THE Dynamics of disorder

RICHARD STEINITZ explores Ligeti's piano études, book 1

> This concept of many-layered polyphony is influenced by my preoccupation with geometry, especially fractal geometry and the science of dynamical systems and deterministic chaos.[1]

IN AN EARLIER article (*MT*, March 1996) I attempted to explain the relevance of current research in the physical sciences to the recent music of Ligeti and to ally the composer with a new spirit of rapprochement emerging between humanist and scientific cultures. The study of dynamical systems has helped to restore a poetic and aesthetic dimension to our perception of the sciences. But is chaos theory a passing fad, or should we heed Sir Karl Popper, who, in the lecture, 'Of clocks and clouds', from which Ligeti borrowed the title of his 1972/73 composition, warns us to be wary of 'fashions in science' and of scientists who 'climb on the band wagon almost as readily as do some painters and musicians'?[2] As it happens, the new mathematical explanations of complex phenomena seem to have become fundamental to many branches of science. And, whilst Ligeti's interest in them may be fashionable, this is certainly not a matter of 'bandwagons attracting the weak'. There could scarcely be a composer of bolder independence and originality. Rather, it indicates Ligeti's alertness to a genuinely contemporary interaction between creativity and contextual experience.

In focusing my previous discussion on the musical 'spirals' created by Ligeti in three of the later piano études, I suggested various analogies between his musical thinking and contemporary ideas in physics, particularly between his deformation of musical material, through the presence of hidden variables, and what scientists call 'sensitivity to initial conditions'. It's time to examine these and other issues in the first book of études. I propose to concentrate on four of them in this article – but first, some thoughts about Ligeti's piano studies as a whole.

When the first six études were published in 1986, their subheading of *première livre* clearly indicated that the composer planned more to follow. But I doubt if Ligeti at that time foresaw the encyclopaedic breadth of the twenty or more études he now seems intent on producing. The first two books of 14 studies (lasting in performance some forty-five minutes) together amount to an extraordinary series of intricate technical and compositional achievements. Now, with the appearance of a 15th étude[3], Ligeti has embarked on a *troisième livre*. What more, one wonders, can he possibly invent?! We already have music of Lisztian dimensions, at once rigorous and purposeful, volcanic and expansive, testament to an astonishingly wide-ranging imagination, requiring almost superhuman feats of mental and physical dexterity. For pianists able to encompass their technical demands, and convey the inner subtlety and expressive riches of the music as if such problems scarcely existed, the completed études constitute some of the most rewarding and impressive recital repertoire of our time.

Initially, the études seem to have been conceived as creative partners, alternative solutions as it were, to technical concerns which Ligeti was simultaneously exploring in the Piano Concerto and had earlier addressed in the Trio for violin, horn and piano. Although, at first glance, his occasional adoption of apparently simple, even tonal material looks like a reversion to the tradition of Bartók and Debussy, this is no weakening of his art. Harmonic, melodic and rhythmic building blocks may seem familiar, and there are precedents, too, for the overall structures. Yet the composer's simultaneous working-out of different mechanisms quickly carries innocent and unsuspecting material into hazardous labyrinths. His pursuit of extremes, his technical ingenuity, his plurality of method and musical vision, make the études constantly fresh and surprising. The results are dazzling, and utterly characteristic of their composer.

As in Ligeti's earlier music, the études evoke a variety of extra-musical analogies, not least, of course, those suggested by his titles. These make a colourful list: 'Disorder', 'Open strings', 'Blocked keys', 'Fanfares', 'Rainbow', 'Autumn in Warsaw', 'Galamb borong' (an artificial name for an imaginary gamelan music), 'Metal', 'Vertigo', 'The apprentice magician', 'In suspense', 'Interlacing', 'The devil's staircase', 'Infinite column' and, with the new 15th étude, 'White on white'. The titles, however, suggest metaphorical ideas rather than technical character, and give no indication of two other significant stimuli. One was Ligeti's first contact in 1980 with the music of the American composer, Conlon Nancarrow, whose own extremely intricate polyrhythmic studies composed for player piano (thereby circumventing the limitations of human performance) became for Ligeti a major inspiration. Another was the music of the Central African Republic, also rich in polyrhythmic features, which Ligeti discovered in 1982 through recordings made by the ethnomusicologist, Simha Arom. In a foreword contributed to Arom's exhaustive treatise on *African polyphony and polyrhythm*,[4] Ligeti marvels at the way the simple individual parts of sub-Saharan music acquire complex rhythmic relationships within an ensemble, noting the 'strong

Richard Steinitz is a Professor of Music at the University of Huddersfield. In addition to being Artistic Director of the annual Huddersfield Festival of Contemporary Music, he is currently writing a book on Ligeti for Faber & Faber.

