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Paul Archbold

Commentary on works

Folio of compositions:

- ~~—1.~~ **Fragments after Chiyo**
- ~~—2.~~ **Elements of Iridescence**
- ~~—3.~~ **...and the unseen eyebeam crossed...**
- ~~—4.~~ **Of crossed destinies**
- ~~—5.~~ **Chiaroscuro**
- ~~—6.~~ **Études en mouvement**
- ~~—7.~~ **Pas de deux**
- 8. The Land Solos**

**Submitted as part of a portfolio for the degree of PhD in
Music Composition, University of Durham**

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Paul Archbold

Submission for the degree of PhD in Music Composition

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List of Works

Fragments after Chiyo
1991

mezzo soprano, flute (doubling alto flute),
cello and piano
duration 6 minutes

Elements of Iridescence
1991

flute (doubling piccolo), violin, viola, cello²
duration 5 minutes

...and the unseen eyebeam crossed...
1992

chamber orchestra
flute (doubling piccolo), oboe, cor anglais,
clarinet (in A) doubling bass clarinet in B $\flat$,
2 bassoons
2 trumpets (in C), 2 horns (in F)
1 percussion = marimba, vibraphone,
2 suspended cymbals, claves
strings - at least 6.5.3.3.2 players
duration 8 minutes

Of crossed destinies
1993

harp
duration 12 minutes

Chiaroscuro
1996

solo double bass and strings 3.3.2.2.0 players
duration 10 minutes

études en mouvement
1992-7

piano
duration 13 minutes

Pas de deux
1997

viola and piano
duration 10 minutes

The Land Solos
1997

clarinet in B $\flat$ doubling bass clarinet in B $\flat$
clarinet in A doubling bass clarinet in B $\flat$
2 tenor trombones (in B $\flat$ /F)
percussion = Thai Gongs (D $_3$ -F $\sharp_4$), vibraphone,
glockenspiel, Japanese Temple Bell (in C)
duration 23 minutes

Preface

The attached portfolio is a selection of works that I have composed since October 1990. The selection includes most of the concert music written in this period but excludes the incidental music that I wrote for three productions of Astra Theatre (*Woyzeck*, *Macbeth* and *The White Scourge*), and incidental music to *The Beggar's Opera* (written for the St Magnus Festival, Orkney). Two chamber works, with which I was never satisfied, are also omitted: *Catch for Three* for three oboes, composed for a project for children with special needs and *Chimaeric Visions* for free bass accordion and percussion.

The group of works submitted display several common characteristics; a fascination with instrumental colour and the variety of blends and hues available within an ensemble, a concern for shaping gesture at a motivic and a dramatic level, an interest in metaphor and metonymy in language and music and the possibility of drawing a connection between both art forms, the role of composition processes and structures in determining the perception and comprehension of a work and finally the engagement of the performer in the realisation of the 'virtual' music of the score. This commentary is intended to explore these issues in relation to my work but cannot, for reasons of scope and space, be an authoritative dissertation on each subject. I am aware of the dangers of appropriating terms and concepts from disciplines outside music and have attempted to outline the points of contact in my introductory chapter.

For each work, I will outline the literary and musical influences that I consider most significant. I will then proceed to give a description of the character of the work and offer a partial analysis discussing some of the work's characteristic features. The commentary does not attempt to 'translate' the music into prose and all analysis can remain only partial; music is a temporal art whose structures are not identical with those of language. In some respects music is less precise than language as it lacks any concept of a 'dictionary', yet our experience of music is so allusive, coercing visual, tactile and sonaesthetic experiences in addition to distinct aural impressions into our memory, that it can be as rich. The score must stand as a 'virtual' work, a text that suggests and controls its interpretation.

Preamble : the Reader in music

A text is not a text unless it hides from the first comer, from the first glance, the law of its composition and the rules of its game. A text remains, moreover, forever imperceptible. Its law and its rules are not, however, harbored in the inaccessibility of a secret; it is simply that they can never be booked, in the *present* into anything that could be rigorously be called a perception. (Derrida, 1981: 61)

The opening paragraph of Derrida's extended essay 'Pharmakon' could equally apply to any work of art, be it a painting, a building, a play or a musical work. Artists generally talk about an 'essence' which is present in a 'work' which can only be revealed with careful and patient study. Whether such study takes place in the privacy of a study or the immediacy of a public performance is irrelevant to Derrida. Neither the spoken word (or by extension any spontaneous act e.g. an improvisation) nor the written text (as a book or as a score) are closer to the 'authentic' self of the creator and neither are they free from a rigorous mis-reading which can always reveal a 'counter-work'.

Plato considers writing a drug (*pharmakon*), which in the dialogue between Socrates and Phaedrus, is revealed as both a cure (preserves memory) and as a poison (promotes 'false' knowledge, knowledge that has not been revealed). Derrida argues that the *pharmakon* is equally present in a spoken or written text and questions the possibility of achieving an 'essential' meaning. Each interpretation introduces terms which need further interpretation, and since these interpretations can be multiple, meaning is continually 'deferred'. Interpretation reveals the text as an unending labyrinth, a structure without 'centre'.

Umberto Eco, by contrast, is unwilling to allow a work to expand and vanish in an infinite play of signifiers. He posits a 'Model Reader', created by the text, with which the 'Empirical Reader' engages and that limits the text's field of interpretation.

A text is a device conceived in order to produce its model reader. I repeat that this reader is not the one who makes the 'only right' conjecture. A text can foresee a model reader entitled to try infinite conjectures. The empirical reader is only an actor who makes conjectures about the kind of model reader postulated by the text. Since the intention of the text is basically to produce a model reader able to make conjectures about it, the initiative of the model reader consists in figuring out a model author that is not the empirical one and that, in the end, coincides with the intentions of the text. (Eco 1995: 64)

A similar strategy is advanced by Wolfgang Iser, but here it is the interaction between the written text and the empirical reader that engenders a dynamic process, a process that produces a work richer by virtue of its implications.

...the written text imposes certain limits on its unwritten implications in order to prevent these from becoming too blurred and hazy, but at the same time these implications, worked out by the reader's imagination, set the given situation against a background which endows it with far greater significance than it might have seemed to possess on its own.
(Iser in ed. Lodge, 1988: 213)

These arguments applied to the act of reading can equally applied to poetic origination. The author can be seen as a convenient term for the accumulation of fragments torn from other cultural products.

... the author is not an indefinite source of significations which fill a work; the author does not precede the work, he is a functional principle by which, in our culture, one limits, excludes, and chooses; in short, by which one impedes the free circulation, the free manipulation, the free composition, decomposition and recomposition of fiction...The author is therefore the ideological figure by which one marks the manner in which we fear the proliferation of meaning.
(Foucault in ed. Lodge, 1988: 209)

At its most generous, this line of enquiry investigates the author as an active misinterpreter of other works.

...poems, I am saying, are neither about 'subjects' nor about 'themselves'. They are necessarily about *other poems*; a poem is a response to a poem, as a poet is a response to a poet or a person to his parent. Trying to write a poem takes the poet back to the origins of what a poem *first was for him*, and so takes the poet beyond the pleasure principle to the decisive initial encounter and response that began him...To live, the poet must *misinterpret* the father, by the crucial act of misprision, which is the re-writing of the father.
(Bloom in ed. Lodge, 1988: 247)

This, however leads to a problem of mimesis: to what extent is the 'meaning' of a work predicated on that of its predecessors. Can there be an 'intrinsic' meaning to a work? If there can be no intrinsic meaning, can later works accrue meaning? The 'essence' of a work is revealed as an absence.

Literature involves the voiding, rather than the affirmation, of aesthetic categories. One of the consequences of this is that, whereas we have traditionally been accustomed to reading literature by analogy with the plastic arts and with music, we now have to recognise the necessity of a non-perceptual, linguistic moment in painting and in music, and learn to *read* pictures rather than to *imagine* meaning... (De Man in ed. Lodge, 1988: 362)

A text can also exploit an 'absence' in the foreground: by employing invented words which allude to other words but elude definition or, as in Mallarmé's *Livre*¹, (Mallarmé, 1957) by using the blank space of a page to disrupt and postpone 'meaning'. It is with such qualities of absence that Ferneyhough plays in his *Second String Quartet*. (Ferneyhough, 1982)

This piece is about silence - not so much the literal silence (although this, too, is an obvious feature of the opening section) but rather that deliberate *absence* at the center of musical experience which exists in order that the listening subject may encounter itself there.

Since all forms of silence can only be approached via their own proper negatives, the organisation of this quartet concentrates on the definition of several, ever-tighter concentric paths focused upon this core of stillness. (Ferneyhough, 1996:117)

Derrida is uncomfortable with such a 'centre' to a work. As 'structure' and its attendant concepts 'surface' and 'skeleton' are borrowed from another field, that of architecture, a 'centre' is a simplifying concept, a point of orientation around which forces are in balance.

...structure- or rather the structurality of structure- although it has always been at work, has always been neutralised or reduced, and this by a process of giving it a center or referring it to a point of presence, a fixed origin. The function of this center was not only to orient, balance and organize the structure - one cannot in fact conceive of an unorganized structure - but above all to make sure that the organizing principle of the structure would limit what we might call the *play* of the structure. By orientating and organizing the coherence of the system, the center of a structure permits the play of its elements inside the total form. And even today the notion of a structure lacking any center represents the unthinkable itself. (Derrida in ed. Lodge, 1988: 109)

Derrida has shifted the metaphor of 'structure' to another domain, say that of mathematics or chemistry. A chemical structure such as a crystal lattice is held together by forces acting between the component atoms. No centre is required - the lattice is identical at all equivalent points².

1 (Mallarmé, 1957). *Livre* was written in but not published until 1957.

2 There are however difficulties in calculating forces at the edge of a crystal lattice.

It is therefore possible to distinguish a 'structure', a set of relationships between objects which may not be complete, from a 'form', the overall appearance of the composite.

First, the term 'structure' suggests details, connections in a small space; the word 'form' on the other hand...[suggests] ... relations over wide stretches. Form is a relative concept; a motif is the form of its notes, a theme the form of its motifs...Secondly the expression 'structure' can be related to abstract components, to pitches or time values separated from the remaining sound qualities...What is meant by the term 'form' on the other hand, is a concrete musical shape in which pitch, duration, dynamics and timbre interact...a row is a structure but not a form. (Dahlhaus in ed. Katz and Dahlhaus, 1992: 810)

Ligeti draws attention to the spatial origin of the term 'form' and produces a general concept of morphology.

Form is originally an abstraction from spatial configurations, from the proportions of objects being extended in space. Applied to nonspatial areas - the form of poetry or music - 'form' is an abstraction of an abstraction. Corresponding to the provenance or the concept, spatial aspects cling to forms that unfold in time...The syntactic relations of the musical aspects are ...transposed by our imagination into an implied space, whereby the individual aspects - elements, shapes, segments, parts etc. - have the effect of places or objects, the complete progression of musical events thus appearing as it were architecture in space...It is the interaction of association, abstraction, remembrance and prognosis which elicits in the first place the nexus of relations that make the conception of musical form possible. (Ligeti in ed. Katz and Dahlhaus, 1992: 782-3)

In so doing, Ligeti distinguishes 'music' from 'musical form'.

'music' would thus be the purely temporal process, 'musical form', conversely the abstraction of the same temporal process, in which the relation within the process are no longer temporal but present themselves as spatial; musical form arises only when one retrospectively views music's course in time as 'space'. (Ligeti in ed. Katz and Dahlhaus, 1992: 783)

Ferneyhough is aware of a further abstraction where one perceives a 'tactility' of form.

Even though when talking about 'tactility' in musico-temporal terms, one is speaking with connotational rather than denotational intent, I still feel that the term serves to identify an experience most of us have occasionally had. When we listen intensively to a piece of music there are moments when our consciousness detaches itself from the immediate flow of events and comes to stand apart, measuring, scanning, aware of itself operating in a 'speculative time-space' of dimensions different from those appropriate to musical discourse in and of itself. We become aware of the passing of time as something approaching a physical, objectivized *presence*. (Ferneyhough, 1996: 43)

It is the interplay of such sensations with more immediate perceptions and more distant recollections that modify our experience of the flow of time. Elliott Carter quotes Charles Koechlin who categorises four kinds of time:

1. Pure duration, a fundamental of our deepest consciousness, and apparently independent of the external world : life flows by...
 2. Psychological time. This is the impression we have of the above duration according to the events of our existence: minutes that seem centuries, hours that go by too quickly... That is, duration relative to the circumstances of life.
 3. Time measured by mathematical means; all of which depend on visual methods-sand clocks, clocks, chronometers...
 4. Finally, I would like to talk of 'musical time'...Auditory time is without doubt the kind that comes closest to pure duration. However, it appears to have the same connection with space in that it seems to us measurable (by ear) and divisible...Besides as concern the measure of this (musical) duration, the role of musical memory possess an importance that seems to escape many.
- (Carter, 1977: 343-65)

Carter adds as a commentary to 'musical time' a passage from Suzanne Langer.

But the existence of time is anything but simple. It involves more properties than 'length' or interval between selected moments; for its passages have also what I can only call, metaphorically, *volume*...But even its volume is not simple; for it is filled with its own characteristic forms, as space is filled with material forms, otherwise it could not be observed and appreciated...The primary illusion of music is the sonorous image of passage, abstracted from actuality to become free and plastic and entirely perceptible.

(Carter, 1977: 343-65)

In order to mould the passage of time, Ferneyhough proposes a definition of the term 'figure'

as an element of musical signification composed entirely of details defined by their contextual disposition rather than their innate, stylistically defined referential capacity. The synchronic is replaced by diachronic succesivity as the central mode of 'reading' musical states, for the reason that a progressive, accretional definition of musical vocables is indispensable if a counterweight to the suffocating presence of historically concrete stylistic triggers is to be created.

(Ferneyhough 1995: 34)

In contrast to the continually unfolding figure, he defines a gesture as

'frozen force' to the extent that it stands for the expressive sentiment, for an absent exchange of expressive energies. The gestural vocable is, in many ways, comparable to the individual word, in that it may be usefully recognised in radically diverse context and manifested through a vast variety of individual nuance.

(Ferneyhough, 1995: 35)

It is perhaps with these concepts of unfolding figure and referential gesture that music comes closest to the concept of the metaphoric and metonymic poles elaborated by Jakobson for language.

The development of a discourse may take place along two different semantic lines : one topic may lead to another either through their similarity or through their contiguity. The metaphoric way would be the most appropriate term for the first use and the metonymic for the second, since they find their most condensed expression in metaphor and metonymy respectively.
(Jakobson in ed. Lodge, 1988: 57)

This interplay between unfolding figure, expanded and extended by exploiting a limited set of characteristics, and referential gesture, a dramatic contour which can connect diverse textures, is for me a rich resource. As in Ferneyhough's *Second String Quartet*, the structures by which the figure is defined can have differing degrees of perceptual permeability. However, I believe that it is important to distinguish between the transformational procedures which, when combined in an arbitrary fashion, create a musical idea and the idea's perceived characteristics. These approaches are not necessarily compatible and I will explore the issues raised by applying Nattiez's tripartition in my discussion of *Études en mouvement*.

To shape time, I adopt several approaches. The flexible notated rubato in, for example, *Of crossed destinies*, movement III, shapes psychological time by simulating the phrase rhythm of relaxed breathing. In other works a rigid time frame is used, allowing the music to proceed like a mechanism or functioning as a springboard for irregular accentuation.

The investigation of the characteristics of a limited number of pitch-class sets reveals a dense network of relationships which can be made audible by chord registration, pitch selection and orchestration. This limited domain allows for a subtle aural perspective, 'form' in Ligeti's abstracted spatial sense.

In creating music with such a set of limiting 'rules', I wish to encourage the listener to attend to details, to anticipate the future evolution of the work. Such is my intended 'Model Reader', a Reader not satisfied with surface morphology. However, as a composer, I cannot prevent diverse

and diverging readings of my music. Neither do I wish to do so, as my works are frequently my reading of and my response to another work, a critical mimesis.

In exploiting these multiple associations and implications the composer is faced with a bewildering array of possibilities; a dense wood awaits exploration. Eco suggest two ways of walking through such a wood:

The first is to try one of several routes (so as to get out of the wood as fast as possible, say, or to reach the house of grandmother, Tom Thumb, or Hansel and Gretel); the second is to walk so as to discover what the wood is like and find out why some paths are accessible and others are not.
(Eco, 1995: 27)

Fragments after Chiyo

Context of the work

This was the first work to be written at the University of Durham for a workshop given by the London Sinfonietta. The work build on features of two works that I had completed in the preceding year; the *Piano Sonata* and *Disenchanted Voices* for flute, viola and harp.

The *Piano Sonata* was a reworking of an earlier work, *Toccata*, and had caused me considerable difficulties. In the *Piano Sonata*, I wanted to intensify the dramatic gesture of the earlier work and sharpen the juxtaposition to create a discourse where the audience is aware of its emotional charge but frequently forced to view 'objectively'; a musical equivalent to the theatre of Samuel Beckett. As was consistent with this intention, the 'narrative' is frequently interrupted.

Flashbacks and flashforwards are impossible to achieve in music as music possess no signifiers to relative time frames; an idea happens at that instant and no other. Nonetheless, it is possible to mould the flow of time, creating textures that move too fast to be perceived completely or pauses which seem enormous in context. By keeping the 'material' in continuous transformation yet keeping its character elusive, I was able to shape the work as if time was plastic.

The architecture of the work was fixed with a detailed proportional plan, the 'material' composed from complex temporal canons and the gritty harmony characterised by chromatic saturation. The lines flow out of synchronisation, chords fragment or congeal. It is a violent work, where any attempt by the 'material' to gain harmonic or melodic character is vigorously suppressed.

Disenchanted Voices is a quieter work, building its harmonic 'material' from flute multiphonics which are re-interpreted by viola harmonics and harp pedal points before proliferating into a tapestry of interlinked lines. It was this attention to a clear yet somewhat exotic soundworld which became the starting point for *Fragments after Chiyo*.

Fragments after Chiyo

With *Fragments after Chiyo*, I wanted to write a work where each sound would be telling, with an orchestration so fragile it could almost 'tear'. The gestural characterisation and the use of juxtaposition however relates to the piano sonata.

In many works employing transformation procedures, the composer intends the change from one state to another to be as smooth as possible so that a precise moment of change is not noticeable. As a listener, I often find this approach unsatisfactory; either the 'material' has so little audible internal characterisation that the effect is one of aimless wandering or the process is so obvious that its execution is unnecessary and irritating. In this work the 'transformation' is not continual but presented in fragments which suggest states of a process, states which refer and allude to one another by exhibiting similarities and divergences.

The haiku

Harusame ya

Harusame ya
utsukushiu naru
mono bakari

Beni no tsuyu

Koborete wa
tada no mizunari
beni no tsuyu

Meigetsu

Meigetsu ya
itemo itemo
yoso no sora

Spring rain

Spring rain:
Everything just grows
More beautiful

Simply water

The dew of the rouge-flower
When it is spilled
Is simply water

The harvest moon

Autumn's bright moon
However far I walked, still far off
In an unknown sky

For this work I required texts which were very short and had very compact and clear imagery. The haiku were taken from (ed. Cosman, 1979). I had initially intended to set the poems in English and Japanese, but I was unable to find a copy of the original source with the Japanese text (Blyth, 1967) until early last year (1996). Kaga no Chiyo (Nun Chiyo or Chiyo-Jo) is one of the best known Japanese woman poets who took up orders on her husband's death. Although her poems are often commonplace and tinged with a superficial logic, this simplicity was ideal for my purposes.

The first movement sets all three haiku employing mimetic techniques which connect to a long tradition of word painting in song. Specific images in the haiku correspond to precise textures in my music, in many cases approaching the onomatopoeic.

falling rain	e.g. instrumental texture; I b1 (tutti) or II b1
growth	(i) harmonic reinterpretation, e.g. dyad becoming a multiphonic; I b3/4 (ii) phonetic transformation, e.g. the vowels; II b7-9
dew	(as water droplets sparkling in the morning light) e.g. piano, flute and cello; I b6
flowing water	e.g. piano; I b10
rain	(an erratic heavy shower) e.g. tutti; III b2-4
the moon	(cold clear piercing light) e.g. tutti; I b12
landscape	(the bleak and desolate landscape in which the poet walks) e.g. tutti; I b14-16

It is not important to me that these textures signify a word in an absolute sense, but only that an association is created in the mind of the listener.

The following three movements are commentaries on specific ideas in each haiku; growth (II), water as giver of life (III) and alienation (IV). As the haiku are associated with the seasons, I close the cycle by linking the fourth movement to the first.

As a word can be isolated from its context, probed in its phonological characteristics and put in relation with other words similar or disjunct in meaning, I wished to play with associations of musical textural types. There is a clear semantic relation between a droplet that adheres to a leaf having fallen as rain and a droplet of dew having condensed from a mist. In my mimetic texture for rain, I have adopted a convention of imitating a shower gently falling on an expanse of water. For dew, I have suggested a still droplet shimmering in light with a rocking arpeggiation of a static harmony. To transform between these states, I reduced the length of the rain fragment, gradually simplifying the harmony until a static chord could be revealed. In later arpeggiating this chord as an ascending figure, I could suggest water 'spilled'.

A second, diverse, reading is also possible of this text. The droplet on the rouge-flower will be red, the colour of blood, and the spilling of blood as simply water suggests the precariousness of all life. This (perhaps false) reading suggested the violent quasi-mechanical texture in II b5-7, where the 'rain' harmony is re-worked as block chords. The second movement becomes a commentary on life and death, summarised in the ironic re-interpretation of 'so beautiful' in II b14.

The third movement focuses on types of water - spring rain, rain water, dew. Most of the phonemes are extracted from "water" in several pronunciations. This is expanded with /j/, /k/, and /tj/ to enable a closer connection between the voice, the flute ramtongue notes and the cello scratch tones. There are two main textures; the erratic rainfall of b2-4 and the contrary motion scales of 'spilled' in b5. The rainfall takes on a mechanical quality in b14-16 leading to a new setting of 'spilled' at b18. This new setting, connected with 'moon', is much more intense.

The third haiku is a search for spiritual fulfilment. In the first movement, 'moon' is set as a cold bright light. In the fourth movement, I suggest a dark unsettling landscape of a late Autumn night, a scene observed in half shadows. The slow unfolding lines are surrounded by chromatic embellishments while the cello ascends unsteadily with increasing clarity. The opening bars allude obliquely to other textures; the piano low clusters resemble the 'water' phonemes of the second movement, the repeated $D\sharp_4$ of 'Autumn' relates to the setting of 'Spring rain' in the first, a connection made clearer in b5/6 where the 'simply water' texture leads via 'dew' to the brightness of the 'moon'. Memories of 'blood' reappear as fragments in b8-11, but are brushed aside by 'spilled' in b12. The passage from b13-17 elaborates on b14-17 of the first movement, but here 'moon' changes phonetically (cf. 'grow' in II) and is brought into contrast with the water imagery.

The final texture encapsulates the work; the piano transforms 'rain' into 'blood', while the extremely high cello trill (now a note, not a harmonic) becomes increasingly 'bright' and insistent. Finally the voice, flute and cello merge 'in an unknown sky'.

Elements of Iridescence

This work was written while I was attending Peter Maxwell Davies' summer course for young composers on Hoy in 1991. The elements of the title are the Platonic elements of water, air, fire and earth. In the work I attempted to capture some of my impressions of the island; a boat passing through an imaginary storm, the gales that howl across the island, the magical play of light reflected in the bay, and the harsh bare rock of the hills.

The resulting work, composed and performed in sections over several days, became an investigation into some of the musical relationships possible within the ensemble. The first two sections are essentially orchestral in their approach; the musicians contribute to a texture but there is little opportunity for the individual shaping of a line or interactive dialogue. The third section offers more solo lines and the harmony is more resonant. Despite its angular quality the fourth movement requires an interactive approach where short accented notes are gradually sustained so that the work takes on a glutinous quality from which the piccolo finally breaks free.

The most prominent sonority in the work is the chord $G_4, C_5, A\flat_5$ which derives from a flute multiphonic, often with the addition of $E\flat_5$. In the first section, this chord is 'torn apart' as each component interval is expanded or contracted in string glissandi. Furthermore, the string instruments drift out of synchronisation so that the chord cycles are obscured. The flute flies erratically within the pitches of the chords as if trapped, until it is submerged in the final sonority.

In the second section, chromatic clusters govern both the harmonies and the fragmentary melodic line. The string clusters, at the extremity of the instrumental ranges move from perceptible pitch to noise but are far enough above the flute that the flute is audible. Towards the end of this section, the chords become clearer, more expansive as the instrumental sonorities merge. The chord $G_4, C_5, E\flat_5, A\flat_5$ is the dominant sonority of the third movement where it serves as a point of departure and repose. The pitches used in each melodic line are limited but the vertical sonorities follow no consistent pattern. Like the third section which uses only a few gestures elaborated by extension of a melodic pattern, the fourth section is composed of a limited repertoire of chords which are cycled in new combinations and juxtapositions with the addition of new variants.

Harmonic Interlude

The pitch organisation of works in the twentieth century has been described and investigated in several ways. In general, composers have focused on specific techniques for generating or transforming pitch material. Analysts, who sometimes are also composers, have attempted to devise coherent systems which can uncover connections hidden in works and produce a clear framework against which works can be assessed.

In the early 1950s, Milton Babbitt published several articles³ that applied aspects of the mathematical discipline of set theory to the partitioning of the chromatic scale. In contributing to the foundations of a more general 12-tone theory than that found in Schönberg's pronouncements published at that time, Babbitt was able to investigate the music of Berg, Webern and Schönberg in more detail than had previously been possible. Babbitt bases his theory on the following premises:

- (i) The octave in which a pitch occurs can be considered irrelevant. Hence, notes doubled or replicated in different octaves can be ignored.
- (ii) As a pitch collection can be expanded in range without limit, the most distinctive form of the collection is the permutation where the range from lowest to highest pitch is at a minimum.
- (iii) The common characteristic of all permutations of a set is the distribution of intervals. As permutations of pitch collections sometimes replace an interval by its complement, it is appropriate to count all intervals but notate the complement when an interval is larger than 6 semitones.
- (iv) As the resulting interval vector is preserved by the simple transformation function of Inversion, the prime and inverted forms of a set are considered equivalent.

3 See for example (Babbitt, 1955)

Babbitt's early publications concentrate on the structure of several note rows, especially the hexachordal combinatorial rows of late Schönberg. But it is also possible to determine the intervallic properties of sets of any size and to investigate their similarities and differences. Such a classification of referential pitch-class structures was codified by Allen Forte⁴ as pitch-class-set analysis and independently exploited by Elliott Carter⁵ in much of his oeuvre. However the difference in approach between analyst and composer are revealing. Forte's early work starts from an investigation into how the early works of Berg, Schönberg and Webern achieve coherence before they adopt the structure of serialism. Carter wishes to exploit the inherent properties of the non-tonal chords discovered and shaped in the early works of these composers.

The differences between Carter and Forte now emerge. Forte is most interested in the interval distribution of sets, so he orders his set numbering by (decreasing) interval vector (with the anomaly of Z-related sets). Carter is interested in the registral disposition of sets so he keeps the symmetrical and asymmetrical sets separate.

Most of Forte's relationships, R_H , K_H , etc. depend on the idea of the complementary set: that once a collection has been presented, the composer (and perhaps also the listener) expects the chromatic scale to be completed with the appearance of the missing pitches. Forte takes this concept one step further, considering this 'virtual' complement to be part of the same conceptual structure as the original collection and hence considering the complement relevant at any transposition.

Carter's music is concerned with exploiting similarities and contrasts. Pitch collections are presented in a limited number of permutations and registrations which emphasise a particular structure; e.g. a melodic pattern may abound in one interval. Chords are often related by a common subset or presented as components of a registally fixed chromatic set. Carter is hence free to present simultaneously different musics which can be separated by their different harmonic characteristics.

