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Portfolio of Compositions and Technical Commentary: GIVING CONTEXT TO THE ARBITRARY GAMES WITH NOTES

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Portfolio of Compositions and Technical Commentary

**GIVING CONTEXT TO THE ARBITRARY:
GAMES WITH NOTES**

Lionel Steuart Fotheringham

**Thesis presented in fulfilment of the requirements
for the degree of Ph.D. in Music**

King's College, London, 2015

ABSTRACT

The Thesis is a portfolio of scores and recordings of six musical compositions, accompanied by a technical commentary. The compositions are for various forces, from solo piano, unaccompanied choir and chamber ensembles to full orchestra.

The pieces are the results of research into ways of reconciling the familiar tonal and metrical systems of the past with more recent technical approaches to composition. I felt the need to explore new systems of organisational possibilities different from the rather loose extended tonality of my works written prior to starting the portfolio: a way of 'playing with notes' to give my work a harmonic and rhythmical logic. I wanted to find a context in which my previously rather arbitrary choices could have meaning, at the same time as retaining a personal sense of artistic creativity.

In some works, my research focused on quoting and developing 'found' tonal material (keyboard pieces by Byrd in *Forms in Movement*, and a Scottish bagpipe melody in *Symphony No.1*) as a method of seeking this reconciliation. In others, I use sets of tetrachords (in *Bagatelle III* and *Arcturus*) or hexachords (in the *Three Latin Motets*) based around diatonic triads and scales, or traditional dance forms like the passacaglia (*Symphony No.1*). Some of the systems are more dominant in the compositions than others (my *Three Latin Motets* and *Symphony No.1* both draw their pitches almost entirely from modes), whereas others are used only in part of the pieces (such as isorhythm in *Arcturus* and *Symphony No.1*, and fixed melodic intervals in the *Quintet*).

By the last piece in the portfolio, I feel the research led me to a greater sense of intellectual satisfaction in my music, and that I have, paradoxically, more freedom to be artistically inventive and expressive within the new systems I have found.

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Portfolio of Compositions

Compact Disc of recordings

DVD of recordings

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2. Three Latin Motets, for unaccompanied S.A.T.B. choir.
3. Five Bagatelles, for piano.
4. Arcturus, for an ensemble of nine players.
5. Forms in Movement, for oboe d'amore & piano.
6. Symphony No. I, for orchestra.

RECORDING DETAILS

CD

Track 1 **Quintet for Piano and Wind** 8.04

Lontano, conducted by Odaline de la Martinez.

Recorded at King's College, London, May 2010.

Three Latin Motets

Cantainn, conducted by James Grossmith.

Recorded at Glasgow University Memorial Chapel, April 2014.

Track 2 *Ave, vera caro Christi* 3.31

Track 3 *Magna et mirabilia* 4.06

Track 4 *Ave, vere sanguis Domini* 4.09

N.B. Due to the circumstances of the recording, some passages intended for a full voice section have been sung by a soloist.

Five Bagatelles

Roderick Chadwick – piano.

Recorded at Highgate School, June 2012.

Track 5 *Bagatelle I* 2.15

Track 6 *Bagatelle II* 1.48

Track 7 *Bagatelle III* 4.00

Track 8 *Bagatelle IV* 1.40

Track 9 *Bagatelle V* 2.47

Arcturus

CHROMA, conducted by Lionel Steuart Fotheringham.

Recorded at Highgate School, June 2012.

<i>Track 10</i>	<i>Movement I</i>	3.53
<i>Track 11</i>	<i>Movement II</i>	3.49
<i>Track 12</i>	<i>Movement III</i>	5.14

Symphony No. I

Performance electronically generated from the Sibelius file.

<i>Track 13</i>	<i>Movement I</i>	7.17
<i>Track 14</i>	<i>Movement II</i>	8.08

Total time: 60.42

DVD

Forms in Movement

Althea Talbot-Howard – oboe d'amore; Dominic Saunders – piano.

Recorded at West Road Concert Hall, University of Cambridge, April 2014.

<i>Track 1</i>	<i>Prelude & Pavan</i>	<i>starting at</i>	0.00
<i>Track 2</i>	<i>Galliard</i>	”	6.55
<i>Track 3</i>	<i>Fantasia</i>	”	8.55

Total time: 14.19

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Work on this portfolio would not have been possible without the invaluable guidance of my supervisor, Rob Keeley. I am grateful to my fellow King's doctoral composition students for the insights gained during discussion of our own and others' compositions at seminars in 2010-12. I am also very grateful to those musicians who took the time and trouble to perform the pieces in the portfolio. Most of all, I would like to thank my wife Elizabeth for her constant support, encouragement and patience.

L.S.S.F.

Inverarity, Angus

August 2015

CHAPTER I: GIVING CONTEXT TO THE ARBITRARY

Prior to starting this degree, I composed music which was largely text-based in a fairly traditional idiom, working with a blend of diatonic and dissonant harmonies and structures appropriate to the form and meaning of the text. However, I have chosen in this portfolio to focus on introducing and manipulating, or 'playing games' with, certain technical parameters to the compositions, all of which are a departure from my previous practice.

My background as a composer stems from my introduction in my early teenage years to the organ music of Messiaen. It was an epiphany to hear the use of added-sixth chords, other 'jazzy' harmonies, and irregular rhythms in a religious piece for organ, especially when compared to the relatively sober language of the Lutheran chorale prelude. Particularly interesting was the technical introduction to Messiaen's *La Nativité du Seigneur*,¹ with its brief explanation of the composer's 'modes of limited transposition' and his additive and 'non-retrogradable' (i.e. palindromic) rhythms. This was seminal in developing my understanding of how the technical approaches to composition in the twentieth century were very different from those of the previous three hundred years.

I particularly enjoy contemporary pieces that contain diatonic references such as major and minor triads. This was something that attracted me about Olivier Messiaen's music: even if there were only fleeting or oblique references to tonal chords within the modernist language, it was enough to bring a 'ray of sunshine' into the music, as well as providing some sense of large-scale structure by resolving onto a 'tonic' chord. For example, 'Méditation II' of the *Méditations sur le mystère de la Sainte Trinité*² contrasts the dense chromatic sounds of chords using the composer's third mode of limited transposition with simple triads (also belonging to the mode), and uses different transpositions of the

¹ Messiaen, Olivier: *La Nativité du Seigneur*, Editions Alphonse Leduc, Paris, 1936.

² Messiaen, Olivier: *Méditations sur le mystère de la Sainte Trinité*, Editions Alphonse Leduc, Paris 1970.

mode to achieve a large-scale tonic-dominant-subdominant-tonic structural progression over the course of its twelve minutes.

I also have an affinity for music that has a clear melodic element. This may be buried in a dense texture (for example, the vocal line in Movement VI, 'Candor est lucis æternæ' of Messiaen's *La Transfiguration de notre Seigneur Jésus Christ*),³ but as long as there is some sort of melody, I feel that there is a clear linear aspect of the music that can be easily distinguished in the texture, giving something for the ear to latch on to. For example, in Hugh Wood's *Symphony, Op.21*⁴ (which I also refer to later), the first movement has this kind of strong melodic line much of the time, at first in the brass, and later in the violins.

Before this degree, my desire for a clear line led me to write music without moments of silence or changes in tempo, avoiding a succession of different blocs of material. In this sense I was going against Messiaen's method from the 1950s onwards of building up large structures from smaller contrasting units, as I felt it more important to have an ever-unfolding melody.

My preference for tonal references and a strong melodic line also led me to compose in a chromatic tonal language. I did not feel the need to have an alternative system at the basis of what I was creating, as the tonal references and strong melodic drive seemed to be enough in themselves. I was 'living in the moment', revelling in the enjoyment of sound. An extract from my *Benedicite* of 2007 demonstrates this style (Ex.I.I). It was as if I was pulling out the bits of Messiaen's music that I liked whilst ignoring the integrity and logic of his system.

³ Messiaen, Olivier: *La Transfiguration de notre Seigneur Jésus Christ*, Editions Alphonse Leduc, Paris 1972.

⁴ Wood, Hugh: *Symphony*, Chester Music, London, 1995.

Ex. I. I: Benedicite, 1st movement, b.28-40.

♩ = 54

28

SOPRANO *mp* O ye Hea- vens, *p* bless ye the Lord: *mp*

ALTO *mp* O ye Hea- vens, *p* bless ye the Lord: *mp*

TENOR *p* O ye hea- vens, *mp* bless ye the Lord:

BASS *p* O ye hea- vens, *mp* bless ye the Lord:

ORGAN *mp* Ch.

Pedals *mp*

31

S. *mf* praise him and mag - ni - fy him for

A. *mf* praise him and mag - ni - fy him for

T. *mf* praise him and mag - ni - fy him for...

B. *mf* praise him and mag - ni - fy him for e - ver. *mf poco marcato* O ye

Sw: + Sesquialtera
Sw. *mf* 5

Ch.

34

S. *mf* e - - - ver. *mf* bless ye the Lord:

A. *mf* e - - - ver. *mf* bless ye the Lord:

T. *mf poco marcato* O ye Wa - ters that be a - bove the fir - - ma - ment,

B. *mf poco marcato* Wa - ters that be a - bove the fir - - ma - ment,

Ex.1.1 cont'd.

