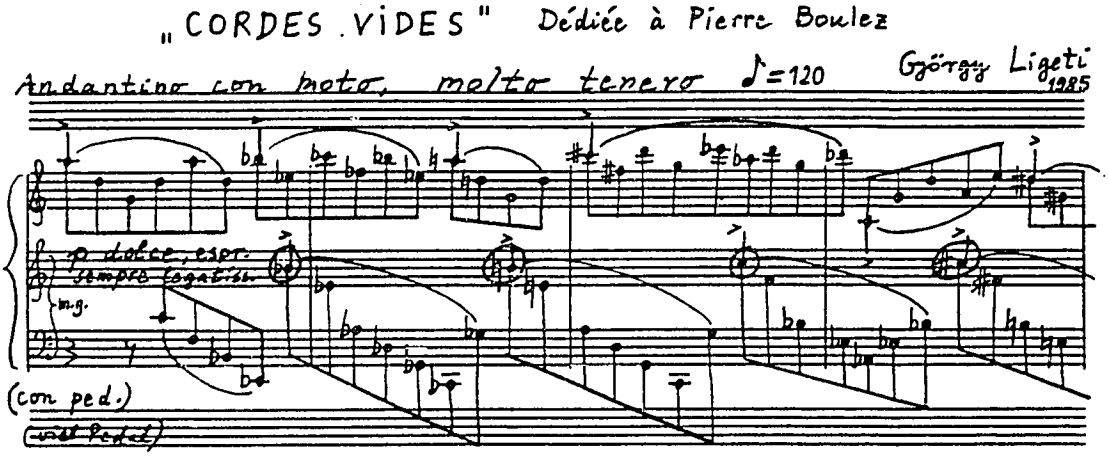

Figure 1.5 *Cordes Vides,* mm. 1-4. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne.

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[27] This piece, also transcribed for organ as *Omaggio a Frescobaldi* and as the final movement of the *Bagatelles* for wind quintet, was deemed by the Hungarian authorities "too chromatic," and remained unperformed for many years, as the composer relates to Pierre Michel in Michel 137; and to Griffiths, *Ligeti,* 21.

The fifth Etude, *Arc-en-Ciel (Rainbow),* also contains chromatic descents which recall the Lamento motif:

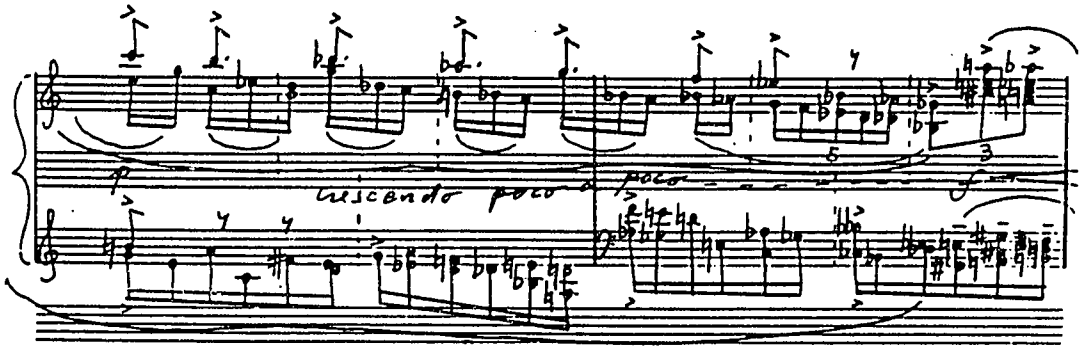

Figure 1.6 *Arc-en-ciel,* mm. 9-10. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne.

Now that we have an idea of the Lamento motif's context, we can examine more closely the pieces based upon it. Admittedly, this approach has its drawbacks: especially in the Trio and Concerto, the analyses are investigations of "bleeding chunks," to use G. B. Shaw's term for Wagner's operatic excerpts. Placing these movements fully in context would mean analyzing entire pieces, which would take too much space. Keeping in mind the risk of incompleteness, though, the Lamento motif presents an opportunity to examine the composer's late style from several different perspectives. Moreover, the motif itself is one of Ligeti's most profound and personal inventions.

CHAPTER TWO
TRIO FOR VIOLIN, HORN AND PIANO
FOURTH MOVEMENT, "LAMENTO"

Although Ligeti conceived them as ironic persiflage along the lines of his famous *Poème Symphonique* for 100 metronomes, two harpsichord pieces of 1978—*Hungarian Rock* and *Passacaglia ungherese*—prefigure in many ways the new style that would fully announce itself in the Horn Trio.[1] True to their titles, both pieces draw on classical forms and the traditions of Ligeti's homeland; they also develop the disquieting, "non-tonal diatonicism" of the closing scene of *Le Grand Macabre*. Like the opera, these pieces suggest music of the past while at the same time pointing forward: *Hungarian Rock*, with its motoric, left-hand ostinato, directly foreshadows the second movement of the Horn Trio (and later *Fanfares*, the fourth Piano Etude).[2] In the same way, the *Passacaglia ungherese* seems to be a "compositional warm-up exercise"[3] for the Trio's final movement, "Lamento."

The *Passacaglia* is built on a two-measure cycle of intervals. A single voice plays eight notes, followed by another voice in canon to

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[1] In the same way almost twenty years earlier, the *Poème Symphonique* proved significant for Ligeti's later work.
[2] See Pierre Michel's discussion of *Hungarian Rock* in Michel 115-16.
[3] Josef Häusler, liner notes, *György Ligeti*, trans. John Patrick Thomas, Wergo Compact Disc Wer 60100-50 (1986) 15. The two harpsichord pieces grew out of Ligeti's composition class in Hamburg.

create eight intervals, slowly spiraling downward through invertible counterpoint:

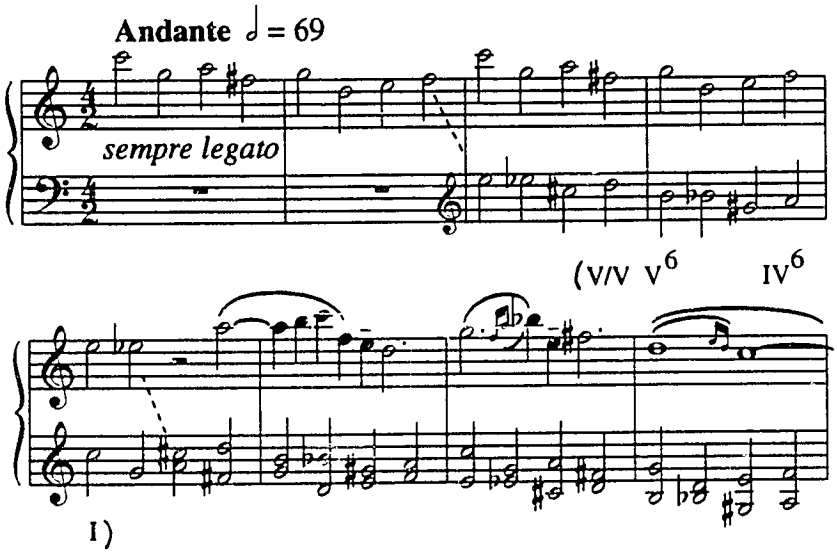

Figure 2.1 *Passacaglia ungherese*, mm. 1-8. © B. Schott's Söhne, Mainz, 1979. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne.

"The piece is to be played," the composer writes in a performance note, "preferably on an instrument which is tuned in mean-tone temperament. The eight intervals (major thirds and minor sixths) on which the music is based are then heard in just intonation." As in earlier pieces, Ligeti searches here for alternatives to equal temperament. Although all twelve notes appear in the ground, the eight intervals sound "completely clean"—that is, their ratio is always 5:4—but from interval to interval the effect is strange.[4]

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[4] Griffiths, *Ligeti* 109; only these eight intervals have the exact 5:4 ratio.

The intervals alternate between major thirds and minor sixths except at the end, where two minor sixths slide up in parallel motion; otherwise the voice-leading is either in similar or contrary motion. Roman numerals below the intervals in Figure 2.1 show some quasi-tonal progressions. Once the interval cycle reaches the bottom of the keyboard, it leaps back to high C and again starts to descend. This descent repeats every twelve measures, making a total of six complete cycles (the last chord is the low dyad E-G♯, the seventh interval in the cycle).

An elegant melody enters a beat before the sixth measure, occasionally decorated with ornaments. Although the thirds sound well in just intonation, the melody, moving mostly by step, does not. Ligeti's non-tonal diatonicism reinforces this strange effect: although the melody often fills in the missing note of a triad, it just as often leaves a dissonance unresolved.

The ground continues unchanged as the melody grows more intricate, progressing to eighth notes in m. 49 (with imitative counterpoint), then sixteenths in m. 61; the lines grow chaotically dissonant. The last four bars (71-74) restore some sense of order, in a kind of fourth-species counterpoint as the music winds down (*allargando poco a poco*) to the end.

The Horn Trio's Lamento shares some important characteristics with the harpsichord piece: it is a passacaglia based on an interval cycle (now five chords instead of eight); its melody accelerates through diminution; and it uses alternative tunings. In overall effect, though, the two pieces could not be more different. While the harpsichord piece is

ironic and curiously static despite its accelerating melody, the Lamento is emotionally direct, with a form that grows from stillness to cataclysm, followed by a long, motionless coda. "Never before," writes Josef Häusler, "has György Ligeti so uninhibitedly conveyed pain, grief, and anguish."[5]

The passacaglia form has long been linked with grief and lament; Bach's "Crucifixus" from the B Minor Mass and the end of Purcell's *Dido and Aeneas* are only two of the most famous examples. Ligeti cites the Purcell as an inspiration for the Lamento, along with two madrigals by Monteverdi, "Zefiro torna" and "Lamento della ninfa."[6] Both pieces' melodies, like most passacaglia models, accelerate through diminution. "Zefiro torna" Ligeti admires especially for its syncopated, asymmetrical melodies moving against the regular ground bass (which also relies on syncopation for its flowing effect), while in the second, the ground's descent sparks his imagination.

In his own work, the passacaglia appears most prominently in the final scene of *Le Grand Macabre*, whose subject, fittingly, is death, but on a grand scale—the end of the world:

> Fear not to die, good people all!
> No one knows when his hour will fall.
> And when it comes, then let it be. . .
> Farewell till then—live merrily![7]

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[5] Häusler 18.
[6] In a conversation with Ulrich Dibelius quoted in Dibelius, "Ligetis Horn Trio," *Melos* 46/1 (1984) 57.
[7] György Ligeti and Michael Meschke, libretto for *Le Grand Macabre*, trans. Geoffrey Skelton, liner notes for Wergo Compact Disc WER 6170-2 (286 170-2), 1991, p. 91.

As anyone familiar with the opera knows, death is accepted with a large dose of irony—so much that no one knows whether or not the world has, in fact, really ended. The Horn Trio's Lamento seems to address the same subject on more personal terms, lifting the protective, ironic veil.

Much of the movement's emotional effect depends on the chromatically falling "Lamento motif" described in chapter one (see Figure 1.1, p. 4). The motif is derived from the passacaglia, which in turn stems from a variation of the "lopsided horn-fifths" motive that is the Trio's motto:

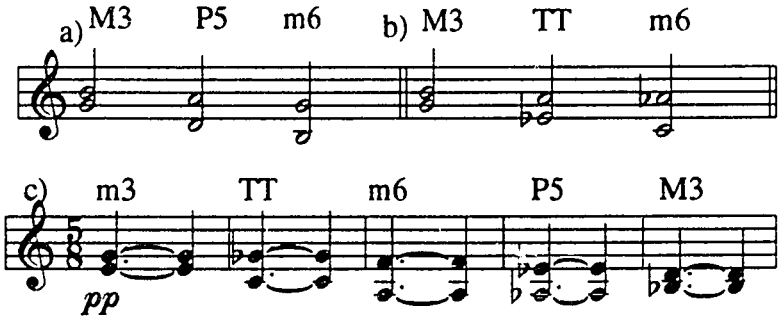

Figure 2.2 a) Traditional horn fifths; b) Ligeti's "lopsided" version of them, the main cell of the Horn Trio; and c) the first five bars of the Lamento, violin part. © B. Schott's Söhne, Mainz, 1984. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne.

Ligeti's motto progressively alters the horn fifth's three intervals: the first remains a major third; the second raises the lower note a half-step to make a tritone; and the third raises both notes a half-step. In the Lamento, the first interval is reduced to a minor third; the second and third remain lopsided; the fourth and fifth intervals, perfect fifth and

major third, complete the cycle. The pattern is an extension of horn fifths: thirds (or sixths) alternating with perfect fifths (or tritones).

Brahms uses this motive in the third movement, "Mesto," of his Horn Trio, composed in memory of his mother. But Ligeti's inspiration for this motive comes most directly from the horn fifths in Beethoven's Sonata Op. 81a, "Les Adieux"—even though the horn fifths idea itself does not originate with Beethoven.[8]

Here is how Ligeti describes the movement:

> While the first three movements are diatonic, the fourth is a chromatic variation of the preceding three, in the guise of a passacaglia. A five-bar harmonic pattern (a variation once again of the horn-fifths cell) provides the framework around which descending chromatic figures increasingly become intertwined, until eventually the five chords are completely overgrown. During this escalation, the piano undergoes a transformation, ultimately emerging as a gigantic imaginary drum, whose echo can be heard in the pedal tones of the horn. A strangely altered reminiscence of the horn-fifths cell appears in the piano and horn, like the photograph of a landscape which in the meantime has dissipated into nothingness.[9]

These processes of growth and transformation, woven into the melody and passacaglia, form the structure of the Lamento.

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The Lamento, in 5/8 meter, is 106 measures long, counting the final four bars of fadeout into silence. The form is a large-scale

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[8] Dibelius 46.

[9] György Ligeti, liner notes for Erato Compact Disc ECD 75555, trans. Sid McLauchlan (1990) 22. While Ligeti describes this piece as a "chromatic variation," many of the diatonic elements of the other three movements remain; the chromaticism comes mostly (but not entirely) from the Lamento motif.

crescendo which reaches an extended plateau of high intensity from mm. 57-77; the long, still coda lasts for the remaining 29 measures. The climax just before the coda is one of the most striking moments in the entire Trio: the piano, transformed into a "gigantic imaginary drum," suddenly stops, revealing the horn and violin quietly sustaining a minor second, separated by six octaves:

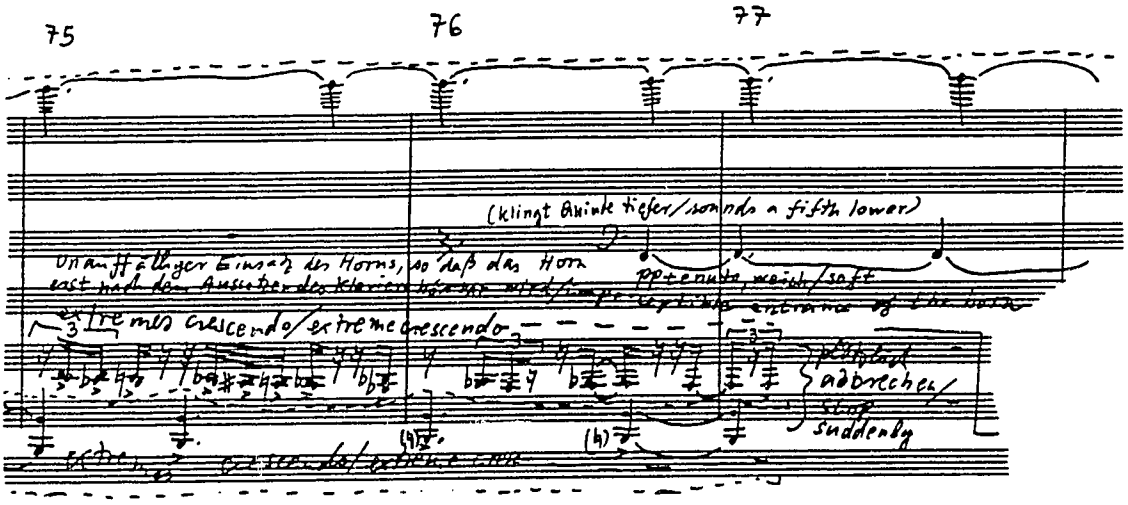

Figure 2.3 Climax of the Lamento, mm. 75-77. © B. Schott's Söhne, Mainz, 1984. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne.

These registral extremes continue a process that began in the middle register; together with the melodies' gradual acceleration and overall crescendo (from *pp* to *ffff+*), the crescendo shape of the voice-leading determines the form of the piece. After the climax, though, in spite of the low horn line's gradual descent, and the wisps of tunes in the violin and piano, the overall impression is one of stasis—a frozen attitude, or as Ligeti suggests, a photograph of a vanished landscape.

The beginning of the piece suggests stasis as well, in the horn's long, sustained, stopped B. The muted violin fills in the notes of an E minor triad, followed by the other harmonies of the passacaglia. Two of these are triads—the opening E minor and the fourth chord, A^b minor—while the other three are more or less dissonant trichords: [0,1,6], [0,2,6], [0,1,4]. Except for the last, the violin's intervals all descend in similar motion; the prominent tritone in the second chord simultaneously recalls and rejects tonality with its parallel voice-leading (see Figure 1.2, pp. 8-9). The last interval, B^b-D, is the only one approached and left by contrary motion.

As the horn continues its pedal, the piano plays the Lamento motif, comprising three phrases labeled in Figure 2.4 as a, b, and c. The harmony, spiraling downward, is now E minor in first inversion. The motif relies on another difference between Ligeti's diatonicism and traditional tonality: instead of resolving to a consonant E, the melody drops to E^b, then D. Throughout the piece the melody misses its consonant resolution, falling instead to another dissonance and continuing its descent, as if it had lost something it could never find again. The emotional effect recalls Ligeti's experience in a vivid childhood dream that possibly inspired his micropolyphonic music: "These transformations were irreversible; no earlier state could ever recur. There was something inexpressibly sad about this process: the hopelessness of elapsing time and of the irretrievable past."[10]

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[10] György Ligeti, "States, Events, Transformations," trans. Jonathan W. Bernard, *Perspectives of New Music* 31/1 (Winter 1993) 165.

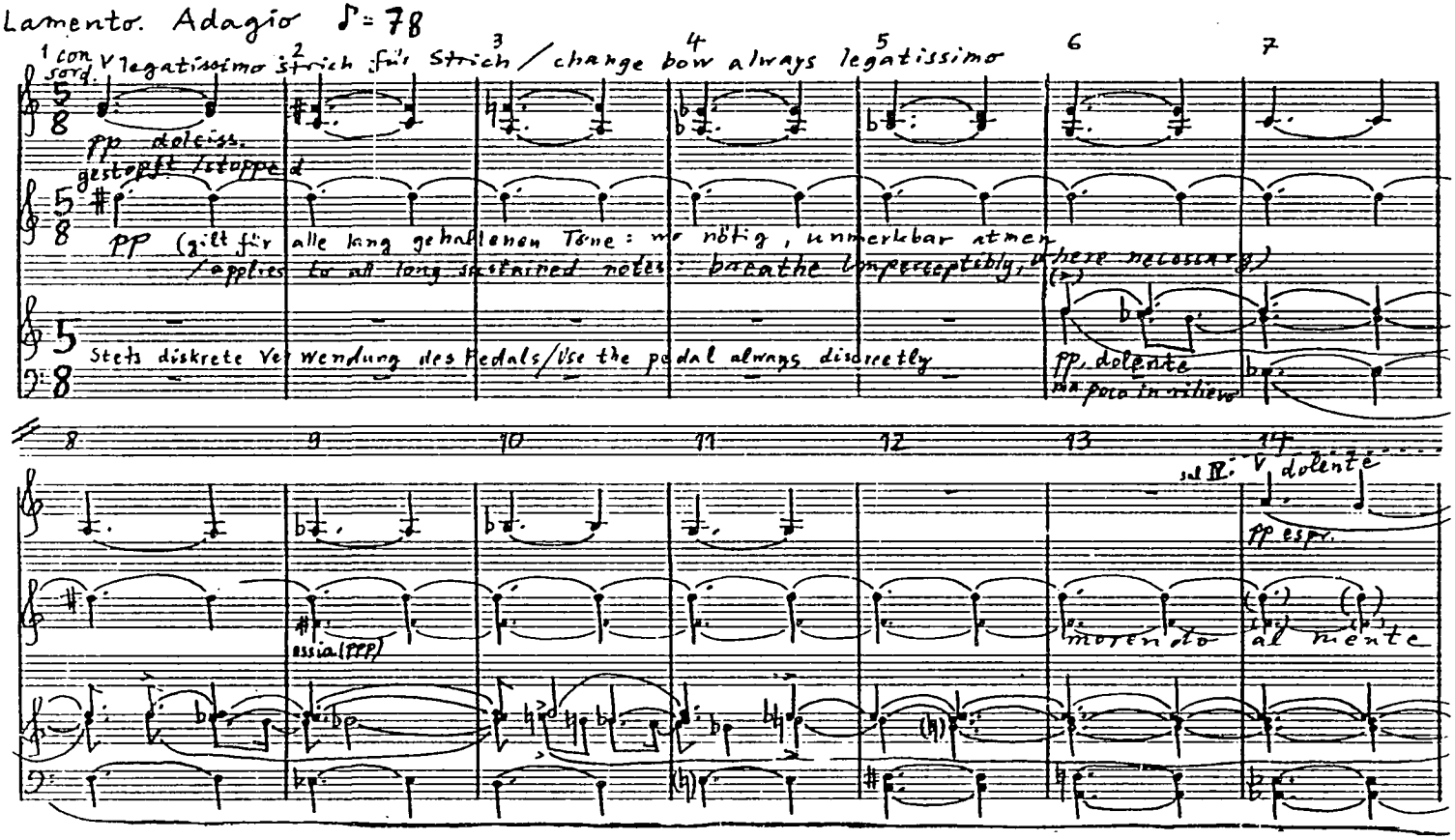

Figure 2.4 Lamento, mm. 1-13. © B. Schott's Söhne, Mainz, 1984. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne.

The piano's second small phrase, b, extends the descent one note to D^b, sounding as a suspended fourth against the ground's A^b minor $^6_4$; again, the melody does not resolve to the consonant C^b (though the horn already sustains it enharmonically). The third phrase, c, is longer than the first two, interrupted near its end by an accented, half-step clash (E^b-D, m. 11, labeled x). Once again, the melody's C in m. 10 descends not to the consonant B but to B^b. When B finally arrives a bar later, it is too late: the E minor chord has shifted to [0,1,6].

The piano's final note serves two purposes: B is the note we have been waiting to hear since the second phrase, so its arrival sounds cadential; also, the horn, which has played the same note since the beginning, now fades out to take a much-needed breath, covered by the piano (in the same way, the piano covers the horn's appearance at the climax—see Figure 2.3).

The asymmetry of the passacaglia's 5/8 meter works against the melody. At its first entrance in m. 6, the piano coincides with the second cycle of the passacaglia, but when the third cycle begins in m. 11, the piano is in midphrase. The violin's answering melody (again, a broken appoggiatura) starts in the fourth bar of the third cycle, coinciding with the only other triad available to Ligeti, A^b minor (m. 14—the effect is like suddenly modulating to a new key). This rhythmic imbalance is important to Ligeti, especially since the passacaglia is such a regular structure:

> Things should not necessarily be exact. I always like to evade them a little, still reserving the right to fall back upon them. So I consciously chose a 5/8 meter for the five intervals of the passacaglia model. But the partition into five cannot be heard; it

> is never distinctive, since it doesn't act as a five-beat meter, but rather as an additive meter. Still, the first five measures, once the piano begins in the sixth measure, raise expectations of a symmetrical completion. But this expectation is dashed—the five-bar groupings can be analyzed only visually, not by the ear—and that is why the sense for a periodic articulation, like a fallacy, is always misled.[11]

Along with the asymmetrical 5/8 meter, the repetition inherent in passacaglia form reduces any sense of forward motion, as Paul Griffiths points out: "if the music must keep starting again, it cannot develop much sense of necessary continuity."[12]

The passacaglia's repetition, though, is offset by pedal tones constantly altering its harmonies. As the piece progresses, the pedals, shifting from instrument to instrument, plus the accumulating register and intensity of the passacaglia, interact to produce changing harmonic plateaus, as shown in Figure 2.5 (see following three pages).

The passacaglia's slowly expanding wedge is a familiar Ligeti device from pieces like *Lontano* and the Chamber Concerto; unlike these pieces, though, this wedge expands by fits and starts. Perhaps the subtle, strange diatonicism of the piece discourages a smoother, more obvious shape, although the end result is the same.

The first four cycles (mm. 1-20) descend through invertible counterpoint. There are three pedal tones, each in a different register: the horn's opening B lasts for the first 13 bars; a low C appears in the piano at the beginning of the fourth cycle (m. 16), but only for 4 bars;

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[11] Quoted in Dibelius 57.
[12] Griffiths, *Ligeti* 109-10.

then the horn enters imperceptibly in m. 20 on low B^{b}, its entrance masked by the piano.

This new pedal continues through the fifth cycle (m. 20), in which the passacaglia's register returns to its starting point. In its second bar (m. 22), an extra voice appears, the first in a steady accumulation of resonance. In the sixth cycle (m. 22) the two hands suddenly break apart in opposite directions: low octaves in the left hand ("sonorous") descend from G^{b} to D^{b}, a slowed-down version of the subject, while the right hand ascends through octave displacement. The right-hand part also introduces rhythmic asymmetry: the second interval (C-G^{b}) appears midway through the first bar, and the fifth bar remains silent—the missing interval (B^{b}-D) is in the bass.

Because of the right-hand ascent, the seventh cycle (m. 31) finds itself an octave higher than the beginning. In m. 34, shortly after the left hand's low descent has faded away, a high, bell-like E^{b} is struck, doubled at four octaves (the violin sustains the other passacaglia note, $G^{\#}$). From here on, the passacaglia is doubled at the higher octave. Just before the piano's high E^{b} the horn enters unnoticeably on a sustained $C^{\#}$, covered by the violin's melody.

The passacaglia continues through four more cycles, doubled at the higher octave, climbing more or less steadily, accumulating more and more resonance with added notes. Finally, at the second bar of the twelfth cycle (m. 57), the dam bursts: the piano becomes a drum, crashing in on low octave C's in a large-scale, 5:4 polyrhythm with the still-climbing passacaglia. The C's pick up where the descending bass left off in the seventh cycle (D^{b}, m. 31) and continues, falling after

Figure 2.5 Sketch of the passacaglia plus pedal tones. Passacaglia notes appear as quarter notes (one to a bar), while pedal tones appear as white notes. Each barline marks a new cycle of the passacaglia; harmonies which change within a measure (as in mm. 46-47) appear as eighth notes. Occasionally, the beginnings of melodic phrases are included, to place the passacaglia's harmonies in context. © B. Schott's Söhne, Mainz, 1984. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne.

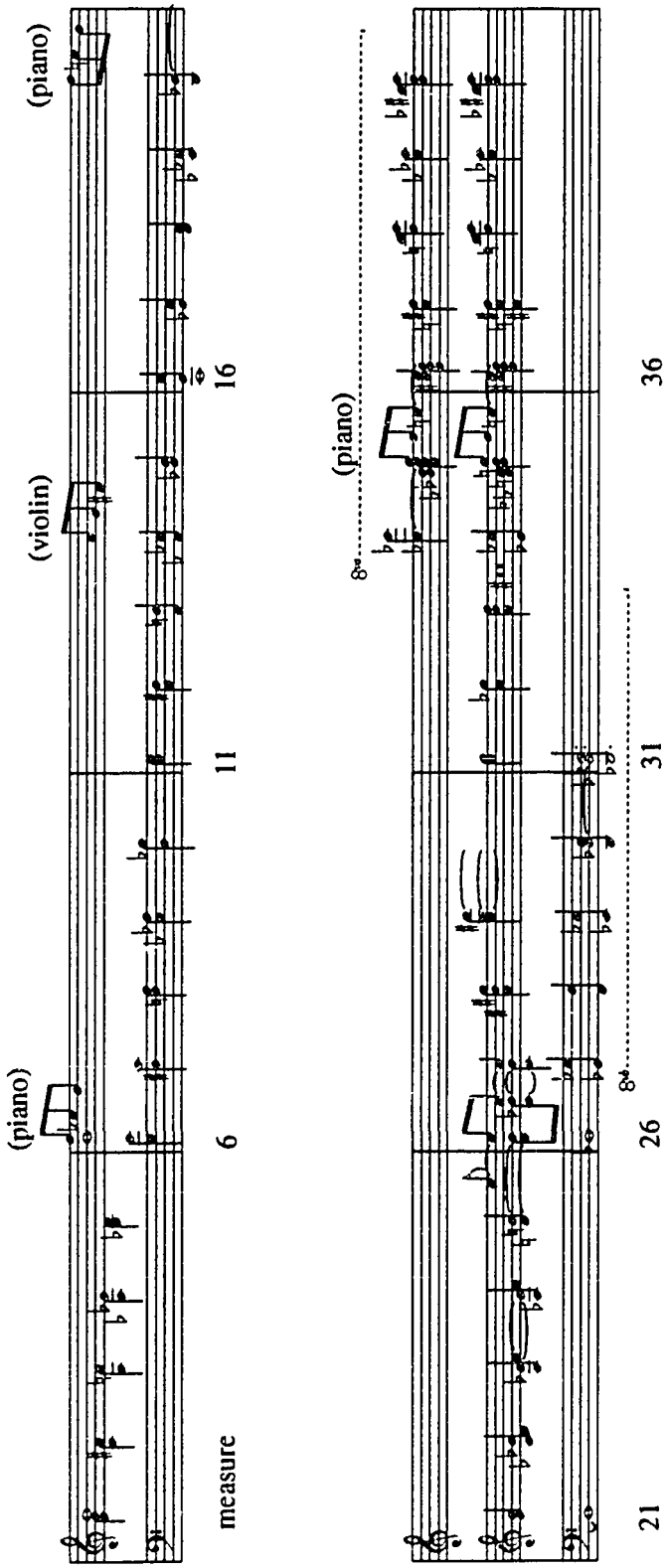
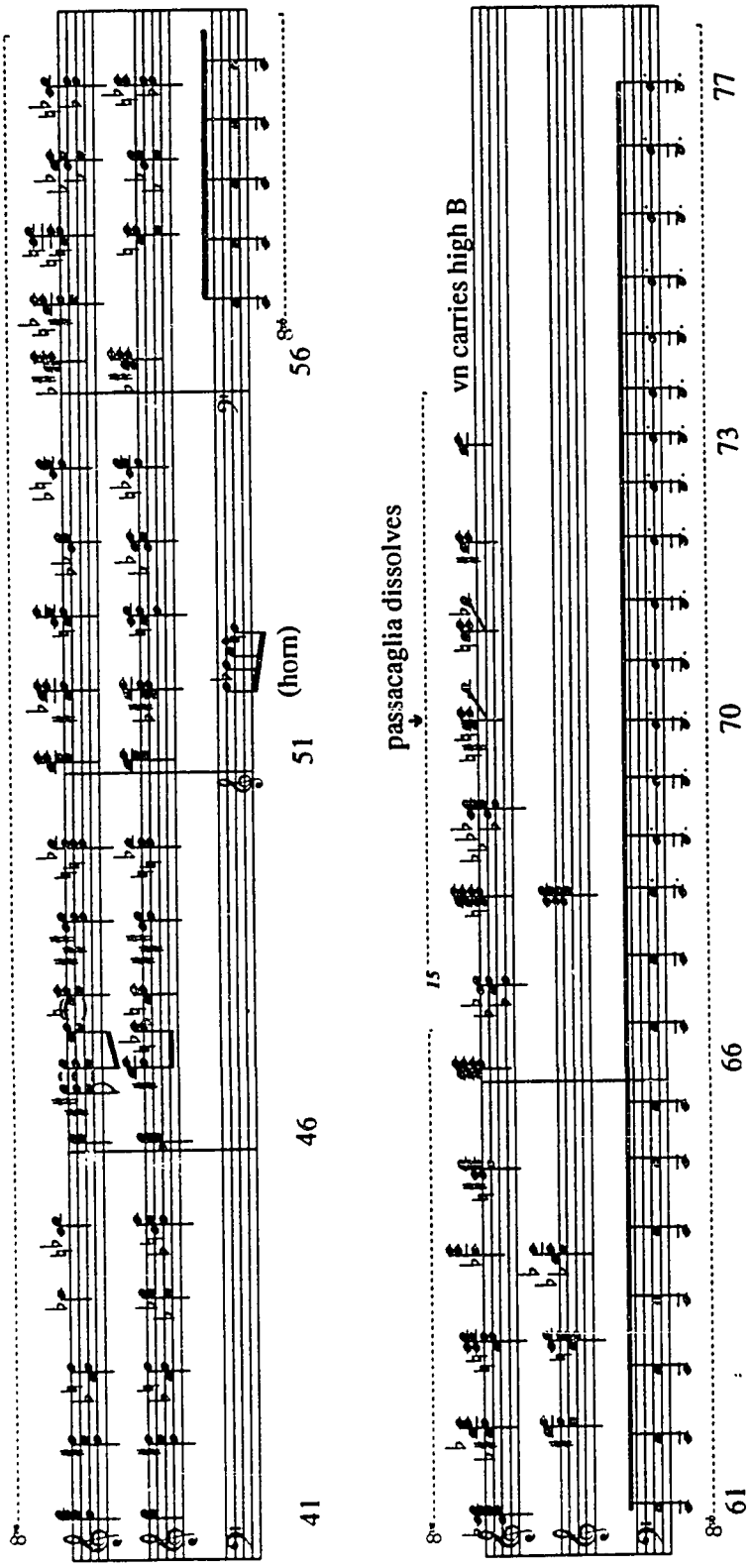

(piano)
(violin)
(piano)
(piano)
6
11
16
21
26
31
36
measure

Figure 2.5 (Continued)



fifteen repetitions to low octave B's, accelerating to a 5:3 polyrhythm (dotted quarter notes, repeated 14 times). Whereas the *Passacaglia ungherese* remains static despite its accelerating melodies because of the unchanging, descending loop of its passacaglia, by contrast one of the reasons the Lamento has such a powerful sense of motion is its slow ascent to dizzying heights—which makes the low octave's entrance all the more dramatic.