4 see (Forte, 1973)

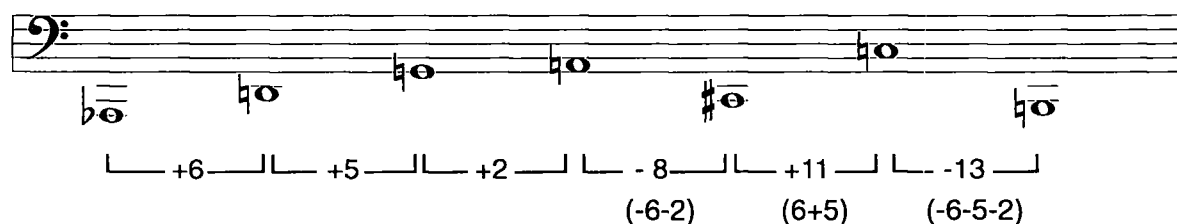
5 see (Schiff, 1983)

Many of the antecedents for this kind of thinking can be seen in the works of Alban Berg. Even in such an early work as the opus 3 quartet (Berg, 1910), Berg's motivic patterns are treated like pitch-class-sets. The opening motif is constructed with a knowledge of its intervallic properties. Berg's motivic working is essentially contrapuntal: the vertical sonorities are the result of the combination of distinct horizontal fragments, which are elongated and compressed but preserve their contour and intervallic content. This is unlike Schönberg's common practice where intervallic content is often rapidly and radically transformed, e.g. *Drei Klavierstücke* op11 no 1 (Schönberg, 1911).

Much interesting light can be shed on Forte's theory in analysing the first movement of Olivier Messiaen's *Et expecto resurrectionem mortuorum* (Messiaen, 1964). Most of the harmonic and melodic material is based on three 7-note sets (7-5, 7-Z12, 7-20). Yet the harmonic material is more severely restricted: set 7-Z12 is used in only one registration but transposed on five different bass notes; set 7-20 is used in nine registrations, each on a different bass note (see examples 1 and 2). Only two bass pitches, A $\flat$ and C $\sharp$, are coloured by both sets 7-Z12 and 7-20. Set 7-5 is used melodically. The three 7-sets are subsets of set 10-6, Messiaen's 'Mode 7'.

Only at the end of the first movement is complementation important; each six note chord is presented with its complement to produce a 12 note chord. However, the 6-sets are dissimilar in interval vector and are primarily connected by the important trichord subset, 3-11 (the minor triad).

However, there are features of this music which are not revealed with a pitch-class-set approach. The opening theme (set 7-5) is constructed from the sum of three source intervals: 6, 5, and 2 semitones. The absolute size of these intervals is important here; 5 semitones is not equivalent to 7 semitones by inversion.



Example 1 Messiaen *Et exspecto Resurrectionem Mortuorum*, movement 1, bars 26-35

a j f l d g c m e j b l h b k c b i d

Example 1 Messiaen *Et exspecto Resurrectionem Mortuorum*, movement 1, bars 26-35

a b c d e f g h i j k l m n

pitch class sets of the upper 6 notes of the chords

pitch class sets of chords including the bass note

Example 2 Pc-sets of the chords in the first movement of Messiaen *Et exspecto Resurrectionem Mortuorum*

Secondly, several commentators have likened the horn/clarinet chords to an organ mixture stop. A close examination of bar 26 of the first movement demonstrates that the chord is a 'chord of resonance' (fundamental plus tempered harmonics 9,11,13,15,17 and 19) and all the chords in this passage can be regarded as tempered approximations to the upper partials of a bass note⁶ (see example 3).

The importance of the registration of chords in Messiaen is even more striking in the bird-song episodes of the fourth movement. Several source pc-sets are used here, often closely related by a common subset. Frequently sets recur with the same spacing, or with one pitch transposed by an octave.

It is for these reasons that my use of Forte's theory in my composition differs from his text. The principle of complementation is rarely important to me, but I am concerned in making the structural properties of a chord audible. In several works, I create a network of chords by partitioning a large set or by creating 'hybrid' sets from a number of smaller parent sets. For each chord in the network, I calculate the interval vector, index vector and trichordal vector⁷ to determine the similarities between sonorities. The registration of chords is important to me, so I compare chords by their ambitus and intervallic realisation. As in some works of Carter, pitches are sometimes fixed in specific registers to create distinct harmonic fields.

6 The lowest note of the chord is usually, but not always, the fundamental of the harmonic series.

7 See appendix 1 for a definition of interval vector, index vector and trichordal vector

...and the unseen eyebeam crossed...

...and the unseen eyebeam crossed... takes its title from a passage from T.S. Eliot's *Burnt Norton*:

There they were, dignified, invisible,
Moving without pressure, over the dead leaves,
In the autumn heat, through the vibrant air,
And the bird called, in response to
The unheard music hidden in the shrubbery,
And the unseen eyebeam crossed, for the roses
Had the look of flowers that are looked at.
(Eliot, 1963)

Eliot's poem contrasts a protected innocent world of child-like freedom with a strictly determinist universe in which all events are causally linked, all decisions trapped in a hermetic system. The wonder of flowers is lost when they are observed, classified, understood. The explication of all diachronic processes reduces our world to a single deadly synchronic system. Only in an appeal to a transcendental God can Eliot escape from this conclusion, a possibility that he explores in the later poems of the *Four Quartets*.

I was fascinated by how the way we look at the world transforms the world. We can never undo a perception; once an observation is embedded in our memory, we, and our world, are changed. Yet memory itself is fallible, and in its failing our self is altered.

In the first of *Six Memos for the Next Millennium*⁸, 'Lightness', Italo Calvino discusses this objectification of perception in his discussion of Ovid's telling of the myth of Perseus slaying the Medusa. Here the gaze of the Medusa turns life to death, robs the living of its distinctive intrinsic qualities.

At certain moments I felt that the entire world was turning into stone: a slow petrification, more or less advanced depending on people and places but one that spared no aspect of life. It was if no one could escape the inexorable stare of the Medusa. The only hero able to cut off the Medusa's head is Perseus, who flies with winged sandals; Perseus, who does not turn his gaze upon the Gorgon but only upon her image reflected in a bronze shield.
(Calvino, 1992: 4)

Calvino's essay is concerned with lightness and how this quality can be present within the prose itself; the poignant metaphor, the economy of image. He praises the virtue of lightness and discusses the skilful manipulation of 'weight', the weight of existence which oppresses the human condition and freezes the imagination.

I am immediately tempted to see this myth as an allegory in the poet's relationship to the world, a lesson in the method to follow when writing.(p4)

Perseus's strength always lies in a refusal to look directly, but not in a refusal of the reality in which he is fated to live; he carries the reality with him and accepts it as his particular burden.
(Calvino, 1992: 5)

In his literature, for instance *Invisible Cities*⁹, this lightness relies on the skilful use of artifice, the commonplace idea expanded into a web of fantasy; e.g. the plumbing system that ascends without floors or supporting walls to create the city inhabited by nymphs and mermaids.

The music

The halting opening presents a series of glimpses of a 'figure' in rapid change. All of the work is hidden in the first fragment; the simple chromatic circularity of the descant, the ambiguous accentuation which could suggest a pattern of 3+3+2 ♩ or a regular ♩ pulse, the rapidly changing chords which could be functional or a mere homophonic colouring of the descant, the deeper structure implied by the accentuation and the framing silence. Each successive glimpse charts the development of the material; the expansion of the fragment into contorted arabesques, the increasing irregularity of the accentuation, the emphasis on the accented chords rather than the rapid pulsation, the change in speed of the pulsation itself and finally the emergence of a chord.

From this moment, the texture becomes increasingly complex with the pulsating line passed between different timbral groups. By the end of the section, these elaborative processes create a textural fission, firstly by revealing a slow sustained melodic line (b34) within frenetic activity and secondly by the juxtaposition of a slow pulsing chord with chaotic fragments. Convulsive

transformation is the essence of this work and is emphasised by an orchestration that exploits extremes of register and timbral groupings of diverse 'weight' to suggest a dynamic 'perspective' where the linear unfolding of the narrative is distorted as ideas are thrust between foreground and background.

The second section (b53), its rhetoric suggesting a first subject exposition of a sonata, features a dialogue between a fanfare and an ornamented pedal point. Its antithesis (b73) is a duo of melodic arabesques in clarinet and cor anglais above a repeated chord. The rhythm of the melody and bass figures has been interchanged. The conjunction of the arabesque and repeated figure in b95 precipitates a gradual return to the accented chords of the opening which are in turn elaborated into the homophonic texture.

The third section retraces the opening section, perhaps suggesting an exposition repeat or a development section. The contrast between activity and absence is emphasised by the tense sustained chords which fill the silences. Harmonies are now perceptible and salient, figures more clearly delineated, but the complexity has now been reduced; the music has lost some of its fluidity and the sustained chords threaten to remain immobile.

Stripped of its decoration, the opening idea begins the fourth section as a quirky dance. Despite attempts to break free from the constraining static chords, the arabesque figure is engulfed in immense dissonant chords which, from an opposition polarised by the use of extreme registers, gradually coalesce into a sustained hexachord which is the tonal resolution of the work.

The cor anglais lament ornaments the melodic core with yearning arabesques, but is extinguished by an orchestral shudder. The final fragment of the opening figure is petrified as a chord of harmonics.

General framework

The realisation of the poetic inspiration of this work determined several of the technical decisions. The opening fragments require a regulatory framework: a framework which can furnish elaborations and guarantee coherence. Such a framework must have different elements: metric, melodic and harmonic. Many of these elements are inter-related and may be composite.

With Eliot's poem in mind, I wished to exploit the opening figure in two ways: by simplification, where a deep structure can be gradually revealed and by elaboration, where a skeleton is fleshed out.

Metre

A regular rhythmic cycle provides the essential structural backbone of the work. Unlike a mediaeval isorhythmic structure, this background is not consistently articulated on the surface by recurrent ideas, but serves as a point of reference.

I was particularly interested in Simra Arom's discussion of the rhythmic structure of the music which he researched in the Central African Republic (Arom, 1991: 229-306). Here, the long cycles would be of 8, 16 or 24 units with recursive unequal binary division until a sequence of units lasting 2 or 3 units is reached. These rhythms are often executed at extremely fast tempi, e.g. unit=720. The music consists of several such rhythmic strands proceeding simultaneously.

My work is similarly hierarchically constructed, so that the rapid pulsation can be absorbed into longer units. Each section is split into subsections of slightly unequal duration which are in turn subdivided unequally, but I often use a ternary rather than a binary division. The proportions are chosen so that this inequality can be 'felt' at all levels of the structure. However, my rhythmic phrase is 80 units long, the tempo is slower and there is only one strand. The notated metre remains deliberately simple to aid precision of ensemble; the perceived metric structure is achieved by accentuation, density of chord and orchestration.

36 44 20 24 16 20

7 6 5 6 5 3 6 4 9 6 4 5 10 6

4 3 2 4 3 4 5 5 6 3 6 2 4 4 5 5 4 6

core melody

bar 1-7

bar 8-14

bar 15-21

bar 22-32

bar 33-41

bar 41-50

Example 4

Rhythmic framework

Example 4 gives a melodic reduction of the first section of the work, bars 1-51. There are six phrases of twenty crotchets, each of which is composed of four subphrases with a principal accent at the semiquaver time points 0, 20, 36 and 60. These accents can be at the beginning of a fragment (—U), at the end (U—), or at the middle (U—U). With each subsequent phrase the fragments are extended, gaining anticipations and prolongations, until, with the fifth phrase, the fragments coalesce into continuous semiquavers.

The accentuation pattern is articulated by timbre, (e.g. the opening pizzicato string chords in the first phrase), by scoring, (i.e. the principal accents are more heavily scored), and by dynamic intensity. The pattern is repeated incessantly, but is not always revealed in its entirety.

The melodic kernel is similarly composed of several layers, where each layer is elaborated by the use of a few regulatory pitch class sets. The pitch level of the background melodic line is not fixed however, so that it is possible to achieve melodic growth through several sections.

At the opening of the work, the figure is a 'complex' object where a proliferation of detail obscures a core. The core, here articulated by the pizzicato strings, is a slowly unfolding melodic line enriched by chromatic block harmonies with an irregular pulse. The woodwind ensemble decorate this line with a rapid chromatic melody in even semiquavers using a wider palette of block harmonies. At this tempo, the harmonies are not perceivable and act as a colouring of the melodic line stated by the trumpet and doubled an octave higher by the flute. These first seven bars are the essence of the work, consisting of a total statement of the framework.

[illegible]

Example 5

Harmony

Ten pentachords and twelve hexachords form the basis of all the harmonic and melodic material of this work. These are all related to seven 4-chords which were extracted from the opening of *Elements of Iridescence*. Each 5 or 6 note chord is a combination of two 4-note chords. The differences are audible as varying degrees of dissonance, density or radiance. There is a strong sense of unity, as if a single chord is being examined under different light.

4-20 4-16 4-8 4-27 4-24 4- 4-

5-20 5-Z38 5-7 5-29 5-30

5-26 5-33 5-15 5-34 5-Z18

6-20 6-Z26 6-Z29 6-7 6-Z6 6-Z38

6-27 6-Z49 6-Z42 6-Z23 6-Z50 6-35

The following table gives the interval vector, trichordal vector and 4-chord derivation for the 5-note sets.

Forte name	pc-content	interval vector	trichordal vector	derivation
5-20	[0,1,3,7,8]	[2 1 1 2 3 1]	[0 1 0 3 2 0 : 0 1 1 0 2 0]	4-20 + 4-16 4-20 + 4-8 4-16 + 4-8
5-Z38	[0,1,2,5,8]	[2 1 2 2 2 1]	[1 0 1 2 1 1 : 1 0 0 1 2 0]	4-20 + 4-27
5-7	[0,1,2,6,7]	[3 1 0 1 3 2]	[1 0 0 2 5 0 : 0 1 1 0 0 0]	4-16 + 4-8
5-29	[0,1,3,6,8]	[1 2 2 1 3 1]	[0 1 0 1 1 0 : 2 1 2 1 1 0]	4-16 + 4-27
5-30	[0,1,4,6,8]	[1 2 1 3 2 1]	[0 0 1 1 1 1 : 1 2 1 0 1 1]	4-16 + 4-24
5-26	[0,2,4,5,8]	[1 2 2 3 1 1]	[0 1 1 1 0 1 : 1 2 0 0 2 1]	4-27 + 4-24
5-33	[0,2,4,6,8]	[0 4 0 4 0 2]	[0 0 0 0 0 3 : 0 6 0 0 0 1]	4-24 + 4-24
5-15	[0,1,2,6,8]	[2 2 0 2 2 2]	[1 0 0 2 2 0 : 0 4 1 0 0 0]	4-16 + 4-16
5-34	[0,2,4,6,9]	[0 3 2 2 2 1]	[0 0 0 0 0 2 : 2 2 1 1 2 0]	4-27 + 4-27
5-Z18	[0,1,4,5,7]	[2 1 2 2 2 1]	[0 1 2 2 1 0 : 0 1 1 1 1 0]	Z relation of 5-Z38

By employing such a limited kernel, which is omnipresent but elaborated and expressed in many different ways, the work resembles Eliot's lines:

Time present and time future
Are perhaps present in time future
And time future contained in time past
(Eliot, 1963)

Of crossed destinies

This work for solo harp takes its title from *The Castle of Crossed Destinies*¹⁰ by Italo Calvino. In this novel, a group of travellers rest in a remote castle and discover that they have mysteriously lost the power of speech. Each traveller tells their tale using a sequence of appropriate tarot cards. As the tales are told, many of the cards are re-used and take on different meanings. In the final pattern of cards all tales are told, but this pattern also connects all the travellers imprisoning them in the castle.

My work consists of three 'tales' enclosed by a frame. All the tales share melodic figures and harmonic progressions, yet have different characters and directions. The whole work is constrained by a sombre mode.

As *...and the unseen eyebeam crossed...* built on *Elements of iridescence*, so *Of crossed destinies* builds on the orchestral work. In particular, the seven note mode which forms the basis of this work is an elaboration of the set 5-29 (the opening chord of the third movement) which has a prominent role in the orchestral work. The rate of harmonic change in *Of crossed destinies* however is slower and chords are drawn from the mode with frequent elaboration or re-interpretation. The mode is not fixed to a particular pitch level but can subtly shift.

The more obvious unifying principle is the use of motivic fragments; especially $E\flat$, $F\flat$, $G\flat$, $E\flat$ which connects the first and fourth movements and the motif $E\flat$, $F\flat$, $C\sharp$, $D\flat$ which is shared by the first and second movements. Furthermore, the cells (0,1,3) and (0,1,4) pervade much of the music.

What distinguishes this work from my earlier works is a preoccupation with narrative; how to suggest that a 'story' is unfolding without requiring a single fixed meaning. As a solution, I developed long melodic lines which could continue through diverse textures. Movement I and V

10 (Calvino, 1977)

are framing melodic statements and are almost identical; movements II, III, and IV are built from melodies that unfold.

Aspects of the Novel

Italo Calvino's novel is composed of two independent but related sets of tales - *The Castle of Crossed Destinies* and *The Tavern of Crossed Destinies*. It is the first of these which is the model of my work and is influential in several respects.

The narrative structure of Calvino's novel is multi-levelled. The opening chapter *Castle*, relates the journey of the narrator to the castle at a hectic pace. Very few hints are given concerning his past. The chapter also starts a series of re-interpretations whereby 'reality' and 'fiction' are confused; the narrator's breathlessness after his long journey becomes an inability to communicate by speech.

The dealing of the tarot cards by the host at the end of the first chapter and the re-shuffling of the cards in the last by the hostess act as a narrative frame. All the tales of the characters are told in the arrangement of the cards. But the narrative spills outside the frame: the opening chapter introduces the narrator before the cards are dealt and the hostess tells her story in the cards before re-shuffling them. The living of events and the abstracted telling of events are interpolated.

Furthermore, the narrator never relates his story directly:

"The square is now entirely covered with cards and with stories. My story is also contained in it, though I can no longer say where it is, since their simultaneous interweaving has become so close." (Calvino, 1977: 41)

"Surely my own story is also contained in this pattern of cards, my past, present and future, but I can no longer distinguish it from the others. The forest, the castle, the tarots have brought me to this point where I have lost my story, confused it in the dust of the tales, become free of it." (Calvino, 1977: 46)

The narrator is simultaneously the interpreter of tales, a participant in the action of tale telling, passing the Knight of Clubs to Astolpho (Calvino, 1977: 35), a character referred to in the tales of others (or so he tells us) and an enigma whose identity has to be constructed and discovered.

The artifice of the novel

Of the 78 cards of the tarot deck, Calvino's grid uses 73. All the court cards, the Major Arcana and the Fool are used. Only five numeral cards are omitted; the three of coins, the three and five of swords, the three of clubs and the four of cups. Each of the characters in the novel are identified by a court card giving twelve tales. These court cards are usually used only once in each tale, and the cards are positioned at one end of a row or column. There are however four court cards which are not directly ascribed to one character - these cards do not represent a person who tells their own tale but are found in the tales of others and are positioned within the grid.

(a) King of coins

He appears as Ingrate's dead father and as the hostess's (evil) father-in-law

(b) Knight of swords

He appears in several guises: as a messenger to Ingrate, a radiant archangel threatening the grave robber, as an unknown warrior who barter away the key to the City of Death and as the prince to whom the hostess is married

(c) Queen of Swords

She appears as an armed maiden, the temptress Angelica, the Queen of the Day and the Queen of Destruction.

(d) Page of Clubs

He appears as the unjustly tortured youth released by the Queen of the Night and as the young soldier whose love for Angelica drives Roland to insanity

I suspect that the Knight of Swords represents the narrator, an ambiguous figure who acts as a messenger who transcends earthly existence and whose arrival at the castle and imprisonment in the grid reunites him with the hostess.

The numeral cards take on several meanings associated with different implications (verbal and visual) of the suit. Coins signify money, as fortune or as moral emptiness, Swords, battles and arms, Clubs, dense forests or the Tree of Life, and Cups, banquets, fountains and amorous encounters.

Each of the cards of the Major Arcanum have a single interpretation. Most of these cards are used four times, except for the Hermit and the Empress which are used only twice.

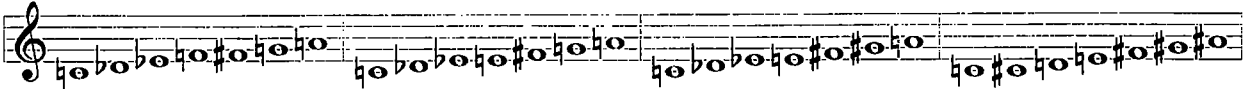
The final tale is told by the hostess, who significantly breaks the symmetry of the grid's design by placing the seventy third card ($12 * 6 + 1$), the seven of clubs next to her court card. This card alludes to the forest in which she

...awaits her husband's return and peering at every movement of the foliage of this wood, at every card drawn from this pack of tarots, every turn of events in this pattern of tales, until the end of the game is reached. Then the hands scatter the cards, shuffle the deck, and begin all over again.
(Calvino, 1977: 48)

The music

[A] wood is a garden of forked paths. Even when there are no well-trodden paths in a wood, everyone can trace his or her own path, deciding to go to the left or right of a certain tree and making a choice at every tree encountered.
In a narrative text, the reader is forced to make choices all the time. Indeed, this obligation to choose is found even at the level of the individual sentence - at least, every time a transitive verb occurs. Whenever a speaker is about to end a sentence, we as readers or listeners make a bet (albeit unconsciously): we predict his or her choice, or anxiously wonder what choice will be made...
(Eco, 1995: 6)

Eco's description of the narrative text encompasses several issues that I wished to deal with in this work. For a listener to be able to make choices and anticipate possible continuations, I needed to establish a consistent harmonic framework for each movement. The work is therefore based on four related modes. These modes are frequently transposed, so it was necessary to choose transpositions that ensured that the rate of pitch change was slow. This modal structure enables the material to be in constant flux. It is however sometimes necessary to allow the material to be shaped into gestures. These gestures are defined by a recurrent rhythmic motifs and a limited number of pitch cells.

W	X	Y	Z
			
<1,2,2,1,1,2,3>	<1,2,1,2,1,2,3>	<1,2,1,2,2,1,3>	<1,1,2,2,2,2,2>
7-28	7-31	7-32	7-33

The following seven note modes form the harmonic basis for much of the work:

The prevalence of mode Y throughout the work and the omnipresent pitch Eb₄, to be found as a point of arrival or departure, gives the work a claustrophobic character. There are numerous correspondences between movements : the opening pitch cell of the movement I becomes one of the main cells of the movement IV and the interval of 1 and 3 semitones generate the melodies of movements I and II. The opening chord of III is the same as the final chord of IV, and is closely related to the final chord of II. Furthermore, there are a network of textural similarities; e.g. the arpeggios which can rush forward in breathless haste in II, entangle the melodic line in IV or serve as elaborate embellishments in III.

The movements are not a direct translation of Calvino's tale into a musical form; the relationship is more elusive, sometimes tangential, capturing elements of the text as Calvino encapsulates and elaborates the visual characteristics of his cards.

Movement I

To effect a frame, the first and last movements differ in rhetorical gesture from the other movements. I and V are bold emphatic statements whereas the enclosed movements are elusive and exploratory.

The principal melodic line of the first movement is characterised by an emphatic repeated pitch which is decorated by chromatic neighbour notes. The line gradually expands, initially using small intervals (minor seconds and minor thirds) and eventually reaching sixths and sevenths.

Initially, the subsidiary line doubles the melody in an organum at the major 9th, but as the melody pulls itself from the pedal E_b, the subsidiary line becomes more independent until the separation reaches two octaves in bar 11. After this apex, the lines gradually approach one another to coalesce in a shimmering arpeggio in b14.

Mode X is the starting point of this movement, from which it slides towards mode Z and W.

Movement II

Movement II can be seen as Roland's frantic pursuit of Angelica through the forest, the discovery of her unfaithfulness, his destructive anger and the loss of his reason. The pace of the movement is rapid with short stabbing chords cutting through elaborate arpeggios.

The second movement is almost exclusively based on modes X and Y. These modes transform smoothly into one another by changing only a few pitches. In the first section of the movement, the harmony keeps returning to the opening transposition of the melody.¹¹

Bar	1	4	7	9	13	15	18-9	20	22-3	27	28	30	32	34-5
mode	X ₀	Y ₀	Y _{iv}	X ₀	Y ₇	X ₀	X _{iii}	X ₀	Y ₀	X ₀	Y ₀	X ₀	Y ₀	Y _{iv} X _{iv}

The melody is largely composed of two pitch cells which recur at different transpositions and proceed at several tempi.

In the second section the harmonic change is more rapid.

bar	34-5	36-7	37-8	39-40	41	44	48	49-53	53	61	66	67	68	69	70	72	72-3	74
mode	X _{iv}	Y _{iv}	Y ₀	X ₀	Y ₀	Y _{iv}	Y ₃	Y _{iv}	Z	Y ₃	Y _{iv}	Y ₃	X ₃	X ₁₂	X _{iv}	Y ₉	Y _{iv}	Y ₉

¹¹ I have simplified the harmony here by ignoring the organum decoration of the melodic line.

In this section, the melody is initially absent; the harmonic motion is carried by slow arpeggios. Only after a disruptive glissando are fragments of the melody discovered.

Towards the end of the movement (b75-90) the motifs are severely distorted and the harmony moves rapidly through new modal areas. The final section rediscovers the opening-motif and restores the mode Y_9 .

The movement has turned full circle, ending on the opening pitch but in a darker harmonic landscape, the mode having been transposed down a minor third. This darkness is reinforced by the pedal tuning - the tight strings of a sharp tuning sound brighter than the darkness of the relaxed string.

Movement III

Movement III suggests Astolpho's visit to the desert of the moon.

From this arid sphere every discourse and every poem sets forth: and every journey through forest, battles, treasures, banquets, bedchambers, brings us back here, to the centre of the empty horizon.
(Calvino, 1977: 39)

A slow melodic line unfolding over a slow unsteady procession of chords forms the basis of this movement. This line is elaborated with arabesques which become increasingly contorted and enhanced by imitation.

Mode Y forms the basis of the third movement, initially presented as two chords, the first of which can be heard as $F\sharp^7$ in first inversion (with the dissonant colouring of $B\flat$) and the second as $E\flat$ in first inversion.

The interaction of melody and bass can best be appreciated by examining the voice leading. The principal 'consonant' intervals are 3 and 6 semitones; these intervals are not 'stable', but are the most common and occur frequently at the end of arabesques. In the central section, a greater

variety of intervals are used, but 3 and 6 semitones became increasingly prominent towards the end of the movement. Both intervals are contained within the opening set 5-29.

The harmony is also integrated by a series of relationships between distinct sonorities - the spacing of several chords emphasise the interval of 8 semitones and others that of 6 semitones.

Movement IV

Movement IV alludes to the journey of the grave-robber, who descending via the abyss of death, climbs again the Tree of Life [and] arrives at the City of the Possible, from which the Whole is contemplated and Choices are decided.
(Calvino, 1977: 27)

The image displays two staves of musical notation for Movement IV. The notation consists of a series of notes on a five-line staff, with various interval markings above and below the notes. The intervals are labeled as follows:

- Staff 1: 3-2, 3-3, 3-3, 3-2, 3-10, 3-3
- Staff 2: 3-3, 3-2, 3-3, 3-2, 3-10, 3-2, 3-8, 3-3, 3-3, 3-8, 3-2, 3-2, 3-7, 3-3, 3-8, 3-5, 3-11, 3-8, 3-3

The fourth movement is a parallel to the second movement and uses the same modal forms

bar	1	3	8	9	11	12	14	15	16	17	18	21	23	27	30	36
mode	X ₃	X _{III}	X ₃	X ₁₂	X ₆	Y ₃	X ₆	X ₁₈	X ₆	Y ₁₀	X ₀	X ₃	Y ₁₃	X ₃	X ₀	Y ₀

The character of the movement however is very different. The melodic line unfolds slowly by overlapping a limited number of trichords : 3-2, 3-3, 3-5, 3-8, 3-10 and 3-11, thereby emphasising the intervals of 1, 2, 3, and 6 semitones.

The line is coloured by dark elusive arpeggios in the bass register of the harp, which ascend and become increasingly prominent as the movement unfolds. The line is imitated contrapuntally and becomes increasingly entangled until it unfurls into decorative flourishes. Only at the end of the movement is the mode used melodically in a quasi-canonic passage (b30-5) which descends from the highest register of the instrument to rest on 5-29, the opening chord of the third movement.

Movement V

The final movement is a re-working of the first movement, with thicker chords and some small changes to the dramatic shaping. The opening melodic flourish is re-enforced with parallel motion in the bass. As the hostess reshuffles the pack in Calvino's novel, this movement returns to the opening closing the work with a strong gesture which is final but not a resolution.