The musical score consists of two systems. The first system (measures 37-38) features vocal parts (Soprano, Alto, Tenor, Bass) and piano accompaniment. The lyrics are: "praise him and magnify him, and". The piano part includes guitar and trumpet parts with specific fingering and articulation instructions. The second system (measures 39-40) continues the vocal parts and piano accompaniment. The lyrics are: "fy him for ever. O all ye". The piano part includes guitar and trumpet parts with specific fingering and articulation instructions. The score includes dynamic markings like 'f' and 'mf', and performance instructions like 'senza dim.' and 'cresc. poco a poco'.

However, the reason I began this thesis was that I felt the need to explore new organisational possibilities: a way of ‘playing with notes’ to give my work harmonic and rhythmical logic, and I also felt I could not ignore what George Benjamin terms ‘the abyss at the heart of modern music: the arbitrary.’⁵

Benjamin is discussing the canons in the first movement of Webern’s Symphony, Op.21; he explains how they avoid the abyss by allowing a logical system for the generation

⁵ Benjamin, George: ‘Canonic Codes’ in: Latham, Alison (ed.): Sing, Ariel: Essays and Thoughts for Alexander Goehr’s Seventieth Birthday, Ashgate, Aldershot, 2003.

of material, meaning that the four parts are closely related to each other, rather than being independent. By 'arbitrary', I imagine Benjamin means not music created *entirely* at whim or random, without reference to any system: rather, he is referring to the 'free' atonal music of the Second Viennese School, which is composed without an organisational system akin to the 'common practice' of 1600-1900, deliberately avoiding references to diatonic harmony, and often lacking a clear pulse. He may also be referring to twelve-tone music in which the row lacks any degree of internal organisation. The 'abyss' (from the ancient Greek meaning 'unfathomable depth') can be seen as the apparent baselessness of the composer's musical decisions except as an intense emotional response to a text or as an expertly distilled sound-picture.

What is so 'abyssal' about 'the arbitrary' in music? If music is arbitrary, its very nature is to live only in the moment; this denies it the possibility of having inner unity and cohesive logic. It can have little deeper meaning beyond its surface, and there is scant possibility of large-scale structures without a text. It may have emotional authenticity, but it lacks an intellectual foundation. I do not feel the composition of such 'arbitrary' music can be lastingly satisfying and convincing, however vivid its effect.

This, then, leads to the need to have a system which can provide a unity and cohesive logic that satisfies me. As Schoenberg wrote of his 'Method of Composition with twelve Tones':

It aims at replacing the form-building effect of functional harmony through another central force: through a row of unchanging tone relationships. ...One could certainly also employ other methods.⁶

⁶ Auner, Joseph: *A Schoenberg Reader: Documents of a Life*, Yale University Press, New Haven, 2003, p.339.

In this method, Schoenberg provided the template for a new method of organising and composing music, and his reference to ‘other methods’ encourages further exploration of this approach. However, this came with another danger. Roger Scruton writes:

It was enough to devise a system, a code, which would cancel out the arbitrariness of the sounds, by organising them in accordance with another, however inaudible, grammar. ...So long as the inner logic of the result could nevertheless be revealed to the rational and enquiring mind, the result would be music – new, meaningful music.⁷

This portfolio attempts to address both sides of this dichotomy: that a logical compositional system imbues the resulting music with structure and meaning, but care should be taken that the finished piece is nonetheless inviting and comprehensible to a mind and an ear conditioned by the history of tonal music. My predilection is for diatonic and modal ‘light’ in the music, so music incorporating the familiar sounds of major and minor triads is important to me as a composer. I wanted to give the listener a reference point in all the permutational ‘games’ in my compositions, so I made sure that there were always clear elements of diatonicism in the pieces.

In the course of researching compositional models for a suitable way forward, I came across Julian Anderson’s article about Oliver Knussen’s Horn Concerto.⁸ Anderson mentioned the concerto’s use of the all-interval tetrachord and Knussen’s attempt to reconcile a freely chromatic language with tonality. Mention of tetrachords intrigued me as a way of organising the pitch content of my compositions, and I set about considering how I might employ them. More detail on this can be found in Chapter 5. Anderson also writes:

⁷ Scruton, Roger: *Understanding Music: Philosophy and Interpretation*, Continuum, London, 2009, p.167.

⁸ Knussen, Oliver: *Horn Concerto*, Faber Music, London, 2008.

The open and unproblematic use of plainly tonal material, and its gradual transformation to and from more chromatic areas via the octatonic scale are handled with ease and pleasure, as if the incredibly tight structuring of Knussen's later music [here perhaps Anderson means works such as *Coursing* or *Autumnal*] has allowed him to relax into something obviously freer without the music becoming in any way flaccid or vague.

...The Horn Concerto may prove a significant pointer ... to fresh ways in which tonal structuring might once again provide an understood framework against which composers are able to invent and improvise coherently, without any sense of historical regression or anxiety.⁹

It is telling that Anderson says that 'relaxation' and 'being free' leads to music becoming 'flaccid' and 'vague'. He clearly agrees that 'the arbitrary' is abyssal.

If I wanted to bring a clearer sense of internal structure to my compositions by using parameters and manipulating them by 'playing games' with notes, here seemed to be a clue as to how to achieve this: in this case, using on the one hand the octatonic scale and on the other a fully chromatic language as a way of balancing tonal references. In my portfolio, I did not use the octatonic scale, but used other, similar modal methods of pitch organisation. The final manifestation of this in the portfolio comes in the Symphony, where I use Messiaen's third mode of limited transposition within a tonality of D major, as dictated by the bagpipe melody on which it is based. This, I hoped, would also follow the spirit of the second half of Anderson's quotation above.

In Berg's *Wozzeck*,¹⁰ a favourite opera, I became aware of the very high level of organisation used by Berg in the fore-, middle- and background of the piece. Douglas Jarman writes:

⁹ Anderson, Julian: 'A la mode – Julian Anderson introduces Oliver Knussen's Horn Concerto and Two Organa' in: *The Musical Times*, Vol. 136, No. 1828 (June 1995), p.293.

¹⁰ Berg, Alban: *Wozzeck*, Universal Edition, Vienna, 1958.

The peculiar expressive power of Berg's music springs primarily from the fact that, for long sections, it encourages tonal interpretation while, at the same time, it refuses to confirm this interpretation. While the melodic patterns and the individual harmonic formations are frequently reminiscent of those of earlier music, the harmonic formations themselves are rarely arranged in a succession organised according to traditional functional harmonic procedures.¹¹

Once again, the idea of rooting the total chromatic in references to traditional tonal formations appealed to me. I have attempted to compose along these lines in the Quintet for Piano and Wind (the triadic underpinnings to the approach to the climax (b.174-225)) and by using hexachords and tetrachords with strong triadic elements in the Three Latin Motets, Five Bagatelles, *Arcturus* and the Symphony. In addition, *Forms in Movement* is based on pieces by Byrd, and attempts to reconcile their tonality with a more chromatic language by using prominent major and minor triads in the harmonies.

The most important decision, then, was what kinds of systems I could use to 'play games' with the internal structure of my music. I chose the following.

- Pitch:
 - fixed intervals in melodic writing;
 - modes;
 - use of a single hexachord; and
 - a fixed set of tetrachords.
- Rhythm:
 - use of poetic metres in creating musical rhythm.
- Pitch and Rhythm:
 - isorhythm; and

¹¹ Jarman, Douglas: *The Music of Alban Berg*, Faber and Faber, London, 1979, p.16.

- permutations of melodic cells.

I wanted to see what musical results could be achieved by setting up the systems' rules and seeing what happened: the myriad of possible results is akin to playing chess, in which the same rules can produce a multitude of outcomes. Composing with these parameters seemed attractive, as they could form a controlled resource-bank from which I could create a good portion of the musical material. The systems deal only with the pitch and the rhythm of the music, leaving me to make musical choices about other aspects of the music, such as orchestration and dynamics. These aspects could be said to remain 'free', even 'arbitrary': the pitch and rhythm systems provide the intellectual context in which their 'freedom' can be satisfying and convincing.

I gleaned the various systems from a wide variety of works, trying them out in some pieces, but not all. For example, I took the idea of using fixed intervals in melodic writing (as used in the Quintet) from Carter's Double Concerto,¹² in which he assigns particular intervals to the two solo instruments and their own accompanying groups (see p.24). The use of melodic modes was inspired by my great admiration for Messiaen's music. I wanted to use his modes, yet retain my own musical personality – this was in part achieved by a different method of constructing harmonies, as detailed in Chapter 7 on the Symphony. The idea of using a fixed hexachord came ultimately from Berg's *Wozzeck*, Act III, scene 4 (this is examined in Chapter 3 on the *Three Latin Motets*), and I extended from this the set of tetrachords first used in *Arcturus* (see Chapter 5).

In using poetic metres and isorhythm, I was inspired by reading Michael Hall's book on the music of Birtwistle. When discussing the opening of the composer's *Verses*,¹³ Hall

¹² Carter, Elliott: Double Concerto for Harpsichord and Piano with Two Chamber Orchestras, Associated Music Publishers, New York, 1962.