Once the bass reaches low B, the passacaglia—now at the very top of the piano—begins to dissolve in m. 70, the fourth bar of the fourteenth cycle. Just before, the passacaglia pitches become overwhelmed by diatonic clusters—all the white keys, then all the black keys. After reaching this saturation point, the clusters, now fully chromatic, begin to fade, disappearing off the top of the keyboard. As the passacaglia dies away, the drum grows louder, suddenly vanishing off the opposite end of the keyboard at the peak of its crescendo.

Two striking moments form a symmetry with the opening: the high, metallic E$^{\flat}$, struck in four octaves in m. 34, and the piano/drum entrance on low C in m. 57. As Figure 2.6 shows, each of these points lies the same interval from the outer notes of the opening E minor chord—two octaves plus a major third, disregarding octave doublings.[13]

Appendix C shows the melodies of the piece (see attached foldouts). While the passacaglia has fourteen cycles (the last extended to a fadeout), the melody has eight, helping to form the large-scale asymmetry mentioned earlier. Although each melodic cycle breaks the

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[13] See Bernard 1987 and Hicks 1993 for detailed observations on intervallic symmetry in other Ligeti works.

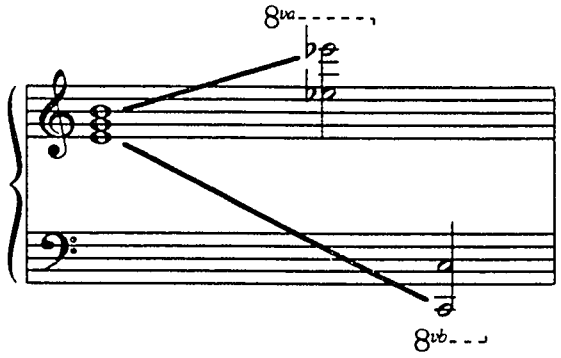

Figure 2.6 Intervallic symmetry from the opening chord (m. 1) to m. 34 and m. 57.

Lamento motif into smaller and smaller fragments, the basic structure remains the same: three phrases (a, b, c), each longer than the preceding one. In the first cycle, a has three notes, b has four notes, and c has seven (3+4). Phrase c is longer partly because of an interruption, labeled x: a leap up to an accented, half-step clash, then a concluding, balancing leap downward. Even without this interruption, the initial descent in phrase c is five notes, one note longer than phrase b. The interruption x will play an important role: apart from it, there is no difference between the three phrases except their number of notes (which changes drastically as the piece progresses).

Throughout the piece the descending melodies accelerate and climb in register, following the passacaglia's crescendo. But like that of the passacaglia ground, the melodic ascent is jagged. The first four cycles are static, the piano and violin trading statements of the motif. The first and third cycles, played by the piano, begin on F; the second and fourth cycles, played by the violin, begin on A. We have already seen the piano's sudden leap to octave E$^{\flat}$'s in m. 34 (see Figure 2.6

above); this gesture also introduces a sudden rise in the melody, now doubled in octaves (m. 35). The piano's melody becomes compound, separated by register: one voice continues to ascend in doubled octaves; the other, imitating the violin, stays in the middle register (upbeat to mm. 41-42; mm. 48-51). In m. 37 the violin also begins to climb slowly, but it soars only in m. 49, just before the horn enters.

Besides the progressive diminution and ascent, the motivic working becomes more detailed, trading between the two (and eventually three) instruments as shown below in the first seven cycles (see Figure 2.7, next page, and Appendix C).

The melodic motives are tossed back and forth, growing more extended and fragmented. Each cycle begins with phrase a, continues through b (except for the seventh cycle, m. 48), and concludes with some version of c, incorporating the interruption x. Phrase c is where most of the extensions occur, as the instruments imitate each other's motivic fragments.

The first cycle (mm. 6-13) is a simple piano solo; the violin answers the piano's melody in the second cycle (mm. 14-21). The second cycle introduces elision: before the violin has finished, the piano begins the third cycle (mm. 19-26). The violin interrupts the piano's melody in the third cycle, playing phrase c. The piano echoes the violin's interruption, starting the motivic fragmentation that will eventually destroy the phrases' identities, just as resonant clusters eventually overwhelm the passacaglia harmonies.

In the fourth cycle the roles are reversed: the violin plays phrases a and b, introducing triplets; the piano interrupts the violin, again on

I (6) Vn
Pf a3 b4 c7
II (14) Vn a3 b4 c7 (elides with III)
Pf
III (19) Vn c6 (violin interrupts piano melody)
Pf a3 b4 c2
IV (27) Vn a4 b6 c 4 x'
Pf c↗3c↘5 x (piano interrupts violin)
V (35) Vn c↗3c↘7 c↗3c↘9 c↗5c↘6 x'
Pf a3 b4 c↘4 c↘4 c↘6
VI (43) Vn c↘3x c↘4 x'
Pf a4 b5 c↗3c↘6 c↘5 x
VII (48) Vn c↗3c↘4 c↘7x c↘5x c↘6x' c↘4x' c↘20
Hn a4 b5 c↗3c↗2c↘5 x
Pf a4 c↘6x c↘8 c↘10c↘4c↘11 c↘11

Figure 2.7 Motivic interaction in the Lamento, mm. 1-56.
(measure numbers appear in parentheses)
a,b,c the three phrases of the Lamento motif—c is interrupted
c↗ ascending submotive
c↘ descending submotive
x single, rising interval (interruption in c)
Each phrase letter is followed by the number of notes in the phrase; thus, a3 has three notes.

phrase c, in a further diminution of sixteenth notes. Phrase c is varied in another way: it develops an ascending prefix, giving c three parts: initial ascent (labeled c↗); descent (c↘); interruption (x). The violin imitates the piano's motive x, extending it to make a five-note melody (x', m 32).

The fifth cycle follows a similar scheme, again exchanging instrumental roles. Phrase c is expanded still more, to three iterations of the descending c↘ figure. Here also the piano drops back to the middle register, imitating the violin; sixteenth-note triplets appear at the end of the phrase (m. 42). In the sixth cycle (mm. 43-47) the tension

grows; the piano, once again in the high register, plays its doubled octaves detuned to major and minor sevenths. At the end, motive x (extended in the violin) slows the accumulating, snowball effect of the accelerating descents, opposing the still-rising passacaglia.

The horn's entrance (m. 51), midway through the seventh cycle, increases the tension to the breaking point. The piano begins; its phrase a (m. 48) dramatically opposes the previous cycle, slowing to triplets in a lower register, continuing the violin line from m. 46. The violin, though, suddenly soars—again, Ligeti avoids smooth contours. Phrase b is left out, making way for the horn's detuned variation of the piano's first phrase. The horn's entrance in the midst of the others' diverging lines is unanticipated, but inevitable: until now, its three sustained pedals have remained in the background, its entrances masked by other instruments. We almost forget the horn is there, and its entrance is startling. But the escalating motives in the piano and violin clearly culminate in the horn's weird, distorted melody: the horn plays the Lamento motif (with an extension of c↗; see Figure 2.8) detuned by the seventh and eleventh partials of various harmonic series. In the other movements of the Trio, the horn's "out-of-tune" notes are a result of the different harmonic series which comprise the horn's melodies. Now, though, the natural harmonics appear in a chromatic context, intensifying the "broken appoggiatura" effect that gives the motif its emotional impact:

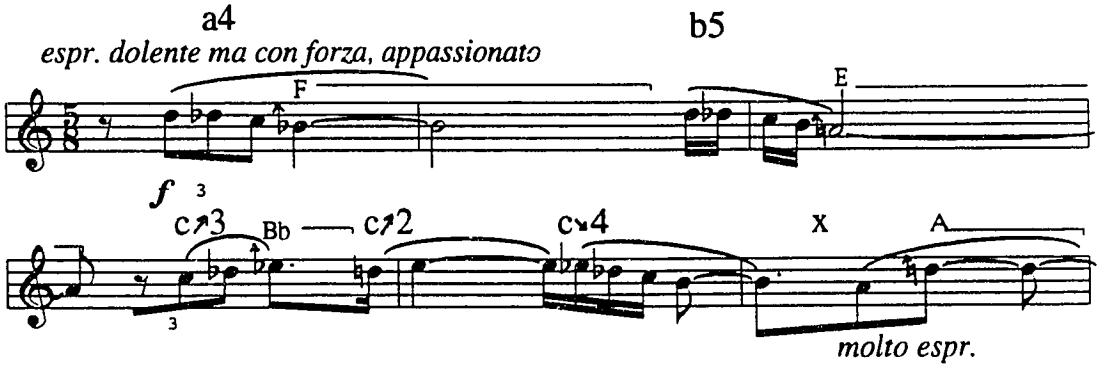

Figure 2.8 Lamento, mm. 51-56, horn part (sounding pitch). © B. Schott's Söhne, Mainz, 1984. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Around the horn, the violin and piano's lines fall faster, more precipitously. In the piano, extra voices accumulate in contrary motion inside the overall descent.[14] Finally the figures plummet to an explosion: the piano's "gigantic imaginary drum" releases the enormous tension that has built up.

Despite this explosion, the music continues to grow in intensity. The passacaglia continues to climb, and a new piano countermelody in the middle register ("grandioso") accompanies the end of the horn's out-of-tune, chromatic melody (see Figure 2.9). Against the piano, in m. 57 the horn begins the eighth and final cycle, starting with an extended phrase a. The violin joins in phrase b (end of m. 59), moving violently in parallel tritones with the horn, separated by two and a half octaves.

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[14] Ligeti returns to this device in *Automne à Varsovie*, the sixth Piano Etude.

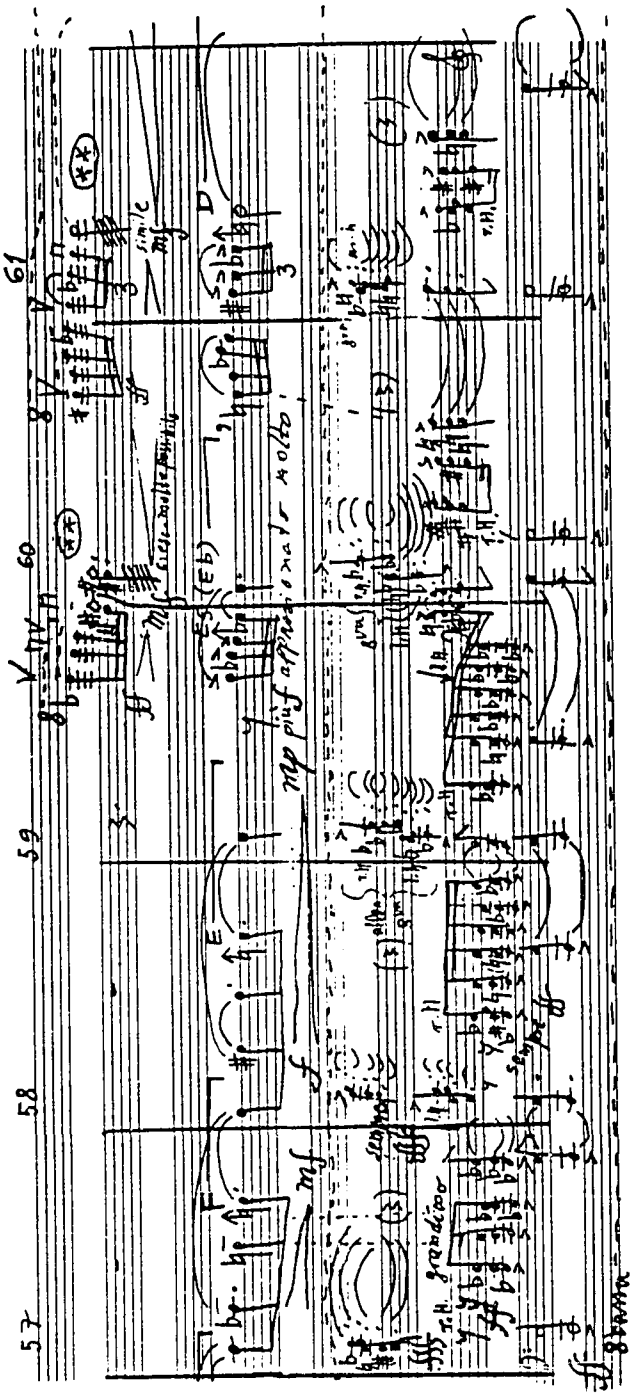

Figure 2.9 Lamento, mm. 57-61. © B. Schott's Söhne, Mainz, 1984. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

The tritone harmonization makes the violin sound like a high harmonic of the horn—but a sinister one, with tremolos marked "cresc. molto possibile" while the horn sustains.

During these held notes, the piano's countermelody gradually descends in two stages (mm. 57-61, 62-77), eventually turning into a second, much faster drum, pounding away on the lowest notes of the keyboard. This countermelody is derived from motives a + x; its first stage appears in Figure 2.9 (middle staff of the piano part). Above it, the violin and horn's melody begins to split apart (m. 67): the violin climbs and the horn descends, both dying away as the piano continues its descent ("with utmost ferocity, black"). The horn fades out in m. 74, while the violin reaches a high B (one note from the top of the piano keyboard) where it remains, dangerously high, as soft as possible; Ligeti instructs the violinist to add a mute "in an imperceptible rest," if necessary.

The piano plunges into the depths, growing constantly in force ("even more ferociously, extreme crescendo"); Ligeti seems to be asking for something more than a piano, writing as if it really *were* a drum (see Figure 2.3). Abruptly, at its moment of greatest intensity, it vanishes; the coda begins with long, quiet, held tones revealed in the horn and violin. As in the midnight scene of *Le Grand Macabre*, the world has ended; the coda, perhaps, depicts something after: "the photograph of a landscape which in the meantime has dissipated into nothingness."

The coda unfolds in three parts. First, the violin's pedal turns into an extremely high, slow statement of the Lamento motif, spanning

nine bars (mm. 77-86). The absence of any other rhythmic activity produces a feeling of stasis:

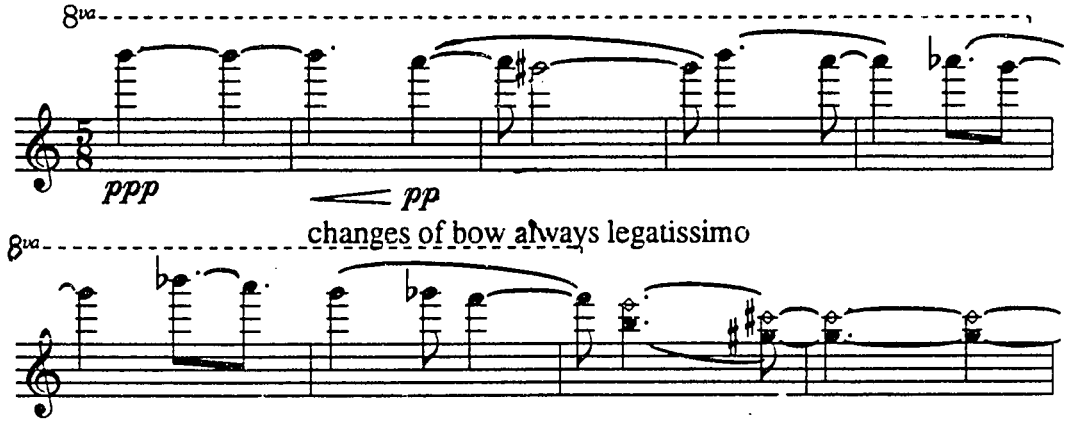

Figure 2.10 Lamento, mm. 77-86, violin part. © B. Schott's Söhne, Mainz, 1984. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Like the violin's melody, the horn's pedal B♭ eventually descends to low A♭, then G, (virtually the lowest note on the instrument), continuing the descent from the piano's percussive, octave B's.[15] This belongs to the same descent that first appeared in m. 27, completing a large-scale line that runs the entire piece.

The piano returns in the coda's second part (m. 87), no longer a drum, but now playing a high, soft, poignant chorale, a shortened version of the motif (phrases a and b only). The harmony is loosely

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15 The horn player must breathe occasionally, producing a rhythm of rests and entrances, but Ligeti does not notate this; instead he instructs the player to "breathe where necessary (always imperceptibly) and enter again very softly." Of course, it is impossible to breathe imperceptibly (unless one can circular breathe in such a low register); Ligeti wants the breath to *feel* imperceptible.

diatonic, based on the pedal $B^{\flat}$ in the horn. The end of the phrase shifts down to $A^{\flat}$ major^7 (m. 90) clouded by a held-over, dissonant E in the violin. The violin takes the place of phrase c, winding slowly down from the E, all on harmonics, in a diatonic melody based on G (a half-step removed from the horn's pedal $A^{\flat}$) that recalls the horn tunes of the first movement—the seventh, $F\natural$, is even artificially lowered in m. 93 (see Figure 2.11).

In the final part (shown in Figure 2.11) the piano plays phrase a, now harmonized for the first time as the lopsided horn-fifths motto. The third interval is a tritone instead of the motto's minor sixth, moving in parallel with the falling horn pedal to a G^7 chord (m. 95). The violin answers, now playing *molto espressivo*, *dolcissimo*, a melody derived from x that pivots between two tritones, ending on a suspended fourth (C, m. 97). The next two piano chords, the last events of the piece, have a tremendous emotional impact; to understand why we need to look back at the harmony of the piece.

The Lamento's harmony is mostly bleak, made up of minor chords or dissonant sets which accompany the motif, the falling, "broken appoggiatura" which does not fit its surroundings. But occasionally, glimpses of light break through as brief, diatonic passages: the first of these is the unexpected C major brought about by the low C pedal in m. 16 (see the analytical reduction, Figure 2.5). For the first time, the melody is consonant with the passacaglia. One bar later, though, the C-$G^{\flat}$ tritone once again obscures the harmony.

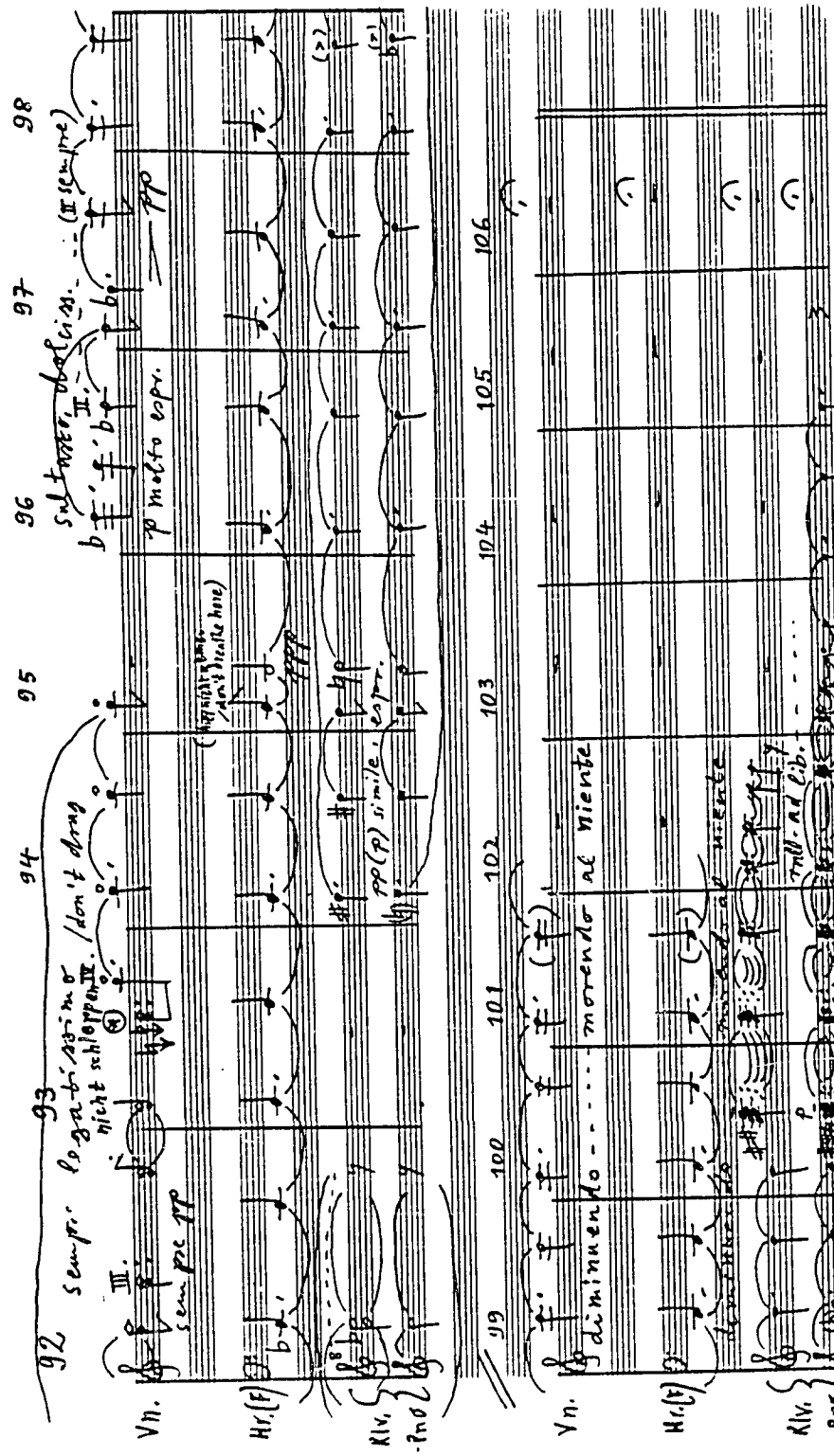

Figure 2.11 Lamento, mm. 92-106. © B. Schott's Söhne, Mainz, 1984. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

The next diatonic episode happens almost immediately (mm. 20-24). Here, the B^b pedal in the horn, together with the violin's F-C, support piano harmonies that approach B^b major, culminating in a V^7 chord over the tonic pedal (m. 23). Again, in the next bar the passacaglia forces the dominant into a minor seventh (the piano's A-A^b, m. 24); the violin's answering melody sustains a double-stopped E, a tritone away from B^b (m. 24). Just after the example (m. 26), a brief, E^b major $^6_4$ provides a respite before the deep, sonorous bass descent in m. 27.

The next episode is even more striking, especially since it follows the bass descent: the bell-like E^b's doubled over four octaves in m. 34. The harmonies in the next two bars are bright, resonant, Lydian clusters on A^b and G, again clouded by the diminished triad that follows (m. 37; see Figure 2.5).

As the tension grows, the harmony becomes more complex and resonant. To get a full sound Ligeti uses triads and seventh chords with added notes (mm. 43-46, 49-51, 54-55, etc.), but their diatonicism provides no relief as it did earlier; on the contrary it increases the tension, juxtaposed with the growing vehemence of the dissonant, chromatic descents. Once the piano/drum enters in m. 57, the passacaglia harmony grows even more resonant, developing to white-key and black-key palm clusters doubled at the octave (mm. 66-69). Underneath, the piano's countermelody ("grandioso") is harmonized mostly by tritones (see Figure 2.9 above).

After this climactic opulence, the wide, barren registral space separating the horn and violin comes as a shock (m. 77), preparing the

dolcissimo entrance of the piano. In the coda the bright, diatonic harmony, only hinted at earlier, finally blooms, its tenuous beauty stretched thin by the violin's high register. The piano's first phrase, mm. 87-90, supported by the horn's low B♭, rhymes with the passage from the beginning that approached B♭ major, mm. 20-24. The violin's diatonic answer on the G series (mm. 90-95), built a half-step off the new horn pedal (A♭), gently recalls the earlier movements.

The final phrase begins by recalling the very opening of the Trio; we have come full circle. The violin's answer begins with an appoggiatura E♭-D that resolves to a consonance; the following A♭-G♭, though, opposes the pedal G, ending with the suspended dissonant fourth, C; the dominant G seventh turns to G minor, a gesture of stark tragedy. But the final chord is a luminous auditory image: a high, Lydian cluster on A, rhyming with the A♭ chord (m. 35), leaving the meaning of the ending equivocal in a coda that contrasts yet affirms the movement's sense of grief and cataclysm.

CHAPTER THREE

PIANO ETUDE NO. 6, *AUTOMNE A VARSOVIE*

In the ongoing series of Piano Etudes, many elements of Ligeti's new style appear in their most concentrated form. For instance, the dance ostinato in the Horn Trio's second movement is even more strictly adhered to in the fourth Etude, *Fanfares,* appearing in every register, never changing until it flies off the top of the keyboard at the end. Later, in the Piano Concerto, it becomes one of a whole collection of modal materials.[1] The Lamento motif of the Trio's final movement undergoes a similar transformation. Its relatively free treatment in the Trio becomes more rigorous in *Automne à Varsovie,* taking over the entire piece. Then in the Piano Concerto, the motif appears in new, more complex surroundings.

While all the Etudes use complex rhythms, the first and sixth are among the most innovative.[2] In his essay on the first book of Etudes, Ligeti barely mentions the other four, so preoccupied is he with the main goal of these two works: to produce exceedingly complex polyrhythms—or, as he says, "illusory rhythms"—with a single, human interpreter. Both etudes achieve this goal in different ways. The first, *Désordre*, uses interlocking schemes of talea-like rhythmic patterns, each of which goes in and out of phase, recalling (not for the first time) the music of Steve Reich. Like his earlier *Monument* from the Three Pieces for Two Pianos, or the "Mirror-canon" first movement of the

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[1] It appears only once, in the first movement, clarinet part, m. 93.
[2] At this writing, four new Etudes from Book Two are complete, and Ligeti is writing the other two, making a total of twelve pieces.

choral *Magyar Etüdök*—or Boulez's *Structures Ia*—once the rules and materials have been invented, the piece virtually composes itself. It is a complex musical machine.[3]

The sixth Etude, *Automne à Varsovie,* while somewhat freer in construction, still follows strict principles, drawn from two vastly different sources of inspiration: the piano music of Chopin and Schumann, and the indigenous music of sub-Saharan Africa, which Ligeti encountered through recordings made by Israeli ethnomusicologist Simha Arom. The composer writes:

> One often arrives at something qualitatively new by unifying two already known but separate domains. In this case, I have combined two distinct musical thought processes: the meter-dependent hemiola as used by Schumann and Chopin and the additive pulsation principle of African music. Stemming from the mensural notation of Renaissance music, the hemiola arises from the metric ambiguity posed by a measure of 6 beats, which can either be divided in three groups of two or in two groups of three. . . . The shimmering effect of simultaneously dividing the bar into two and three produces the metric tension which in itself is one of the strongest attractions of the music of Chopin, Schumann, Brahms and Liszt. A completely different metric ambiguity is to be found in African music as well. Here, of course, there are no measures in the European sense of the word, but instead one finds two rhythmic levels: an underlying layer consisting of fast, even pulsations which are however not counted as such but rather felt, and a superimposed layer of occasionally symmetrical but more often asymmetrcal patterns of varying length, though always multiples of the basic pulse.[4]

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[3] Denys Bouliane (1990) and Lois Svard (1990) both provide detailed analyses of the first Etude.

[4] György Ligeti, "On My *Etudes* for Piano," trans. Sid McLauchlan, *Sonus* 9/1 (1988) 4-5. An abbreviated version appears in the liner notes to Erato Compact Disc ECD 75555.

First, Ligeti's mention of Chopin brings to mind scientist-philosopher Douglas R. Hofstadter's article, "Pattern, Poetry and Power in the Music of Frédéric Chopin."[5] Hofstadter, the author of *Gödel, Escher, Bach* and other works, appears in Ligeti's long list of imaginative influences.[6] Like Ligeti, his interests are catholic, ranging from artificial intelligence to font design to Rubik's Cube. Though an amateur musician, his thoughts on music are well-informed and insightful, particularly regarding the hemiola:

> In theory, two voices playing a three-against-two pattern need not be perfectly aligned. If you shift the upper voice by, say, 1/12 to the right, you get a different picture (see Figure [3.1b]). Here the triplet's third note starts halfway through the doublet's second. As you can see, the triplet extends beyond the end of the interval, presumably to join onto another identical pattern. We can fold the pattern around and represent its periodicity in a circle, as is shown in Figure [3.1c]. By rotating either of the concentric circles like a knob, we get all possible ways of hearing three beats against two. In Chopin and most other Western music, however, the only possibility that I have seen explored is where the triplet and doublet are perfectly "in phase."[7]

Here, Hofstadter constructs a grid of twelve pulses underneath the three-against-two pattern, in a way that remarkably resembles Ligeti's methods in the sixth Etude. Also, by suggesting that hemiolas need not be "in phase," he stretches the idea in a way that obliquely points to Ligeti's concept of "generalised hemiolas." The idea of phasing, of

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5 Collected in *Metamagical Themas: Questing for the Essence of Mind and Pattern* (New York: Basic Books, 1985). This article originally appeared in *Scientific American,* April 1982.
6 Quoted in chapter one, p. 6
7 Hofstadter 177-78.

course, also recalls Steve Reich's music (which fascinates both Ligeti and Hofstadter), as well as Ligeti's first Piano Etude, *Désordre*.

A few pages later, Hofstadter describes "a tricky bit of polyrhythm"—actually a complex combination of 2:3 and 3:8 from Chopin's Fourth Ballade. He presents this two-measure passage (mm. 175-76) in a three-color scheme that shows the contrasting rhythms (reproduced as Figure 3.2).

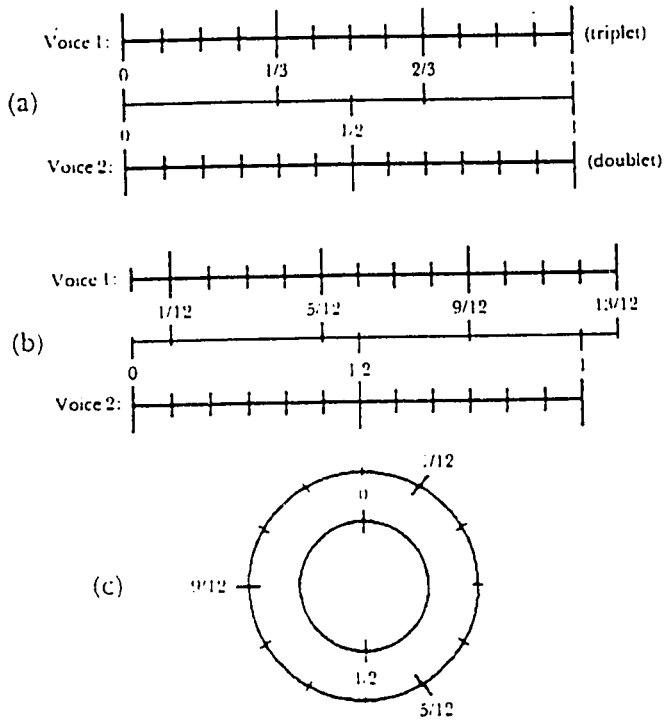

Figure 3.1 Two of Douglas R. Hofstadter's variations on the hemiola concept, from *Metamagical Themas: Questing for the Essence of Mind and Pattern.* Reprinted by permission of Basic Books, Inc.