Chiaroscuro

In the visual arts, subtle and complex illusions of depth are achieved by the delicate use of shading and the juxtaposition of light and shade. Such chiaroscuro enhances the perceived brightness of an object and affects its prominence.

In *Chiaroscuro*, the two antiphonal string quintets ‘shade’ the delicate lyrical voice of the double bass. In the Andante both string groups add resonance to the double bass harmonics, whereas in the Presto they unfold a complementary line which varies in ‘weight’. In the Lento the strings suggest rather than state, in much the same way as a few delicate brush strokes on an otherwise blank page can suggest a landscape shrouded in mist in Japanese ink-brush painting.

I was particularly interested in the nineteenth century painting *Yodo River*¹² by Shiokawa Bunnin. The artist uses black ink exclusively on untreated paper; the ink must be applied quickly and no errors can be erased. The painting can be seen as a balance of black marks on a white background or as a realistic depiction of a mountain scene relying on several conventions. The blank canvas is as important as the ink; it can be the sky, the moon, mist or a river depending upon the context. The delicate wash of the brush can suggest that some blank parts of the canvas are brighter than other parts, and the contrast of thick broad strokes and delicate detail carries the eye across the canvas or encourages it to linger.

A similar interest in oriental art, in particular calligraphy, was discussed by Siobhan Davies in a pre-performance talk on her dance work *And the glass blew in...*¹³ She was interested in how the weight of the quill and the speed of drawing the pen left ‘evidence’ in the nature of the mark left on the page; certain marks could only be created with a particular gesture at a specific speed. She was interested in exploring the ways in which the perceived weight of the body could be altered by moving the centre of the movement and how this would affect the kind of motion the body could make. A dancer could begin a phrase heavily with their ‘centre’ between the hips and

¹² Bunnin, Shiokawa: *Yodo River* (BM JP 2557)

¹³ *And the glass blew in...* performed by the Siobhan Davies Dance Compny in 1995

then remove the weight by moving the 'centre' higher in the body resulting in a more fluid movement.

These ideas of adding and removing 'weight', and the attendant influence on the movement of line, became a guiding principle for much of the writing in the *Presto*. A particular example of such an attempt is the removal of weight in bars 203-6 where the loud string clusters 'evaporate' into faint harmonics.

Context of the commission

When Paul Sherman commissioned this work, he was very clear in asking for a lyrical work for double bass which was not virtuosic but 'within the ability of most orchestral bass players.' He also indicated that he wanted a work that could be performed by several ensembles. As I was aware of the particular balance problems posed by the combination of bass and string ensemble, and since the premiere was to be given by Opus 20, I fixed the instrumentation to double bass and ten strings.

In writing for double bass with two antiphonal string groups I was able to project the fluidity of line spatially, with motifs moving from one group to the other, and to stratify the harmony, with one group sustaining a chord while the other group adds ornamentation. From the full ensemble I extracted several smaller units which could form a relationship with the soloist; two cellos, solo viola, two cellos and two violas, and four violins.

Writing for the double bass

In writing for the bass, I was aware of certain practical limitations. The voice of the bass is soft for much of its range; it was therefore essential that the textures were transparent. As Paul wanted a lyrical work, he recommended a relatively narrow range of about a twelfth where the bass is at its most expressive. As the bass is still quite low in this register, my solution was to allow the work to unfold as two complementary lines. The excursions of the bass into the high

register are relatively few owing to the difficulties of intonation and projection; the passage from b203-7 is a notable exception, the climax of the work whose effect depends upon the bass being concealed in the string clusters. The extreme high register is principally employed with the use of harmonics, e.g. at the opening of the work.

A further limitation of the bass is its gruff quality when played at speed; the long strings take time to 'speak', so low fast passages will always sound 'muddy' (a specific use of this sound is in the fourth movement of the *Chamber Concerto*¹⁴ of György Ligeti). In order to achieve the effect of speed in the Presto Scorrevole, the string ensemble establishes the frenetic activity while the bass unfolds a slow line where the fast notes are part of the articulation. When the bass imitates the scurrying motion of the other strings it plays in the tenor register with repeated notes or a slurred chromatic figuration of narrow range.

As the distance of a semitone is large on the bass, it was necessary to write melodic lines that moved principally by step, or with leaps restricted to adjacent strings, open strings or harmonics. I was very aware of the difficulties involved in rapid position changes both in terms of performance impracticality and in the unfocussed acoustic result. As the melodic cell [0,1,4] could be articulated rapidly in several configurations (<1, 3>, <3, 2>, <4, -1>, <4, -3>, <-4, 1>, <-4, 3>) in most registers, I used this basic cell for constructing most of the bass's melodic line.

Furthermore, Paul had a dislike for those virtuoso works for the bass written since about 1950 which use 'extended' performance techniques, in particular scratch tones, circular bowing and extremes of the high register, which he considered an abuse of the instrument and a suppression of its individual voice.

With these considerations and preferences in mind, I chose to write a work which would be predominantly melodic. The dramatic tensions would be achieved by the interaction of two lines, one for the bass and one for the other strings; in the Andante the string line is composed of fragmentary echoes of the bass's melodic line which coalesce into chords; in the Presto

14 (Ligeti, 1970)

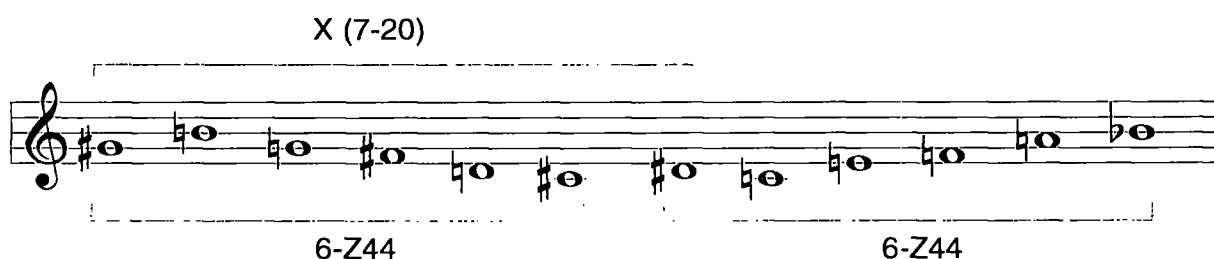
scorrevole the string ensemble line is a complement to the bass line which can unfold in organum, be suffused by resonance or transform in timbre (e.g. arco→pizz.); in the Lento the bass line moves within a pulsating aura of string harmonics.

Harmony

The early sketches of the harmonic material of the work involved exploring various chains of the cell [0,1,4]. One chain which held a particular interest was :



Although such a sequence does not continue to form a closed cycle which exhausts the chromatic scale without repetition of pitch-class, it does have several interesting properties. The opening seven notes form an asymmetrical set which can be permuted to reveal a hexachord which can be combined with its inversion to form a 12 note row. In addition, in this form the first six notes belong to the harmonic series of the open strings of the bass.



The seven note set can be condensed into the interval of a major sixth giving

I_0 (0,1,2,5,7,8,9)

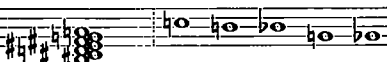
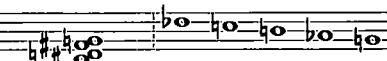
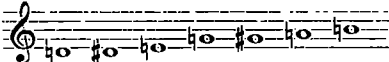
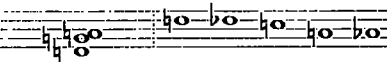
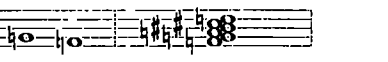
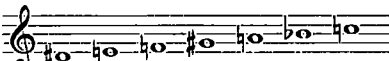
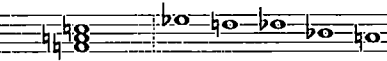
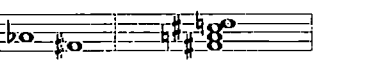
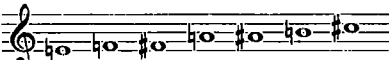
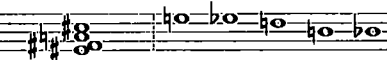
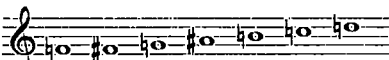
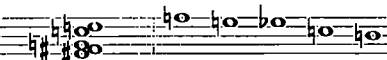
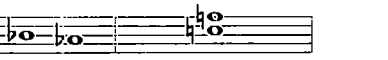
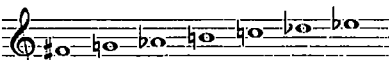
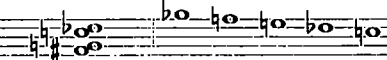
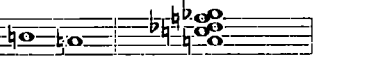
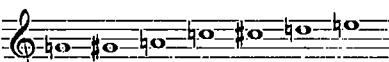
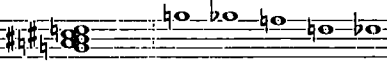
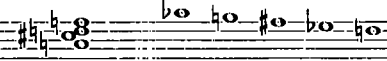
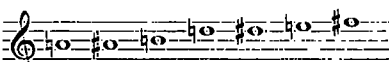
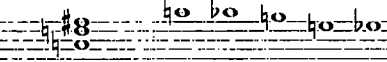
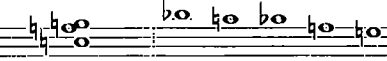
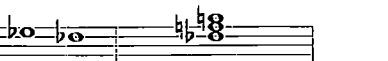
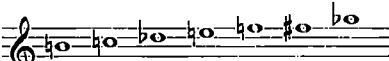
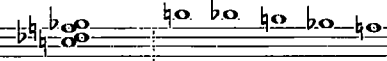
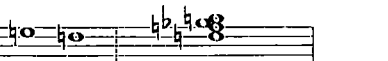


and inverted to give

P_0 [0,1,2,4,7,8,9] (the standard Forte form 7-20)



The intersections of P_0 with the various other prime forms and P_0 with all the inversion forms gives the following sets:

n	P_n	$P_0 \cap P_n$	I_n	$P_0 \cap I_n$
0		 7-20		 4-6
1		 4-8		 4-9
2		 3-9		 6-Z48
3		 3-11		 4-20
4		 4-19		 3-9
5		 5-14		 2-5
6		 4-9		 5-22
7		 5-14		 6-Z6
8		 4-19		 4-8
9		 3-11		 4-23
10		 3-9		 3-12
11		 4-8		 4-17

A full pc-set analysis of the set 7-20 yields the following:

2-sets (intervals)

[4 3 3 4 5 2]

3-sets (trichords)

[2 1 4 5 6 1 : 4 3 3 4 1 1]

4-sets

4-2	[0,1,2,4]	p	4-17	[0,3,4,7]	s
4-4	[0,1,2,5]	p+2i	4-18	[0,1,4,7]	p+i
4-5	[0,1,2,6]	p+i	4-19	[0,1,4,8]	2p+i
4-6	[0,1,2,7]	s	4-20	[0,1,5,8]	s
4-7	[0,1,4,5]	s	4-22	[0,2,4,7]	p+i
4-8	[0,1,5,6]	2s	4-23	[0,2,5,7]	2s
4-9	[0,1,6,7]	s	4-24	[0,2,4,8]	s
4-13	[0,1,3,6]	p	4-26	[0,3,5,8]	s
4-14	[0,2,3,7]	i	4-27	[0,2,5,8]	i
4-Z15	[0,1,4,6]	p+2i	4-Z29	[0,1,3,7]	p
4-16	[0,1,5,7]	p+2i			

5-sets

5-6	[0,1,2,5,6]	p+i	5-22	[0,1,4,7,8]	s
5-7	[0,1,2,6,7]	p+i	5-29	[0,1,3,6,8]	p
5-11	[0,2,3,4,7]	i	5-30	[0,1,4,6,8]	p+i
5-13	[0,1,2,4,8]	p	5-32	[0,1,4,6,9]	i
5-14	[0,1,2,5,7]	p+2i	5-35	[0,2,4,7,9]	i
5-19	[0,1,3,6,7]	p	5-Z36	[0,1,2,4,7]	p
5-20	[0,1,3,7,8]	p	5-Z37	[0,3,4,5,8]	s
5-21	[0,1,4,5,8]	p	5-Z38	[0,1,2,5,8]	i

6-sets

6-Z6	[0,1,2,5,6,7]	s	6-Z44	[0,1,2,5,6,9]	p
6-16	[0,1,4,5,6,8]	p	6-Z47	[0,1,2,4,7,9]	p
6-Z17	[0,1,2,4,7,8]	p	6-Z48	[0,1,2,5,7,9]	s
6-18	[0,1,2,5,7,8]	i			

The set 5-14 [0,1,2,5,7] is the most populous 5 subset of 7 and is formed in four of the intersections $P_0 \cap P_n$ and $P_0 \cap I_n$. This 5-set forms the harmonic basis of the Andante. The other two prominent 5 note sets, 5-6 [0,1,2,5,6] and 5-30 [0,1,4,6,8] form the basic material of the Presto. The Lento uses all the four and five note sets resulting from the intersections.

The complement of 7-20, 5-20 [0,1,3,7,8] is not of particular importance in this work despite the Kh relationship between these sets.

Andante

The Andante exploits the intersection between different forms of the set 7-20. The characteristics of this section can be clearly seen in an examination of the first ten bars of the score (example 6). There are four layers of activity :

- (i) The arco melodic lines. These melodies are formed from the set 7-20 and occur in db, vla1, vln1b and vln1a etc. The transpositions are chosen so that there are a limited number of common pitch classes between adjacent sets.
- (ii) The final note of each melodic line is sustained, and with the addition of the sustained G $\sharp$ in vcl 1, forms the set 5-14 [0,1,2,5,7]. This background layer of sustained chords uses this set exclusively.
- (iii) The second string group adds sustained notes to keep the harmony rich :
b2 [0,2,3,4,7], b4 [0,1,2,5,6], b5/6 [0,1,2,5,7,8]
- (iv) A final decorative layer with melodic fragments played pizzicato. These fragments are always based on the pc-set of layer (iii) but freely add ornamental notes.

From b7-15, the texture becomes more intricate but the four layers can still be discerned. The sustained chords or layer (ii) have at their core the set 5-14, but when considered with the bass line of vcl 2 follow the sequence:

6-18, 6-Z6, 6-18, 6-Z6, 6-Z6, 6-18, 6-18, [0,1,2,4,5,8]

In b14-15, the note E $\flat$ in vcl 1 changes [0,1,4,5,8] to the alien [0,1,2,4,5,8]; i.e. a set which is not a subset of 7-20. This chord is important as it is the first time that a set has been spaced to emphasise its allusions to tonality; [0,1,4,5,8] as E $\flat$ G B $\flat$ D F $\sharp$ suggests an E $\flat$ $\sharp$ chord. The E $\flat$ slightly disturbs the equilibrium of this chord.

In b16-30, the texture simplifies to string chords and a bass melody. From high harmonics, the bass melody continues its descent through the tenor register using subsets of 7-20 until in b26 it repeats the opening phrase of the work two octaves lower.

Musical score for Example 6, featuring multiple staves with complex notation, including triplets, accidentals, and various time signatures. The score includes labels such as 7-20, 5-11, 6-Z6, 5-14, 6-18, 4-Z29, and 7-20(each line).

The score is organized into several systems. The first system includes staves with labels 7-20, 7-20, 7-20, and 7-20. The second system includes staves with labels 7-20, 7-20, 7-20, and 7-20. The third system includes staves with labels 7-20, 7-20, 7-20, and 7-20. The fourth system includes staves with labels 7-20, 7-20, 7-20, and 7-20. The fifth system includes staves with labels 7-20, 7-20, 7-20, and 7-20. The sixth system includes staves with labels 7-20, 7-20, 7-20, and 7-20. The seventh system includes staves with labels 7-20, 7-20, 7-20, and 7-20. The eighth system includes staves with labels 7-20, 7-20, 7-20, and 7-20. The ninth system includes staves with labels 7-20, 7-20, 7-20, and 7-20. The tenth system includes staves with labels 7-20, 7-20, 7-20, and 7-20.

Example 6

The string chords are based on the core set 5-14 and are enriched to form the set 7-20 in b24 and b34 and 8 note chords in b25. The highest note of the chords is often governed by a source pc-set. This passage demonstrates the first use of bass pedal points (b23).

Presto scorrevole

This movement can be seen as a scherzo with two trios:

A B A' C

Scherzo (A) b30-70

The bass line is constructed entirely from the cell [0,1,4]. These cells are linked with one or two pitches. The melody gradually rises over two octaves from (written) F₂ to G₄.

The string line uses six textural ideas:

(a) scurrying/buzzing motion

These rapid passages are based on the set 5-6 and are largely static in character. Vln2a & vln2b, and vln2c & vla2 form two pairs. The line of the first of each pair is based on the set 5-6 while the second plays in organum a major second lower. The pairs frequently overlap to create an 'active cluster'. As the organum is at the second, the 4 note pc-sets contain at least two major seconds and hence are often alien to the source set 7-20. This gives a harmonic 'colour' to this section which distinguishes it from the opening Andante. A third independent thread, also based on the set [0,1,2,5,6], is added by vcl 2 which thickens the texture e.g. b33

(b) descending/ascending chords in organum

The upper melodic line is constructed from overlapping 5 note sets, e.g. orchestra two b50-51 is based on 5-6. The lines fall mostly in parallel so that each chord is also 5-6 (in prime or inversion).

In many passages the horizontal and vertical sets used are different; e.g. in b40-1 the horizontal sets are 5-14 and 5-6 but the vertical sets are always 5-6. Note that in this

passage the chords move from an expanded form of 5-6, (0,3,11;4,10) to a condensed form (0,1,2,5,6).

(c) ornamented sustained chords

A sustained 5-note chord is decorated by repeated scales employing 7-20 in 3-part canon e.g. b53.

(d) quasi-canonic motion

This texture is similar to (a) except that the melodic line is constructed from overlapping sets so that the texture ascends or descends. The overlapping sets may be small (e.g. [0,1,4] in b47, which resembles the construction of the bass's melodic line). A third thread thickens the texture by adding a fifth independent note to the chords ensuring that each vertical sonority is 5-6 or 5-14.

(e) static cluster

This is similar to the ornamented sustained chords (c). Four or five parts repeat a motivic pattern from the same set, so that the melodic figure is 'frozen' as a chord. Often the figure alternates between the prime and inverted forms of an asymmetrical set to achieve some variety, e.g. b66-8.

(f) swoops

As in (a), this texture features two pairs of instruments, this time without a third thread.

The pairs are in canon, but the organum may use intervals other than a second. In b53-55, the pairs are vla1&vcl1 and vla2&vcl2:

The musical score illustrates two systems of canon textures for two pairs of instruments: vlna1/vcl1 (top staff) and vlna2/vcl2 (bottom staff). The first system consists of four measures. Above the top staff, the labels are P0, 5-22, 5-20, 5-22, 5-22. Below the bottom staff, the labels are P8, P5, 5-22, 5-20, P10, P8, 5-22, (5-22). The second system consists of two measures. Below the top staff, the labels are P1 and P6. The notation includes treble and bass staves with various musical symbols like notes, rests, and accidentals.

The harmonic characteristics change here from major third based chords of the descent to major second based chords of the ascent (the exclamations marks indicate the change of transposition).

Of these textures, (a), (c) and (e) are essentially static and (b), (d), and (f) dynamic. By juxtaposing these types, and carefully controlling the ambitus of the chord/cluster, a subtly varying texture is shaped to complement the bass melodic line.

bar	30	40	41	47	49	50	51	53	55	56	60	61	64	66
type	a	b	a	d	e	b	d	c	f	c	f	c	b	c

Trio 1 (B) b70-136

The pace of this section is somewhat slower and one can feel the 'ghost' of a fast waltz.

It is in this section that the dialogue between bass and string ensemble becomes more intimate; both lines of argument share textural features.

(A) melodic chains

These melodic chains are formed less strictly than in the scherzo from the sets [0,1,4] and [0,1,3]. The melodic line has a free contour, e.g. b70 vln. I

(B) Ascending <-1,2,4> chains

These chains are formed by the juxtaposition of [0,1,4] sets with a precise intervallic structure. It is from such a chain that the set 7-20 was derived, e.g. b81 db

(C) Fragments based on X

The opening of such fragments take their contour from the bass phrase that opens the work. They vary in length up to the 12 notes of the chromatic scale and in this form can be divided into two sets of 6-Z44, prime followed by inversion or vice versa, e.g. b89 db

(D) Fragments of X in augmentation

These fragments lose their melodic identity but drive the harmony of the phrase, e.g. b92 vcl. I

(E) Ascending 5-note motifs

These string motifs are constructed from 5 note subsets of 7-20 and are played arco and slurred together. The texture consists of four lines moving in similar motion. The chords have an open spacing, e.g. b72 vln.1

(F) 'cadential' chords

These phrases consist of two chords, the first long with a crescendo from piano to forte and the second short and accented, e.g. b80 upper strings

(G) static cluster

The same texture as (e) in the scherzo, e.g. b136 tutti

The textures follow the following pattern:

bar	70	72	75	77	80	81	84	86	89	92	96	101	105	111
bass		F				C		F	A	F		C	F	————
strings A	B	A	B	D		A	B	A	B	A	C	D	E	
														E————

Scherzo II (A') b137-190

The return of the scherzo is preceded by the 'static cluster' and signalled by the return of the scurrying motion, an octave lower, with the addition of a repeated note on the bass, (b). When the bass imitates this scurrying motion it is rudely interrupted by a sequence of contrary motion chords from the ensemble. As the scherzo proceeds, ideas from the first trio are incorporated.

There are four new textural types:

(g) repeated note (bass)

(h) contrary motion chords

The highest and lowest melodic lines move by juxtaposed [0,1,4] sets in contrary motion.

All of the chords are forms of the set 5-14, except for the final cluster. As a result of this motion, the chords funnel in from the open (0;2,9;8;7) to the compact (0,1,2).

(i) trills

The textures follow the following plan:

bar	137	146	148	150	151	152	154	158	164	168	171	177	181	183	188
bass	Ag	Aa			Aa		Bf		Ai	Ba	Bc	Ai	Ba	Bd	
strings	Aa	Ah	Ah		Bb	Bb	Ab	Ai	Ah	Ba	Ad	Ba	Ac	Ad	
										Ba	Bc	Ai		Bd	

Trio II (C) **b191-209**

There are six types of material in this section:

- (a) Melodic fragments from the set 7-20

These fragments have no fixed contour

- (b) Descending/ascending pizzicato chords

These three or four part chords descend in similar motion with each line presenting the 7-20 set. The chords always contain a semitone.

- (c) A short accented five note chord followed by a long decaying seven note chord.

The second chord 'folds in' on itself; as the high pitches fade out, they are replaced by the same pitch several octaves lower.

- (d) glissandi harmonics

Five part chords moving in organum

- (e) 'evaporating' clusters

a dense cluster transforms into high veiled harmonics.

- (f) A long seven note chord crescendo followed by a short accented five note chord.

In b191-197 (a) and (b) are in dialogue while (c) forms a background sonority. The first chord of (c) is a subset of (a) and the second chord of (c) is a subset of (b). (a) and (b) are related by two or three common pitches.

In b198-202, (a) is passed in dialogue between db and vla, the set being transposed up a semitone on each occasion. The chord of string harmonics (d) is a subset of (a).

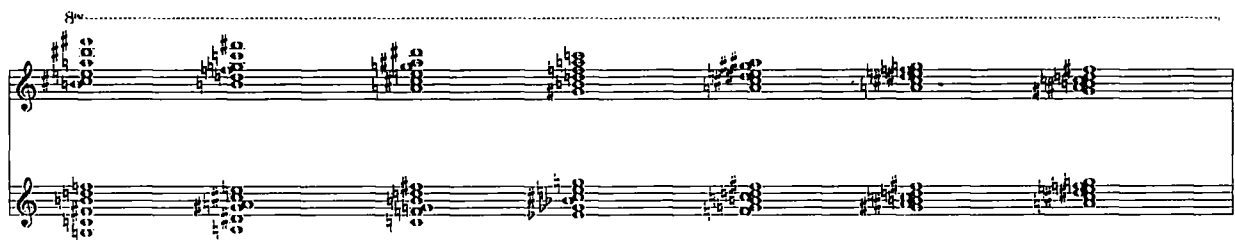
In b203-6, the dense clusters 'evaporate' to faint harmonics revealing the bass figuration. The

exact pitches of the cluster and high chord are not structurally relevant; the chord was determined by the harmonics available on the instruments at the position determined by the cluster.

From b207-210, the bass melody is constructed from the fragments (a) which transforms into the opening fragment X. The strings accompany with (f) using related chords.

Lento b210-273

The final section features a slow-moving melodic bass line surrounded by an aura of high harmonics. These string harmonics rotate within registrally fixed 12-note chords. There are seven main 12-note chords which condense from a range of $4\frac{1}{3}$ octaves to $1\frac{3}{4}$ octaves. The condensation is not linear; the range contracts and expands and the fundamental octave occasionally changes.



Within each 12-note chord there is a sequence of 4-note or 5-note chords which use the principal subsets of 7-20. The chords move in a closed sequence of transpositions so that the chromatic scale is exhausted. The transposition of succeeding sets is selected according to the number of pitches in common between adjacent chords; no notes in common produces rapid harmonic change whereas three notes in common creates a languid stasis.

Registrally fixed 12-note chord	5-set 5-22 [0,1,4,7,8] p1 p2 p3 p4 p5					p6 p7 p8 p9 p10 p11					4-set 4-9 [0,1,6,7] p12 p1 p2 p3 p4 p5					p6 p7 p8 p9 p10 p11				

At the opening of this section the bass is foreign to the string harmonies; its melodic line is freely constructed from the sets [0,1,3] and [0,1,4] using the pitches excluded from the string chords.

As the line evolves, it incorporates more pitches from the chords until at b238 the bass forms the lowest part of the 12-note registrally fixed chord. At b241 the bass recollects the melodic idea of b211 and then extends this with new melismas before descending via the motif X to the low E.

The pulse of the string harmonics change frequently, often in opposition to the pulse of the bass, as if the bass was a boat floating down a river with unpredictable currents. The string pulses are related by a simple pulse labyrinth centred on the basic pulse of $\text{♩} = 90$ using the proportions 2:3:4.

45		
67.5	60	
90	90	90
	120	135
		180

The image displays a musical score for string harmonies and a corresponding bass pulse. The score is organized into two systems, each with a treble and bass staff. Above each system is a dashed line labeled '8va'. The string harmonies are represented by complex chords in the upper staves. The bass pulse is shown in the lower staff with notes and rests, each labeled with a pulse value. The first system's pulse values are 90, 135, 67.5, 90, 120, and 90. The second system's pulse values are 60, 180, 45, 67.5, 45, 90, 60, and 45. The time signatures for the pulse line are 3/4, 3/4, 3/4, 3/4, 4/4, 3/4, 6/8, and 3/4.

In the final bars of the work, the bass and strings are fused - the string chords are the set 7-20 arranged as the tempered overtone series of the bass. As the chords ascend, using more remote overtones, the bass tone becomes further *sul ponticello*. As the ensemble and soloist fuse, the bass's voice is disembodied.

8^{va} -----

Études en mouvement

This title is a fortuitous compromise. I started the work with the title 'Movements', as the work explores our perception of the flow of time and as a homage to Stravinsky¹⁵. On hearing a rehearsal of the work, Richard Steinitz expressed an interest in programming it in the Huddersfield Contemporary Music Festival but mistakenly christened them *études* in the advance publicity. I was unhappy with the title *études* as this suggests virtuosic exercises at the limit of contemporary technique, so I settled on the composite *études en mouvement*. This title suggests to me a study of how things move, how we perceive movement and how ideas can be expressed in movement.

Despite my initial reluctance to use the title *études*, the work makes conscious reference to a long tradition of fine works for the solo pianist, of which the most important to me are the sets of *études* by Debussy¹⁶ and Ligeti¹⁷. For both these composers, *étude* refers not only to the study, mastery and display of virtuosic pianistic technique but also to the establishment, exploration and solution of specific compositional problems.

The *études* of Debussy are, for me, a set of symbols brilliantly executed in musical terms, a use of metaphor which is at the core of his work and which orientates his individual use of variation, elaboration and re-interpretation.