1. From Ligeti's programme note for the premiere of the first version of the Violin Concerto in September 1990.

2. Karl Popper: *Objective knowledge: an evolutionary approach* (rev. ed., London, 1979).

3. 'White on white', premiered by Pierre-Laurent Aimard at the Kninklijk Conservatorium in The Hague on 26 January 1996.

4. (English ed., Cambridge 1991).

inner tension between the relentlessness of the constant, never-changing pulse coupled with the absolute symmetry of the formal architecture on the one hand and the asymmetrical internal division of the patterns on the other. What we witness in this music' he writes, 'is a wonderful combination of order and disorder which in turn merges together producing a sense of order on the highest level.'

Order and disorder? Is this another instance of chaos theory? Actually, Ligeti's interest in volatile musical situations stems from a much older preoccupation with polyrhythmic polyphony and was already a feature of the overlapping grids characteristic of his music in the 1960s. But, whereas the micropolyphony at the heart of works like *Apparitions* involved an 'enmeshing of individual parts' to produce one composite sonic mass, the music of the 1980s explores a hierarchy of self-contained structures operating more independently and 'heard simultaneously on several levels'. That he now views this interaction from the vantage-point of current mathematical thinking is indicated by his naming the first study after a crucial issue in the science of dynamical systems, the concept of 'disorder'.

LIGETI has said that only two of his compositions are deliberately based on ideas from contemporary mathematics, the first piano étude, 'Désordre', 'which is self-similar – an iterated structure based consciously on the Koch snowflake' – and the fourth movement of the Piano Concerto – 'a fractal piece'.[5] Nevertheless, 'Désordre' establishes procedures common to many of the études, namely the simultaneous unfolding of independent but related processes in each of the pianist's two hands. At first glance their musical material looks alike. However, it is their *dissimilarity* which is crucial. The allocation to each hand of different but complementary scales gives to these pieces what one might call their own 'combinatorial tonality' (i.e. the illusion of a third or resultant tonality created from the combination of the other two); whilst the simultaneous unfolding of similar but marginally different metrical patterns results in increasingly divergent polymetric counterpoints. When, into these already unstable textures, Ligeti plants other variables, it is as if he had injected his metrical processes with toxins, calculated to deform them insidiously from within but at different rates.

Throughout 'Désordre' the right hand plays only (heptatonic) white notes, the left hand (pentatonic) black (see ex.1). The study proceeds as a continuum of quavers grouped asymmetrically, mostly in patterns of three and five. The main notes of each group are accented, doubled at the octave and prolonged in order to project more spacious melodic lines in both hands, a technique whose ancestry stretches back to Schumann and Chopin. Ligeti's melodies, however, are not legato but detached and jagged.

The melodies in each hand are of different lengths. The right-hand melody consists of three phrases (initially of four, four and six bars long) iterated a total of 14 times, but with gradually compressed metre and with each successive statement transposed up one step of the hyperphrygian mode. The first cycle starts on b', the second on c' (last note, second system in ex.1), the 14th on b''' two octaves higher, after which the music stops. The left-hand melody has a similar character but with four phrases per cycle instead of three (initially of four, four, six and four bars). This cycle, too, is repeated, here transposed each time basically through the interval of a fourth (compare the last three bars of ex.1 with the opening), although successive transpositions, in this case, are necessarily mutated by the minor third gaps in the pentatonic scale. Although right and left hands each have independent metrical cycles, as logical processes they look orderly and deterministic.

In fact, however, other deconstructive forces are at work. For the first three bars, the two hands sound rhythmically together, notated for convenience in eight quavers to the bar, but grouped and accented in the hemiola patterns of 3+5, 3+5, 5+3. Such agreement is short-lived. From bar four, by deleting one quaver from the right hand to make a 7/8 bar, and similarly thereafter reducing every fourth bar to 7/8, the top line begins to move progressively ahead of the lower, as Ligeti's barring shows. Also, the truncated 7/8 bar, by occurring every *fourth* bar, changes position in the repeating phrase structure, so modifying the hemiola rhythms in different places. Of course, right and left hand cycles move out of step more drastically since, as we have seen, the left-hand melody contains an extra phrase making its cycle four bars longer. The initial cycles in the two hands add up to 109 (31, 31 and 47) quavers in the right, but to 144 (32, 32, 48 and 32) quavers in the left. So, in almost no time at all, the metrical patterns of both hands move far apart.