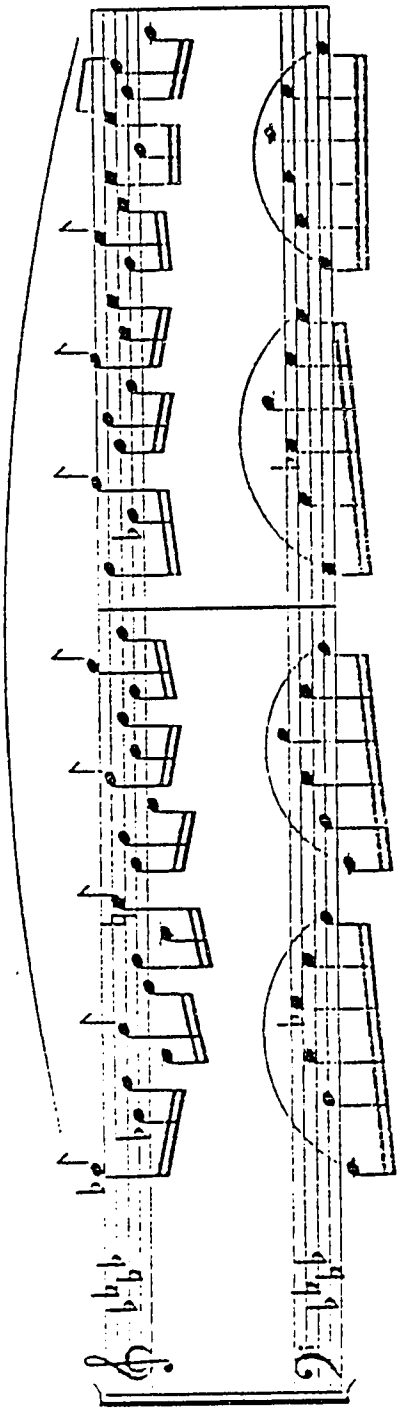

Figure 3.2 Hofstadter's example of Chopin's Fourth Ballade in F minor, mm. 175-76. Reprinted by permission of Basic Books, Inc. (pending)

This complex hemiola is probably the closest precursor to the rhythms of the *Warsaw* Etude in the piano repertoire. (The different colors also recall Ligeti's multicolored sketch for the first Etude, reproduced on the Schott edition's cover.) At a fast tempo the polyrhythm sounds like a special kind of rubato, rather than a complex hemiola; Ligeti takes advantage of this quasi-rubato in his Etude, giving the piece a "super-Chopin" effect. The similarity between Hofstatder's article and Ligeti's thinking is remarkable, considering that Ligeti at the time was not yet familiar with the article; in a 1990 lecture on his Etudes, though, he did refer to the Chopin passage as one of his inspirations.[8]

Inspired by Chopin, Ligeti alters the European hemiola, now by combining *several* groups of *irregular* beats: instead of two against three, he uses such combinations as three against five, five against seven, or even three against four against five against seven. At the same time, he does away with European meter—the larger grouping of beats into measures—replacing meter with a continuous, undifferentiated pulse of sixteenth notes. This quick, steady pulse stems from an African idea explained by Simha Arom in his monumental *Polyphonies et polyrythmies instrumentales d'Afrique centrale*, a treatise on the music of the Pygmy peoples of the Central African Republic.[9] Ligeti regards Arom's work highly enough to have contributed an Introduction to the book, in which he highlights this underlying pulse: "For composition,

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[8] György Ligeti, "Polyrhythmical Aspects in my Piano Etudes," lecture given at the International Bartók Seminar and Festival, Szombathely, Hungary, 26 July 1990, quoted in Svard 76.

[9] Translated into English as *African Polyphony and Polyrhythm: Musical Structure and Methodology* by Martin Thom, Barbara Tuckett, and Raymond Boyd (New York: Cambridge University Press, 1991).

[Arom's research] opens the door leading to a new way of thinking about polyphony, one which is completely different from the European metric structures, but equally rich, or maybe, considering the possibility of using a quick pulse as a 'common denominator' upon which various patterns can be polyrhythmically superimposed, even richer than the European tradition" (p. xviii). Arom, in his inimitably rigorous way, defines this pulsation:

> By *pulsation* we mean the isochronous, neutral, constant, intrinsic reference unit which determines tempo. To take this definition piece by piece:
> - *isochronous*, i.e., repeated at regular intervals
> - *neutral* insofar as there is no difference between one pulsation and another: the idea of an arrangement of beats at a higher level [i.e., meter] is excluded
> -*constant* in being the only *invariable* element in the course of the piece
> - *intrinsic*, i.e., inherent in the music itself and specific to each piece: this makes it always a relevant factor
> - a *reference unit*, i.e., establishing a unit of time
> - *determining tempo* by setting the internal flow of the music it underlies (p. 202).

Later, Arom painstakingly investigates the difference between rhythm and meter, concluding that European meter is nothing more, nor less, than a series of identical durations with regular accentuation—in other words, meter is just an extremely simple rhythm, spread out on a large scale. "*What is called metre in music is thus the simplest form of rhythmic expression.* In other words, musical metre has no independent status [from rhythm]. Ignorance of this fact is the root of the many confusions between metre and rhythm" (p. 204, his italics).

The primacy of meter is furthermore a comparatively recent development in Western music. To illustrate this point, Arom quotes the French musicologist Maurice Emmanuel:

> In the sixteenth century, the bar was not yet in use; partitioning, and even vertical alignment, were not indispensable to either eye or mind in reading a score. It was customary to beat *time*, nothing else. The intrinsic structure of a piece would thus give rise to measures which could be heard *but not seen.* This made it possible to conceive of rhythm as based on beats, but not on beats marshaled into measures (p. 196).

Of course, the lack of European measures is nothing new for Ligeti: "Even as early as the orchestral piece *Apparitions* (1958/59) one finds in my music precisely this characteristic lack of a bar-oriented meter—I used bars and their subdivisions simply as optical aids for the notation." The barlines in *Automne* function similarly: the listener perceives only the chains of hemiolas (or as Ligeti calls them, "super-signals"), which move independently of the barlines. This rhythmic freedom recalls not only African rhythmics, but those of the Renaissance as well, and probably underlies Ligeti's admiration for masters such as Ockeghem and Phillipe de Vitry, as well as the ars subtilior of the late fourteenth century.

Although complex polyrhythms have existed in Ligeti's music ever since he came to the West—nearly every score abounds in simultaneous layers of triplets, sixteenth notes, quintuplets, etc.—the difference between the earlier pieces (including even the Horn Trio) and the Etudes lies in this new conception of pulse. In the earlier works, the pulse is something to be divided, into two, three, and so on; even thirteenth-tuplets show up occasionally. The effect of these different

subdivisions, especially when they occur simultaneously, is to blur the aural landscape, creating the micropolyphonic "Ligeti effect." The smallest common denominator of all these subdivisions is a microscopic fraction of a beat; no one can hear it, much less count it. Even though the first movement of the Horn Trio unfolds simultaneously in three tempi (based on subdivisions of three, four, and five), because the tempo gradations are so subtle, the effect is indistinct—a kind of strange, dislocated rubato.

On the other hand, the Etudes and their rhythmic predecessors, *Continuum* especially, conceive of the pulse as a musical atom, a common denominator, a basic unit which cannot be divided any further. Different rhythms appear through *multiplications* of the basic pulse, rather than *divisions*: this is the principle of African music seized on by Ligeti (it also appears in the music of Philip Glass, Steve Reich, and others). In effect, the blurred rhythmic patterns are now seen through a microscope; instead of a dense web, the shape takes on definition, though fantastically complex, not unlike an image of a fractal coastline. As he puts it, "In a piece such as *Continuum* where I (consciously) tried to create an illusionary rhythm, I came (unconsciously) close to the rhythmic conception evident in the music of sub-Saharan Africa."[10]

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[10] Ibid. Complex additive rhythms also characterize the music of Eastern Europe, Ligeti's heritage. *Fanfares,* the Fourth Etude, as well as the Horn Trio's second movement and the harpsichord piece *Hungarian Rock* (1978), pay homage to the rhythms of Ligeti's homeland. But Eastern European rhythms still tend to fall into meters—3+2 or 2+2+2+3 are common examples—while sub-Saharan African (and Ligetian) rhythms do not.

African rhythms are cyclical and repeating, but the lack of bar accentuation, as well as their speed and complexity, distinguish them from European rhythms. Still, they do resemble hemiolas, as Ligeti explains: "Strangely enough, it is possible to beat both a duple or a triple meter to these rhythmic patterns by handclapping or, for example, with a percussion instrument. This prevailing metric ambiguity produces, in theory at least, a kind of hemiola, which however in practice does not really exist: there can be no real ambiguity as there is no meter based on the barline, there are no accents and consequently no hierarchy of beats, only the smoothly flowing additive pulse."[11]

Arom calls this principle *regular asymmetry:* the rhythmic figure cannot be divided into two identical cells (that would be symmetrical); but the figure *can* be divided into an odd number of units, say, three identical cells—this is the "asymmetrical internal structure" mentioned earlier by Ligeti. In another sense, though, the repeating periods (over the ground layer of fast, even pulsations) are "regular," since each cyclical period always contains an even number of total pulsations.

> In Central Africa, regular asymmetry is usually based on the repetition of a single cell or configuration, whose position with respect to the pulsation is shifted each time it recurs in the rhythmic figure. This shifting comes about as a result of a difference in the arithmetic progressions of rhythm and metre [or, upper layer and constant pulsation]. This, in fact, is the principle of the *hemiola* (see [Fig. 3.3—the pulsations are marked by thin vertical lines]).[12]

Only rarely do these African hemiola rhythms fall into the familiar, two-against-three grouping; more often they tend towards three-against-

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[11] Ibid.
[12] Arom 245.

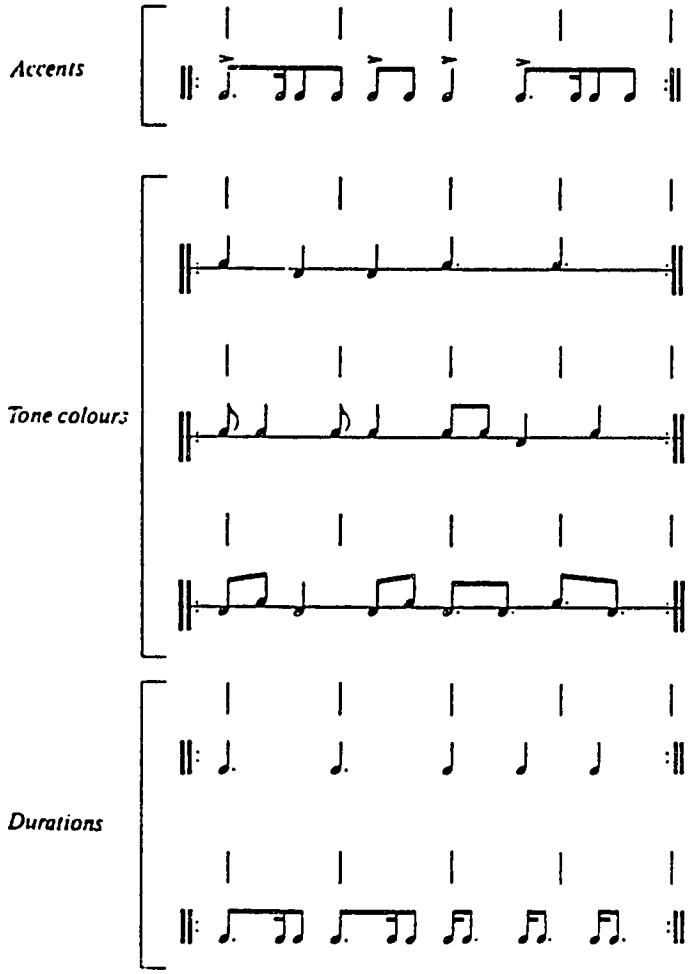

Figure 3.3 Examples of hemiola-like patterns in Central African music, notated by Simha Arom; the thin, vertical lines signify the regular pulsation. Reprinted by permission of Cambridge University Press.

four (we will return to these rhythms when Ligeti uses his own versions of them in his Piano Concerto).

The inspiration to combine these two rhythmic conceptions, European and African, in a piece for solo piano was sparked by Ligeti's discovery of Conlon Nancarrow's music for player piano. Nancarrow has discovered amazingly complex polyrhythms that are beyond the human ability to perform, or even to perceive. But since the writing is contrapuntally clear, unlike Ligeti's earlier micropolyphony, we hear more than an impenetrable web of sound; we hear complex patterns which sound logical, even congenial, but which lie beyond our comprehension, partly because of their extreme speed. As conductor and pianist Joel Sachs writes, "While cascades of notes whirl about the playerless keyboard at speeds that dare our ears to understand what is happening, these pieces retain a good-natured, humane wit."[13]

One can discern some hemiola-like characteristics in Nancarrow's music, as well. One of his player piano pieces to be successfully transcribed for piano four-hands (by Yvar Mikhashoff) is *Study No. 15,* described by Sachs: "It is a canon in which the two parts perform the same material at different tempos (in the ratio 4:3). Gradually the faster, upper part pulls ahead. Then, when it has finished its melody, it starts again at the slower tempo. Soon the lower part—originally the slower—completes its statement of the melody, begins again at the fast tempo, and gradually catches up in this canonic race. The two hit the finish line simultaneously."[14] With its four-against-three basis, this

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[13] Joel Sachs, liner notes for the compact disc, *Continuum Performs Nancarrow* (Musicmasters, 1991: 7086-2-C).
[14] Sachs, liner notes.

piece also represents an extension of the hemiola concept—one, however, that surpasses the technique of a single performer. Ligeti took this music as a challenge: "The splendid music of Nancarrow incited me to search for a way of producing such rhythmic entanglements with the help of *living* interpreters. Especially, I asked myself if so complex a polyrhythm could be entrusted to a *single* soloist."[15]

Rather than polyrhythm or polymeter, perhaps the best word for this music is *polytempo,* or as Ligeti calls it, a "tempo fugue."[16] The composer describes how he achieves this effect:

> . . . the pianist plays, in the *Automne à Varsovie*, an even succession of notes. The piece is notated in 4/4 (although the barlines as such are not audible), with 16 fast pulses per measure. There is however a place in the piece where the right hand accentuates every fifth pulse and the left every third. To the ear, these chains of accents blend together to form a super-signal consisting of two melodies: a slower one formed by the groupings of five and a faster one produced by the groupings of three. The ratio 5:3 is of course arithmetically simple, but perceptually very complex. We do not count the pulses but rather experience two qualitatively different tempo levels. Neither does the pianist count while playing: he produces the accents according to the notation, is aware of a pattern of muscle contraction in the fingers, all the while however hearing another pattern, namely that of the different tempi which could not possibly be produced consciously.[17]

Before seeing how Ligeti uses this effect, one final thought: his idea would probably not work with any melodic material other than simple scales. Without timbral differences to help the listener parse the

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[15] Ligeti, "On My *Etudes* for Piano," 6.
[16] Ligeti, "Polyrhythmical Aspects in My Piano Etudes."
[17] Ligeti, "On My *Etudes* for Piano," 5-6.

various lines, a more complicated melody in different simultaneous tempi would sound like a succession of complicated arpeggios—in fact, pieces like Steve Reich's *Piano Phase* exploit a very similar effect. Even in the *Warsaw* etude, the thicker, contrapuntal passages are difficult not to perceive as subtly shifting arpeggios. The pianist requires a superb sense of touch to distinguish the closely woven lines.

****

Automne à Varsovie, 122 measures long, is composed in two parts, bisected by the bare tritones of mm. 55-62. Elements of an arch form present themselves as well; the opening pitch E^{b} enharmonically reappears as $D^{\#}$ in m. 98. In both halves of the piece, the action is cumulative, each time suddenly cut off: at the halfway point, an enormous climax disappears into a *subito pp* passage, while the end of the piece is hurled off the bottom of the keyboard, with the classic Ligeti indication, "Stop suddenly as though torn off, dry [aufhören wie abgerissen, secco]." A closer look at the piece reveals the same gesture throughout: a steady buildup followed by *subito pp*—or at the end, silence. Figure 3.4 shows the layout of the dynamics. One of the wildest climaxes in the piece *(fff)* comes immediately before the "recapitulation" on $D^{\#}$ in m. 98: this climax helps to define the ABA aspect of the piece.

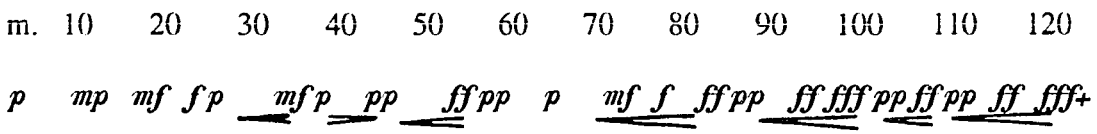

Figure 3.4 Dynamics in *Automne à Varsovie* (ostinato is usually *pp*).

In all there are seven such climaxes; the one just mentioned is the fifth. Although they all represent the same dynamic gesture, each is approached differently, through voice-leading, rhythm, and dynamics. This variety of gesture is especially remarkable given the strict limitations of harmony, melody, and rhythm Ligeti sets himself. Before looking more closely into the form, though, let us examine the opening of the piece to the first climax, mm. 1-24, in which Ligeti introduces the ideas for the entire piece.

The opening section—or exposition, in the fugal metaphor—consists of three phrases (A, B, C), each more elaborate than the one preceding; each phrase in turn contains three smaller phrases. The first sound the listener hears is a repeating ostinato of sixteenth notes, arpeggiated over four octaves on E$^{\flat}$. This ostinato, or background pulse, will be present in one form or another for almost the entire piece; it is Ligeti's "rapid, 'African' succession of non-accented notes." Although no accents are marked, since the figure is always arpeggiated from the lowest to the highest, we hear a pattern of quarter-note, or 4/16 rhythms, articulated by register.

After five statements of this pattern, a melody comes in, accented, *piano,* played in octaves in the upper register (m. 2): it is the chromatic subject of the Horn Trio's Lamento, descending gently in durations of five sixteenths, making a five-against-four rhythm with the background ostinato. The rhythmic relation of 5:4 expresses the main idea: different time streams, linked by a "common denominator" pulse.

♩ = 144 Presto cantabile, molto ritmico e flessibile

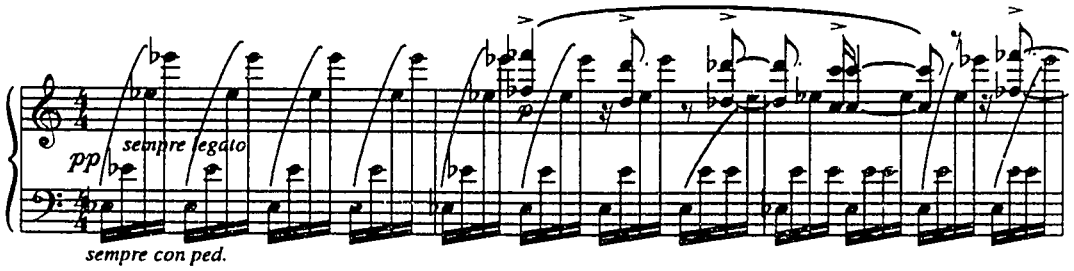

Figure 3.5 Ligeti, *Automne,* mm. 1-3. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

The effect does not *sound* like a polyrhythm, at least at first, but rather like two separate entities juxtaposed: a quiet, insistent ostinato, and a falling lament that does not mesh with the ostinato either harmonically or rhythmically. The tempo marking, "Presto cantabile, molto ritmico e flessibile" expresses the dual nature of the music. It is at once rhythmic and flexible; it suggests both clocks and clouds. Appendix D, a representation of the entire Etude, beams the melodic notes together to show the tempo levels and phrasing. (I use George Crumb's "half-dotted" notation, in which a dot preceding a note subtracts half of the value of the dot following the note; thus, ♩‿♪ equals ♩.). Barlines, inaudible to the listener and thus useful only to the performer, are left out.

The melody descends by half-steps except when it encounters the ostinato E^{b}, which it skips over. For much of the piece, the melody

carefully avoids the background ostinato pitch. Also, the opening $F^{\flat}$, a half-step above the ostinato $E^{\flat}$, has the character of an appoggiatura—one, though, that misses its resolution ($E^{\flat}$) and continues to slip away. Part of the music's emotional impact stems from this feeling of a "broken appoggiatura," a falling dissonance which overshoots its resolution, never to return (the melody shares this characteristic with the Horn Trio's Lamento, discussed in chapter two).

The melody appears in three small phrases, a_1, a_2, and a_3. Each falls farther down, always skipping $E^{\flat}$, and ends with a "half-dotted half-note," two units long (or ten sixteenths). Each phrase is longer than its predecessor, and a_1, the first, is longer than the ostinato introduction. Phrase a_3, though, is much longer—nearly the length of a_1, a_2 and the introductory ostinato combined:

	ostinato $E^{\flat}$	a_1	a_2	a_3
	4 units (20 16ths)	5 units	6 units	14 units
melodic range:	$E^{\flat}$	$F^{\flat}$—C	$F^{\flat}$—B	F —$A^{\flat}$

Figure 3.6 Lengths of the first three phrases and the introductory ostinato; units are groups of five sixteenth notes.

Phrase a_3 differs from the first two phrases in several other ways. It begins in m. 5 with a pitch and agogic accent: a half-dotted half-note $F^{\natural}$, a semitone higher than a_1 and a_2. The F is also harmonized with a lower major seventh, sharply dissonant to the octaves that have gone before. As the melody progresses downward, it is twice interrupted by small ascents; each of these, too, is harmonized with a major seventh,

stressing their delaying, quasi-deceptive function. Ligeti always marks these interruptions *sfz;* the second of them, C#/D, is more intense than the first, thanks to its extended length. Already we can see beginning a process of accumulation—the phrases stretch longer, cover a wider range, and grow more dissonant—which will carry through to the first climax.

Phrase a3 ends with the abrupt modulation of the ostinato from E♭ down to D (m. 9): abrupt, because the final E♭ group is only three sixteenth-notes long instead of four (see Figure 3.7). The sudden shift frustrates the feeling of released tension which usually accompanies the end of a phrase. The ostinato moves simultaneously with the last note of the melody, A♭, in parallel tritones. As in the Horn Trio's Lamento, tritones moving in similar or parallel motion help create the "neither tonal nor atonal" sound Ligeti strives for.

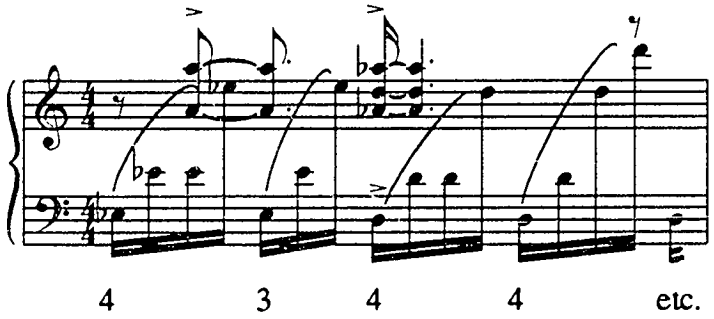

Figure 3.7 *Automne,* end of phrase a3 (m. 9). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Here, it is almost as if the E♭ ostinato were waiting for the melody to reach A, the magical tritone; then the ostinato "locks into gear" with the melody and slips down a semitone, overriding its own rhythmic, four-note pattern.

The second large phrase, B, follows the same contour as the first. It begins in m. 10 a semitone higher (F#) than the highest note of phrase a3; now a new voice accompanies it, a fifth below the melody. The addition of the fifth produces various triads: combined with the ostinato D, we hear B minor 6_3, B♭ major 6_3, the open-fifth field D-A-E, and the trichord D-A♭-E♭—pitch-class set [0,1,6], a tritone plus a perfect fifth.

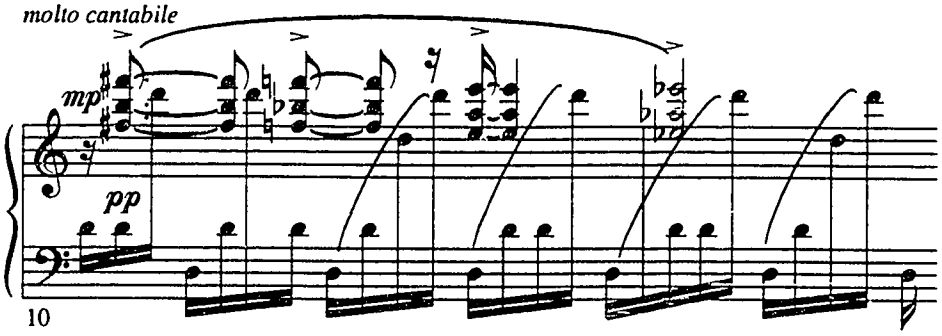

Figure 3.8 *Automne,* phrase b1 (mm. 10-11). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Phrase b2, mm. 11-12, adds another lower-fifth voice (G), in turn, to the ostinato D. While D maintains its 4/16 rhythmic cycle, the lower G is played every eight sixteenths, creating a half-note (2/4, or 8/16) period, like a slow-motion version of the ostinato D.

As before, the melody avoids the ostinato, now skipping from E♭ to D♭. The addition of G in the left hand creates these harmonies:

G major^7
G minor^7
G-D-A-E (open fifths)
G-D-A♭-E♭ [0,1,5,6]
G-D-G♭-D♭ [0,1,5,6]

Figure 3.9 Harmonies in phrase b2 (mm. 11-12).

As soon as phrase b3 begins (m. 13), the slow-motion ostinato G in the bass falls to F#. The upper melody starts a semitone higher on G# and begins to descend, chasing after the bass, which has suddenly become a melodic line. This new, left-hand line is rhythmically unstable, growing progressively faster until low C. The left-hand descent shows a tendency Ligeti will exploit later in the piece: all ostinatos are ultimately unstable, and may suddenly become chromatic melody at any time (see Figure 3.10). The chords grow more dissonant as the bass line descends, until the A♭ major $^{6}_{3}$ appears with sudden clarity as the different lines rhythmically converge. Then the upper voice finishes its phrase, while the bass line rests; the ostinato has jumped to A♭. The first right-hand chord, A-D-G# (again, [0,1,6]), is striking. Like the beginning of a3, the outer interval is a major seventh; the D is the middle voice from phrases b1 and b2. Add the left hand (D-F#), and we hear a D major $^{6}_{3}$ triad with an added raised fourth, G# (set [0,1,3,7]). This first chord sounds like another "broken appoggiatura"—the G# attempts to resolve to F# but misses, sliding down through G and F.

In the last six notes of the right hand, the ending of phrase b3, Ligeti introduces contrary motion (see Figure 3.11). These inner voices, which up to now have always moved in similar or parallel motion, now suddenly become independent: like the ostinato just before, voice-leading which is apparently stable can become unstable without warning. In both Figures 3.10 and 3.11, the chords marked *sfz*—the "interrupting" chords—are the most dissonant, as they were in phrase a3.

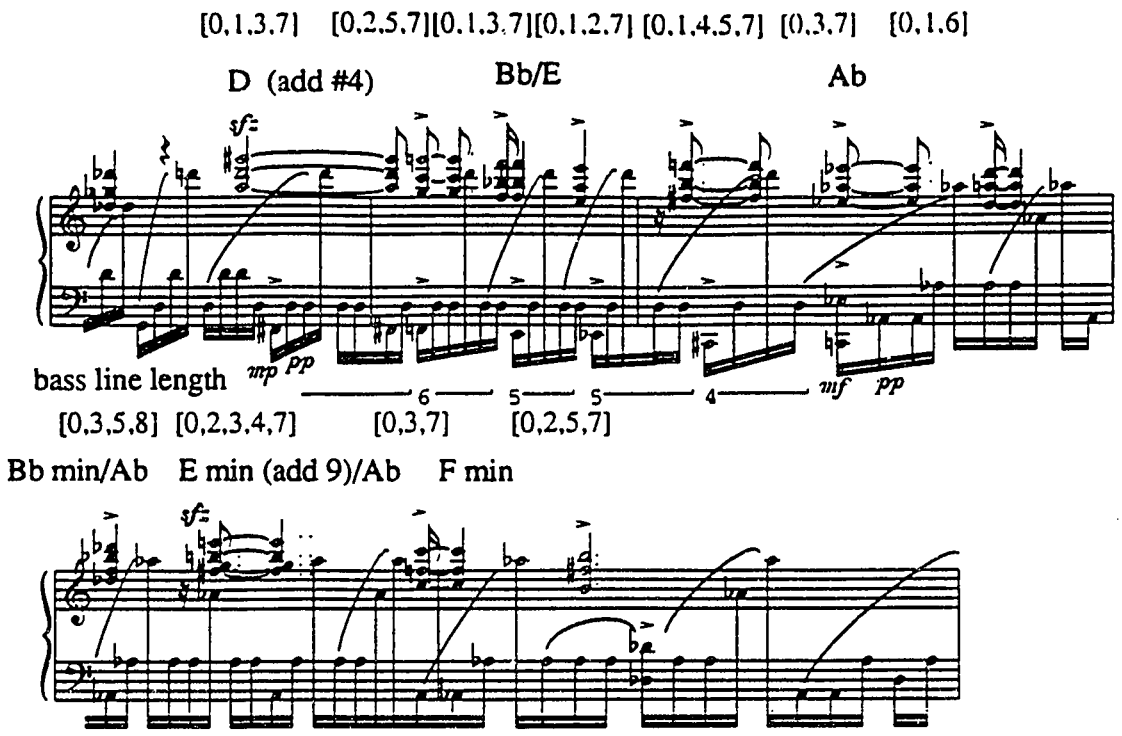

Figure 3.10 *Automne,* phrase b3 (mm. 13-17). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

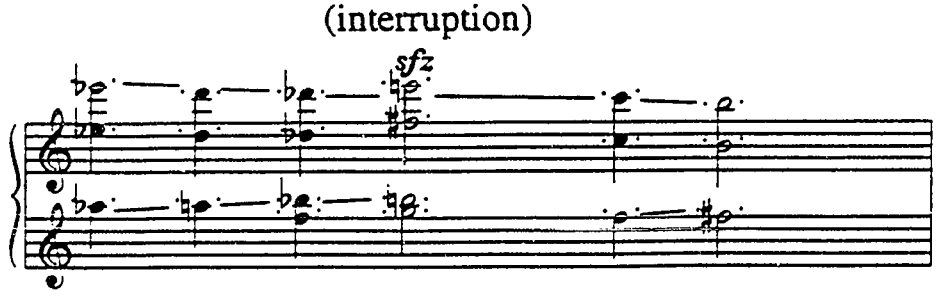

Figure 3.11 Contrary motion at the end of phrase b3 (mm. 15-17).

The final note of phrase b3 is three units long: ♩.⁀♩. , one unit longer than the end of a3. During this interlude between phrases B and C (m. 17), D^{b} appears in the left hand, doubled at the octave—again, a fifth lower than the ostinato A^{b}, as with the G-D pair in phrase b_2 (m. 11). The D^{b} in the bass forms its own slow-motion line, dropping down to B as phrase c_1 begins (m. 18).

In every way—melody, harmony, texture, dynamics, and especially rhythm—phrase C is the most intense of the opening section's three phrases. The melody in c_1 begins on $A^{\#}$, the highest note heard so far; c_2 begins on the same pitch, while c_3, like a_3 and b_3 before, starts still higher on C. Now we can see another principle at work: behind the surface descent of the Lamento motif lies a background ascending line, formed by the first note of each phrase. The registral, voice-leading "wedge" produced by this ascent and the gradual descent in the bass, plus the steadily increasing dynamics, constantly increase the musical tension. In Appendix D, the notes in the ascent are circled.

Rhythmically, phrase C is where Ligeti's concept of "tempo fugue" comes fully into play. The middle and bass voices enter in imitation of the first, upper voice, each in different multiples of the basic pulsation:

Upper	(5/16)	c_1	c_2	c_3
Middle	(3/16)	c'_1	c'_2	c'_3
Bass	(4/16)		c''_2	

Figure 3.12 Imitation and polyrhythm in phrase C (mm. 18-24).

Each entrance is marked in Appendix D. As Ligeti points out (on p. 62 above), the right hand and left hand form the polyrhythm 5:3. Before, the polyrhythmic relationships emphasized the differences of the musical material. Now, the polyrhythm springs from two voices with the same idea—a strict kind of heterophony, or a fugal subject in augmentation. As the composer says, though, the effect is like hearing two different tempi at once.

Ligeti carefully arrays these different layers to form sounds rich in triads, seventh chords, and tritones, as shown in Figure 3.13 (phrases c_1 and c_2). Instead of the open fifths which accompany phrase b, phrase c is harmonized mostly with tritones, or the [0,1,6] just heard at the beginning of b_3 in the right hand (m. 13, Figure 3.10).

The upper voice, as it descends from A# to G♮, passes through the ostinato G#, ignoring the tendency to avoid the ostinato pitch. But just as it hits G#, the imitation c'_1 in the middle voice starts off unobtrusively on the same pitch two octaves lower—both the ostinato and the upper voice provide a launching pad, so to speak, for the new, middle voice. Like the upper voice, this new middle voice descends chromatically a minor third, from G# to F♮, a tritone above the slow-motion, octave B's in the bass.