On a surface reading, Ligeti's *études* are modernist works which define themselves in the execution of a process limited by a set of rules, a mechanism which once started continues until the point of exhaustion. These processes are articulated with a notable lucidity and each *étude* has a consistency and rigour of rhetoric which is reminiscent of the aesthetic of the baroque. Yet, despite the exhilaration of a performance, they are profoundly pessimistic works; the only conclusion possible is an escape from the limit of the range of the keyboard, a heavenly rise off the top register or a race into the depths.

15 (Stravinsky, 1960)

16 (Debussy, 1915)

17 (Ligeti, 1986)

Désordre (György Ligeti : Études pour piano, premier livre, 1)

Désordre exhibits this disjunction at several levels. The overall shape is an expansion from the centre of the keyboard to the extremes followed by a sudden return to the centre and a confused ascent. In his recent article¹⁸, Richard Steinitz discusses the process by which the hands stagger out of synchronisation and the second process by which the motifs are transformed by a process of irregular diminution. He points to the contradiction between the rigour of these systems and the perceived disorder, encapsulated in the title.

But there are traps laid for the unwary analyst. These processes are themselves controlled by higher level processes, but these processes can be extrapolated before the opening of the work. Is such an observation justifiable or meaningful? The opening sonority is almost as dense as is possible on the keyboard, given the terms imposed by Ligeti's system, so preceding bars can not be imagined. Also the work begins in such an emphatic manner that the listener is not invited to suspect an 'earlier' origin - the work just begins. It is as if Ligeti has composed a musical work equivalent to the 'Big Bang theory' of cosmology; the universe begins but there is no evidence to suggest a 'why' and defining the 'moment' of creation becomes enmeshed in the difficulties of conceiving the absence of time.

There are further contradictions in the work; the right hand is exclusively white-note diatonic, each phrase repeated transposed (diatonically) up a tone; the left hand is exclusively black-note pentatonic, transposing down by a (usually perfect) fourth but contained within the pentatonic set. Here are two exclusive modes in opposition, sets which have no pitch-classes in common. A conflict of 'white-note' and 'black-note' musics has other cultural associations, perhaps a conflict between West and East. At the opening the intervals between the left and right hand melodic notes are to be found in a whole-tone scale, but the context is one of claustrophobic interpenetration. As the hands diverge, the structural properties of each set becomes more audible but the intervals between the hands become more dissonant and their resolutions more gauche and incongruous. When the rhythmic cycles almost coincide, the intervals are once

again mostly multiples of the whole tone. However at the extremes of the keyboard, the intervals are so enormous that the right hand notes are heard as distant consonant overtones of the extremely rapid bass melody. In the second half of the work, the melodic lines accrete extra pitches, producing chords which make conflicting claims for precedence. The end of the *étude* does not result from the exhaustion of a process but by a deliberate extinction of a system which has become locked in a confused circular argument.

Ligeti is playing a sophisticated intellectual game, inviting us by the title and musical rhetoric to believe that we are safely observing the actions of an autonomous musical agent constrained by precisely defined rules. Yet a closer examination reveals that there are incongruities to which he wishes us to attend which rely on the conflict between his system and our tonal preconceptions. In positioning the work in dialogue with systems outside its own boundaries he questions the validity of justifying a work by its process and internal logic.

Music and Discourse

Études en mouvement partakes in game playing, adopting the techniques of several composers but encapsulating them in hermetic processes. The techniques are at the core of the composition but are evident to different degrees; the surface exhibits differing degrees of permeability¹⁹ to the structure. The rules are often arbitrary, especially in the 'links' between rhythmic and harmonic structure.

In 'Music and Discourse', (Nattiez, 1990), Jean-Jacques Nattiez adopts a communication model from Molino which distinguishes three different levels; the *poietic*, the *neutral* and the *esthetic*.

The *poietic* encompasses all aspects of creation and the creative process, from the biography of the artist, the affects of the cultural environment on the artist, the artist's creative commentary on other works and the artist's own personal and public codes.

19 Ferneyhough refers to the concept of 'permeability' in his article on his *Second String Quartet* (Ferneyhough, 1995: 117). If a structure is perceptibly apparent so that the listener can accurately predict the next event, the surface can be said to be permeable.

The esthetic level centres on the listener; the process of perception, the abstraction of higher 'meaning' and the extrapolation of potentialities, the sonaesthetic and affective responses, but also the listener's repertoire of known works and known musical behaviours.

The neutral level²⁰ is that which is intrinsic to the 'text'. For Nattiez, the text can be a graphic inscription on a page (a score, a 'virtual' sounding work), or the work in sound. I believe however that these 'texts' are more different than Nattiez is prepared to acknowledge.

For Nattiez, direct communication is impossible; an individual creates a text, a set of data with intrinsic properties, which a second individual interprets. The creative and interpretative procedures can be different; it is possible for an interpreter to discover a totally different 'meaning' from that intended by the author. The only check on a hermeneutic free-for-all is the requirement of truth to the text; that both processes should be consistent and congruous with the structure and integrity of the data.

A similar discussion is rehearsed by Derrida²¹. An author cannot prevent a second interpretation of his text; ambiguities are intrinsic to the nature of language. Furthermore, it may be impossible to distinguish which of several different interpretations is most valid. Derrida is even more severe in that he sees this dilemma as central to the text itself and its system of signs, i.e. the neutral level, and not just to the poietic and esthetic levels.

Even so, Nattiez's approach simplifies the complex encounter between the creator and the work and the listener and the work. It is possible for the creator to discover in the analysis of his/her work features which are essential to its nature which were not consciously pre-meditated. This, if discovered in the composition process, can change the later course of the work. Furthermore, composers can often 'hear' a technique operating in the work in circumstances where this is (objectively) unlikely. Or, a composer who regularly transforms material in a particular way

20 I am aware of the criticisms of Nattiez's neutral level. Nattiez makes it clear that he does not propose that analysis can be 'neutral' but that the term 'neutral level' encompasses those elements of a text which could be seen as separable from the producer and recipient. Such a 'neutral level' would encompass Eco's 'Model Author' and 'Model Reader'.

21 See for example (Derrida, 1981: 95-117)

becomes extremely proficient at recognising this when hearing a new work. Conversely, it can be very difficult to demonstrate the existence of an aurally perceived coherence in the written form of the music.

In the following discussion of *études en mouvement* I will give one of many possible interpretations, my own. I will begin with an description of how I hear the étude, followed by an analysis of the text and a discussion of my intentions using Nattiez's terms for convenience. I hope to indicate something of the interplay between many different approaches which I consider a part of this work.

Étude 1: 'éclat'

Esthetic level

The defining character of this étude is its halting motion where rapid gestures are arrested by more reflective material. The angularity of line, alternation of percussive chord and resonant chime and the abrupt change of dynamics all emphasise the fevered proliferation of motifs. The lilting figure which opens the work recurs as a point of rhythmic repose, returning in altered form at the end of the work. This corresponds with the stable harmonic axis $D\sharp/E\flat$ at the centre of the keyboard. This centre remains a point of attraction throughout the work; motifs spiral towards this point or chords explode from it.

Neutral level

The work is constructed from the juxtaposition of three motivic cells which constitute two independent layers which are superposed. The method of working is similar to that proposed by Boulez (Boulez, 1991), except that the motif forms are rarely visible in their 'natural' form but only in combination.

There are three cells with the following rhythmic proportions:

a	b	c
3 : 3 : 1	2 : 3 : 2	1 : 3 : 3

Each cell can occur at three levels of augmentation, with the unit taking the value:

unit value	♩	♩	♩
augmentation	1	2	3

I will indicate cells by letter with the subscript indicating the level of augmentation.

Example 7 indicates the interplay of cell types throughout the étude. Note that the unit shown here is the ♩ to avoid distorting the appearance of a cell through a metric modulation.

The first 6 bars result from the cells :

I	a_3	a_3	a_1	b_2	b_3	b_2	c_1	c_3	c_3
II			a_2	b_2	c_2	a_1	b_1	c_1	

As can be seen, the cell order chosen creates macro-cells. These are not necessarily an audible structure in the music, but are used to predict the coincidence points between phrases²².

The pitch structure is based on a mode which appears in three transpositions. The intervallic structure of the mode is :

$\langle 3, 3, 1, 2, 3, 2, 1, 3, 3 \rangle$

and the transposed forms are based on $C_b (X_0)$, $E_b (X_3)$, and $D_b (X_2)$. The following registration makes the connection clear.



22 $a_3 + a_3 + a_1 = b_2 + b_3 + b_2 = c_1 + c_3 + c_3 = 49 \text{ } \text{♩}$
 $a_1 + b_1 + c_1 = 21 \text{ } \text{♩}$, $a_2 + b_2 + c_2 = 42 \text{ } \text{♩}$, $a_3 + b_3 + c_3 = 63 \text{ } \text{♩}$

The musical score for Example 7 consists of three systems of staves, each with multiple parts labeled with letters and numbers. The notation includes various musical symbols such as notes, rests, and bar lines.

System 1 (Measures 1-5):

- Staff 1: Labeled with a_3 , a_1 , b_2 , b_3 , c_1 , c_3 , and a_3 .
- Staff 2: Labeled with a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .
- Staff 3: Labeled with a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .

System 2 (Measures 6-10):

- Staff 1: Labeled with (c_3) , a_3 , a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .
- Staff 2: Labeled with a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .
- Staff 3: Labeled with a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .

System 3 (Measures 11-15):

- Staff 1: Labeled with (a_3) , b_3 , a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .
- Staff 2: Labeled with a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .
- Staff 3: Labeled with a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .

System 4 (Measures 16-20):

- Staff 1: Labeled with a_1 , b_1 , a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .
- Staff 2: Labeled with a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .
- Staff 3: Labeled with a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .

System 5 (Measures 21-25):

- Staff 1: Labeled with a_3 , b_3 , a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .
- Staff 2: Labeled with a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .
- Staff 3: Labeled with a_2 , b_2 , c_2 , a_1 , b_1 , c_1 , and a_3 .

Example 7

This set of interval numbers is identical to the proportions of the rhythmic cells - both derive from a 7 : 3 polyrhythm.

7			7			7										
3	:	3	:	1	:	2	:	3	:	2	:	1	:	3	:	3
3		3		3		3		3		3		3		3		3

The first transposition²³ of the mode X_0 is the source for the pitches of the first bar. From bar 2-6, two transpositions of the mode are combined: $X_0 + X_3$. In b7, the third modal transposition is introduced in the form $X_0 + X_2$.

The pitch-class $C_{\sharp}$ is alien to all three modal transpositions and is used rarely. In b11, b18 and b19 it merely enriches the chords with additional dissonance, but it appears more pertinently as the highest note in b15, b18, b21 and in the final chord, b24.

Poesis

The method of construction was employed to create an intricate rhythmic structure and a simple but flexible referential harmonic structure. The dynamic contrasts do not necessarily articulate the beginning of a new cell or the closure of a larger unit; I was interested in capturing and moulding the tensions apparent in the rhythm of the figure. The mode is similarly used flexibly; the pitch classes are not fixed in specific registers. Pitches alien to the mode are occasionally added to enrich the resonance or dissonance of a chord.

The pitch and rhythmic structures derive from a 7 : 3 polyrhythm; the work was written for a friend's twenty-first birthday.

In this work, the artifice by which the rhythmic phrases is generated is not made salient on the surface of the work. The composition interprets this material as gestures which can be used in a simple rhetoric by contrast.

23 The subscripts here indicate transposition by semitones. X_0 commences on the pitch-class $C_{\natural}$.

Étude 2: 'Mirrors'

Esthetic

This étude falls into two unequal parts. The first part draws resonant harmonies from delicate intertwining melodies. These melodies are elusive with a simple open and close gesture where the precise rhythm is uncertain. The harmonies appear static but change subtly.

The second part expands the range of the harmonies away from the centre of the keyboard in a succession of textures each distinct and employing a different style of elaboration. The resonance of the chords is modified by the pedal to leave only one or two notes sounding. The procession of textures is cumulative, building to a violent eruption which stimulates the piano into a vivid resonance. Three short sections reduce the tension and return the music to an arabesque similar to the opening, a gesture which is both a question and a resolution.

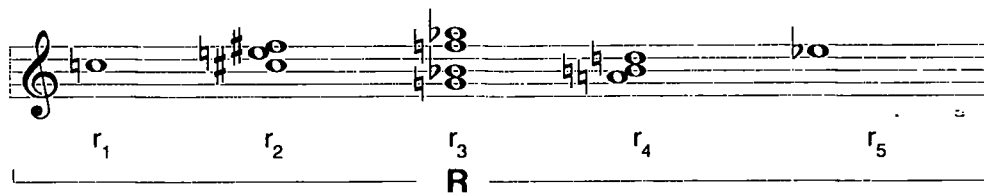
Neutral

The first part is composed from a melodic line which intersects with its inversion. The notated rubato and polyrhythms ensure that the attacks of the two lines are unpredictable and rarely coincide. The use of the sustain-pedal blurs the lines to create an elusive texture. The prime melodic line is composed from five note melodic cells which are usually combined in pairs. Each of the twelve²⁴ 5-note cells are distinct in pitch-class content yet are intimately related. Each cell is formed from a permutation of the intervals <1,4,4,6>.

The musical notation displays 12 distinct 5-note cells, each represented by a melodic line on a staff with a treble clef and a key signature of one flat (B-flat). The cells are arranged in three rows of four. Above each staff are four interval permutations: Row 1: <1,4,4,6>, <4,1,4,6>, <1,4,6,4>, <4,1,6,4>; Row 2: <1,6,4,4>, <4,4,1,6>, <4,4,6,1>, <4,6,4,1>; Row 3: <6,4,4,1>, <6,1,4,4>, <6,4,1,4>, <4,6,4,1>.

24 As there are two identical intervals in this set, there are $4!/2 = 12$ distinct cells.

The first note of each cell is fixed to C_4 . The succeeding pitch-classes can be viewed as a route through the following set of chords (R), ending with an E^b .



The inverted line (I_3) begins with E^b and ends with C_4 . The combined harmonies are hence symmetrical, although the registral disposition of pitch-classes often disguises this. For reasons of practicality, the prime form is not exclusively assigned to the right hand and the note order is sometimes changed.

In b3, the right hand note F_5 is replaced by $G\sharp_5$ to ensure a smooth ascent to the $A\sharp_5$ and avoid the stasis of too many repetitions of the same pitch class.

The second part of the étude features richer harmonies. Each note of the 5-note cell is elaborated by multiplication with one of the chords from R.

P_0 r_2

I_3 r_2

$P_0 \otimes r_2$

$I_3 \otimes r_2$

This process is applied to both the prime and inverted forms. The 'complexes' vary in density from five to twenty notes (doubled with the inversion). Each hand tends to read through each complexes in order, although in some bars some of the chords are combined and there are occasional interchanges of pitch between the left and right hand. However, the order in which the complexes are used is not the same as the first section of the work; the order chosen allows for a better dramatic shaping. The originating sets are frequently presented in the complexes to reinforce the harmonic basis of the work.

Poesis

The number 25 is again related to a birthday.

Étude 3: 'Canon a 60'

Esthetic

The opening of this work builds by a process of accumulation: the three note motif is expanded by extension, the addition of an anacrusis and elaboration from within. In b7, this process is further complicated by the interactions between this figure and a version transposed a semitone lower. At the rapid tempo of this work, the pitches of the quavers are difficult to discern and tend to be perceived as a buzzing around the accented sustained note. The ear is hence drawn to the dialogue between the accented sustained notes as each attempts to assert priority, shifting position to wrestle control of the 'tonality'. At the peak of activity the texture covers a range of just over two octaves before thinning to a single note.

Neutral

The work is a six part canon at the unison. The cantus is based on a nine note row (R).



This row is repeated transposed to begin on each of its pitches in turn, i.e.

$R_0, R_{11}, R_3, R_{10}, R_2, R_9, R_6, R_7, R_4.$

All six voices complete this pattern. Some voices continue with further transpositions producing 62 repetitions of the row in total.

The points at which the six voices enter are, in quavers:

0, 11, 23, $(45 + 17)$, $(45 + 28)$, $(45 + 39)$

These time points²⁵ ensure that there is the greatest density of attacks possible with six voices with the duration sequence (5, 1, 6, 2, 7, 3, 8, 4, 9).

Poesis

This work is a 60th birthday present for Peter Maxwell Davies. It is a 6 part canon with 62 repetitions of the row in 60 bars. The row is derived from the magic square for *Ave Maris Stella*²⁶ with the final note of his row moved to the beginning.

Peter Maxwell Davies principally uses his squares to generate long melodic lines. By using a pointillist texture, I intended to emphasise the mechanistic level on the surface but reveal the concealed voice-leading framework in the sustained notes. This use of a formalism to buttress and re-evaluate traditional tonal procedures is a feature which I admire in Maxwell Davies's work.

Étude 4: 'Riffs'

Esthetic

The basic premise of this work is the opposition of chord and line, one of the simplest textural opposition possible on the piano. The work opens with irregular short stabbing chords which are harmonically similar but always different. The erratic stabbing becomes more frequent and regular but never steady and predictable. Only with the introduction of the melody does the rapid defining semiquaver tactus become clear.

25 The duration of the row is 45 quavers. As all the staggered duration rows cycle continuously, the attacks will always occur at the same point in the cycle. It is therefore convenient to consider the basic cycle as 45 time points, numbered 0-44 for mathematical convenience. See the discussion of the delay function in appendix I

26 (Davies, 1975)

The chromatic melodic line wanders widely across the lower half of the keyboard pausing occasionally to emphasise a particular pitch. This melody is repeated with the addition of a complementary line.

In the second half of the work, the melodic lines are synchronised, moving in the upper part of the keyboard in an irregularly spaced organum. The chords, in dialogue with the melody, articulate the beginning of phrases or answer with double attacks. Later, the chords are sustained as a background to the melody.

At the end of the work, chords and melody separate; the repeated chords expand out to the extremes of the keyboard to climax in a rapid scalar melodic line which plunges from B_7 to the bottom note A_0 .

Neutral

The rhythmic material is constructed from 31 repetitions of a duration cycle 31 semiquavers long. The basic form, heard at the opening of the work, has the proportions:

$$\langle 5, 6, 5, 4, 7, 4 \rangle$$

corresponding to the set of time points

$$P = (0, 5, 11, 16, 20, 27)$$

If this pattern is played in canon with itself in such a manner that those time points greater than 30 are 'wrapped round' to their corresponding points at the beginning of the cycle, one obtains the following cycles (example 8). These patterns differ in the number of attacks present and the distance between attacks.

The work does not simply follow a process of regularly increasing the delay, as for example in Steve Reich *Clapping Music* (Reich, 1972). Rather, the order of patterns is chosen according to the properties of the patterns; patterns with double attacks, e.g. $(P + \Gamma_{31}(P, 1))$, are withheld until the end of the work, whereas the opening begins with patterns of a few irregular attacks and gradually increasing in density.

Example 8 displays musical notation for a sequence of notes, organized into three groups of two staves each. Each staff is labeled 'rhythm' and 'combination'.

Group 1:

- rhythm:** A sequence of notes with fingerings 5, 4, 3, 2, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- combination:** A sequence of notes with fingerings 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

Group 2:

- rhythm:** A sequence of notes with fingerings 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- combination:** A sequence of notes with fingerings 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

Group 3:

- rhythm:** A sequence of notes with fingerings 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- combination:** A sequence of notes with fingerings 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

Example 8

Étude 5: 'So'

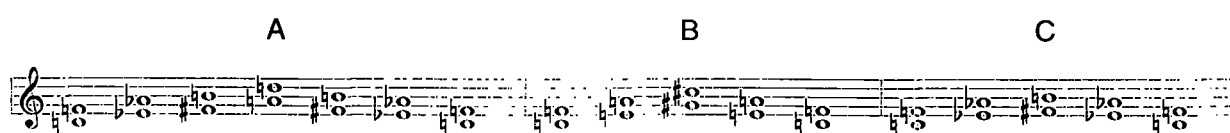
Esthetic

The étude exclusively employs the intervals of the perfect fourth and the fifth to create fragments which are interspersed with long silences. The opening fragment delineates the shape of the whole étude, a rapid irregular alternation of short quiet dyads expanding out to an 'interrupted cadence'. The second fragment traverses the same outline, but expands more rapidly and sustains the dyads so that the harmony is exposed and more salient. As the succeeding fragments increase in length the silences become shorter. The chords explore a wider range of the piano although remaining quiet and reveal a binding pedal point at the centre of the keyboard. The final fragment returns to the opening texture, expanding rapidly and appearing to decelerate into a long resonant chime.

The quality of the silences vary in the work. The opening silence is 'theatrical', too long to be a pianist's anticipatory pause, so the precise beginning of the work is obscure. The second pause interrupts the musical argument, almost before it has started, whereas the next few silences articulate phrases. The penultimate pause suggests that this is the end of the work, but it is interrupted by the final fragment. The final 'rest' allows the chime to fade into silence.

neutral

There are three melodic patterns at the core of this work. Pattern A is an arc which ascends and descends through a major sixth in seven steps of a minor third. Pattern B is also an arc, but it ascends and descends through a minor 6th in five steps of a major third. Pattern C combines features from A and B with an arc ascending and descending through a tritone in five steps of a minor third. All the patterns are doubled at the interval of the perfect fourth. The subscript letter 'u' states that the first interval goes up, and 'd' that the first interval goes down.



These patterns proceed at various rates with pulses of 5 ♩ , 7 ♩ , 10 ♩ or 14 ♩ . There are two layers of activity, I and II, which normally correspond to the left and right hands. Each layer is composed from the interaction of two pulses. In the tables below, the first number refers to the number of pulsations and the second to the duration of the pulse in semiquavers. Numbers in square brackets indicate a rest of several semiquavers; numbers in round brackets indicate that a cycle is continuing.

<i>bar</i>	<i>b11</i>	<i>b11</i>	<i>b13</i>	<i>b14</i>	<i>b23</i>	<i>b24</i>		
layer Ia	A _d 7*5		A _u 7*7			A _u 7*5		
layer Ib	C _u 5*7		C _u 5*10 see note ²⁷			C _u 5*7		
layer IIa	[7]	A _u 7*5		A _u 7*5	A _u 7*5			
layer IIb	[7]	B _d 5*7		B _d 5*7	B _d 5*7			
<i>bar</i>	<i>b26</i>	<i>b26</i>	<i>b31</i>	<i>b32</i>	<i>b34</i>	<i>b37</i>	<i>b38</i>	<i>b40</i>
layer Ia	(3)	A _d 7*7		A _u 7*10			A _d 7*7	
layer Ib	(3)	B _u 5*10 see note ²⁷		C _u	5*14		B _u	5*10 see note ²⁷
layer IIa	A _u 7*5		A _d 7*5		A _u 7*5	A _d 7*5		A _u 7*5
layer IIb	B _d 5*7		C _d 5*7		B _d 5*7	B _u 5*7		B _d 5*7
<i>bar</i>	<i>b44</i>	<i>b45</i>	<i>b47</i>	<i>b49</i>	<i>b58</i>			
layer Ia	A _d 7*5		A _u 7*7		A _d 7*5			
layer Ib	B _u 5*7		B _d 5*10 see note ²⁷		B _u	5*7		
layer IIa	(10)	A _u 7*7		A _u 7*7				
layer IIb	(10)	B _d 5*10 see note ²⁷		B _d	5*10 see note ²⁷			

²⁷ As (7*7) and (5*10) are not equal, and it is important that the structural polyrhythm should align, I have consistently subtracted a semiquaver from the (5*10) phrase, i.e. 10+10+10+10+9.

The proportions of the étude can be seen from layer 1

phrases	35	49	35	49	70	49	35	49	35	♪							
proportion	5	:	7	:	5	:	7	:	10	:	7	:	5	:	7	:	5
sections	5		:	7		:	5										

The whole work is divided into the proportions

$$2 : 4 : 5 : 4 : 2, \quad \text{i.e. } 48 : 96 : 120 : 96 : 48 \text{ ♪}$$

and silences interspersed in the ratio

$$5 : 3 : 1 : 1 : 3 : 5, \quad \text{i.e. } 120 : 72 : 24 : 24 : 72 : 120 \text{ ♪}$$

The combination of silence and sound divides the work into the proportions that result from a 5 : 7 polyrhythm, i.e.

7		7		7		7		7												
5	:	2	:	3	:	4	:	1	:	5	:	1	:	4	:	3	:	2	:	5
5	5		5		5		5		5		5		5		5					

Poesis

The ‘problem’ that I posed for this étude was to combine the two component phrases so that no four consecutive dyads in any single layer or in both layers would have any pitch-classes in common. Solving such a problem is by turn intriguing and frustrating, much like assembling a jigsaw puzzle, and often appearing equally pointless. As the component phrases are of different lengths, the layers overlap and the encounters between these phrases becomes increasingly unpredictable. After several re-writes, I began to question whether a ‘solution’ existed to my ‘problem’ and eventually I gave up! I suddenly realised that if I allowed a more frequent repetition of pitch classes, I could elicit a denser network of correspondences from my material. An ABA structure was born, where the B section has a more static background harmony than the A section.

At this stage, the music still lacked character and I was concerned that it may be no more than a tedious exercise. In a tutorial with Sohrab Uduman, I improvised on these sketches, freely choosing the registration of the dyads and exploring dry and sustained textures. In this improvisation, I recognised what I had to do; the final realisation merely required decisions as to

when to open up the texture, where to dispose the dyads, when the dyads should be sustained and the discovery that an interesting sustained line could be drawn at the middle of the keyboard.

The interspersing of silences into this structure was the final inspiration. The silences were inspired by a work that Kunihiro Goto wrote while he was my student at the University of Sheffield. His programme note focused on the moment when an instrument releases its sound into the air. 'So', the title of the work, means 'A gust of wind' in Japanese and is the name of Kuni's son.

Pas de deux

In *Pas de Deux*, I wished to investigate several of the issues and problems associated with ensemble playing. An often discussed role for a keyboard instrument is as an ‘accompaniment’ to a sustaining melody instrument, a role whereby the keyboard supplies harmonic support and resonance. In most good duo sonatas, the relationship is much more sophisticated with both instruments employing ‘thematic’ and ‘accompanimental’ material. A ‘legato’ melodic line, where each note is of constant dynamic is strictly impossible on a piano. The term ‘legato’ is used here to suggest an ideal where the player has control of the internal dynamic profile of each note; in practice, a series of performance conventions are employed including considerations of timing, dynamic shading of successive notes, pedalling and careful balancing.

Another solution to the ‘problem’ of the duo of keyboard and sustaining solo instrument is to acknowledge the inherent timbral differences of the instruments and to write music that manifests these characteristics and exploits the conflicts and convergences possible by juxtaposing and superposing such material - a fine example of this is Elliott Carter’s *Duo for violin and piano*. *Pas de deux* proposes another solution to the duo; what are the consequences of two distinct instruments playing exactly the same material? In exploiting this situation, I sought to challenge the listener to hear the instruments afresh.

The viola and piano do not use identical tuning systems. A piano is tuned approximately to 12-tone equal temperament, with some expansion of interval in the topmost octave. In 12-tone equal temperament certain intervals, in particular thirds, are not in tune with the harmonic series of the piano strings and will produce beats. These beats can clearly be heard by playing a major third at the centre of the keyboard, using the *una corda* pedal. For much of its range, the piano has two or three strings to each key; these strings are not tuned precisely to the same pitch and also produce beats, a ‘quasi-vibrato’. By playing the same major third without the *una corda* pedal, the additional beats produced by the interference of the pitch variations of adjacent strings create a complex ‘quasi-vibrato’ which makes an ‘out-of-tune’ interval seem more acceptable to the ear.

In isolation, a string player will tune individual intervals so that the interval conforms with the harmonic series; i.e. the note frequencies are in an integer ratio. Such tuning minimises beats thereby giving a purer sound, and stimulates the instrument into sympathetic resonance.

Pas de deux requires a slightly unconventional stage layout. The grand piano must have the lid high, and be tilted so that the pianist's back is 45 degrees to the audience. The viola player should face the pianist so that the viola sound is directed partially to the audience and partially into the piano. This enables the sound of both instruments to blend and merge.