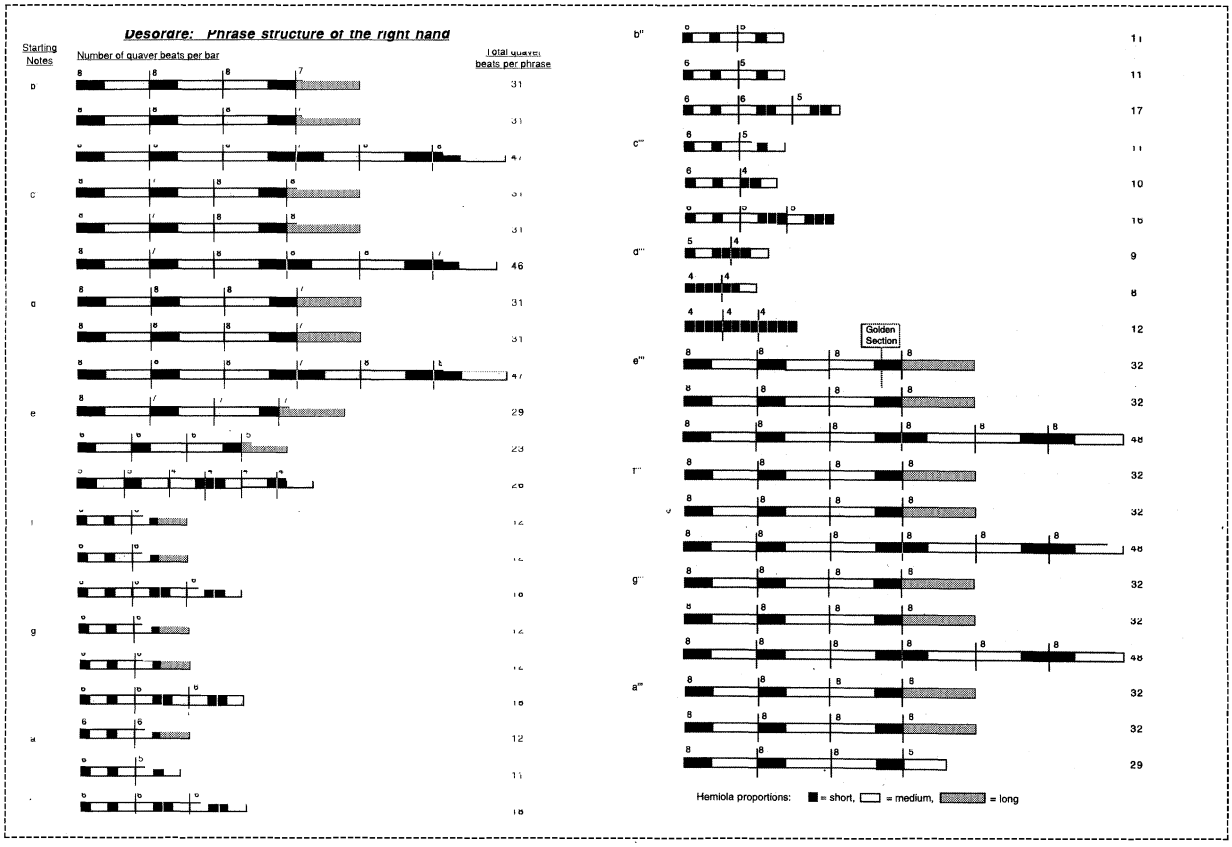
Any remaining stability is upset by yet another at first apparently small discrepancy whose effect is to turn orderly if frenzied hemiolas into a headlong stampede of incessant accents. By a further deletion of quaver beats, and consequent compression of bar lengths and phrase durations, the rhythmic cycles are repeatedly squeezed. My diagrammatic representation in ex.2 shows how this operation affects the right-hand phrase structure of the whole study and how, by the third phrase of the tenth cycle, every note has been reduced to its minimum possible duration (i.e quavers) and the prevailing hemiola character completely eliminated.

The restoration of the 3+5 Bulgarian rhythm of the opening occurs close to the golden section, after which the original bar length of eight quavers is stabilised for 18 bars in both hands before they begin to diverge again. Now it is the right hand which remains constant, and the left which pulls away, this time by the *addition* of quaver beats extending every third bar to nine quavers. The way this 9/8 bar shifts within the left-hand cycle, and its runaway abduc-

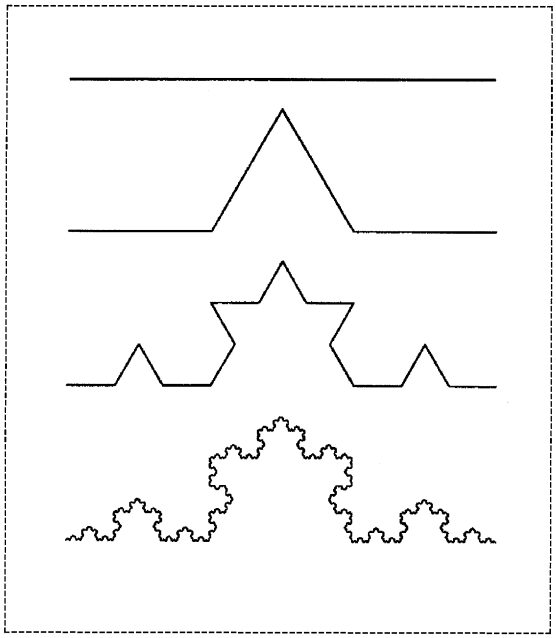
5. Ligeti in conversation with Heinz-Otto Peitgen and Richard Steinitz, Huddersfield Festival (November 1993).