The harmony in phrase c_2 is similar to c_1, with three differences: first, the opening upper-voice chord is intensified by an added F, forming the set [0,1,6,7]; also, the middle voice's imitation does not wait for the upper voice's G#, but starts only two sixteenths after the upper voice begins; finally, the ostinato climbs from G♭ to B♭. Immediately before, the different lines formed a passing, diminished seventh chord

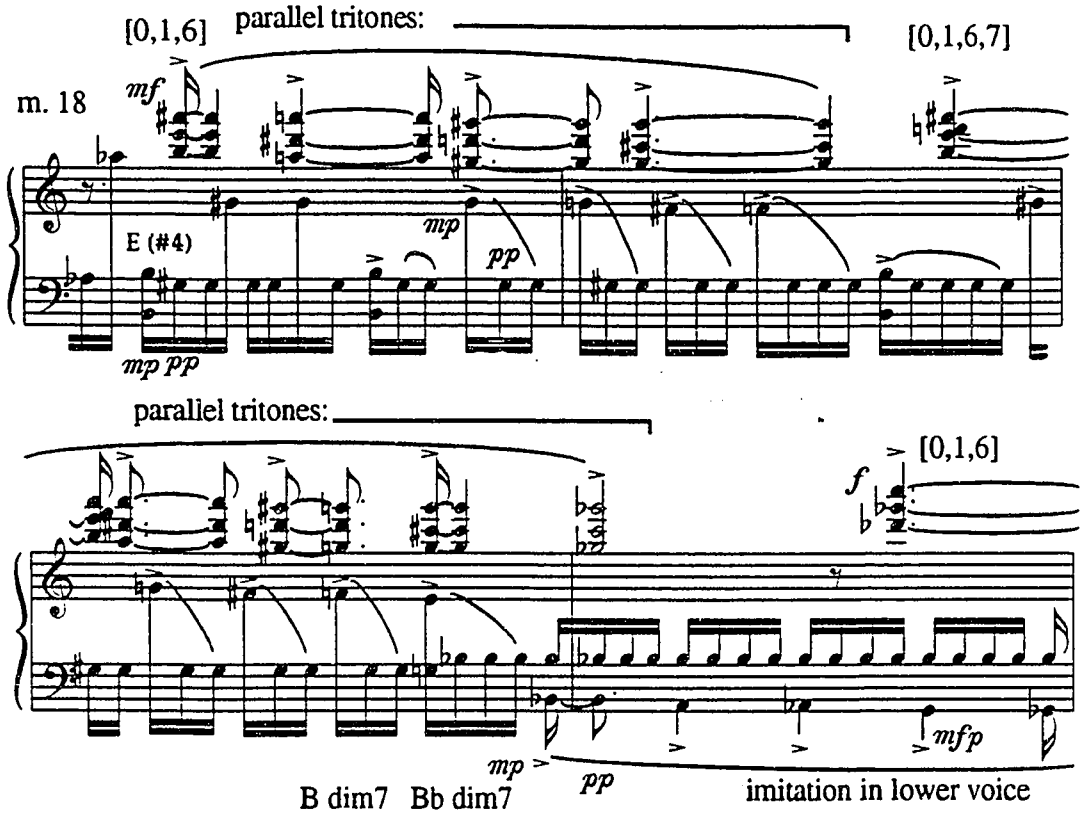

Figure 3.13 Phrases c_1 and c_2 (mm. 18-21). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

(two interlocking tritones) built on the slow-motion B octaves in the bass. As the ostinato moves, the upper voices "lock into gear" and shift down a semitone, to a B^b diminished seventh chord, as shown above in Figure 3.13 (compare with Figure 3.7). Also, the different strands rhythmically converge upon this chord, as they did at the A^b6_3 cadential chord in phrase b_3 (compare with Figure 3.10).

Like the middle voice in phrase c_1, the bass at the end of c_2, mm. 20-21, launches its imitation from the ostinato (now B^b) and descends,

four octaves lower than the upper voice, in quarter notes (4/16). Before it completes its line, though, the upper voice has already begun phrase c3, the culmination of all that has happened so far. The middle voice again imitates the upper, this time starting from A instead of G#. So that its faster line can converge with the upper voice at the climax, the middle voice does not begin until the upper voice's fifth note—the "interruption" of its high descent, accented as before by a more dissonant chord [0,1,6,7] and a longer duration. (Besides, given the position of the hands, it is physically impossible to bring in the middle voice until the bass finishes its lower line.)

The bass line in c3 splits into two: after G♭, it leaps up for three notes, E-E♭-D, while also leading down to F (see Appendix D). At this instant the ostinato climbs once again, from B♭ to B (m. 23); the upper voices have just reached A♭/D. The resulting diminished seventh chord, a half-step higher than the B♭ diminished seventh in phrase c2, increases the musical tension still further. The release finally arrives when the bass and ostinato, still out of sync with the upper voice, rhythmically converge in m. 24. Even here, though, at the end of the exposition, the climax is equivocal. The phrase is not as long as it should be: while a3 and b3 each have eleven notes in the upper voice, c3 only has eight; the rest of the phrase is replaced by its shadowy reflection, an echo in mm. 24-26 (which I label c4; compare the phrases in Appendix D). In this transitional phrase the music changes drastically: the ostinato is marked *subito pp*, the melody *p*, cantabile; the register is suddenly confined to the middle for the first time; the melodies are now unadorned by chords or octaves; and the upper voice—the main voice,

up to now—drops out. Both of the other voices spin down from C, the new ostinato note (m. 24).

The end of each large phrase (A, B, and C) has been somehow ambiguous:

m. 9	the ostinato is jarred out of its pattern;
m. 15	the different melodic strands do not complete their lines together;
m. 24	a melodic phrase is truncated, right at its high point.

Ligeti has given us the equivalent of deceptive cadences, or half cadences at best. As the piece nears its conclusion, though, the climaxes become more violent and definitive.

To sum up the opening, then: the subject appears three times, each appearance louder, higher, and more dissonant than the one before. The third phrase of each statement is altered in some way. The last phrase introduces the melody in different tempi, almost like countersubjects in a fugue. The harmonies have been of four types:

1. Triads, major or minor, in first inversion;
2. "Open-fifth fields," though not always arranged vertically in fifths;
3. [0,1,6], which combines tritones, major sevenths, and fifths—also, elaborations of this set such as [0,1,2,7] or [0,1,3,6,7], or a major triad with an added #4;
4. Seventh chords—usually major, minor, diminished, or half-diminished—in root position or inversion.

With a few exceptions, Ligeti uses these four chord types through the entire Etude, choosing his chromatic lines so their superimpositions and collisions produce these sonorities. As Paul Griffiths would say, these sounds make a kind of "glue" that helps hold the piece together.[18] At

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[18] Griffiths, *Ligeti* 109.

the same time, though, the triads and seventh chords do not obey any rules of tonality; they are ultimately byproducts of the horizontal, chromatic lines (the harmonies of *Lontano,* which result from strict canons, happen the same way; the canons are designed to produce these harmonies).[19]

One of the main ideas which will develop through the piece is *instability*. Without warning, notes in the ostinato can become melodic, and what appears to be a series of chords in the right hand is revealed to be a collection of independent, moving voices. Usually, things become unstable right before a climactic moment, analogously to the way in tonal music harmonic rhythm often increases as a cadence approaches.

Since the entire Etude is built on chromatic scales, it is difficult to separate phrases from one another. As we saw at the beginning, though, the theme appears in three clearly marked phrases. If we follow Ligeti's suggestion of a "tempo fugue," this threefold phrase (the Lamento motif) can be taken as the subject; whenever a melody does not fit the Lamento pattern, the passage is most likely some kind of "episode." The piece divides then into subject and episode as shown below:

1)	mm. 1-24	Exposition
2a)	mm. 25-36	Episode 1a
2b)	mm. 37-54	Episode 1b
3)	mm. 55-85	Re-exposition
4)	mm. 85-97	Episode 2
5)	mm. 98-122	Recapitulation (Episode 3)

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[19] See Robert Rollin, "Ligeti's *Lontano:* Traditional Canonic Technique in a New Guise," *The Music Review* 41/4 (1980) 289-96.

Later we will look for relationships between the episodes and expositions, but first let us compare the two expositions themselves. The full subject appears twice: at the beginning and the (approximate) mid-point of the piece. Like the beginning, the re-exposition (mm. 5585) gradually builds to a climax, but in a completely different way. It again appears in three statements, D, E, and F. As before, each large phrase comes in three smaller phrases. Here, though, the similarites end. For one thing, phrase D has no ostinato accompaniment: the ostinato drops out, leaving the subject in bare, parallel tritones (no octave doublings) at extreme registers. Figure 3.14 shows phrase d3 (mm. 58-62): as before, the interruptions to the descent are accented with dissonant half-steps.

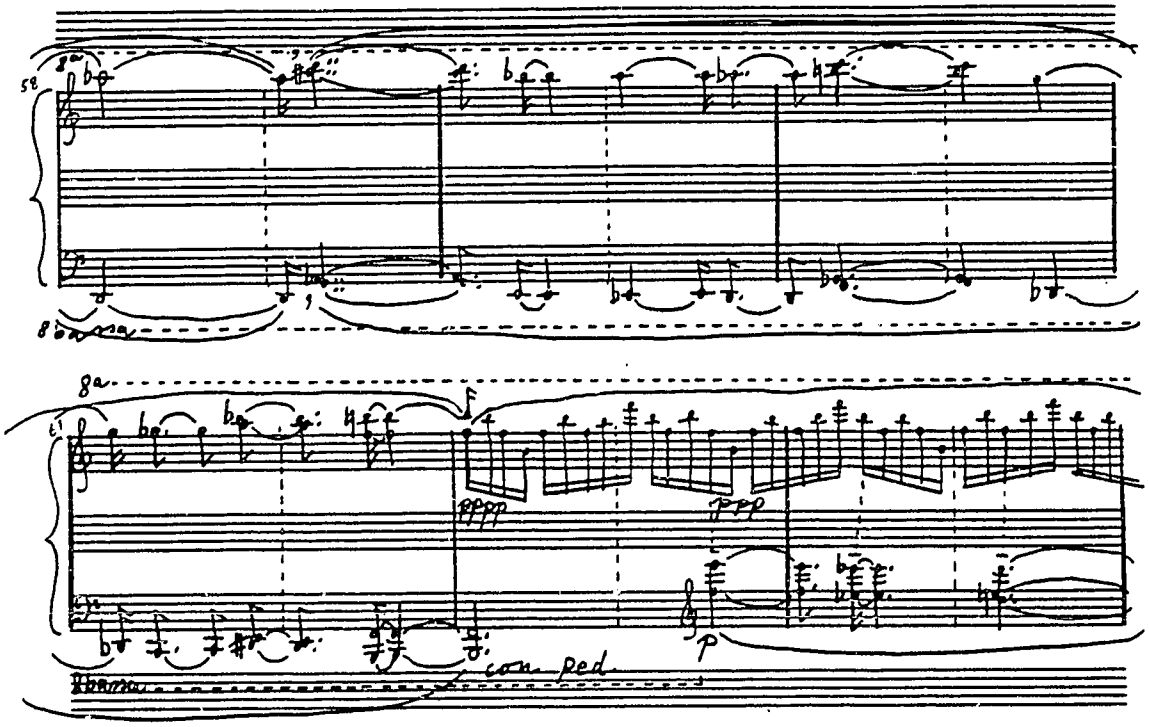


Figure 3.14 *Automne*, phrase d3 (mm. 58-63). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

The phrase ends with a tritone F/B, which dissolves into a new ostinato, quietly oscillating in the extreme upper register. The foreground changes into the background, making way for a new foreground.

Because of the ostinato's reappearance in m. 62, phrase E sounds more like a new beginning than a continuation—and in some ways, it is. It presents a new harmonization of the subject, in which lower voices climb as the melody descends. The melody is now in 7/16, a new, slower tempo. The background arpeggios are now in a 5/16 pattern, the former tempo of the melody.

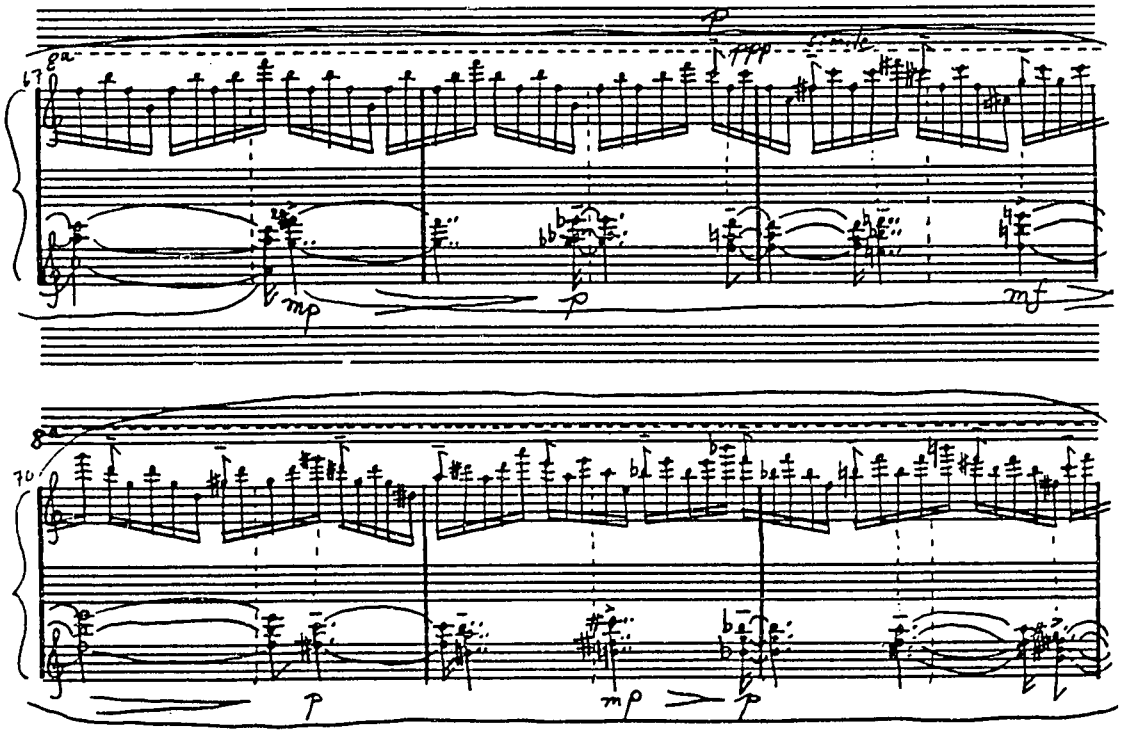


Figure 3.15 Phrase e3 (mm. 67-72). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Phrases e1 and e2 both begin on the major seventh F/E and work inward; combined with the ostinato's F/B, the opening sonority is again [0,1,6]. Phrase e3 (mm. 67-72), as in the exposition, starts higher—a whole step, though, instead of a half-step, to avoid the ostinato F. As the melody continues, the ostinato background slowly begins to rise by half-steps; again, [0,1,6] is prominent.

Phrase e3 continues erratically downward, as the ostinato hits the very top of the keyboard and starts to descend, like a marble bouncing off a wall. At this moment, phrase F enters, a single line starting on C, in 4/16 (quarter notes—until now only the ostinato has used this speed). The ostinato continues to descend; now its oscillating tritone has slid unobtrusively to a perfect fifth, and its descent contracts to 3/16 in phrase f2. Figure 3.16 shows phrases f1 and f2 (mm. 73-75); the tempo relationship is 3:4:7.

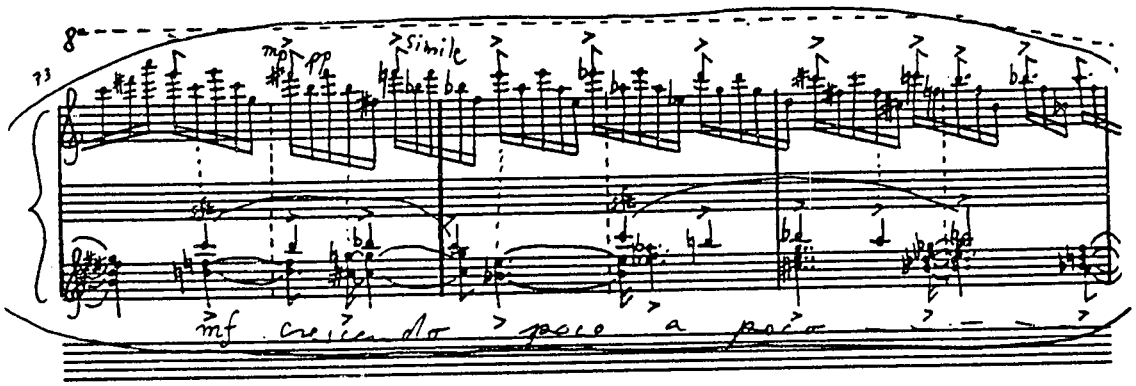


Figure 3.16 Phrases f1 and f2 (mm. 73-75). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Phrase f3, like e3 before, is extended into a continuous descent (in 4/16); another line in 5/16 joins in at m. 77. Immediately (m. 78), the ostinato and f3 exchange tempi (3/16 and 4/16), as shown in Appendix D; the effect is that the melody accelerates.

The disparate lines continue, reaching a climax in m. 85. The ostinato becomes steadily more complex, including its own, interior contrary motion (m. 80) and a descending figuration (mm. 82-85, somewhat reminiscent of the end of Chopin's First Ballade). Because of this contrapuntal extension, the re-exposition is seven bars longer than the opening. Like the exposition, this middle version proceeds by accumulation, but now we can take the word in a more literal sense: as each phrase continues, new ones are continually added. Phrase D, since it is transformed into the background ostinato, continues in a sense for the rest of the piece; the other voices progressively pile up until the climax in m. 85.

The re-exposition is followed by a brief transition/echo, mm. 85-87 (phrase f4), shown in Figure 3.17; it corresponds to phrase c4, the transition after the exposition. The ostinato shifts to A^b, in the middle register only, while melodies float gently downward in 3/16, 5/16, 7/16, and 4/16. Rhythmically, this transition is just as complex as the climax before, but the quiet dynamic and disappearance of the low register afford a sense of calm.

Now let us turn to the episodes, one following each exposition. Although both transform the subject in different ways, each begins *pianissimo,* and eventually ends *fortissimo* or louder. Episode 2, following the re-exposition, is more straightforward than the first.

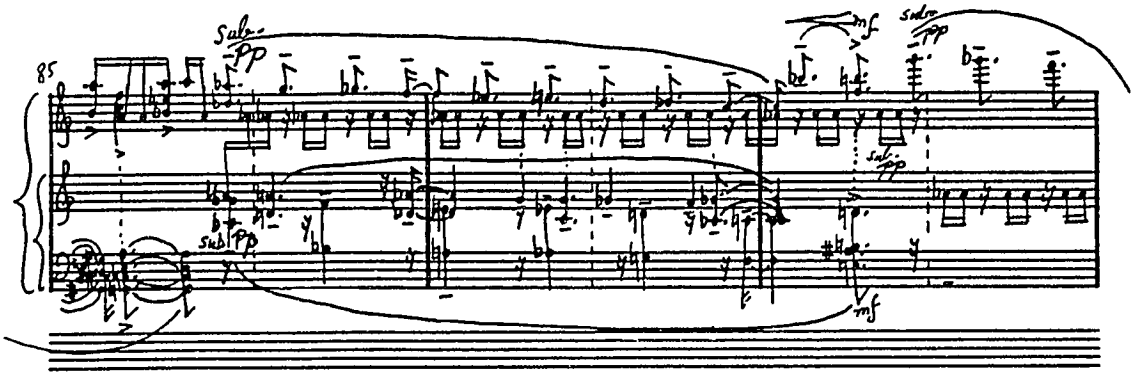


Figure 3.17 *Automne,* phrase f4, mm. 85-87. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Like the re-exposition just before, it gradually accumulates voices; but here, the voices accelerate madly toward opposite ends of the keyboard.

At the beginning of episode 2 (m. 87), the ostinato remains on the same pitch ($A^{\flat}$) as the transition just before. The meter remains 3/16, identical to the descending melody above. The next two bars bring entrances in 4/16 and 5/16. Then, the top and bottom voices introduce expanding, contrary motion; the top voice, after a partial start, eventually rockets to the top of the keyboard. The second ascent (mm. 93-98; see Figure 3.18) further thickens the texture by introducing more notes, which disappear as they fly off the top of the keyboard one by one, foreshadowing (in the opposite direction) the end of the piece. In the left hand, the 3/16 voice overtakes the 5/16 voice, which disappears in m. 96; then the 3/16 voice gathers speed and plummets downward, erasing the distinction between it and the ostinato.

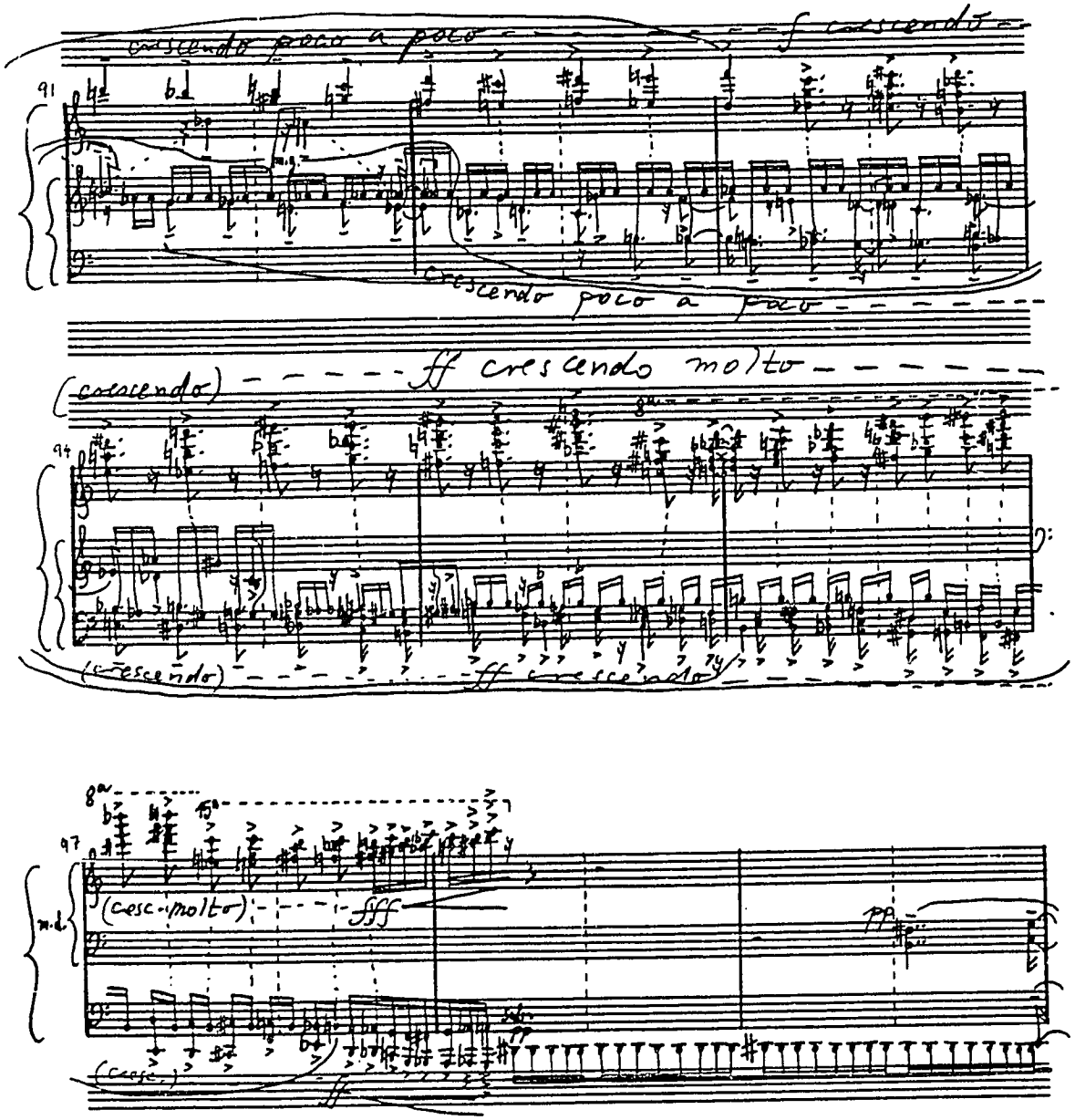


Figure 3.18 *Automne,* end of Episode 2 (mm. 91-99). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Episode 1 (mm. 26-54) is formally more complex, dividing into two sections separated by the *mf* climax in m. 36. Rhythmically it is simpler; melodic voices in 3/16 and 5/16 play against an ostinato that shifts between 4/16 and 3/16. The rolling octaves of the beginning return after having been compressed into the middle register at the first climax; many of the voice-leading details can be seen in Appendix D. The right-hand melody begins by extending the gentle descent of the transition (phrase c4) immediately before, then makes three false starts on the subject; their interruptions are marked *sfz* in mm. 28-30 (see Figure 3.19).

On the fourth attempt the right hand succeeds: the upper voice, which disappeared at the first climax, returns with the subject, harmonized in three different voices in the upper register. At the same time, the bottom drops out from the ostinato. After all these attempts, the subject is only two phrases long; the second phrase leads to a collision of voices in the middle register. Throughout these eleven bars (mm. 26-36) the right-hand melodies have been in 3/16, the left-hand in 5/16; the ostinato has shifted from 4/16 to 3/16 and back again as it slides from C$^{\#}$ to A.

After this collision in m. 36, which reaches only *mf*, the two melodies exchange places: now the right hand is in 5/16, the left in 3/16. Carefully avoiding each other's pitches, they pursue a meandering course which gradually descends, sharing a four-note motive and its inversion (see Appendix D). Whereas shifts in the background ostinato have always been sudden heretofore, now the ostinato, too, gradually descends, from A to G.

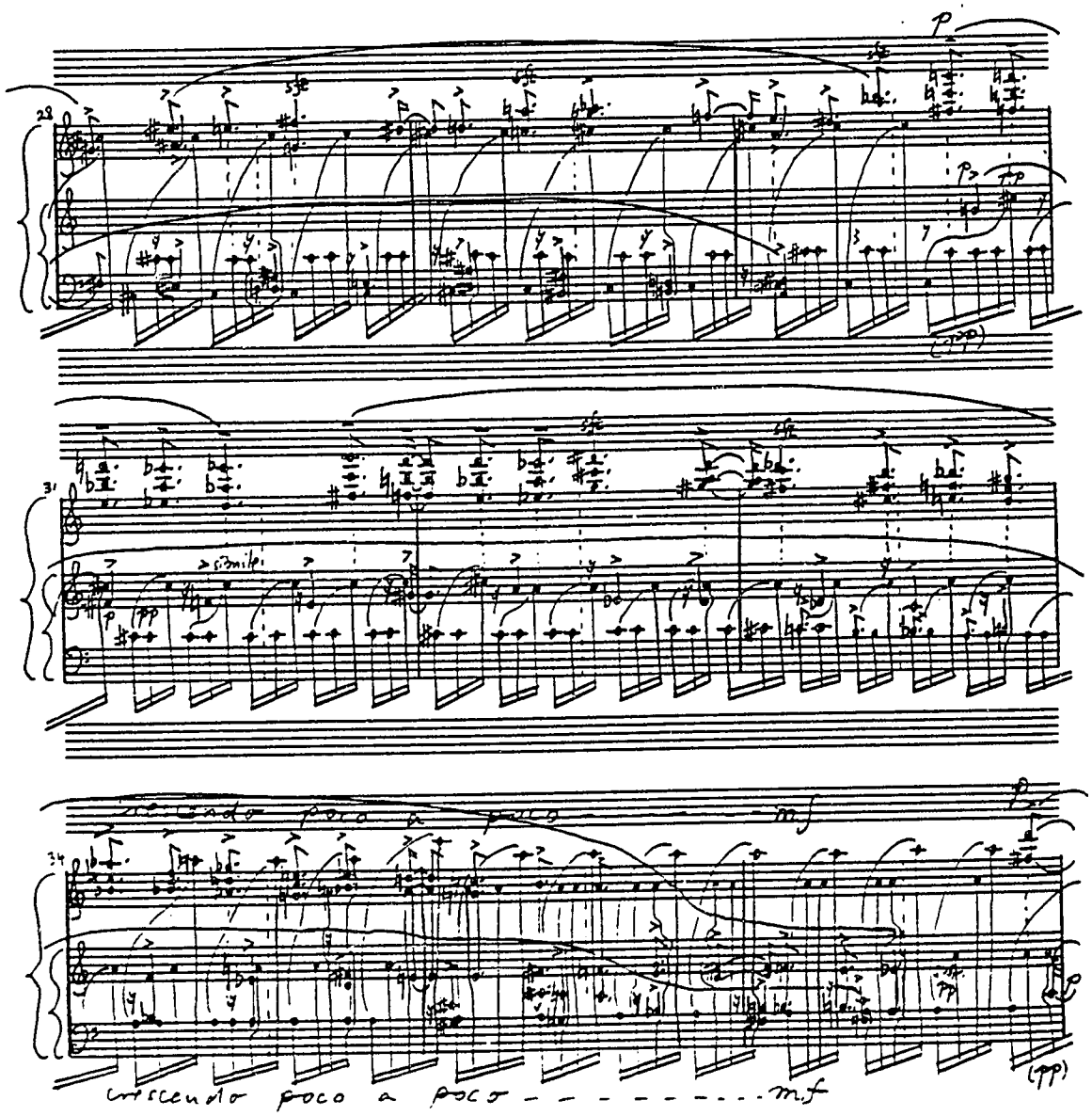


Figure 3.19 Episode 1a (mm. 28-36). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

With the ostinato remaining on G, the melody voices begin to wedge outward in contrary motion (m. 41); the bass (3/16) disappears into the depths, then suddenly returns in the high register in m. 43 (see Appendix D). The ostinato shifts quietly to octave E's, rolled downward in 3/16. Again, this is something new: until now, the ostinato has either been on one note, or on octaves rolling *upward.*

Now, after these uncertainties of motion, the music is primed for a descent that will lead to the midpoint and the re-exposition. Along with the 5/16 and 3/16 voices in the right hand comes a new voice in 7/16, at the end of m. 44. The ostinato develops its own, embedded descent in m. 45 and gradually begins to expand, both in range and duration, as the other three layers fall:

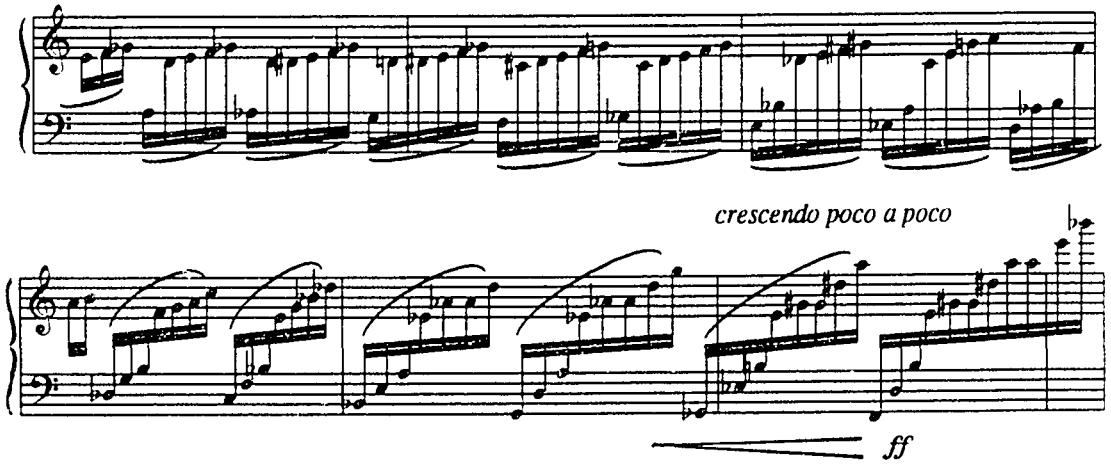


Figure 3.20 End of episode 1b, mm. 49-54 (ostinato only). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Finally we are left with the recapitulation, starting at m. 98, the final two pages of the Etude. Here, everything comes at us faster than before. The main layers—7/16, ascending in first-inversion triads, plus successive descending entries of 5, 4, and 3—are shown in Appendix D; the steadily climbing ostinato is locked to a single, low register. The effect is very much like a stretto. "Recapitulation" is a loaded word, but I think it is justified: not only does the ostinato return to its starting place (E^b), but it is in the low register, as if the music has finally landed on solid ground. Also, the stretto effect gives the listener a sense of expectation, of something nearing completion.