¹³ Birtwistle, Harrison: *Verses*, Universal Edition, Vienna, 1965.

explains how the rhythms in the piano are based on the iamb (∪ –) and trochee (– ∪),¹⁴ two of the basic metres from poetry (Ex.1.2).

Ex.1.2: Harrison Birtwistle: Verses, opening [verse one].

(∪ –) (∪ –) (∪ –) (– ∪)
 iamb iamb iamb trochee
 [(∪ –) (∪ –)] [(∪ –) (∪ –)]

(the first two iambs are each made up of two further iambs if the grace notes are included)

I liked this idea of using a regular metrical pattern, altering the durations of the notes not only within the pairs but also between poetical metres: it provided a very satisfying way of applying a structure to rhythm outside the conventional musical metres of previous centuries. I was also struck by George Benjamin’s highly inventive use of the iamb in his *Fantasy on Iambic Rhythm* for piano,¹⁵ and felt that this was an area I would like to explore; the results can be seen in the last of the Five Bagatelles (Chapter 4).

The use of isorhythm is likewise inspired by Birtwistle’s *Verses*. Hall explains how the opening uses isorhythm in the piano.¹⁶ I was fascinated by the idea of introducing this medieval technique into contemporary music. I saw it as a very suitable way to construct melodic material – having an element of repetition to provide aural memorability and, as with poetic metre, avoiding over-adherence to a regular pulse. Hall also describes how

¹⁴ Hall, Michael: Harrison Birtwistle, Robson, London, 1984, pp.36-37.

¹⁵ Benjamin, George: *Fantasy on Iambic Rhythm*, Faber Music, London, 1993.

¹⁶ Hall, pp.36-37

Birtwistle manipulates the isorhythm, introducing small variations in the repetitions; this was an idea I adopted in *Arcturus*, and led me to the permutations in the organisation of melodic cells. The techniques in which I play with isorhythm are detailed in Chapter 5.

In each case, I wanted to push at these parameters' boundaries and see how I could exploit them in an artistically satisfying way. For example, when using fixed melodic intervals, I used diminished, minor, perfect, major and augmented forms of numeric intervals, rather than sticking to Carter's intervals with fixed numbers of semitones. In isorhythmic and modal writing, I insert the occasional 'spanner in the works', with a pitch or duration altered, removed or added, and when using the tetrachord set, I add an occasional extra chord. These slight alterations to the parameters are present because my final judgement about the pieces had to be from the point of view of my musical instincts and preferences. In the end, music is primarily to be enjoyed as something to listen to, rather than being simply a 'system' realised through the medium of sound, and I hope I have achieved a convincing reconciliation of these two aspects in the portfolio.

CHAPTER 2: QUINTET FOR PIANO AND WIND (January-April 2010)

Introduction

The Quintet for Piano and Wind was written for a workshop with Lontano in May 2010. The request was for a work for wind quartet and piano with a duration of 6-7 minutes.

Models

The obvious models I turned to were the quintets by Mozart and Beethoven for the same ensemble. I was struck in both by the frequent textural separation of piano and wind; although there are many passages where the five instruments are well integrated (Mozart, 2nd mov., b.18-43), there are just as many where the piano is a soloist (Beethoven, 2nd mov., b.38-48), or takes on a concertante role accompanied by the wind (Beethoven, Rondo, b.23-38 & 52-9).

I decided to give the five instruments equal roles. Each instrument has at least one prominent solo moment (oboe, b.67-81; clarinet, b.37-47; horn, b.54-67; bassoon, b.153-161; piano, b.129-142) but all instruments act together in ensemble elsewhere. As regards writing for solo wind instruments in ensemble, I studied particularly Ligeti's *Six Bagatelles*¹⁷ and *Ten Pieces*¹⁸ for wind quintet. I liked the variety of instruments used in the treble register (sometimes in pairs), especially in the third Bagatelle (with the ostinato), and tried to reflect this in my piece (b.37-82). The frequent use of the instruments in unison or near-unison in *Ten Pieces* (especially No.9) inspired such passages as b.232-4; additionally, the use of silence (especially in No.7) inspired similar complete breaks in the texture in b.109-113.

I wanted to make sure that the individual characteristics and capabilities of each wind instrument were suitably exploited. Examples can be seen in the bassoon melody in b.153-161, the ease of use of a very wide tessitura of the clarinet (b.46-7) and its ability to

¹⁷ Ligeti, György: *Six Bagatelles for Wind Quintet*, Schott Music, Mainz, 1973.

¹⁸ Ligeti, György: *Ten Pieces for Wind Quintet*, Schott Music, Mainz, 1969.

play very quietly (b.163-7), the 'hunting fanfare' quality of the horn (b.54-65), and the piercing lyricism of the oboe (b.175-201).

Structure

I decided to experiment with a structure which opposed two contrasting blocks of material: one slow, linear and largely semitonal; the other fast, with wider intervals and more rapidly shifting textures. Alongside, there is an overall plan that encompasses expository (b.1-82), exploratory (b.83-162), combinatory (b.163-225), and closing (b.226-end) functions, which seemed a suitable way of developing the blocks a little like a Sonata, in homage to the Classical tradition of my models. The sections are clearly indicated by the changes in tempo.

The opening section's melody is presented un-harmonised at first, as if emerging from nothing; the 'garlands' of piano figuration which here add a mysterious air to the tentative opening later become more important. The faster section (b.37ff) presents three melodies in the clarinet, piano (b.48) and horn (b.54).

At b.83, the developmental/exploratory section begins. The initial melody is passed around the instruments and re-harmonised, with the 'garlands' being put into relief (compare piano b.3 with wind b.105-6). There is a more fragmentary approach in the fast section at b.109, with some parts left out of the texture (b.109-128 focus on the accompanimental figures from b.37-76). In b.129-141, the piano harmonises the horn melody from b.54 in inverted canon between the two hands.

The 'combinatory' part of the piece brings together the two sections by overlapping their material; for example, in b.190-195, the oboe plays the melody from the first section, whilst the piano LH plays the clarinet melody from the second section.

The brief coda combines the two principal ideas in b.232-240 by accompanying the melody from b.1 (played by all the wind as a 'uniting' device) with the 'fifths' chord (see below: 'Harmony & Melody') derived from the rising arpeggio figure in b.37.

Harmony & Melody

The opening slow section (b.1-36) comprises a melodic opening out from a central note (a¹) by chromatic step, with intensification by dynamics, diminished rhythms and widening intervals. The conception is largely linear, deliberately avoiding stasis and creating a sense of expectation.

Bars 37-82 explore the construction of melodic lines using a fixed interval. As mentioned previously, this idea was taken from Carter's *Double Concerto*. In his work, Carter assigns minor intervals, the perfect fourth and augmented fourth to the harpsichord and its associated chamber orchestra, and major intervals and the perfect fifth to the piano and its chamber orchestra. After repeated listening to Carter's piece and studying the score, this gradually becomes apparent, even if it is subservient to the more obvious audible interest in the rhythmic and spatial instrumental interplay. I liked this idea of constructing melodic lines, and wanted to make it clearly audible. In addition, I decided that I would assign a particular interval to each instrument and allow myself some small latitude by allowing major, minor and other forms, allowing a greater stylistic unity with the stepwise chromatic movement in the other sections of the piece. The assignment of intervals is: clarinet – fifths; horn – sixths; oboe – thirds; piano – sevenths and ninths. The bassoon is not given its own interval, as it is primarily used to partner or accompany the other instruments in this section. At points in the music, it is very clear that a particular interval is being used exclusively by an instrument, especially the clarinet in b.37-47 and the horn in b.54-63; at other moments, it is less audible – the contrapuntal piano part in b.48-54 is such an example. Sometimes these fixed intervals are used in accompaniment (clarinet and bassoon, b.54-64) and as chords (piano, b.55-66). Additionally, some melodies are transformed by employing a different basic interval (compare b.37-47 in the clarinet with b.67-80 in the oboe). The resulting melodic lines make their intervallic content much clearer than in Carter's piece, as they are the main focus of the section, and are allowed to play out for longer before the next instrument with its distinct set of intervals enters.

The third section (b.83-108) introduces a more prominent harmonic element to the slower music. The pitches in the piano arpeggio (b.85) are an aggregate of six rising perfect fifths (inspired by the prominent rising fifths in the clarinet in b.37) from D flat to G placed so as to be easily playable by two hands. This chord and its variants (including triads and bare fifths) increasingly dominate the harmonic language of the remainder of the piece, especially in the piano (b.115-126, 226-end) and lower winds (b.91-8; 174-196). However, the linear style of the first section is still present in the winds, especially in b.99-105.

The fourth section (b.109-162) continues to blur distinctions between contrasting sections. The woodwind chords at the outset, although a variant of the piano accompaniment from b.37ff., recall the semitonal melodic lines of the first section in superimposed form. The piano takes the horn melody from b.54-67 (based on sixths) and harmonises it with a variety of intervals in inverted canon, culminating in another chord of compacted superimposed fifths in b.142 (E flat to D).