Ex.1: 'Désordre', beginning

Ex.2: 'Désordre', diagrammatic representation



Ex.3a: Koch curve



tion of extra quavers during the final six bars of the study is typically capricious. What remains constant throughout the study is the ascending scalic character of the quaver accompaniment, whose vigorous counterpoint provides much of the music's tremendous ebullience.

'Désordre', therefore, celebrates the excitement of living dangerously; its sense of reckless acceleration is like the heady exhilaration of riding a roller-coaster. On the surface the music is wonderfully homogeneous, but underneath are hazardous currents as Ligeti pursues structural logic to the point where it becomes increasingly anarchic, where orderly phrases become frenzied and panic-stricken, racing each other towards chaos and destruction.

The resizing of the same shape (in this case, phrase structure) through continuous iteration is a fractal characteristic. Repeating an operation over and over again, on ever smaller scales culminates almost inescapably in a self-similar structure, a classic example being the 'Koch curve' proposed in 1904 by the Swedish mathematician, Helge von Koch (see ex.3a), in which smaller and smaller equilateral triangles are erected over the middle third of shorter and shorter straight lines. Starting out with a triangle and iterating this process produces the Koch flake (see ex.3b). Aside from its relation to this elegant structure, 'Désordre' also demonstrates how tiny discrepancies quickly breed confusion. Albeit in microcosm and in a finite context, Ligeti illustrates a fundamental idea of chaos – that small differences in initial conditions rapidly lead to dramatic outcomes. This is the characteristic of deterministic chaos first recognised by Henri Poincaré in 1903, rediscovered in 1961 by Edward Lorenz whilst studying computer models of 'unpredictable' weather patterns, and which have obsessed certain mathematicians and scientists during the 1970s and '80s.

LIKE 'DÉSORDRE', 'Touches bloquées', the third étude, is built on a quaver continuum; except that, in this study, some of the keys touched don't sound, being already depressed by the other hand.[6] Ligeti here returns to an earlier experiment, the second movement of *Monument – Selbstportrait – Bewegung* (1976), whose novel techniques clearly deserved further exploration and whose notational system is also adopted in the study. Although physically the pianist plays incessant quavers, what we hear is a perforated music like a moth-eaten cloth. The audible effect recalls the asymmetrical complexity of Conlon Nancarrow and the score itself is like a pianola roll peppered with tiny holes – holes which increase in number as the music proceeds. Irregular bar-lengths add to this impression. Although the study has no written time-signature, bar lines coincide with phrase patterns and therefore (unusually in Ligeti) have some accentual significance. At first, 7/8 and 8/8 bars alternate to coincide with the descending and ascending phrases, but soon the music grows more elastic so that, overall, the study contains bars of almost every length between two and twenty-two quavers! Near the middle, there is an impetuous episode which suggests that the whole study should not be taken too seriously and that the poor pianist's apparent inability to maintain regular quavers only compounds his seemingly unsuccessful efforts at playing in octaves – for such is the effect of the hilariously frantic *Poco meno presto* episode (with its composed 'smudged' octaves) on page 14 of the score.

What of the dynamical forces at work in this piece? Basically, there are four: firstly, harmonic expansion in which successive tonal aggregates are defined, only to be veiled again through 'blocking'; secondly, a gradual emergence of brief legato phrases; thirdly, enlargement of the 'holes' as more keys are blocked; and, fourthly, the development of a fragmentary counterpoint of isolated quavers, dropped into the holes left by the other hand. These staccato notes later assume a different function as they either reinforce or counteract the impression of accents produced by the increasing number of legato phrases. And, whereas their choice of pitches at first echoes key pitches in the continuum, soon they acquire their own linear independence, the texture becoming more dense until the end, where everything falls away.

For the first 17 bars, all silent 'gaps' in the continuum are of single quavers. Gradually more notes are blocked, and the gaps come in pairs, then threes, until towards the end are long chains of inaudible ostinatos, sensed only by the ghostly patter of oscillating fingers tapping the ivory. The texture becomes increasingly threadbare, like a carpet worn through to its web, and one is reminded of the way in which the background fabric is exposed to view in the skeletal, see-through music of Lachenmann.

6. Perhaps Ligeti learnt the piano using Dohnányi's *Essential finger exercises for obtaining a sure piano technique*, in the first of which, three digits hold down the same keys (C, D and E) during an exercise to strengthen the fourth and fifth fingers.