A brief section appears in m. 105 which for the first time splits the ostinato between the two hands; even at this late stage, Ligeti transforms his ideas in new ways. The right and left hand become "out of phase"—briefly recalling the first Etude—and accelerate to a ferocious climax in the middle register on two interlocking tritones, [0,1,6,7]. This climax is similar to m. 36 (the end of episode 1a, Figure 3.19), except that now the voices accelerate and crescendo to *ff*, destroying the ostinato (see Figure 3.21).

For the last time, the music shifts to *subito pp* at m. 107. The preceding two bars have been based on $C^{\#}$; now the ostinato moves up a half-step, harmonized in parallel 10ths (F/D). Two 4/16 lines gradually approach each other in the middle register while a 5/16 voice gently descends from above; a 3/16 voice enters, adding to the stretto effect, and abruptly the music soars into the final statement of the subject (m. 112). This is the only time in the piece that a crescendo leads *into* a section, instead of ending it.

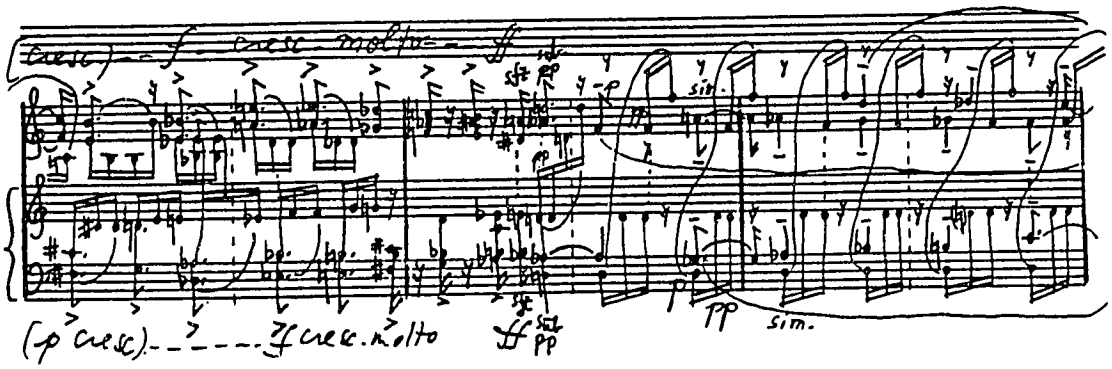


Figure 3.21 Recapitulation, mm. 106-8. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

This final subject has only two phrases; the last is extended, accelerating all the way to the bottom of the keyboard (episode 1b works the same way). The main voice in 5/16, harmonized at first in fifths and [0,1,6], again introduces internal contrary motion starting in m. 114 (see Appendix D).

At the same time, another right-hand line in 4/16 clashes with the main melody, eventually merging with the accelerating subject in m. 116. The ostinato (once again confined to the left hand) plummets erratically, completely unhinged: it does not focus on any one pitch long enough to find a center, but instead veers from contrary-motion lines to arpeggios to quasi-trills. An embedded, 3/16 line pounds away to the bottom of the keyboard, barely ahead of the accelerating lines above:

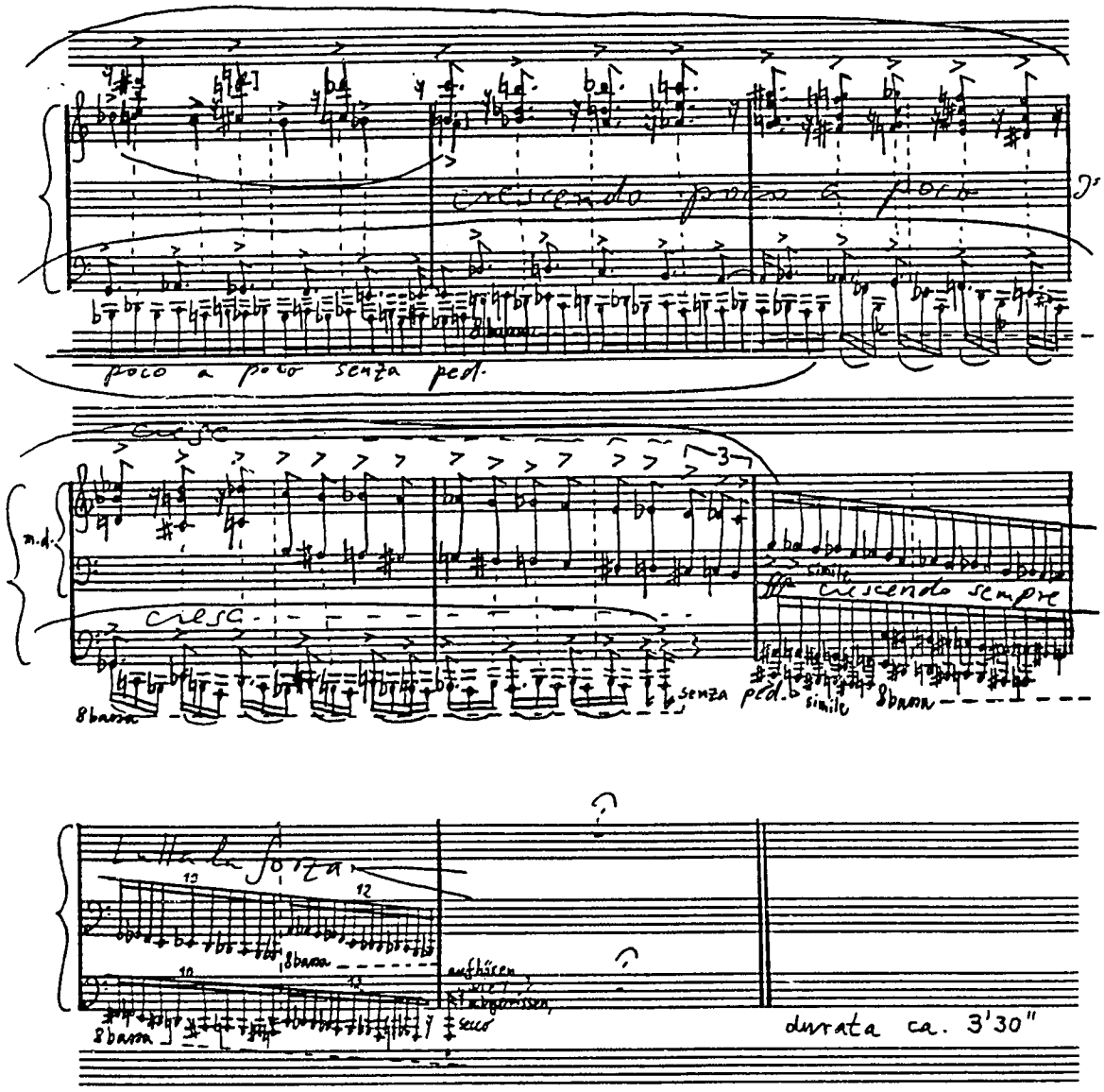


Figure 3.22 Recapitulation, mm. 115-22. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

The tendency toward instability from the beginning of the piece has finally won out. All of the voices in the piece are gathered by the constantly accelerating subject, which takes them and one by one hurls them into the ground.

****

The background, underlying pulse, along with the two expositions of the subject, is the main proponent for the two-part form of the piece: when its running motion disappears halfway through, we feel as if we have stepped onto a bridge spanning a chasm. After it reappears at the top of the keyboard, it continues until m. 119, three bars from the end.

Here are the ostinato pitch classes, in order, for the first half of the piece:

$\underbrace{E^{b}\ D\ A^{b}}_{[0,1,6]}\ B^{b}\ B\ C\ \underbrace{C^{\#}\ A\ G\ E}_{\text{(dom. 7th)}}$ (E/F) (E/F/F$^{\#}$)
ascent → beginning of expansion

Ligeti uses all twelve notes in the ostinato, without repeating any of them. From A^{b} up to $C^{\#}$, we see another hidden, long-term ascending line, working against the foreground descents. Then there is a formal elision: the completion of the ostinato's ascent, $C^{\#}$, happens at the beginning of the second section, *after* the first section's climax.

Several forces operate upon the ostinato to help drive the music to the two main climaxes, *f* and *ff:* its register is gradually limited to one insistent, repeated note; its rhythmic period speeds up; and the duration of each ostinato pitch becomes progressively shorter. These events are summarized in Figure 3.23.

After the midpoint climax and seven-bar, *pp* interlude (the beginning of the re-exposition), everything changes: the distinction between background ostinato and foreground melody becomes

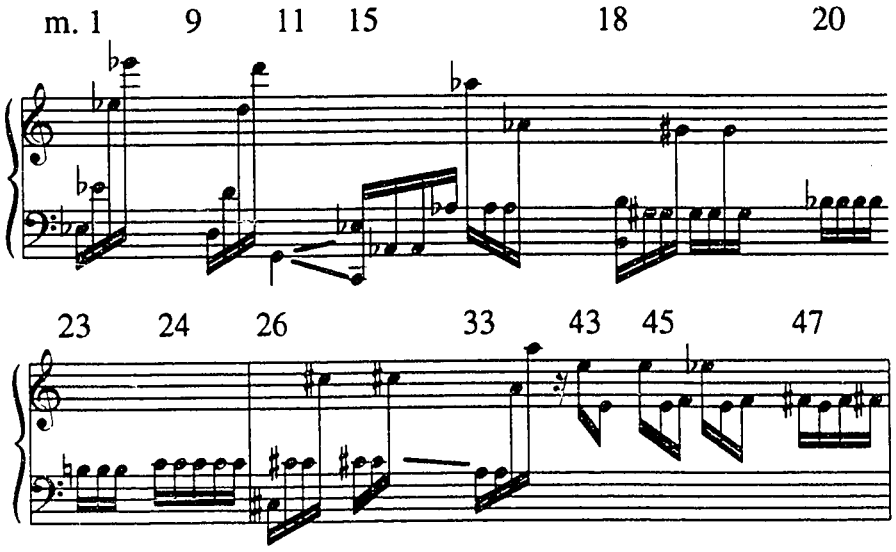


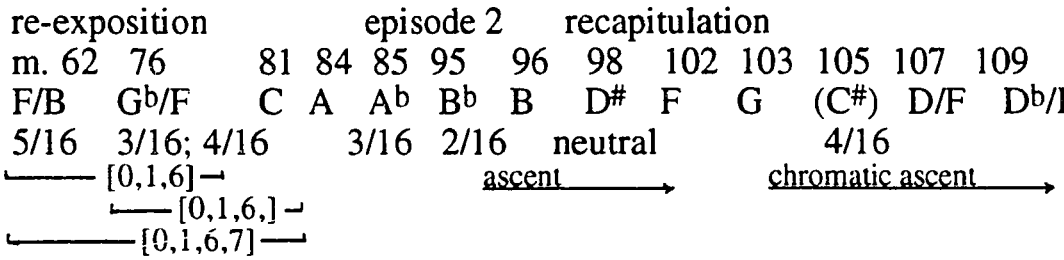
Figure 3.23 Summary of the ostinato's registers in the first half of *Automne*.

progressively less clear. The first thing we notice is the ostinato's focus on *two* pitches, the tritone F/B. Also, it oscillates up *and* down, like a sine wave. After it bounces off the top of the keyboard (m. 73), melodic lines start to spring unpredictably from it as it descends, growing louder all the time until the climax in m. 85.

Despite all these differences, there is nothing here that is completely new; Ligeti instead amplifies aspects of his ideas from the beginning. For instance, the ostinato's dual focus on F and B is a natural extension of the former emphasis on one note. Since the ostinato until now has always been arpeggiated either up or down, it makes sense for it to oscillate in both directions. Also, the ostinato's slow journey up to the

top of the keyboard has been foreshadowed by the left-hand descent in m. 14 (recall Figure 3.10).

For the rest of the piece, the background becomes more and more active, except for the A^{b} held for nine bars at the beginning of episode 2 (mm. 85-94). The pitches the ostinato does focus on for the second half of the piece once again add up to twelve. Again, the first three notes form the set [0,1,6]; the fourth makes [0,1,6,7]. These opening sets are followed by two ascents:



In the first half of the piece, the register of the ostinato narrowed as it approached a climax; in the second half, though, the register is not linked to the climaxes. At the beginning of the second half, the ostinato (F/B) is arpeggiated in octaves. Then, after the climax that ends the re-exposition (m. 85), the ostinato narrows to the middle register (A^{b}, m. 85); it stays in one register until it splits into both hands in m. 105. Rhythmically, the meter of the background pulse is erratic, as shown above; but leading to the climax right before the recapitulation (m. 98), the ostinato steadily accelerates until the low $D^{\#}$ of the recapitulation, which is metrically neutral, an undifferentiated pulse of sixteenth notes. As it climbs, its durations become shorter and shorter.

Because of the ostinato's disappearance in the middle, and the return of E^{b} in m. 98, the piece seems to divide at once into two parts and three parts—a formal hemiola, in a sense. The seven climaxes also

give us a foothold on which to base our different ideas of the form. Here is a brief description of each climax:

1)	m. 24	*f*	3:5 polyrhythm; end of exposition
2)	m. 36	*mf*	3:5 polyrhythm, middle register
3)	m. 54	*ff*	expanding ostinato, contrary motion outward; end of first half
4)	m. 85	*ff*	3:5:7 polyrhythm, descending; end of re-exposition
5)	m. 98	*fff+*	acceleration, contrary motion outward; end of episode 2, prepares recapitulation
6)	m. 107	*ff*	acceleration, contrary motion into the middle register
7)	m. 122	tutta la forza	acceleration, off the bottom of the keyboard

The final three climaxes are approached by acceleration, especially the last, in which the continuous pulse itself accelerates, including the only triplet in the piece, m. 119. At the end of the first half, on the other hand, the ostinato perceptually slows down, as its durations become longer and longer. Two climaxes, the third and fifth, expand outward to the ends of the keyboard; the fifth is more intense, since it goes out farther and reaches a louder dynamic. The same is true of the second and sixth climaxes, which end in the middle register—the sixth is more intense. As one would expect in a form that depends so much on crescendo, the loudest climax comes at the end.

There are three climaxes in the first half of the piece, four in the second half (see Figure 3.4). The spacing of these high points suggests another kind of formal crescendo: in each of the two large sections, a long block of music is followed by shorter blocks.

The piece does not divide exactly down the middle; nor, for that matter, does it articulate any special ratio such as the Golden Mean.

This is not surprising; Ligeti has often disclaimed any abstract, mathematical relationships in his music, preferring a more direct, intuitive approach. It is hard to imagine a more direct approach than this Etude's, with its single-minded theme and obsessively repeated formal gestues.

Why did Ligeti give this piece its evocative title? Beyond the obvious reference to Chopin and the famous music festival, one can only guess; Ligeti has said before that he does not like to talk about such personal matters of composition. Chopin has appeared directly in Ligeti's music once before, at the end of the second of the Three Pieces for Two Pianos, *Selfportrait with Reich and Riley (and Chopin is in the Background).* In both instances, the music is intensely tragic. One can infer, perhaps, that the Etude expresses deep sympathy for the plight of the Polish people, who in the early eighties were struggling with *Solidarność* and the totalitarian government, and who have suffered, along with all the peoples of Eastern Europe, since long before the time of Chopin.

CHAPTER FOUR
CONCERTO FOR PIANO AND ORCHESTRA, SECOND AND THIRD MOVEMENTS

The last movement of the Horn Trio and *Automne à Varsovie* present two different versions of the Lamento motif. In the second and third movements of the Piano Concerto (1985-88), Ligeti takes these two versions and juxtaposes them: the second movement places the Horn Trio's Lamento in an unusual instrumental setting, while the third movement mixes the tempo fugue of *Automne à Varsovie* with jubilant, African rhythms. Both movements combine techniques of his old and new styles.

Ligeti composed the Concerto in two stages. After completing the first three movements and hearing them performed in 1986, he decided the work was still incomplete. He added two movements, finishing the full score in early 1988 with the following instrumentation:

> . . . one each of Flute, Oboe, Clarinet, Bassoon, French Horn, Trumpet, Trombone; Percussion; and Strings. The flutist doubles on Piccolo, the clarinetist on Alto-ocarina. The Percussion consists of a large complement that could be mastered by a single virtuoso performer. It is more practical, however, for two (or even three) players to divide the instruments among themselves. In addition to the usual percussion instruments, the part includes two simple wind-instruments: the slide-whistle and chromatic harmonica.
>
> Because they are never divided, the string parts—2 Violins, Viola, Cello and Doublebass—could be soloistically performed. For the sake of balance, however, a sectional complement is more

> practical, with 6-8 first and 6-8 second violins, 4-6 violas, 4-6 celli, and 3-4 doublebasses.[1]

Formally, the Concerto's second movement ("Lento") differs from its predecessor, replacing the Horn Trio's passacaglia with four sections based on variations of the Lamento motif. While the Horn Trio's passacaglia forms a long crescendo followed suddenly by a motionless coda, the Lento has a more rounded, crescendo/diminuendo form, although its climax is just as harrowing. Some passages recall elements of Ligeti's earlier music: the micropolyphonic writing of the early sixties reappears in a high, dense, fortissimo canon for woodwinds halfway through the piece (the third section); also, the unusual instrumentation, especially in the percussion, recalls the dramatic works—the two sets of *Aventures* from the sixties, and *Le Grand Macabre* a decade later. As in most of Ligeti's work, registral and dynamic extremes abound.

If the second movement looks backward, the third looks ahead—although its opening sounds like a sequel to *Continuum,* the long melodies and African rhythms later in the piece proclaim the new style. The movement is in rondo form, with two African-derived episodes interpolated between quasi-fugal statements of the Lamento motif. The motif has been elaborated since *Automne:* the polyrhythms are more complex, and swirling scales and arpeggios form the backdrop for the melody, rather than the one-pitch-class ostinato of *Automne.* The orchestra both amplifies and opposes the piano (often at the same time),

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[1] Ligeti, "On My Piano Concerto," *Sonus* 9/1 (1988) 8.

forming an intricate tapestry of shifting melodic, rhythmic, and harmonic patterns.

Although the second and third movements differ in tempo and form, both extend Ligeti's experiments with new kinds of harmony (discussed in chapter one):

1) The black key/white key partitioning that first appeared in *Désordre* (referred to by the composer as "diatonic/ anhemitonic pentatonic");

2) The nine-note collection identical to Messiaen's third mode of limited transposition;

3) The "super-whole-tone" partitioning which later appears in the seventh Piano Etude, *Galamb Borong;*

4) The natural harmonic series; and

5) "Chords-in-fifths" fields.

The dense chromaticism created by the mixtures of these harmonies, some of them (such as the black/white collection) already fully chromatic, recalls the cluster compositions of the early sixties. As with the illusory rhythms in *Automne,* though, Ligeti looks at cluster harmony through a microscope: instead of obtaining clusters by writing them directly, he creates a "polyphony of harmonies" that keeps the total chromatic constantly present, while each individual harmony retains its identity as a separate stream, through melody, register or instrumentation. This effect appears as early as *Melodien* (1971), but now the separate streams are more sharply defined.

These harmonies partially result from Ligeti's desire to combine non-equidistant and equidistant divisions of the octave. The black key/white key collection, for example, combines two non-equidistant

divisions, the diatonic (white key) and anhemitonic pentatonic (black key). On the other hand, the nine-note collection (Messiaen's third mode of limited transposition) is an example of equidistant octave division—two half steps alternating with whole steps, making a series of partially filled-in major thirds. This and other equidistant divisions (such as the whole-tone scale) portray indirectly the tuning systems of other cultures:

> As for *equidistancial* scales (or interval structures), tempered twelve-tone division of the octave permits only the chromatic scale (all minor seconds) and the six-tone scale (whole-tone scale: all major seconds). In addition, the four-fold division of the octave (in four minor thirds), and the three-fold division (in three major thirds) are possible. In many other music cultures additional equidistant octave divisions are available, as in the Javanese slendro's five-fold division and the Melanesian seven-fold division that are widespread throughout Southeast Asia, as well as (independently) in the southern half of Africa. Here it is not a matter of exact equidistance: there is a certain tolerance of tuning deviations of the intervals.[2]

The "super whole-tone" collection he describes as "quasi-equidistancial," also portraying these Asian and African intonations:

> There are places in which the melody and piano figuration are formed out of the two whole-tone collections, one collection in one hand, the complementary collection in the other hand. In this way both whole-tone and chromatic languages reciprocally arise, an unusual sort of equidistance, remarkably iridescent and likewise "oblique," an illusionary harmony, clearly originating within twelve-tone temperament, but no longer belonging to it.[3]

Another of the new techniques (also discussed in chapter one) is the evocation of harmonic series as an alternate tuning system. In the first, third, and fifth movements the horn and trombone play natural

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[2] Ibid.
[3] Ibid.

seventh, eleventh, and thirteenth partials; the trumpet in the last movement joins them by artificially bending its notes. Unlike the Horn Trio's Lamento (but similar to the Trio's other movements), these "out-of-tune" notes sound well, since Ligeti writes quasi-diatonic melodies for them, as shown in the second "African" episode from the third movement:

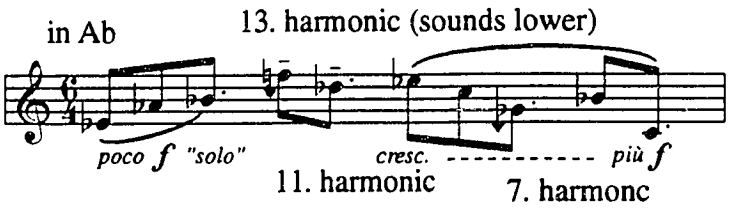

Figure 4.1 Concerto, III, m. 63, horn part (concert pitch—the direction "in A^b" instructs the horn player to use the A^b natural harmonic series). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Besides writing melodies that include natural overtones, Ligeti writes hamonies that evoke the overtone series, especially in the first movement (see Figure 4.2). Usually, these harmonies move in strict parallel motion with a melody. Earlier pieces, such as Ravel's *Bolero,* have used similar techniques; the effect is not unlike organ registration, with its added higher harmonics.

In the other movements, Ligeti uses the same kind of parallel harmony with chords that do not fit into the harmonic series; these rely instead on quasi-jazz voicings and "fifth-field" voicings. These fifth-fields, together with other quasi-equidistant harmonic fields, give the third movement "a strange soft-metallic color (the *metallic* arising from

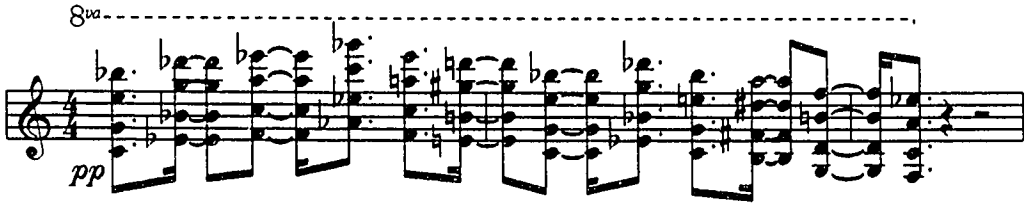

Figure 4.2 Concerto, I, mm. 36-38, strings. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

the non-harmonic overtones)."[4] This analogy fits strikingly well with his description of *Lux Aeterna* in a 1981 interview with Pierre Michel:

> I produce relations emanating from a blurred harmonic spectrum, which gives [the choir] a metallic timbre. The choir itself is not metallic, but rather as if you had a bell, or something of the same genre. This provides for the superposition of harmonic sounds and nonharmonic sounds based on a model which one finds in the spectrum of bells. I synthesize a sort of imaginary bell with human voices.[5]

One of these inharmonic, jazz voicings, an extended dominant chord often notated (for example) B^{b}/C or C^{11}, appears most prominently in the third movement's second "African" episode, again moving in parallel motion; though not identical to the overtone series, the chord's dominant sound bears some resemblance to it.

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[4] Ibid., 11. The eighth Piano Etude, which also features perfect fifths, is called *Fém* (Hungarian for "bright metal").

[5] Michel 161-62. Ligeti's reference to the "imaginary bell" in *Lux Aeterna* brings to mind the second movement of the *Magyar Etüdok*, in which the choir not only sings chords in fifths, but sings "Bim, bam!" as well, mimicking bells. Ligeti takes the "metallic" quality of the fifth-fields here quite literally.

Figure 4.3 Concerto, III, mm. 61-62, woodwinds. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Another common voicing combines the fifth-fields with other intervals such as sixths, as shown in the Lento's second section (the major sixth is a common, inharmonic interval heard in bells). Here, the strings in harmonics form a halo above the clarinet melody:

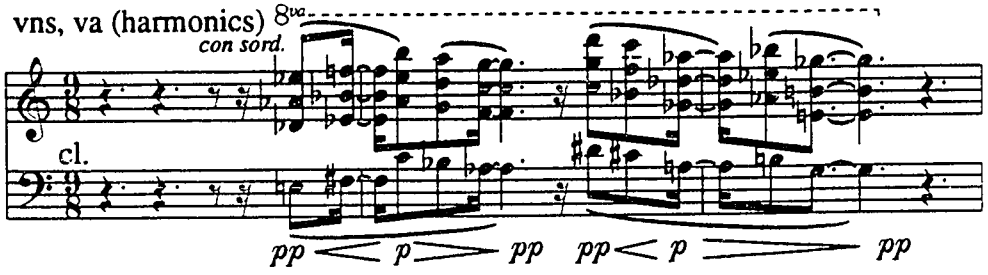

Figure 4.4 Concerto, II, mm. 34-36, clarinet and strings. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Fifth-fields appear most prominently, though, at the end of the third movement, where Ligeti closes by quoting almost exactly the final bars of *Cordes Vides,* the open-fifths etude. Here and elsewhere one can see the Etudes acting as compositional studies for the Concerto. This passage also suggests that the techniques of the late style, summarized in the various Etudes, form a repertory, or palette, from which Ligeti can

assemble compositions, almost like a painter selecting colors. To see the details of these techniques, let us examine each movement individually.

****

The second movement, "Lento e deserto," the Concerto's only slow movement, is also its simplest rhythmically. The Lamento motif slowly grows from a single half-step at the beginning to tumbling cascades at the climax. Throughout the piece, the shape of the motif is determined by the nine-note symmetrical mode which Messiaen labels the third mode of limited transposition; its three missing pitches form an augmented triad. Like the octatonic collection (mode two in Messiaen's classification), it has only a few transpositions (four, as opposed to three in the octatonic scale) before its pitches repeat themselves.

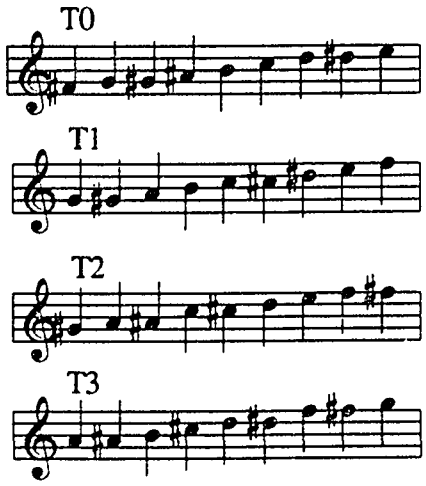

Figure 4.5 The four transpositions of Messiaen's third mode of limited transposition.

The movement's 81 measures are divided into four sections:[6]

1) mm. 1-31 quasi fugue over low bass pedal

2) mm. 32-40 piano solo at extreme registers, with interruptions

3) mm. 41-59 high, fortissimo canon in winds, piano, glockenspiel

4) mm. 60-81 climax and diminuendo

In the earlier pieces the Lamento motif always appeared as a smooth, flowing melody. Now, though, it is broken into small pieces, distributed among many different instruments which imitate each other as in a fugal exposition. The movement begins with a startling juxtaposition: a long drone on low F in the contrabass, just after the piano has evaporated to nothing in its highest register at the close of the first movement. Here the long, static drone has two purposes: it replaces the motionless silence which often follows the end of a Ligeti movement, and it accentuates the contrast in tempo between the two movements.[7] Over the bass F, the piccolo, playing in its lowest register, starts piecing together a descending theme, hesitantly adding a note at a time.

Once the figure grows to four notes (m. 8), the piccolo plays a tritone A^{b}-D (m. 9) which seems to conlude the phrase; then it starts

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[6] Lois Svard groups my second and third sections together as one; this is reasonable, since my second section is only nine bars long. I have based this segmentation of the form on new statements of the motif; what I call the second section comprises the most concentrated statement in the movement.

[7] Lois Svard discusses these points in Svard 111.

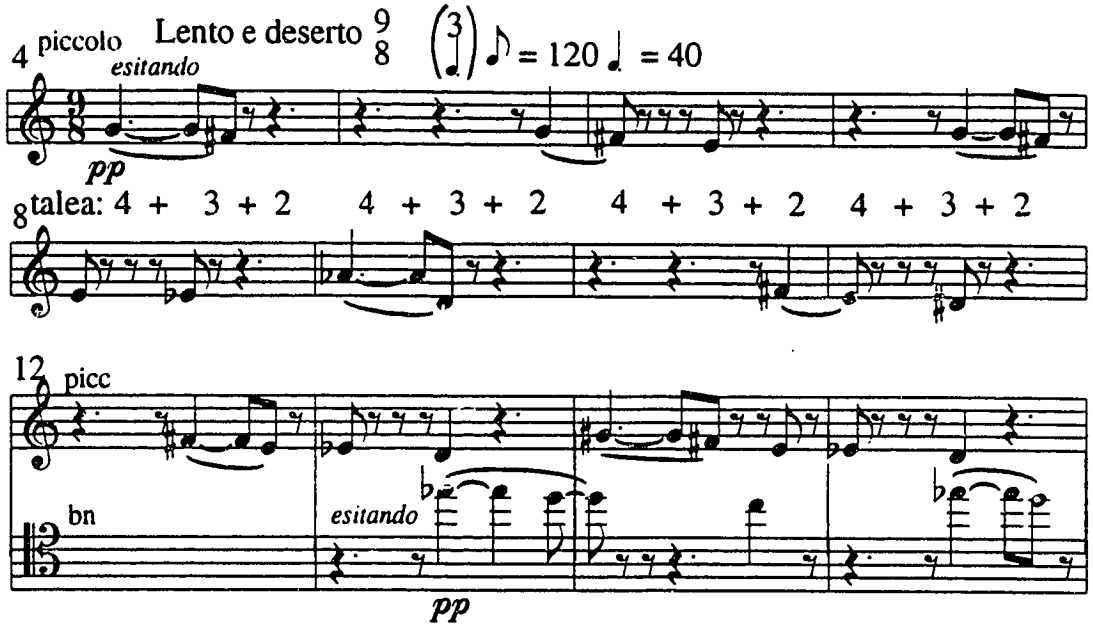

Figure 4.6 Concerto, II, mm. 1-16, piccolo (sounds an octave higher) and bassoon parts (the contrabass sustains a low F throughout). The talea structure is explained below. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

again, a semitone lower. Now each fragment is one note longer than before, beginning with three notes instead of two. Midway through the piccolo's slowly growing melody, the bassoon enters in its highest register. The piccolo here plays low D, the bassoon high E♭, so that the bassoon, perhaps for the first time in the literature, actually plays *above* the piccolo.

Gradually the other instruments enter, in similar fashion: slide whistle, piano, trumpet and trombone (harmon mutes), horn (stopped), alto ocarina, strings, oboe. Most of the instruments play in a precariously low or high register, or with odd-sounding mutes; some of them, like the ocarina and slide whistle, are not often heard in the

concert hall. Because of all these unusual demands, many of the instruments, as Lois Svard points out, tend to play slightly out of tune, producing a blurred harmonic effect.[8] The dynamic is always *pp possibile*. Ligeti was inspired partly by Eskimo music in this movement, which may account for these unusual timbres, as well as the lonely isolation ("deserto") the music suggests.[9] The piano, when it enters, does so unobtrusively; except for its normal timbre (the part is marked *semplice*), it is only one voice among many. It does, though, have one notable difference: its part is in 3/2, while the others are in 9/8.

All of the melodic fragments (except for the oboe's, for reasons we will see later) fit into one transposition (T0, in Figure 4.5) of the mode. Since the contrabass low F does not belong to the same transposition, all of the melodies may be seen as a form of broken appoggiatura (dicussed in earlier chapters), never resolving to the consonant bass. The trumpet and trombone, beginning in m. 24, play together in a harmony of fourths and tritones, determined by the governing mode.