The fifth and sixth sections (b.163-225) run together, with the decorated form of the first-section melody (oboe) in counterpoint with the clarinet melody from the second section in b.182-201 in the piano. Here the melody has several different intervals, rather than the fixed intervals of previous versions. A similar confluence of opposing ideas occurs in b.202-5, where the piano melody from b.48-54 is played in the wind whilst the piano plays the 'fifths' chords first introduced in the third section (b.85). The triadic formations in the bass register of this section help build a sustained increase in tension to the climax. The work concludes with a short coda (b.226-end) combining the 'fifths' chords (also in arpeggiatic form in b.235-40) with the opening melody.

Texture

I have enjoyed exploring the exchange of ideas first heard on one instrument in one context with another instrument and context. For example, the accompanimental figures first heard in the piano in b.1 & 3 become the dominant melodic figures in b.96-106 in the

clarinet and then all wind instruments. Similarly, the accompanimental piano figure in b.37-45 becomes the sole texture (played only by wind instruments) in b.109-113. I enjoyed playing with the sonority of having the instruments blend into one another when carrying the melody in the first section (clarinet and oboe, b.3-11; all wind instruments, b.25-32). The trill introduced by the clarinet in b.40 increasingly dominates the whole texture as the work comes to a conclusion.

In this first foray into a piece for the portfolio I can see some of my old ways, but I also enjoyed using the new composing technique of fixed intervals. I was keen to seek out more games to try in the next piece.

CHAPTER 3: THREE LATIN MOTETS (October 2010-August 2011)

Choice of texts

I first came across the 15th-century French Eucharistic texts of the first and last motets in their settings by Francisco de Peñalosa (1470-1528) during mass at Westminster Cathedral. The sincere, simple beauty of the words inspired me to compose my own setting when the opportunity arose.

The last motet was actually composed first. As it was commissioned for a professional group, I wanted to exploit the full textural and harmonic possibilities such a choir affords by dividing the voices into seven or eight parts. Conscious that this constituted a textural density that could not be realistically surpassed, I chose to set the second of the pair of texts, thereby leaving open the possibility of setting the first in the less elaborate texture of four parts and creating a sense of culmination in the final text.

I felt that the settings should be musically related, as the texts start with rhyming first lines 'Ave, vera caro Christi' and 'Ave, vere sanguis Domini'. I decided to use the same pitch organisation (a single hexachord) for both, and to begin the settings almost identically. I explored different aspects of the hexachord: the first motet focuses more on the horizontal, melodic aspect, whereas the last focuses on different vertical arrangements of the entire hexachord (its harmonic aspect).

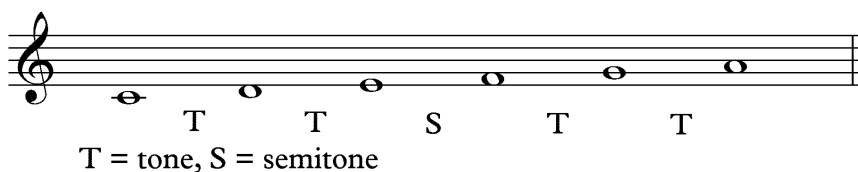
In order to make a contrasting set of three motets, I looked for a text with a dramatic character to oppose the devotional mood of the Eucharistic texts. A familiar source was the set of New Testament canticles used for Vespers in the modern Breviary. I decided on a text from the Apocalypse that explains why a believer should feel the strong devotion to the Sacraments expressed in the outer motets. It refers to the omnipotence of the Godhead and the consequent compulsion of 'all peoples' to revere him; effectively expressing the fulfilment of the redemption promised by the outer pair of texts. To ensure contrast, I took a different approach to texture, tempo and mood. The fragmented nature

of some of the vocal lines (for example, b.43-50) was inspired by Poulenc's sacred choral music ('Qui tollis peccata' from the 'Gloria' of the Mass in G major,¹⁹ and 'Nos fugam capietis' from 'Tristis est anima mea' of the *Quatre motets pour un temps de penitence*).²⁰ However, to maintain some musical unity, I used the same hexachord as in the other motets.

Hexachords

The use of hexachords in music is long-established, dating as far back as Guido d'Arezzo's theories in his *Micrologus* of the early eleventh century. In his hexachord, all adjacent pitches except the third and fourth are separated by a whole tone (Ex3.1).

Ex.3.1: Guido d'Arezzo's natural hexachord



Guido names the pitches in the hexachord after the opening syllable of successive lines of the hymn text 'Ut queant laxis'. The hymnic structure of my first text inspired me to use a hexachord in my own setting in homage to Guido's theories.

The hexachord used throughout my *Three Latin Motets* similarly consists of a scale with four whole tones and a semitone. However, the semitone is placed last rather than third, providing a more 'hazy' sonority suited to the mystical character of the texts. Beginning on middle C, it is in Ex.3.2. This is pitch-class set 6-34 in Allen Forte's categorisation.²¹

¹⁹ Poulenc, Francis: Mass in G major, Éditions Salabert, Paris, 1937.

²⁰ Poulenc, Francis: *Quatre motets pour un temps de pénitence*, Éditions Salabert, Paris, 1946.

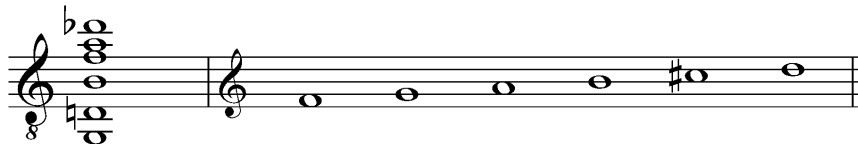
²¹ Forte, Allen: *The Structure of Atonal Music*, Yale University Press, New Haven, 1973, p.181.

Ex.3.2: *Three Latin Motets: The Hexachord on C.*



I chose the 6-34 hexachord because there are some notable uses of it in twentieth century music that I admire. For example, it is the second of the two oscillating chords which close each of the three acts of Berg's *Wozzeck*²² (Ex.3.3).

Ex.3.3: *Alban Berg, Wozzeck, concluding hexachord to all three Acts, in chordal and scalar form.*



This chord appears not only at the conclusions of the acts, but also at significant points through the work, often as a melodic line. For example: the hexachord is used horizontally to signify the idea of death in Act II; the interlude between Act I, scenes 4 and 5 uses it as its main melodic material, and a five-note segment of it is habitually used as the motif to signify *Wozzeck*'s entry and exit.²³ Its use at the very end of the opera, with the G₀-d⁰ dyad spread out over many octaves in the strings and the remaining notes being played in the celesta is surely one of the most beautiful and haunting moments in twentieth-century music.

In Act III, Scene 4 of *Wozzeck*, Berg uses just one hexachord throughout the entire scene (pitch-class set 6-Z47). The profusion of instrumental textures and voicings of the hexachord created by the composer in the scene before the moment of *Wozzeck*'s drowning is something that I have tried to emulate within the more confined timbral medium of a small unaccompanied choir and within the (very!) different spirit of the text.

²² Berg, Alban: *Wozzeck*, Universal Edition, Vienna, 1958.

²³ Jarman, Douglas: *The Music of Alban Berg*, Faber and Faber, London, 1979, pp.49-51.

‘Without Warning’, from Esa-Pekka Salonen’s *Five Images After Sappho*²⁴ also uses the 6-34 hexachord. After the solo soprano’s opening declaration, the song has a profusion of descending patterns in the treble instruments (representing the ‘whirlwind’ in the text) underpinned by shifting chords in the bass. These patterns use quite a few different scales, but one that sticks out particularly is the 6-34 hexachord, often occurring at moments of relative repose. However, each particular chord and its own scale are quite brief, never settling for longer than a few seconds. I wanted to reflect this transitory nature in the Three Latin Motets, but without introducing too complex a set of harmonic fields so as to keep the harmony fairly straightforward for an unaccompanied choir. I achieved this by modulating at will between the twelve transpositions of the hexachord.

The transpositions are set out as chords and labelled in Ex.3.4. The top line (labelled J1-J6) has the hexachords based on a rising whole-tone scale beginning on C, the bottom line has those on the D \flat whole-tone scale (K1-K6). The whole-tone scale is used because the hexachord contains five successive pitches of the full whole-tone scale, and transpositions within lines (for example, J2 to J3, or J3 to J6) contain four common pitches, meaning that ‘modulation’ between them causes less of a change in sonority than a move between lines (such as J1 to K1 – only one common pitch).

Ex.3.4: Three Latin Motets: the twelve transpositions of the hexachord.

The image shows two rows of musical notation on a treble clef staff, each containing six chords. The top row is labeled J1 through J6, and the bottom row is labeled K1 through K6. Each chord is represented by a set of notes on a staff with a key signature and a time signature. The chords are arranged in a sequence that demonstrates the transpositions of the hexachord.

²⁴ Salonen, Esa-Pekka: *Five Images After Sappho*, Chester Music, London, 1999.

I had used this particular hexachord in brief sections of a choral work from 2002, and felt that its sonority was well suited to voices, especially when opened out into chords with pitches spaced a third or fourth apart. It has the advantage of being part of a tonal scale (A minor melodic rising, scale degrees 3 up to 1), giving the choir local reference points to assist with pitching. I attempted to vary the textures, voicings and melodic shapes of the music in order to disguise the use of this single hexachord, as I was keen to avoid the ear tiring of one particular sonority.