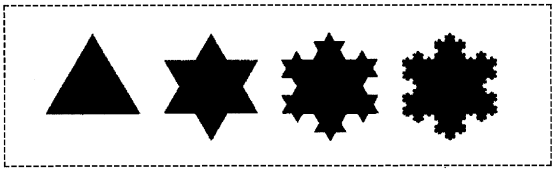
THE FOURTH étude, 'Fanfares', is a splendidly engaging piece that should be in the repertoire of every adventurous pianist. Its opening bars strike one as disarmingly ordinary; they could easily be mistaken for one of Bartók's *Six dances in Bulgarian rhythm*. Overall, however, this study is an impressive demonstration of the difference between plagiarism and originality. Could anyone except Ligeti have evolved, from this routine beginning, music so ingenious and dazzling? Such is his irrepressible invention that the casual listener could be forgiven if he failed to notice that the whole study is composed around an unchanging ostinato repeated bar after bar, with only octave transpositions, no less than 208 times.

For the very reason that he uses familiar materials and procedures, the composer's resourcefulness in marrying intellectual virtuosity with expressive elegance couldn't be clearer. Yet the melodies are surprisingly euphonious, the phrase structures neatly proportioned, the harmonies audaciously consonant. Surely we have before us a postmodern Ligeti? Where now the revolutionary daring of *Apparitions*, the extravagant conceit of *Aventures*, the iconoclast whose mischievously named *Poème symphonique* for a hundred metronomes so discomforted the burghers of Hilversum at the opening of their City Hall? Is this the once bad wolf now cavorting in the fleecy triads of diatonicism?

Such accusations can be countered by observing that, throughout this study, Ligeti pursues a characteristically eccentric obsession. 'Fanfares' explores every aspect of a singular vision, driving onward relentlessly to the point where we experience something new and unique; it is certainly not the comfortable path of reinstating the familiar. Nor is euphony for Ligeti an aesthetic position, as it is for others, but rather the incidental byproduct of a particular purpose, appropriate to one set of premises, not to another. In any case, Ligeti manages to use consonant harmony and yet remain radical through the sheer speed and rhythmic intricacy with which he hurtles unrelated triads before us.

With its breathlessly insistent ostinato, 'Fanfares' is the archetypical moto perpetuo. Above or below its 208 ostinato repetitions gallops a bright, sonorous motif, a trumpet-like fanfare mostly of dyads and triads but occasionally unlaced in dancing figurations. At each appearance, this motif is melodically and rhythmically varied, generally alternating between right and left hand. Habitually, it contains four melodic phrases whose symmetry evokes folk, even Viennese classical antecedents. The ostinato itself contains two identical ascending tetrachords an augmented fourth apart, whose tritonal axis is matched throughout the rest of the texture by a Bartókian balance of diatonic and chromatic ingredients, here exceptionally favouring the diatonic and consonant. All the first 45 chords are consonant (see ex.4). Indeed, virtually the whole piece is built on concords, interspersed with a sprinkling of diminished triads and seventh chords. Moreover, the norm is for major triads to articulate the motif when it is in the right hand, minor triads when it is in the left. Only towards the end does a more dissonant bitonality prevail.

