# Thesis with Commentary on the Portfolio of Original Compositions 

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#### Abstract

The introduction to the commentary on the submitted works attempts to locate the music within a broad cultural context. Modernism is seen as a significant point of reference and is defended for its idealism. In pursuance of this defence, issues concerning the relationship of art to religious belief are investigated. A modern definition of art is proposed in terms of the difficulty of creating closure. Closure is seen as particularly significant in relationship to our perceptions of the the apparent chaos which pervades life in a broadly secular climate. Chaos is presented as problematic and related to the sense of horror engendered by a contemplation of infinity. At the same time it is suggested that chaos only exists as a category for perception and is something of a mask, covering up the complex visions of reality presented by the sciences. In light of the difficulty of creating closure in a manner which does not create a false relationship with chaos (and/or complexity) the concept of 'constellations' is investigated. This is undertaken with a view to uncovering its developing significance in composition and in particular its influence on methods used in the submitted works.


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* Text by Philippe Druillet with permission © Les six voyages de Lone Sloane, Editions SEFAM, 1998, Druillet

The following scores are not bound in with this thesis:
Geometries of Dust; Le Trône du Dieu Noir; Crevasse; Refraction; Torsion; The Ridge on the Slope; Interstate.
These are to be found in the boxed part 2 of the submission with the recordings of The Ridge on the Slope and Refraction.

## Acknowledgements:

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## Introduction: The Cultural Context

## i) Distortions of Perspective

No history, certainly not cultural history, can exist without the distorting effects of perspective. Philosophical guidelines, expressed as aesthetics, are scarcely drawn across cultural maps before being called into question; personal viewpoints, while rarely declaring themselves as such, can never be absent. We would, of course, prefer a much simpler situation: that of a reliable and universal cultural narrative. Such a narrative would, perhaps, have served several worthy causes. It might, for example, have served as a reference guide to any young student entering, all too hastily equipped, the perilous arena of cultural production. Just because a hope for such a narrative may now, at the beginning of the $21^{\text {st }}$ century seem absurdly naïve - perhaps obsolete - does not mean that we can be entirely untouched by such tacit desires for simplification. Anyone embarking on a commentary on his or her own work, complete with relevant cultural sign-posting, will surely feel wary of betraying this too much. To balance this one may reflect on the inevitability that every artist and/or commentator will have his or her own unique aesthetic history forming a distorting lens through which to view surrounding influence. Inevitable, and yet not necessarily pernicious, this more personal aesthetic history may, for the cultural producer, also become a (positive) moulding force. As we can have no real control over how, where and when we show up on the scene, this personal
history at least has the merit of implying the existence of an automatically selective and therefore simplifying desideratum. This must surely be regarded as helpful as one almost unconsciously constructs one's own personal canon from the artworks which engage one's attention most passionately and dynamically.

## ii) Modernism and Postmodern Criticism

I am interested in the continuation of the Modernist Project. In particular it is the attitude of resistance to the cultural inertia of our times - for example the acquiescence to the mass media - which engages this interest. Seen in this light one could add that the need for resistance is all the more urgent in the early $21^{\text {st }}$ century than it was in the early $20^{\text {th }}$. The modernist view of the need for resistance, founding a concept of aesthetics upon an ethos refracting this in a variety of forms, whether theological, positivist, Marxist (etc.) showed the persistence of the view of the art work as a possible means of salvation in an essentially secular climate. Whether or not this view reflected a quaint naivety it tended to endorse a view of high culture serving a purpose beyond that of entertainment. This seems crucial, and the strategy, endemic to postmodernism, of promoting the significance of mass culture over such an 'elitist' ethos, evinces a disappointing and fundamentally disengaged view of the arts in late capitalism. As if reflecting this the most characteristic art form of our times is advertising. Capable of absorbing practically any tendency of the avant-garde, one may well observe, on a visit to the cinema for example, that the witty commentaries of the adverts easily outstrip any cultural pretensions of the main
feature. Surrealism was the first casualty to fall to the cause of advertising some seventy years ago, and the absorption rate has been accelerating ever since. Sometimes the fine arts operate in a manner that suggests jealousy of this trend. By making use of a re-channelled and recycled art-historical wisdom in the endorsement of the sensational, many pieces that are currently celebrated in the visual arts serve as nothing so much as material to advertise the name of the artist as a brand-name assuring secure investment. Further possibilities of the artist and his or her lesser-known work are then simply irrelevant.

## iii) Science, Art and Chaos

Whether or not we can still claim that art has a higher function it is clear that there was no such problem in the episteme of pre-enlightenment times when art maintained a clear position in its role of servitude to religion. If one defines the function of art in such times as that of maintaining and promoting a certain view of reality, this clarifies the relationship that it had with the natural sciences. Art and science must have been like twin sisters of which science was by far the more problematic. Art would have been seen by the church to promote and nurture the more or less appropriate emotional life for the devotee (a sense of awe and reverence) while science would have tended to promote the intellectual understanding of reality for a flock who were supposed to remain as ignorant and largely $u n$-intellectual as possible. Having cut loose, science has advanced at such an exponential rate that we are all the more aware of the vast scope of our remaining ignorance. An ignorance, moreover, whose full impact
we are no longer shielded from by reference to an officially endorsed higher reality. I believe this to be the most salient feature of modern, or indeed, postmodern times. It is within this ambit that art seeks to redefine itself.

In terms of challenging our view of the world scientific progress has, in a real sense, outstripped advances in the arts. Thanks to science, however, we could now redefine both art and science in relation to our world perception. This may be considered as a relationship with chaos. For science this is the attempt to make sense of chaos rigorously, while for art it is the attempt to isolate special units of meaning by way of affective connecting tissue in seeming defiance of chaos. Selections and connections are made to define and to contextualise closure for the individual work and this contrasts with the pre-enlightenment paradigm which provided closure prototypically regardless of whether the individual work achieved this. Small wonder, then, that one of the artistic ideals which has been identified from the Renaissance onwards is that of unity. To refuse to create meaningful closure would then seem to endanger the work, 'opening it up' to contagion from surrounding disorder. I wish to emphasise here that by 'chaos' I intend, for the purposes of this commentary, to limit the meaning of the word to an approximate the O.E.D definition: "state of utter confusion and disorder" rather than the modern sense indicated by recent studies of complex states within apparent disorder (although these are far from irrelevant). Meanwhile science informs us that all that we perceive is associated with the most fundamental narrative of all: that of the cooling of our universe from the time of the big bang; the passage from high energy and low entropy to
low energy and maximum entropy. It is precisely such ideas from the cosmological scale view of things that rightfully insinuate themselves as the proper concern of the cultural producer as outrider into the deserts of the unknown opened up by science and philosophy.

Chaos in the sense indicated is, of course, apparent rather than absolute; a category for perception. The sense of 'utter confusion and disorder' is, nonetheless, a psychological reality of our relationship to the immense complexity of the world around us probably to a greater extent than we generally care to admit. In addition, the kaleidoscopic manner in which television and radio present news broadcasts to us, the bizarre recontextualisations and distortions of scale presented to us by advertisement hoardings as we drive our cars, the sheer fragmentation of everyday life in our cities, all contribute to an enhancement of perceptual chaos. Due to that which filters down to us, half digested, from the front lines of scientific research our nerves are perpetually fine-tuned to our ignorance. At a fundamental and particularly emotional level, the confused sensibility engendered opens up to us a sense of immensity of scale. The chaotic vision of the galaxies presented by the night sky, for example, open up to our imaginations the prospect of the majesty and horror of Infinity.

This is, of course, nothing more than a thumbnail sketch of some of the less frequently acknowledged aspects of anxiety, which perpetually impinge upon us as we survive the prevailing episteme. I wish to suggest that this joins with some of the central concerns of Theodore Adorno about aesthetic imperatives seen in a more general view. Adorno promotes the idea of the artwork of
resistance, work which significantly straddles a fault line, exhibiting anxiety. The music of Schoenberg was celebrated by Adorno particularly on account of the same features which led Boulez to be so condemning in his article "Schönberg is dead" [1952:18-22]; the fault line here was that fracture which Boulez perceived between Schoenberg's twelve tone method and the persistence therein of classical formal models with characteristic motivic treatment. I wish to suggest that the reason we consider certain contemporary examples of art music as emergent from the modernist canon is because they embrace, rather than deny the contingencies of perceptual chaos. Any work which exhibits a form of atonality (the term seems far more appropriate in this context than post- or pan- tonality) may do so symptomatically. The reasons why the Second Viennese school had to go beyond tonality become all the more clear when we consider that tonality represents a self-closing system. In a sense the symphonies of Bruckner and Mahler already heralded the presence of a fault line because with such extensive time scales and complexity of modulatory schemes the membrane of tonality was stretched thin to the point of transparency. Tonality had emerged as the vehicle to promote the prototypical theological closure reflected in miniature: given a truly vast canvas the miniaturisation effect became problematic - virtually self-critical in fact. On the contemporary scene music by such composers as Howard Skempton and Michael Nyman inevitably seem to join with the popular musics of our time in as much as they persist with miniaturised tonalisms and a corresponding closure consisting of short-circuitry. Music by Elliott Carter, or Brian Ferneyhough are perceived as emphatically more problematic with regard to closure and are
therefore more likely to be felt as engaging with the central issues of the art of our times (and here, as far as it goes, one has only considered the pitch domain).

Perhaps, however, one should qualify observations about the need for artistic closure with the provision that closure in modern art needs to make the attempt of embracing paradox - the straddling of a fault line being perhaps an example of just one way this may be achieved. The paradox in question is that of making selections and connections in defiance of chaos, yet not creating a too easy and therefore false relationship with reality while doing this. This might entail embedding a significant representation of chaos within closure, thus acknowledging the problem of perceptual chaos despite the artistic imperative of unity. In light of the concerns exposed here I believe that contemporary complaints against the imperative of unity - a complaint one associates with postmodernism - should be re-examined in a manner which takes appropriate account of these matters. ${ }^{1}$

## iv) Foreword concerning the submitted works

Before becoming interested in musical modernism I was interested in the music of Bruckner, who influenced one of my early works: a symphony. In an undergraduate dissertation I analysed certain passages in the first movement of Bruckner's $8^{\text {th }}$ Symphony as if they were lines which could be arranged vertically, like lines of poetry, showing the signifying impact of differences thus presented. I became interested in the idea of meaning being, as it were, 'read between the lines'. Whereas meaning in Bruckner seems to be created in
the middle ground by thematically related tonal manipulations sustained over a significantly extensive period of playing time, the strophic relational aspect of meaning established over the mid- to foreground struck me as something one could potentially extract and use in a non-tonal context (and, moreover, on a smaller time-scale). On account of this the theory behind Schoenberg's twelvetone composition naturally attracted my attention. I wish to draw attention here particularly to the relational aspect, not only because it seems to receive less attention than that of specifics of pitch mechanics but also because of a largely ignored implication concerning the metaphysical concept behind it. The promotion of the chromatic total as a series in which notes 'relate only to one another' seems to be an example of the 'constellation' conception of an oblique approach an understanding of the real. One feels entitled to consider that Schoenberg regarded composition with twelve tones as a method concerning a relational matrix that embodied the latent possibility of promoting an awareness of the noumenal. When offering analytical insights into his own and classical works Schoenberg emphasised the connections between themes over the differences to be found in musical substance. This is to say that significance was to be found, not within themes themselves, but in some form of contextualising intermediary function (Gedanken) from which a more fundamental significance was drawn. In twelve tone composition such a contextualising function would be formed by the method of arranging, with a view to evincing a particular harmonic disposition, the twelve notes of the chromatic scale. In an essay entitled 'Schoenberg's Aesthetic Theology' Carl Dahlhaus implies that Schoenberg derived such a conception from teachings he
would have encountered in Judaism [1987, 81-92]. In Jewish metaphysics one finds the concept of 'intermediaries' known as the 'Sefiroth'. The concept of the Sefiroth was expressed in Torah exegesis, the esoteric aural tradition established by Jews in $13^{\text {th }}$ century Spain, which in later mediaeval times received codification in written form and became better known as the Kabbalah. At the basis of this idea is a problem reflected in Schoenberg's version of the story of Moses and Aaron in his opera of that name. The essential point is that God and the word of God cannot be known directly; God is too abstract to have direct influence on the world. Moses berates Aaron for representing God in the form of the Golden Calf but Aaron replies that by encoding God's law in the form of the Ten Commandments Moses has essentially done the same thing. The metaphysics of the Kabbalah seems to address the essence of the problem by proposing the 'Sefiroth' as a constellation of intermediaries, comparable perhaps to the angels of the Christian tradition. One might wonder whether Adorno could have suspected such a background to composition with twelve tones when he read Walter Benjamin's The Origin of German Tragic Drama in 1928, after he had been studying in Vienna; indeed it may be that his particular interest in the constellation concept as expressed by Benjamin in that work, stemmed in part from his understanding of Schoenberg ${ }^{2}$. In his introduction to The Adorno Reader Brian O'Connor gives the following account of Benjamin's idea:

Benjamin's theory posits the idea of constellations, a metaphor which expresses the practice of philosophical truth. In this practice the subject mediates phenomena, striving to arrange them in
such a way, in 'constellations,' that they might reveal their idea...........the meaning of any phenomenon can emerge only when the phenomenon is understood as configured with certain other phenomena.
[O'Connor: 2000: 4]

Whereas the relationship between concepts stemming from Judaism and concepts which informed methods of communicating Gedanken remain largely conjectural in the case of Schoenberg ${ }^{3}$ one finds a strong link in the case of Benjamin. Gershom Scholem's book Major Trends in Jewish Mysticism [1946] is dedicated to Benjamin with the words: "The friend of a lifetime whose genius united the insight of the Metaphysician, the interpretative power of the Critic and the erudition of the Scholar". Scholem was recognised as one of the major scholars of Jewish history in the twentieth century and the book in question elaborates on the concept of the Sefiroth providing the historical contexts for divergences in the interpretation of the word. The main concern in the context of this commentary is, however, the depth perspective which may be gained for the concept of constellations by way of this interest in the background of these major modernist personalities (uncertainties over details concerned with channels of influence in the history of ideas, and ones credulity of the theological implications notwithstanding).

I became interested in the ideas of Brian Ferneyhough because of his commentary concerning certain of his own compositional practices which seemed to embrace the principle in an advanced and particularly imaginative form. Because of the controversy surrounding this composer. The type of idea
which interested me is expressed by Ferneyhough himself in the following quotation from an interview with Joel Bons:


#### Abstract

.... I conceive of ordering as being something like a sieve, a set of filter systems, which I forcibly impose on the basic mass of initially unformed or unarticulated emotional, creative volition, the drive which leads one to create anything at all. In order to give it meaningful shape, it has to be pressed against some resistance, a certain amount of pressure has to be generated, like steam in a boiler wanting to escape....


[Ferneyhough:1995: 227-228]

Musical specifics, then, find their way into the final score via the imposition of a matrix of relationships. Filter systems permit and exclude as if diachronically varying criteria of selection have been set up. In my understanding or interpretation of this idea, constellatory relationships are set up between layers of systems governing parameters independently or in concert. I was interested in this as it seemed to translate something of the concept to compositional practice itself in a manner that goes beyond serialism whilst absorbing its possibilities; neither limited to serialism nor excluding any such procedural engagement. A matrix may be set up in the precompositional stage so that the composer never has a lack of specifics with which to work while the compositional decisions about what is in actual practice pertinent to the idea, the reason the constellations were set up in the first place, remain in his or her hands. Ferneyhough in the same interview, however, sees: -
....constellations of detail emerge from the monolithic mass or block of creative drive, not by multiplication but by division, by being channelled forcibly through the precompositional grid. In consequence the illusion of multiplicity is promulgated - a multiplicity rooted in the primary state before the grid's resistance was overcome....
[op. cit. p.228]

One of the things I have found particularly interesting about this version of constellatory conceptualisation, is the idea, derivable from the last sentence quoted, of a complexly ordered structure being established from out of a chaotic situation - a situation, moreover, which one confronts with "...initially unformed....creative volition...". I assume that the basic idea of a piece has taken shape in the composer's mind and that materials and 'precompositional grid' amount to an analogous 'best estimate' of how the piece might be achieved. One problem with less complex conceptions of pre-compositional planning is that they rarely allow for sufficient dialogue between composer and materials during the actual business of getting notes onto paper. By positing a matrix of sufficient density, on the other hand, one is never left with any doubt that the materials demand decisions to be made while the general relevance at any moment is allowed for providing one can see it.

It may also be that such concepts tend to provide a useful method of creating a distance between the composer and the materials worked with. I had found in many of my earlier compositional efforts, and the symphony in particular, that I often felt too close to the materials I was working with to facilitate the more intellectual aspects of structuring; unable to see the wood for the trees. A
further problem with feeling too much proximity is that deeply ingrained habits of listening are engaged with and tend to occlude the possibilities of the alien. If one has anything worth saying at all, anything new to contribute, this can easily be obscured during the more routine moments of note spinning. A dense matrix of possibilities derived from one's initial conception are more likely to throw up the more remote consequences of what one was proposing in the first place. This appeals to the composer, like myself, who no longer finds credible the idea that musical meaning can, in any worthwhile sense, occur by way of an emotively charged foreground event.

Whether or not the surface of Ferneyhough's music sounds as complex as might be expected given the evidence of the concepts and notational instructions, a certain quality is achieved in many of his pieces, particularly those involving wind instruments with detailed playing instructions forming part of the compositional matrix. I would like to refer to as 'plasticity'. I value this quality and would also apply the term in connection with the music of quite different composers for other reasons. Perhaps in light of the general aesthetic concerns I have drawn attention to one might say that the sense of plasticity is achieved when one feels that certain chaotic forces are being channelled and refracted in the work. The manner in which certain Polish composers, and Penderecki in particular, responded to Xenakis' early music employing stochastic procedures provides an interesting example. Whereas I cannot claim to be particularly devoted to Penderecki's music as such, I find the multiplicity of notational devices and corresponding playing techniques which he devised during the sixties enormously refreshing and inspiring. The ability to deliver the
sense of darkness and horror by such means in the score of the St. Luke Passion, for example, justifies them however vulnerably loose and generalised the playing procedures are.

I believe that the influence of Ferneyhough may be detected in two of my pieces: Refraction and Torsion. The influence of Penderecki is mentioned in connection with one of the phase groups in my piece Geometries of Dust although I have been concerned to specify in much greater detail the specific sonority sought after. The influence of Elliott Carter's polyrhythmic procedures is also to be noted in Geometries. These influences have helped in achieving something of the quality I refer to as 'plasticity'. I believe this was quite lacking in certain of my earlier works and have come to regret this. Certain achievements in sonority and notation which I identify with these composers allow one to feel that the music is 'under one's hands' to be moulded like the clay in the hands of the sculptor.

The intention here has not been so much to acknowledge the influence of particular composers as to illustrate ideas and qualities that I find interesting in view of my general ideas on aesthetics. It is not that my music derives in a conscious way from such aesthetic concerns, however; indeed, it is rather the other way round. I believe most composers would understand this. For me composing involves mainly a sense of adventure.

Observations about the submitted works are contained in sections 1 to 5 below.