In the fourth movement of *Pas de Deux*, the viola and piano play exactly the same notated pitches in a phrase which includes all the intervals less than an octave. The viola is muted, attenuating the upper partials of each note. The piano is marked *una corda* and *tre corde* so that the beats produced from the piano intervals are audible and mixed with the viola sound. The *fp* attacks in the piano stimulate the instrument into resonance, yet rapidly reduce the dynamic level so that the interaction of the sustained viola dyads and the piano dyads can be perceived. The result is a composite sound, where the piano simulates the *pizzicato* attack of an enormous resonant viola. This composite sound is further probed when the viola ascends into harmonics, revealing the fading resonance.

Later in the movement, the dyads are recontextualised as upper partials of a low pseudo-fundamental, Bb_0 or Bb_1 . Both instruments merge in the single sonority of the final chord; the $F\sharp_1$ viola harmonic is 'out-of-tune' with the implied Bb minor of the proximate Bb , $D\flat$ dyad in the piano, but all the pitches are consonant with the low Bb_0 of the piano - $F\sharp_1$ is in the ratio 3:2, $D\flat$ 9:8, Bb 15:9 and $F\sharp_1$ 11:8.

In the first movement, the intervals chosen are simple ratios in the harmonic series; 3:2 (perfect fifth), 4:3 (perfect fourth), 9:8 (major second) and 9:4 (major 9th). These intervals are 'in-tune' in the 12-tone equal temperament of the piano and produce chords that are pure and resonant. The pedalling is specified to shape the decay of the resonance.

The double-stopped harmonics in the viola are resonant within the instrument, but not all of them can be produced on open strings. Hence each dyad has a different colour depending how each note is produced. The viola follows the decay of the piano and as the chord decays the beats between the two instruments become more apparent.

These two movements are very slow and the pulse is approximately even: in both cases the ear is led into the unfolding sound. The pitches chosen cover the whole chromatic scale although not all pitches are accorded equal preference.

The fifth movement exploits the pitches available as harmonics on the piano. In the octave C_2 - C_3 on a small Yamaha grand, nodes of the third, fifth and seventh harmonics are close together, and are within the comfortable stretch of either hand. By resting each finger on the strings of adjacent keys, a five note chromatic cluster will produce a chord of harmonics. By moving each finger in turn, an interesting evolving figure is created. In piano harmonics, the sound is not pure - a residual pitch of the fundamental of the string is also present, colouring the sound. The five-note figure is reordered several times and gradually transposed by two successive semitones upwards, employing ten tones of the chromatic scale before returning via its starting point to introduce $E\flat$ and finally settling on $C\sharp$. The viola part is derived canonically from the piano line, starting four quavers after the piano, then progressively skipping notes until it catches up with the piano. At the highest pitch of the work, the viola overtakes the piano, continuing to skip notes until it stops four quavers ahead. The irregular accentuation of each part, preserved in the canon, draws attention to specific pitches, highlights the transformation of the figure, and shapes the tension of the movement - the accents are more frequent and closer together in the centre of the movement.

A similar concentration on accentuation occurs in the third movement where the viola line unfolds erratically in notes of irregular duration. The melodic line emphasises specific intervals, of 1, 3, 4, and occasionally 5 semitones. Here the piano is subsidiary, doubling the viola an octave below or above the principal pitch. The movement requires precise ensemble at a rapid tempo in order to exploit the unity of attack and emphasise the drama of performance.

In the two remaining movements, the two instruments exhibit different facets of the same material. In the second movement, the viola's melodic line is constructed exclusively from the intervals of 1, 2 and 3 semitones, and soars in a long arc employing all the pitches of the chromatic scale. The succession of intervals is irregular, so that the phrase structure of the viola line cuts across the regular four-bar structure established by the piano. The piano material is constructed from the same intervals, but presented as four arpeggiated hexachords emphasising the pc set [0, 1, 3]. The piano chords support and contextualise the viola melodic line so that the rising or falling semitones are perceived as accented or unaccented appoggiaturas. As the line descends towards the opening pitch, the harmonic context has changed so the viola cadences on a lower pitch, D $\sharp_5$.

The pitch material of the final movement partitions the chromatic note into a ten-note set composed of the pitches available as the first seven natural harmonics on the four open strings of the viola (C $\flat$, C $\sharp$, D $\flat$, E $\flat$, F($\natural$), F $\sharp$, G $\flat$, A $\flat$, B $\flat$ ($\natural$) and B $\flat$) and a complementary dyad (E $\flat$ and A $\flat$). In the first half of the movement, the piano presents rapid arabesques through these pitches. The first arabesque is high above the viola dyad, clearly registrally separated and alien. Each new arabesque employs a lower pitch range until the viola dyad is enveloped by the piano sonority. The second half of the movement exchanges the roles of the instruments, presenting the same material as though under magnification. The piano slowly tolls the dyad on the lowest possible pitches E $\flat_1$ and A $\flat_1$, and the viola reveals the pitches of the arabesques in slow arpeggios. In the final gesture of simultaneous lines of ascending and descending fifths, the instruments exchange roles once more.

Each movement of *Pas de Deux* has a simple and clear structural premise which constrains the material and determines the referential framework. Each movement also focuses on a different aspect of the duo, exploiting a different facet of the acoustic properties of an instrument or addressing an issue of ensemble playing. The work demands an intense mode of listening, one that is sensitive to the nuances of sonority and tensions of performance. It is through the

concentration of material and the expansiveness of slow tempi that one is able to apprehend a new relationship between the viola and piano, where one is aware simultaneously of the differences in sonorities and of a composite unity.

The Land Solos

Background

In 1995, I attended 'The Exchange', a course for choreographers and composers organised by 'The Dance Place' and led by Philip Flood and Gill Clarke. I had been interesting in writing a work for dance for several years and wished to gain experience of collaborating with a choreographer. As the format of 'The Exchange' included lectures, discussion sessions and short sessions working with individual choreographers, I had an ideal opportunity to experiment with ideas, learn elements of another artform and discuss the collaborative process.

During this intensive course I worked with ten choreographers and was particularly interested in the work of Catherine Seymour. We discussed a large scale collaboration and Catherine was able to raise funds to commission a work from me and mount three productions in the autumn of 1997. The première at the Purcell Room, South Bank Centre, London, was the culmination of Catherine's one year post as the first Choreographer in Residence at the South Bank Centre.

The Project

The Catherine Seymour Dance Company was formed in 1990 as a vehicle for the choreographic work of Catherine Seymour. Like many young contemporary dance companies, it does not employ dancers on a full-time basis and is variable in size with a maximum of six dancers. In her works preceding 'The Land Solos' Catherine had used a wide variety of pre-recorded musics and had commissioned two specially composed tape works. For 'The Land Solos', she was keen to employ musicians for the performances and to exploit the interaction between musicians and dancers. It was decided that the musicians would be on stage and surround the dance area.

As a working concept, Catherine wished to explore man's relationship to hostile environments, in particular deserts. I was immediately drawn to the ambiguity of 'air' sounds, which could be human breath or sand scattered by the wind, and unstable sonorities which could be formed by

the resonance of air in a cave or produced by the human voice. Such sounds were for me a link between the human and the inanimate landscape. To explore these sounds, I selected an ensemble of two clarinets and two trombones. The pitched metallic percussion was added to add resonance to the ensemble and the cabassa to provide dry brittle articulation.

Catherine chose an ensemble of four dancers, two male and two female, who could present solos or create a 'landscape' where one dancer shadows another. As two pairs, the ensemble can present a polyphony where two styles of material coexist.

The collaborative process

For the ensemble, I chose specific players with whom I had worked on previous occasions: Roger Heaton (clarinet), Barrie Webb (trombone) and Christopher Brannick (percussion). All three gave generously of their time to discuss their instruments and advise me on practical issues.

With some nebulous musical ideas, I spent a ten-day research trip with Catherine Seymour to New Mexico in July 1997, observing the rich diversity of fauna and flora and the stunning variety of landscape. Through frequent discussion, we gained a clear view of the work and decided that it was unnecessary to adopt a rigid scenario or structural plan.

On completing half of the score, we discussed the work in Durham and made a number of changes. I recorded the completed score on piano and orchestrated the work while Catherine began the choreography. No changes to the structure of the music were made in the rehearsal, although there were revisions to the articulation and the tempi of sections.

Following the performance, I have had the opportunity to discuss further the clarinet parts with Ian Mitchell and his suggestions have been incorporated into the revised score.

The structure of the music

In observing dance works I have been intrigued by how the perceived rate of musical change is altered by the pace of the dance movement; an example is Siobhan Davies' choreography to Steve Reich's *'Different Trains'* where an obsessive, static section of music appears energetic and brief as a result of the kinetic complexity of the dance. Dance movement phrases have their own internal dynamic and unfold according to their own logic, so it is inappropriate to insist that the dance and music phrases must correspond. Catherine Seymour and I wished to explore this tension further, to create a counterpoint between the dance and the music where the phrase dynamics could collaborate or conflict. To ensure that the musical structure was clear, I composed a work that is essentially monophonic, alternating sections of stasis with sections that concentrate on a specific rhythmic figure or type of movement.

'The Land Solos' begins in silence with a solo for male dancer. The music emerges from the silence with a duo for two clarinets in multiphonics. The multiphonics chosen here are quiet, develop slowly and are pure with only two pitches separated by less than an octave. I combine six multiphonics for the B $\flat$ clarinet with nine for the A clarinet to create thirteen four-note chords which form the harmonic basis of much of the work. These chords are introduced in short phrases that gradually expand. The phrases are built from simple duration patterns; symmetrical structures (e.g. 5:4:5 ♩), arithmetic expansion (e.g. 3:4:5) and iambic rhythms (e.g. 2:3 or 2:4). The Thai gongs add a more regular pulse which complements the chordal patterns in the clarinets.

The second section, Lento (b73), is more luminous; the spacing of the opening multiphonic chords is expanded and the vibraphone arabesques enrich this harmony to form chords of seven or eight notes. The slow regular pulse defines a section of stasis that is one extreme of the work.

The third section, Allegro (b92), is rhythmically irregular. The duo for two trombones is constructed from the combination of two rotated rhythmic cells articulated by the open and closed positions of the harmon mute. These patterns sometimes establish, sometimes destabilise

the $\frac{3}{4}$ metre and create erratic syncopations that are reinforced by the cabassa. The trombones proceed in rhythmical unison separated by the intervals of 3, 5, 8 or 10 semitones. The introduction of the clarinet duo in b141 is a continuation of the same rhythmic and harmonic principles, but here the line is separated into two complementary melodic threads.

The fourth section, Allegro (b163), returns to the harmonic material presented in the second section; the clarinet arabesques use the same seven- and eight- note harmonic fields that were presented by the vibraphone.

The fifth section, Lento (b223), is the stark centre the work with bell-like attacks, high clarinets, mid-register trombones and the bare intervals of 2, 5, 7 and 10 semitones.

The sixth section, Andante (b247), is scored for solo trombone with a slow and expansive melody. This line is a magnification of the clarinet solo of section four.

By contrast the seventh section, Vivace (b286), is characterised by the expansion and contraction of a trochaic rhythmic figure, the second note of which is always accented (4:1, 3:1, 2:1  or 2:1 ). These phrases are interrupted by articulated glissandi where the ensemble threatens to disintegrate. The combination of the trombone slide with the lip glissandi expand or contract the harmonic series to suggest the overblowing of a bizarre wind instrument. The close position chords of this section are related to the muliphonic sonorities of section one.

The eighth section, Lento (b374), is characterised by calm descending phrases for bass clarinet, trombone and gongs; the bass clarinet and trombones proceed in rhythmic unison separated by the intervals of 8 or 10 semitones whereas the gongs feature the intervals of 2, 3, 4 or 10 semitones.

The ninth section, Presto (b382), is again based on pairs of notes of unequal duration, but here the pattern can be iambic or trochaic. The glockenspiel plays in organum with the second clarinet and second trombone predominantly at the interval of 8 or 9 semitones.

The melodic line of the tenth section, (b451), is related to the melodic line of the eighth section with a similar shape and interval content. The clarinets are separated by the intervals of 6, 7, 8, 9 or 10 semitones. In the first phrase they are doubled by the trombones 11 semitones lower, in the third phrase 14 semitones lower.

In this context, the eleventh section is an expansion of the preceding material and a reworking of section eight; here the trombones imitate the slow melodic descent of the gongs.

The twelfth section is related to section five, but the instrumental colours are less vivid. The clarinet 1 melody of section five becomes the upper part of the vibraphone, doubled 6, 8, or 10 semitones lower. In this section the clarinet 1 plays the summation tones of the vibraphone part while the bass clarinet 2 is allocated the difference tones to give a shimmering homophonic texture where quasi-tonal chords are presented in a non-tonal context.

The final section features a duet between the two clarinets which remains harmonically fixed while the accompanying harmony in the trombones and gongs shifts downwards. The clarinet arabesques are constructed from segments of several harmonic series and allude to both the trombone lip glissandi in section seven and the 'tonal' chords of section twelve. The final clarinet arabesque is supported by the trombone glissandi; the harmony evaporates to leave the toll of the temple bell.

Although no scenario was specified, I envisaged the work as a single day with the static sections denoting changes of light; section one night, section two dawn, section five noon, and section twelve dusk. Sections eight, ten and eleven are transitional and the remaining six sections (3, 4, 6, 7, 9, 13) suggest the movement of figures in a landscape.

Appendix 1

Conventions employed in the composition portfolio and commentary.

Music notation

The notation of the music conforms to the principles defined in *The Essentials of Music Copying* (Homewood and Matthews, 1990). Accidentals carry throughout the bar, but cautionary accidentals with or without parentheses are employed liberally to avoid ambiguity. The notation of 'irrational' rhythms owes much to the discussion in (Read, 1978).

The notation of quarter tones, microtonal inflections and several special instrumental sounds derive from a study of scores by Brian Ferneyhough and others. For tempered quarter tones I employ the symbols :

$\flat$ $\sharp$ $\sharp\sharp$ $\sharp\sharp\sharp$
 $\flat$ $\flat\flat$ $\flat\flat\flat$ $\flat\flat\flat\flat$

Accidentals with attached arrows are non-tempered microtonal inflections.

An arrow indicates a transition from one state to another e.g.

sul pont. → *sul tasto*

The fingering for flute multiphonics are taken from *The Other Flute* (Dick, 1989), a volume recommended to me by several professional flautists.

For metric modulations, I have followed the logical conventions of Elliott Carter i.e.

← $\text{♩}^{\text{♩}}$ = ♩ →

All dynamics are relative to the instrument, i.e. ff for a double bass is not expected to equal ff on a trombone!

Analytical notation

In the commentary, I have employed the following pitch convention: C_1 is the first C on the piano keyboard and the octave number changes at each subsequent C. ($A_4 = 440\text{Hz}$)

Notation of pitch sets

As in much American analytical literature, I number the ascending chromatic scale with twelve integers 0-11 where 0 is an arbitrary reference pitch, not necessarily C_1 .

Following (Forte, 1964), an ordered pitch-class set in its most compact form is notated by the integers 0-11 separated by commas and enclosed in square brackets e.g. [0,1,4]. An interval vector is an ordered set of 6 integers separated by spaces enclosed by square brackets e.g. [1 0 1 1 0 0]. The order of this set refers to the number of intervals of size 1 to 6 semitones present in a pc-set.

I have notated sets which are not in the Forte form in round brackets e.g. (0,3,4). Where it has been important to compare the registration of chords, I have used a semicolon to indicate a change of octave. In such cases, the integer 0 refers to the bass note e.g. $G_3 B\flat_3 B\flat_4 \rightarrow (0, 4; 3)$.

I have notated interval sets in angled brackets separated by commas.

Hence the set (0,3,4) corresponds to the interval set $\langle 3,1 \rangle$ and is an instance of the pitch class set [0,1,4] with interval vector [1 0 1 1 0 0].

I have adopted Forte's numbering of pitch-class-sets, with the addition of the following letters: p (prime), i (inverted) for isomorphic sets and s (symmetrical) for non-isomorphic sets. These letters are for my convenience only and do not reflect any hierarchical precedence.

I have expanded Forte's system by the use of a trichord vector, an ordered set of twelve elements which correspond to the number of trichords present in a set e.g.

[0,2,3,5,7] has the trichordal vector [0 1 0 1 0 1 : 3 0 1 0 1 0]
 corresponding to the trichords

0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	2	2	2	2	3	3	4
2	3	4	5	6	4	5	6	7	6	7	8

(The colon in the vector is simply for reading convenience as it separates the vector into two halves)

Many sets with identical interval vectors (Forte's Z relation) are distinct with regard to trichordal vector. As I composer, I find the trichordal vector a better indicator of set similarity and a more useful compositional tool than the interval vector.

Notation of sets

A single capital letter can refer to any set, be it a pitch-class-set, a chord or a melodic line. The subscript integer, 0-11, indicates the transposition level from an arbitrary reference level.

Following Forte, an inversion of a set uses the first element of a pitch-class-set as its axis, i.e.

$B = I(A)$ such that

$$b_{k-m} = |12 - a_m|_{12}, 1 < m < k, a_m \in A, b_m \in B$$

where $k = \text{size}(A)$

If the inversion has a transposition subscript, it is assumed that inversion precedes transposition.

Calculation of interval and index vectors

For any set, A, a grid, G, of intervals can be calculated according to the formula :

$$g_{n,m} = |a_n - a_m|_{12}$$

where $a_n \in A$ and $a_m \in A$, $1 < n < \text{size}(A)$, $1 < m < \text{size}(A)$

and $g_{n,m} \in G$

If it is assumed that intervals greater than 6 semitones can be considered equivalent to their complements, this grid is symmetrical about a diagonal axis from top left to bottom right, each element of the diagonal being 0. A simplified triangular grid can therefore be constructed following (Forte, 1964)

$$g_{n,m} = |a_n - a_m|_{12}$$

if $g_{n,m} > 6$, $g_{n,m} \rightarrow g_{n,m} - 6$

where $a_n \in A$ and $a_m \in A$, $1 < n < \text{size}(A) - 1$, $2 < m < \text{size}(A)$

and $g_{n,m} \in G$

Forte uses this grid to calculate an interval vector, V , of six elements, where the ordered set refers to interval of size one to six semitones.

$a_n \in A$ and $a_m \in A$, $1 < n < \text{size}(A) - 1$, $2 < m < \text{size}(A)$

$i = |a_n - a_m|_{12}$

if $i > 6$, $i \rightarrow i - 6$

$V_i \rightarrow V_i + 1$

The resulting vector can be used to discover how many pitch class elements of a set will be repeated in the new set after transposition by an interval i , up or down. If the transposition is by 6 semitones, V_6 must be doubled owing to symmetry (a transposition of 6 semitones up and 6 semitones down are both possible and both should be considered.)

Similarly a grid of indexes can be calculated, where the index determines the number of pitch classes which stay constant between a set and its transposed inversion.

$g_{n,m} = |a_n - (12 - a_m)|_{12} = |a_n + a_m|_{12}$

where $a_n \in A$ and $a_m \in A$, $1 < n < \text{size}(A)$, $1 < m < \text{size}(A)$

and $g_{n,m} \in G$

In this case the grid is not symmetrical, so an index vector, W , of twelve elements (0-11) must be used.

$a_n \in A$ and $a_m \in A$, $1 < n < \text{size}(A)$, $1 < m < \text{size}(A)$

$j = |a_n + a_m|_{12}$

$W_j \rightarrow W_j + 1$

These procedures can further be extended to calculate the number of pitch class sets in common between two arbitrary sets at a given transposition interval or following inversion of the second set followed by transposition. However, an interval vector of twelve elements must be used as the grid will not be symmetrical around the major axis.

Chord multiplication

In (Boulez, 1991: 128-130), Boulez describes his method of producing chord complexes by multiplying two simpler chords together.

If A and B are two sets and $T(X,y)$ is a transposition function such that

$$Z = T(X,y)$$

$$z = |x+y|_{12}, \text{ where } x \in X, z \in Z$$

Boulez's multiplication can be defined as:

$$A \otimes B = T(A, b_1) + T(A, b_2) \dots T(A, b_m), 1 < m < n, b_m \in B$$

where the operation '+' adds elements to a set and n is the number of elements in set B .

e.g.

$$(0,1,6) \otimes (1,4,8) = (1,2,7) + (4,5,10) + (8,9,2)$$

The set can be written in ascending order, omitting repetitions, (1,2,4,5,7,8,9,10), if required.

Boulez tends to omit note repetitions in his earlier work²⁸, especially if the complex is to be used as a chord. I have included note repetitions in *études en mouvement II* to produce a rich harmonic field.

Delay function

By analogy with a transposition function, a delay function $\Gamma_z(X,y)$ can be defined which takes a set of time points X and increments each element with the value y . The modulus, z , ensures that time points beyond the end of the rhythmic cycle are rotated to the beginning.

$$D = \Gamma_z(X,y)$$

$$d_m = |x_m + y|_z, 1 < m < k, x_m \in X, d_m \in D$$

$$\text{where } k = \text{size}(X)$$

28 See for example the discussion in (Boulez, 1971: 37-42)

Appendix 2: Notes on recordings

Fragments after Chiyo

Recording 1 (workshop)

London Sinfonietta workshop at the University of Durham

Phillippa Davies (flute)

Christopher van Kampen (cello)

Ian Brown (piano)

Susan Bickley (mezzo soprano)

Anthony Pay (conductor)

Recording 2 (workshop performance)

Jane's Minstrels : SPNM workshop at the Guildhall School of Music and Drama, London

Jane Manning (mezzo soprano), Roger Montgomery (conductor)

This is a SPNM recording - I do not have the master.

Elements of Iridescence

Recording of first performance, The Kirk, Hoy

Scottish Chamber Ensemble

The original recording was made on a Sony Walkman and is not of good quality.

...and the unseen eyebeam crossed..

Rehearsal recording

Royal Scottish National Orchestra, conductor David Davies

City Hall, Glasgow, RSNO/IBM composers' competition

This is a distant recording on a portable DAT - I have only a cassette copy. The clarinet is using a B flat instrument in error.

Of crossed destinies

Recording made and edited by Paul Archbold at the University of Huddersfield

Hugh Webb, harp

Chiaroscuro

Recording of first performance, St. Giles, Cripplegate, London
March 1996

Paul Sherman (double bass) and Opus 20, conductor Scott Stroman	
Christopher Tombling (violin 1a)	Ann Morphee (violin 2a)
Cleo Gould (violin 1b)	Greg Warren Wilson (violin 2b)
Abigail Brown (violin 1c)	Sonia Slany (violin 2c)
Bridget Carey (viola 1)	Rachel Stott (viola 2)
Jo Knight (cello 1)	Emma Black (cello 2)

Minor inaccuracy at the opening of the Lento section

Études en mouvement

Recordings on several occasions

études 1 and 2	Concert performance, University of Huddersfield
étude 4	Concert performance, University of Durham,
étude 5	Concert performance, University of Durham, February 1998
Paul Archbold, piano	
étude 3	synthesised version

Pas de deux

Bridget Carey (viola), Paul Archbold (piano)
Recording of first performance, University of Durham, February 1998

Occasional minor inaccuracies, e.g. the opening tempo of movement 4.

The Land Solos

Roger Heaton, Ian Mitchell (clarinets)
Barrie Webb, David Whitson (trombones)
Christopher Brannick (percussion), Paul Archbold (conductor)
Catherine Seymour Dance Company
Recording of first performance: Purcell Room, London, September 1997

There are several problems with this recording - I had to position the microphones on the stage, so the dancers are audible. Furthermore I was unable to check recording levels, so there is some distortion in sections five and six.

The score is revised; the clarinet duo in section four was originally for solo clarinet.

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Paul Archbold

Fragments after Chiyo (1990)

for mezzo soprano, flute,
piano and 'cello

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author and information derived
from it should be acknowledged.



24 FEB 1999

Fragments after Chiyo

flute (doubling alto flute)

cello

piano

mezzo soprano

Duration 6 minutes

Thesis ++

1998/

ARC

FRAGMENTS AFTER CHIYO

I

words : Kago no Chiyo
translated from the Japanese
by R. H. Blyth

Paul Archbold (1990)

$\text{♩} = 48$

Flute

pp sempre

3 6

Cello

pp sempre

gliss 3

Mezzo soprano

P

Spring

Piano

pp

5 5 5 5

Ped

2

FL

P

5

pp 3

Vcl

P

M.S.

rain

Pno

pp

7

P 3 5

Ped

Fl 3 *pp*

Vcl *pp* (ord.) *ppp*

M.S. *p* *mp* *p*

Everything just grows

Pno *p* *mp* *p*

(Ped)

Fl 4 *mfz* *pp* *ord.*

Vcl *p* *mfz* *pp* *ppp* *pp*

M.S. *p* *5:4* more beau- ti- ful

Pno *p* *pp*

(Ped)

5

Fl

Vcl

M.S.

Pno

mp *p* niente

ppp *Ped*

6

Fl

Vcl

M.S.

Pno

fllt₂ *P_{II} 3 II* *P*

fllt₂ *P*

P *P*

Ped

The dew of the

8 Fltz *mp* *mf* 3

Vcl *mp* *mf*

M.S. *mf* *f*

rouge flower when it is spilled

Pno *mp* (Ped) Ped

9 Fl *f* tr. *tr.* *tr.*

Vcl *mf* *tr.* 3 *tr.*

M.S. *mp* *p*

is sim- ply wa- ter

Pno *mf* *tr.* (Ped) Ped

FL 11

tr. (b-e)

mp

10

fp

Vcl

tr. (b-e)

pp

fp

3

M.S.

f

3

p

Au - tumn Au - tumn's

Pno

(3)

f

(Ped)

Ped

FL 13

tr. (b-e)

f

Vcl

f

pp sempre

M.S.

f

bright moon

how - e - ver

Pno

f

6

pp

pp

Ped

3

Handwritten musical score for the song "The Rose Tree". The score is written for four parts: Flute (Fl.), Violin (Vcl.), Mezzo-Soprano (M.S.), and Piano (Pno.). The music is in 3/4 time and consists of two measures. The first measure is marked with a "14" above the Flute staff. The second measure is marked with a "5" above the Flute staff. The lyrics "far I walked, still far off" are written below the Mezzo-Soprano staff. The piano part includes a bass line with a double bar line and a key signature change to B-flat major (two flats) in the second measure.

Handwritten musical score for the piece "In an unknown sky". The score is written for three instruments: Flute (Fl.), Violoncello (Vcl.), and Piano (Pno.). The music is in 3/4 time and consists of 16 measures.

Flute (Fl.): The Flute part begins in measure 16 with a whole note G4 (G4) marked *pp*. It continues with a half note A4 (A4) in measure 17, a quarter note B4 (B4) in measure 18, and a quarter note C5 (C5) in measure 19. The key signature changes to one sharp (F#) in measure 20, where it plays a quarter note D5 (D5).

Violoncello (Vcl.): The Violoncello part begins in measure 16 with a whole note G3 (G3) marked *pp*. It continues with a half note A3 (A3) in measure 17, a quarter note B3 (B3) in measure 18, and a quarter note C4 (C4) in measure 19. The key signature changes to one sharp (F#) in measure 20, where it plays a quarter note D4 (D4).

Piano (Pno.): The Piano part begins in measure 16 with a whole note G3 (G3) marked *pp*. It continues with a half note A3 (A3) in measure 17, a quarter note B3 (B3) in measure 18, and a quarter note C4 (C4) in measure 19. The key signature changes to one sharp (F#) in measure 20, where it plays a quarter note D4 (D4).

Vocal Part: The vocal part begins in measure 16 with the lyrics "In an unknown sky". The melody is written in a soprano clef and consists of the following notes: G4 (G4) in measure 16, A4 (A4) in measure 17, B4 (B4) in measure 18, and C5 (C5) in measure 19. The key signature changes to one sharp (F#) in measure 20, where it plays a quarter note D5 (D5).

II

♩ = 48

1

FL *pp* *sul pont. trem.* *mp* *pp*

Vcl *ppp*

M.S. *mp* *spræ* (2) *8va* → (i)

Pno *pp* *ppp* *pp*

Ped

2

FL *mp* *pp* *mp*

Vcl *ppp* 3 3

M.S. *mp* *spræ*

Pno *pp* *ppp* *pp*

Ped

Handwritten musical score for "The Rose Tree" featuring Flute (Fl.), Violin (Vcl.), and Piano (Pno.). The score is written in 4/4 time and includes dynamic markings such as *mp*, *p*, *mf*, and *pp*. The Flute part includes a triplet of eighth notes and a five-measure rest. The Violin part features a triplet of eighth notes and a five-measure rest. The Piano part includes a triplet of eighth notes and a five-measure rest. The score is marked with a 3 and a 5, indicating the number of measures in the respective rests.