Ex.3b: Koch snowflake



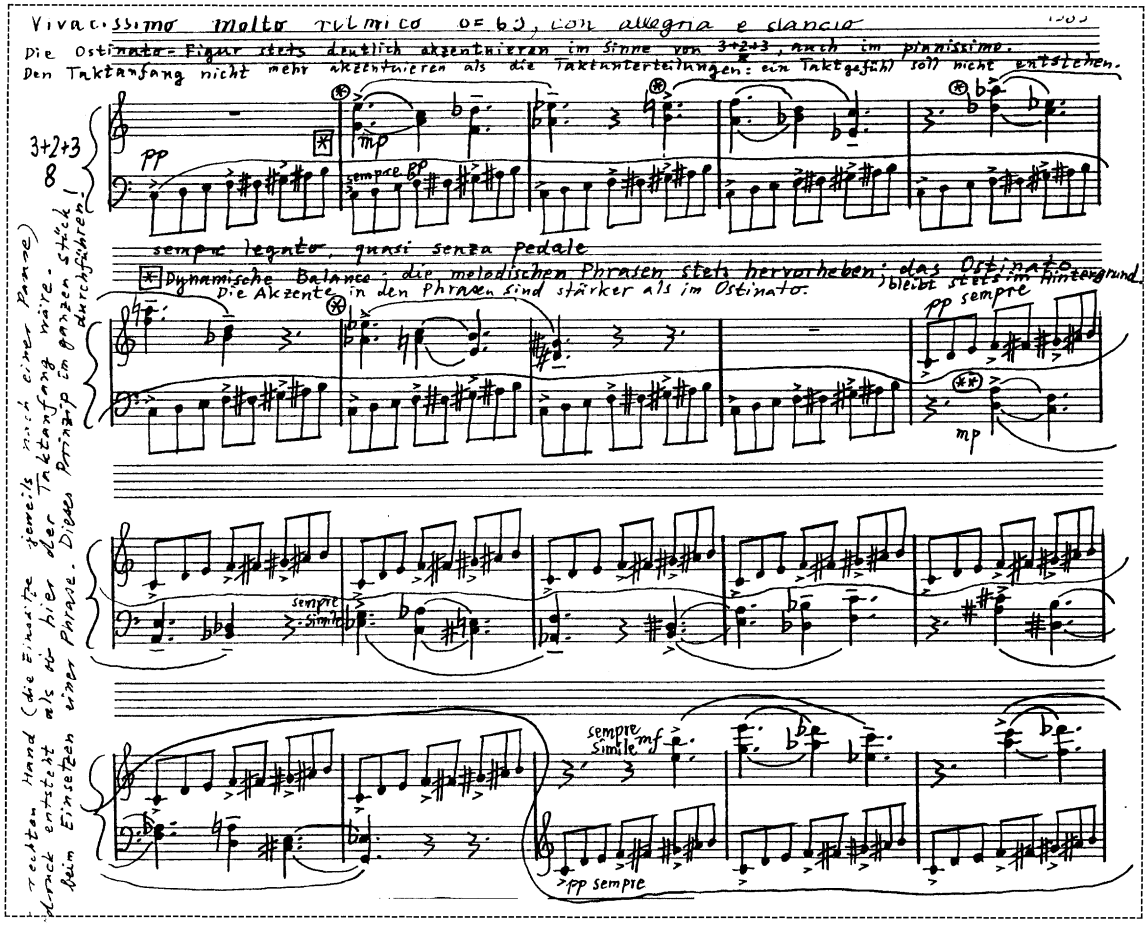
The first complete statement of the main melodic motif is in the right hand and consists of four phrases, each of four chords, all of them major. They are, in fact, all the major triads in the various inversions which it is possible to construct on the first, fourth and sixth notes of the ostinato, i.e. in step with its 3+2+3 hemiola character (see ex.4). In this intriguing interplay between orderliness and invention, some things are surprisingly systematic. Successive variants not only change hands, but exchange major and minor modes:

RH bars 2–8 16 chords consisting of 9 different *major* triads & their inversions
LH bars 10–17 18 chords consisting of 13 different *minor* triads & their inversions
RH bars 18–26 20 chords consisting of *major* triads & inversions, plus seventh chords
LH bars 28–36 23 chords consisting of *minor* triads & inversions, plus diminished chords
RH bars 37–45 23 chords consisting of *major* triads & inversions, plus seventh chords

Despite this exceptional emphasis on consonance and chordal categories, Ligeti's rapid juxtaposition of triads from unrelated keys sounds delightfully piquant. Indeed the overall tonality of the study is much more sophisticated than such a systematic technique might imply. Earlier, with reference to 'Désordre', I suggested that a 'combinatorial' tonality results from the vertical superimposition of two different modes. Here, in 'Fanfares', combinatorial tonality emerges from the speed of the horizontal sequence, which compresses individual diatonic components as if we were hearing them together. To this pantonal mixture, we should add the tritonal contribution of the ostinato (with its two tetrachords related by an augmented fourth), and the straining apart of the contrapuntal lines. The whirl of these many harmonic ingredients around the rotating spindle of the ostinato sets up centrifugal forces, as harmonies are spun outwards above and below the centre, at times flying off to the extremities, as happens on page 21 of the score.

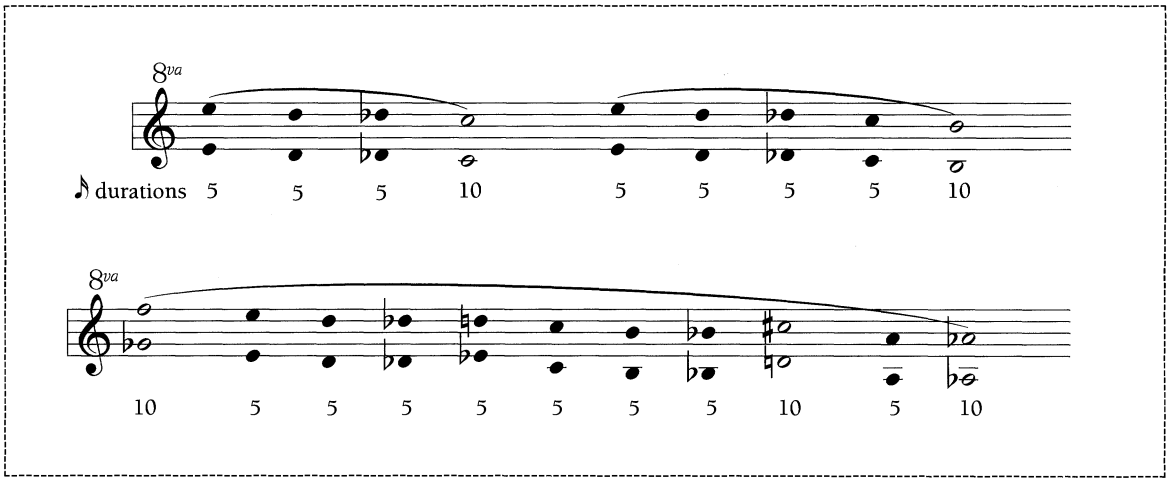
An approximate count reveals that there are a total of around six-hundred chords in 'Fanfares'. Evidently, since the study lasts little above three minutes, we hear on average nearly two-hundred chords per minute! Individually, the majority are consonant