Rhythmically, a talea scheme determines the placement of the individual fragments. Ligeti calls this talea structure "much simpler" than the first movement's polymetrical design, because it is in a single meter (except for the piano), 9/8. But since each instrument has its own, slightly different talea, and since only a few points in each talea are actually sounded, the result is a seemingly random scattering of melodic fragments. The piccolo solo quoted above in Figure 4.6 illustrates the

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[8] Ibid., 112.
[9] Roberto Sierra, personal communication, 8 November 1993.

technique: its rhythms are governed by a talea structure of 4+3+2 eighth notes. Even though the rhythms depend on the talea, the phrases do not, since Ligeti only articulates certain points on the talea (apparently freely). The sparseness of the talea structure, and the independent phrases superimposed over it, render the talea more or less inaudible. Ligeti appears to be using it as a device for generating rhythms, rather than as a structure meant to be heard.[10]

The piccolo's talea happens to add up to nine, so it repeats every measure; most of the others' do not, as shown below.

Piccolo	(m. 4)	4+3+2 eighth notes
Bassoon	(m. 13)	4+3
Slide whistle	(m. 21)	3+2
Piano	(m. 23)	5+4+3 (3/2 meter)
Trumpet/Trombone	(m. 24)	3+2+3
Horn	(m. 25)	3+2+1
Alto Ocarina	(m. 26)	4+3+2 (same as piccolo)
Bass whistle)	(m. 28)	3+2 (same as slide
Oboe	(m. 29)	3+2

Figure 4.7 Concerto, II. Talea structures in the first section (mm. 1-31).

The last three instruments to enter, alto ocarina, bass, and oboe, each play already-existing taleas. When the alto ocarina enters, the piccolo has already been playing for twenty-two measures. By this point its melodies have grown more sparse, making room for the others, so the alto ocarina can safely step in the holes left by the piccolo. The bass

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[10] For a detailed discussion of this issue, see Bernard, "Inaudible Structures, Audible Music: Ligeti's Problem, and His Solution."

enters for a different reason: since the beginning of the piece it has been playing the low F drone, while the percussionist has been playing slide whistle. In mm. 27-28, the two switch roles. A covered bass drum roll enters imperceptibly in m. 27, covering the bass's release in the following bar. The slide whistle's talea is no longer heard, so the bass is free to adopt it. The oboe, along with the viola and cello, share the 3+2 talea with the bass, in the same way that the alto ocarina and piccolo share the 4+3+2 talea. Figure 4.8 shows the end of the first section and the first bar of the second.

Throughout the first section, the music has been confined to the middle register, accompanied by a drone in the bass. The register climbs slowly but steadily, culminating in two brief oboe phrases (mm. 29-30) which are higher than anything before, reaching high G#—nearly the top of its range. These two phrases do not fit the mode's T0, but instead lie in T2, foreshadowing the next section. The bass, also dangerously high, remains in T0.

In the second section, the piano, which up to now has been an ensemble player, suddenly becomes the solo instrument. Its melody in barren, extreme registers resembles the midpoint of *Automne*. The harmony, similar to the trumpet and trombone duet earlier (from m. 24), is a mixture of tritones and fourths determined by the mode, now changed to transposition T3. The meter remains the same (3/2), but now the piano subdivides in quintuplets, producing a new rhythmic effect: the melody is continuous, not fragmented, but its apparent tempo has changed.

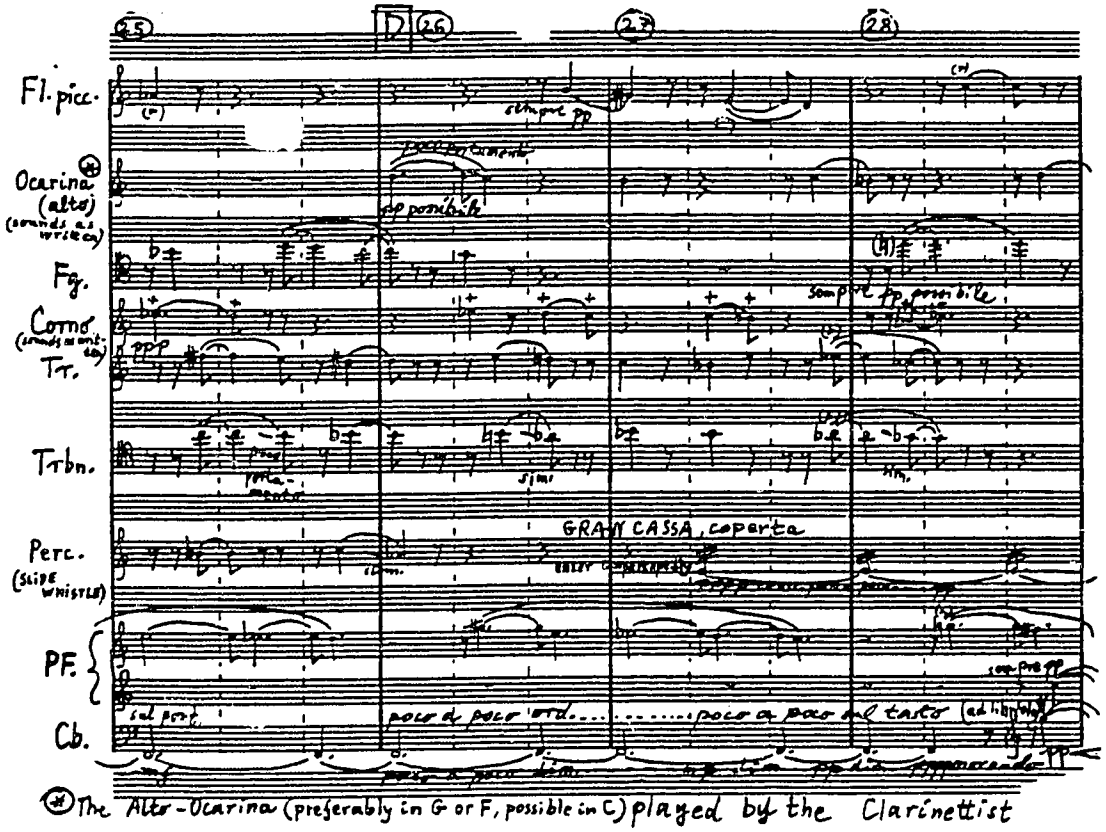
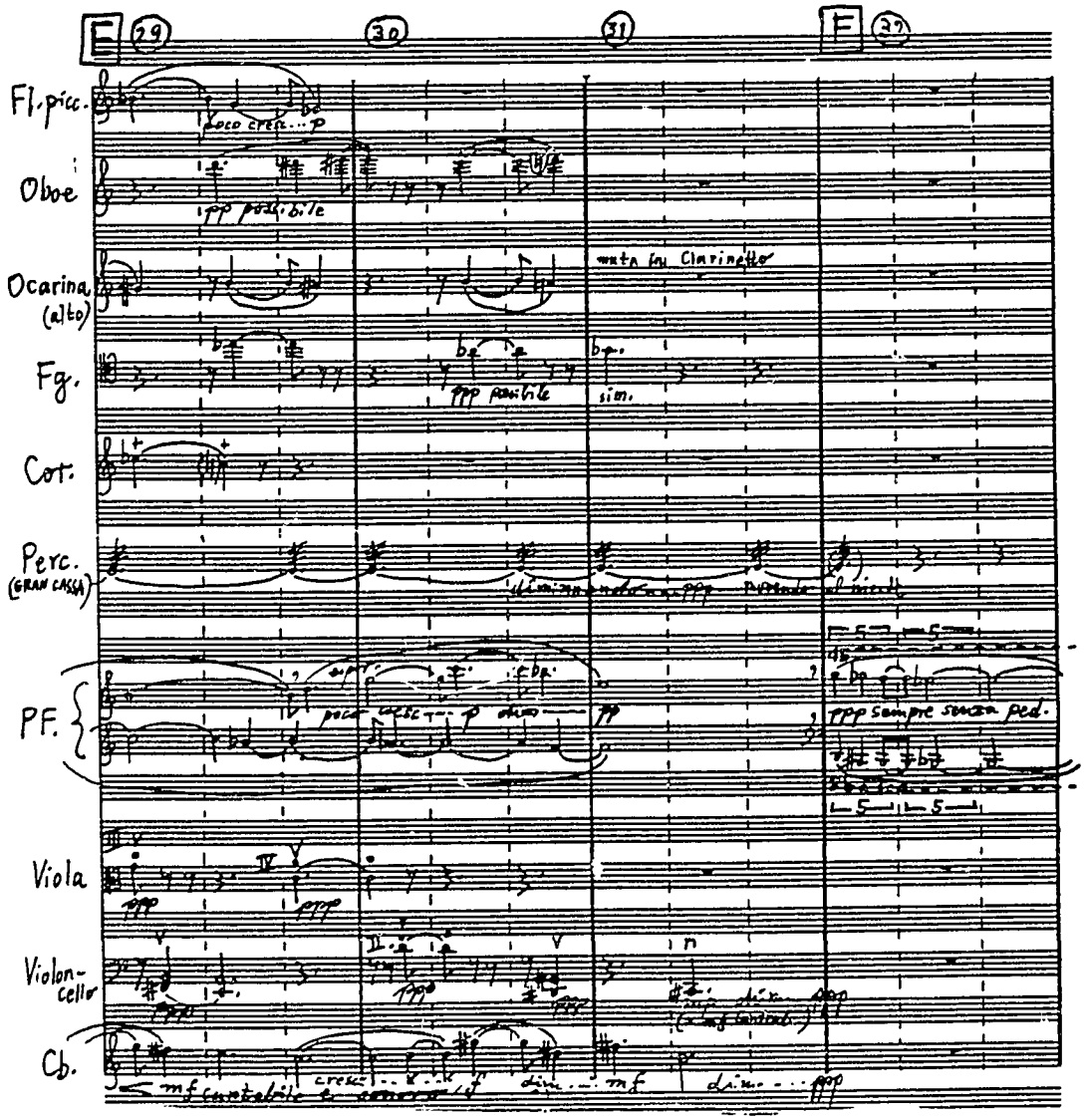


Figure 4.8 Concerto, II. mm. 25-32. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Figure 4.8 (Continued)



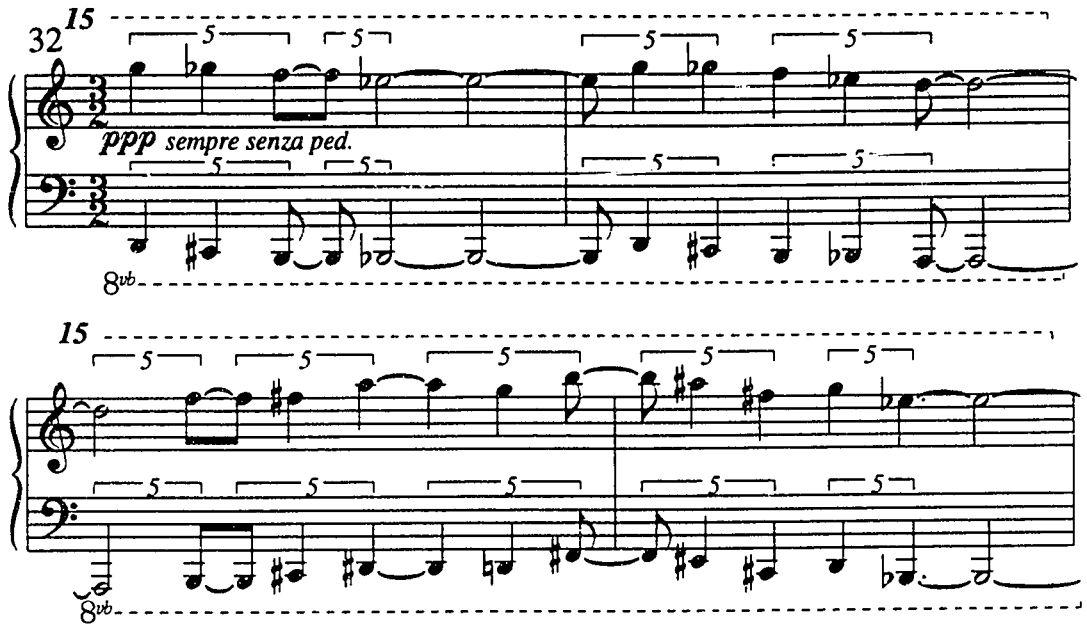


Figure 4.9 Concerto, II. Beginning of second section (mm. 32-35). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

As the piano plays *ppp,* the orchestra interrupts with three brutal, stabbing interruptions, each growing more violent. The first, in m. 36, is preceded by two brief, quiet, five-note phrases in the clarinet, colored by high harmonics in the strings (mm. 34-36; see Figure 4.4). The two clarinet phrases are based on complementary whole-tone sets taken from the mode (T2 and T3, respectively). The second phrase is abruptly cut off by the first interruption, a four-note, whole-tone fragment based again on T2, drawn from an earlier piccolo figure in m. 20.

The second interruption two bars later is a single cluster-chord, pizzicato in the strings *(sffffff),* flutter-tongued in the brass and piccolo, with a flexatone glissando as loud as possible. The transposition is T1,

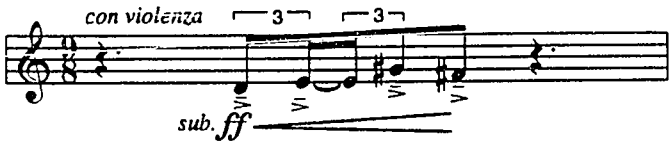


Figure 4.10 Concerto II. Second section, first interruption (m. 36); piccolo (sounds an octave higher), oboe, bassoon, horn, cello, and bass. The guero joins on the first note, *fff*. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

the only one not yet heard; the chord, spelled from bottom to top, is G B C# D# E F, resembling the upper partials of a harmonic spectrum.

So far the piano has ignored the orchestra's first two interruptions. The third time it joins them with a cluster at the keyboard's top octave, "with the two palms, very hard and short" (m. 40). The violins again play pizzicato, now on high harmonics (the major second E-F#), joined by the oboe and whip. The piccolo and clarinet, though, sustain the same major second *fortissimo*, beginning the third section.

The third section, nearly as long as the first (19 bars), is a high, *fortissimo* canon for piccolo, oboe and clarinet, later joined by the glockenspiel and piano, leading to the climax. The meter changes to 3/2 for the entire ensemble, with the three winds shifting between subdivisions of four, five, and six. The blurred rhythms, together with the close pitches, recall the micropolyphonic canons of *Atmosphères* and the Requiem. There are not enough voices, though, to form a impenetrable mass of sound, and the piano and glockenspiel timbres

stand out. The canon, whose subject is shown in the piccolo below, is in transposition T2, the same transposition (and the same register) as the oboe at the end of the first section. The piano for the first time does not play the motif, but only plays its melodic extensions; the piano's late entrance increases the music's intensity.

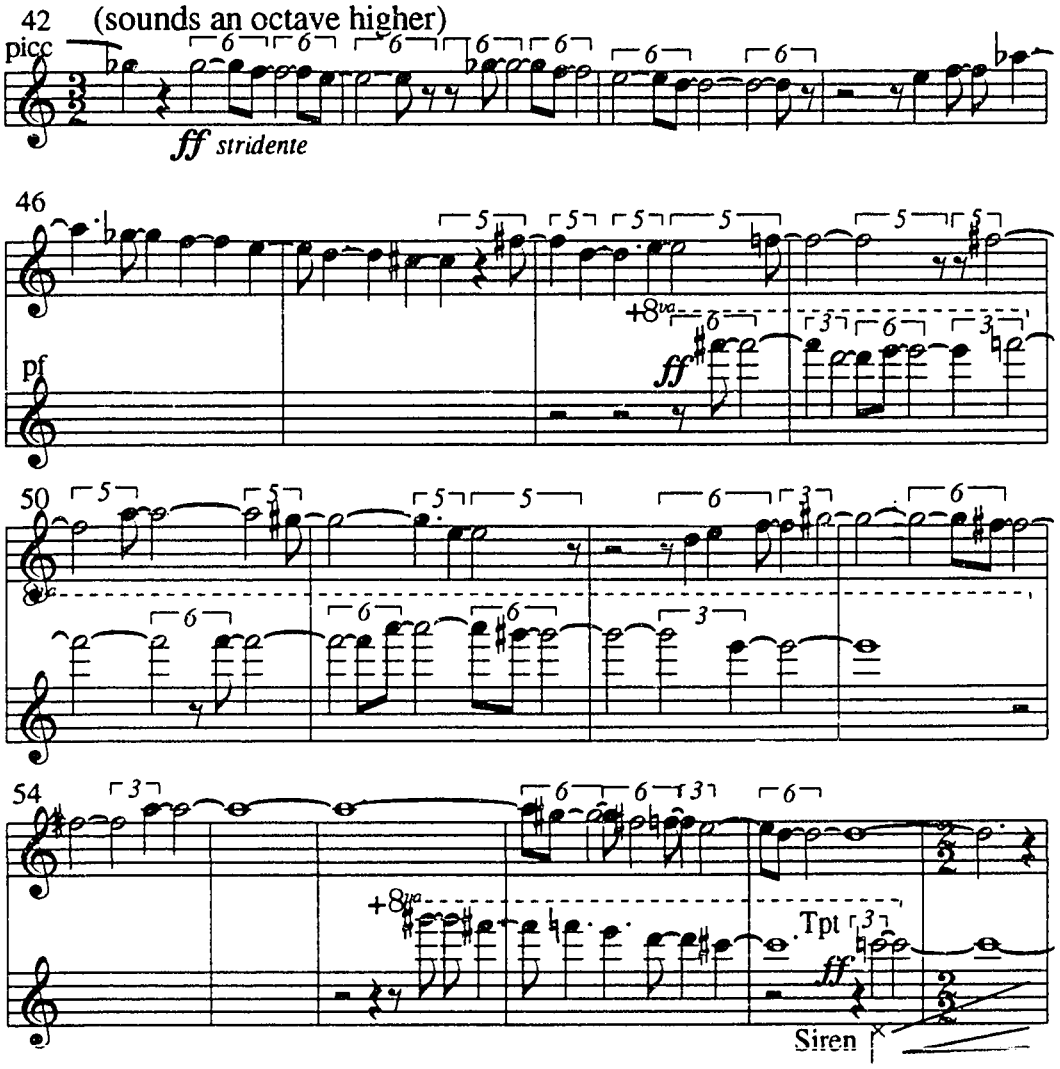


Figure 4.11 Concerto, II. Third section, piccolo and piano parts (mm. 41-59). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

The strings accompany with high, dense tremolos that slowly climb chromatically to high A, the piccolo's highest pitch (m. 54), starting *pppp* and growing to *fffffff*. For the first time, Ligeti disregards the mode in favor of chromatic clusters. As the canon progresses, the piano leads the winds down to C# (m. 51); in the next bar the trumpet extends the cluster to high C, *ff*, stretching the music to the breaking point as the siren begins a long, slow, rising wail.

The siren peaks at the climax of the piece, the beginning of the last section. The tempo is suddenly *più mosso*, the time signature 3/4. The harmony suddenly breaks to the tritone B♭/E (the B♭ is prepared both by the high A and by the downward motion of the previous cluster), sustained at the registral extremes as if the piano solo from the second section had returned in full force. The piano, both hands at the highest octave, "tutta la forza, con violenza, martellato," cascades in short, clangorous bursts like shattering glass, playing the black key/white key collection. A shrill whistle blows a single, sustained *ffff* blast. These sounds carry strong extramusical associations: in Breughelland, two screaming sirens announced the imminent arrival of the great Macabre, Nekrotzar; in real life as well, sirens and whistles are powerful signals.

The last section is a ramified version of the first: the melodic fragments of the opening are now extended and richly harmonized. As the piano gradually descends, its phrases no less ferocious, the trumpet plays *fortissimo* an expressive, heroic solo derived from the whole-tone fragments in the second section (see Figures 4.4 and 4.10). The trumpet solo is the first of a series of passages that accompany the piano's long descent, shown in Figure 4.12. Except for the trumpet's first phrase—

the whole-tone fragment from the second section—each of its remaining three phrases are in the nine-note collection, transposed to T1. It plays steadily in quintuplets, going against the piano's triplets and sixteenths. By the end of its fourth phrase, its dynamic has fallen to *piano.*

As the trumpet solo fades away, the xylophone launches a *fortissimo* imitation of the piano's descent, all in sixteenths (m. 65). It also plays in the piano's black/white partitioning, always loud, for six phrases, after which the percussionist moves to glockenspiel once again (m. 72). In the third movement we will see another climactic, much more virtuosic duo for piano and xylophone.

Just before the xylophone enters, four groups of instruments begin to play slowed-down versions of the overall descent. The winds enter in m. 64, freely imitated (at a faster speed, with the melody a half-step lower) by the brass in m. 67; the strings follow in m. 70, echoed by the rest of the orchestra in m. 72. The winds' harmony is the same as the accompaniment to the soft clarinet phrase in section two (see Figure 4.4). During their four phrases the dynamic increases steadily to *ffff.* With one exception (E^{b}, m. 68), the piccolo's melody lies in the transposition T2. The brass and wind harmonies are both non-modal; the winds move entirely in parallel motion, while the brass move in similar motion. (The trombone part is doubled by the viola and cello playing *pizzicato.*)

The final two groups, the strings and the rest of the orchestra, magnify the winds' harmony outward. The string's entrance (m. 70) contains the four woodwind notes, and adds four more to create eight-note chords in parallel motion, based on juxtaposed fifth-fields a whole-

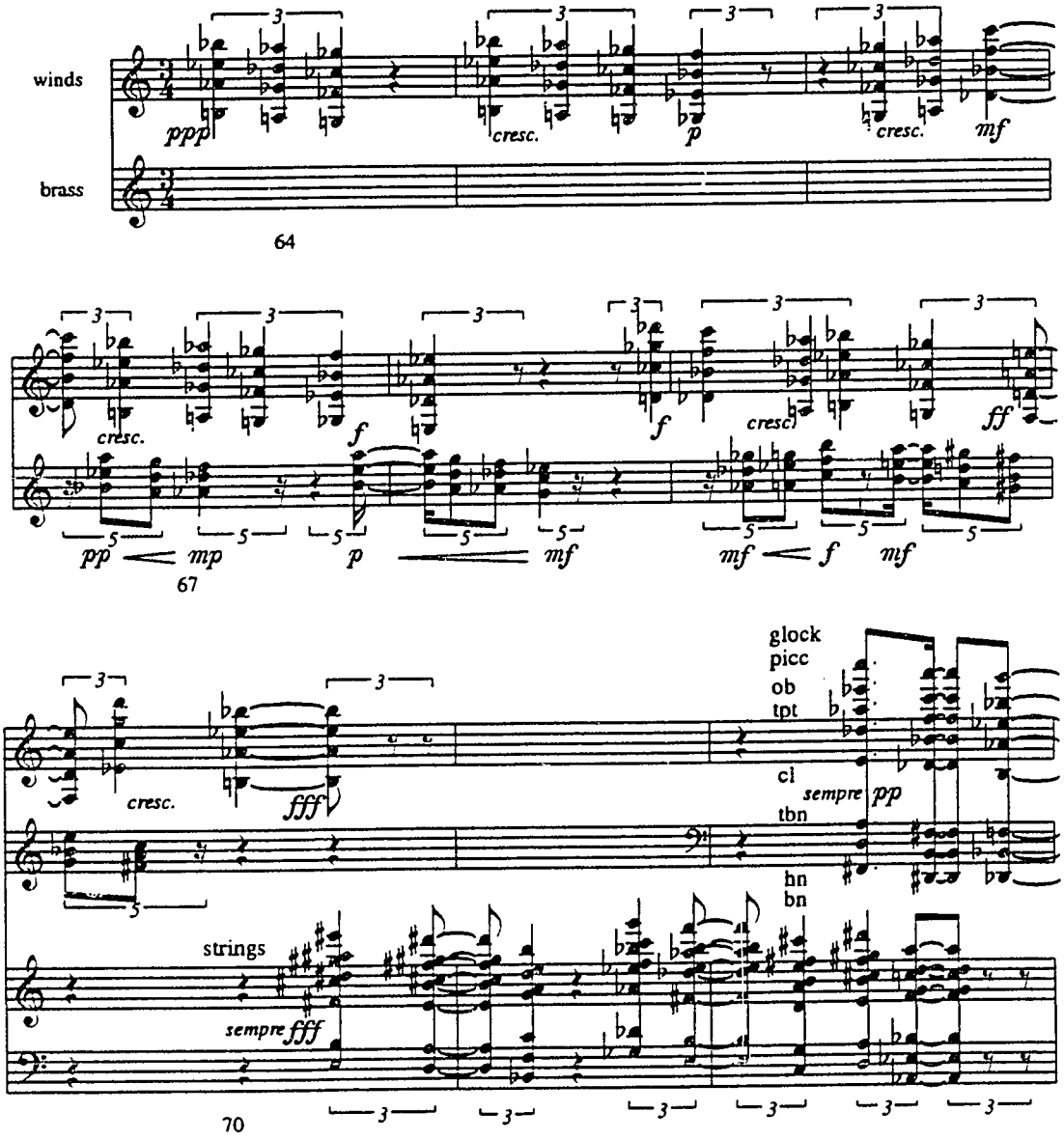


Figure 4.12 Concerto, II: final section, accompanying phrases to the piano, mm. 64-72. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

step apart. The melody is all in the whole-tone scale on B (which fits into either T1 or T3). Their five phrases range from three to five notes in length, *sempre tutta la forza.*

They are echoed in turn, two bars later, by the winds, brass and glockenspiel, *sempre pp.* The six inner notes of their harmony (two fifth-fields separated by a major sixth) are the same as the strings', forming the center of a nearly symmetrical eight-note chord. They play only three phrases. Melodically, the first two phrases form a diatonic scale (E Aeolian), taking the top voice (glockenspiel); the last phrase provides the missing five notes, the anhemitonic pentatonic collection F A^{b} B^{b} D^{b} E^{b}. The four groups, winds, brass, strings, and ensemble, play evenly, but with different subdivisions of the beat, creating a halo of harmonies and rhythms around the falling piano.

This surrounding halo stops in m. 76, as the piano approaches the middle register. Its outbursts become more fragmented without losing force, always in the white key/black key partitioning. In m. 78 the piano finally stops after two thick chords; the trombone and horn quietly reinforce the underlying pedal, which has sunk to low A in m. 76. As the piano fades away, the clarinet and chromatic harmonica play a brief duet, the lament in contrary motion, settling on a C major/minor chord over the A pedal. The dissonance makes for the sound of a defective harmonica, a broken toy; we are reminded of the beginning, with its strange, detuned instruments. The movement, with its dramatic formal shape and extramusical associations in the percussion, suggests some kind of program; beyond the reference to Eskimos, however, Ligeti does not specify one. It may, though, be safe to say that while the climax is

terrifying and the ending strangely sad, the emotional effect is not as profound as the ending of the Horn Trio. The difference in feeling arises partly from the placement of the movements: the Lamento ends the entire Trio, while "Lento e deserto" is not only an inner movement, but one that is linked, *attacca,* to its neighbors.

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The link between the second and third movements lies in the middle register, on a soft trill that quickly accumulates rhythmic and harmonic clouds. All the while a fast, steady pulse—the idea lying behind both *Continuum* and *Automne à Varsovie*—ticks away (see Figure 4.13).

"The third movement of the Piano Concerto," writes Ligeti, "is my clearest example to this moment of illusionistic rhythm and melody."[11] As in *Automne à Varsovie*, the Lamento motif returns in the guise of a tempo fugue. The difference lies in the underlying African influence, which is more or less conceptual in the Etude; nobody hearing it would recognize African musical ideas. In the Concerto, however, the African influence affects the music more directly, especially in two episodes which use different sub-Saharan rhythmic patterns. These rhythms are based on symmetrical and asymmetrical divisions of twelve (examples of these divisions are given in Figure 3.3). Episode 1 is based on four against three (a rhythm already present by m.9, as Figure 4.13 illustrates), while Episode 2 is based on seven plus five (see Figures 4.1 and 4.3).

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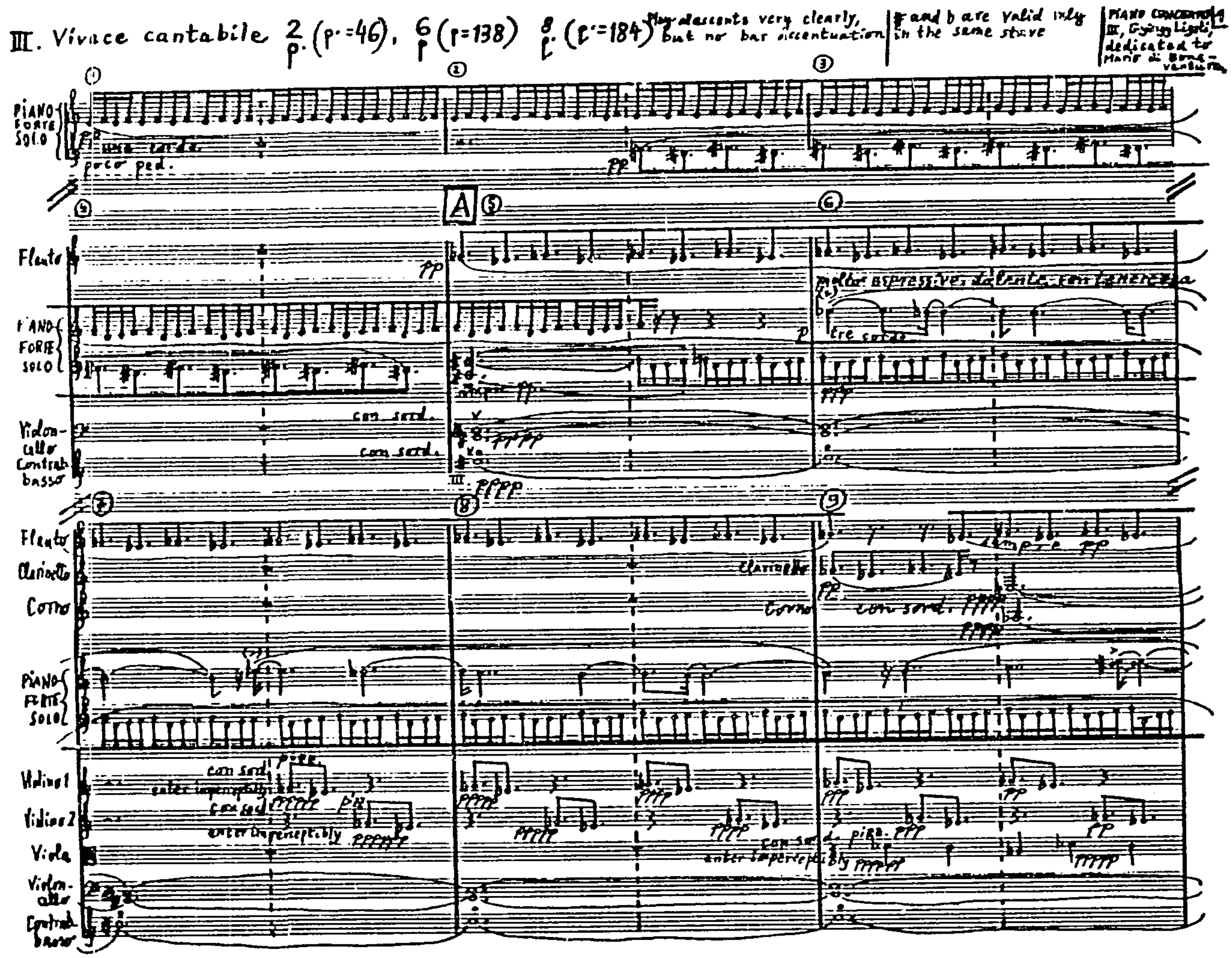
[11] Ligeti, "On My Piano Concerto," 10.

Figure 4.13 Concerto, III, mm. 1-9. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.


III. Vivace cantabile
and b are valid only in the same stave
PIANO FORTE SOLO
una corda
poco ped.
Flauto
molto espressivo, dolente, con tenerezza
tre corde
Violoncello
Contrabasso
con sord.
Clarinetto
Corno
sempre
Violino 1
Violino 2
Viola
enter imperceptibly

The tempo is not quite as fast as the Etude's (quarter note = 138, compared to 144), contributing to the movement's relaxed, swinging gait. Actually, though, the music is more difficult to perform: the background pulse continues without a break until the end, and it is more complex. Earlier, in *Automne* the background pulse eventually became "unglued" as the music approached the midpoint and the end, moving in scales and arpeggios instead of rolled octaves and single pitches (see Figures 3.21). In the Concerto's third movement, however, the background pulse appears as a two-note tremolo even at the beginning. As the piece progresses, these patterns constantly change from tremolos to scales to arpeggios, sometimes in the right hand, sometimes the left, sometimes both. Also, the background's harmony constantly shifts between quasi-diatonic, "super whole-tone," and fifth-field collections, most of the time partially filled in by chromatic passing tones.

The form is a rondo, alternating the fugal Lamento motif with African episodes. Since the piano and orchestra's sections sometimes overlap, the measure numbers listed here are approximate.