Handwritten musical score for measures 4-6 of "The Swan" by Debussy. The score includes parts for Flute (FL), Violoncello (Vcl), Mezzo-Soprano (M.S.), Piano (Pno), and Pedal (Ped). Measure 4 features a flute trill and a mezzo-soprano entry. Measure 5 includes a mezzo-soprano trill and a piano entry. Measure 6 shows a mezzo-soprano trill and a piano entry. The score is marked with dynamics like *mf*, *p*, *mp*, and *pp*, and includes performance instructions like "arco trem. due corde" and "tr. (non tr.)".

5

FL *8va* *loco* *8va*

Vcl *pizz* *arco* *pizz* *arco*

Pno *f* *Ped*

7

FL *ppp*

Vcl *ppp* *p*

M.S. *ppp* *3* *5* *5* *pe, o* *pe, o* *pe*

Pno *ff* *ppp* *Ped*

9

Fl *mp pizz* *pp* *pp arco*

Vcl *mp* *pp*

M.S. *mfz > p*
gro (o) —————> e —————> (i)

Pno *mp* (Ped) *pp* *8va* *5* *3* *8va* *Ped*

10

Fl *pp*

Vcl *pp* *pizz* *p* *(b)*

M.S. *sotto voce*
— i —————> o ————— s
ev-ery-thing just
8va *5* *3* *8va* *Ped*

Pno *8va* *(Ped)* *pp* *5* *3* *8va* *Ped*

[illegible]

non Ped

* scrunch! :- short unpitched scraping noise; intense bow pressure near bridge at the heel
damp immediately

14

Fl

f *p*

Vcl

f

M.S.

mp 5:4

so beau - ti - ful

Pno

f

III

$\text{♩} = 112$
tr. *non tr.*

FL ff pp *ord.* *sul tasto* $\frac{1}{2}$ breath tone

Vcl ff pp

M.S. pp *whispered* *(voiceless)* *(voiced)* *sung* $\frac{1}{2}$ *voiced*
water [wstə] water spring water water wə

Pno ff *8va 7* *sfz*

Ped 7:4

3 FL *ord. fltts* $\frac{1}{2}$ breath tone

Vcl ** molto sul pont* *sfz > pp* *ord. col legno battuto notato* *mf*

M.S. *sfz > pp* *(1/2 voiced)* *P* *mf > P* *sung* *pp*
wə $\int$ wə tR tR tR tR wə tR

Pno *mf* *P* *mf* *pp* *pp* *sfz*

8va

5

Fl *ord.* $\frac{3}{3}$ *f* *p* $\frac{1}{2}$ breath tone *pp* *ram tongue* $\frac{3}{3}$ *mf* >

Vcl *ord. molto sul pont.* *f* *pizz. ord.* $\frac{5}{3}$ *ff*

M.S. *f* *KR* *p* *whispered* $\frac{1}{2}$ voiced *mf sung* $\frac{3}{3}$

w t g *w t g* *rain*

Pno *sfz* *b b b* *8va* *f* $\frac{8}{6}$ *Ped* $\frac{7}{6}$ *mf*

7

Fl $\frac{1}{2}$ breath tone *pp* *mf* *flttz* *p*

Vcl *arco col legno battuto gettato* *p* *pizz.* *ff*

M.S. *p* $\frac{1}{2}$ voiced *mf sung* *whispered*

w t g *spring* *w t g*

Pno *sfz* *b b b* *8va* *sfz* $\frac{8}{6}$ *f* $\frac{7}{6}$ *Ped*

Handwritten musical score for measures 9 through 14, featuring staves for Flute (Fl), Violoncello (Vcl), Piano (Pno), and M.S. (Music Stand).

Measure 9: Flute (Fl) has a trill (tr.) marked *ord. (b♭)* and *f*. Violoncello (Vcl) has *mf* and *sfz* markings. Piano (Pno) has *mf* and *sfz* markings.

Measure 10: Flute (Fl) has a trill (tr.) marked *ord. (b♭)* and *f*. Violoncello (Vcl) has *mf* and *sfz* markings. Piano (Pno) has *mf* and *sfz* markings.

Measure 11: Flute (Fl) has a trill (tr.) marked *ord. (b♭)* and *fff*. Violoncello (Vcl) has *mf* and *sfz* markings. Piano (Pno) has *mf* and *sfz* markings.

Measure 12: Flute (Fl) has a trill (tr.) marked *ord. (b♭)* and *fff*. Violoncello (Vcl) has *mf* and *sfz* markings. Piano (Pno) has *mf* and *sfz* markings.

Measure 13: Flute (Fl) has a trill (tr.) marked *ord. (b♭)* and *fff*. Violoncello (Vcl) has *mf* and *sfz* markings. Piano (Pno) has *mf* and *sfz* markings.

Measure 14: Flute (Fl) has a trill (tr.) marked *ord. (b♭)* and *fff*. Violoncello (Vcl) has *mf* and *sfz* markings. Piano (Pno) has *mf* and *sfz* markings.

[illegible]

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21

Fl

Vcl

M.S.

Pno

8va

23

Fl *fff* *br. rumm* *fff*

Vcl *scrunch!* *col legno battuto gettato* *mf*

M.S. *mf* *P*

Pno *fff* *fff* *8va* *mf* *3*

water *spring water*

26

Fl *Take Alto Flute*

Vcl *fff*

M.S.

Pno *fff* *fff* *8va*

IV

♩ = 48

Alto Flute

pp sempre

Cello

pp *pp*

Mezzo Soprano

legatissimo

Piano

pp sempre

mp secco

8va basso sempre

2

A.Fl.

Vcl.

M.S.

P

Au tumn

Pno

8va bass.

Handwritten musical score for "L'Espresso" by Schubert. The score is written on four staves:

- A.F.I.** (Alto Saxophone): Treble clef, key of D major (two sharps). The first staff shows a melodic line starting with a triplet of eighth notes, marked *(pp)*.
- Vcl.** (Violin): Treble clef, key of D major. The first staff shows a melodic line starting with a half note, marked *ppp*. The second staff shows a melodic line starting with a half note, marked *dolce* and *ppp*.
- Pno.** (Piano): Treble and Bass clefs, key of D major. The first staff shows a melodic line starting with a half note, marked *(pp)*. The second staff shows a melodic line starting with a half note, marked *(mp)*. The third staff shows a melodic line starting with a half note, marked *8va basso*.
- M.S.** (Mezzo-Soprano): Treble clef, key of D major. The first staff shows a melodic line starting with a half note, marked *ppp*.

The score includes various musical notations such as triplets, slurs, and dynamic markings (*pp*, *ppp*, *mp*, *dolce*). The key signature is D major (two sharps) and the time signature is 4/4.

Handwritten musical score for a piece titled "Au tourn." The score is written on five staves, each with a 3/4 time signature. The staves are labeled as follows:

- A.F.L.** (Alto Flute): The first staff, featuring a melodic line with many accidentals (sharps and flats) and some rests.
- Vcl.** (Violoncello): The second staff, featuring a melodic line with a triplet of eighth notes and dynamic markings *p* (piano) and *mp* (mezzo-piano).
- M.S.** (Mezzo-Soprano): The third staff, featuring a vocal line with a long note and the lyrics "Au _____ tourn." written below it.
- Pno** (Piano): The fourth staff, featuring a complex accompaniment with many accidentals and rests.
- 8va basso** (Octave Bass): The fifth staff, indicated by a dashed line and the label "8va basso" below it, featuring a melodic line with many accidentals.

The score is written in a handwritten style with various musical notations, including notes, rests, accidentals, and dynamic markings.

5

AFL *pp* *P* *pp*

Vcl *mp* 5 *P* 3

M.S.

Pno *pp* 3 5 *P* *Ped.*

8va basso

6

A.FL *tr. mmm* *pp* *pizz* *P* *pp* *arco*

Vcl *pp* *P* *pp*

M.S. *P* 5 *Au—* *tum'n's* *moon*

Pno *tr. mmm* *pp* 3 *P* *Ped.* *Loco* *Ped.*

7

A.F. *tr. mmm*
f *tr. mmm*
ff *p sub*

Vcl *scrunch!*
sfz *sfz* *pizz*
ff

M.S. *f*
bright *f*
bright

Pno *f*
sfz *8va*
ff

9

A.F. *tr. mmm*
f *tr. mmm*
ff *p sub*

Vcl *sfz* *sfz* *pizz*
ff

M.S. *f*
bright *f*
bright

Pno *f*
sfz *8va*
ff

8va *Loco*

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17

A.Fl. *ppp* *mf* *ppp* *5thz*

Vcl. *ppp* *mf* *pp cresc.* *8va (preferably!) arco*

M.S. *pp* *mf* *p* *far un-known sky*

Pno. *pp* *mf* *pp cresc.* *Ped*

19

A.Fl. *mp cresc.* *f* *sfz* *tr. (be)*

Vcl. *mf* *f* *3* *(8va)*

M.S.

Pno. *(cresc.)* *mf cresc.* *5* *7* *3*

(Ped)

20

AFI

8va pesante

Vcl

Ppp < p

M.S.

Ppp < p

2 → I

Pno

(cresc.) 7

(Ped)

fff



Paul Archbold

Elements of Iridescence (1991)

for flute, violin, viola, cello

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24 FEB 1999

Elements of Iridescence

flute (doubling piccolo)
violin
viola
cello

Duration 5 minutes

Thesis ++
1998 /
ARC

Elements of Iridescence

Paul Archbold

♩ = 56

flute

ff

can sord.

violin

ff

can sord.

viola

ff

can sord.

cello

ff

flute

ff

violin

ff

psub

viola

ff

du

cello

ff

du

ff

du

[illegible]

Handwritten musical score for the first movement of the Concerto for Violin and Piano, Op. 35, by Maurice Strakosky. The score is for the first system, measures 1-4. It includes staves for Flute, Violin, Viola, and Cello. The tempo is marked "Allegro" and the time signature is 4/4. The score features various musical notations including dynamics (p, f, sfz, p sub), articulation (accents, slurs), and performance instructions (senza sord., arco, pizz). The Flute part has a "pan-pipe tune" marked above it. The Violin and Viola parts have "scratch" and "senza sord." markings. The Cello part has "arco" and "pizz" markings. The score is written in a clear, legible hand.

X = "scratch" tone: sul ponticello, intense bow pressure

Handwritten musical score for flute, violin, viola, and cello. The score is written on four staves. The flute part is on the top staff, the violin on the second, the viola on the third, and the cello on the bottom. The music is in 2/4 time and features various dynamics including piano (p), forte (f), fortissimo (ff), and sforzando (sf). There are also markings for "pan-pipe" tone and "arco" (bowed). The score includes a variety of note values, rests, and articulation marks.

45

flute

violin

viola

cello

Handwritten musical score for measures 45-54. The score is written for four staves: flute, violin, viola, and cello. The key signature has one flat (B-flat). The time signature is 4/4. The music features complex rhythmic patterns, including sixteenth and thirty-second notes, and rests. Dynamics include *f* (forte), *pp* (pianissimo), and *5p* (pizzicato). There are also markings for *arco* (arco) and *pizz.* (pizzicato).

49

flute

violin

viola

cello

Handwritten musical score for measures 49-54. The score is written for four staves: flute, violin, viola, and cello. The key signature has one flat (B-flat). The time signature is 4/4. The music features complex rhythmic patterns, including sixteenth and thirty-second notes, and rests. Dynamics include *f* (forte), *pp* (pianissimo), and *5p* (pizzicato). There are also markings for *arco* (arco) and *pizz.* (pizzicato).

54

flute

clarinet

viola

cello

Handwritten musical score for measures 54-60. The score is written for four staves: flute, clarinet, viola, and cello. The key signature has one flat (B-flat). The time signature is 4/4. The music features complex rhythmic patterns, including sixteenth and thirty-second notes, and rests. Dynamics include *f* (forte), *pp* (pianissimo), and *5p* (pizzicato). There are also markings for *arco* (arco) and *pizz.* (pizzicato). The word "Take Piccolo" is written above the flute staff.

♩ = 90

59 Piccolo

violin

viola

cello

65 Piccolo

violin

viola

cello

70

Piccob

violin

viola

cello

sul pont.

pp

The musical score for measures 70-73 is written for four parts: Piccolo, Violin, Viola, and Cello. The Piccolo part is in the top staff, and the string quartet is in the bottom three staves. The key signature has one flat (B-flat). The Piccolo part consists of eighth and sixteenth notes. The Violin, Viola, and Cello parts feature sustained chords and moving lines, with the Cello part including a 'sul pont.' instruction and a 'pp' dynamic marking.

Paul Archbold

**Pas de deux
(1997)**

for viola and piano

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I
to BridgetLento ($\text{♩} = 60$)

1 *8va sempre*
Sounding

f — *sim.*
(follow piano decays)

molto legato
mf
Suggested Pedaling

mf — *sim.*

6 *8va*

mf — *sim.*

mp

Handwritten musical score for "The Rose Tree". The score is written on four staves. The first two staves are for the vocal part, and the last two are for the piano accompaniment. The key signature is one flat (B-flat), and the time signature is 3/4. The tempo is marked "Allegretto". The score is divided into two systems by a double bar line. The first system contains measures 1 through 4, and the second system contains measures 5 through 8. The vocal part is written in treble clef, and the piano accompaniment is written in bass clef. The piano part includes fingerings (I, II, III, IV) and dynamics (f, mf). The score is handwritten in ink on aged paper.

Andante (♩ = 60)
molto legato, dolce

1

P

sopra

Ped

poco a poco espressivo

4

Ped

7

Ped

sopra

10

Ped

13

(Ped)

16

poco a poco dolce

(Ped)

19

(Ped)

22

(Ped)

III

Allegro (♩ = c 144)

First system of musical notation, measures 1-5. The score is in 3/4 time, key of D major. The upper staff features a melody with eighth and sixteenth notes, marked *f* (forte). The lower staff provides harmonic support with chords and single notes, also marked *f*. A series of triangle symbols (Δ) is placed below the upper staff. The system concludes with a fermata and the word *lunga* (long).

Second system of musical notation, measures 6-10. The melody continues with similar rhythmic patterns. The lower staff maintains the harmonic accompaniment. Triangle symbols (Δ) continue below the upper staff.

Third system of musical notation, measures 11-15. This system introduces dynamic markings: *p* (piano) and *f* (forte) are indicated above the upper staff, and *f* and *fp* (fortissimo piano) are indicated below the lower staff. The melody and accompaniment continue with the established patterns. Triangle symbols (Δ) are present below the upper staff.

16

pp

20

pp

Lento ($\lambda = 60$)

con sordini
molto Legato, non vibrato

* To achieve the mf. *pp.*, the acciaccatura should be long enough to give a resonant attack. The resonance should be captured by the pedal. The piano here is imitating a resonant string pizzicato.

[illegible]

(sounding)

10

pizz *arco* *pizz* *arco*

p *mf* *p* *mf* *pp* (hold)

p (*mf*) *p* (*mf*) *ppp* (hold)

pp *pp*

8va basso

V

Moderato (♩=72) *pizz*

1

P

* harmonic, 5th 3rd 5th 7th 5th (sounding pitch)

fingerings 2 1 3 4 5 (balance to viola)

5 harmonic 5 finger

7

harmonic 7 4 finger

harmonic 5 3 finger

15

harmonic 5 5 finger

harmonic 5 3 finger

harmonic 5 2 finger

harmonic 3 1 finger

harmonic 7 4 finger

harmonic 5 3 finger

harmonic 3 1 finger

* This movement is not possible on all pianos due to the positioning of strengthening bars and cross-stringing. In such a case, it is acceptable to perform the sounding pitches on the keys as normal - mezzo staccato.

* By scientific convention, the first harmonic is the fundamental: the second harmonic is produced by touching a node at $\frac{1}{2}$ the length of the string. Here, the third harmonic is found at $\frac{1}{3}$ the string length, fifth at $\frac{2}{5}$ of the string length and the seventh at $\frac{3}{7}$ of the string length. These nodes, on adjacent strings, can be touched by the fingers of the right hand.

Handwritten musical score for measures 23-30. The score is written on three staves: a single treble clef staff at the top, and a grand staff (treble and bass clefs) below it. The key signature has one sharp (F#) and the time signature is 4/4. Measure numbers 23, 24, 25, 26, 27, 28, 29, and 30 are indicated at the beginning of each measure on the top staff. Fingerings are indicated by numbers 1-5 below notes. Harmonic markings are written above the notes in the grand staff: "harmoni 5" above measures 24, 25, and 26; "harmoni 3 5" above measure 27; "harmoni 7" above measure 28; and "harmoni 3" above measure 29.

Handwritten musical score for measures 31-38. The score is written on three staves: a single treble clef staff at the top, and a grand staff (treble and bass clefs) below it. The key signature has one sharp (F#) and the time signature is 4/4. Measure numbers 31, 32, 33, 34, 35, 36, 37, and 38 are indicated at the beginning of each measure on the top staff. Fingerings are indicated by numbers 1-5 below notes. Harmonic markings are written above the notes in the grand staff: "harmoni 5" above measure 31; "harmoni 5 7" above measure 32; "harmoni 5" above measure 35; and "harmoni 7" above measure 37.

Andante (♩ = 72)

Handwritten musical score for a piano piece, marked "Andante (♩ = 72)". The score is written on four systems of staves, each system consisting of a vocal line (soprano, alto, and tenor) and a piano accompaniment (treble and bass clef). The key signature is B-flat major (two flats). The tempo is marked "Andante (♩ = 72)".

The score includes dynamic markings: *pp* (pianissimo) and *Ped sempre* (pedal always). The piano accompaniment features complex rhythmic patterns, including triplets and sixteenth notes, with fingerings indicated by numbers 1-5. The vocal lines are primarily sustained notes, often with grace notes or slurs. The score is divided into measures by bar lines, with measure numbers 1, 4, 7, and 10 indicated at the beginning of each system.

13

16

19

22

(Ped)

25
(sounding pitch)

8va -

IV III II I II III IV III II I II I I II I III II I

Va

P

pp

8va basso

Ped →

(8va) -

28

IV III II I II III IV III II I II I I II I III II I

Va

(8va basso)

(Ped) →

(8va) -

31

IV III II I II III IV III II I II I I II I III II I

Va

(8va basso)

(Ped)

Ped

8va basso



Paul Archbold

The Land Solos (1997)

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The Land Solos (1997)

Clarinet 1 in B $\flat$ doubling bass clarinet in B $\flat$

Clarinet 2 in A doubling bass clarinet in B $\flat$

2 Tenor trombones (B $\flat$ /F) with harmon and straight mutes

Percussion:

Thai Gongs (D₃ - F $\sharp$ ₄), Vibraphone, Glockenspiel, Cabassa

Japanese Temple Bell

Commissioned by the Catherine Seymour Dance Company with funds from the Arts Council of England.

First Performance

Purcell Room, South Bank Centre, London, September 29 1997.

Performers:

Roger Heaton, Ian Mitchell (clarinets)

Barrie Webb, Dave Whitson (trombones)

Christopher Brannick (percussion)

Paul Archbold (conductor)

Acknowledgement

I would like to thank the performers for their generosity in giving advice during the composition and rehearsals of this work. The work was written for the dance work *The Land Solos* choreographed by Catherine Seymour.

Thesis ++

1998/

ARC

The Land Solos

Paul Archbold 1997

Andante (♩ = 80)

Clarinet 1 (B_♭)

sempre legato

ppp

Clarinet 2 (A)

sempre legato

ppp

Trombone 1

Trombone 2

Percussion

Japanese Temple Bell in C

Cl. 1 (B_♭)

Cl. 2 (A)

Trb. 1

Trb. 2

Temple Bell

gently stroke bell

pppp cresc. poco a poco

13

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Temple Bell

pppp cresc. poco a poco

Detailed description: This block contains the musical notation for measures 13 through 19. The top two staves are for Clarinets 1 and 2. Clarinet 1 is in B-flat and Clarinet 2 is in A. The next two staves are for Trumpets 1 and 2. The bottom staff is for the Temple Bell. The key signature has one flat (B-flat). The time signature changes from 5/4 to 4/4 at measure 14, then to 5/4 at measure 15, and back to 4/4 at measure 16. The dynamics start at pppp and increase through a crescendo to a fortissimo level by measure 19.

20

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Temple Bell

pppp cresc. poco a poco

Detailed description: This block contains the musical notation for measures 20 through 26. The top two staves are for Clarinets 1 and 2. Clarinet 1 is in B-flat and Clarinet 2 is in A. The next two staves are for Trumpets 1 and 2. The bottom staff is for the Temple Bell. The key signature has one flat (B-flat). The time signature changes from 5/4 to 4/4 at measure 21, then to 5/4 at measure 22, and back to 4/4 at measure 23. The dynamics start at pppp and increase through a crescendo to a fortissimo level by measure 26.

26

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Temple Bell

Measures 26-32. Cl. 1 (B $\flat$) and Cl. 2 (A) play a melodic line with eighth notes and quarter notes, tied across measures. Trb. 1 and Trb. 2 are silent. Temple Bell plays a rhythmic pattern of eighth notes and quarter notes.

33

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

Thai Gongs

ppp

Measures 33-39. Cl. 1 (B $\flat$) and Cl. 2 (A) play a melodic line with eighth notes and quarter notes, tied across measures. Trb. 1 and Trb. 2 are silent. Thai Gongs play a rhythmic pattern of eighth notes and quarter notes, marked *ppp*.

40

Cl. 1
(B₁)

Cl. 2
(A)

Trb. 1

Trb. 2

Thai
Gongs

46

Cl. 1
(B₁)

Cl. 2
(A)

Trb. 1

Trb. 2

Thai
Gongs

53

Cl. 1
(B $\flat$)

Cl. 2
(A)

Trb.1

Trb.2

Thai
Gongs

53 54 55 56 57 58

59

Cl. 1
(B $\flat$)

Cl. 2
(A)

Trb.1

Trb.2

Thai
Gongs

59 60 61 62 63 64

65

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

Lento (♩ = 60)

70

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

Vibraphone
espressivo

mp

Red

75

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

Measure 75: Cl. 1 (B $\flat$) plays B $\flat$ 4, Cl. 2 (A) plays A4, Trb. 1 and 2 are silent, Vib. plays a melodic line starting on G4 with a slur and accent.

Measure 76: Cl. 1 (B $\flat$) plays B $\flat$ 4, Cl. 2 (A) plays A4, Trb. 1 and 2 are silent, Vib. continues the melodic line with a slur and accent.

Measure 77: Cl. 1 (B $\flat$) plays B $\flat$ 4, Cl. 2 (A) plays A4, Trb. 1 and 2 are silent, Vib. continues the melodic line with a slur and accent.

Measure 78: Cl. 1 (B $\flat$) plays B $\flat$ 4, Cl. 2 (A) plays A4, Trb. 1 and 2 are silent, Vib. continues the melodic line with a slur and accent.

79

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

Measure 79: Cl. 1 (B $\flat$) plays B $\flat$ 4, Cl. 2 (A) plays A4, Trb. 1 and 2 are silent, Vib. plays a melodic line starting on G4 with a slur and accent.

Measure 80: Cl. 1 (B $\flat$) plays B $\flat$ 4, Cl. 2 (A) plays A4, Trb. 1 and 2 are silent, Vib. continues the melodic line with a slur and accent.

Measure 81: Cl. 1 (B $\flat$) plays B $\flat$ 4, Cl. 2 (A) plays A4, Trb. 1 and 2 are silent, Vib. continues the melodic line with a slur and accent.

Measure 82: Cl. 1 (B $\flat$) plays B $\flat$ 4, Cl. 2 (A) plays A4, Trb. 1 and 2 are silent, Vib. continues the melodic line with a slur and accent.

83

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

87

Cl. 1 (B $\flat$) *mp*

Cl. 2 (A) *mp*

Trb. 1 *con sord. (harmon)* *p*

Trb. 2 *con sord. (harmon)* *p*

Vib. *mp* *pp* *p*

Detailed description: This page contains musical notation for measures 83 through 90. Measures 83-86 are grouped together. In these measures, Cl. 1 (B $\flat$) and Cl. 2 (A) play sustained notes. The Vibraphone (Vib.) has a melodic line with slurs and accents. Measures 87-90 are grouped together. In these measures, Cl. 1 (B $\flat$) and Cl. 2 (A) play sustained notes. Trb. 1 and Trb. 2 enter with a harmonic line marked 'con sord. (harmon)' and 'p'. The Vibraphone continues with a melodic line, with dynamic markings *mp*, *pp*, and *p* indicated.

Allegro (♩ = 90)

90

Cl. 1 (B $\flat$) *mp*

Cl. 2 (A) *mp*

Trb. 1 *p* *f*

Trb. 2 *p* *mf* * (open)

Vib. *mp* *mf* Cabassa

94

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Cabassa

* Trbn. 2 to match dynamic of Trbn. 1

100

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Cabassa

105

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Cabassa

110

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Cabassa

115

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Cabassa

120

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Cabassa

+ o o + o o + o + o + o + o + o + o + o + o

[illegible]

130

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Cabassa

135

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Cabassa

This image shows a page of a musical score, specifically measures 140 through 144. The score is for a woodwind and percussion ensemble. The instruments listed on the left are:

- Cl. 1 (B $\flat$)
- Cl. 2 (A)
- Trb. 1
- Trb. 2
- Cabassa

The score is written in 2/4 time. The key signature has one flat (B $\flat$). The measures are numbered 140, 144, and 148. The dynamics are marked as *f* (forte), *p* (piano), and *mf* (mezzo-forte). The score includes various musical notations such as notes, rests, and slurs. There are also some performance instructions like "open" written above the trumpet parts in measures 144 and 148.

149

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Cabassa

153

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Cabassa

f

f

mf

f

mf

f

open

open

156

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Cabassa

p *f* *f* *f*

p *f* *f* *f*

open

open

accel. ----- Allegro (♩ = 104)

160

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

mf *f* *f*

mf *f* *fp*

mf *f* *fp*

mf *f* *fp*

Vibraphone

f

164

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

f *fp* *f* *fp* *f*

169

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

p *p* *p*

senza sord.

mf

[illegible]

177

Cl. 1 (B $\flat$)

mf

pp

5:4

7:4

Cl. 2 (A)

mf

pp

5:4

5:4

5:4

Trb. 1

Trb. 2

Vib.

mf

pp

5:4

5:4

5:4

5:4

181

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

8:6

7:4

p

p

mf *p*

5:4

p

p

mf *p*

185

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

5:4

f

p

f

3

p *mf*

f

5:4

f

p *mf*

p *f*

190

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

196

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

The musical score is divided into two systems. The first system covers measures 190 to 195. In measure 190, Cl. 1 (B $\flat$) has a rest, while Cl. 2 (A) plays a quarter note. In measure 191, Cl. 1 (B $\flat$) plays a half note, and Cl. 2 (A) plays a quarter note. In measure 192, Cl. 1 (B $\flat$) plays a half note, and Cl. 2 (A) plays a quarter note. In measure 193, Cl. 1 (B $\flat$) plays a half note, and Cl. 2 (A) plays a quarter note. In measure 194, Cl. 1 (B $\flat$) plays a half note, and Cl. 2 (A) plays a quarter note. In measure 195, Cl. 1 (B $\flat$) plays a half note, and Cl. 2 (A) plays a quarter note. The second system covers measures 196 to 201. In measure 196, Cl. 1 (B $\flat$) plays a half note, and Cl. 2 (A) plays a quarter note. In measure 197, Cl. 1 (B $\flat$) plays a half note, and Cl. 2 (A) plays a quarter note. In measure 198, Cl. 1 (B $\flat$) plays a half note, and Cl. 2 (A) plays a quarter note. In measure 199, Cl. 1 (B $\flat$) plays a half note, and Cl. 2 (A) plays a quarter note. In measure 200, Cl. 1 (B $\flat$) plays a half note, and Cl. 2 (A) plays a quarter note. In measure 201, Cl. 1 (B $\flat$) plays a half note, and Cl. 2 (A) plays a quarter note.

4

4

207

Cl. 1 (B_♭)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

212

Cl. 1 (B_♭)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

5:4

ff

5:4

ff

5:4

ff

217

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

220

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Vib.