## Part One

## Commentary to Geometries of Dust

The earliest sketches for this work were visual, only significant in the most general terms. The sketches are in pen but have the character of shapes cut out of contrasting pieces of Letratone (transparent sheets of plastic used by graphic designers to produce a variety of shaded textures) overlapping each other in various ways. The textures represented contrasting material of different orchestral groupings. Some layers I envisaged as having the hard and sharp quality of engraved glass, others would have a more diffuse powdery character. Some dense layers would appear in the background. Given that the piece would be orchestral, my attitude to the work was comparable to that of a composer setting out to write a symphony: the piece should be strong in formal abstraction. The title 'Geometries of Dust' suggested something of this seriousness of intent, although it does, of course, also suggest an extra-musical preoccupation. I was interested in reflecting something of the fundamental qualities of matter perceived through a contemplation of the night sky and what cosmology tells us about the nature of time and space. I decided that the contrasting materials of the orchestral groupings would be phased in time against one another and considered that the orbital patterns of planets would be a conceptual model for a realisation of this. In crude outline: the matches and mismatches of the phases would represent the 'geometries' and the individual characters of the phases - taken to be the various orbiting bodies - would represent the 'dust'. I found the simplicity of this fundamental idea useful as,
indeed, even this would lead to a great deal of complexity in realisation. Limiting the phases to just three in number appears in retrospect to have been a wise decision. I was interested in the dramatic possibilities of the three coming together at a certain point in the piece as an integral consequence of their relationships. Deciding that the total span of the polyrhythm representing the phases should be around ten minutes I calculated that 735 beats at a crochet beat of 72 would provide this. Phases of 15,21 and 49 beats duration respectively were arrived at by the following calculation:-

1 divided by $35=0.028571 \times 735=21$
1 divided by $49=0.020408 \times 735=15$
1 divided by $15=0.066666 \times 735=49$

Such background rhythmic schemes are, of course, familiar from the modernist canon. The concertos of Elliott Carter, in particular, provide pertinent examples. Many composers have used similar schemes and I had the opportunity of discussing the phenomenon in general terms with Philip Grange who used a polyrhythmic scheme in his orchestral work Focus and Fade. I found that the approach which I took to realising the scheme in Geometries contrasted in several ways with the works which I looked at and discussed. I was more interested in making clear the start and end points of the background scheme that I used; these are between the start of bar 41 and the end of bar 407. (N.B.: bass drums and tam tam give weight to the instigation of the large scale polyrhythm. While I wanted the characteristic material of the onset of the 21
and 49 beat phase groups to appear here, I allowed them to be delayed in this isolated instance by one beat in a 'ricochet' effect; I thought this more effective and allowed a small compromise to the scheme). Generally speaking, I present much of the material of the contrasting phases simultaneously and have rarely allowed one phase to dominate the foreground for more than a few bars. After much experimenting I found that the Carterian approach of differentiating the material of the phases intervallically did not produce the type of material and sonority I wanted. Intervallic partitionings which involve intervals larger than a minor third tend to project the vertical dimension in such a way that it is difficult to restrict the sense of parametric continuity at registral boundary points to only that which one intends. I noticed that foreground events which reach up into high registers need to be imbedded in a texture in which a general sense of continuity generally prevails. Otherwise much of the emphasis in the high register, signalling all too clearly, may work against the sense of onward flow of the phase events. In addition, with the experience of having written a small chamber work in which phasing was important, I decided that it was often useful to leave empty bars at the end of a phase so that the onset of its next cycle should stand out clearly. My intention here is to point out differences in procedure from that which I know concerning the formal background of other large-scale polyrhythmic works. This may show a tendency to hear, for example, certain works by Elliott Carter in a way that does not correspond to that composer's intentions, but these observations are offered here only with the purpose of giving reasons for particular compositional choices I made.

The phase of 15 beats is given to instruments generally at the higher end of the register: the piccolos, flutes and oboes plus all the violins and violas. The clarinets play a dual rôle as they are sometimes used in the 21 beat phase scheme (see below) but are more often used in conjunction with the piccolos, flutes and oboes. The material given to the 15 beat group was devised initially as two part counterpoint using the following motifs:-

## Example 1-1

' 15 ' motif one

' 15 ' motif two


In devising these lines I had in mind the sonority of an overall effect I wanted to achieve which would involve quite dense vertical harmony. I discovered an element of what I was looking for by harmonising the lower line in parallel tritones and the upper line with parallel major 9ths below. I completed the sonority I sought by adding two almost static lines in the upper midrange of the span compassed when the upper line had been taken up an octave. The result is as follows:-

## Example 1-2



I extended this pattern over the given span of 15 beats in a variety of ways. For the most part I was concerned with giving a distinctive overall 'shape' to the material. Throughout the construction of this piece I found that it was important to balance two necessities. One was the requirement of making the each phase at each appearance as clearly defined as possible, and this meant that each appearance could not be too different from the last. The second was that the repetitiveness would not become too tedious. While the second requirement was offset to some extent by the essential interest in hearing the way that each appearance would appear in a slightly different setting resulting from the fundamental nature of the phasing, I was naturally interested in exploring the different possibilities latent within each template for basic material.

Potential for repeating the pattern exists in the raw pitch material shown above, as continuing the same intervallic pattern (of motifs one and two) from the sixth note as from the first, gives an overall ascending curve. Realising that I could get a strong arch shape from this I used the retrograde form to add a descending one. As the pattern would be tedious if it was present all the time I planned on separating the ascending and descending forms by a silent group of 15 beats in occurrences from bars 108 to 407 . For much of the time the beat is divided into 7 X semiquavers. In some cases the material is presented homophonically while elsewhere a contrapuntal texture is presented. Typically I used talea patterns to create a general sense of acceleration or de-acceleration within the span of the phase. A typical example can be found in the woodwinds between bars 70 and 78. An example of the descending form of the material with rhythmic counterpoint can be seen at bars $93-100$. The violin and viola parts between bars 183 and 190 provide an example in which I eliminated the ascending upper lines, compressing the material beneath a d flat in the first violins throughout the 15 beat span but retaining the intervals between the other parts. One of the reasons I did this was so that the material would be relatively inconspicuous while the 21 phase group dominated. Originally I had planned that the 15 group material would be transposed either a semitone down or a major $7^{\text {th }}$ up with each recurrence but in practice I often altered this to suit the context provided by the other phase groupings. Use of augmentation, often abandoning the septuplet subdivision is also made to suit particular contexts see e.g.:-bars 243 250.

The phase group of the 21 beat span consists of piano, tubular bells, amplified dulcimer and all the brass instruments plus occasional use of the clarinet. This group makes use of a twelve-tone row. The following is in the form P2:-

## Example 1-3



The following is a fairly straightforward usage in the piano in bars 50 and 51 :-

## Example 1-4



The start of the local 21 beat phase is at bar 51 (the second appearance of the 21 phase in the total cycle which starts at bar 41) and is made fairly conspicuous by the flamboyant gesture on the piano reaching up to the high $g$ flat. The use of the tone row is apparent here. The first five notes of P 2 are used in the brass to make a clear beginning to the start of the third appearance of the 21 phase:-

## Example 1-5



At this juncture I was interested in making audible some connections between the harmony of the 21 phase and the 15 phase (abandoned in late cycles). In the above example, for instance, the chord with its outer span of a compound major $9^{\text {th }}$ and the tritone between the top two notes resembles many of the homophonic occurrences within the presentation of the 15 phase. The piano part in the following example from bar 61-67 contains chords which were taken from some other instances of harmony worked out for the 15 phase:-

## Example 1-6



At this point in the piece there is a relative calm following a fairly stormy passage throughout most of bars 40-45. I wanted some apparent resemblance between the vertical harmonies of the two phase groups in order to suggest a relatively peaceful co-existence with 'orbits' in balance. This, I considered would serve, in dramatic terms, to prepare the ground for a stringent contrast later on in passages which would be moulded to sound more disturbed, as if the gravitational forces of the orbiting worlds were putting stress on one another. The above example also serves to show how some of the rhythmic ideas were worked out in this piece. In this case the quintuplet semiquaver was used as a unit to calculate durations by use of the numbers shown to make a rallentando relative to the beat of crochet 72 .

Many of the early passages of the 21 phase group closely resemble the one which appears between bars 51-67. In the passage starting at bar 113 use is
made of the Retrograde Inversion form of the row in order to maintain a close resemblance to earlier passages and yet introduce some variation.

## Example 1-7a



It can be seen from this example that the row served as a useful point of reference at a certain level and yet rhythm, phrase shape and gesture are equally as important. Here, as in other locations, I knew broadly the type of music which would suit my purposes and constructed a strategy for obtaining the desired results. Such items as this tone row proved useful in the initial exploration of materials. In bars 115-116 however, in the right hand part of the piano, it will be found that straight inversion of the row, I 2, is used:

Example 1-7b


At bar 177 I wanted the 21 group to be given a certain amount of free reign and set out to develop the material. Other phase groups are temporarily in abeyance. As at this point the 21 group would dominate, it would not need to retain the characteristic rhythmic shape which identified it thus far and so I was able to abandon for a while the pattern of accelerando and rallentando relative to the beat and compose with a certain amount of rhythmic freedom. The passage
which follows from bar 177 is to be thought of as a double phase, lasting 42 beats (or 21 complete bars in 2/4). Example $1-8$ shows an early sketch for the 21 phase group between bars 180-187 with annotations about tone row usage (please refer to example 1-8 which is shown with the longer examples at the end).

On the second beat of bar 208 and instance of the 21 phase group starts and at bar 209 the rhythmic organisation shows the resumption of the accelerando/rallantando process relative to the beat, much in the same way as has been observed above concerning bars 61 to 67 . (Please note, however, the lacuna in bar 212 to allow the onset of the 49 beat phase group to be heard clearly; this is an example of the manner in which the scheme was modified to allow for increased clarity in the way the phasing can be heard between groupings). At a later stage the process becomes more dramatic as a similar rhythmic pattern acts like a sieve to alternately exclude and allow through the same material, creating lacunae in the material alternating with forceful continuances. This sometimes presents vertically material heard sequentially on previous occasions. This starts to happen at bar 219, but this time the material is derived from that of bars 177-198 which is notionally 'squeezed' into the rhythmic framework provided. At a later stage the 49 phase group undergoes a similar treatment which creates a powerful effect when combined with that occurring in the 21 phase group; an effect which is brought about largely as a realisation of the wish to produce the effect of strong gravitational forces acting upon one another.

The material for the 49 beat phase group was composed freely, after a great deal of experimentation, without any pre-existing conceptual models. The instruments used are cellos and double basses, 2 harps, bassoons, 7 -string electric guitar, bass guitar, timpani and roto-toms. Of these instruments the cellos and double basses play the leading part as they are more often present than any of the other instruments (indeed, the electric guitar and bassoons appear quite rarely). Depending on the acoustics of a given venue, the cellos and double basses may need to be amplified to achieve the desired volume levels with relative ease and the slightly harder sonority which amplification might introduce would be accepted. I do not specify the type of amplification to be used but envisage that the transducing mechanism that would work best might be Neumann U87 microphones near the bridge. In such venue it is likely that the harps (and dulcimer in the 21 group) would require contact microphones. The intention in the case of the harps and the dulcimer is not to distort the natural sound at all but rather make detail clear.

The material often contains dense 'cluster chords'. Some of the writing here was influenced by the orchestral music of Penderecki. I had often considered that his method of specifying sonorities by means of black blocks covering several lines of a stave, with little other guidance, had the tendency to produce fascinatingly dark sonorities. Such sonorities would have been ultimately frustrating to me in this work, however, because I felt a need to specify more exactly what I wanted to hear within the possibilities of such a resource, despite admittedly being interested in achieving harmonies near a borderline with a
world of sonic chaos. The 49 phase most often announces itself with material such as the following (at bar 65) in the (divisi) cellos and basses:-

## Example 1-9



The 49 beat phase cycle is projected in its most characteristic and complete form near the end of the total cycle. This starts at bar 359. From bar 373 the first of the last two phases of 49 beats builds in dynamism towards the last phase (which starts half way through bar 383) by means of an accelerating pattern heard on the timpani:-

## Example 1-10



The second phase of 49 in this sequence also commences distinctively and includes the harps which assist with the clear signalling of the event (please refer to example 1-11 which appears at the end).

The following example shows the beginning of one of the variations of the 49 beat phase group in the cellos and double basses (which is similar to the material heard in bar 4). The numbers indicate the manner in which the rhythm has been made to slow up and accelerate relative to the beat in a procedure comparable to that shown above in connection with the other phase groups (please refer to example 1-12 which appears at the end).

One of the reasons I constructed this in the manner shown was that it was necessary in the given context to have a version of the 49 beat phase which would have a denser sonority a for a longer period of time and an overall rhythmic pattern which would create a sense of phrase shape continuity over its long span. This was done in order to create, first of all a dense continuous backdrop to the fragmentation which starts to occur in the 21 beat phase group at bar 219 , (this point corresponds to the eighth bar of example $1-12$ ), but ultimately to make a comparison with some of the developing procedures heard in that phase group. This becomes significant when, at bar 310 , the 49 beat phase group is presented in terms of lacunae and continuations comparable to those which have occurred and are continuing to occur in the 21 beat phase group. The following example shows the cellos and double basses only for the passage from bar 310 to bar 321 although the pattern of lacunae and continuations involves all the instruments in the phase group. The rhythmic pattern was conceived in terms of multiples of sextuplet semiquavers but, for
pragmatic reasons, creates the desired effect without sticking rigidly to the sextuplet subdivisions:-

## Example 1-13



Unlike the material of the 21 beat phase group heard at this point, which drew almost exclusively from material previously presented without gaps, the 49 group material here was often extensively reworked so that the continuities had more of a contrapuntal texture (this refers to bars 341-343, for example). From this point up to bar 359 , at which point the 49 group starts its final two cycles, the intention is that the 21 beat phase group and the 49 beat phase group
interact with their lacunae and continuations sometimes overlapping and sometimes coming together so that the listener hears in alternation moments of considerable sonic density and silence. While this is going on the 15 beat phase group continues it's cycling much as before and tends to operate as a backdrop within the overall texture. The effect is often raw and aggressive in sonority. Here the intention is to portray elemental forces in nature interacting (in the case of the phases of 21 and 49) or - to speak in terms of the programmatic concept behind the work - continuing outside the stress fields of the gravitational forces at work (in the case of the 15 beat phase group). The return to zero of the three phase groups is designed as a climactic point. At the crucial moment at the start of bar 408 strong chords in the brass substitute for the material of the phrase groups. Some of the material which is heard after that point was conceived of as material from the 21 phase group and that of 15 conjoining. The pitch material was formed as a 30 note row built out of motifs of the 15 beat phase group interpolated with the intervals of the 21 group note row. The prime form (P6) of the resulting row is as follows:-

## Example 1-14

New row formed from 21 beal phase row and series from 15 beat phase series


After bar 408 the instruments abandon the groupings which they had during the phase cycle. The following sketch for a passage near the end is annotated with P6, I-0 etc to show usage of the 30 -note row. (I0 shares its third note with P6
and its sixth and seventh notes in reverse order). Ex 1 -
15


This example is also useful to show a change in the expressive nature of the material used towards the end of the piece. To a large extent I was influenced in the composition from bar 408 onwards by concepts from physical science which speculate about what happens to matter and time when materials are condensed into a black hole. The example shown above is part of a conceptual 'regime change' caused by the high pressure of a cataclysm.

In consideration of the compositional process described its seems as if there are two quite distinct strategies for expressing scientific theory in musical terms. The first is that which one may refer to as a formalistic strategy, adopted most notably by a composer such as Xenakis, which seeks to create analogies. In broad terms a comparable strategy operates in this piece to form the cyclic phasing which makes an analogy with orbiting bodies at a background level and is sometimes quite apparent at a mid-ground level, but which from bars 41 to 407 effects the material globally. The other is more of a psychological strategy - probably more familiar within programmatic romanticism - which seeks to exploit the effectiveness of certain devices in the foreground. An example of this here would be the creating of lacunae and continuations in some of the material to create textural impressions of opposition and tension. In this piece I have ensured that such devices have a strong relationship with the background level whether or not they stem from that level integrally. Few would claim that a formulistic strategy may be usefully presented without keeping a weather eye on musical effect. It may be found that the rigour involved in such a strategy tends to obscure this, yet a formal approach cannot be embarked upon without a
process involving selective musical decisions. In other words it would be difficult to maintain convictions about the wisdom of pursuing any given formal procedure without having a view to the psychological effectiveness of the results it may produce.

## Part Two

## Le Trône du Dieu Noir

The text for this work comes from the first part of the graphic novel Les Six Voyages de Lone Sloane by the French illustrator Philippe Druillet who also wrote the story. The work in question was one of Druillet's earliest published works and was first produced in book form by Dargaud in 1972. It is, of course, true to say that 'Le Trône du Dieu Noir' is not taken from the literary canon, or even a traditionally accepted legend or myth cycle. It does, however, despite being set in outer space in the distant future, have a resemblance to a Greek myth in that it is essentially about mortals seeking the aid of gods to give them power. Also, typical to such tales, one gains the impression that in the background the gods are struggling amongst themselves and merely using mortals to act out their conflicts. There is little dialogue in the piece, and what there is I have used as recitative. The words are mostly delivered by the narrator or the chorus. The scenario is so far removed from ordinary life that, as in the mythic realm of opera, music is as natural a vehicle for the words as speech.

## Synopsis

Sloane is travelling alone through deep space. Suddenly his spaceship goes out of control and explodes. Sloane is preserved by some arcane magic and a throne made of
stone appears in place of his ship. It takes him on a long voyage to a distant, very ancient, world on which there is a huge mountain temple with a city inside it. He is taken to the 'accursed priests' who are from a dying race which has usurped the ruins of this ancient world and have sent the throne out to find 'Être Vivant', a living being whose body will help them in an experiment to resurrect one of their former gods in order to help their race survive. The 'living being' is Sloane, and they cast him into a dungeon to await the experiment. In the dungeon Sloane is visited by a vision of 'The King Gods' who tell them that the god the 'accursed priests' wish to resurrect with Sloane's life is 'The Black God' the 'most monstrous being of the infernal spheres', a 'god of destruction'. The priests wish to use this god to help them 'enslave the entire universe'. The King Gods give Sloane a magic word to break the spell at the point at which he feels the evil of this god enter him. Soon Sloane is taken and put into 'the terror machines' while the priests chant the spell that will summon the 'Black God'. As the experiment reaches its climax Sloane is unexpectedly transformed into an infinite army of bodies all identical to himself. He shouts out the magic word, the spell is broken and the temple destroyed while the priests flee in terror. At the end one is presented with the image of Sloane voyaging again through space on the throne of stone towards an unknown destination.

Writing music for voices is, of course, quite a different prospect from that of writing music for instruments alone. In itself the sound of a human voice suggests the presence of personality and narrative. In a vocal work, music is subservient to text. In this case, however, I was inspired equally by Druillet's illustration. One gets the impression, in fact, that for Druillet the text generally took second place to the graphics. An entire page might be given over to a single illustration, for example, blocks of narrative text might
be depicted on ornamental stone tablets, belonging within the picture space of the illustration. For the sake of the design the sequence of illustrations could run from right to left (this occurs on the first page of Le Trône du Dieu Noir, for example) or a block of pure colour might interrupt the illustrations, making the picture plane erupt with a gestural physicality. With such devices Druillet often challenged the conventions of comic-strip narrative.

On account of the difference in approach represented by setting a text, while at the same time wanting in some way to pay tribute to Druillet's graphics, I decided to experiment at stylistic boundaries. Bent Alois Zimmermann's Die Soldaten had also engaged my interest in the possibilities of stylistic allusion. A further consideration was the final scene of the piece 'Les Machines d'Epouvante'. Here the text refers to the 'diabolic rhythm' of the machines, and to me this suggested a repetitive rhythm of great physicality. Here I have aimed at a stylistic hybrid with recent sub-genres of Heavy Metal that use a drum-kit with double bass drums in a particular manner. In fact it was while developing my own skills as a double bass drummer that I began to see how this hybridisation could work. I consider it to be worthwhile in the long run to confront the boundaries of a style as the 'edges' are thereby perceived more clearly. Presenting this work in the context of a thesis is one which, in my opinion, should encourage experimentation towards achieving something stylistically unfamiliar.