On occasion in the Motets, I add one pitch to the hexachord. The use of an extra note to disturb the integrity of the hexachord is analogous to Boulez's methods in his *Dérive I*.²⁵ In this homage to Paul Sacher, the composer creates a hexachord from the letters of Sacher's surname (S = Es = German Eb, A, C, H = German B^b, E, R = French ré = D). Five more hexachords are created, all starting on Eb, using the same intervallic content, but rotating the intervals through the series one position at a time.²⁶ Chord 5 out of the six has a 'wrong' note: A^b is used where in fact A^b should be present according to the system used to derive the chords. Jonathan Goldman states that Boulez advocates in his *Leçons de musique*²⁷ that such an 'accident' 'makes the realisation more interesting than the idea.'²⁸ I agree with Boulez that the artistic side of music is more important than the strict realisation of its structural system, and it is in this spirit that I feel able to add an occasional extra note to the hexachords.

The pitch I add most frequently to the hexachord is the one which transforms it into a traditional minor scale. If a B is added at the end of Ex.3.2, the resulting pitch collection is a full rising A minor melodic scale; if this scale is then re-arranged to begin on

²⁵ Boulez, Pierre: *Dérive I*, Universal Edition, Vienna, 1984.

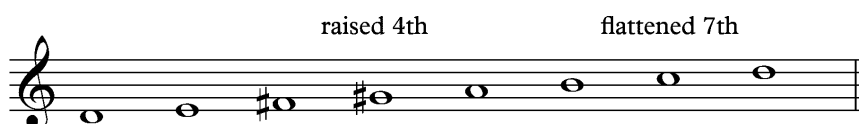
²⁶ see Goldman, Jonathan: *The Musical Language of Pierre Boulez: Writings and Compositions*, Cambridge University Press, Cambridge, 2011, p.119 for full details.

²⁷ Nattiez, Jean-Jacques, ed.: *Points de repère: Tome 3, Leçons de musique*, Christian Bourgois, Paris, 2005

²⁸ Goldman, p.119.

D, it becomes the 'acoustic' scale, or pitch-class set 7-34 (Ex.3.5). This is essentially a major scale with a sharpened fourth and flattened seventh, and the name 'acoustic' refers to those particular scale degrees being the first two chromatic pitches in the natural harmonic series (albeit altered to their nearest equal-tempered equivalents).

Ex.3.5: Acoustic scale on D.



The extra pitch was usually added because I wanted to maintain the elegance of the melodic line, and was struggling to make the music do what I wanted to hear whilst strictly adhering to the hexachord.

In choral music, a precedent for use of the acoustic scale can be seen in many of the later works of Herbert Howells. For example, his *Coventry Mass*²⁹ uses the scale almost straight away (b.7) in the opening 'Kyrie eleison' (Ex.3.6), providing an ethereal contrast to the austere Phrygian-mode opening of b.1-6. The pitch collection in b.7-9 corresponds to transposition K1 with c^2 as the extra pitch completing the acoustic scale.

An example of the acoustic scale in my *Three Latin Motets* can be found in b.64³ of the second motet, 'Magna et mirabilia'. Here, the f^2 in the soprano part does not belong to the J4 transposition used in b.63¹-67², but does complete the acoustic scale on $A\flat$ contained in the notes of that particular transposition (Ex.3.7). This example quite clearly follows the Howells extract by having a stepwise rise of a major triad at the top of the texture, and it is this appearance of the major triad that adds the extra note to the hexachord, creating the acoustic scale.

²⁹ Howells, Herbert: *The Coventry Mass*, Novello, Sevenoaks, 1969.

Ex.3.6: Herbert Howells, *The Coventry Mass*, 'Kyrie eleison', b.1-9.

Quasi lento, penitento ♩ = 70

2 *pp* 3 4 5

Choir
Lord, have mer - cy, —
(unis.)

Quasi lento, penitento ♩ = 70

Organ
pp *p*

Man.

6 *mp* 7 8 9 *pp*

Lord, — have — mer - cy,

mf *pp* *mp* *cresc.*

&c.

Ex.3.7: 'Magna et mirabilia' from *Three Latin Motets*, b.63-67.

S.
A.

63 64 65 66 67

San - ctus, — — — — — quo...

San - - - ctus, — — — — — quo - ni-am

T.
B.

J4 J3

It is also in Boulez's spirit that there is no systematic approach to the changeover between different transpositions of the hexachord. Whereas Boulez uses each hexachord in order (and then through three different permutations) with their number of beats' duration increasing then decreasing largely by integer steps over the course of the work, the choice of transpositions in the Three Latin Motets was usually dictated by my aural pleasure obtained in the resulting change of sonority at the moment of modulation. Bars 32-42 of the first motet illustrate the use of these modulations (Ex.3.8).

Ex.3.8: 'Ave, vero caro Christi' from Three Latin Motets, b.32-42.

The musical score for 'Ave, vero caro Christi' from Three Latin Motets, bars 32-42, is presented for Soprano (S.), Alto (A.), Tenor (T.), and Bass (B.). The score includes dynamic markings and transposition labels in boxed text. The lyrics are: 'O Je - su, O pi - e, O dul - cis Fi - li Ma - ri - ae: mi - se - re - re no...'. The score is divided into two systems. The first system covers bars 32-37, and the second system covers bars 38-42. The transposition labels are J6, K1, J5, K4, and K6. The dynamics are pp, ff, mf, ff, p, mp, pp, p, and mp.

The transposition in use is indicated by the boxed text. The extract begins with the relative stability of five bars of transposition J6, followed by three bars each with their own transposition (K1, K4, K6). There is a deliberate shift from the 'J' to the 'K' set at the beginning of b.37 to add a sense of climax to the music: J6 and K1 contain only two common notes (G and A# = Bb), giving a rather extreme modulation. The diminuendo in bars 37-39 is countered by the more rapid modulations between transpositions, though in

these three bars, they are more closely related, all being from the 'K' set. The music continues with a single line in the sopranos moving to transposition J5, the two combining to form a brief white-note passage.

The use of hexachords in composing the Motets is far more extensive than any system used in the Quintet. I liked the sound of the harmonies and melodies, and felt that I had achieved my aim of incorporating familiar tonal formations within a system-based approach to composing. I felt now that I had to see if I could write effective instrumental music using a similar approach, and decided to write a set of brief compositional studies to explore various techniques.

CHAPTER 4: FIVE BAGATELLES FOR PIANO (October 2010-December 2011)

Origins

The Bagatelles grew from a piano lullaby composed for the christening of my daughter in 2010. I designed that piece to have a restful harmonic system based on extended triads (pitches added to major and minor triads) rather than the more chromatic approach used elsewhere in my music. Later, when wishing to experiment with compositional ideas on a smaller scale, I began to write several piano pieces to see how I might reconcile chromatic and irregular rhythmic ideas with the relatively diatonic and regular-pulsed music of the lullaby. Eventually, the idea grew to create a set of pieces where some of the underlying harmonic ideas in the lullaby (which was adapted into the central, third Bagatelle) would permeate through the remaining pieces.

Tetrachords

The tetrachords in the Bagatelles were conceived at the keyboard as being extended versions of major and minor triads, adding one other pitch, sometimes diatonic to the tonality of the triad, sometimes chromatic. Having a traditional triad as the bass of each of these chords was important to me, as it would serve as the diatonic equivalent of the simple tonic-dominant harmony of the famous *Wiegenlieder* by Schubert (D.498) and Brahms (Op.49, No.4). Usually, the additional notes were chosen simply because they pleased me, and because I liked the sound of the resulting chord in its particular voicing in Bagatelle III.

An extract of the first eight bars in its final Bagatelle III version (Ex.4.1) illustrates my method of creating the tetrachords. When the chords are reduced to the pitches only, they can be arranged with (in most cases) the major or minor triad at the bottom (semibreves in Ex.4.2), and the extra pitch at the top (black noteheads in Ex.4.2).

Ex.4.1: Five Bagatelles for Piano, Bagatelle III, b.1-8.

Ex.4.2: Five Bagatelles for Piano, Bagatelle III, reduction of harmonies in b.1-8.

The process begins quite plainly, with b.1-5 following the method exactly. However, by b.6, the method is expanded a little to have an incomplete triad (C major without a G) and two extra pitches. By b.7, there is effectively the superimposition of a D major triad on the C minor triad, and the basic chord in b.8 is a dominant seventh (without the fifth).

This combination of the simple method of tetrachord formation and the more complicated versions continues for the remainder of Bagatelle III. In fact, often the initial chord of each bar is in itself a tetrachord formed in the same way as those in b.1-5.

The principle of adding free chromatic notes to the diatonic tetrachords also forms the harmonic basis of Bagatelle IV. The LH in b.1 contains two groups; the first is an incomplete version of the tetrachord in Ex.4.2, b.1, the second has all the pitches in Ex.4.2, b.2. As a chromatic counterpart to this, the RH plays pitches that can be related to other keys: C# major (first group) and Eb major (second group).