		(length in bars)
Introduction, mm. 1-5	(similar to *Continuum*)	5
Lamento 1, mm. 6-30	3 statements (A, B, C)	25
Episode 1, mm. 31-51	4 against 3 rhythm	21
Lamento 2, mm. 52-59	1 statement	7.5
Episode 2, mm. 59-76	7 plus 5 rhythm	17.5
Lamento 3, mm. 77-87	(recapitulation) 1 statement	10.5
Coda, mm. 87-96	(from the end of *Cordes Vides*)	9.5

The first section is the longest, comprising with the introduction nearly one-third of the piece. The two other Lamento sections consist of only one statement of the motif, instead of the three-fold statements of *Automne* and the Trio. Both episodes are longer than the second and third Lamento sections. Since we are already familiar with the tempo fugue technique, we will concentrate mostly on the orchestra's role and the two African-influenced episodes. As before, though, a close look at the beginning will show us the basic principles the piece follows.

Introduction and Lamento 1 (mm. 1-30)

The solo piano begins, the right hand playing a tremolo on the white keys; the left hand plays on the black keys a 3/16, slower tremolo (see Figure 4.13). The orchestra subtly amplifies the left-hand part: in m. 5, the flute takes over the 3/16 oscillating line, while low string harmonics sustain the perfect fifth C#-G#. The right hand's pattern grows into a white-key scale fragment (m. 6) which continues through the first section. Beginning in m. 7, the Lamento melody unfolds in three large statements, A, B, and C; its rhythm is 7/16, the slowest tempo stream from *Automne*. As in the Etude, the melody's three statements each comprise three small phrases, each one longer than before. The difference is in the pitches: now, like the second movement, the melody lies in Messiaen's third mode (although the melodic mode, like the background, changes as the piece progresses).

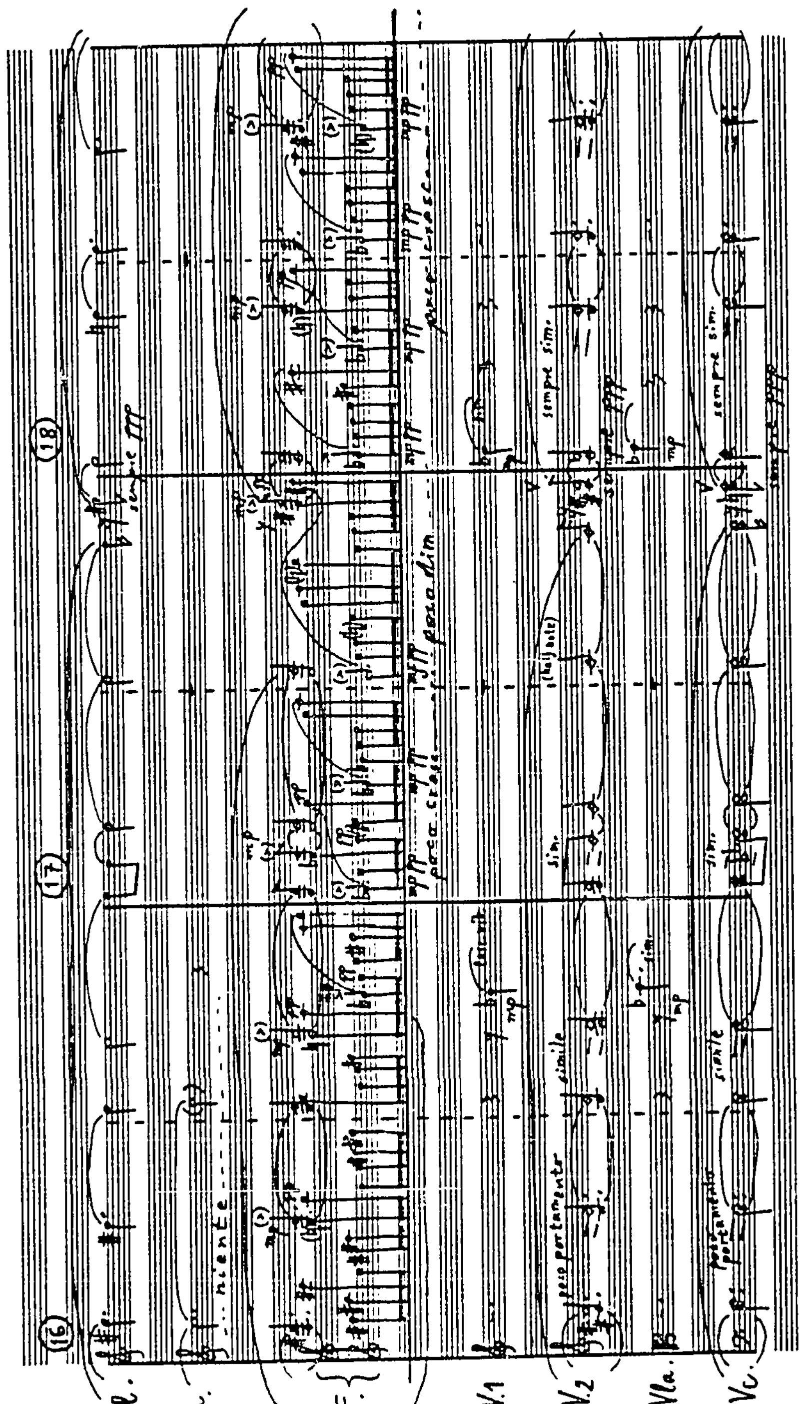
Throughout the first thirty bars the orchestra gradually grows more prominent, so that by the first episode, the pianist plays an accompanying role. At first, though, the orchestra limits itself to the

C#-G# drone plus the flute's oscillating, 3/16 line, doubled by the pizzicato violins in m. 7. Two bars later (as the piano begins its phrase a3) the viola softly plucks a quarter-note line, forming a pizzicato, four-against-three polyrhythm. The clarinet and horn join the sustaining string harmonics to create a black-note chord (see Figure 4.13, m. 9). On the piano's last note of the melody (m. 13), the rest of the orchestra suddenly enters *ppp* (m. 13), playing a wide, fifth-based chord. The piano's patterns gather themselves for a leap into the high register, preparing for the second Lamento statement (B, mm. 16-25) as the orchestra fades out.

Figure 4.14 shows the beginning of the second Lamento (B). The flute and high string harmonics harmonize the piano in the the upper register, in a series of parallel thirteenth chords. The orchestra supports the piano in this way for the first two phrases (mm. 16-20), again growing more prominent at the third phrase (mm. 21-25).

A melodic imitation enters in the piano's left hand (m. 16), as in *Automne,* but with an important difference. As the descending melodies accumulated in the Etude, their new tempos became faster, increasing the musical tension. Now, though, the tempos relax: the right hand plays its melody in 5/8, the left in 3/8. Instead it is the background pulsation which grows more complicated: its scales have become arpeggios, spread between the two hands, moving independently of the Lamento melodies. Here, as in much of the movement, these arpeggios fit no single harmony, but rather imply one (in this case the "super whole-tone" collection). The melodies, also, belong to different

Figure 4.14 Concerto, III, mm. 16-18. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.


Fl.
Tr.
PF.
V.1
V.2
Vla.
Vc.
16
17
18
niente
poco cresc.
poco dim.
sempre ppp
simile
sim.
sempre sim.
poco portamento

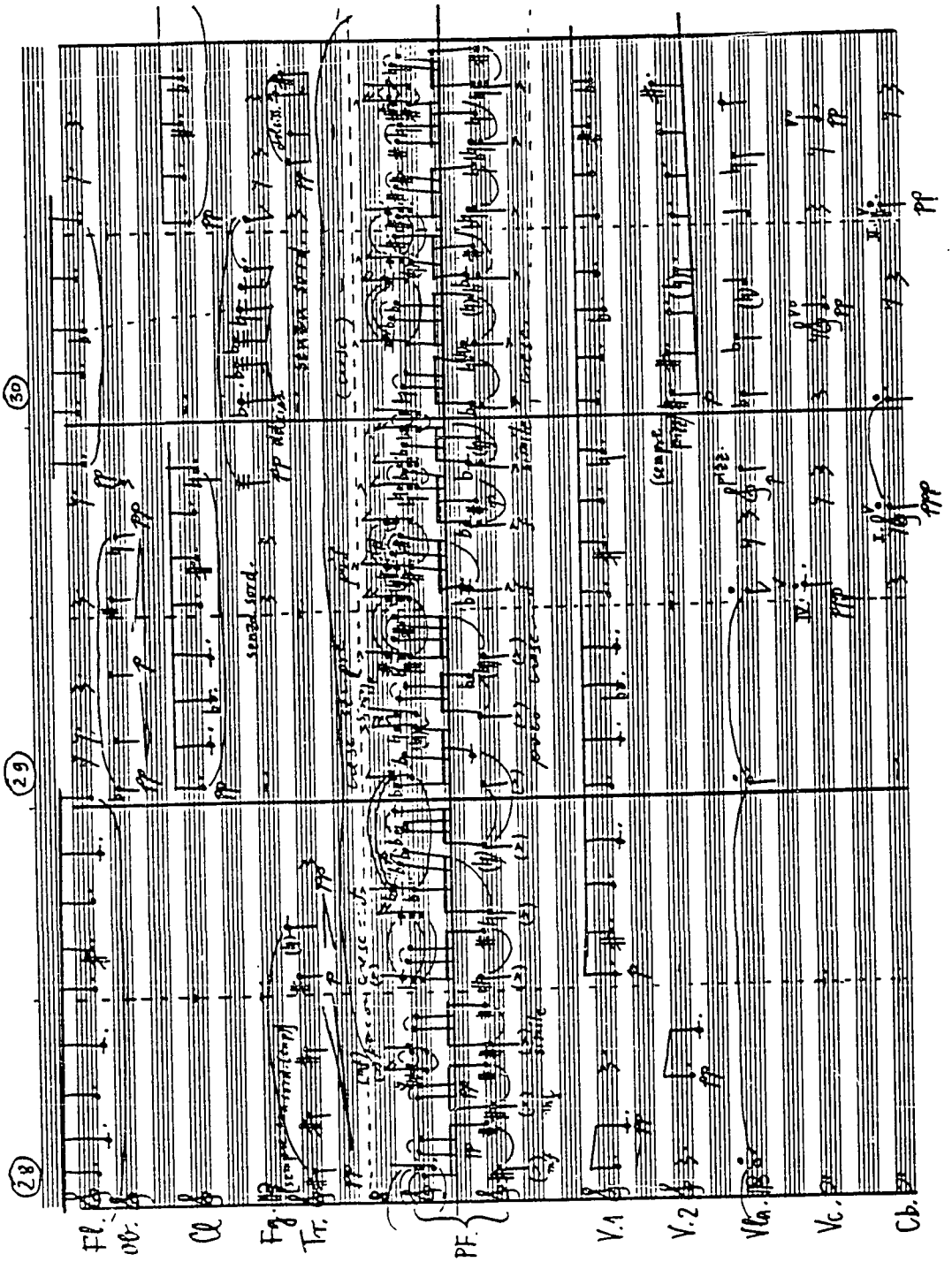
harmonic fields: the right hand melody shares the same whole-tone collection as its background, while the left hand melody is in Messiaen's third mode. As the B statement ends, the orchestra enters once again (m. 22), balancing the high flute and strings by dropping to the low register. The piano's melodies begin to accelerate, preparing for the third Lamento statement, C (m. 26-30).

By the end of the third statement, the piano and orchestra have reversed roles: the orchestra, instead of supporting the piano's lines, takes center stage, leaving the piano to provide the basic pulse only. The third statement begins, though, with the piano by itself, accelerating to 5/16 in the right hand, 4/16 in the left. In m. 27, the beginning of phrase c_2, the flute and pizzicato violins restart the 3/16 oscillating line that first appeared in m. 5. Then in m. 28 (see Figure 4.15 below), the trumpet and oboe add graceful, quarter-note lines which mesh with the flute and pizzicato strings to make a four-against-three polyrhythm. This polyrhythm becomes melodic in m. 30, as the bassoon and trumpet combine the three-against-four lines to make lightly swinging melodies which lead to the first episode.

Episode 1 (mm. 31-51)

In m. 31 the rototoms enter on the same four-against-three rhtyhm played by the orchestra for the last three bars, transforming the inherent polyrhythm into explicitly African drumming. Above the drums, the horn plays a lyrical, gently syncopated solo in three phrases, the woodwinds joining on the last.

Figure 4.15 Concerto, III, mm. 28-30. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.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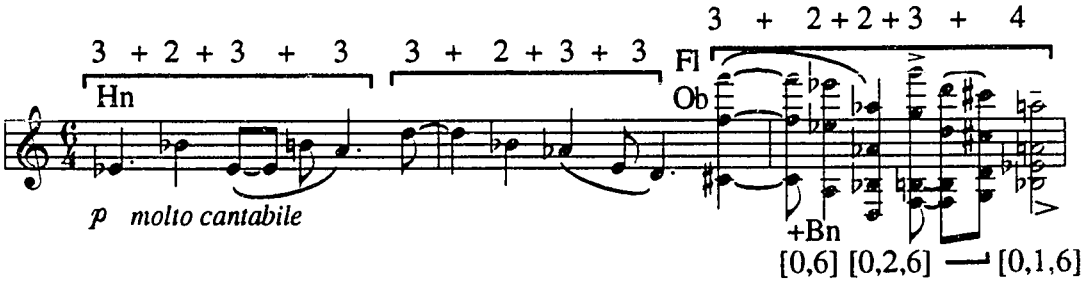


Figure 4.16 Beginning of Episode 1 (mm. 31-33), orchestra (melody instruments only). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

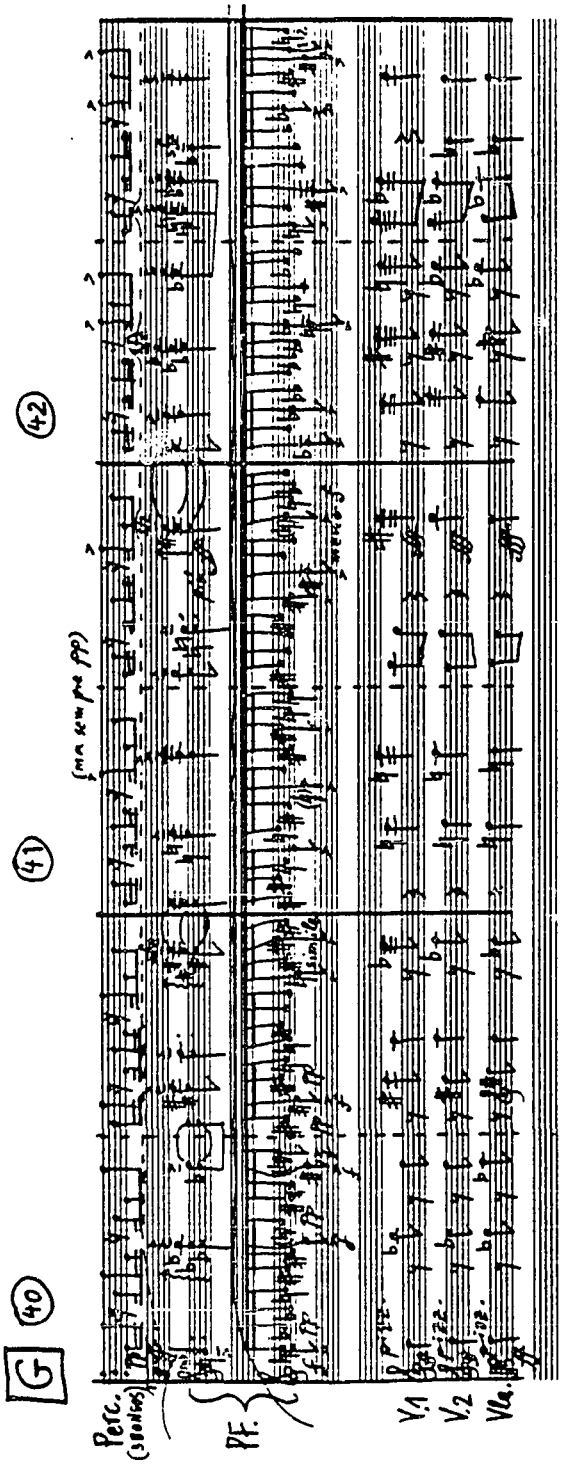
The melody is a curious combination of Balkan music and African-American jazz, with additive rhythms and sudden, angular leaps. Its rhythmic structure, 3+2+3+3, adds up to 11/8, working against the roto-toms' 12/8 ostinato. The third phrase slightly extends the length. The winds and horn play in dominant-type harmony, based on [0,2,6] and [0,1,6].

A second, three-fold statement of the melody enters on the heels of the first, in both low and high registers (pickup to m. 34). Again, at the third phrase the woodwinds join in an extension, now four bars long.

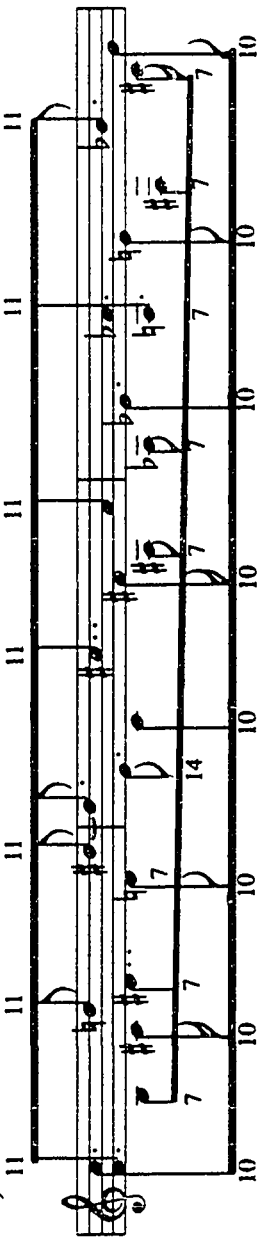
Meanwhile the piano, oblivious to this new melody, continues to spin out lines from the end of its last Lamento phrase. Now in the ratio 5/16 : 7/16, it plays in its highest register, making a descant to the melodies below. As the orchestra finishes its second melodic statement, the piano gradually descends, then suddenly comes to the fore, announcing a third, solo version of the melody, harmonized by metallic fifths, doubled by pizzicato strings.

Figure 4.17 a) Episode 1, piano's first phrase, mm. 40-42; b) accents in the piano's left hand. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

a)



b)



The left hand continues the background pulse, now peppered with erratic accents. The rhythm of these accents is the result of three different tempo streams, in 5/16, 7/16, and 11/16. These embedded, accented lines cannot be heard distinctly, since they all lie in the same register and move in disjunct motion, unlike the chromatic lines of *Automne*. Here it seems the complexity really is impenetrable; the accents form a kind of micropolyphonic, rhythmic web, which works with both the piano's melody and the percussion to create an effect not far removed, perhaps, from the *Poème Symphonique* for 100 metronomes.

In m. 43 the two hands reverse roles, the left hand now playing the melody in the middle register. As before in the orchestra, its last phrase is extended, this time crashing all the way down to the lowest register, *ffff*, for the first time in the piece. As the piano ends its phrase, new ideas gradually appear. First, the percussion has been subtly shifting its patterns since its entrance in m. 31, gradually transforming from a four-against-three pattern to a new pattern based on the sequence 3+2+2+3+2, which fades to nothing in m. 48. This pattern, which will eventually become the basis for Episode 2, can be grouped in two different ways: 3+4+3+2, or 7+5 (this rhythm also appears in eighth-notes towards the end of the first movement, mm. 85-110; compare with the examples transcribed by Arom in chapter three). In m. 47, one bar before the drums fade out, the low pizzicato strings gradually pick up this new rhythm, much as they did at the beginning. Their interlocking rhythms form descending fifth-fields, out of phase with the drums. Ligeti asks for pizzicato sul ponticello, imitating the sound of the rototoms, which themselves imitate African

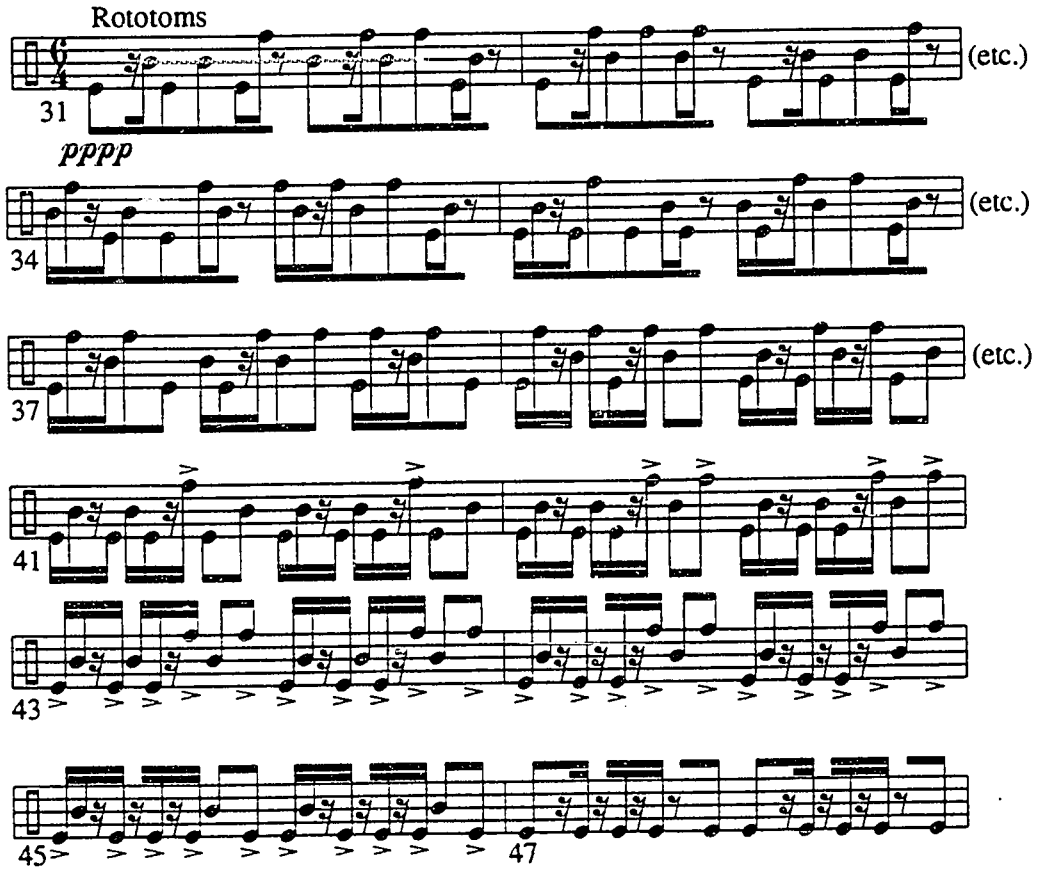


Figure 4.18 Rototoms' rhythmic transformation, mm. 31-48. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

drums (in the rental score they are marked rototoms; in the published score, though, they are marked bongos).

At the same time, the violins—legato and tremolo, simultaneously—begin a new, long-limbed melody, based on tunes from the first movement. The melody lasts for eleven bars, almost to the end of the second Lamento section. As it progresses it develops several imitations in other instruments, each in a different meter (see Figure 4.19). The descending motive [0,1,3,7], recalling the Lydian mode, appears several times during the melody; earlier, it contributed to many of the melodies in the second movement of the Horn Trio. Additionally, Denys Bouliane notes the Lydian mode's presence in the third Etude, *Touches Bloquées (Blocked Keys),* recalling one of Bartók's preferred scales, the so-called acoustic mode.[12]

Lamento 2 (mm. 52-59)

By the time the piano starts into its second Lamento section in m 52, the orchestra's imitations of the violin melody have already begun to proliferate. Here the piano plays only one Lamento statement, the right hand melody now in 11/16; its harmonies move in contrary motion in the high register (see Figure 4.20 below). In the deep bass, the left hand rapidly arpeggiates different fifth-fields in the manner of the second Etude, *Cordes Vides* (this figuration will return at the end of the piece); the result sounds like a combination of the second and sixth Etudes. As the right hand ends its first phrase (m. 53), a new, rising left-hand voice enters in 5/16, harmonized at the major sixth by the

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[12] Bouliane, "Six Etudes de Ligeti," 120-22.

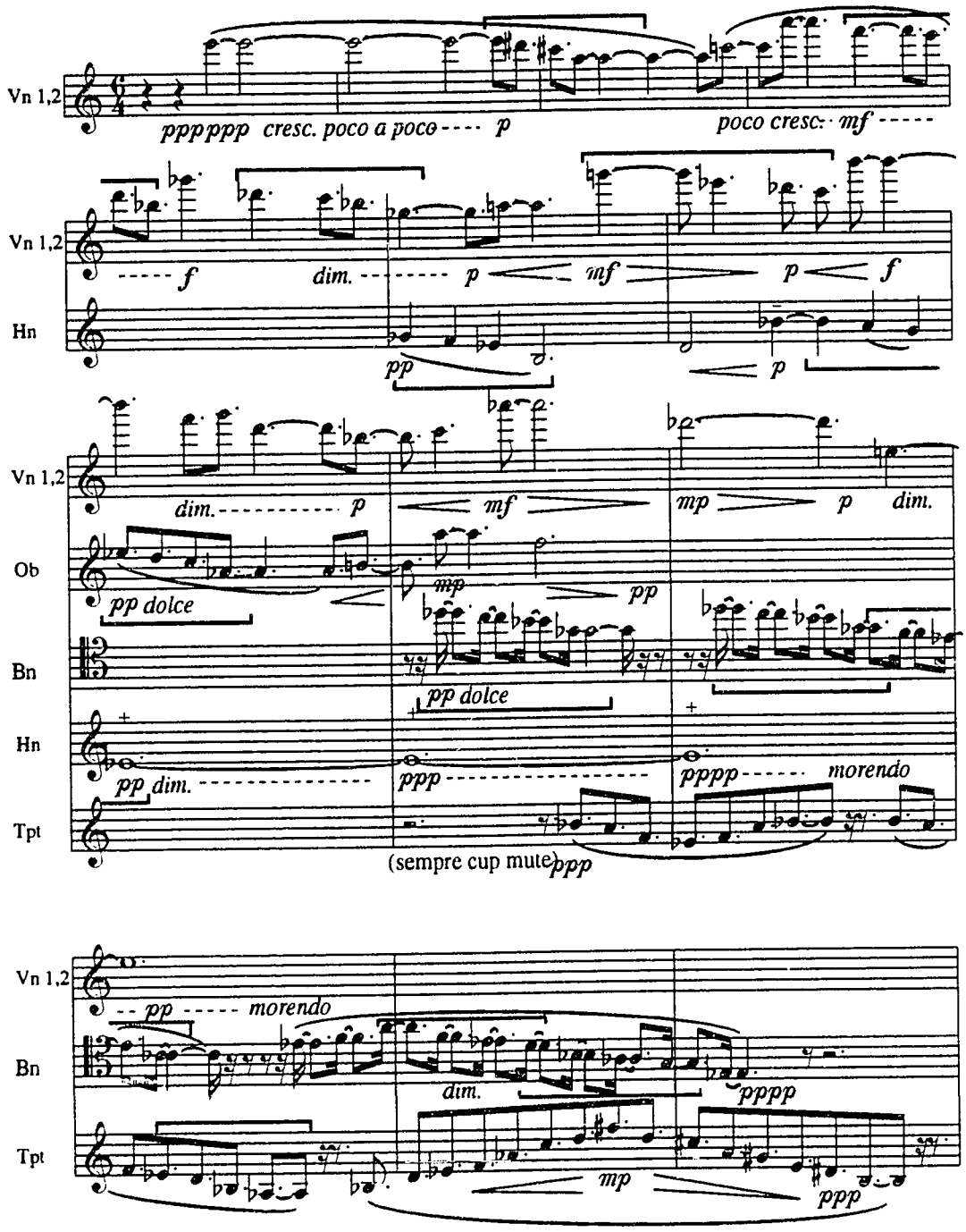

Figure 4.19 Concerto, III, violin melody and its imitations, mm. 47-59; the brackets show set [0,1,3,7]. Violin 1 plays sempre legato; Violin 2 plays sempre tremolo. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

flute. Three bars later, at the end of the right hand's second phrase, another voice appears, descending, still in 5/16; the clarinet harmonizes it, again at the major sixth. The total effect of this passage is quite complex, consisting of three separate layers (see Figure 4.20):

1) The long violin melody and its imitations;
2) The piano's Lamento fugue and its harmonizations in flute and clarinet;
3) The rhythmic pedal of the lower strings (in fifths, like the left hand of the piano).

Episode 2 (mm. 59-76)

Just as the beginning of the second Lamento section did not coincide in the piano and orchestra parts, the beginning of the following Episode 2 is also somewhat blurry. The piano and orchestra (usually divided into two or more layers) each have their own, constantly-evolving music which only occassionally coincides with the others'. The low, pizzicato string pedal (2+2+3, 2+3) begins to climb upward (m. 59); at the same moment a new idea enters in the oboe and trombone, *pp dolcissimo, molto ritmico e con eleganza.* This idea more or less marks the beginning of Episode 2, overlapping the piano, which continues (along with the flute and clarinet) to extend the last phrase of the Lamento motif (see Figure 4.21).

The new melody is based on the same rhythmic cycle—2+2+3, 2+3—as the pizzicato rhythmic pedal (see also Figure 4.1, m. 63). In other words, just as in the first episode, melodies begin to develop from the underlying rhythmic pedal—in both cases played by pizzicato strings.

Figure 4.20 Concerto, III, excerpt of Lamento 2, mm. 55-57.
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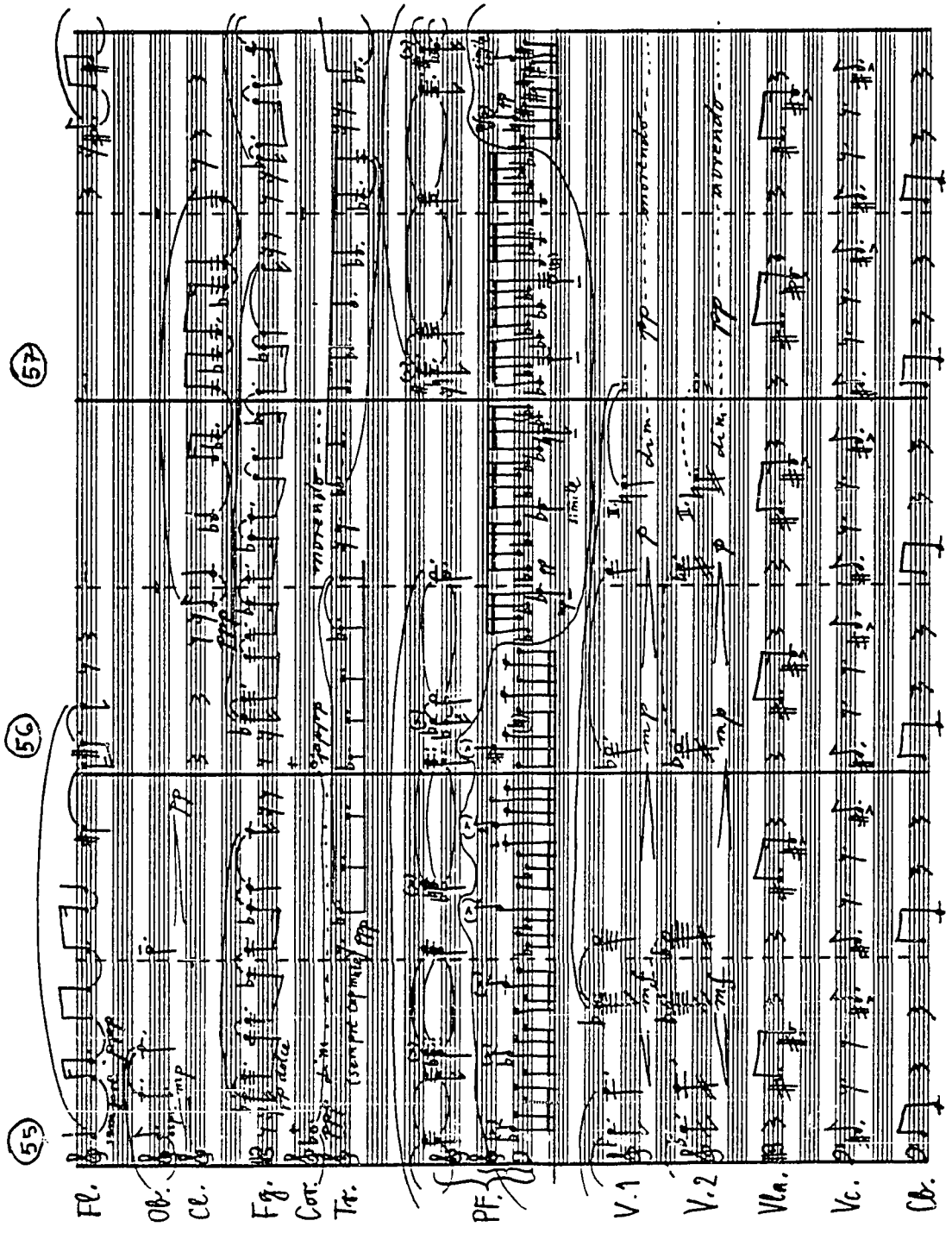
55
56
57
Fl.
Ob.
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Tr.
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V.1
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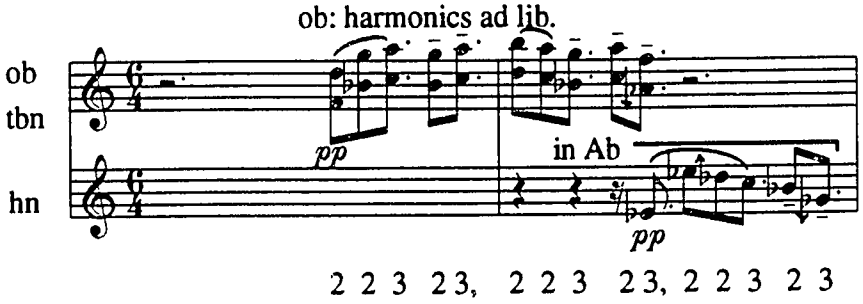


Figure 4.21 Concerto, III: Beginning of Episode 2, mm. 59-60, oboe, trombone and horn. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

These short phrases are tossed from instrument to instrument, reaching a climax in m. 64 as the piano once again leaps into the high register. Since m. 61, the piano's two left-hand voices have been accelerating from 5:7 to 3:4; this acceleration produces the tension released by the registral leap. The rototoms re-enter in m. 65 on the pattern set up by the pizzicato strings, just as in Episode 1. The piano, both hands in the extreme high register, plays its accents with the drums as another long, slow melody unfolds in the violins against a series of ominous, sustained chords in the low orchestra, mostly triads or fifth-fields. The melody now is even longer (12 bars), contrasting starkly with the orchestral chords. Again, Ligeti presents three layers of activity: piano and percussion, violins, and the low, brooding chords. This section, more than any other in the movement, recalls perhaps the intense, tragic spirit of *Automne à Varsovie,* although the Lamento motif itself is not present.