Some other parts of the music present stylistic allusions of a different nature. In the section entitled 'Les Rois Dieux', for example, I have used sequences and imitation in a manner I consider reminiscent of baroque music. This seemed appropriate to me as 1) I wanted the style to seem different in that movement to that which had preceded it because it is concerned with a message from gods speaking from their 'palaces of light',
breaking into the main character's prison cell. Whereas most of the music is concerned with the dark and demonic I wanted to suggest a lighter more angelic world. 2) Druillet's work is itself full of stylistic allusion. 'Les Rois Dieux' are made to appear rather like Hindu multi-faceted gods, while the image of Sloane, the main character, facing them in his prison cell shows the influence of Salvador Dali (while there is also reference made to that artists later 'atomic' work in the 'explosion' of spheres radiating out from behind the gods). It is not, however, that I felt the need to make the stylistic references of the music fall into a straightforward alignment with the references which Druillet made. I did not, for example, feel inclined to invoke a taste of Indian classical music to accord with the Hindu imagery. One of the features of the baroque style which accords with Druillet's style at this time, on the other hand, is that of figural repetition and highly worked surface detail.

Druillet's publisher, Editions SEFAM, gave me permission to use the text on the condition that I used it in its entirety without changes or additions. There is a considerable amount of narrative text and this obliged me to find a variety of strategies in order to incorporate a narrator into the music without this becoming tedious. This consideration added to the need for stylistic experimentation. In the central section 'Iotai celui qui cherche' there is a great deal of text and the approach I took there was the simple one of having the narrator reciting while the music continues in the background. Much of the music in that section is repetitive so as not to distract from the narrative, but the music also illustrates certain scene changes so that it does not become too restricted. As an example: the music at the beginning of that movement is engaged with the description of a journey and so I took the repetitive thematic material through a series of
transpositions to give a sense of movement. In the Prologue and 'La fusée va exploser' the narration is sung and interrupted with forceful musical events. To balance the amount of time taken up with a narrator speaking or singing against the music there is a certain amount of time devoted to purely instrumental music. This may be seen in 'Vers le Cachot', for example. In 'Les Machines d'Epouvante' the movement commences with spoken narration, but it would not have been practical or effective to continue this when the music gains in loudness, and so the narration is taken up later by the chorus (a transition which also occurs on a smaller scale elsewhere).

It was difficult to decide what to do about the 'magic word' in the story. It is central to the narrative, of such power and portent that Sloane was instructed to forget it as soon as he shouted it out. I felt a need to respect the idea of the word being cloaked in secrecy. Represented in the graphic novel only by a rune invented for this story, there was no way of ascertaining what the sound might be in any case. My solution was to represent the word by a moment of silence followed by a phrase on tubular bells - an instrument hardly used elsewhere in the score, with an instruction that the rune should be projected on a screen or data projector behind the choir. This does not infringe the power or secrecy associated with the word in the narrative but rather tends to emphasise it.

## Harmony

Work on this piece began with harmonic ideas, and most particularly the twelve tone row which is presented by the solo bass voice of the narrator at the beginning of the Prologue. The following is P11:-

## Example 2-1


which is used as a melodic line in bar 1:-

## Example 2-2



In this work the tone row does not serve as a basis for a true serial composition, however. It provided a sober, rather solemn phrase unit and I used it in a manner which favoured particular features, illustrated well by the example above; the expansion upwards and downwards from the initial note, extending a parametric outline, and the four descending semi-tones, completing the chromatic total which tends to emphasise its melodic boundary as a clear identifiable phrase. The interlocking trichords $0,1,3 / 0,1,4$ (taking a sharp and a natural as successive zeros) and $0,4,6$ and $0,1,6$ (taking a natural
and $d$ natural as successive zeros) struck me as interesting features of harmonic succession when considered in conjunction with the previously mentioned features.

The other harmonic idea stemming from the earliest work on this piece was that of partitioning musical space into the two whole-tone hexachords split around middle C , which is first introduced briefly in bars 4 and 5 of the Prologue (see above). A twelvetone row creates a very distinctive self-contained harmonic quality (and could be used to convey a sense of being trapped within a very tight musical space). The whole tone hexachord is of an almost opposite nature, its structure opens out to endless harmonically undifferentiated duplicates of itself and its character, while distinct from other types of musical scales, has a deficiency in terms of the kind of internal complexity which the twelve-tone row is invariably rich in. The result of juxtaposing two such different principles of harmonic construction towards the start of the piece made a very rich framework upon which to build associations.

The idea governing the harmonic and melodic aspects of construction of this piece was to extrapolate between these contrasting harmonic concepts. I regarded the tone row as embodying something of an active principle while the hexachordal partitioning operated as a passive principle: a state to which the music could easily revert, in the dramatic sense of being drawn towards an inevitable fate. As the narration had commenced with clear melodic usage of the tone row there was a tendency to regard this as signifying the human active framework which is alluded to in such phrases in the Prologue as 'Les hommes décidèrent d'étendre leur puissance sur tout l'univers'. Humanity in the piece is represented by the character Lone Sloane, who, as the name suggests, tends to act alone. The solo narrator conjures up this sense of isolation while the chorus, who, as seen above, first introduce the harmonic feature of the hexachordal split, evoke the desolate
sidereal wasteland against which background the action commences. This is re-enforced at bar 28 of the Prologue where the altos re-iterate the hexachordal melodic line of bars 4-5 emphasising the words of the narrator 'l'univers gardait son secret'. As I was inclined to see it, the story, rather in the manner of a Greek legend, is about the partial uncovering of one of the universe's secrets which is lying in wait to entrap an unsuspecting mortal. In the earlier stages of the work it seemed appropriate to align the hexachordal idea with a certain fatal inertia. In accordance with the serial aspects of this conception, one finds, for example, that the movement 'La fusée va exploser' begins with a considerable use of the tone row in many of its permutations at times when the music is agitated and turbulent. The following is extracted from bars 3 and 4 of the narrative part, the numbering of the notes show how they relate to P 0 starting from the second note in that row:-

## Example 2-3



This movement gravitates towards the hexachord partitioning in later bars leading seamlessly and without a break into the following movement 'Iotaï celui qui cherche' which begins quite peacefully with the thematic idea representing 'Iotaï' entirely caste in the hexachordal mould as is shown in example 2-4 (please refer to the longer examples at the end of the thesis).

The harmonic logic of the hexachordal split also dominates later themes.
At bar 39 of 'Iotaï celui qui cherche' the lower hexachord is used to introduce a new
theme with a descending line from f sharp in the horns and a rising line on the same hexachord in the double basses and harp. At the point at which an e flat is introduced in the horns at bar 43, the minor third contamination of the lower hexachord is emphasised by the discord of the e natural/f flat underpinning the note in the harps and double basses. At bar 47 the cor anglais introduces an upper line starting the opposing hexachord on $g$ natural. Impurities are introduced into this hexachord, such as $f$ sharp, by the cor anglais and trumpet in bars 50 and 51 . The actual impression conveyed by the thematic material here has the quality, to my way of thinking, of a dark processional music such as one might expect to hear in a notional 'Black Mass'. The theme is reintroduced in the early stages of the final section of music 'Les Machines d'Epouvante' (bars $10-23$, in the lower strings, bass clarinet, contrabassoon and trombones) in which its menacing potential is further emphasised by a slowing of the relative tempo of the line throughout the various metric modulations the mechanics of which, in contrast, permit the drums to 'shift up in gear' to a faster tempo. This slowing, while the dynamic level is building, inevitably gives the impression of increasing weight and battle-ship like momentum.

The rather lugubrious quality of the hexachord-based themes mentioned above contrasts with the way the hexachordal conception is to be characterised later. In 'Les Rois Dieux' the hexachord split is re-evoked fully at bar 28 after a brief motivic reference to the 'Iotai' theme in the violins at bar 21. At this stage we are much closer to the dangerous truth signalled by this harmonic idea. Seen from a distance, as it were, it seemed calm and serene, but now it is close up it is seen to be menacingly turbulent with a driving force of its own, and it is appropriate that it takes on a more active quality. The threat posed by The Black God and his accursed priests for whom the throne Iotaï was created,
has by this time been clarified.
In bar 5 of 'Les Rois Dieux' there is a complete in sequential usage of the RI6 version of the tone row (again used as a melodic phrase):-

## Example 2-5



At the end of 'Les Rois Dieux' the deities have given Sloane the magic word. They then tell him that, when the time comes, he must shout it out and then forget it.

I decided that this part should be sung by female voices only. Although described as 'Kings', Druillet's picture of the gods involved at this stage look decidedly female. There is also a tendency in Druillet's stories for the main character to be saved by the intervention of a powerful female figure (this happens in Torquedara Varenkor, Urm le Fou and his recent book Chaos, for example) so I decided it was appropriate to bring this in line. I wanted the voices to sound remote and angelic. Although voices suggest, as mentioned above, personality, the sound of voices singing in clusters fascinates me as the overtones become so dense that there is almost a resemblance to non-pitched percussion or to sound produced by some other inanimate object. I felt that the quality I wanted these gods to emanate at this point was that of something which was simultaneously hard but warm, like alabaster or marble glowing in sunlight. After considerable experimentation I discovered that two semi-tonal clusters of four notes with their lowest notes separated by a perfect fourth gave the basic sonority I was after. Further research also revealed that the tone row would be useful here as, combined with a particular rhythm scheme (explained below) the chords produced would progress from
a barely articulate 'marble' chord, through to some which seemed clearer and more open harmonically, before ending with a particularly 'cloudy' dense cluster which I felt would be suitable for representing the secrecy cloaking the magic word as the gods sing 'tu oublieras'. The following diagram illustrates the tone row usage in the $2^{\text {nd }}$ sopranos and $1^{\text {st }}$ altos:-

## Example 2-6



The rhythm scheme involved was one which I developed from a consideration of the perspective view of the architecture in the picture in which Druillet shows Sloane being led towards a dungeon. Having noticed the classicism of some of the temple buildings depicted on the same page, I was considering how the proportions shown in the perspective view correspond to the Fibonacci series. It occurred to me that if one were to use rhythms based on cycling through the first few integers of the series starting from 2 one would create a pattern in which there would be a staggered sequence of different parts coming together rhythmically at various points in time (much in the same way that contrapuntal lines based on magic squares do, but far more regular). I had considered
using this in 'Vers le Cachot' to get obtain some impression of the way the Sloane would pass by the 'Momies Royales' on either side of the vast corridor, (the voices would have been divided into right and left so that, for example, soprano 4 and alto 1 would have been on opposite sides) but experimentation showed it would be more suitable as a matrix for the tone row projections in the passage in question. The following diagram shows the manner in which I multiplied crochets as a basic unit to build the rhythmic proportions with the number series (please refer to example 2-7 which appears with the longer examples at the end of the thesis).

## Instrumentation

As the piece progresses, and as the location shifts from human space to remote alien worlds, more instruments are added. The first three sections of music use little of the orchestra apart from the string section. Towards the end of 'La fusée va exploser' French horns add to the solemnity of the theme which represents the throne. Most of the instrumental addition occurs during the following section 'Iotaï celui qui cherche'. As the narrative conducts us towards an alien world, harp and cor anglais are introduced almost simultaneously, the changing sound world enhancing the sense of changing landscape. The sound character of the cor anglais is strongly projected, as between bars 28 and 40 it has a soloistic rôle. Continuity is maintained because the music it plays at this juncture is almost the same as the music that the narrator had in the Prologue, shifted up an octave. It might be argued that some very different music should have been found in order to emphasise the difference of the alien world. I would disagree with this as I think that 1) given that a work needs to maintain consistency at some level, repeating a melody on a very different instrument in a contrasted context actually emphasises difference so that both causes are served, 2) I tended to regard the cor
anglais as having the character of some creature acting as herald to an alien world and wanted it to have as vocal a character as possible; the fact that the same material was sung on the previous occasion emphasises this, 3) the music could not have too much here that had not been heard before as otherwise it would tend to distract attention too much from the narration 4) the music derives from the tone row and I wanted this again to be heard in close proximity to music dominated by hexachordal partitioning. The music immediately preceding, the 'Iotaï' hexachord-based theme, was a case in point, but the new theme which starts at bar 39 in the horns, harp and double basses presents a new example (albeit with the e flat invading the lower hexachord). Featured strongly towards the end of this section, the trumpet began to represent Sloane's anger at the accursed priests. Three wind instruments, piccolo, oboe and contrabassoon, play a significant part in characterising 'Face de Plombe' the spokesman of the accursed priests, as they enter with harsh dissonant chords when his recitative starts at bar 63. I introduced the vibraphone at bar 74 thinking of it as conveying a very liquid sound, its sustain emphasising the flow of the horizontal in contrast to the verticality of the writing for piccolo, oboe and contrabassoon. The liquid quality was illustrative of the words of 'Face de Plombe': 'mais pour cela il faut le fluide d'un corps palpitant'. In 'Iotaï celui qui cherche' there might be heard a style reference to Harrison Birtwistle, particularly considering his processional music, the manner in which he occasionally makes use of a hypnotic repetitive phrases (in the harp at the beginning of The Triumph of Time, for example) and the feature of using a high piccolo and low contrabassoon in a discordant woodwind texture (which I have used during the recitative of 'Face de Plombe' as mentioned above).
'Vers le Cachot' makes use of a wide range of woodwind, brass and percussion
instruments with the string section represented by pizzicato notes. I cannot recall to what extent it was intentional, but I think that the texture here is similar to that of the ending of Brian Ferneyhough's Carceri d'Invenzione No.l the title of which refers to a comparable scene, of course. In fact Druillet's depiction of the city in the mountain temple is similar to the city of Cimaroon pictured in his own Urm le Fou, and in that work the similarity to Piranesi's Carceri is clearly detectable. In this way the reference seemed appropriate.

I tend to think of the 5 -string bass guitar as a symbol of power due to its potency in the low register. Even without a scordiatura the low b string is tuned only a whole tone above the lowest note of a piano, while the potential for amplification is comparable to that of a cathedral organ. For this reason I used it to re-enforce the word 'puissance' on the low $b$ in bar 35 of 'Les Rois Dieux'. The contrabassoon doubling it at this points adds to the richness of the timbre.

The final section 'Les Machines d'Epouvante' introduces a 7-string electric guitar with a heavy overdrive sound. This instrument combines with the drum kit, the 5 -string bass with double-bass drum, anvil and muted d flat on tubular bells to invoke a vision of monstrous machinery. In addition a synthesiser is instructed to produce a digeridoo-like sound (which could be based on a sample of that instrument). The drums and the electric guitar in particular are responsible for the projection of certain features of the 'Heavy Metal' style referred to above. Bar 81 provides an instance to illustrate this point. With palm-muted low strings the octave e's of the guitar will sound weighty but cleanly chopped with a rich staccato (the 7 -string guitar tends to sound naturally thicker than a 6 -string due to the increased mass of the neck). The alternating semi-quaver double bass drums are also a typical feature of this style of metal, while the battering on the tom
toms in rhythmic unison with this increases the sense of power. I invoked the fast double bass drums at bar 81 to illustrate the words about Sloane being transmuted into an infinite army of duplicates of himself. I envisaged a possible staged performance in which either a video or some visual trickery would produce images of the character filing out into the huge laboratory like photocopy images on some super-fast Xerox. The piece ends with a sustained chord in the strings and the repetition of the soprano and alto music heard at the end of 'Les Rois Dieux' this time played from a recording through the sound system to give the impression of the voices being heard from a great distance. It seemed appropriate that the piece should end with string and vocal sections only (the exception being the harp and tam tam of the last two bars) stripping the sonority bare after the cataclysm represented in the passage from bars 135-145 of 'Les Rois Dieux' thus providing a similar texture to that with which the piece began.

## Part Three

## Crevasse for solo classical guitar

My ideas for this piece stem from playing the instrument and considering some of its unique physical properties. Crevasse is an attempt to recapture an idea I had, while improvising on the guitar with certain harmonic materials and ideas about timbre, during a concert at some point at least two years before I commenced work on the actual composition. The idea was of such an elusive nature that it would not have made any difference if I had started work on it immediately after improvising (something I was unable to do due to pressure of other work). If I had recorded the improvisation, in fact, it still might not have
been sufficient to capture the idea as it involved mainly certain ratio measurements which I heard internally (without being able to define exactly) while playing, rather than just the improvisation itself. The only point that persisted with some clarity is that it involved the material heard, in the final composition as presented, at bar 63 as a dénouement of what had occurred before. I wrote Crevasse in the spirit that it was best to attempt to capture the idea, by means of an armoury of best estimates, rather than not to try at all. The scheme which represents my 'best estimate' is outlined below; it is carried out in the final composition in only the most fractured and fragmented manner because, after I had written the piece in more precise accordance with the scheme, I found I had to make a large number of alterations to pitch/register elements (in particular) so that the ear should not be distracted by what proved to be irrelevancies. There is, however, a background pattern of rhythmic events which one is expected to hear through some of the abrupt changes in texture and timbre (see bars 46, 49 and 51, for example) this becomes particularly focused from bars 46 through to 62 (note the closeness of the triplet values of the 'tempo primo' bar 51 to the quintuplets of bar 49 in real time). The changes in texture and timbre (which have received some criticism for making the piece sound too 'patchwork-like') were elements intrinsic to the original idea. These, in conjunction with both the rhythmic background and rhythmic detail, were intended to create the appropriate conditions for the way that the material of bar 63 would be heard. The intention is that bar 63 should create the effect of breaking through the detail to a level of rhythmic essence at the same moment that the timbre achieves a certain quality of raw simplicity. Along with the
sustained level of difficulty in terms of articulation which pervades this piece (which will only be fully apparent to a guitarist) this requirement establishes the need for a virtuoso performer.

Before presenting the schematic concerns behind the composition of Crevasse, however, the reason for the title deserves some attention. When I embarked upon the improvisation mentioned above I had recently been given a Spanish guitar by a friend who no longer needed it. This was a astonishingly good example of the kind of rough made guitar one sometimes finds at Spanish airport kiosks and had particularly clear harmonics. As my usual instrument is a solid body electric guitar I was particularly fascinated by the way the clean sounds were emitted from the hollow sound chamber. Having recently seen some wonderful photographs of a crevasse in an Antarctic ice flow in a University Geography department I found that the images of this cavity merged in my imagination with the guitar's hollow chamber.

One of the lesser-explored potentialities of the guitar concerns the possibility of playing chords of mixed timbre: mixing the sound of harmonics with those of strings fretted normally. An example of one such chord is to be found in bar 7, consisting of b , e and a as harmonics (touched at nodal points on the low $\mathrm{e}, \mathrm{a}$ and $d$ strings) and $f$ and $b$ flat as stopped notes. I decided that I would develop harmonic material for this piece by writing transpositions and permutations of this and other mixed timbre chords with similar intervallic properties.

I constructed several tone rows consisting of orderings of the notes of the bar 7 chord combined with orderings of its complement in the total chromatic set. Rather than sticking with the constraints of the rows I used them as a basis for
composition only with a view to extracting successive refinements (or evolutions) of the row from material already written in which an earlier version of the row had become embedded, or indeed lost in terms of linear connectivity, in homophony (in fact the main purpose of the row was to prompt me to think of as many variants of the bar 7 chord as possible, rather than as a method of harmonic control). The final form of the row which I found useful to trigger ideas was one developed from the material of which bars 32 and 33 used to consist (which has since been altered slightly in the finished composition).