Bagatelle I

This ternary-form piece contrasts bell-like chords in its outer sections with a long-breathed, highly decorated and often unaccompanied melodic line at the centre. It is an exploration of piano sonority.

The outer passages use dyads with various intervals and durations across a wide compass and dynamic range of the piano, aiming for an arresting opening. The contrast between loud and soft passages imitates distant echoes of the bell sounds. This passage was inspired by passages of music such as the opening of 'La chouette hulotte' from Olivier Messiaen's *Catalogue d'oiseaux*³⁰ as well as the closing of the fifth of Robert Keeley's *Études de Cloches*.³¹ At times, the pitches in short sequences form part of a scalic fragment, often part of a minor scale; for example, the first bar uses notes entirely from F# minor, and b.2²⁻³ uses notes from B minor. This and other fleeting references to diatonic triads in the piece are meant to introduce gradually the much more overt diatonic language of Bagatelle III into the chromatic mix.

The melody of the central section is intended to give the impression of an improvised line free of any sense of pulse. Occasionally, reference is made to the bell texture of the outer sections (LH, b.9, b.14) as a unifying feature. In the final passage from b.21, the durations of the opening are played in reverse, but the dyads are in their original order.

Bagatelle II

This piece plays with the idea of the sustained pedal note and its opposite in the shape of abrupt staccato figurations. Part of the reason for the rhythm of the pedal iterations in the RH at the opening is to disguise their *piano* repetitions behind the much louder LH notes, giving the impression of a far greater sustaining power than the piano is capable of at that

³⁰ Messiaen, Olivier: *Catalogue d'oiseaux*, Book III, Editions Alphonse Leduc, Paris, 1963.

³¹ Keeley, Robert: *Études de Cloches*, Cadenza Music, Newport, Wales, 2009.

tessitura. However, I couldn't resist making a feature of the potential for rhythmic interplay opened up by these reiterations, which led to the gradual accelerations of note values in the RH and culminated in the short-duration repetitions in b.12. The rapidly rising passages in b.22 and b.46 were inspired by a similar figure occurring three times in Szymanowski's magical *Étude*, Op.33, No.4 at b.7-8, b.10-11 and b.22-23.³²

Bagatelle III

I wanted to leave a sense of expectation at the end of this piece, and decided on the crescendo to *mf* at the end. Much of the character of this movement is inspired by James MacMillan's *Angel*,³³ a piece which uses largely sustained single notes played *ppp* save for one louder chord near the centre. The increasingly long rests between events towards the end refer to Harrison Birtwistle's *Ostinato with Melody* for piano,³⁴ where a similar lengthening of silences between paragraphs at the close of the piece occurs. Similarly, the distortion of the regular 5/4 metre set up at the beginning was inspired by the Birtwistle's 'cubistic' undermining of the regular pulse in his *Saraband: The King's Farewell*:³⁵ I found it very suitable as an image of the irregular breathing of a child falling asleep.

Bagatelle IV

As a counterpart to the preceding piece, this has a sense of urgency in its rhythm and rising arpeggio figures. The unifying permeation of the lullaby harmonies previously mentioned is apparent in the LH (for example b.1-4 uses the same harmony as b.1-2 of III). However, the overall language has returned to the chromaticism of the first two pieces; this allows a free choice of sonorities based on the tetrachords dictated by the central Bagatelle. It is contrasting, however, in focusing largely on one duration (the semiquaver) in different

³² Szymanowski, Karol: 12 *Études*, Op.33, Universal Edition, Vienna, 1922.

³³ MacMillan, James: *Angel*, Boosey & Hawkes, London, 1993.

³⁴ Birtwistle, Harrison: *Ostinato with Melody*, Boosey & Hawkes, London, 2000.

³⁵ Birtwistle, Harrison: *Saraband: The King's Farewell*, Boosey & Hawkes, London, 2001.

metrical groupings. The chords of the central section start off by being closely related to the first figure in the LH in b.1: the pitches F[#]-D-E in succession, become F^b-D-E in the RH at b.21.

Bagatelle V

After the relative compositional freedom of the other Bagatelles, I thought it might be interesting to write a complementary piece in which I incorporated several parameters.

I. Poetic Metres

The acceleration of note values explored in Bagatelle II is extended here to form the rhythmic basis of the section up to b.28³. The durations in the RH follow the pattern of two Greek poetic metres: the iamb (∪ –) followed by the dactyl (– ∪ ∪). The inspiration for the use of poetic metres was drawn from pieces by Birtwistle and Benjamin, as discussed in Chapter 1. I was very much in awe of Benjamin's invention in his *Fantasy on Iambic Rhythm*, but felt that I needed a longer pattern to offer myself more latitude in each repetition when it came to varying the durations of individual notes. Each of my repetitions of the iamb-dactyl pair is separated by a silence, and the fourth note in the series has a louder dynamic than the others. In b.1-4, the short values are three quavers long, the long ones seven. In b.5-7, these durations are marginally shortened, and further shortening occurs in b.8-10. In these and subsequent repetitions, a brief note (almost an acciaccatura) is inserted as a developmental device. In b.18, the LH takes over the iamb-dactyl durations, starting off with three and ten semiquavers in b.19 and lengthening considerably up to b.28. The moment of the changeover from acceleration to deceleration is marked not only by the change of the device's place in the texture, but also by the loudest dynamic in this section. The use of this poetic-metrical pattern in acceleration and deceleration gives a sense of structure to the stuttering rhythmic effect of this section.

2. Harmonic Minor Scales

Each of the iamb-dactyl phrases mentioned above uses five or six different pitches taken entirely from minor harmonic scales. The idea was to restrict the choice of pitches within each phrase and give some sense of unity between them, but not to be overt about their tonal origins. However, it is a good way of linking the pitches to the much more diatonic language of Bagatelle III. The scales used in each phrase are set out in Table 4.1. For ease of performance, many pitches were enharmonically re-spelt.

All twelve keys are used in the RH (F# minor forms the basis of the pitches in RH b.19²⁻³), and continue to be used before another system takes over: the use of hexachords.

Table 4.1: Five Bagatelles for Piano, Bagatelle V, harmonic minor scales used in b.1-28.

Bar	Minor harmonic scale
1-4	A minor
5-7	E \flat minor
8-10	C \sharp minor
11-12	D minor
13-14	E minor
15-16 ²	B \flat minor
16 ³ -17 ³	A \flat minor
17 ⁴ -18 ³	B minor
18 ³ -19 ²	C minor
19-21 ¹	G minor (now in LH)
21 ³ -24 ¹	F minor
24 ³ -28	E \flat minor

3. The Hexachord

Bagatelle V uses the same hexachord as the *Three Latin Motets*. It first appears in the LH from b.11 in transposition K1 (see Ex.3.4). Each transposition has each of its six pitches played once as part of three successive dyads, and then another transposition is used (for

example, K2 in b.13² and K5 on the second triplet quaver of b.14¹). The intervals of the dyads are 2nds, 3rds and 4ths circulating through a mathematical arrangement given in Table 4.2. Some of the intervals are inverted, with 4ths becoming 5ths, 2nds becoming 7ths.

Table 4.2: Five Bagatelles for Piano, Bagatelle V, arrangement of intervals in LH, b.11-18.

Bar	Intervallic values (sometimes inverted)
11-13 ¹	4 – 3 – 2
13 ² -13 ⁴	3 – 4 – 2
14 ¹ -14 ²	4 – 2 – 3
14 ²	2 (– 3 – 4) (bracketed intervals not used)
15-16 ²	3 – 2 – 4
16 ⁴ -17 ²	2 – 4 – 3
17 ³ -17 ⁴	4 – 2 – 3
17 ⁴ -18 ¹	2 – 3 (– 4)

In b.20-26¹ in the RH, the same set of parameters was used. After this, a free choice of notes was used as the RH's phrases disintegrate, leading to the final section at b.29.

In b.29-36 the hexachord is used to form the chords. Bars 31-34 are given in Ex.4.3, with each chord labelled with reference to the transpositions in Ex.3.4. No two adjacent chords (unless identical) come from the same transposition, and sometimes I use complementary transpositions, such as the K6-J6-K6 sequence in b.31-32. In this way, I created a total-chromatic language similar to the rest of the Bagatelle. These kinds of juxtapositions would be difficult for choral singing, but present no problem for the piano. Care was also taken to ensure that different voicings and inversions were used for each chord, analogous to similar variations in the use of the triad in conventional tonal harmony. The chords and rhythms used in b.37 to the end are freely chosen, bringing the set of five pieces full circle to the free choice of pitches in Bagatelle I.

Ex.4.3: Five Bagatelles for Piano, Bagatelle V, hexachord transpositions in b.31-34.

The musical score consists of two systems of two staves each. The first system (measures 31-32) shows chords K1, K4, K5, and K6 in measure 31, and J6 and K6 in measure 32. The second system (measures 33-34) shows chords X, K2 (no A, + D), J2, K2 (no C), J1, J3, and J1. Dynamics include piano (p) and mezzo-forte (mf). Trills and triplets are marked with '3' and brackets.

Note: Chords marked 'X' are not part of the hexachord set.