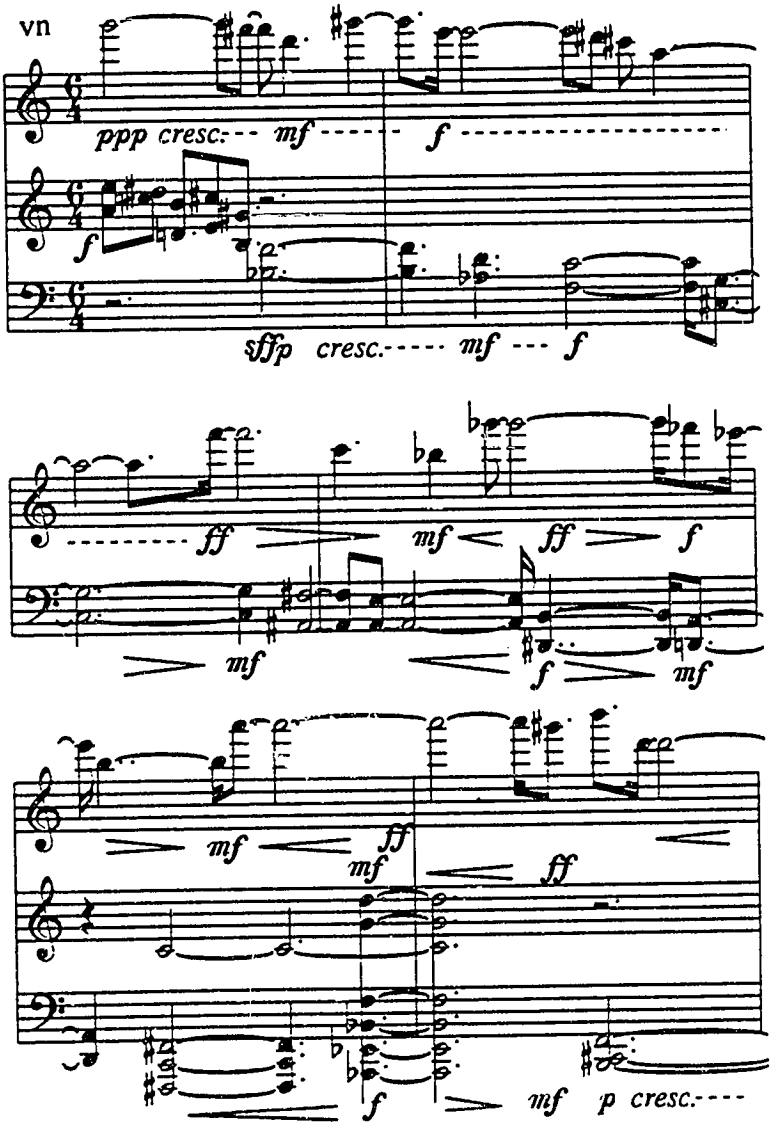
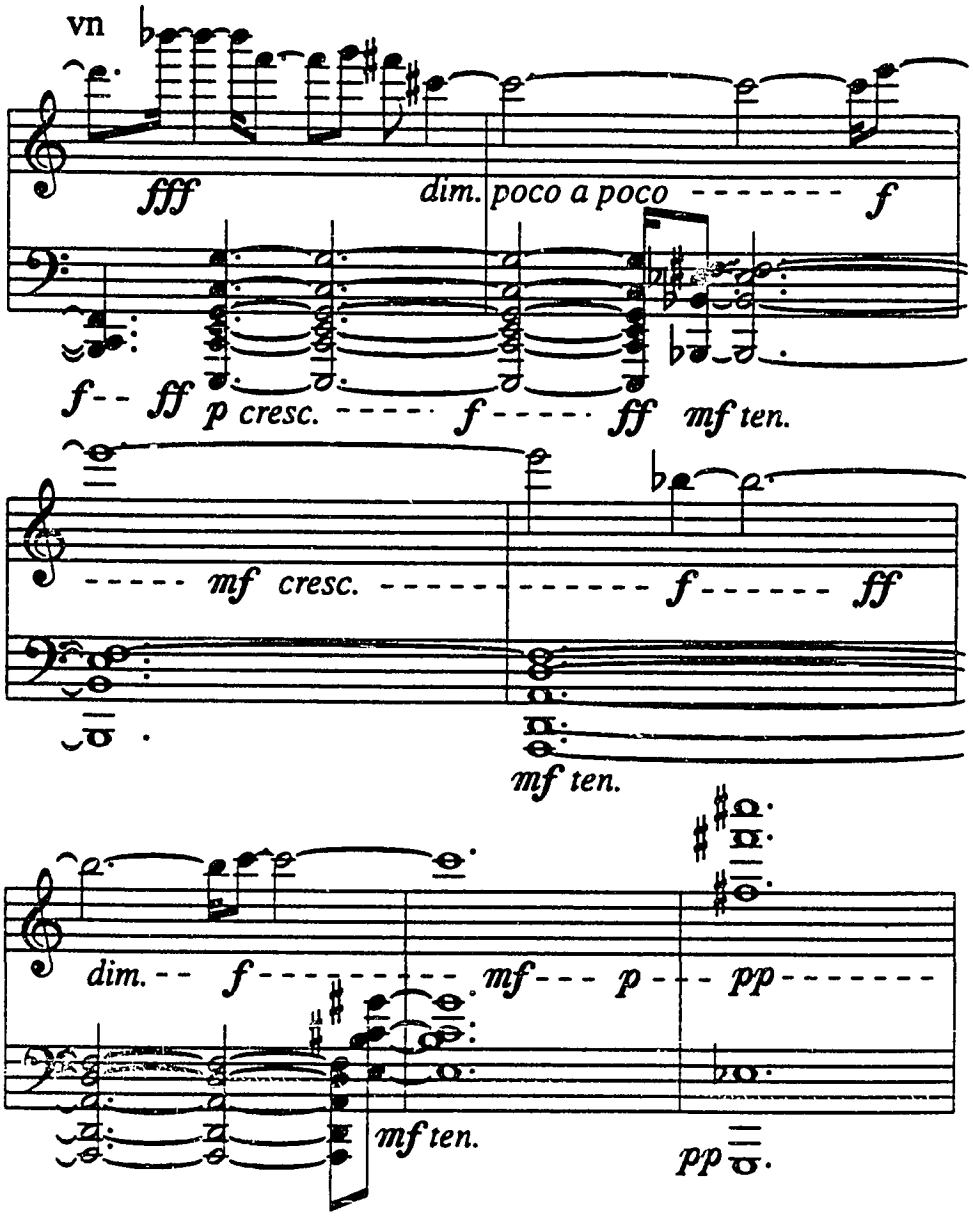


Figure 4.22 Concerto, III, mm. 65-76, end of Episode 2; orchestra only (no piano or percussion). © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

Figure 4.22 (continued)

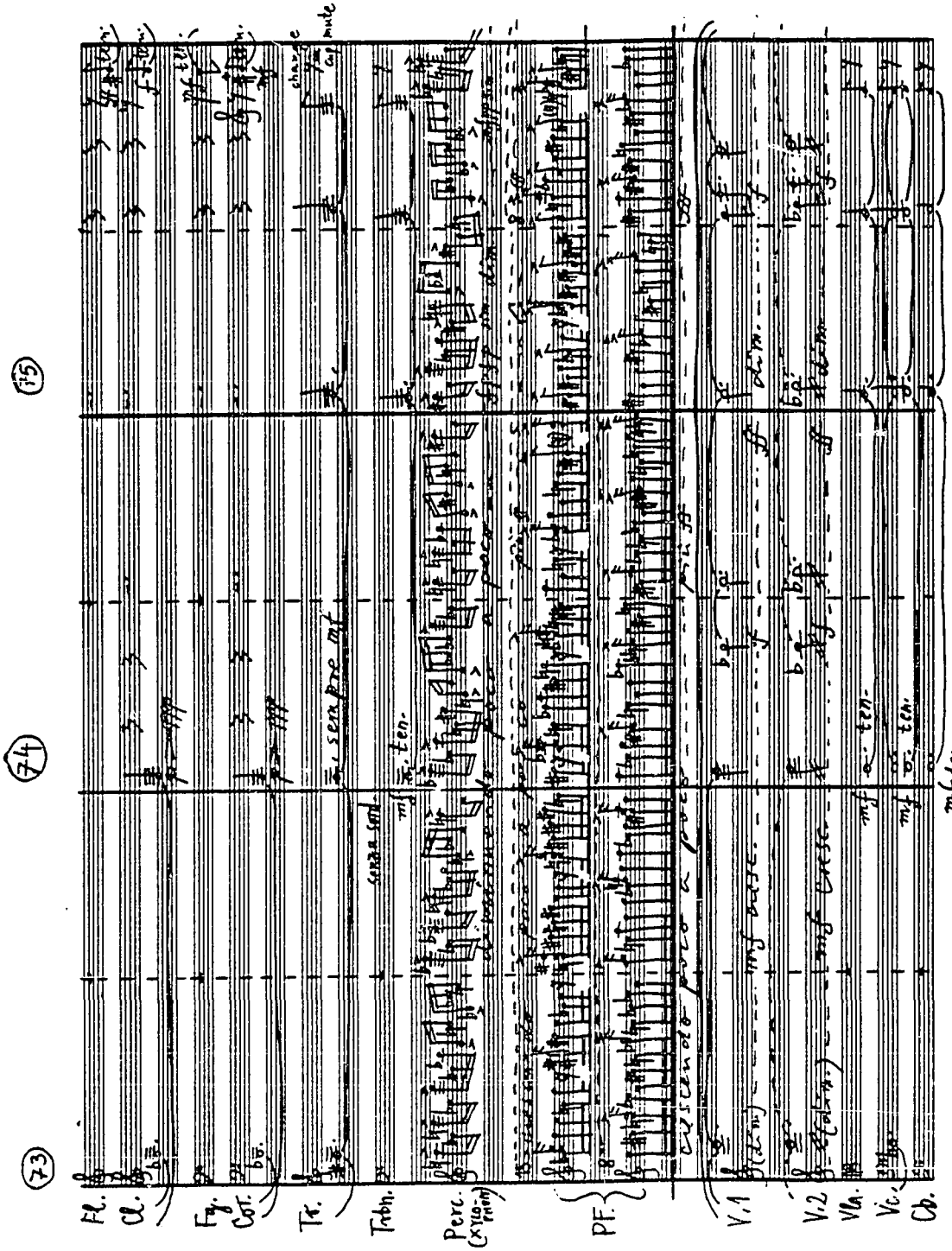


Opposed to this slow, dark music is the frenetic activity of the piano and percussion (see Figure 4.23). The rototoms fade out in m. 69; two bars later the xylophone enters in a stratospheric, *fortissimo* duo with the piano, suspended above the low orchestral chords. The xylophone part here is even more virtuosic, if possible, than the piano. As they continue to play, their patterns begin to shift. The xylophone's pattern is disrupted by small rhythmic extensions (recalling the displaced rhythms of *Désordre*), while the piano shifts in m. 72 to an *Automne*-type accent ratio of five (L.H.) against six (R.H.); by m. 76 the piano has three chains of accents in the ratio 3:4:7. Once again, these conflicting streams produce an effect of random, seemingly scattered accents. The xylophone gradually fades out while the piano remains at full force; a subdued, mid-register wind chord—$E^{add\ 6}$, voiced in fifth-fields (upbeat to m. 76; see Figure 4.22)—erases the low-register chord in brass and strings, leading into the final section of the piece.

Lamento 3 (recapitulation and coda), mm. 77-96

Orchestrally, the final Lamento section is the simplest. The orchestra accompanies the piano's right-hand voice (9/16), gradually adding instruments and reaching a climax in m. 87 (see Figure 4.24). The harmonies are relatively simple, consisting mostly of fifths alternating with sixths to produce a polytonal effect of interlocking major and minor triads, as shown in Figure 4.24. The piano part, though, reaches its greatest complexity, adding more and more voices,

Figure 4.23 Concerto, III, mm. 73-75. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.


73
74
75
Fl.
Cl.
Fg.
Cor.
Tr.
Trbn.
Perc.
(Vibr.)
PF.
V.1
V.2
Vla.
Vc.
Cb.
mf ten.

each moving outward in contrary motion at a different tempo, finally reaching a total of six tempo streams: 4:5:6:7:9:11, always with the constant sixteenth-note background.

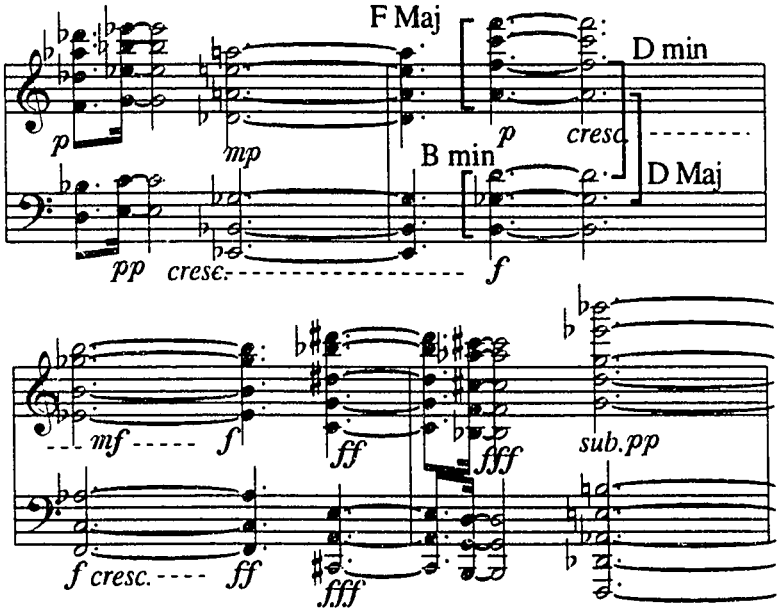


Figure 4.24 Concerto, III, mm. 84-87, orchestral reduction: approach to the climax of the recapitulation. © B. Schott's Söhne, Mainz, 1986. All Rights Reserved. Used by permission of European American Music Distributors Corporation, sole U.S. and Canadian agent for B. Schott's Söhne, Mainz.

The climax is followed by *subito pp;* the orchestra continues its series of chords at the registral extremes, now an echo. The piano runs smoothly up to the middle register to play, finally, the violin tune from the middle of the piece (which originally appeared in the first movement). Underneath, fifth-fields in the left hand slowly approach the bottom register, directly recalling the end of *Cordes Vides.*

Unlike *Automne,* the ending is tranquil—perhaps one of the reasons Ligeti decided to add more movements. Even so, Ligeti could have ended the piece here, as John Warnaby considered in an early review.[13] The interconnections in the three movements—the violin theme of the first and third movements, and the Lamento motif of the second and third—produce a unity that remains despite the remarkable mixture of old and new styles.

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[13] John Warnaby, "Ligeti's Piano Concerto," *Tempo* 163 (December 1987) 47-9.

CHAPTER FIVE
LIGETI'S LATE AND EARLY STYLES: FULL CIRCLE

We have seen the Lamento motif in four different pieces, each time in a different context. Broadly, these four movements can be viewed in pairs: the slow movements of the Horn Trio and Piano Concerto, on the one hand, and the fast, polyrhythmic *Automne à Varsovie* and the Concerto's third movement on the other. At the same time, their chronological development shows a progression in thinking, a metamorphosis: the germination of an idea (the Horn Trio of 1982); its concentrated development (*Automne,* 1985); and finally, its intermingling with other ideas (the Piano Concerto, 1988).

In this chronological respect, the Lamento motif serves as a model for other elements in Ligeti's late style. Like many of these other elements, it has been implicitly present in Ligeti's music for a long time (in the form of a descending chromatic scale, as discussed in chapter one). Also, like many of the other elements, it first appears full-blown in the Horn Trio; then in a Piano Etude, in concentrated form; then in somewhat freer versions, mixing with other elements. The Horn Trio, the first substantial piece of the new style, lays out many of the new techniques and ideas, while the series of Etudes seems to classify the elements of the new style, each rigorously developing a single idea. The Piano Concerto and other more recent pieces, including the *Nonsense Madrigals* (1988) and Violin Concerto (1990-92), can be seen partly as mosaics of new and old ideas, piecing together sections of the Etudes

with older "Ligeti signals," including micropolyphony, "frozen expressionism" and quasi-minimalist repetitive patterns. In fact, the Violin Concerto goes a step further by quoting his third *Bagatelle for Wind Quintet,* written before he left Hungary.[1]

The Violin Concerto thus makes explicit a trend that has been forming for some time in Ligeti's music: the return to his early style and his love for the music of Bartók, his predecessor and compatriot. This is one of the most important elements of Ligeti's recent music, and among the most problematic, since it seems to contradict Ligeti's oft-stated antipathy to postmodernism or other "retro" movements, as they are known in Europe. The rest of this chapter will attempt to clarify this seeming paradox, also drawing comparisons with some of Ligeti's contemporaries.

In 1985 Ligeti summarized his ideas in a brief article, "My Position as a Composer Today":

> We live in an age of artistic pluralism. While modernism and even the experimental avant-garde are still present, "post-modern" artistic movements are becoming more prevalent. "Pre-modern," however, would be a better word to describe these movements, for the artists who belong to them are interested in the restoration of historical elements and forms. . . The syntax of the nineteenth century is present in all the arts.
>
> This "retro" reaction, after a period of experimentation and modernity, is understandable, just as subjective pathos can follow a constructivist era. Understandable yes, but not excusable. We live at the end of the twentieth century, in a world of micro-processors, biotechnology, television, mass manipulation and bureaucracy, of totalitarian, expansionist dictators living next to populist democracies and societies of abundance. . .

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[1] Ligeti, "György Ligeti on His Violin Concerto," program note for the Los Angeles Philharmonic, 18, 19, 21 February 1993.

> Moreover, consider modernism and the experimental avant-garde of the fifties or even the sixties: do they not also belong to the past, to history, to the "academy?" By rejecting at once the "retro" and the former avant-garde, I declare for myself a modernism of today.[2]

By claiming allegiance neither to modernism nor postmodernism, Ligeti declares himself an individual. In a similar way, he describes his compositions of the late sixties and early seventies as "neither tonal nor atonal," a description he also applies to the "non-diatonic diatonicism" of the eighties. Jeffrey Bossin suggests that this outsider stance originates from the circumstances of his life:

> "Living in permanent exile from his native land, he is conscious of the freedom his alien status accords him, a freedom which enables him to draw inspiration from the various Western avant-garde movements without feeling bound to any of them. Thus, though one of the foremost contemporary composers, Ligeti represents something of a maverick whose keynote is a continuing search for an individual style."[3]

Characteristically, it is as a "maverick" that he presented his Horn Trio at a 1984 concert in Berlin, going against the "taboo" of melody and of ABA form that had been the rule in postwar avant-garde music.[4] Here is where the contradiction arises, though: if he breaks with the avant-garde tradition by using elements from the past, is he not identifying himself with the past—with "retro," postmodernist movements? Ligeti resolves the contradiction by using these past elements in a new way. In the sixties, he did the same thing by re-

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[2] Ligeti, "Ma position comme compositeur aujourd'hui," *Contrechamps* 12/13 (1990) 8-9.
[3] Bossin 233.
[4] Ibid. 238. See also Hermann Danuser, "Zur Kritik der musikalischen Postmoderne," *Neue Zeitschrift für Musik* 149 (December 1988) 6-7.

introducing the octave, an interval shunned as old-fashioned by postserialist composers.[5]

In the Horn Trio and later pieces, his references to the past are much stronger, but he maintains that there is a difference: "I am trying to develop a harmony and melody which are no genuine return to tonality, which are neither tonal nor atonal but rather something else, above all in connection with a very high degree of rhythmic and metric complexity."[6] Without a "genuine" return to tonality, Ligeti can use the vocabulary—but not the syntax, the grammatical rules—of the nineteenth century to achieve the "neither tonal nor atonal effect" which defines his outsider, anti-establishment stance. In this way, he differs not only from composers who directly imitate the "pathos" of earlier music, but also from postmodernist composers such as Alfred Schnittke, who at times arrange bits of the past in an almost meta-musical collage. Even when Ligeti expresses himself most directly, as in the last movement of the Horn Trio, the quality of expression is not like that of the past, as Bayan Northcott recognizes:

> . . . even the most vehement passages have a quality of expression that Ligeti himself has termed 'deep frozen.' . . . After the cultural dislocations of a catastrophic century, Ligeti seems to say, the past can only be evoked as an aural image, a kind of musical life-in-death.[7]

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[5] Ligeti discusses his re-introduction of the octave in his interview with Péter Várnai, in *Ligeti in Conversation,* trans. Gabor J. Schabert. (London: Eulenberg, 1983), 27-29.
[6] Bossin 238.
[7] Bayan Northcott, liner notes, *Horn Trios by Brahms and Ligeti* (Bridge Compact Disc BCD 9012) 1988.

Gavin Thomas neatly summarizes the situation:

> What then has happened to Ligeti's music over the past ten years? Have they been Ligeti's period of new simplicity? Neo-classicism? Neo-romanticism, even? Such labels may seem to describe the surface characteristics of some parts of recent scores—the sense of expressive directness, rhythmic impetus and melodic and harmonic fullness—but they tell us little about the heart of the music, or its context, in which the works of the last decade may be seen as representing the harvest of a lifetime's attempt to recover music from the statistical chaos into which it had been flung by total serialism, against the background of which Ligeti began his composing career in the West.[8]

Although Ligeti's use of historical elements, as Thomas suggests, is not as simple as it may seem, one aspect of his new style recalls his own past more directly: the reappearance of ideas inspired by the music of Bartók. We have seen the influence of Balkan folk-music in the rhythms of recent scores, and we have noted that many harmonic devices—the partitioning of the total chromatic into complementary whole-tone or white-key/black-key collections, for example—appear in Bartók's scores. A further consideration of some basic trends in Ligeti's recent music will help to clarify the re-emergence of Ligeti's musical past.

We have seen that the recent style consists partly of a large new repertory of diverse "Ligeti signals." Behind these new techniques, though, lie two guiding interests. One is a fascination with other musical cultures, seeing how they can be combined with his own heritage—the traditions of both Western art music and his native Hungary. This fascination underlies the quasi-African rhythmic experiments of

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[8] Gavin Thomas, "New Times: New Clocks," *Musical Times* (July 1993) 376-79.

experiments, including the illusory Indonesian intonation of *Galamb Borong,* and the Alaskan-influenced timbres of the second movement of the Piano Concerto. Furthermore, the cultures which seem to have made lasting impressions on him rhythmically—African and Caribbean music particularly—bear some relation to the complex metrics of Balkan music. The different tunings in these cultures also bear some similarities to Balkan tuning, which can be stridently microtonal; Bartók himself occasionally experimented with quarter- and sixth-tones. Finally, Transylvanian folksong lies behind the Lamento motif, whose contour carries a similar emotional meaning in many cultures.

The other guiding interest is Ligeti's lifelong synesthesia, which has lately manifested itself in the fantastic images of fractal geometry and, more generally, recent research into computers, artificial intelligence and other sciences.[9] The fourth movement of the Piano Concerto uses a formal idea inspired partly by fractal images, starting with isolated fragments which gradually grow into an overwhelmingly complex, out-of-control texture. In one way, this formal idea stems from traditional diminution technique, which appears in the *Passacaglia ungherese* and the Horn Trio's Lamento. *Cordes Vides* uses a similar idea, but the lack of an underlying ostinato lends the Etude a less traditional, "fractal-form" effect. Another element of *Cordes Vides,* the shiny, metallic "fifth-fields" which appear in several of the new works, is also synesthetic in nature. Lastly, pieces such as *Désordre* and the

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[9] For a detailed discussion of earlier visual analogies, see Bernard, "Audible Structures, Inaudible Music," 209-11, and Elmar Budde, "Musik—Klang—Farbe: zum Problem der Synästhesie in den frühen Kompositionen Ligetis," *Musik und Bildung* 21 (February 1989) 68-75.

is also synesthetic in nature. Lastly, pieces such as *Désordre* and the Piano Concerto's first and fourth movements use what Ligeti calls a "vegetative" form, in which the process of the entire piece is contained within any single section of the piece, almost like a musical genetic code which determines the entire structure (this idea has much in common with the process music of Steve Reich, and earlier ideas such as canon).[10]

These two main interests, Ligeti's idiosyncratic approach to "world music" and his synesthetic, scientific inspirations, help to explain his interest in the music of Conlon Nancarrow. Nancarrow's abstract structures, combined with his references to American jazz, capture Ligeti's imagination, perhaps because Nancarrow has realized Ligeti's own goals of combining abstract structures (some derived from the world of computers and fractal geometry) with the music of his youth and early adulthood.

In sum, Ligeti has been able to regain his past, without merely aping it, by opening himself to outside influences which have melded themselves to his own childhood memories and early musical experiences. "The rhythmic worlds of Nancarrow, of Latin America, of Central Africa, blend themselves in my imagination with elements of Hungarian and Romanian folklore which I have known since my youth, transforming themselves into conceptions absolutely non-folkloric, individual and constructed."[11] Also, his creative imagination, which has

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[10] Ligeti, "Ma position comme compositeur aujourd'hui," 9.
[11] Ibid.

always been strongly influenced by outside images and ideas, now finds inspiration in some of the latest scientific innovations, including chaos theory and computers. As always, though, Ligeti takes care to point out the difference between these outside influences and his own music:

> Scientific thought and methods differ so profoundly from those of art that it is neither technology nor mathematics as such which can "create" art in any way. Rather, the ideas of science can fertilize artistic thought and imagination, thus having a more fruitful effect on the development of a new visual art and a new music. Such an art would finally be compatible with the spirit and conception of life in our time.[12]

When one compares Ligeti with his contemporaries, one discovers a similar retrospective quality. Perhaps most notable is Lutoslawski; works of his later years, such as *Chain II, Chain III* and the Piano Concerto, have a more direct relation to his predecessors Szymanowski, Bartók and Chopin than earlier works. Boulez, on the other hand, has taken a slightly different approach, extensively reworking several of his early pieces including *Notations* and *Le Visage Nuptial.* In a very general way, Stockhausen's cycle of operas *Licht,* with its autobiographical overtones, shares a similar retrospective quality. Messiaen, a slightly earlier composer, kept adding to his repertory of techniques throughout his life, without discarding any; the mosaic-like quality of much of his music, combining earlier and later ideas, bears some similarity to Ligeti's recent work.

As a final instance of the continual change in Ligeti's thought, the Lamento motif has indirectly given birth to a new idea, also based on falling chromatic scales. The Piano Etude No. 9, *Vertige,* and the third

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[12] Ibid.

movement of the Violin Concerto attempt to create the acoustic illusion of an endlessly falling scale, an effect produced in electronic music by reintroducing higher partials as the fundamental frequency of a tone slides down to inaudibilty.[13] Ligeti's chains of overlapping chromatic scales are related to the Lamento motif, yet their aim is different. Earlier, the motif served to reflect various musical cultures—Transylvanian, African, and in the Piano Concerto, Alaskan—but now it portrays an acoustic phenomenon, a scientific illusion, although the intensity of expression remains just as powerful as before. This flexibility has characterized Ligeti's thinking throughout his long career, and ensures that his next works—the final Piano Etudes and an opera based on Lewis Carroll's *Alice* books—will be as astonishingly unpredictable as the rest of his music.

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[13] Stephen Ferguson discusses this Etude in "Tradition—Wirkung—Rezeption: Anmerkungen zu Ligetis Klaviermusik," *Neue Zeitschrift für Musik* 153 (January 1993) 8-15.

APPENDIX A

LIST OF WORKS, 1978-APRIL 1994

1978 *Hungarian Rock* for harpsichord
Passcaglia ungherese for harpsichord

1982 Trio for violin, horn and piano
Drei Phantasien nach Friedrich Hölderlin for 16-part mixed choir a cappella

1983 *Magyar Etüdök (Hungarian Studies)* for 16-part choir a cappella

1985 Etudes pour piano - premier livre (1-6)
Désordre
Cordes à vide
Touches blocquées
Fanfares
Arc-en-ciel
Automne à Varsovie

1985-88 Concerto for piano and orchestra

1988 *Nonsense Madrigals* for 6 unaccompanied singers (1-4)
Two Dreams and Little Bat
Cuckoo in the Pear Tree
The Alphabet
Flying Robert
Etudes pour piano, 7 and 8
Galamb Borong
Fém

1989 Etudes pour piano, 9
Vertige
Nonsense Madrigals, 5
The Lobster Quadrille

1991 *Mysteries of the Macabre* for coloratura soprano or solo trumpet and ensemble (1991) or trumpet and piano (1988)
Loop for solo viola

1990-92 Concerto for violin and orchestra

1992 *Macabre Collage* for orchestra

1993 Etudes pour piano, 11-13, and 13a
Entrelacs
L'escalier du diable
Coloana infinită
Coloana fără sfârşit (for player piano)
Facsar for solo viola
Nonsense Madrigals, 6
A Long Sad Tale

1994 Sonata for solo Viola
1. Hora lungă
2. Loop
3. Facsar
4. Prestissimo con sordino
5. Lamento
6. Chaconne chromatique

APPENDIX B

SELECTED DISCOGRAPHY

All titles are Compact Disc.

Etudes pour piano, 1985. Volker Banfield, piano. Wergo 60134-50, 1987.

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Konzert für Klavier und Orchester, 1985-88. Ueli Wiget, piano; Ensemble Modern, Peter Eötvös, conductor. Sony Classical SK 58945, 1994.

Trio für Violine, Horn und Klavier, 1982. Saschko Gawriloff, violin; Hermann Baumann, horn; Eckart Besch, piano. Wergo 60100-50, 1986.

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---. Maryvonne Le Dizès-Richard, violin; Jacques Deleplancque, horn; Pierre-Laurent Aimard, piano. Erato ECD 75555, 1990.

---. Guy Comentale, violin; André Cazalet, horn; Cyril Huvé, piano. Disques Montaigne 782006, 1992.

APPENDIX C

Melodies in the Lamento of the Horn Trio, mm. 1-51.

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(See attached foldouts.)

APPENDIX D

Analytical reduction of Etude No. 6, *Automne à Varsovie.*

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(See attached foldouts.)

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This bibliography concerns itself mostly with Ligeti's work since *Le Grand Macabre,* and with material published since 1980. Several good bibliographies for earlier materials already exist; see especially Richart's *György Ligeti: A Bio-Bibliography.* Some materials have appeared after work on this essay was nearly complete; of particular interest is the collection of Ligeti's sketches of recent works, *Notenbilder: Kunstmappe.*

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