Ex.4: 'Fanfares', beginning



Ex.5: from 'Fanfares'

Ex.6: the 'lament' theme of 'Automne à Varsovie', with its durational scheme



(but less so towards the end). At speed, the summation of all these ingredients including their overtones creates an illusion not only of some indefinable supratonality but of exotic temperaments. As Ligeti worked on the études, new, imaginary tuning systems began to occur to him, strange, uncharted sonic terrains which he was consciously to explore in étude no.7 and, later, in the Violin Concerto.

If pantonal synthesis characterises the harmony, the real thrust of this study is once again rhythmic. At its heart is shifting accentuation, basically the metrical expansion and contraction inherent in the 3+2+3 division of an 8/8 metre. The variety of cross-metrical relationships which Ligeti manages to invent is legion. Ex.5 shows left-hand groups of effectively 9/8, then 6/8, then 6/4, then a chain of dotted crotchet units, all against 8/8 in the right hand. Then there is the notated deceleration of the chordal fanfare motif towards the end of the piece, a process similar to the prolongation which ends 'Désordre'. Thus, although 'Fanfares' uses quite ordinary material, the result is never commonplace. One feels that some earlier 20th-century composers might have written this piece. Yet none did. It needed the mentality of a Ligeti – with his East European folk-roots, his obsession with polymetrics and Dadaistic delight in improbable logic – to treat the ever-shifting relationship between immutable ostinato and melodic variables to such a dazzling acrobatic display.

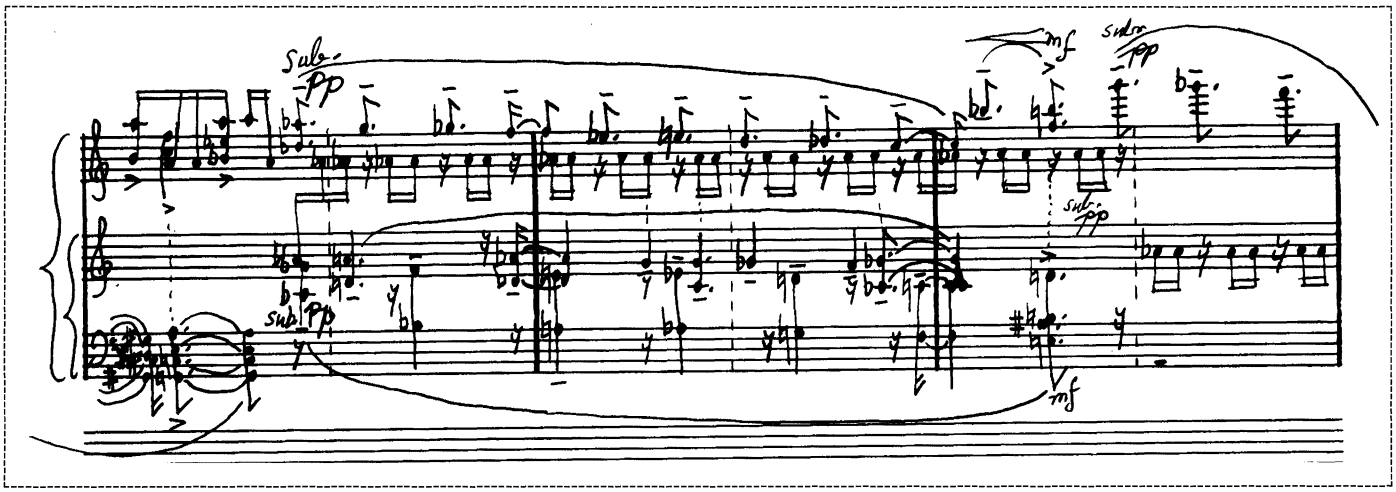
THE LAST in the first book of études, 'Automne à Varsovie' is also the longest and, perhaps, the most far-reaching and haunting. Like others, it explores many different manifestations of a single concept, that of superimposing one or more melodies at different speeds against a background of continuous pulses, here notated as semiquavers. Its asymmetrical layers are ever-fluid, the combination of shorter or longer subgroups of semiquavers with slower and faster melodies being handled with tremendous skill and sensitivity. It seems extraordinary that Ligeti can get away with basing the music so predominantly on descending chromatic scales, stock-in-trade of 19th-century melodrama, yet produce a study so personal, distinctive and profound. Certainly, the eighty-or-so chromatic phrases treading their weary descent through this study – like tired labourers returning home, united in resignation and only distinguishable by the speed of their gait – impart an enduring bleakness to the music. So many phrases, always descending yet never seeming to get lower, call to mind not only the Shepard-Risset glissando (see my first article), but also the infinite melancholy of Maurice Escher's faceless figures, toiling for the umpteenth time around an endless staircase that gets neither higher nor lower.[7] Ligeti has repeatedly stressed the affinity between his music and Escher's enigmatic drawings; but this study also embodies anxieties stemming from the political unrest in Poland during the early 1980s (hence the dedication 'to my Polish friends' and the Chopinesque character of its arpeggiated figurations), concerns which are also at the heart of Nono's *Diario polacco 2* of 1982.