## Example 3-1



The final six notes of this are the notes of the bar 7 chord plus e flat. In common with that chord the row as a whole makes a particular feature of perfect 4ths, semitones and tritones and obscures other relationships. I also made further use of the retrograde form of a tone row I had constructed earlier, the first half of which features major and minor third relationships:

## Example 3-2



I was interested in forming a meaningful relationship in the structuring of the piece between the first three notes of this row and the dramatic gesture planned
for bar 63 which features these three notes. The requirement seemed to be to create a sense that the gesture of bar 63 was an inevitable outcome of what had preceded it, particularly from bar 46 onwards. I decided that I would find a way of imbedding the $d, f$ and $e$ in the preceding material and make some use of the rhythmic context of bar 63 . With this in mind I constructed the scheme concerning an expansion and contraction of the rhythmic figure of bar 63. In terms of quintuplet semiquaver units the rhythm of the notes $d, f$ and $e$ of the bar have the values 6,3 and 3 respectively (the value of $d$ is 6 in the sense that this corresponds to the value heard before the f breaks across the sound of the sustained d harmonic). In bar 46 I multiplied these values by 3 so that one would expect to find a d starting at the beginning of the bar and being sustained for a total duration of 18 quintuplet semiquavers, an f would immediately follow (preferably in a relatively low register) and last for 9 quintuplet semiquavers and an e would follow that lasting for a further 9 . What happens in practice is that the scheme is obscured in any case by the change in tempo which I later found necessary at this point and the first $d$ here lasts for 23 quintuplet semiquavers before the appropriately low $f$ is heard at the end of the bar. On the other hand the $\mathrm{d}, \mathrm{f}$, e sequence is reinforced in the foreground by the f heard at a register two octaves higher on the last quintuplet semiquaver of the first beat of the bar and an $e$ is heard as a high harmonic at an equal distance after this. I rejected the idea of projecting the contour strongly rather than the pitch relationship as I felt this would tend to compromise the manner in which the material of bar 63 is heard as a dramatic contrast to what has gone before. The next part of the 'expansion phase' of this scheme begins with the g
harmonic at the end of bar 47 , for the idea was that the motif would appear transposed up a fourth to g , b flat, a . As the values are now to be multiplied by 6 this is regarded as the dominating pitch for the next 36 quintuplet semiquaver values, but the surrounding figuration does not allow the harmonic to be sustained. The b flat occurs where it should, but is not sustained and becomes somewhat buried in surrounding detail and the a appears a major $7^{\text {th }}$ above this rather than a semitone below two quintuplet semiquavers early at the start end of the last quintuplet semiquaver on the fourth beat of bar 49. Due to the difficulties encountered I tried to project the figure in terms of the relationship between its first two notes and attempted to 'frame' much of the material by continually emphasising this: see for example the b flat reappearing as a low enharmonic a sharp during the fifth beat of bar 49 and the high $g$ harmonic reappearing during the following beat. The d harmonic to low f relationship also re-establishes itself during bar 54. Generally the passage from bar 49 to 62 was freely re-written although the idea of making the outcome seem in some sense inevitable was kept very much in mind with the low e 'held back' until its appearance in bar 63.

Tone row manipulations dominated the plans for bars 46 to 63 , however, and evidence of these remains only slightly buried. The form of the main row I was using at this point was RI9: -

## Example 3-3



I modulated this with the alternative row (which is shown above beginning on d) with the result shown in example 3-4:

Example 3-4


The counterpoint of bar 49 resulted from a double modulatory scheme in which each resulting row was put through the talea of an isorhythmic series to form the upper and lower parts. The music from this point to bar 63 was composed more freely with a view to creating some audible links with the material heard at the beginning of the piece. After the watershed of bar 63 to the end the music is generally more dramatic, reflecting, to my way of thinking, a sense of something having broken through to the surface at the crucial point. There is much evidence of thinking of the guitar in terms of the physicality of its technique. This can be seen in the arpeggiated material from bar 69 to bar 76, and in particular the 'gear change' between bars 70 and 71 which results from adjusting the hand patterns in a simple but effective manner.

The notation of this guitar piece reflects an interest in making clear the requirement of sustaining notes, particularly the harmonics, and constrains the fingering in most cases by showing which strings are to be used. This is done to ensure that the right timbre is obtained. Extending the score over three staves proved particularly useful. If one compares the way the harmonics are notated in bar 46 with those notated in bar 48 then it becomes clear that the method of
indicating sustain changes according to the phrasing requirements of the local situation. Diamond note heads are used for harmonics but resultants are never shown as in some cases they would contain such inharmonicity (due to the relationship between string tension, string stiffness factor at nut and bridge in relation to string length) as to render the real resultants too complex to be usefully notated. These factors stemmed from the intention of writing a piece that reflected the unique physical nature of the classical guitar and it's playing technique.

## Part Four

## Refraction for flute, guitar and bass clarinet

This piece originated in two fragments which I regarded in the first place merely as studies. These studies were somewhat constructivist, or at least rather formal, in their nature. The fragments are represented in the final score by the material which appears between bars 1 and 5, marked 'brillante' (an entirely unaltered appearance of the second of these studies, chronologically speaking) and the material which appears between bars 37 and bar 48, marked 'tranquillo grazioso' (this is a slightly altered version of the first study). The studies had concerned methods of rhythmic and harmonic organisation which seemed to me so different from one another that - despite using identical instrumentation - I doubt whether I would have considered the idea of putting the results into the same piece if it were an image which occurred to me shortly after writing the second of them. I had picked up a fragment of a geode while in the Atlas Mountains of Morocco. I took some interest in the geology and the geode's
physical origin, the heat generated by the cataclysmic meeting of the African and European continental shelves many millennia ago. I started to regard the study fragments as separate geological strata coming together with a certain inevitability, forming a crystal in the heat of impact. The material of bars 1 to 5 represented the hard glittering surface of the geode and the material of bars 37 to 48 with the crystal at the centre. At this point I came to conceive of the temporal structure of Refraction as an excursion through the strata of the geode through to the centre and out again. I considered that my attempt to form 'bridges' between the different kinds of material involved (which I conceptualised at this stage as consisting of three 'layers' representing the outer shell, an inner strata and the crystal interior) would 'unlock' the differences between the material in a musically interesting manner.

The account, which follows below, dealing with the specifics of the music (from a technical viewpoint) may be found to be something of an oversimplification if one makes detailed reference to the music. Most of the account is reconstructed from work-in-progress comments made during composition but, regrettably, some stages involved were either not documented sufficiently or were discarded by accident (like most composers, I imagine, keeping a record of all the operations involved becomes virtually impossible at times when speed is imperative in order to keep all of the elements in mind simultaneously; generally speaking I have found that in most instances my memory only retained a simplified version of the operations involved - yet give examples of them below). In some instances I recall that procedural rigour was regarded as quite imperative. I found later, however, that in some cases I must
have made substantial modifications to the resulting music - apparently on the basis of a further layer of (forgotten) considerations. Undoubtedly some of this was done on an intuitive basis during the act of finalising certain sections before proceeding to the consideration of new ones. I recall, for example, that my methods were frequently modified during a routine 'hands-on' procedure during which I would record myself playing sections onto a four track tape recorder and then listen critically to judge the effectiveness of the passages (this normally resulted in quite minor adjustments to what I had written, however, except for whole passages which I altogether discarded). It will be noted that the finalised structure makes much use of the idea of putting complete passages into retrograde motion (i.e.: mirror fashion in all parts). This feature, which may seem stylistically idiosyncratic, is one which I have found to be significant and effective in previous compositions, although here it was suggested by the idea of passing inwards and then outwards through the strata of a geode (in this piece I certainly made adjustments in such cases on an entirely intuitive basis with the idea that the retrogressive manoeuvres could actually be made more apparent to the listener than if no modifications had been made to a strictly retrogressive procedure. I found here that this idea (of structural 'mirroring') assumed concrete form in a very late stage of composition. It seems to me to reflect, in the actual time of the piece itself, something of the process of composition from the point at which one starts to re-encounter one's original conception being reflected backwards from the points of closure 'onto the working surface', so to speak. I have recently been tempted to regard the employment of such structural 'mirror' procedures as an attempt to embrace a
'natural' phenomenon, as one encounters in modern theoretical physics the idea of radiational symmetry in time. This idea is discussed, for example, by Huw Price in Time 's Arrow and Archimedes Point (Price: 1996). The 'outer shell' of the geode is represented by the music of the first five bars. The harmony of the fragment heard between bars 1-4 was organised in order to exhibit the characteristics of a spatial set filtered through the constraint of intervallic differentiation between instruments. The spatial set is shown below:

## Example 4.1a



The flute part is restricted to those intervals associated with the trichord $0,2,4$ (set 3-6 in Fortean notation): major $2^{\text {nd }}$; major $3^{\text {rd }}$; flat $6^{\text {th }}$; flat $7^{\text {th }}$; and then major $9^{\text {th }}$ etc.

Similarly the guitar takes the trichord $0,2,5(3-7)$ which permits: flat $3^{\text {rd }}$; major $6^{\text {th }}$ and perfect $5^{\text {th }}$.

The Bass Clarinet takes the trichord $0,1,6(3-5)$ thus permitting: flat $2^{\text {nd }}$; Perfect $4^{\text {th }}$; tritone; flat $7^{\text {th }}$ and then flat $9^{\text {th }}$ etc.

At the end of bar 4 a different spatial set supersedes the one shown above. The new spatial set is shown below:

## Example 4.1b



The manner in which I had planned the succession of spatial sets in the study (as opposed to Refraction itself) has much to do with the logic of 'pivot tones'. The bass clarinet gives a considerable amount of weight to the $g^{\prime}$ and c sharp" pitches which the two sets have in common, 'over the join' as it were, while in the flute part the manner in which the $g$ sharp 'gives place to the $a$ ' is emphatically highlighted in bar 4. (For a note on the reverse procedure in bar 16 please see below as it is dealt with during the account of the conflation of spatial set/intervallic differentiation with serial thinking).

The opening bars also demonstrate the rhythmic stratification of the parts, which is kept to fairly consistently throughout bars 1 to 28 . The subdivisions of the beat for flute, guitar and bass clarinet rhythms are 7,6 (or3) and 5 respectively although in the opening five bars the Flute rhythms are not subjected to an irrational subdivision but are derived from straightforward demisemiquaver divisions.

At bar 6 one enters a new 'strata' and from here the rules which governed bars 1-5 are infringed. The idea was to carry this logic of infringement through in a gradual way so that by bar 37 the music would enter an altogether different territory in terms of organisation. In fact the method of interpolating between the two kinds of rhythmic and harmonic organisation is arranged into two
stages marked at bar 6 as 'piu animato e piu fantastico' (the passage from bar 6 to bar 15 is based on the retrograde in all parts of bars 64 to bar 72 ) and at bar 16 as 'strepitoso'. (N.B.: in this score the expressive markings are organised into two groups: font size 12 for the general expressive markings and font sizes 10, and in some cases 9 , for those giving directions to individual instruments. Instances of the second category are numerous while those of the first category are usually confined to marking out the 'strata'). In practice I was not happy with the more gently graded 'infringement' which occurred according to the plan between bars 5 and 16 . I substituted the music I discarded here for a passage based on the retrograde of bars 64 to 72 . This was useful partly because I felt something more abrupt was needed in bar 6 (the brief silence and the fragmented entries of flute and guitar in bar 6 make for a 'heraldic' effect in the sense breaking the flow, thereby suggesting that something different is about to occur). Bars 64 to 72 had in fact been planned as something of a retrograde of bars 6 to 15 - (written at an earlier stage) because, as mentioned above, the idea was that one should obtain a sense of emerging through a similar strata of rock on the other side of the geode. In practice, having discarded the music for bars 6-15 the compositional process took place in reverse order so that bars 64 to 72 were written first. The coda passage of bars 74 to 78 was written in accordance with the principle behind this scheme. Here it can be observed that the music of bars 74 to 78 is based on a retrograde version of the opening 5 bars but with the 'axis of symmetry' of rhythmic organisation changed within the duration span of each bar. Bar 77 is given a median axis, for example. Rather than simply being bar 3 in reverse, therefore, one finds that most of the activity of the bar
takes place in the middle of the bar. (Other changes were made to the plan of retrogression on a purely intuitive basis; one does not find that the explanation accounts for all of the differences between bar 37 and a reversal of bar 3). I derived this 'axis of symmetry' approach to rhythmic organisation from ideas discussed by Pierre Boulez in Boulez on Music Today (Boulez: 1971 pp. 5557). The idea found a natural place in this score because I was preoccupied with the idea of projecting an intensified sense of a rhythmic 'negative space' around the notes (see note below regarding performance). The idea of intensifying axial symmetry also informed the rhythmic modifications to the idea for the guitar part to be observed in example 4-2. (Please refer to the separate section of larger examples which is included after the notes).

Despite the alterations to bars 6 to 15 mentioned above, a relative rigour informs the flute writing of bars 16 and 17 in terms of retaining the idea of emerging from the section pervaded by spatial set and intervallic thinking (which had substantially dominated the music I had written for bars 6 to 15 before the material of bars 64 to 72 was used in retrograde form here). This is not to say, however, that the final version of bars 6-15 entirely discards this either: the minor third preoccupation remains in place in the guitar part in bars $7-8$ and the bass clarinet retains its allotted intervals at least as far as bar 11. One may also note that the flute part at the beginning of bar 16 refers back to its gestures of bar 1 in terms of rhythm and contour, thus substantiating a backward connection to the spatial set region. A description of the manner in which the flute part of bars 16 and 17 breaks away from the (interrupted) spatial set/intervallic thinking of the preceding bars will receive attention in due course
on the basis that, procedural alterations notwithstanding, it informs the writing which found its way into the final score.

As mentioned above, the second fragment of 'study' material used in the piece (chronologically the first study written) was very similar to the material which eventually found its way into the piece between bars 37-48. The succession of pitch classes therein is derived from the following tone row given in the form P3:

## Example 4-3



It will be found that the notes of the row between bars 37-48 are distributed vertically as well as horizontally. In order to prevent further confusion it should be noted that the row appears to start one note from its end note in the bass clarinet part in which it plays $d$ in bar 37 after the sounding of the note $b$ which is not taken from the row but was in fact inserted in order that the $E$ natural in the flute part at the end of the bar should not sound like a secondary leading note in the key of B flat.

With regard to the rhythmic life of this extract it should be noted that the flute part, in statistical terms, telescopes from long to short values and then expands up to longer values again, a feature governing the rhythmic organisation of the flute part throughout most of the piece. The values are counted in septuplets in bar 37 (a crochet value is also counted according to the prevailing tuplet
division of any bar) and in quintuplets after the metric modulation at the start of bar 38. The rests following each successive pitch are counted into the rhythmic values. Taking the d sharp of bar 37 as the starting point we can discern here the following number series up to the E flat of bar 41 and the rests which follow it into bar 42:
$9 / 11 / 4 / 6 / 5 / 4 / 1 / 2 / 2 / 1 / 1 / 3 / 1 / 1 / 1 / 2 / 3 / 4 / 6 / 15$

The form of the bass clarinet and guitar parts in the study was based on that of an isorhythmic canon. The rhythm of this was a talea constructed from the following number series:

1) 1551352133125213

This was modified in the Refraction guitar part so that one finds in that part the number series:

13255352133125213
preceding the talea which eventually starts to appear in the guitar in bar 47 . The bass clarinet in Refraction does not repeat the talea.

The bar subdivisions for bass clarinet and guitar in the relevant section (bars 37 -69) follow the plan:
$3 / 4 / 5 / 6 / 7 / 6 / 5 / 4$ etc. while the absolute values of the bars changes after each completion of this cycle so that a quaver value is subtracted each time:

3/4 $5 / 8 \quad 2 / 4 \quad 3 / 8$.

The outcome can be discerned if one takes it into account the fact that the absolute values allocated to the successive numbers of the talea (which govern the rhythmic units) change locally in accordance with the subdivisions of the sum of the metric values of each bar (shown above). This means, for example, that the dotted crochet $f^{\prime \prime}$ in the bass clarinet part found in bar 38 represents the first two values making up the number five. The number five is made up in total of the dotted crochet of bar 38 tied to the dotted minim (the first three values in a 3/4 bar divided into crochet quintuplets) in bar 39. This emerges in such a manner because the total $3 / 4$ value of bar 38 is notionally divided into 4 dotted quavers so that the actual dotted crochet (f) of that bar consists of 2 parts of the number 5 , but the quintuplet dotted minim of bar 39 , which is divided into a notional 5 X quintuplet crochets, consists of the remaining 3 parts of the number 5 . In bar 41, on the other hand, the value 5 allocated to the note $d^{\prime \prime}$, is made up of a minim tied to a quaver because the bar is divided into 7 X septuplet quavers.

It will be found that there is almost invariably either the iteration of a note or an accent on a held note at the start of each bar. This has been done in order to enhance the sense of time 'telescoping' with the contraction of bar lengths at the end of each cycle. In order to provide for this it was necessary to make some alterations to the rhythmic scheme which was allotted to the guitar and bass clarinet. Some minor liberties, for example, have been taken with the application of the number series from which the two instruments take their values. The bass clarinet starts from the beginning of the series in bar 38 while
the guitar starts from its own series (a modified version of the talea shown above) at the start of bar 39 .

Please refer to example 4-4 where the numbers of the talea are shown for the guitar and bass clarinet parts from bars 37-42.

As mentioned above, the material of bars $37-48$, which puts this scheme into motion, started off as a formal study. This study originated as an investigation of the idea of 'time bubbles' - or at least my interpretation of this idea - another derivation from Boulez (op. cit. pp58-59). I had valued this study for the 'floating' quality which it evinced, with its occasional flurry of activity provided by the retraction of number series in the flute into single values. Before adapting it for use in this piece, this particular study evoked for me an image of nature: that of looking into the almost still waters of a fish pond where, just occasionally, one would get a sudden glimpse of rapidly moving tail fins.

Further observations will be made about the usage of the pitch series and rhythmic design described above in the course of discussing the overall structure of the piece.
i) Method used for composing out intervallic differentiation while projecting the pitch series.

Having decided that the fragment that appears at bar 37 was going to represent the inner crystalline structure of the geode I proposed forming a bridge between bar 5 and bar 37 in a manner which would:

1) bring the pitch series increasingly into focus,
2) reflect an aspect of the manner in which the series is projected in the flute writing from bars $37-48$,
3) start to reflect aspects of the vertical harmony of bars 37-48 increasingly as the character of the series starts to become apparent in the bars $16-30$.

In fact the first two propositions were worked together: a contracting and expanding number sequence was devised for the flute with the idea that the series would move from one's sense of background time into the foreground. This sequence would reflect an aspect of the flute writing between bars 37-48 because there one also finds that the rhythm is controlled by the number sequence described above ( $9 / 11 / 4 / 6$ etc.) which is comparable in the sense that it eventually diminishes to the shortest values before expanding again. The difference between this and the sequence between bars 5 and 37 is that the latter: i) starts from much longer values and ii) the numbers do not control a period through which a component of the pitch series is sustained but rather a period during which that component is made to dominate parametrically as a registral boundary point (usually the highest point) for more or less elaborate melismas (see the e flat, e natural, $b$ flat, a f sharp, f natural and b natural appearances in bars 16-19 and the notes which occur in between them. In terms of septuplet semiquavers these successive pitches dominate spans of music according to the number sequence: $25 / 16 / 20 / 18 / 17 / 16 / 15$ ). The successive notes of the melismas generally move intervallically in the manner associated with the flute writing of the opening bars but I think it would be more accurate to describe the way the melismas operate in respect of these
intervals in terms of 'characteristic behaviour'. The flattened $2{ }^{\text {nd }}$ interval and its inversions are permitted for the flute writing from bar 5 onwards and an example of the way that this interval is involved in characteristic treatment of the prior intervallic hierarchy is shown in its involvement in the manner in which vestigial 'spatial set' elements are cancelled within the flute part in order to avoid octave replication and a new spatial set order is established (albeit briefly). \{N.B.: one of the reasons for the relative sparseness of the bass clarinet and guitar parts from bars 16 to 20 is that the flute register requires here a semitonal field relatively dense in order that the domination of spatial set order is not done away with too rapidly but can be to some extent maintained within that one part $\}$. The choice to promote relatively free melismatic writing within the flute part, was useful inasmuch as it tended to promote a sense of horizontal projection - signifying a changing field of play - over the vertical logic of strict spatial set thinking. For a while, then, the bass clarinet and guitar 'recede'; the flute has 'grabbed all the notes' so to speak. At the end of the second beat of bar 16 we find the a"' is conceptually referred back to as a vestige of the spatial set that dominated bar 5. The a" remained usefully in place there because the note from the P 3 row which is to be projected as being at the top of the hierarchy locally is e flat (the first note of P3) and, because the whole tone and major $3^{\text {rd }}$ are one of the flute's main intervallic responsibilities here, it is convenient that a natural is part of the same hexachord. This is because we only have to move to g to gain a line of permitted linear connectivity to e flat or b . From there we have a direct line to d sharp treated as e flat enharmonically. During the third and fourth beats of bar 16 the $g$ " and a" act in the manner of
upper and lower 'leading tones' to a flat'' in order to establish it as the set component which will now dominate in this registral area, first gaining ascendancy over and then eliminating the a" in order that at the beginning of bar 17 we find it acceptable for the newly established e natural"' to arpeggiate directly onto the g sharp (enharmonic a flat). By the end of the bar, however, a" not only has to reappear but also to dominate as the new row component to be promoted parametrically. This is done by arpeggiating onto it starkly from the preceding row component, the b flat, and then leaving three septuplet semiquaver rests in order to emphasise it by allowing it space. My idea is that the ear registers all the better the fact that this pitch has reappeared. I think this works all the better due to the rather elaborate manner in which a" was superseded in bar 16 for it did force the ear to give some priority to an awareness of both pitches.