Lento (♩ = 60)

223

Cl. 1 (B $\flat$)

fp > *sim.*

Cl. 2 (A)

fp > *sim.*

Trb. 1

fp > *sim.*

Trb. 2

fp > *sim.*

Thai Gongs

231

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

239

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

fp

fp

fp

fp

Andante (♩ = 56)

247 take Bass Clarinet

BCl. 1 (B $\flat$)

BCl. 2 (B $\flat$)

Trb. 1

Trb. 2

Thai Gongs

mf

251

BCl. 1
(B₁)

BCl. 2
(B₁)

Trb. 1

Trb. 2

Thai
Gongs

256

BCl. 1
(B₁)

BCl. 2
(B₁)

Trb. 1

Trb. 2

Thai
Gongs

261

BCl. 1 (B $\flat$)

BCl. 2 (B $\flat$)

Trb. 1

Trb. 2

Thai Gongs

The score for measures 261-265 shows the BCl. 1 part with a melodic line and dynamics. The BCl. 2 part is silent. The Trb. 1 part has a melodic line. The Trb. 2 and Thai Gongs parts are silent.

[illegible]

271

BCl. 1 (B $\flat$)

BCl. 2 (B $\flat$)

Trb. 1

Trb. 2

Thai Gongs

p *pp* *p*

p

276

BCl. 1 (B $\flat$)

BCl. 2 (B $\flat$)

Trb. 1

Trb. 2

Thai Gongs

pp

p *p* *pp*

play

pp

sing
con sord. (harmon)
sing

play
pp

pp

Vivace (♩ = 144)

282

BCl. 1 (B₁)

BCl. 2 (B₁)

Trb. 1

Trb. 2

Thai Gongs

con sord. (harmon)

play

sing

ord.

fp

sfz p

fp

sfz p

fp

sfz p

289

BCl. 1 (B₁)

BCl. 2 (B₁)

Trb. 1

Trb. 2

Thai Gongs

sfz p sfz p sfz p sfz p sfz p sfz p sfz p sfz p

sfz p sfz p sfz p sfz p sfz p sfz p sfz p sfz p

sfz p sfz p sfz p sfz p sfz p sfz p sfz p sfz p

sfz p sfz p sfz p sfz p sfz p sfz p sfz p sfz p

* Force note to form a multiphonic, gradually increasing the number of overtones

295

BCl. 1 (B₁)

BCl. 2 (B₁)

Trb. 1

Trb. 2

Thai Gongs

p *p* *sfz* *p* *sfz* *p* *sfz*

p *p* *sfz* *p* *sfz* *p* *sfz*

p *p* *sfz* *p* *sfz* *p* *sfz*

p *p* *sfz* *p* *sfz* *p* *sfz*

301

BCl. 1 (B₁)

BCl. 2 (B₁)

Trb. 1

Trb. 2

Thai Gongs

p *sfz* *p* *sfz* *p* *sfz* *p* *sfz*

p *sfz* *p* *sfz* *p* *sfz* *p* *sfz*

p *sfz* *p* *sfz* *p* *sfz* *p* *sfz*

p *sfz* *p* *sfz* *p* *sfz* *p* *sfz*

307

BCl. 1 (B₁)

BCl. 2 (B₁)

Trb. 1

Trb. 2

Thai Gongs

p *p* *p* *p* *sfz p sfz* *sfz p sfz*

5:3 5:3

6 16

312

BCl. 1 (B₁)

BCl. 2 (B₁)

Trb. 1

Trb. 2

Thai Gongs

p *sfz p sfz* *p sfz* *p sfz* *p sfz* *p sfz p*

p *sfz p sfz* *p sfz* *p sfz* *p sfz* *p sfz p*

p *sfz p sfz* *p sfz* *p sfz* *p sfz* *p sfz p*

p *sfz p sfz* *p sfz* *p sfz* *p sfz* *p sfz p*

6 16

319

BCl. 1 (B $\flat$)

sfz p sfz p sfz p

BCl. 2 (B $\flat$)

sfz p sfz p sfz p

Trb. 1

sfz p sfz p sfz p

Trb. 2

sfz p sfz p sfz p

Thai Gongs

325

BCl. 1 (B $\flat$)

sfz p sfz p sfz p

BCl. 2 (B $\flat$)

sfz p sfz p sfz p

Trb. 1

sfz p sfz p sfz p

Trb. 2

sfz p sfz p sfz p

Thai Gongs

330

BCl. 1 (B₁)

BCl. 2 (B₁)

Trb. 1

Trb. 2

Thai Gongs

p *sfz* *p* *sfz* *p* *sfz*

p *sfz* *p* *sfz* *p* *sfz*

p *sfz* *p* *sfz* *p* *sfz*

p *sfz* *p* *sfz* *p* *sfz*

Thai Gongs

335

BCl. 1 (B₁)

BCl. 2 (B₁)

Trb. 1

Trb. 2

Thai Gongs

p *sfz* *p* *sfz* *p* *sfz* *p*

p *sfz* *p* *sfz* *p* *sfz* *p*

p *sfz* *p* *sfz* *p* *sfz* *p*

p *sfz* *p* *sfz* *p* *sfz* *p*

Thai Gongs

340

BCl. 1 (B $\flat$)

sfz p sfz p sfz p sfz p

BCl. 2 (B $\flat$)

sfz p sfz p sfz p sfz p sfz p

Trb. 1

sfz p sfz p sfz p sfz p sfz p

Trb. 2

sfz p sfz p sfz p sfz p sfz p

Thai Gongs

346

BCl. 1 (B $\flat$)

sfz p sfz p mf 9:6

BCl. 2 (B $\flat$)

sfz p sfz p mf 8:6

Trb. 1

sfz p sfz p mf 7:6

Trb. 2

sfz p sfz p mf 7:6 5:3

Thai Gongs

[illegible]

Musical score for measures 351-360. The score includes parts for BCl. I (B₄), BCl. 2 (B₄), Trb. 1, Trb. 2, and Thai Gongs.

- BCl. I (B₄):** Treble clef, 2/4 time signature. Measures 351-360 show dynamics *p*, *sfz*, *p*, *sfz*, *p*, *sfz*, and *f*.
- BCl. 2 (B₄):** Treble clef, 2/4 time signature. Measures 351-360 show dynamics *p*, *sfz*, *p*, *sfz*, *p*, *sfz*, and *f*. A sharp sign (#) appears above the staff in measure 359.
- Trb. 1:** Treble clef, 2/4 time signature. Measures 351-360 show dynamics *p*, *sfz*, *p*, *sfz*, *p*, *sfz*, and *f*. Labels "play" and "sing" are present above the staff in measure 358.
- Trb. 2:** Bass clef, 2/4 time signature. Measures 351-360 show dynamics *p*, *sfz*, *p*, *sfz*, *p*, *sfz*, and *f*. Labels "sing" and "play" are present below the staff in measure 358.
- Thai Gongs:** Bass clef, 2/4 time signature. Measures 351-360 show rests.

357

BCl. 1 (B $\flat$)

BCl. 2 (B $\flat$)

Trb. 1

Trb. 2

Thai Gongs

p *mf* *p* *sfz* *p* *sfz* *p*

p *mf* *p* *sfz* *p* *sfz* *p*

p *mf* *p* *sfz* *p* *sfz* *p*

p *mf* *p* *sfz* *p* *sfz* *p*

5:3 9:8 7:4 6:4 7:6 7:4

361

BCl. 1 (B $\flat$)

BCl. 2 (B $\flat$)

Trb. 1

Trb. 2

Thai Gongs

sfz *p* *sfz* *p* *sfz* *p* *f* *p* >

sfz *p* *sfz* *p* *sfz* *p* *f* *p* >

sfz *p* *sfz* *p* *sfz* *p* *f* *p* >

sfz *p* *sfz* *p* *sfz* *p* *f* *p* >

5:4 6:4 7:4 7:4 6:4 6:4

366

BCl. 1
(B $\flat$)

p 5:3 *mf* 9:8

BCl. 2
(B $\flat$)

p *mf* 7:4

Trb. 1

p *mf* 6:4

Trb. 2

p 7:6 *mf* 7:4

Thai Gongs

370

BCl. 1 (B $\flat$)

p

mf

9:6

BCl. 2 (B $\flat$)

p

mf

8:6

Trb. 1

p

mf

7:6

Trb. 2

p

mf

7:6

5:3

Thai Gongs

372

BCl. 1 (B $\flat$)

p *f* 5:4 *p* 5:4

Cl. 2 (A)

p 5:4 *f* 6:4 *p*

Trb. 1

7:4 *p* *f* *p* 7:4

Trb. 2

6:4 *p* *f* *p* 6:4

Thai Gongs

con sord. (straight)

take Clarinet in A

Lento (♩ = 56)

374

BCl. 1 (B $\flat$)

ppp

Cl. 2 (A)

Trb. 1

ppp

Trb. 2

Thai Gongs
vibe stick, rim of gong

Glockenspiel

ppp

Presto (♩ = 132)

382 take Clarinet in Bb

Cl. 1 (Bb)

Cl. 2 (A)

p

senza sord.

Trb. 1

Trb. 2

p

Glock. 

388

Cl. 1
(B $\flat$)

Cl. 2
(A)

388

389

390

391

392

Trb. 1

Trb. 2

Glock. 

394

Cl. 1 (B₁)

Cl. 2 (A)

Trb. 1

Trb. 2

Glock.

Trills and slurs are indicated for Cl. 2 (A), Trb. 2, and Glock. in measures 394-400. Trb. 2 and Glock. feature triplet markings in measures 398 and 399.

400

Cl. 1 (B₁)

Cl. 2 (A)

Trb. 1

Trb. 2

Glock.

Trills and slurs are indicated for Cl. 2 (A), Trb. 2, and Glock. in measures 400-406. Trb. 2 and Glock. feature triplet markings in measures 404 and 405.

406

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Glock.

412

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Glock.

417

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Glock.

423

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Glock.

429

Cl. 1 (B_♭)

Cl. 2 (A)

Trb. 1

Trb. 2

Glock.

435

Cl. 1 (B_♭)

Cl. 2 (A)

Trb. 1

Trb. 2

Glock.

441

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Glock.

446

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Glock.

senza sord.

senza sord.

451

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

p *<mp>* *p* *<mf>*

p *<mp>* *p* *<mf>*

p *<mp>* *p* *<mf>*

p *<mp>* *p* *<mf>*

Lento (♩ = 72)

455

Cl. 1 (B $\flat$)

B.Cl. 2 (B $\flat$)

Trb. 1

Trb. 2

Thai Gongs

p *f* *pp*

p *f* *pp*

p *f* *pp*

p *f* *pp*

take Bass Clarinet

Thai Gongs

pp

460

Cl. 1 (B $\flat$)

BCl. 2 (B $\flat$)

Trb. 1

Trb. 2

Vib.

con sord. (straight)

ppp

con sord. (straight)

ppp

Molto Lento (♩ = 48)

467

Cl. 1 (B $\flat$)

BCl. 2 (B $\flat$)

Trb. 1

Trb. 2

Vib.

ppp

pp

ppp

pp

Vibraphone

pp

Cl. 1 (B $\flat$)

474

tr $\sharp$ tr $\flat$ tr $\flat$ tr $\sharp$ tr $\flat$ tr $\flat$ tr $\sharp$

BCl. 2 (B $\flat$)

tr $\flat$ tr $\sharp$ tr $\sharp$ tr $\sharp$ tr $\flat$ tr $\flat$ tr $\flat$

Trb. 1

Trb. 2

Vib.

Cl. 1 (B $\flat$)

481

tr $\sharp$ tr $\sharp$ tr $\flat$ tr $\flat$ tr $\flat$ tr $\sharp$ tr $\sharp$

BCl. 2 (B $\flat$)

tr $\flat$ tr $\flat$ tr $\sharp$ tr $\sharp$ tr $\flat$ tr $\sharp$ tr $\sharp$

Trb. 1

Trb. 2

Vib.

488

Cl. 1 (B $\flat$)

BCl. 2 (B $\flat$)

Trb. 1

Trb. 2

Thai Gongs

3/4

3/4

3/4

3/4

3/4

Adagio (♩ = 60)

493

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

p

7:4

7:4

take Clarinet in A

pp

pp

Thai Gongs

pp

494

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

7:4

495

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

7:4

7:4

7:4

7:4

496

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

7:4

7:4

3/4

497

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

7:4

7:4

3/4

498

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

7:4 7:4

499

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

7:4 7:4 7:4

500

Cl. 1 (B $\flat$)

Cl. 2 (A)

Trb. 1

Trb. 2

Thai Gongs

7:4

7:4

501

Trb. 1

Trb. 2

7:4

502b

Trb. 1

Trb. 2

Japanese Temple Bell in C

p

5:4

6:4

6:4



Paul Archbold

...and the unseen eyebeam crossed...

for chamber orchestra
(1992)

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author and information derived
from it should be acknowledged.



24 FEB 1999

... and the unseen eyebeam crossed...

Instrumentation

Flute (doubling piccolo)

Oboe

Cor Anglais

Clarinet in A (doubling bass clarinet in B_♭)

2 Bassoons

2 Trumpets (in C)

2 Horns (in F)

Percussion :-

marimba, vibraphone, 2 suspended cymbals, wood block

Strings

at least 6.6.3.3.2 players

The score is written in C with the usual octave transpositions.

Duration 8 minutes

Programme Note

"...and the unseen eyebeam crossed..." takes its title from the first movement of T. S. Eliot's poem *Burnt Norton*. The reader is led into a magical garden of childhood innocence where the roses are subtly changed by the presence of the onlooker. This work is a composed act of perception - fast complex fragments are examined, dissected and frozen until a hidden melodic line is revealed. In this process of objectification, there is also another transition, from life to death.

First Performance

First performed in public by the Royal Scottish National Orchestra in the City Hall, Glasgow in the final concert of the RSNO/IBM composers' competition, September 1993.

Thesis ++

1998/

ARC

FL 8

Ob

C.A.

Cl

Bsn 1

Bsn 2

Hrns

Trp 1

Trp 2

Claves

VI.1

VI.2

Vla

Vcl

Db

pan43 18146

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12

FL

Ob

Ca

Cl

Bsn

Hrns

Trp

Perce (claves)

VI.1

VI.2

Vla

Vcl

Db

Take Marimba (hard sticks)

pan43 18146

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16

Fl

Ob

Ca

Cl

Bass

Hrns

Trps

Mand

Viol. I

Viol. II

Vla solo

Vla 3

Vcl

Cb

PIANO 18 STAVE

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21

Fl

Ob

Ca

Cl

Bass

Hrns

Trps

Mand

Viol. I

Viol. II

Vla solo

Vla 3

Vcl

Cb

Handwritten musical score for measures 27 to 32. The score is arranged in two systems of staves. The first system includes staves for Flute (Fl), Oboe (Ob), Clarinet (Cln), Bassoon (Bsns), Horns (Horns), Trombones (Tbns), and Maracas (Mar). The second system includes staves for Violin I (Vi. I), Violin II (Vi. II), Viola (Vla), Violoncello (Vcl), and Double Bass (Db). The music is written in a key signature of one flat (B-flat) and a 3/4 time signature. Dynamics include *mf* (mezzo-forte), *f* (forte), and *ff* (fortissimo). The score is marked with a double slash (//) at the end of the first system.

PAN-43 18 STAVE

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Handwritten musical score for measures 33 to 38. The score is arranged in two systems of staves. The first system includes staves for Flute (Fl), Oboe (Ob), Clarinet (Cln), Bassoon (Bsns), Horns (Horns), Trombones (Tbns), and Maracas (Mar). The second system includes staves for Violin I (Vi. I), Violin II (Vi. II), Viola (Vla), Violoncello (Vcl), and Double Bass (Db). The music is written in a key signature of one flat (B-flat) and a 3/4 time signature. Dynamics include *mf* (mezzo-forte), *f* (forte), and *ff* (fortissimo). The score is marked with a double slash (//) at the end of the first system.

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39

Fl

Ob

Cor

Cl

Bass

Horn

Trump

Mar

Vi. I (div)

Vi. II (div)

Vla

Vcl

Db

SPANAG B STAVE

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47

Fl

Ob

Cor

Cl

Bass

Horn

Trump

Mar

Vi. I (div)

Vi. II (div)

Vla

Vcl

Db

allargando

allargando

allargando

53

FL

Ob

CA

Cl

Bsn

Hrns

Trps

Mar

VI.1

VI.2

Vla

Vcl

Db

SPANAS 18 STAVE

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58

FL

Ob

CA

Cl

Bsn

Hrns

Trps

Mar

VI.1

VI.2

Vla

Vcl

Db

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63

FL

Ob

C.A.

Cl

Bsns

Hrns

Trps

Mar

Viol 1

Viol 2

Vla

Vcl

Db

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66

FL

Ob

C.A.

Cl

Bsns

Hrns

Trps

Mar

Viol 1

Viol 2

Vla

Vcl

Db

72

FL

Ob

Cl

Bsn

Hrns

Trps

Mla

VI.1

VI.2

Vla

Vcl

Db

73

[illegible]

81

FL

Ob

C.A.

Cl

Bsns

Hrns

Trps

Flar

VI.1

VI.2

Vla

Vcl

Db

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86

FL

Ob

C.A.

Cl

Bsns

Hrns

Trps

Flar

VI.1

VI.2

Vla

Vcl

Db

Handwritten musical score for measures 91-95. The score is written for a large orchestra, including Flute (Fl), Oboe (Ob), Clarinet in A (CA), Clarinet in Bb (Cl), Bassoon (Bsns), Horns (Hrns), Trumpets (Trps), and Maracas (Mar). The notation includes various musical symbols such as notes, rests, and dynamic markings (e.g., *ff*, *p*, *mf*). The score is divided into systems, with measures 91-95 spanning the first system. The bottom of the page includes the text "PAN-43 18 STAVE" and "COPYRIGHT PANOPUS LTD 1976".

Handwritten musical score for measures 96-100. The score continues the orchestral arrangement, featuring the same instruments as the previous system. The notation includes various musical symbols such as notes, rests, and dynamic markings (e.g., *ff*, *p*, *mf*). The score is divided into systems, with measures 96-100 spanning the second system. The bottom of the page includes the text "PAN-43 18 STAVE" and "COPYRIGHT PANOPUS LTD 1976".

106

FL

Ob

C.A.

Cl

Bsns

Hrns

Trps

Mar

VI.1

VI.2

Vla

Vcl

Db

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113

FL

Ob

C.A.

Cl

Bsns

Hrns

Trps

Mar

VI.1

VI.2

Vla

Vcl

Db

SPAN-43 18 STAVE

118

FL

Ob

C.A.

Cl

Bsns

Hrns

Trps

Mla

Vi.1

Vi.2

Vla

Vcl

Db

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123

FL

Ob

C.A.

Cl

Bsns

Hrns

Trps

Mla

Vi.1

Vi.2

Vla

Vcl

Db

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128

FL

Ob

CA.

Cl

Bsns

Hrn

Trps

Mar

VI-I

VI-II

Vla

Vcl

Db

pan-A3

18 STAVE

A handwritten musical score for a full orchestra and string ensemble. The score is written on ten staves, each labeled with an instrument or section: FL (Flute), Ob (Oboe), C.A. (Clarinet Alto), Cl (Clarinet), Bsns (Bassoons), Hrns (Horns), Trps (Trumpets), Suspended Gong/Bell, VI.1 (Violin I), VI.2 (Violin II), Vla (Viola), Vcl (Violoncello), and DB (Double Bass). The music is in 3/8 time and features complex rhythmic patterns, including triplets and sixteenth notes. Dynamics such as p (piano), f (forte), mf (mezzo-forte), and sf (sforzando) are indicated throughout. Performance instructions like "non vib" (no vibrato) and "vib" (with vibrato) are present. The score includes various articulations and phrasing marks, such as slurs and accents. The handwriting is in dark ink on aged paper.

148

Fl

Ob

C.A.

Cl

Bsns

Hrns

Trps

Symbols

VI.1

VI.2

Vla

Vcl

Db

PRINCE 18 STAVE

Copyright 1950

153

Fl

Ob

C.A.

Cl

Bsns

Hrns

Trps

Symbols

VI.1

VI.2

Vla

Vcl

Db

159

FL

Ob

C.A.

Cl

Bass

Horns

Trps

Vib

VI.1

VI.2

Vla

Vcl

Db

MAN-43 18 STAVE

Copyright PANOPUS LTD 1971

170

FL

Ob

C.A.

Cl

Bsns

Hrns

Trps

Vib

Vi.1

Vi.2

Vla

Vcl.1

Db

SPANAS 13 STAVE

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176

FL

Ob

C.A.

Cl

Bsns

Hrns

Trps

Vib

Vi.1

Vi.2

Vla

Vcl.1

Db

Take piece

PAN-A3 18 STAVE

Copyright Pandpus Ltd 1984

~~SECRET~~ PAN-A3 18 STAVE

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Handwritten musical score for a symphony, page 18. The score is written on 18 staves, organized into three systems of six staves each. The instruments represented are:

- System 1 (Woodwinds and Brass):** Flute (Fl.), Oboe (Ob.), Clarinet in A (Cl. A.), Bassoon (Bsn.), Contrabassoon (Cb.), and Horns (Hr.).
- System 2 (Brass and Woodwinds):** Trumpets (Tr.), Trombones (Tbn.), Maracas (Mar.), Flute (Fl.), Oboe (Ob.), and Clarinet in A (Cl. A.).
- System 3 (Strings and Woodwinds):** Violin I (Vi. I), Violin II (Vi. II), Viola (Vla.), Violoncello (Vcl.), Double Bass (Db.), Flute (Fl.), Oboe (Ob.), and Clarinet in A (Cl. A.).

The score includes various musical notations such as notes, rests, and dynamic markings like *p*, *f*, and *cresc.*. The page number "18" is written in the top left corner. The score is written in a clear, legible hand.

Handwritten musical score for a symphony orchestra, measures 206-210. The score includes parts for Piccolo, Oboe, Clarinet in A, Bass Clarinet, Bassoon, Horns, Trumpets, Mellophone, Violin I, Violin II, Viola, Violoncello, and Double Bass. The music is in 3/4 time and features complex rhythmic patterns and dynamic markings.

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PAN-A3 18 STAVE

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228

Picc *f*

Ob *f*

C.A. *f*

B.C. *f*

Bsns *f*

Hrns *f*

Trps *f*

Vib (Ped) → *f*

VI.1 *f* *dim* *mp* *f*

VI.2 *f* *dim* *mp* *f*

Vla *f* *dim* *mp* *f*

Vcl *f* *dim* *mp* *f*

Db *f* *dim* *mp* *f*

SPAN-43 18 STAVE

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237

Picc *pp* *lib. mm* *mf*

Ob *pp* *lib. mm* *mf*

C.A. *pp* *lib. mm* *mf*

B.C. *pp* *lib. mm* *mf*

Bsns *pp* *lib. mm* *mf*

Hrns *pp* *lib. mm* *mf*

Trps *pp* *lib. mm* *mf*

Vib (Ped) → *pp* *lib. mm* *mf*

VI.1 *mp* *dim* *pp*

VI.2 *mp* *dim* *pp*

Vla *mp* *dim* *pp*

Vcl *mp* *dim* *pp*

Db *pp* *lib. mm* *mf*

to marimba

rit. ———— *ed. 1*

rit. ———— *ed. 1*

SPAN-43 18 STAVE

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← d = d → Lento (1=50)
249

Picc

Ob

C.A. *espressivo*
p

B.Cl.

Bsns

Hrns

Trps

Mar *soft sticks*
pp

VI.1
(pp)

VI.2
(pp)

Vla

Vcl

Db

SPAN-A3 18 STAVE

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253

Picc

Ob

C.A.

B.Cl.

Bsns

Hrns

Trps

Mar

VI.1

VI.2

Vla

Vcl

Db

SPAN-A3 18 STAVE

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257

Picc

Ob

C.A.

B.C.

Bsns

Hrns

Tprs

Mar

Vi.1

Vi.2

Vla

Vcl

Db

SPAN-A3 13 STAVE

© Paul Archbold 1992

Paul Archbold

Chiaroscuro

for double bass and ten strings
(1996)

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from it should be published
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author and information derived
from it should be acknowledged.



24 FEB 1999

Chiaroscuro

Instrumentation

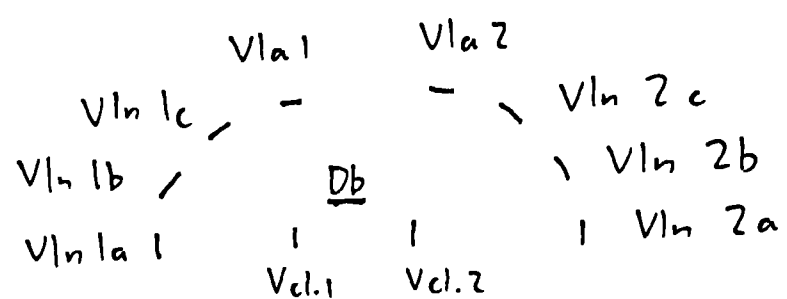
solo double bass

6 violins

2 violas

2 cellos

Suggested Seating Plan



Commisioned by Paul Sherman with funds from London Arts Board

First Performance

First performance by Paul Sherman (double bass) and Opus 20 (conductor Scott Stroman) on Tuesday 19th March 1996 at St. Giles Cripplegate, London.

Thesis #
1998/
ARC

Andante (♩ = 60) rubato
I non vib. II III

db

vin1a con sord. non vib. gliss. P = PP

vin1b con sord. non vib. PP > PPP P = PP gliss.

vin1c con sord. non vib. PP P = PP gliss.

vla1 con sord. non vib. PP > PPP P = PP gliss.

vc1 con sord. non vib. PP P = PP gliss.

vin2a con sord. non vib. PPP

vin2b con sord. non vib. PPP

vin2c con sord. non vib. pizz. non vib. PPP

vla2 con sord. non vib. pizz. non vib. PPP

vc2 con sord. non vib. PPP P = PP

7

db P

vin1a PPP PP = PP P = PP P

vin1b PPP PP = PP P = PP P

vin1c PPP PP = PP P = PP P

vla1 PPP PP = PP P = PP P

vc1 PPP P = PP

vin2a non vib. pizz. PP arco PPP

vin2b pizz. PP arco 3 PPP

vin2c (arco) 3 PPP

vla2 arco 3 pizz. PP arco PPP

vc2 PPP PP = PP

12

db

p

vlnIa

arco
pp

vlnIb

arco
pp

vlnIc

pp

vlnI

pp

vclI

pizz
pp

vlnIIa

pizz
pp

vlnIIb

pizz
pp

vlnIIc

pp

vlnII

pizz
pp

vclII

pizz
pp

18

Handwritten musical score for a string orchestra. The score is written on ten staves, each representing a different instrument. The instruments are: db (double bass), vln1a (violin I), vln1b (violin II), vln1c (violin III), vln1d (viola I), vln2a (violin II), vln2b (violin III), vln2c (violin IV), vln2d (viola II), and vcl1 (cello). The score includes various musical notations such as notes, rests, and dynamic markings like *mf*, *p*, and *mp*. There are also performance instructions like *vib. ord.* and *arco*. The notation is in a cursive, handwritten style.

Presto sgarbiato (♩ = 120)

26

db

p

riante

p

3

vln1a

p

vln1b

p

vln1c

p

vla1

p

vcl1

p

vln2a

pp

vln2b

pp

vln2c

pp

vla2

pp

vcl2

pp

33

3

3

3

vln1a

f

vln1b

f

vln1c

f

vla1

f

vcl1

f

vln2a

pp

vln2b

pp

vln2c

pp

vla2

pp

vcl2

pp

53

53

db

mf

3

mf

vln1a

pp sub

vln1b

pp sub

vln1c

pp sub

vln1d

pp sub

vcl1

pp sub

vln2a

(on string)

p

vln2b

(on string)

p

vln2c

(on string)

p

vln2d

mf

vcl2

mf

Poco più mosso

7

68

db

p mf *f* *p*

senza sord.

pizz.

vin1a

senza sord.

pizz.

vin1b

senza sord.

pizz.

vin1c

senza sord.

pizz.

via1

pizz.

vcl1

pizz.

vin2a

dim.

senza sord.

vin2b

dim.

senza sord.

vin2c

dim.

senza sord.

via2

dim.

vcl2

73

db

mf *p* *mf*

arco

vin1a

arco

vin1b

(pizz)

vin1c

via1

f dim.

vcl1

(pizz)

f dim.

vin2a

vin2b

vin2c

via2

pizz

f dim.

vcl2

pizz

f dim.