It was interesting to play with such an apparently restrictive set of parameters in this last Bagatelle, especially when trying to use them to make a musically satisfactory result that blended with the relatively freer approach of the others. This required a great deal of time, and I am not sure that it ended up being the most musically effective piece in the set. Much of the detail, such as the circulation of intervals, is not obviously apparent. I felt I had reached a limit in trying to work with so many different parameters at once, and from now on I preferred to work with fewer, but make those more 'telling'.

CHAPTER 5: ARCTURUS (February-July 2011)

Origins

Initially, I wanted to compose a piece for the organ that used extreme textural contrasts, with quiet sustained passages interrupted by energetic chords. I quickly realised that I wanted greater expressive and textural subtlety than could be attained on even the best-equipped of organs, so I decided instead to write for a mixed ensemble of woodwind, percussion and strings. I opted for the gentler woodwinds, and an equal balance of four each of winds and strings. This is closer to the combinations used in Beethoven's Septet and Schubert's Octet, rather than pieces where the solo strings are often swamped, such as Schoenberg's Chamber Symphony No.1.

As for form, I wanted to write a piece in distinct movements, but of a longer duration and greater complexity than the Bagatelles. Approaching the end of the first movement, the music needed to flow straight into the contrasting character of the second, so I decided that all movements should run straight through without a break.

Midway through composing the second movement, I came up with an extra-musical idea that I felt could pull the work together for me and the listener. The piece went from being a mere 'Nonet' to *Arcturus*, and the life-cycle of the eponymous star in the constellation Boötes began to be an aid to describing the music already present, as well as point a way towards how the third movement would be conceived. I liked that I was now writing a piece of programme music, a departure from my previous abstract instrumental works in the portfolio.

Tetrachords

I first decided to use tetrachords for *Arcturus* when analysing the pitch content of a sequence of chords improvised at the piano – this became the first woodwind phrase of the piece. I realised each used a major or minor triad in the treble, adding another pitch in the

bass. The other pitch in the *Arcturus* tetrachords, however, is (very largely) chromatic to the tonality of their basic trichord, as opposed to the diatonic ones of *Bagatelle III*. I thought it would be good to extend this principle and create a reasonably-sized set as the unifying harmonic basis for the piece, adding further tetrachords based on seventh chords or, in one case, quartal harmony. The tetrachords have a distinctly harmonic character, very different from the ordered intervallic tetrachords of Webern's tone rows in his *String Quartet, Op.28* or *Variations, Op.30*.

The set is given in Ex.5.1, each laid out with d^2 at the top to assist comparison. Each tetrachord type is labelled with a letter. The order is dictated by their first appearance in the woodwind passages of b.1-13 of the first movement. Table 5.1 shows how I initially analysed the tetrachords and indicates where they first appear. Ex.5.2 analyses the tetrachords in b.6-9.

Ex.5.1: *Arcturus*: tetrachord set as in 1st movement, b.1-13.

Table 5.1: *Arcturus*, 1st movement: details of the 12 tetrachords.

Tetrachord	Chord formation (using triads as a basis)	Pitch- class Set	First appearance	Transposition in semitones from version in b.1- 13
A	D minor + C \sharp	4-19	Bar 1, beat 2	+11
B	B \flat major + B \flat	4-18	Bar 1, beat 3	0
C	B minor + C \flat	4-Z29	Bar 2, beat 1	+10
D	B minor + A \sharp	4-19	Bar 2, beat 2	+9
E	D major + C \sharp	4-20	Bar 3, beat 1	+9

Tetrachord	Chord formation (using triads as a basis)	Pitch-class Set	First appearance	Transposition in semitones from version in b.1-13
F	B \flat 7 without F + E \flat	4-16	Bar 6, beat 3	+4
G	A \flat 7 without C + D \flat	4-16	Bar 7, beat 4	+5
H	B diminished + C \sharp	4-13	Bar 8, beat 2	+11
J	G \sharp minor + D \flat (or G \sharp diminished + D \sharp)	4-18	Bar 8, beat 2	+10
K	B minor + C \sharp	4-14	Bar 8, beat 3	+5
L	Quartal harmony on D \sharp + D \flat	4-6	Bar 8, beat 4	+1
M	B diminished + E \flat	4-12	Bar 13, beat 3	+5

Ex.5.2: Arcturus, 1st movement: use of tetrachords in b.6-9.

Tetrachord type: C F A B G H J K L C X

Note: Chords marked 'X' are not part of the tetrachord set.

Another difference between these tetrachords and those in the Bagatelles is that these have fixed voicings (even when transposed). As such, they provide a recognisable aural signature in the piece wherever they appear. An example from the 'stabbing' chords in the final movement makes this clear: the tetrachords even at this late point in the piece retain their original vertical arrangement of intervals between pitches (Ex.5.3). Any sense of the tonality of the triads used in making them up is strongly disturbed by their having the 'extra', dissonant, note in the bass of the voicing. This fundamental opposition between the bass note and the triad above chimes well with the programmatic idea of the piece: the relentless energy of the star, which eventually fizzles out to nothing, just as the tetrachords dissolve into a mass of semiquavers and then dyads after the climax (fig. 40).

Ex.5.3: *Arcturus*, 3rd movement: use of tetrachords in b.110-112.

Tetrachord type: C B F G D J

110 111 112

Fl., Clt, Bsn, Vib., Vcl.

The matter of the tetrachords having fixed voicing is important when it comes to analysing their pitch content. In Table 5.1, it can be seen that three pairs of chords are actually of the same pitch-class set: A and D, B and J, and F and G. The second and third pairs are inverted forms of each other, whereas A and D are simply re-voicings of the same chord: a minor triad with an added major seventh. Whereas Allen Forte's system avoids expressing non-tonal music in terms of traditional harmonies,³⁶ I cannot deny the importance to my ear of having the triad in the prominent position at the top of the chord in the fixed voicings. These voicings help make the chords more memorable and distinguishable from each other, which is why the pairs of chords from the same pitch class set are listed separately. I also felt that, by having more than one note in addition to the three making up the triad, I would obscure the triadic portion too much. The occasions when I extend the number of notes in the chords to five or more are limited and brief.

The twelve tetrachords form the vast majority of the chords used in the woodwind in b.1-39 of the 1st movement. Only very occasionally do a small number of other chords creep into the music. For example, I used three-note chords in b.3³⁻⁴ because I did not feel that the flute would balance so low in its range with the other wind instruments playing *forte*, so I doubled it up with the saxophone at the top of the texture. This led to similar conclusions to the woodwind phrases elsewhere, such as in b.9, b.20 and b.39.

The tetrachords are extended to pentachords by the strings in b.55-77, usually by the addition of a pitch diatonic to the basic triad. Similar variations by addition or removal

³⁶ see Forte, *The Structure of Atonal Music*, p.12, first footnote.

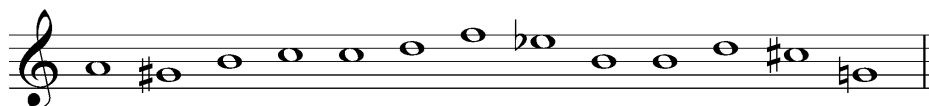
of a pitch from the tetrachord are used in the 2nd movement, b.1-4 and elsewhere; this is used as a linking device between the two movements. The set re-appears in the final movement (b.31-49 in the wind and vibraphone), and gradually dominates the harmony of the interjections from b.78 to b.146. It provides harmonic unity for the whole piece.

Isorhythm

The third movement of *Arcturus* is the first piece in the portfolio to use isorhythm. It was tempting to use it to ensure an effective structuring of the music even as it portrays a disintegrating star, the *color* and *talea* almost representing the elemental building blocks of the universe released as the star dies.

The *color* is derived from the opening violin part in the first movement up to the moment where the viola enters; this was chosen to add a measure of unity to the piece and because I felt it was a suitable length. It is given in Ex.5.3.

Ex.5.4: *Arcturus*, 3rd movement: color – prime version (P-0).



Pitch number: 1 2 3 4 5 6 7 8 9 10 11 12 13

The *color* is manipulated in a serial manner, analogous to twelve-note methods. It occurs in transposed, inverted, retrograde and retrograde-inverted forms, hence its being labelled ‘prime version’ in Ex.5.3. In fact, the first appearance of the *color* is in 1-8 (inverted form transposed up 8 semitones) in the clarinet and violin in b.3. In addition, selected *color* pitches are occasionally displaced by an octave or two.

The *talea* has seventeen durations, derived from the durations of the woodwind chords in b.13-20 of the first movement. However, some of the durational values were combined or altered to give an interesting variety in the *talea*. The original durations and

the final form of the *talea* are given in Table 5.2. The first appearance on the isorhythmic line occurs in the clarinet and violin from b.3 (Ex.5.4). The *talea* is used with several different durations as its unit value, from a crotchet (clarinet and violin in b.3), a quaver (ibid. in b.22), triplet quaver (flute, soprano saxophone, bassoon, vibraphone in b.31 from duration k), dotted quaver (clarinet and lower strings in b.50), minim (flute in b.67), dotted crotchet (clarinet in b.67) and semiquaver (bassoon and double bass in b.71).

Table 5.2: *Arcturus*, 3rd movement: *talea* and its derivation from 1st mvt. b.13-20 woodwind chord durations.