The third point, mentioned above, which concerns the intention to reflect aspects of the vertical harmony of bars 37 to 48 was largely superseded in practice. The intention was carried through in the first place in the manner in which I arranged for certain pitches to coincide vertically between bass clarinet and guitar in bars 23 to 30 (the rhythmic part of the plan which coincided with this harmonic concern remains vestigial in evidence and is described below). The harmonic relevance has been undermined by subsequent changes that I made to the music of bars 37 to 48 , undertaken in order to rebalance the harmony in relation to the preceding material (and in particular to eliminate certain tonal implications which had been less conspicuous in the study). These changes were decided upon entirely by ear, with little or no reference to
harmonic theory. I contemplated some further changes to the overall scheme in order to accommodate all the changes globally in retrospect, but these emerged as solutions which had low priority and would have upset most of the elements I wanted to retain.

## ii) Bass clarinet and guitar and their rôle in projecting the series

During bars 16-21 one is intended to hear the bass clarinet and guitar gradually becoming more assertive, contrasting the legato of the flute with abrupt fragmented material, for example (see the bass clarinet part in bars 20-21 for example) while the dynamic level rises steeply. The material of each of these instruments, considered separately, sticks quite close to the intervallic constraints prescribed for them during bars $1-5$ but, as with the flute, the semitone and its inversional equivalents of major $7^{\text {th }}$ and flattened 9th here become common property. As these instruments became more active I decided that a new and more rigorous scheme was needed as a reference point for their activities. In bar 23 - more or less coincident with the 'poco calando' marking each instrument was to adopt simultaneously a set of characteristic rhythmic patterns and pitch patterns. The example of the rhythmic design which was made for the guitar part has already been referred to in example 5-2. The pattern shown in the example had already undergone some modification from one which I had decided to scrap. The scrapped patterns had been part of a design which had led to the construction of a counterpoint which then emerged as too stiff and formal. The modifications had to do with alterations to the plan by which each successive pattern was derived from the previous one by a process of rotating the rhythmic values shown in cell 1 . (There had been a
comparable but separate scheme for the bass clarinet part based on the pattern which appears during the first crochet beat of bar 23 in that part). The patterns shown on the lower line of each cell in example $5-2$ were further modifications to the ones on the upper line made in order to exaggerate the rhythmic 'axis of symmetry'. It will be found, for example, that the main areas of movement for the patterns on the bottom line are confined to the start and end points of a crochet beat or the middle part according to a less pronounced tendency in the cell component shown on the upper line. The music which found its way into the finished score for the bass clarinet and guitar parts for bars 23 to circa bar 30 reflect music derived from the modified scheme for both parts in only a vestigial fashion: the plan had served its purpose.

While the principle behind the rhythmic design accorded with the conventional contrapuntal wisdom of reciprocally having one part moving most while the other is moving least, the pitch patterns had projected successive notes of transpositions of the row (through various $\mathrm{P}, \mathrm{I}, \mathrm{R}$ and IR permutations) parametrically. Alternate notes of the row were taken in relay fashion at about a crotchet's beat distance. The bass clarinet pursued a pattern of five successive rhythmic cells while the guitar had nine. As mentioned above, the formal plan had as its raison d'être the need to apply a certain rigour to the activities of the guitar and bass clarinet during a passage in which it was necessary to build to a new crescendo approaching the change of organisational principles associated with the arrival of the tranquillo grazioso passage of bar 37 . This resource was to be drawn from, rather than adhered to strictly. I considered this passage, as well as that of the few bars immediately preceding it, as embodying the most
significant stage in development in relation to the geological image behind the idea of the piece: the details of the cataclysm which formed the geode.

## iii) Structural outline

The material of bars $1-36$ has been described above in some detail with regard to its structural function of providing a bridge between the characteristic writing of the first 5 bars and that of bars 37-48 and also the means by which this has been worked through. In a sense these bars represent the music of an expositionary phase followed by a bridge phase, of Refraction. In outline one could identify the overall structure of Refraction in terms of a total of five phases:

1) Exposition I
2) Bridge
3) Exposition II (bars 37-48)
4) Development
5) Coda

This does not give full account of a different level of structure in which one may discern the retrograde operations or 'mirror block relationships' (the retrogressions of which have origins other than that of row variation).

In some cases the retrogressions undergo further localised processes but essentially the outline of the structure, ignoring this, could be described as follows:
i) Exposition: $\mathrm{A}($ bars $1-5)$
ii) Bridge part one: B (bars 6-15)
iii) Bridge part two: C (bars $16-36$ )
iv) Exposition II: D (bars $37-48$ )
v) Development incorporating D retrograde (bars 50 to 63)
vi) Development incorporating, in paraphrase, aspects of C and D combined (bars 64 to 72 ) (this also approximates to being the retrograde of bars $6-15$ )
vii) Coda with a silence-filtered version (by means of changing rhythmic axial symmetry) of $A$ in retrograde (bars 73 to the end).

The note to performers which prefixes the score asks the players to listen for the sense of rhythmic shape provided by the rests which interrupt each part and occasionally signify a moment of complete silence. I consider the rhythmic shape provided by rests to be significantly analogous to that of 'negative space' in the visual arts. I wanted to draw the performer's attention to the role it plays in this piece, as in the act of composition I attempted to make it as dynamic and texturally important as possible. I consider that the performer might be able to enhance the sense of negative space in ways which might not entirely concur with the strict text of the score but which could be regarded as valuable if it helped to bring the music to life in performance.

## Part Five

## Torsion for piano solo

The idea for this piece stems from a fragment taken from an improvisation on the piano. Whilst trying out harmonic ideas on the piano I felt as if I was approaching, in a very loose manner, a type of texture and sonority which I had been unable to capture by the pen and manuscript paper method. I recorded this onto tape. Most of the recording resulting from this was of little use, but a fragment taken from near the beginning had the right qualities. I transcribed this and then made a few minor alterations. The results of this initial work can be heard between bars 115 to 121 of the finished piece.

Initially I found it difficult to envisage the context in which this fragment would appear. I tended to think of it as an opening gesture and this imposed some limitations which I later rejected. If, for example, the material of such an opening were to be followed up in such a way that the dynamism and density were sustained, then very soon one would arrive either at a situation in which aural fatigue would become a problem for the listener and a complete contrast would become necessary - too soon, or so it seemed to me. In a sense the way that such options appeared to me more or less desirable became my strongest clue as to the character of the piece I envisaged albeit rather dimly. Before long it occurred to me that trying to capture the essence of the idea in a different medium- as I had done with the graphic sketches of Geometries of Dust, for example - could prove useful. I tended to regard such sketching as a means of
temporarily 'switching off' the intellect which at this stage seemed to evoke too many inhibitions. In fact I find it necessarily to produce these sketches as rapidly as possible because I believe them to be a form of graphic 'automatic writing'.

On this occasion I found that the problematic relationship between the musical and the visual medium troubled me particularly over the question of the relationship of the visual image to the time domain. I noticed, however, that the drawings I made this time bore some resemblance to sculptural works which I had produced many years ago at art school. 3D objects are more amenable to 4D interpretation because one can consider different aspects as one moves around them. Lacking the time or materials to produce a complete sculpture (sheet steel would be my chosen material for this work) I made a rough model out of index cards and stuck them to a $140 \times 230 \mathrm{~mm}$ wooden base. Translated from the drawing the 3D work emerged in the form of three separate forms arranged close to one another. I labelled these forms A, B and C. I chose to 'square off' the wooden base conceptually by ignoring a small part of object $A$ which extends beyond the boundary of the 140 mm square when viewed from the 230 mm side. Part of the reason for this is that I found I was able to regard certain features of object A as directly equivalent to features of the improvised fragment. The drawing from which I derived the sculpture was regarded as representing the view from the south (please see example 5/lb: Torsion object, south elevation - this is not the initial drawing but represents the equivalent viewed from the appropriate side of the model; example 5/la shows the model from above and the east, north and west elevations are shown at examples $5 / 2 \mathrm{a}$,

5/3a and 5/4a). From the southern view form A appears on the left, form B on the right with form C behind it. A measure of 2 X quavers to 1 X mm was used and the object was 'scanned' as if by a camera travelling along the south elevation baseline on a fix rail from left to right. Having observed that this procedure produced strong associations between the improvised fragment and object A, I proceeded to analyse views of the object, always scanning from left to right and moving round the object so that the elevations appeared in the order: south, east, north, west. After a number of false starts in which I tried slightly different interpretations I eventually decided on a scheme in which each view corresponded to a cycle of 140 quavers notes. The bar lengths were varied in a manner which corresponded to 'time dilation' or 'time compression' effects governed by the distances of parts of each of the forms from the baseline of each elevation. Having initially tried a scheme in which the dilations actually corresponded to multiples of a 'control' beat length of quavers, I rejected this in favour of a proportional scheme in which the time dilations and compressions would be expressed in terms of much smaller actual multiplications or divisions which would then be translated into bar lengths. These bar lengths would always be determined in each case in relationship to the length of the bar immediately before. To establish an effect of dilation or compression an appropriate irrational value could then be applied to an entire bar. This would create a musical metaphor for an object slanting away from the viewer in the following manner: a bar of $4 / 8$ time, for example, divided into 4 iterations would represent a point of departure; this would be followed by a bar of $5 / 8$ time divided according to the value $4: 5$ with just 4 iterations in order to project
a sense of retardation which would represent the increasing distance of parts of the form. For a form slanting towards the observer this procedure would be reversed: a $4 / 8$ bar would be followed by a $3 / 8$ bar divided $4: 3$. This permitted an interpretation that I believed that the listener would feel intuitively. I should emphasise that my interest was not to provide an overall musical interpretation or metaphor for the object as a whole but rather to make use of the object to create a governing sense of unity for the musical work. The 'Torsion Object' should be regarded as merely a significant point in the constellation which would be used to produce the finished work 'Torsion for Piano Solo'. I did not make any attempt to represent the vertical axis of the object in terms of, for example, tessitura. At some points density corresponds either to the relative complexity of the visual image or an overlay of two of the forms from a particular vantage point. I did, however, make some detailed notes at an early stage, which provide some evidence of how I represented the object to myself before producing musical detail. In the following extract from my notes I refer to each of the forms as ' $A$ ', ' $B$ ' and ' $C$ ' and made use of the following legend to establish the identity of certain features:
$b=b u t t r e s s ; c=$ curved; $c p l=$ canted plane; $e=e a s t ; ~ m=$ middle; $n=$ north; $p=$ projection; $\mathrm{pf}=$ fork; $\mathrm{r}=\mathrm{ramp} ; \mathrm{s}=$ suspended; $\mathrm{sl}=\mathrm{slant} ; \mathrm{so}=$ south; $\mathrm{ss}=$ supporting structure; $\mathrm{t}=$ tower; vsg='v'shaped gap; w=west. Other descriptives are: enc=enclosed and Neg=negative space.

This following extract refers to what a camera lens might see on a notional eastwards journey along the southern elevation (i.e.: moving left to right). The bracketed numbers refer to measurements in half millimetres from the left (N.B.: the drawings were at $50 \%$ scale to the model):
$(99-110)$ We see the right edge of Cwb (dilation X 7) which is at the base of the eastward acclivity at its lower edge. Immediately above this Bsmp slants upwards towards the north-east at a less steep angle than the acclivity of Cwb . Further above we have the $v$--shaped gap in the middle of B (Bvsg) and above this we see the upper part of the eastward acclivity of Cwb.
(113) At this point we see the near vertical slope of the left side of the tower of $C(\mathrm{Ct})($ X 7 ) below this the angle at which it merges with Cwb. Below this a descending vertical line at 113 would bisect the right side of Bvsg ( X 5.5 ) and then pass through the upper east edge of Bsmp where it meets the northward canted plane suspended towards the right side of Bsmp which we shall call Bncpl. At this point the line would then continue into the empty space below the middle tower portion of C (Cneg) and touch the left edge of Bncpl 5 mm above the base (at B X 5). This has the illusion of meeting the square vertical wall at the foot of the east side of B (Bewall) which is distanced at a time dilation of X3.

Having analysed the four elevations in this manner - as if one continued to travel around the object in the same direction - four schemes of bars (each scheme making a total of 140 quavers) were produced to run consecutively (in the order south, east, north and west). Example $5 / 1 \mathrm{c}$ (dealing with the southern elevation) shows the metric value of each successive bar with planned iteration
to bar ratios shown below where applicable. The letters of the alphabet shown above the bars of the south elevation provide a key to usage of materials throughout the remaining composition. In other words I generally regarded each bar as potentially embodying a field of figurative activity which had some appropriate points of reference with regard to the object as viewed from the southern elevation. In this manner the southern elevation bars considered alphabetically provide points of reference for the whole composition. If one refers to the bar scheme diagrams for the other elevations one finds that the letters of the alphabet appear in different orders. One should expect this, of course. To take the east elevation as an example one finds, after the $9 / 8$ bar of silence (which represents a gap of 4.5 mm with no object seen) that the alphabet starts to appear in the order: $\mathrm{g}, \mathrm{f}, \mathrm{e}, \mathrm{d}$ etc. and later certain letters appear simultaneously; $b$ with $\mathbf{x}^{1}$, $\mathbf{c}$ with $\mathbf{x}^{2}$, etc. This is because from the east elevation one first sees only the parts of form A which extend towards the east. These were interpreted in the south elevation with the series of letters which are applicable here in reverse order. One sees later the eastmost parts of form B (identified at bars 24 and 25 with $\mathbf{x}^{1}$ and $\mathbf{x}^{2}$ ) superimposed on the westmost parts of form A. In such cases the dilations and compressions, suggested by contrasting distances of the superimposed parts of the different forms, are simplified so that only the ratio which indicates that general direction projected by the ratios in the preceding or succeeding bars is put to use. Sometimes, however, the potential complexity of the situation is given more scope in the interpretation and this leads to the superimposition of different ratios (see bar 81, for example). At all times - and the preceding remarks concerning the
superimposition of ratios provides an instance - I was aware of a great potential redundancy of features of the forms which might have received interpretation but did not get it (as a 'trigger mechanism' for composition I tend to regard the 'Torsion object' as being very rich indeed and plan to make use of other aspects in future compositions). My choices in such matters were normally governed by what I felt was appropriate in terms of clarity for the listener given that the piano does not permit a limitless variety of superimposed timbres. I was not quite so concerned with limiting the extremes of pianistic difficulty given that the piece is generally quite demanding in this respect; I did, however, feel it was more appropriate to concentrate the difficulties to particular points (such as bars 98 to 104) so that practising the piece would tend to suggest a particular concentration on such areas where, it seemed to me, the sonority produced by the 'liberation' of the inherent complexities of the scheme would be most effective.

I regarded the initial fragment from the recorded improvisation as explosive and dense in character. While this character relies on the thick cluster chords played sforzando, I considered that these come to seem all the more explosive on account of the fragment in total being compressed into a relatively small registral space. I had the impression, subjectively speaking, that the attribute that I particularly valued was that of the music bursting through some barrier. One could say that the crowding of the narrow registral space enhances the sense of energy by means of 'compression' in a manner comparable to the compression of steam in a locomotive engine giving the potential for driving force. I did not wish the entire piece to be odd in the sense of all of the music
occurring in a narrowed registral space, however. I came to regard the main task of structuring the piece as that of creating a suitable context for the fragment, which was to become something of a denouement. Its character needed to be emphasised by constructing the right conditions for it and this seemed to be largely a matter of creating contrast and yet stylistically the conditions had to give the impression that the fragment was a natural outcome of what had gone before. It seemed to me that the particular figurative work in the piece which would foreshadow the ultimate arrival of the fragment would be work closely related (and one notes that such figuration would mainly be concerned with the representation of form ' $A$ ') but would have to 1) be less explosive and yet 2 ) in some way reflect the sense of compression while also 3 ) having some kind of identification with the fragment in the substance of the music. From these concerns I began to formulate the proposition that the 'foreshadowing' would have to take place in terms of a reduced form of the actual fragment. I started to visualise this in terms of 'white paper': I wanted to see the notes, visually, trying to break through to the surface of actual paper as if this was the barrier keeping them contained. I imagined that I had newly written out the passage. The ink was still wet and I had placed a piece of blotting paper on top. If I removed the blotting paper after a short period of time just a few notes would start to emerge through the paper from the other side. This is how I conceived the passage of bars 1-7. The identical bar structure of the fragment was used here. The music was not actually worked out by means of the 'blotting paper' technique, of course, but was constructed quite intuitively by extracting particular elements from the fragment.

It seemed appropriate that the material of bar 9 should represent a contrast to the opening 7 bars because form B comes into view at this point. The contrast with the loud, dry almost pointillist opening is indicated in the mp dynamic and 'gracioso' markings. Pedal sustain and legato phrasing emphasise the difference further. The registral space also starts to open up with the low $b$ in bar 9 and the altissimo $g$ sharp in bar 11. It seemed to me that the gentle arpeggiations, each note sustained by the pedal, provided sufficient harmonic profile for one to look for some generative principle which would prove useful in the further interpretation of form $B$.

If one analyses bars 9 and 10 in terms of their respective lowest notes according to the Fortean system ${ }^{(4)}$ (which I am using as a means of relative pitch identification only) in which each of these lowest notes corresponds to Zero then one has the succession:

Bar 9 : b is 0 : progression is: $9,1,3,0$ normal order: $0,1,3,9$
Bar 10 : e is $0:$ progression is: $1,2,11,0$ normal order $0,1,2,11$
Bar 11: if e is held over, „: $10,9,6,4$ normal order $4,6,9,10$

As b is the lowest pitch heard so far and is, in any case, held by the pedal, it seems likely that this provides a general harmonic context while the simple familiarity of the V-I implied by the rhythmic association of the $b$ and the $e$ (the last and lowest notes of their four note groups) forces the presence of the e on us as a sub-contextualiser. The harmony is further simplified by the reappearance, albeit in a different register, of the $d$ and $g$ sharp pitch classes
(which occur in bar 9 as a flat and d). I was also interested to note that if we consider the note order of bar 11 in relation to the held over $b$ as zero then the following correspondences between bar 10 and 11 appear:

Bar 10: e is $0: 1,2,11,0$
Bar 11: b is $0: 3,2,11,9$

Put differently, it could be said that the context may be seen as reinforcing the symmetry of the g flat e flat minor third of bar 10 and the c sharp a sharp minor third of bar 11. The significance I derived from this was that I felt that, because of their strong harmonic identity, I could rely on procedures which established a reference back to these three bars.