80

db

3

p *f* *sfz*

vin1a

mf

vin1b

mf

vin1c

mf

vla1

f dim. *(pizz)*

vc1

f dim.

vin2a

mf

vin2b

mf

vin2c

mf *(pizz)*

vla2

f dim. *(pizz)*

vc2

f dim.

86

db

p *f*

vin1a

p *f*

vin1b

p *f*

vin1c

f

vla1

arco *f*

vc1

f *col legno battuto*

vin2a

p *f*

vin2b

p *f*

vin2c

f

vla2

arco *f*

vc2

f *col legno battuto*

92

db

f

vln1a

pizz

f

pizz

f

vln1b

p

f

pizz

f

vln1c

f

pizz

f

vln1

f

pizz

f

vcl1

ord.

mf

f

sf

vln2a

pizz

f

pizz

f

vln2b

p

f

pizz

f

vln2c

f

pizz

f

vln2

f

pizz

f

vcl2

ord.

mf

f

sf

98

db

vin1a

vin1b

vin1c

vcl1

vin2a

vin2b

vin2c

vcl2

arco

p

f

mf

cresc.

decresc.

arco

pizz.

Handwritten musical score for a string quartet and double bass, measures 104-107. The score is written on ten staves, labeled db, vln1a, vln1b, vln1c, vln1, vcl1, vln2a, vln2b, vln2c, and vcl2. The key signature is one flat (B-flat major or D minor). The time signature is 4/4. The score includes dynamic markings such as *f* (forte), *p* (piano), and *cresc.* (crescendo). The notation includes various musical symbols such as notes, rests, and slurs. The score is written in a clear, legible hand.

Handwritten musical score for orchestra, measures 109-112. The score includes parts for Double Bass (db), Violins I and II (vin1a, vin1b, vin2a, vin2b), Violas (vin1c, vin2c), Violas (vln1, vln2), Cellos (vcl1, vcl2), and Double Basses (vcl1, vcl2). The music is in 4/4 time and features various dynamics (f, p, sfz, mf) and articulations (trem., p. sub., col legno battuto).

Musical score for measures 130-134. The score includes parts for double bass (db), violins (vln1a, vln1b, vln1c, vln2a, vln2b, vln2c), violas (via1, via2), and cellos (vcl1, vcl2). The key signature is one flat (B-flat). The tempo is marked *pizz* (pizzicato). The score features various musical notations including triplets, slurs, and dynamic markings such as *f* (forte) and *ff* (fortissimo). The double bass part has a *f* marking at the beginning. The violin and viola parts have *pizz* markings. The cello part has *f* and *ff* markings. The score is divided into measures by vertical bar lines.

Tempo II (Presto scorrevole)

sempre uguale, staccato

arco
pp sempre

Musical score for measures 135-139. The score includes parts for double bass (db), violins (vln1a, vln1b, vln1c, vln2a, vln2b, vln2c), violas (via1, via2), and cellos (vcl1, vcl2). The key signature is one flat (B-flat). The tempo is marked *Tempo II (Presto scorrevole)*. The score features various musical notations including triplets, slurs, and dynamic markings such as *pp* (pianissimo) and *ff* (fortissimo). The double bass part has a *pp* marking. The violin and viola parts have *pp* markings. The cello part has *pp* and *ff* markings. The score is divided into measures by vertical bar lines.

140

db

vln1a

vln1b

vln1c

vla1

vcl1

vln2a

vln2b

vln2c

vla2

vcl2

145

db

vln1a

vln1b

vln1c

vla1

vcl1

vln2a

vln2b

vln2c

vla2

vcl2

160

db

vln1a

vln1b

vln1c

via1

vcl1

vln2a

vln2b

vln2c

via2

vcl2

p

pp

f

arco

p

pp

f

165

db

5

mf

vln1a

p *sf*

vln1b

p *sf*

vln1c

p *sf*

vla1

5

p *sf*

vcl1

5

p *sf*

vln2a

p *sf*

vln2b

p *sf*

vln2c

p *sf*

vla2

5

p *sf*

vcl2

5

p *sf*

[illegible][illegible]

190 $\leftarrow f$ (♩ = 90)

db

ff

vln1a

pizz

ff

vln1b

ff

vln1c

ff

vla1

ff

vc1

pp

f

vln2a

f

mf

f

mf

f

vln2b

f

mf

f sub

mf

f sub

vln2c

f

mf

f

mf

f

vla2

f

mf

f sub

mf

f sub

vc2

f sub

mf

p

f

mf

p

f

195

db

ff

mp

vln1a

8va

p

ff

gliss

pp

vln1b

p

ff

gliss

pp

vln1c

p

ff

gliss

pp

vla1

p

f

pp sub

mp

mp

vc1

p

f

pp sub

mp

pp

pp

vln2a

f

f

gliss

pp

vln2b

f

f

gliss

pp

vln2c

p

f

pp sub

mp

pp

vla2

p

mp

pp

vc2

f

pp sub

mp

pp

pp

Handwritten musical score for a symphony, page 200. The score includes staves for double bass (db), violins 1a, 1b, 1c, viola 1, violas 2a, 2b, 2c, and cellos 1, 2. The music is in 3/4 time and features complex rhythmic patterns, including triplets and sixteenth notes. Dynamics such as *p* (piano) and *f* (forte) are indicated throughout. The score is written in a clear, professional hand.

205

db

ff

p

ff

tr. H

vin1a

p

f

vin1b

p

f

vin1c

p

f

vin1

p

f

vc1

p

f

vin2a

p

f

vin2b

p

f

vin2c

p

f

vin2

p

f

vc2

p

f

[illegible]

216

db

vln I a

vln I b

vln I c

vln II a

vln II b

vln II c

vln 2

vln 2

[illegible]

Handwritten musical score for a string quartet and double bass, measures 233-238. The score is written on ten staves, with the first staff being the double bass (db) and the remaining nine staves representing the string quartet (violin 1a, 1b, 1c, 2a, 2b, 2c, viola 1, 2, and cello/viola 2). The key signature is one sharp (F#), and the time signature is 4/4. The score includes various musical notations such as notes, rests, slurs, and dynamic markings (p, mf, mp). Measure numbers 233, 234, 235, 236, 237, and 238 are indicated at the beginning of each staff. The notation is in a cursive, handwritten style.

Handwritten musical score for a string quartet and double bass, measures 238-241. The score includes parts for db, vln1a, vln1b, vln1c, vla1, vc1, vln2a, vln2b, vln2c, vla2, and vc12. It features various musical notations such as notes, rests, dynamics (p, mf, f), articulation (pizz.), and performance instructions like 'ord.' and 'stretch sharp'. The key signature changes from one sharp to two sharps between measures 240 and 241.

243

db

vin1a

vin1b

vin1c

via1

vcl1

vin2a

vin2b

vin2c

via2

vcl2

250 db

vin1a

vin1b

vin1c

vln1a

vcl1

vin2a

vin2b

vin2c

vln2a

vcl2

p *f* *mp* *mf* *pp*

II *III* *IV* *I* *II*

[illegible]

Handwritten musical score for a string ensemble, measures 261-268. The score is written on ten staves, labeled on the left as db, vln1a, vln1b, vln1c, vln1d, vcl1, vln2a, vln2b, vln2c, and vln2d. The music is in G major, indicated by one sharp (F#) on the key signature. The time signature changes from 12/16 to 2/4 and back to 12/16. The score includes various musical notations such as notes, rests, slurs, and dynamic markings like *p* (piano) and *mp* (mezzo-piano). The notation is handwritten and appears to be a working draft.

267

db

p

pp

poco sul pont.

sul pont.

molto sul pont.

vln1a

pp

vln1b

pp

vln1c

pp

vla1

pp

vc11

vln2a

pp

vln2b

pp

vln2c

pp

vla2

vc12



Paul Archbold

Of crossed destinies
(1993)

for solo harp



24 FEB 1999

Of crossed destinies (1993)

Programme note

This work for solo harp takes its title from "The Castle of Crossed Destinies" by Italo Calvino. In this novel, a group of travellers rest in a remote castle and discover that they have mysteriously lost the power of speech. Each traveller tells their tale using a sequence of appropriate tarot cards. As the tales are told, many of the cards are reused and take on different meanings. In the final pattern of cards all tales are told, but this pattern also connects all the travellers imprisoning them in the castle.

My work consists of five movements : three 'tales' enclosed by a musical frame. All the tales share melodic figures and harmonic progressions, yet have different characters and directions. The whole work is constrained by a sombre mode.

The work was commissioned by Hugh Webb with funds from the Arts Council of Great Britain and first performed by Hugh Webb at the Purcell Room, London in September 1993.

Thesis +
1998/
ARC

I

Lento 1:40

Handwritten musical notation on a grand staff. The notation includes various notes, rests, and dynamic markings such as *f* and *dim.*. Chord symbols *G_b*, *F_b*, and *A_b* are written above the staff. A measure number '1' is visible at the top left.

Handwritten musical notation on a grand staff, continuing from the previous system. It includes notes, rests, and dynamic markings. Chord symbols *A_b*, *D_b*, *G_b*, and *A_b* are present. A measure number '5' is at the top left.

Handwritten musical notation on a grand staff. It features notes, rests, and dynamic markings. Chord symbols *F_b*, *D_b*, *G_b*, and *A_b* are written above the staff. A measure number '9' is at the top left.

Handwritten musical notation on a grand staff. It includes notes, rests, and dynamic markings. Chord symbols *F_b*, *G_b*, *C_b*, and *A_b* are present. A measure number '13' is at the top left.

Handwritten musical notation on a grand staff. It features notes, rests, and dynamic markings. Chord symbols *D_b*, *A_b*, *C_b*, and *D_b* are written above the staff. A measure number '17' is at the top left.

II

v v v v v

Allegro scherzando

$\text{♩} = 120$

Handwritten musical notation for the first system, measures 1-6. The notation includes treble and bass staves with various notes, rests, and dynamic markings such as *f* and *du*. Chord symbols are written above the staves: A#4, A#4, D#4, B#4, A#4, B#4, A#4, C#4, C#4, D#4.

Handwritten musical notation for the second system, measures 7-12. The notation includes treble and bass staves with various notes, rests, and dynamic markings such as *f* and *du*. Chord symbols are written above the staves: B#4, D#4, D#4, D#4, F#4, D#4, D#4, D#4, D#4, D#4, D#4, D#4.

Handwritten musical notation for the third system, measures 13-18. The notation includes treble and bass staves with various notes, rests, and dynamic markings such as *f* and *du*. Chord symbols are written above the staves: D#4, B#4, C#4, F#4, F#4, B#4, C#4, D#4, D#4, D#4, D#4, D#4.

Handwritten musical notation for the fourth system, measures 19-24. The notation includes treble and bass staves with various notes, rests, and dynamic markings such as *f* and *du*. Chord symbols are written above the staves: B#4, B#4, B#4, B#4, B#4, B#4, B#4, B#4, B#4, B#4, B#4, B#4.

Handwritten musical score for measures 23-27. The notation includes treble and bass staves with various notes, rests, and accidentals. Chord symbols $B\sharp$, $E\sharp$, $B\sharp$, $E\sharp$, and $D\sharp$ are written above the staves. A bracket labeled "8va" spans measures 24-25, and the word "basso" is written below the bass staff in measure 25.

Handwritten musical score for measures 28-32. The notation includes treble and bass staves with various notes, rests, and accidentals. Chord symbols $B\sharp$ and $D\sharp$ are written above the staves.

Handwritten musical score for measures 33-38. The notation includes treble and bass staves with various notes, rests, and accidentals. Chord symbols $F\sharp$, $B\sharp$, and $D\sharp$ are written above the staves. A bracket labeled "8va" spans measures 36-38, and the word "basso" is written below the bass staff in measure 38.

Handwritten musical score for measures 39-43. The notation includes treble and bass staves with various notes, rests, and accidentals. Chord symbols $B\sharp$, $F\sharp$, and $D\sharp$ are written above the staves. Dynamic markings $dim.$ and $cresc.$ are present. Measure numbers 39, 40, 41, 42, and 43 are written at the beginning of their respective staves.

Handwritten musical score for measures 44-48. The notation includes treble and bass staves with various notes, rests, and accidentals. Chord symbols $A\sharp$, $B\sharp$, and $D\sharp$ are written above the staves. A bracket labeled "8va" spans measures 46-48, and the word "basso" is written below the bass staff in measure 48. Measure numbers 44, 45, 46, 47, and 48 are written at the beginning of their respective staves.

Menu mosso (1=90)

(+XV++++)

Bb

Ah, Gh

(+XV++++)

Handwritten musical score for a piano. The score is written on two staves. The key signature is one flat (Bb). The time signature is 3/4. The music features complex rhythmic patterns, including triplets and sixteenth notes. Chord symbols are written above the staves: C# (C sharp), Db (D flat), Cb (C flat), Bb (B flat), B4 (B sharp), and D# (D sharp).

Tempo I

Handwritten musical score for a piano. The score is written on two staves. The key signature is one flat (Bb). The time signature is 3/4. The music features complex rhythmic patterns, including triplets and sixteenth notes. Chord symbols are written above the staves: C# (C sharp), Bb (B flat), B4 (B sharp), and Cb (C flat).

Handwritten musical score for a piano. The score is written on two staves. The key signature is one flat (Bb). The time signature is 3/4. The music features complex rhythmic patterns, including triplets and sixteenth notes. Chord symbols are written above the staves: C# (C sharp), Bb (B flat), B4 (B sharp), and Cb (C flat).

Handwritten musical score for a piano. The score is written on two staves. The key signature is one flat (Bb). The time signature is 3/4. The music features complex rhythmic patterns, including triplets and sixteenth notes. Chord symbols are written above the staves: Fb (F flat), Cb (C flat), C# (C sharp), and Bb (B flat).

vvv'v'v'v

Molto Rubato 1=48

III

Handwritten musical notation for the first system, measures 1-5. The notation includes treble and bass staves with various notes, rests, and dynamic markings. The key signature is one sharp (F#). The tempo/mood is indicated as 'Molto Rubato' and the time signature as '1=48'.

Handwritten musical notation for the second system, measures 6-11. The notation continues with treble and bass staves, featuring complex rhythmic patterns and dynamic markings.

Handwritten musical notation for the third system, measures 12-17. The notation includes treble and bass staves with various notes, rests, and dynamic markings.

Handwritten musical notation for the fourth system, measures 18-23. The notation includes treble and bass staves with various notes, rests, and dynamic markings.

Handwritten musical score for the song "The Rose Tree". The score is written on ten staves, with the first two staves grouped by a brace and labeled "15". The notation includes various musical symbols such as notes, rests, and accidentals. The lyrics "The Rose Tree" are written below the staves. The score is written in a style that appears to be a student exercise or a personal transcription.

Handwritten musical score for the song "The Rose Tree". The score is written on ten staves, organized into two systems of five staves each. The key signature is one flat (B-flat), and the time signature is 3/4. The melody is written in the treble clef, and the accompaniment is in the bass clef. The score includes various musical notations such as notes, rests, accidentals, and dynamic markings like "ff" (fortissimo) and "f" (forte). The lyrics "The Rose Tree" are written below the melody. The score is a handwritten transcription of a musical piece.

Handwritten musical score for the song "The Rose Tree". The score is written on ten staves, with the first staff being a grand staff (treble and bass clefs) and the remaining nine staves being single staves. The key signature is one sharp (F#), and the time signature is 3/4. The melody is written in the treble clef, and the accompaniment is written in the bass clef. The score includes various musical notations such as notes, rests, accidentals, and dynamic markings like *mp* (mezzo-piano) and *p* (piano). The lyrics "The Rose Tree" are written below the melody. The score is a handwritten transcription of a musical piece.

IV

IV

IV

IV

IV

PAN-A3 18 STAVE

Handwritten musical score system 1. The system consists of two staves. The upper staff contains a melodic line with various accidentals and a key signature change to E-flat major. The lower staff contains a bass line with a 'Psub' marking. The system is divided into measures with 4:3 and 5:3 time signatures. A 'cresc.' marking is present in the lower staff.

Handwritten musical score system 2. The system consists of two staves. The upper staff contains a melodic line with various accidentals and a key signature change to F major. The lower staff contains a bass line with a 'Psub' marking. The system is divided into measures with 4:3 and 5:3 time signatures. A 'cresc.' marking is present in the lower staff.

Handwritten musical score system 3. The system consists of two staves. The upper staff contains a melodic line with various accidentals and a key signature change to D major. The lower staff contains a bass line with a 'Psub' marking. The system is divided into measures with 4:3 and 5:3 time signatures. A 'cresc.' marking is present in the lower staff.

Handwritten musical score system 4. The system consists of two staves. The upper staff contains a melodic line with various accidentals and a key signature change to A-flat major. The lower staff contains a bass line with a 'Psub' marking. The system is divided into measures with 4:3 and 5:3 time signatures. A 'cresc.' marking is present in the lower staff.

Handwritten musical score system 5. The system consists of two staves. The upper staff contains a melodic line with various accidentals and a key signature change to E-flat major. The lower staff contains a bass line with a 'Psub' marking. The system is divided into measures with 4:3 and 5:3 time signatures. A 'cresc.' marking is present in the lower staff.

Handwritten musical score for a string quartet, featuring four staves. The score is divided into measures with tempo markings: $d=80$, $d=64$, $d=52$, and $d=40 (d=80)$. The notation includes various musical symbols such as notes, rests, and dynamic markings like p and pp . The score is written in a complex, handwritten style, with some notes and rests appearing to be in different clefs or registers. The bottom of the page shows the number 30, indicating the measure number.

Lento (♩=40) rubato

Handwritten musical score for the first system, measures 1-4. The notation includes treble and bass staves with various notes, rests, and dynamic markings such as *f* and *pp*. Chord symbols like *Gb, F#* and *Gb* are present above the staves. Measure numbers 1, 2, 3, and 4 are indicated at the beginning of each measure.

Handwritten musical score for the second system, measures 5-8. The notation continues with treble and bass staves, featuring notes, rests, and dynamic markings. Chord symbols such as *Fb*, *Ab*, *D#*, and *Gb* are visible. Measure numbers 5, 6, 7, and 8 are indicated.

Handwritten musical score for the third system, measures 9-12. The notation includes treble and bass staves with notes, rests, and dynamic markings. Chord symbols like *Fb*, *Ab*, *D#*, and *Gb* are present. Measure numbers 9, 10, 11, and 12 are indicated.

Handwritten musical score for the fourth system, measures 13-16. The notation continues with treble and bass staves, featuring notes, rests, and dynamic markings. Chord symbols such as *G#*, *D#*, *F#*, *Ab*, *D#*, and *G#* are visible. Measure numbers 13, 14, 15, and 16 are indicated.

Handwritten musical score for the fifth system, measures 17-18. The notation includes treble and bass staves with notes, rests, and dynamic markings. Chord symbols like *Db, C#* and *f* are present. Measure numbers 17 and 18 are indicated.



Paul Archbold

études en mouvement
(1995)

for piano solo



24 FEB 1999

Paul Archbold

études en mouvement (1995)

for solo piano

- | | | |
|-----|------------|--------|
| i | éclat | to YG |
| ii | mirrors | to MY |
| iii | canon a 60 | to PMD |
| iv | riffs | to SU |
| v | So | to KG |

Duration 10 minutes

Thesis ++
1998/
ARC

études en mouvement

I - éclat

to YG

Paul Archbudd

Vivace (♩ = 72)

Handwritten musical score for the first system, measures 1 to 6. The score is written for a single melodic line on a grand staff. It features a variety of rhythmic patterns, including eighth and sixteenth notes, and rests. Dynamic markings include *f* (forte) and *mp* (mezzo-piano). There are also articulation marks and slurs.

Handwritten musical score for the second system, measures 7 to 12. This system continues the melodic line with more complex rhythmic figures, including triplets and sixteenth-note runs. Dynamics range from *mp* to *ff* (fortissimo). Pedal points are indicated with 'Ped' and horizontal lines.

Handwritten musical score for the third system, measures 13 to 18. This section includes a key signature change to two flats, indicated by a double flat symbol (Bb) at the beginning. It features a mix of eighth and sixteenth notes, with dynamic markings of *f* and *ff*. Pedal markings are present throughout the system.

Handwritten musical score for the fourth system, measures 19 to 24. This system includes a tempo change to 'rit' (ritardando), indicated by a dashed line and the word 'rit'. It features a variety of rhythmic patterns and dynamic markings, including *mp* and *ff*. Pedal markings are also present.

II Mirrors
to MY

Etudes en mouvement
Mouvement 2

Lento, rubato

P. Archibald (1993)

5:4 4:5 6:5 4:3

p *mf*

Ped sempre

6:5 7:5 7:6 3:2

mf

una corda

5:4 6:5 3:2

mf

una corda

5:4 6:5 3:2

mf

una corda

* gradually release the sustain pedal

Handwritten musical score system 1. It consists of a single staff with a treble clef and a key signature of one flat (B-flat). The music features a series of chords and melodic lines, with some notes beamed together. A large slur covers the first four measures. The system ends with a double bar line and the instruction "una corda" written below the staff.

Handwritten musical score system 2. It consists of a single staff with a treble clef and a key signature of one flat. The music continues with various chords and melodic fragments. A large slur covers the first four measures. The system ends with a double bar line and the instruction "una corda" written below the staff.

Handwritten musical score system 3. It consists of a single staff with a treble clef and a key signature of one flat. The music features a series of chords and melodic lines, with some notes beamed together. A large slur covers the first four measures. The system ends with a double bar line and the instruction "una corda" written below the staff.

Handwritten musical score system 4. It consists of a single staff with a treble clef and a key signature of one flat. The music features a series of chords and melodic lines, with some notes beamed together. A large slur covers the first four measures. The system ends with a double bar line and the instruction "una corda al fin" written below the staff.

Handwritten musical score system 5. It consists of a single staff with a treble clef and a key signature of one flat. The music features a series of chords and melodic lines, with some notes beamed together. A large slur covers the first four measures. The system ends with a double bar line and the instruction "una corda al fin" written below the staff.

III Canon a 60
to PMO

P. Archbold

Prestissimo *d. = 80*

The musical score is written on six staves, each containing a system of two staves (treble and bass clef). The notation includes various musical symbols such as notes, rests, accidentals, and dynamic markings. The first staff begins with a treble clef and a key signature of one sharp (F#). The second staff begins with a bass clef and a key signature of one sharp (F#). The third staff begins with a treble clef and a key signature of one sharp (F#). The fourth staff begins with a bass clef and a key signature of one sharp (F#). The fifth staff begins with a treble clef and a key signature of one sharp (F#). The sixth staff begins with a bass clef and a key signature of one sharp (F#). The score is marked with a tempo of *Prestissimo* and a metronome marking of *d. = 80*. The piece is in 6/8 time. The notation includes various musical symbols such as notes, rests, accidentals, and dynamic markings. The first staff begins with a treble clef and a key signature of one sharp (F#). The second staff begins with a bass clef and a key signature of one sharp (F#). The third staff begins with a treble clef and a key signature of one sharp (F#). The fourth staff begins with a bass clef and a key signature of one sharp (F#). The fifth staff begins with a treble clef and a key signature of one sharp (F#). The sixth staff begins with a bass clef and a key signature of one sharp (F#). The score is marked with a tempo of *Prestissimo* and a metronome marking of *d. = 80*. The piece is in 6/8 time. The notation includes various musical symbols such as notes, rests, accidentals, and dynamic markings.

Handwritten musical notation for measures 32-36. The system consists of two staves. The upper staff contains a melody with various accidentals (sharps, flats, naturals) and rests. The lower staff contains a bass line with similar notation. Measure numbers 32, 33, 34, 35, and 36 are indicated at the beginning of their respective measures.

Handwritten musical notation for measures 37-41. The system consists of two staves. The notation continues with complex rhythmic patterns and accidentals. Measure numbers 37, 38, 39, 40, and 41 are indicated.

Handwritten musical notation for measures 42-46. The system consists of two staves. The notation includes various intervals and accidentals. Measure numbers 42, 43, 44, 45, and 46 are indicated.

Handwritten musical notation for measures 47-51. The system consists of two staves. The notation features a mix of eighth and sixteenth notes with accidentals. Measure numbers 47, 48, 49, 50, and 51 are indicated.

Handwritten musical notation for measures 52-56. The system consists of two staves. The notation includes a variety of note values and accidentals. Measure numbers 52, 53, 54, 55, and 56 are indicated.

Handwritten musical notation for measures 57-61. The system consists of two staves. The notation includes dynamic markings such as *dim.* and *poco a poco*. Measure numbers 57, 58, 59, 60, and 61 are indicated.

IV Riffs
to SU

Allegro molto (♩ = 120)

sec

f sempre avanti

Ped III (sostenuto)

Ped III (sostenuto)

Ped III

Ped III

(marcato)

Ped III

Ped III

Ped III

Ped III

Ped III

Ped III

Ped III

Ped III

Ped III

Ped III

Ped III

Handwritten musical score for the first system, measures 1-11. The notation includes treble and bass staves with various chords, arpeggios, and melodic lines. A 'Ped III' marking is present at the end of the system.

11

Handwritten musical score for the second system, measures 12-26. The notation continues with complex harmonic structures and melodic passages. A 'Ped III' marking is present at the end of the system.

26

Handwritten musical score for the third system, measures 27-41. The notation includes various musical notations such as chords, arpeggios, and melodic lines. A 'Ped III' marking is present at the end of the system.

41

Handwritten musical score for the fourth system, measures 42-56. The notation includes various musical notations such as chords, arpeggios, and melodic lines. A 'Ped III' marking is present at the end of the system.

56

Handwritten musical score, measures 30-33. The score is written on a grand staff with treble and bass clefs. It includes various musical notations such as notes, rests, and accidentals. Pedal markings are present: Ped III (measures 30-31), Ped III (measure 32), and Ped III (measure 33).

Handwritten musical score, measures 34-37. The score continues with complex musical notation. Pedal markings include Ped III (measures 34-35), Ped III (measure 36), and Ped III (measure 37).

Handwritten musical score, measures 38-41. The score includes musical notation and a 'Sua' marking above measure 39. Pedal markings include Ped III (measures 38-39), Ped III (measure 40), and Ped III (measure 41).

Handwritten musical score, measures 42-45. The score concludes with musical notation and pedal markings: Ped III (measures 42-43), Ped III (measure 44), and Ped III (measure 45).

46

Sua sopra

Ped III

Ped III

Ped III

Ped III

50

loco

accel poco a poco

Sua basso

Ped III

Ped III

Ped III

54

accel

(cresc.)

58

accel

Sua sopra

Sua basso

loco

Presto (♩ = 180)

Etudes en mouvement V

SO

For Kuni, Miyako & So Goto

Allegro e delicato (♩ = 90)

P. Archbold (1995)

Handwritten musical score for piano, featuring complex polyphonic textures and numerous pedal markings.

Measures 40-46: First system, marked with a brace and measure numbers 40, 42, 44, 46. Includes a *Soprano* part starting at measure 46. Pedal markings include *Ped*, *Ped III*, and *Ped*.

Measures 51-57: Second system, marked with a brace and measure numbers 51, 53, 55, 57. Includes a *Soprano* part starting at measure 51. Pedal markings include *Ped*, *Ped III*, and *Ped*.

Measures 60-66: Third system, marked with a brace and measure numbers 60, 62, 64, 66. Includes a *Soprano* part starting at measure 60. Pedal markings include *Ped*, *Ped III*, and *Ped*.

Measures 71-77: Fourth system, marked with a brace and measure numbers 71, 73, 75, 77. Includes a *Soprano* part starting at measure 71. Pedal markings include *Ped*, *Ped III*, and *Ped*.

Measures 82-88: Fifth system, marked with a brace and measure numbers 82, 84, 86, 88. Includes a *Soprano* part starting at measure 82. Pedal markings include *Ped*, *Ped III*, and *Ped*.

Measures 93-99: Sixth system, marked with a brace and measure numbers 93, 95, 97, 99. Includes a *Soprano* part starting at measure 93. Pedal markings include *Ped*, *Ped III*, and *Ped*.

Measures 104-110: Seventh system, marked with a brace and measure numbers 104, 106, 108, 110. Includes a *Soprano* part starting at measure 104. Pedal markings include *Ped*, *Ped III*, and *Ped*.

Empty musical staves for the right hand.

Empty musical staves for the left hand.

Empty musical staves for the right hand.