The technical fascination of the music lies in the relationship between the continuous semiquavers and the polymetric canonic entries of the melody, whose phrases glide through every register, above and below as well as weaving their way across or inside the semiquaver patterns themselves. Most often the semiquaver background is grouped in fours, but other groups (of two, three, five, six, seven and eight) are used to explore new polymetric situations. In three places the whole texture is drawn into accelerating crescendos. In the second and third crescendos, groups of three are reduced to two and then to scalic semiquaver runs. By contrast, the first crescendo expands, fives growing into sixes, sevens, then eights and so on, until suddenly arrested by the unexpected frozen stillness of the central section from which all semiquavers have been numbingly expunged.

Whilst the metrical character of the continuum fluctuates, the melodies heard in relief against this semiquaver background are more formally structured, choosing their tempos also from durational units of three, four, five or seven semiquavers. Each

7. See 'Ascending and descending', in MC Escher: *The graphic work* (Berlin, 1990).

Ex.7: from 'Automne à Varsovie



8. From Keats's 'Ode to a nightingale', a poem to which Ligeti said he returned many times during the composition of *Lontano*.

is of three distinct phrases, the third always longer than the others, that is until their separate identities become subsumed in a flowering of mensural canons. Each melody sticks rigidly to its chosen durational unit – which may be all dotted quavers for instance – except that prominent notes, generally the last of each phrase, are of exactly double duration. Thus, for example, the first right-hand melody contains three phrases measured in five-semiquaver units which are laid out as follows:

Phrase 1 (♪ duration units)	5 5 5 10
Phrase 2	5 5 5 5 10
Phrase 3	10 5 5 5 5 5 5 5 10 5 10

Their subsiding drift adds to the lachrymose effect of this 'lament'. The first two phrases share starting pitches but the second, being one unit longer, ends a note lower. The third starts higher but twists as it falls chromatically to end lower still (ex.6). As melodies are increasingly overlaid, the sense of aspiring higher yet falling lower – as if unable ultimately to gain either height or depth – becomes more and more paradoxical and disturbing. Furthermore, clearly identifiable variants of these melancholy lines (still typified by their three-phrase structure) occur in other works by Ligeti. They belong to an archetypical concept of passacaglia, founded upon the great laments of Monteverdi and Purcell, whose reemergence in virtually all Ligeti's music of the last two decades I propose to investigate in my final essay.

From bar 18, melodies begin to be superimposed at different tempos. First an alto part hurries by in dotted quavers, overtaking the slower pace of the right hand which remains here in units of five and ten. Soon three, or even four melodies (some of them doubled at the perfect fifth) are heard together at different speeds as in the polymetric counterpoint at the top of page 35, where four descending chromatic lines in durational units of three, four, five and seven are heard against a semiquaver background grouped in threes (see ex.7).

But how to halt, how silence these doleful personnages endlessly trudging up and down? Ligeti's solution is to compound their confusion by means of an increasing anarchy of pitch and rhythm, until everything collapses in a thunderous descent into the bottom octave. The strangest moment, however, is not the end but that chilling emptiness in the middle, where the semiquavers unexpectedly stop and we are left with the melody alone, each of its three phrases doubled at the tritone but at the extremities of the keyboard five-and-a-half octaves apart. It is another of Ligeti's mysterious voids, like the gaping hole in *Lontano* where the whole orchestra falls silent leaving only the disembodied whistle of a high violin harmonic above the tuba's lowest note.

Adieu! adieu! thy plaintive anthem fades
Past the near meadows, over the still stream,
Up the hill-side; and now 'tis buried deep
In the next valley-glades:
Was it a vision, or a waking dream?
Fled is that music:– Do I wake or sleep?[8]