The contrasting figuration of bar 12 (occasioned by the need to add to the repertoire of textures as much as interpretation of the object) interrupts the sense of flow (and rhythmic dilation) established in the preceding three bars and makes way for a reversal in the direction of rhythmic compression. Nevertheless a need to re-establish a sense of identity with bars $9-11$ was indicated by the fact that form B is still being viewed at this point. One finds that for the first 4 notes of the left hand part of bar 13 one has the notes of bar 9 transposed up a fifth, but reordered so that the f sharp immediately contextualises what follows:

Bar 9: b is $0: 9,1,3,0$
Bar 13: f sharp is $0: 0,1,9,3$

The three notes which follow (b, c and, in the next bar, b flat) may be considered as corresponding to the transposed but reordered e, fand eflat of bar 10 , (the reordering having been effected in order to 'echo' the f sharp, $\mathrm{g}, \mathrm{e}$ flat which has just occurred; at this stage I was thinking of the notes of bars 9 to 11 as a series). The logic of this becomes obscured by other considerations, however. The note from bar 10, which has not appeared in the reordering, is d flat which would occur as transposition of the g flat. This does appear in bar 14, but as the lowest note of the d flat, g , and b chord. To continue from the c sharp with a transposition of the notes of bar 11 would have produced $a, g$ sharp, $f, e$ flat but instead an attempt is made to reflect back the sense of undergoing a contextualisation by the note e, which was obtained in bar 11. Analysing this numerically, in terms of e as zero, produced the following:

## Example 5-5


and in f sharp, transposed up a whole tone, becomes:

## Example 5-6



In the finished version of bar 14 which appears the e actually appears before the c sharp and after the f sharp has been repeated in the same register as before. In fact the $f$ sharp was thought of as a signifier in the interpretation of form B's 'suspended middle projection' (Bsmp) as the position of bars 13 and 14 correspond to the position on the southern baseline at which our notional camera lens would see this middle part of B suspended some 5 mm above the wooden base. What I was endeavouring to do here, then, may be regarded as continuing the sense of form $B$ which was established in bars $9-11$ but in the particular context of this f sharp which, in the compositional logic I was concerned with at this stage, represents Bsmp.

I wish to emphasise at this stage, that in showing the relationship between my pre-compositional notions and actual compositional practice, I am particularly interested in establishing as clear an idea as possible as to my attitude regarding this relationship. I think this can be detected most clearly in the observations which follow immediately below in which I develop certain ideas about chord structures and then make a rather relativistic use of them in a manner comparable to that of a jazz musician who practices on a given set of modes and then in improvisation plays deliberately in or 'out' of them as the ear dictates.

So far I have offered some observations about my treatment of forms A and B but have excluded $C$. The central part of $C$ suggests a tower shape and I find that this seems to have influenced my attitude towards its interpretation to the extent that most of the features representing it were concèived as vertical harmonies, usually in the upper register of the piano, to suggest height (a
concession to the otherwise dormant idea of interpreting the shape of the forms in terms of tessitura). The chords that I started off with when I considered form C were as follows:

## Example 5-7



The feature of pitch class inclusivity which can be seen between these chords, with registral changes in most cases, was one which I was interested in because the harmonic nature of the improvised fragment, which the piece stemmed from, included octave doublings and free migrations of pitch classes between registers in a manner which was quite alien to the harmonic thinking of my previous compositions. I also considered Chord 3 as having a strong and distinctive character; it seemed particularly well balanced and I tended to look upon it as being the most essential tower chord. (If one examines bars 13 and 14 , discussed above, one notices that the lower four notes of this chord are played in the right hand at the start of bar 13 and the upper 4 notes appear with e flat as an arpeggiation in the right hand in the middle of bar 14 , representing the way that form C appears behind Bsmp). In bars $67-72$, where the interpretation of the object involves seeing part of form $B$ emerging behind the tower and buttress of form C, I pursued an idea of how the harmony might operate by working on some derivations from chord 3 . First of all I analysed the
chord for its intervallic content in terms of adjacent intervals (taken from top to bottom):

Maj. $3^{\text {rd }} /$ maj. $3^{\text {rd }} /$ maj. $2^{\text {nd }} /$ maj. $6^{\text {th }} /$ tritone $/$ flat $2^{\text {nd }} /$ maj. $3^{\text {rd }}$

I then reordered the intervals within the constraint of the major $6^{\text {th }}$ having to appear in the middle to allow for what was possible for the hands:

Maj. $2^{\text {nd }} /$ maj. $3^{\text {rd }} /$ maj. $3^{\text {rd }} /$ maj. $6^{\text {th }} /$ flat $2^{\text {nd }} /$ tritone $/$ maj. $3^{\text {rd }}$
If keeps $b$ as the highest pitch, the usage of this intervallic patters results, in the following pitch classes (with enharmonic alterations) shown here in descending order:

## Example 5-8

## Chord 3 derivative:(drawn linearly to clarify intervallic pattern)



Of course one may choose to ignore the octave repetitions of $f$ and a reducing the number of available pitch classes to six.

This gave me two chords with closely related intervallic patterns so that, if I wanted the top note to be held over with the harmony changing underneath, I could simply alternate the pattern. Alternatively, if I wanted the top note to descend by a minor third without creating parallel harmony, I could do this by changing the pattern of descending intervals and yet maintain a sense of harmonic consistency. I felt that an altogether contrasting chord was needed in
addition, possibly to act as a chord to appear in between successions of those with such closely related structures. It seemed to me that if it were centred on a dense cluster of notes it would naturally be approached and quitted with a useful amount of contrary motion from voicings within the 'tower' chords (with their wider spacings) appearing before and after. To fill this need I constructed the following aggregate (in descending order): -

## Example 5-9

## Chord 4



If one examines the chordal material of bars 67 to 70 it will be found that in practice I frequently used only fragments of the chords mentioned above, and often made pitch class alterations to the chords I had prearranged. In bar 67 one finds that the first two aggregates are constructed from the untransposed pitch class constituents of chord 3 : first the outer four and then the inner 4 pitches. The third aggregate was originally intended as chord 4 but excludes c sharp and $c$ in favour of e flat and $f$. This does not, in any case, permit the contrary motion voice leading I mentioned above, of course, but functions as something of a contrasting 'explosion' in the bass (albeit a carefully tailored explosion). The six notes of the fourth aggregate of bar 67 derives from chord 3, but, instead of shifting the chord downward or rearranging the intervals, I reordered
and re-registered the top four notes while shifting the lowest major third up a semitone to create a sense of contrary motion with the fragment of chord 3 heard at the beginning of the bar:

## Example 5-10



This is a Chord 3 derivative. The final chord of bar 67 is derived from chord 3 shifted down a minor third (without intervallic reordering) this would have been:

## Example 5-11



In practice I left out the b flat and the $d$ and arranged the pitches so that the aggregate resembles chord 4 , having a semitonal cluster in the middle of its narrow intervallic span: c sharp, a flat, $\mathrm{g}, \mathrm{f}$ sharp, e and c :-

## Example 5-12



The chord at the beginning of bar 68 is chord 3 shifted up a semitone but leaving out the top c , middle f and bottom f sharp pitches.

The sforzando f sharp at the beginning of 70 is intended to signify Bsmp, which one perceives appearing beyond form C at this point although the melodic upper lines of bars 69 and 70 provide only a very weak resemblance to the materials of the linear material of bars 10,11 and 13 from which $f$ sharp drew its original significance (albeit in a different register). Note however the consecutive uppermost notes of bar 68 which, re-ordered, are analysed in terms of their resemblance to bar 10 (with the pitch classes e flat and $g$ flat maintained):

Bar $10(\mathrm{c}=0) 5,6, \quad 3,4$
Bar $68(\mathrm{~d}=0) 5,6,(10) 1,4$

Interpreting one media in terms of another may be seen as forming one kind of bridge across a cultural fracture point. Such a fracture point seems almost too rich in possibilities: perhaps it is not surprising, then, that occasionally one feels that in crossing such a bridge one has become somewhat like a horse with blinkers on. One finds it essential to place limitations on the possibilities, and the idea one is trying to project should be sufficient to remove the temptation of getting sidelined into inappropriate possibilities. One of these, concerning
which I was particularly conscious of making a choice, involved the rhythmic interpretation of the object. The sharp division between one kind of activity and another, represented here by the bar line, signifies that I have generally removed the possibility of gradual accelerations and de-accelerations in favour of a more 'patch-work' scheme in which temporal flat-plane effects are superimposed by means of interpretational desiderata on the basic function of the Torsion Object as trigger mechanism. I also note that one could choose to take a much wider variety of views of the object: taking a position on the plinth on which the forms stand in order to look around within the object, or using the idea of shadows formed by strong light sources are but two interesting possibilities.

Having found a 3D object very useful in composing this piece I am considering using a similar method for 'triggering' the composition of other works. In fact I found the possibilities of the Torsion Object itself sufficiently fruitful to consider writing another work making some use of the same object.

## Part Six

## The Ridge On The Slope for String Quartet

This was commissioned by ArtOffice for the combined funeral/memorial service for George Bourne. The death had taken place under circumstances which led to a police investigation and a delay, from point of death to funeral, of over three months. This allowed sufficient time for the commissioning and writing of the quartet. The brief for the commission was to write a piece which would fit into a service in which The Farleigh Quartet would play Pachelbel's Canon for the committal and Schubert's Death And The Maiden at the end of the service. There was also a request that the piece should in some way reflect the influence of one of the composers that George Bourne had been enthusiastic about: Bruckner, Mahler or Wagner. My interest in Bruckner's music made me a suitable candidate for this work. I decided that in order to help the relation between my style and that of Bruckner I would employ elements of fugato throughout most of the piece in a manner comparable to Bruckner's use of fugal procedures in some of his church works and in his Fifth Symphony.

I was interested in making a limited amount of material serve a number of different expressive purposes and envisaged that this could be achieved by means of the subject and countersubjects appearing in quite recognisable inverted forms. Changes in tempo also allow permutations of the material to serve contrasting expressive ends. Initially I envisaged a piece lasting upwards of seven minutes. The structure and tempo markings I mapped out for the overall form of the piece showed me that the piece would last $10^{\prime} 34^{\prime \prime}$,
however, and I gained permission for a piece of this length, (although in the event The Farleigh Quartet, hurrying the tempo somewhat in places, played it in a shorter span of time). In the following outline of the structure, terms relating to fugue are used. These terms are used loosely in analogue with traditional fugue. The use of such terms should not be read as a claim that true fugal practice is operating here; in my opinion the tonality here is too alien to traditional tonal music to allow for this.

The structure, in outline, follows the pattern shown below. Broadly speaking it could be regarded as consisting of two complementary halves, split between bars 1 to 107 and 108 to the end.

Introduction: bars 1 to 16
Fugal exposition: (from figure A) bars 17 to 73 (mostly crochet $=120$ )
Subsection 1 bars 17 to 28 featuring main subject
Subsection 2 (from letter B) bars 29 to 44: stretto Subsection 3 (from letter C) bars 45 to 55 : episodes based on material of two contrasting countersubjects Subsection 4 (from letter D) bars 56 to 70: transposition and inversion of main subject (three bar linking passage from bars 71 to 73 at crochet $=95$ )
'Chorale' section: (from figure E) bars 74 to 107 (mostly crochet $=95$ ) using transposed inversion of main subject in viola part with inversion of second countersubject in first violin.

Counter-exposition (from bar 108 to 154$)($ mostly crochet $=110)$
'Chorale' section 2: (from figure J to K bars 155 to 169 ) (mostly crochet $=$ 95)
$\begin{array}{ll}\text { Final episodes } & \begin{array}{l}\text { (from bar 170 to 192): using mostly countersubject } \\ \text { material building Towards dramatic climax at 'con }\end{array} \\ \text { fuoco' marking of bar } 176 \text { (mostly crochet }=95 \text { ) }\end{array}$

## Coda section: bars 193 to end, with use of some of the material of the introduction (mostly crochet $=70$ alternating with crochet $=85$ )

The introductory section itself contains examples of canon and canon by inversion. Compare, for example the first violin part of bar 1 , starting on $f$ sharp, with its inversion in the viola part commencing on $b$ natural at bar 11 . The viola part then becomes counterpoint to the second violin part which starts on the last beat of bar 11 and is basically a transposition to $b$ natural of the theme heard in the first violin in bar 1. The second violin then takes the transposition to d natural at bar 16 and both the viola and second violin part form counter lines to the fugue subject starting on f natural at letter A in bar 17 . The 'answer' is an answer by inversion starting on b flat in the cello in bar 25. The contour of the inversion is altered, however, as the c natural, the second note of the inversion appears below the $b$ flat to create a different shape (a feature which then regularly recurs). The first violin part of bar 25 might be regarded as providing a countersubject at that point; this is arrived at by sequencing material from its 'codetta'. This material does not always appear as a countersubject when the fugue subject appears.

At letter B of bar 29 a transposition of the subject to a level commencing on $b$ flat appears in the first violin, followed canonically at the interval of a two bars by the second violin. At bar 37 a subsidiary theme, which could perhaps be regarded as a second 'countersubject' due to its extensive use and increasing importance later in the piece, appears in the viola.

In bars 38 to 47 the first and second violin continue in canon. The first violin starts this with the fugue subject heard at its original pitch in bar 38. In bar 46 the cello enters with the 'second countersubject' first heard in the viola at bar 37 transposed to the pitch level starting on d , while the viola continues with material based on the same countersubject. The passage from bar 47 to 51 , resulting from a continuation of the procedures mentioned, might be regarded as 'episodic'.

At bar 52 canon by inversion at the b flat pitch level (using the main fugal theme) is instigated by the cello. Four bars later the first violin which plays the theme in the transposition commencing on $b$ flat. The viola and cello provide counterpoint to this by making transposed canonic use of the inversion of the 'codetta' material heard in the violin part of bar 36. The second violin enters with a variation on the 'second countersubject' transposed to $d$ sharp level at bar 64. At bar 65 the first violin plays another variation on an inversion of the main fugue subject starting from $f$ natural. The cello makes use of the 'second countersubject' idea transposed to g natural level starting at bar 68. Two bars after the tempo change of bar 71 the second violin plays a 5:3 crochet figure which helps to form a link to the slow 'chorale' section starting at bar 74. Here the viola takes an inverted form of the main fugue subject starting on b flat, but, largely due to the change in tempo the character of the music sounds quite different here. A sense of invocation was intended here. In bar 80 an inversion of the 'second countersubject' theme is heard in the first violin transposed to the pitch level starting on c natural. Musical phrases based on inversions of the 'second countersubject', and the 'second countersubject' itself, become
increasingly important in the second half of the piece (see for example the passage starting at figure K , bar 170 to 179 and bar 188 to 192).

The second part of the piece begins at bar 108. If one compares this to bar 17 a clear tendency of the second half of the piece can be observed in contrast to the first half. As observed above, greater use is made of the 'second countersubject' as well as material derived from the introduction. Comparing the music of bars 65 to 73 with the corresponding passage of bars 146 to 154 one finds the inclusion of the theme first heard in bar 1 transposed to the pitch level starting on $g$ in the second violin in bar 150 . This helps to prepare for the coda section which makes much dramatic use of a re-working of the introductory material. Throughout I was interested in making use of particular types of harmonic formation which I regarded as interestingly colourful on string instruments. Despite the appearance of the subject in the cello, I wanted the ear to dwell on the vertical harmony at bars 96 to 99 . Here and at other such points the contrapuntal texture may well seem to give way momentarily to a homophonic one, and this was quite deliberate. Although not literally aware of colour as such in other pieces, in some places in this piece I started to visualise colour arising out of the harmony. Some parts of the 'chorale' sections I saw in terms of a silvery blue fading to white, for example. Although many passages involve the supposedly harsh dissonance of clashing semitones, I consider that the quality of 'greyness' (which I have deliberately sought as a background colour in other pieces, despite the popular wisdom that regards 'greyness' in colour as something to be altogether shunned) was avoided in this piece. In fact I saw much of this piece in terms of shades of burnt umber and ochre enlivened with
streaks of emerald green and cobalt. The textures I visualised in terms of marble and stone.

The Farleigh Quartet, despite some tuning problems in the first two minutes of the performance, generally found the piece easy to play after just one brief rehearsal. I considered this important and asked them many questions in the rehearsal about whether they found the musical sense of the piece easy to perceive, or to put it rather more informally, whether they were 'getting it' or not. It became clear that they 'got it' quite easily and the stylistic relationship to Bruckner was part of the reason for this. I was also glad that the quartet was well received by relatives of the deceased at the combined funeral/memorial service.

The service was conducted at a crematorium in Ruislip. Although a seaman for most of his life, Ruislip was, apparently, an important place for George Bourne. 'Ruislip' is an ancient Saxon name and the title of the piece is a direct translation of its meaning.

## Part Seven

## Interstate for cello and piano

This was commissioned by the cellist Elizabeth Csicsery-Ronay.
The opening ten bars were composed first. Here I was concerned with maximising the contrast between the two instruments, emphasising particular aspects of their respective characters. In the case of the piano it was the ability to sustain a sound, in effect a very dense chord, resulting from a fast iteration of a set of notes spread between both hands while holding down the sustain pedal. With the cello it was the ability to put great power into a line. The cello enters loudly but briefly, arpeggiating from the $d$ natural at the register of its open string to the d flat, g flat double stop in the octave above. This gesture breaks off so that we hear the piano continuing to sustain by means of the pedal (please refer to bars 1 and 2 of the first movement). Something of this reminded me of an aspect of one of my paintings. The cello gesture compares to a vivid smear of red paint, the piano a subdued dark background of marble-effect ochre, green and brown. Here, however, the time domain is of essence. I was interested in the way, not only that the partials of the notes held on the piano vary in intensity and inter-relationship over time, but also the sense of expectation which changes after the cello breaks off, seeming to hold back from a follow-up gesture. This seemed to create a large expectant musical space. I felt that this would help enforce certain long-term objectives in the piece, setting, in particular, an ambience for future references to the opening gesture; a memory of a particular quality of tension spreading out from a chord with a big gap in the middle, an Aladdin's cave of dark musical colours. I had a strong sense that
what I 'wanted to say' was locked within this. I soon noticed as I continued to write, however, that certain vivid memories seemed to associate themselves with the notes, as if the material was a memory capsule that I was gradually unearthing.

Shortly before starting work on the piece I had been in New York. While driving northwards from JFK airport along the Van Wyck Expressway I had been acutely aware that I would have preferred to have been a passenger so that I might more easily have been able to look around and admire the expansive and impressive vistas. At the same time I was in a hurry. I believe it to be a universal human experience, the adrenalin rush of negotiating traffic while trying to keep up as much speed as possible, heightening the senses, making experience vivid. However routine, there is the possibility of danger. I remembered thinking, even at the time, that all that could be seen in the brief interval between signalling and changing lanes might be stored away for later recall. It was this that I seemed to catch in the flood as I continued to write the piece. Adrenalin overload, related to a sense of the visual complexity of the environment, and the desire to recapture fractured memories, interested me as vivid reflections of ideas which I have expressed in the thesis section of this submission concerning the borders of perception, of engaging with the sense of impersonal scale, of perceptual chaos.

Memories may be fragmentary but, once recall starts, a memory of an isolated incident seems to open up as if a fuller recall was nested within it. Memories of reading road signs and changing lanes expand to include vistas of towers, crash barriers, drainage culverts, skyscrapers, rivers and clouds. After driving all day
it is typical that there is a sense of continuing movement and closing the eyes is like entering a cinema in which the projectionist has pressed the fast forward button. Fascinated by cars, roadways and many aspects of American culture, I found I wanted to make the piece into a souvenir of an American road trip. The American origins of the piece led to the title Interstate. I also consider that the title does double service, describing the character of the opening gesture and the way that the cello and piano come together from their substantially different physical worlds of sound production and projection. Throughout I had a tendency to identify the cello with the automobile and the piano with the environment driven through.

As usual when composing, I made a number of drawings in an attempt to isolate aspects of these ideas. Perhaps it is worth mentioning that I did not conceive of this as any more a personal, expressive, engagement with materials and ideas than I did when composing Geometries of Dust; in no sense is this piece intended as a romantic work. In my opinion the work is largely impressionistic.

## General note about structure

The piece is in three movements to be played without a break. The structure might be regarded as cyclic. The end of the last movement makes clear reference to the opening material of the first movement, and all of the material throughout stems from the first 22 bars in one way or another. The two outer movements are quite similar in character. The middle movement provides contrast. This was also inspired by a car journey, not in an urban environment
or out on the open road, but through a dense forest in mist and light rain. The piano part represents rain dripping off the leaves and the small movements in the undergrowth. The cello represents the car moving slowly through the mist along a small winding road up and down hills in the forest. For all the problems of the driving conditions there is the reminiscence of a sense of wonder at the beauty of the forest with its haze and precipitation.

## The first movement

The first ten bars may be thought of as a slow introduction. The first 22 bars, of broad significance throughout, present the raw materials. In the second movement, the piano material of bars 21 and 29 make some reference back to the piano material of these opening bars, as does the piano material of bars 22 and 39 of the third movement.

The cello material from bars 11 to 15 does not reappear until the opening bars of the third movement (where it undergoes considerable development and modification). The faster movement in the cello in this passage serves as a signal that the piece has got underway, but note the way that the piano undermines this in bar 12 with a strong reminder of the opening piano gestures in very stark contrast to the cello and momentarily drowning it out.

I regarded the material of bars 16 to 20 as representative of the essential nature of the piece, and planned its reassertion in the third movement as comparable to the drama of the moment in which the first subject reappears to start the recapitulation in sonata form. The piano material of those bars is very loosely based on some sketches I made in which I experimented with the idea of
developing drum rudiment material, permutations of paradiddles between the fingers of one hand, for the pianist. The material in the cello in bar 17 is based on the cello material in the second half of bar 4 . The material of bars 16 to 20 makes a dramatic and developed reappearance in bars 31 to 37 of the third movement.

The material of bars 24 to 75 has the character of a cadenza for the cello, notwithstanding the continued presence of the piano. Having composed the material of bars 24 to 31 I sought to develop, or 'unlock', some of its features as the cadenza continued - comparing the process to my ideas about unlocking memories - by dividing it into rhythmic 'cells' normally two crochet beats in length. I then reordered the cells. I joined the rhythms of the first cell to the last one last (see bars 32 to 34 ). I then repeated the process several times, accumulating more cells from the opposite ends of the passage each time, until finally all of the material of bars 24 to 31 appeared transformed in the last repetition. I altered the rhythm of the first cell, reversing the semiquaver with the crochet in order to change the emphasis. In the pitch domain, the relationships between the cells were altered to reflect and expand upon what I felt to be significant intervals from the materials of bars $1-6$ of the piece. The interval between the $f$ sharp in the cello on the third beat of bar 31 and the $g$ of bar 32 , as the lower note of the $\mathrm{g} / \mathrm{c}$ diad, would have been determined by the interval between the lowest two notes in the cello in bar one, $d$ and $d$ flat, enharmonically changed and inverted.

The following example is taken from an early sketch, before several of the changes were made, but shows the basic cells from which the cadenza was constructed.

## Ex 7-1



## The second movement ('through a forest in mist and rain')

The middle movement contrasts the busier outer movements in that it is mostly peaceful and reflective with long slow lines for cello against a backwash of somewhat intricate but subdued writing for piano. The piano is intended to represent a forest in rain and fog, while the slow cello line represents the continuing journey of a car, trying to find its way through difficult, partly hidden, terrain.

In the piano part I tried to create an impression of light rain falling on leaves through branches and other incidental forest noises. I considered that there should be a fair degree of consistency in the writing as, given that the rainfall is steady one would expect that patterns of interaction between water, branches,
rain and puddles would be essentially repetitive. To help create this, in the first instance I based the piano writing on quite a rigid scheme. Particular patterns would recur after a certain number of beats. Once this scheme was in place the piano part was more or less continuous, but a little too rigid in its presentation. Whilst I found it necessary to modify the piano part (both for the reasons indicated but also to fit in with the cello melody) I maintained for the most part the use of a spatial set which seemed vital to the consistency of the impression shown in Ex. 7 - 2:

Ex 7-2


From bars 1 to 19 this is kept to with some rigour. I consider this set to be essentially centred on the note $d$ as it is the lowest note and appears in more than one octave. In the passage from bar 19 to bar 29 I wanted to create an impression of turbulence entering into the pattern, such as strong gusts of wind upsetting the balance of gentle watery movements in a forest glade, so in this passage some notes enter in the octaves below d and some of the writing is intended to be reminiscent of the opening gesture in the piano in the first movement. After the turbulence has subsided, from bar 35, the piano part becomes sparse, as if the rain and mist were subsiding.

The cello part is very simple throughout this movement, but spans the entire range of the instrument. The cello may be thought of as representing the gaze of the travellers, marvelling at the beauty and expansiveness of the forest scenery with its mists and tall trees.

## The third movement

In this movement it is the cello that is subjected to the rigours of a spatial set throughout most of the first 20 bars.

The cello begins with material based on that of bars 11 to 15 of the opening movement. This undergoes several transformations as it is transposed but, ignoring neighbour notes, sticks closely to the following spatial set:

Ex 7-3


The metres change and the contour changes due to the use of the spatial set and detailed elaboration of the line, but essentially the cello material is based on a two bar phrase (at the sketch stage scored in common time) which is sequentially transposed so that the material is taken up a minor third each time. If one were to regard bars 1 and 2 as based on an f sharp 'prime', bars 3 to 5 are based on an a natural transposition, bars 6 and 7 on c natural, bar 8 a shortened version of an eflat level version (lasting just one bar) leading back to $f$ sharp at bar 9 where the piano enters. The cello then, essentially, repeats the procedure
from bar 9 with alterations to make space for the piano. As an example of this, correspondence can be found in the cello part between bars 6 and 14 then 8 and 16. Much of the piano writing here is based on mirror harmony between right and left hands, expanding in range upon repetition. See for example the diminished triads on the last beats of bars 10 and 12 , starting a semi-tone apart, and their relation to the sequence that unfolds outwards from that centre. The piano here represented the vistas of vast city boulevards opening up before the cello, characterised as the car driving through them. I wanted to reflect the sense of hard-boiled optimism of a great commercial city and a journey, as if on chemical speed, leading to crisis-on-overload. The cello line changes so that at bar 23 of the third movement it takes the motif, first heard between the last beat of bar 19 and bar 21 of the first movement, transposed down a tritone and then repeated in ascending minor third steps with some modifications leading, first to the 'con fuoco' passage of bars 26 to 30 and then to the 'cello: espressivo sostenuto/ piano: meccanicamente' passage of bars 31 to 35 which clearly reflects the character of bars 16 and 17 of the first movement. This represents not only the 'crisis' but also the sense of recapitulation referred to above. The passage from bar 38, with the tempo change to crochet 40 , to the end forms a coda. Here I regarded the reference back to the opening gesture of the piano as representing a clarification of sorts. Here I considered the atmosphere of a motorway underpass in the early hours of morning, desolate with un-cleared wreckage and other detritus, yet with the occasional truck passing overhead and the wan rays of early light bringing to the abandoned area a sense of other spaces.

## NOTES

1). In his article 'Superior Myths, Dogmatic Allegories: The Resistance To Musical Unity' (Street: 1989) Alan Street finds assumptions made by analytical theorists, for whom the search for unity is of essence, to be grounded on largely unexamined philosophical premises (it is interesting to note, informally, a contrast between the typical reactions of composers to Street's work to that of analysts: analysts are challenged concerning their ability to draw authoritative conclusions about works, while composers are surprised to find that, all the while, such a degree of credibility had been vested in analysis at all). I can clarify my reservations concerning Street's article by observing that he chooses to quote Peter Maxwell Davies on the subject of why unity might be avoided in modern works because of the '... unifying confidence of outlook... which would be inimical to contemporary experience' (quoted in Griffiths 1982: 173; quoted in Street 1989: 79). Having identified the problem of unexamined philosophical assumptions it would seem to me (additionally) problematic that Street assumes that one can proceed to address this without creating a philosophical assertion as to the nature of artwork itself. The allegation I make, to the effect that the modern artwork seeks to create closure in the substance of its relationship to chaos, would suggest a way out of the impasse if it were not for the fact that it is fundamentally out of alignment with Street's contra-unity project.
2). There are few cases of Adorno referring directly to the concept of constellations. A rare example is to be found in his essay 'The idea of Natural History':

It is not a matter of clarifying concepts out of one another, but of the constellation of ideas, namely those of transience, signification, the idea of nature and the idea of history. One does not refer back to these ideas as 'invariants'; the issue is not to define them, rather they gather around a concrete historical facticity that, in the context of these elements, will reveal itself in its uniqueness. (Adorno 1984: 120).
3). Certain statements by Schoenberg are suggestive, however. In an essay of 1923 entitled 'Hauer's Theories' one finds the following remark (the italics are mine):

These laws which he leaves so mystically unproven, and behind which he would like to keep cosmic causes and occult parallels hidden - whether they are present or not: he does not know them and I certainly have more inkling of them than he has, otherwise I could not have expressed the principle." (Schoenberg, 1975: 209).

Much depends on one's interpretation of the italicised phrase. It is particularly of interest in light of Dahlhaus's main assertion which is to the effect that the reasons that Schoenberg provided for developing his twelve tone method is surprisingly weak in terms of music theory alone.
4). My reference point for set notation throughout this commentary is Allen Forte's The Structure of Atonal Music (Forte: 1973). David Schiff's book The Music of Elliott Carter (Schiff: 1983) provides an alternative classification for trichords (etc.) but I decided to adhere to Forte's classification as I believe it to be more widely used in analytical work.

## Examples

For convenience the shorter examples have been inserted in the appropriate places in the text. The remaining examples follow below.

## Example 1-8

sketch for 21 phase in bars 180-187



## Example 1-11



## Example 1-12

Cellos and Double Basses from bar 212 to bar 234, numbers show durations in terms of triplet quavers.


## Example 2-4



## Example 2-7



## Example 4-2

This example show nine rhythmic cells devised for the guiter pait from bwe 23 to ber 30 Besod on the ides of roteting the riythmic values of the firs cell on the top ling, colld $2-9$ had slready been modified before this stage. The further modifications shown on the boccom had already been modified before this stage. The firther modificmions shown on the bowom
line are based on the idea of exaggerating the wial symmetry (within a crochet beats span) of the rtytums shown on the top line. The idea was to choose the moet approprise version of each cell on the bais of what was occurring rhythmically in the bass clarinet part ( which bad been workod oun eocording to similer principles). In this way the maximum activity of one part could occur at times of minimed wetivity in the other part, wiar being the criteris bchind the

$\square$


Example 4-4



## Example 5-1a



## Example 5-1b

(-)


Example 5-1c

## Example 5-2a



$$
\begin{aligned}
& \text { "TORSION" OBJECT } \\
& \text { EAST ELEVATION }
\end{aligned}
$$

## Example 5-2b

## Example 5-3a



Example 5-3b

## Example 5-4a



Example 5-4b
Example 6/4 b: bar scheme of West Elevation in Torsion (bars 88-114).

Bars 115 to 121 represent the improvised fragment upon which bars 1-7 and figures a to $g$ were based.

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## Music Scores

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This work is dedicated to my wife Katarzyna.

# Geometries 

## of Dust

for symphony orchestra

Martin Glover
2004

## Geometries of Dust

Instrumentation
4 flutes, 2 doubling piccolos
3 oboes
3 B flat clarinets
2 bassoons
1 contrabassoon
4 horns
3 trumpets
2 trombones
1 bass trombone
1 tuba
timpani/roto-toms
percussion - 5 players:-
player 1:
dulcimer
vibraphone
gongs (X7)

## player 2:

cymbals (rivet and suspended)
small bass drum (shared with player 3)
floor tom
snare drum
player 3:
log drum
small bass drum (shared with 2)
medium bass drum
tubular bells
player 4:
tubular bells
triangle
large bass drum

## player 5:

3 tam tam (small, medium + large)
2 harps
1 piano
1 electric guitar ( 7 string or de-tuned 6)
1 electric bass guitar
violins I (8 desks)
violins II (7 desks)
violas ( 6 desks)
cellos ( 6 desks)
double basses ( 6 desks)

Duration: c. 14' $30^{\prime \prime}$

## Performance note:

From bars 41 to 407 inclusive the orchestra is divided into three phase groups: 1) upper woodwind, violins and violas 2) piano, tubular bells, dulcimer and brass and 3) the remaining instruments except for un-pitched percussion which is shared. It would be preferable to have group 2 placed in the middle foreground (with the percussion section placed behind).
Any vibrato in the violins and violas should be virtually unnoticeable throughout and zero where harmonics are required.
From the beginning up to bar 407 the violins and upper woodwind should play as legato as possible in those ensemble passages that involve all or most of their respective sections.

The amplification of the electric instruments should aim at the correct timbre ('overdrive' square wave distortion for the seven string guitar, a broad but mellow sound for the bass) while not permitting volume levels disproportionate with the lower string ensemble at any time.
Depending on acoustics, some of the instruments may need amplification, particularly the dulcimer, vibraphone and harps.








$=$









$16$







$22$











Molto staccato (palm muted)















$$
\begin{gathered}
\text { Duly. } \\
\text { Tub. B } \\
\text { Tub. B. }
\end{gathered}
$$

$$
\left(\frac{20}{}\right.
$$

















violins and violas: sempre legato







5





















# LE TRÔNE DU DIEU NOIR 

## an oratorio for mixyed chorus and orcheestra

# Text by PHILIPPE DRUILLET Music by MARTIN GLOVER 

Text © Les Six Voyages de Lone Sloane, Editions SEFAM, 1998 Druillet
With permission of the author and publishers
Music © Martin Glover 2004

# Le Trône du Dieu Noir <br> for 16 piece mixed choir and small orchestra 

text © Les six voyages de Lone Sloane, Editions SEFAM, 1998, Druillet

## choir

4 sopranos
4 altos
4 tenors
4 basses
(N.B.:a narrative rôle is taken by one of the bass singers when the part is sung, but the narration could be taken over by an actor in places where the narration is spoken. Tenor voices, preferably of contrasting character, take the parts Lone Sloane and 'Face de Plombe').

## orchestra

1 piccolo
1 oboe doubling cor anglais
1 b flat clarinet doubling bass clarinet
1 contrabassoon
2 french horns
1 trumpet
1 bass trombone
1 electric guitar ( 7 string or de-tuned 6 string)
1 electric bass guitar ( 5 string)
1 synthesiser (or sampler)
1 harp
4 percussionists (details and lay-out diagram given below)
violins I ( 4 desks + )
violins II (3 desks + )
violas ( 2 desks + )
cellos ( 2 desks + )
double basses (preferably at least 2 players)

## Percussion layout for Le Trône du Dieu Noir

Perc. 1: Timpani, Orchestral Bass Drum, Tam Tams, $\square$ Triangles (Med + Low)

Pere 2: Drumkit with double bass drum, Cymbals including $\square$ Chinese and rivet cymbals

Pere 3: Tam Tams, Lion's Roar, Dulcimer, Anvil, Log Drum, $\square$ Chain (metal with large links)

Pert 4: Piano, Vibraphone, Glockenspiel, Tubular Bells, $\square$ Orchestral Bass Drum, Lion's Roar, Guiro.

$\frac{\Pi \sqcap}{\bigcirc \bigcirc}$ Double Bass Drumkit
$\square$ Dulcimer


Piano
Nib
Gasp

## Performance Notes

The piece is divided into 7 sections to run without breaks. Each section has its own bar numbering.

1) Introduction
2) Prologue
3) La Fusée va Exploser
4) Iotaï Celui Qui Cherche
5) Vers Le Cachot
6) Les Rois Dieux
7) Les Machines d'Epouvante

## Note to the conductor

In places where the drummer (Percussionist 2, who uses a drum kit with double bass drum) is producing a steady beat, tempo control should be left entirely to the drummer so that the impression is given of the drummer 'driving' the ensemble. This applies to passages in the 'Introduction' and to 'Les Machines d'Epouvante' in particular and should be taken as including the passages in which the drums create an over-all impression of slowing down (see bars 139-144 of 'Les Machines d'Epouvante') or speeding up (ibid bars 11-24) and to cases in which a metric modulation occurs during un-interrupted drumming (e.g.: ibid bars 121-22).

## Voices

General note: given the tuning difficulties for the choir presented by the Introduction and the final part of 'Les Rois Dieux' (from 'Ce mot...' in bar 43) it is accepted that these parts may be pre-recorded if preferred (N.B.this is specifically requested for the choral section at the very end of 'Les Machines d'Epouvante' in any case). There is, however, a tuning strategy provided for the end of 'Les Rois Dieux'(please see below).

1) Note that the voice parts are for mixed choir. For the correct timbre it is essential that the sopranos and altos are female voices.
2) Vibrato should not be permitted except in instances in which a solo voice is singing a narrative part or is singing the part of a character.
3) There should be four voices to each section making a total of sixteen. Each singer may be allocated a separate microphone to be fed through a mixing desk. In a normal, averagely dry, acoustic a judicious amount of artificial reverberation should be added. This reverberation should have the character of a moderate sized stone chapel, except where otherwise indicated in the score itself.
4) In the first section, marked 'Introduction' the voices do not sing words but rather artificial sounds. In the fourth section 'Iotaï Celui Qui Cherche' the sung vocal sounds are based on a possible French pronunciation of the made-up word 'Iotaï'. In both cases reference should be made to the phonetic table shown as follows:-

## Phonetic table

ǎ as in 'fãt'.
ah as in 'bah'
aw as in the 'on'of the French word 'garçon' (i.e.: similar to the English aw as in 'lawn' but more nasal.
ay in 'hay'
ě as in 'mět'
ías in 'bit''
ŏ as in 'gŏt'
ūr as in 'pūre'
$t$ as in 'trip'
$\mathbf{z}$ as in 'zǐp'
5) There are numerous passages in which each voice has its own separate part. In some instances the combined voices create dense cluster chords involving singers standing close to one another singing notes a semitone apart. In the following examples cues have been provided to make the pitching of particular chords a little easier. At bar 42 of the penultimate section 'Les Rois Dieux' cues are given which may be used to create the chord which the female voices sing in bar 43 according to the following scheme:-
piccolo G natural $\rightarrow$ soprano 3
oboe F sharp $\rightarrow$ soprano 1
clarinet E natural $\rightarrow$ soprano 4
vibraphone F natural $\rightarrow$ soprano 2
vibraphone C natural $\rightarrow$ alto 3
harp B natural $\rightarrow$ alto 1
harp D natural $\rightarrow$ alto 2
tubular bell D flat $\rightarrow$ alto 4 (C sharp 1 X 8va)
At bar 46 of 'Les Machines d'Epouvante' (the final piece) the voices are split into 8 parts so that there are two voices of each choral division per note in the chord. Each division is split between two notes at the vertical distance of a perfect fourth. The upper note of each fourth is prepared and sung in the preceding bars by the following system of cues:-
bar 42: violins 1 play B flat, taken up by the sopranos 1 X 8 ve below.
bar 43: violins 1 play $G$ sharp, taken as A flat by the tenors 2 X 8 ves below.
bar 44: violins 1 b play $G$ natural, taken up by the basses $2 \times 8$ ves below.
bar 45: violins Ib play A natural, taken up by the altos 1 X 8 ve below.
At bar 83 the voices have a chord which is similarly constituted except that the sopranos (grouped $1+2$ and $3+4$ ) have the minor sixth F natural and Dflat.
The F natural for sopranos $3+4$ is given by the trumpet in bar 81 which proceeds to C sharp for the $D$ flat of the sopranos $1+2$.
Basses $1+2$ also take the pitch class $F$ (which is heard in the appropriate octave in the trombones at the end of bar 82)
The A flat for tenors $1+2$ is played in the appropriate octave by the bass trombone in bar 81 .

The A natural for altos $1+2$ is played by the trumpet at the end of bar 82 .
Altos, tenors and basses $3+4$ have to find their own notes a fourth below singers $1+2$ of their sections, as was the case with the chord in bar 46.
6) In the 'Prologue' and 'La Fusée Va Exploser' sections of the piece quite a substantial part of the narrative is sung by one of the bass singers, while one of the tenor voices takes the part of the main character Sloane, singing in sprechtstimme style. Elsewhere a great deal of the narrative is spoken in recitative style, and this part can be taken either by the same bass singer or an actor. Sloane's part in 'Iotaï Celui Qui Cherche' is spoken and the other spoken 'acting' rôle is that of the alien 'Face de Plombe', the leader of the 'Prêtres Maudits'. It is important that the character of the voice of 'Face de Plombe' contrasts with that of Sloane, but it is still more important that the appropriate dramatic sensibility be brought to the parts in question. The precise timing of all the recitative parts is left to the discretion of the actors and/or singers but is roughly indicated in boxed text placed within the appropriate bars in such a way that a reasonable interpretation will not lead to a clash with any musical event which would mask it.

## Percussion

There are four percussion parts:-

## Percussion 1

timpani / orchestral bass drum/
tam tams/ triangles (medium and low)
Percussion 2
drum kit with double bass drum, cymbals to include Chinese and rivet cymbals
In order to ensure the correct timbre of the drums while balancing the volume level with the non-amplified contingent of the orchestra an electronic drum kit triggering samples may be used if preferred. If an electronic drum kit is not available sound reenforcement might be needed for the other sections of the orchestra. A good sound at lower volume can be achieved with careful damping, depending on the precise characteristics of the drums in question. If the acoustic option is chosen the two bass drums should ideally be a matching pair of 22 "or 24 " drums. Alternatively a single bass drum could be used with a linked double bass drum pedal.

If the percussion clef for the drum kit is read as if for the treble clef then it would be interpreted in the following way from the top ' A ' above the stave downwards:
$A=$ crash cymbal (or Chinese cymbal where indicated) with ' $x$ ' notehead
$G=$ hi-hat (always open throughout the score, and should be set up so that the top
cymbal does not touch the lower one) with ' $x$ ' notehead
$\mathrm{E}=10^{\prime}$ rack tom tom (far left)
$\mathrm{D}=12$ ' rack tom tom (left)
C = snare drum
$\mathrm{B}=13^{\prime}$ or $14^{\prime}$ rack tom tom (right)
$A=16^{\prime}$ floor tom tom (right)
$\mathrm{G}=18^{\prime}$ floor tom tom available (right or left)
$\mathrm{F}=$ bass drum (with right foot)
$\mathrm{E}=$ bass drum (with left foot)
A left handed player may want to reverse the left/right organisation of the drums.

## Percussion 3:

Tam Tams / Lion's Roar/ / Dulcimer / Anvil /Log drum / Chain

## Percussion 4:

Piano / Vibraphone / Glockenspiel / Tubular Bells / Orchestral Bass Drum/ Lions Roar /Guiro

## 7-string electric guitar (or de-tuned 6 string)

A 7-string guitar is specified so that the lower notes can be obtained without retuning (although a 7 -string also has the advantage of having a thicker sound due to the larger neck involved). A six-string could be used in its place if strung with strings of an appropriately thick gauge and tuned a perfect fourth lower than usual (note that the higher pitches of a normal guitar are not involved here, for the most part the lowest three strings are used). It is important, however, that the guitar in question should have a suitably 'heavy' tone when the bridge pick-up is used. The pick-up should be of the humbucker variety (i.e.: double coil with both coils directly facing the strings rather than stacked). The overdrive effect needed here can be obtained at low volume on a suitable stage amplifier which could then be fed through the mixing desk allowing the mixing engineer control over the balance.
The 'palm-muting' indicated in 'Les Machines d'Epouvante' is not only needed in order to obtain a suitably controlled sound, but also because the flesh of the edge of the palm against the strings tends to give more energy to the low fundamentals while suppressing some of the upper harmonics slightly.

## 5-string bass guitar

The low B flat indicated in some parts of the score implies a scordiatura. It is intended that the lowest string be de-tuned by a semi-tone. The instrument may be retuned before its entry in 'Les Machines d'Epouvante' if done silently (sufficient time is allowed for this while the ensemble is playing). The player may prefer to leave the scordiatura in place and transpose accordingly.

## The synthesiser

The synthesiser (the part could equally be played on a sampler triggered from a MIDI keyboard) only has a part to play in the final section 'Les Machines d'Epouvante'. The sound required is to be like that of a digeridoo, and could be a looped sample of
that instrument transposed to the appropriate notes (always in 8 ves ). A dideridoo, as such, would not be suitable given the range of notes needed. During 'Les Machines d'Epouvante' it is suggested that the synthesiser sound be split into stereo with a contrasting eq and/or phase relationship between left and right projections of the sound. It would then be effective to create a panning effect by altering the eq or phase difference between left and right very slowly over the span of roughly three bars continuously.

## Sound reinforcement

As indicated above the voices may all be amplified using a mixing desk. The mixing desk should also take the output lines of the synthesiser, the guitar and bass guitar amplifiers and, if an electronic drum kit is used, the lines from the sound module of the drum kit. A CD player, Minidisk or DAT tape player is also required in order to play back the recorded voices used at the very end of the piece (see bars 158-166 of 'Les Machines d'Epouvante').

## Presentation

Although a concert, rather than a staged, presentation is intended the piece does have one purely visual cue at bar 40 of 'Les Rois Dieux' and bar 130 of 'Les Machines d'Epouvante'. This is the projection of the rune which signifies the 'magic word' given to Sloane by 'Les Rois Dieux' to break the spell conjoured by the 'Prêtres Maudits'. As a merely practical point it might be necessary to use a data projector for this as otherwise the lights would have to be temporarily dimmed, which could be inconvenient for the musicians.
Further to this the piece clearly has the possibility of considerable visual reenforcement based on Druillet's comic strip and possible semi-staging.

## The Throne of The Black God by Phillippe Druillet, translated by Martin Glover.

In the year 804 of the new era after the Great Terror, mankind resolved to expand its power throughout the entire universe. Henceforth the infinite stream of stars would bear the stamp of the human empire, and this for evermore. Great steel caravans were launched into the firmament. Time went by, few returned. The universe kept its secret. An earthman, a rebel among his own kind, voyaged alone in the great cosmic ocean.
The journey lasted several months. All was normal until......
Sloane: The brain is screaming! There seems no reason for it!
The rocket! It's in self-destruct mode! It no longer obeys me! ....Kraal will devour me!
The rocket! The rocket! She's going to $\qquad$

## Explode!

In an instant all is destroyed. Sloane yet survives and floats though space. A magic stronger than the science of man prevents his body from exploding in the void. In the very place where his ship has been a strange shape looms out of the emptiness.

A throne of stone: "Iotaï The Seeker" it is there, confronting him, floating in the ether, dark emissary of those who are not men; have never been men. Throughout the centuries this accursed throne has roamed in search of its prey. It has crossed worlds and universes which the imagination cannot conceive of. Its purpose: to take back to its masters "The Living One", rare in this part of the cosmos. Sloane crossed its path. "The Seeker" then fulfilled its mission.

The journey lasts centuries, years or mere seconds. The time is not human time. Sloane has touched an artefact of the gods and so becomes himself partly a god. His eyes, now lit by the fires of a certain madness, watch universes pass by like a succession of comets on fire.

At last "The Seeker" chooses a planet from among the others. It seems darker and yet more ancient than its sisters. Sloane feels his spirit chill as they approach. There is a sense of something maleficent, evil. There is absolutely no trace of anything human....

When the mountain-temple rises against the light on the horizon, the man no longer doubts his destination. The eldritch architecture suggests that this is truly the end of his journey. Helpless, Sloane lets himself be led through the maze of the inner city. Suddenly before him he sees the accursed priests.

These creatures have usurped the ruins of the incredible city built by the science of those to whom the throne of stone belongs.

Lead Face: "Living One" anger blazes in your eyes. It is assailing my mind in incessant waves.
Do not judge us too hastily "Living One" we snatched you from Earth but we had no choice.
Our race is dying. Our gods left us long ago and without them we cannot survive.
Only one among them is not yet dead. He can return to us and restore our race to its ancient glory.

But for this we need the life-force of a living body so we sent out "The Seeker".
The spark of your life will lead him to us now that you are here "Living One"!
Sloane: Enough of your stupid stories, lead face !

Just for this ridiculous experiment you destroyed my rocket and dragged me from my universe! Go to hell!

## Lead Face: Take him away! Take him away!

The iron faces drag the man through the mountain temple. Sloane is blinded by fury, his instincts warn him of the danger he is in. The dead gaze of the royal mummies pierces him as he goes by. The sight of a throne identical to the one that brought him terrifies him. Sloane is flung into the depths of a dungeon to await the experiment.

At the end of what was, perhaps, the third night Sloane feels the light change. Suddenly it is as if the universe invades his cell.
...The King Gods...
The King Gods: Let your eyes see, let your body hear "O Living One". The call of the accursed priests has reached us. The cry of danger has echoed through our palaces of light. The lead faced priests lied to you "O living one" The god they wish to restore by your life is a god of destruction. The most monstrous being of the infernal spheres. We call it "The Black God". These creatures want to use it to enslave the entire universe. Then the dark shadow of triumphant chaos would cloud each and every day. We cannot act despite our power. And only you, a wretched link in this infernal chain, can do so.
Receive the word of power, the word which will cast "The Black God" into the void from which he should never have emerged. When you feel his evil entering your soul- then you will speak-

## (The Rune)

This word- you will yell it out and then forget it. Farewell, "O Living One"
Prison Guard: The time has come!
The man is carried onto the terror machines. Their steel bulks fill the vast rooms to inaccessible reaches. Unconscious in the infernal glare Sloane floats and rocks to the diabolical rhythm of the monster machines and the incantations of the priests. The echo of his life-force resounds in the heart of the infinite void where "The Black God" sleeps. The man soon feels that the call has been heard..

The experiment reaches its climax. Sloane, bombarded by unknown rays of incredible strength sinks into a delirium. "The Black God" flows into the room. The man tries desperately to remember the word that saves, the gift of the King Gods.

The fateful transition is about to take place when Sloane undergoes an unexpected mutation. His irradiated body multiplies to infinity. Now, truly, an army files out into the huge laboratory.

In the unbearable intensity of the light the priests, terrified by the turn of events, flee in disorder. In a crazed yell, at the very outer reaches of his sanity, while the coils of "The Black God" seek to ensnare his many bodies, Sloane, with a million voices calls out the cosmic word.

Space, silence, the majestic calm of the sovereign universe. In the distance meteorites, the dust of planets. Braving the cosmic winds a man, an earthling, riding on a throne of stone flies through space. In his eyes shines the red fire of madness. Man and stone seem to be travelling towards - only they know where.

# Le Trône du Dieu Noir 























B.solo


2




$18$













one singer only; change to different singer where indicated
S.

A.

T.




(change)
B.


Nar.
de ceux qui ne sont pas des hommes, qui ne l'ont jamais été.

Vln. 1

Vln. 2

S.

A.

(change)
T.

B.


Nar. Ce siège maudit a voyagé pendant des siècles à la recherche de sa proie. Il a franchi des univers et des distances.

Vln. 2








$42$








FdeP
Elle assaille mon esprit en vagues incessantes. Ne juge pas trop vite "Etre Vivant" nous t'avons arrache à la
terre. Mais nous n'avions plus le choix.

fff





| Sloane | 1 | 1 | Sloane: (shouting) | Face de Plomb! Je me moque de vos histoires! |
| :---: | :---: | :---: | :---: | :---: |




Onto 'Vers Le Cachot'
without a pause


C Tpt.


$$
d=66
$$

Narrator $\quad$ Les visages de fer emportent Thomme à travers Le Temple-Montagne. Un rage aveugle s'est emparée de Sloane. Son instinct l'avertit du danger qui plane sur lui.






























4 This part is to be spoken either by an actress or one of the altos. It should be read 2
4 loudly and dramatically like an incantation.

> | Recois le mot magique, le mot qui rejettera "Le Dieu Noir" |
| :--- |
| au neant d'ou il n'aurait jamais du sortir. Quand tu sentiras son |
| empreint souiller ton ame. Alors tu parleras.......... |

the Tam Tam is struck
the rune shown in the comic strip
to represent the word should
be projected on a wall or screen 40 behind the choir.


Bass


The vocal parts (bars 43 to the end) may, if preferred, be pre-recorded and projected from the house

Picc.


Perc. 4

S.

S.

S.



## 7) Les Machines d'Epouvante




N.B.:The narration should be loud, almost shouting, throughout this section
C-
B.(Narrator)

VIn. 1





Ob.


C Tpt.
B. Tbn.
B. Cl .

Cbsn.

B.

Dr.

Perc. 3
Anv.+ Log Dr. and Bass Drum

Perc. 3

Perc. 4
Tub. B.











Vln. 1


7-str.E. Gtr.


Vln. 1












7-str.E. Gtr.
























7-str.E. Gtr.


Bass Gtr
(5-string)

$110 \mathrm{~d}=150$ (tempo primo)

7-str.E. Gtr.





7-str.E. Gtr.
116


Bass Gtr.
( 5 -string)



Vln. 1
$\frac{1 \text { Div. }}{8 b^{\circ}-}$

Vln. 2
$\frac{0 \text { Div. }}{8 \text { 明 }-\infty}$
Vln. 2
(a)



$122 \quad \begin{array}{ll} & j \rightarrow 2 \\ =225\end{array}$

Synth.


7-str.E. Gtr.

T.

B.


Vc.









Bass Gtr. (5-string)









It is intended that the voices heard at this point should be played from a recording of a performance identical to the same passage heard at the end of Les Rois Dieux'. The voices should sound very distant - not too loudand be treated with reverberation to suggest the space of a large cathedral.




# Crevasse 

for classical guitar solo

Martin Glover 1999

Note:

1) The player will find that sustain has been notated in a variety of different ways throughout this piece. Sometimes an extra stave has been employed while at other times slur marks indicate that a set of notes are to be held over. This has been dictated by the particular context of the sustained notes.
2) Harmonics are generally indicated by providing the fundamental pitch in normal notation while a diamond-shaped note head indicates the position at which the string is to be touched. The resultants in this score are not notated as the pitches in question will in many cases be too inflected by inharmonicity (with any normal string gauge) to be true. The distorted harmonics are intended, so it would not be appropriate to choose a lighter string gauge.
3) Bar 63 , in which sforzando notes - including the open d harmonic are articulated with the upward pull of a Bartók pizzicato, is to be regarded as a point of resolution for all of the preceding music up to that point. Despite the many apparent interruptions and changes in texture the moment has been carefully planned for rhythmically. For this reason rubato would not be appropriate at any preceding point in the score. The double bar lines (see bar 45, for example), which mark out an aspect of the structure which may seem somewhat episodic from a textural viewpoint, are not to be regarded as places at which to pause.
4) Crevasse was inspired by a photograph of a fissure in a glacial region in Antarctica. The player is encouraged to look upon the hollow guitar cavity as a place which produces sounds often alien to the simple vibration of string fundamentals, the potential strangeness engendering a comparison with a crevasse in a remote region, far from civilisation.

Martin Glover 1999

## Crevasse





calando




Tempo Primo
piu vivace, poco maestoso


(*all notes to be sustained as long as possible)
piu vivace e poco a poco

Guit.

$\qquad$
$\qquad$



## Refraction

for flute, classical guitar and bass clarinet

Martin Glover 2001

## Refraction for flute, classical guitar and B flat bass clarinet

## Performance notes

Tempo giusto should prevail throughout. This is necessary in order to facilitate the perception at middle ground level of such rhythmic operations as described above. This need not compromise too rigidly the expressive possibilities allowed by interpretative freedom at the foreground level of gesture.
Expressive directions for the entire ensemble are shown in text starting with a capital letter over the flute part while directions for individual players start with lower case letters.

## Flute

The flute has a strongly soloistic character throughout most of this piece, with the suggestion of a wildness occasionally turning moody and sombre.

## Guitar

Some mixed timbre chords (chords with both fretted notes and natural harmonics) appear now and then in the score. In order that the notation should not appear too cluttered, the harmonics appear on the staff with diamond note heads only (fundamentals and resultants are not notated). The pitches indicated by these note heads correspond to the notes normally produced at the indicated fret by stopping. The strings used are indicated by Arabic numerals and the fret number by Roman numerals. Normally fretted notes which sound simultaneously are notated in the usual way on the same stem as the diamond note heads.

## Bass Clarinet

It is suggested that the timbre should be discretely modulated between a heavy 'reedy' sound and a more normal sound (in either direction) in the duration of longer sustained notes. Taking context into account, the performer has expressive freedom in producing the details of this variation in timbre over any given period of time.

Martin Glover Oct 2001

Duration: c. 5' $30^{\prime \prime}$

Refraction


Fl.



Strepitoso




6


Gtr.




B.Cl










Gtr.




# Torsion 

 for piano solo
## Martin Glover <br> 2001

## Torsion <br> for piano solo

## Note to performer

Attention is drawn to the fact that phrasing seldom overlaps between bars (there are exceptions such as that of bars 14-17). This is symptomatic of one of the structural preoccupations of the piece which determines that the bar-line should signify a punctuation in the flow of activity. For the most part different metres and irrational subdivisions accentuate the difference 'over the bar-line' in terms of changing parameters of rhythmic organisation. To obtain the all-important effect of this structurally, tempo giusto needs to be kept throughout.

An extremely high dynamic level is to be regarded as normal. Other passages should, more often than not, convey an impression of keeping something in check.

Martin Glover, Oct 2001
Duration circa 5' $20^{\prime \prime}$


pin pesante

ff





$-4-$











# THE RIDGE ON THE SLOPE for String Quartet 

Martin Glover 2005

## The Ridge On The Slope for String Quartet

> This piece was commissioned by ArtOffice for the combined funeral/memorial service of George Bourne and was first performed by the Farleigh Quartet at Brakespears Crematorium in Ruislip, Middlesex, on August 19 ${ }^{\text {b }} 2005$
> The title is a translation of the Saxon name 'Ruislip', a town built on a ridge on a slope.

## Performance Note

Although vibrato should be kept to a minimum throughout most of the piece, attention is drawn to the sections marked 'chorale'. Here the imitation of a 'vocal' style is suggested, yet excessive vibrato should be avoided.

## Dedicated to the memory of George Bourne

$J=120$
The Ridge on the Slope
Dolce; misterioso N.B. use of vibrato should be minimal throughout




# B <br> ${ }^{J}=142$ <br>  



















L






# Interstate 

for cello and piano

# Martin Glover 2007 

# Interstate for cello and piano 

First movement: page 1
Second movement: (through a forest in mist and rain) ..... page 9
Third movement ..... page 19

The main inspiration for this piece was an American road trip which began in New York and took some of the eastern and southern States and ended up back in New York after an excursion around the Appalachian mountains. The forest referred to in the title of the second movement was the Kanawha State Forest in West Virginia.

Martin Glover 2007

Duration: c. 11' $30^{\prime \prime}$

## INTERSTATE

for Cello and Piano
for Elizabeth Csicsery-Ronay


A
(Cello) Vivace ma sotto voce

(Cello) Scherzando
(Piano) Sonore


B
(Cello) Espressivo; Sostenuto
(Piano) Meccanicamente
$16 \quad j=75 \quad$ ord.



pizz. arco



Ped $\qquad$


pizz. arco


Con fuoco



## Con fuoco (tempo giusto)



$J=50$


Sed.

2

(Cello) Sostenuto, espressivo









Vc. $\underset{\sim}{\mathrm{H}}: \dot{\mathrm{P}} \mathrm{P}$




Misterioso



27



(Cello) Sempre espressivo




Scherzando


(from this point the scherzando decays)








(Cello) Espressivo; Sostenuto
(Piano) Meccanicamente



R