Bar no. in 1 st mvt. in which chord begins	Durations in quavers between beginning of successive Woodwind chords	Final duration in <i>talea</i>	Labelling letter*
13	3	3	A
	3	3	B
14	2	7	C
	5		
	3	3	D
15	1	1	E
	2	6	F
	4		
16	2	2	G
	3	3	H
	4 (omitted)		
17	3	3	J
	3	3	K
18	7	7	L
	3	5	M
19	2		1
	1		
	2	2	P
	4	6	Q
20	2 (quaver + triplet crotchet)		1
	1 (triplet crotchet)		
	1 (triplet crotchet)	1	S

*The durations in the *talea* are labelled with a letter for reference.

Ex.5.5: *Arcturus*, 3rd movement: isorhythmic line b.3-27.

(Violin plays two octaves higher)

Clarinet in A
 3 4 5 6 7 8 9 10
 I-8 of the Color
 Talea unit is one crotchet

Cl.
 11 12 13 14 15 16 17 18 19
 P-0 of the Color

Cl.
 20 21 22 23 24 25 26 27 &c.
 Talea unit is one quaver

The *talea* was not treated serially; this is because I feel it is more difficult to perceive (as well as recall) durational relationships over the scale of a 17-duration *talea* than the pitch relationships in a *color*. Instead, I used it as the basis for other rhythmic aspects of the music: for example, dictating the number of notes in the rotating semiquavers used in b.2-67. Ex.5.5 shows how these are derived from the *talea* values and the interest achieved in the variety of figurations.

Ex.5.6: *Arcturus*, 3rd movement: derivation of number of notes in rotating patterns from *talea*.

Clarinet in A
 27 28 29 30
 3-note figure
 7-note figure

Violin
 3-note figure

Cl.
 31 32 33 34
 4-note figure (3+1 from *Talea*)

Vln.
 35 36 37 38
 6-note figure
 5-note figure (2+3 from *Talea*)
 3-note figure

In order not to have too small a number of notes in the figures, some of the values of the *talea* are combined. A figure with one note would have been too hard to play on a woodwind instrument at this tempo (crotchet = 132), and a two-note figure might have sounded too much like a trill, which would not fit the character of the music at this point.

At b.92, the viola plays 1-0 of the *color* with the *talea* values (starting from duration f) dictating the number of repeated semiquavers on each pitch. Starting in b.99, the soprano saxophone (starting in b.99) is playing a line of freely-chosen pitches in which the melodic figures are dictated by the *talea*. After the model of the rotational figures of b.3-67, the number of pitches in each figure is dictated by the *talea*, but this time, two adjacent figures in the *talea* are used to enumerate the number of times a particular figure is repeated.

Table 5.3 shows how this was generated.

Table 5.3: *Arcturus*, 3rd movement: details of soprano saxophone figures in b.99-117.

Bar no.	First <i>talea</i> value (= number of pitches in figure)	Duration letter	Second <i>talea</i> value (= number of repetitions of figure)	Duration letter	Is figure transposed between repetitions?
99	3	A	3	B	No
100 ²	7	C	3	D	Yes
102 ¹	1	E	6	F	No
103 ³	2	G	3	H	No
104 ¹	3	J	3	K	Yes
105 ¹	7	L	5	M	Yes
107 ³	1	N	2	P	No
108 ³	6	Q	1	R	n/a
109 ¹	1	S	3	A	No
109 ³	3	B	7	C	Yes
111 ²	3	D	1	E	n/a
111 ³	6	F	2	G	Yes
112 ³	3	H	3	J	Yes
114 ¹	3	K	7	L	Yes
115 ³	5	M	1	N	n/a
116 ¹	2	P	6	Q	Yes
117 ¹	1	R	1	S	n/a

As the *talea* has an odd number of durations, it is used twice before the soprano saxophone line stops to rejoin the *brutale* chords. Some figures are transposed on repetition: usually transposition occurred in the figures with more pitches, or figures repeated many times, in order to avoid too monotonous a repetition. Ex.5.6 demonstrates the resulting music. The flute part in b.114-134 is constructed in the same way.

In b.136, the woodwind play the *talea* in their chords starting on beat 2, and the strings start it on beat 3. The climax of the piece is reached when the two groups eventually arrive on a chord at the same time in b.144 (duration q in the woodwind, p in the strings).

Ex.5.7: *Arcturus*, 3rd movement: derivation from *talea* of soprano saxophone line, b.99-117.

The musical score for Soprano Saxophone, measures 99-117, is presented in a single staff. The music is in 3/4 time and features a complex rhythmic structure derived from a *talea*. The score is annotated with various rhythmic groupings and dynamics:

- Measures 99-100: A 3-note figure played 3 times, marked *p*.
- Measures 100-102: A 7-note figure played 3 times (7 x 3), marked *f*.
- Measures 102-103: A group of 6 notes (1 x 6), marked *p*.
- Measures 103-104: A group of 3 notes (2 x 3), marked *p*.
- Measures 104-105: A group of 3 notes (3 x 3), marked *f*.
- Measures 105-106: A group of 5 notes (7 x 5), marked *f*.
- Measures 106-107: A group of 2 notes (1 x 2), marked *p*.
- Measures 107-108: A group of 6 notes (6 x 1), marked *p*.
- Measures 109-110: A group of 3 notes (1 x 3), marked *f*.
- Measures 110-111: A group of 7 notes (3 x 7), marked *p*.
- Measures 111-112: A group of 1 note (3 x 1), marked *f*.
- Measures 112-113: A group of 2 notes (6 x 2), marked *f*.
- Measures 113-114: A group of 3 notes (3 x 3) - last repetition has altered pitches, marked *mp*.
- Measures 114-115: A group of 7 notes (3 x 7) - some repetitions are inverted, marked *f*.
- Measures 115-116: A group of 1 note (5 x 1), marked *f*.
- Measures 116-117: A group of 6 notes (2 x 6), marked *f*.
- Measures 117-118: A group of 1 note (1 x 1), marked *f*.

Why this game-playing with the *color* and *talea*? Why not keep the *color* at the same pitch and in its prime form to keep it recognisable? Why not keep the same unit value for the *talea*? At this stage in the portfolio, I felt that the parameters might be too musically limiting, and the audience would quickly tire of hearing the same sequence of pitches (rather than delight in making a connection), even with the durational alteration afforded by the *talea*. This was also why the *talea* had quite so many durations.

The use of isorhythm was effectively of more benefit to me in this piece as a structural device, rather than being a clearly audible device for the audience. As a result of hearing *Arcturus* in performance, I altered my thinking, and in the Symphony decided to remain with the prime form of the *color*, even though I allowed some transposition after a few repetitions. Similarly, there was a smaller number of durations in the *talea*, and its durational unit was changed very infrequently, and only by a small amount.

Although I found the process of using isorhythm quite laborious and mechanical at first, as the third movement progressed I found it became very fertile ground for creating material. I felt that *Arcturus* was the most satisfying piece in the portfolio up to this point in the way that it combines its compositional systems with its programmatic content to form a convincing structure and compelling trajectory. I was, therefore, keen to continue with a programmatic element in the next pieces to explore other ways of achieving a similarly satisfying result, as well as continuing to explore further structural systems.

CHAPTER 6: FORMS IN MOVEMENT (January-August 2013)

Origins

On a visit to the Tate Modern gallery in 2012, I was struck by the sculptures by Barbara Hepworth. I read further about her work and discovered that in the 1950s she had made sculptures³⁷ inspired by Byrd's *Pavan and Galliard: The Earl of Salisbury*.³⁸ The Pavan sculpture is in bronze: thick, heavy and stately. By contrast, the Galliard sculpture is in lively, shining strips of copper. Their forms are similar – concentric circles flying out from a solid base.

As an organist with an interest in early English keyboard music, I knew Byrd's pieces well and admired them, along with several of his keyboard Fantasias. I decided to see if I could write my own response to Byrd's dances: a work which reflected the characteristics of Hepworth's sculptures, and developed the material from Byrd's music.

Whilst thinking about Byrd and Hepworth, I received a commission for a 12-minute piece for oboe d'amore and piano, so decided to try and combine this commission with my idea. The commissioner wanted to expand the repertoire for the oboe d'amore. In writing for this unusual instrument, I looked to the many examples in the vocal works of J. S. Bach and, in more contemporary music, Dutilleux's *Timbres, espace, mouvement*,³⁹ in which it plays a prominent solo role. I enjoyed exploring the instrument's muted and dark low notes as well as the flexibility of its upper range.

Structure

I wanted to quote from Byrd, as his style and sound world were my inspiration, and therefore had to handle carefully the transition from my contemporary style to one over

³⁷ Hepworth, Barbara: *Forms in Movement (Galliard)* (1956, Wairarapa Museum of Art and History, Aratoi, New Zealand) and *Forms in Movement (Pavan)* (1956-9, cast 1967, Tate St Ives, UK)

³⁸ Byrd, William: *Pavan and Galliard: The Earl of Salisbury*, No.15 in *Musica Britannica*, Vol.27, third revised edition, Stainer & Bell, London, 2000.

³⁹ Dutilleux, Henri: *Timbres, espace, mouvement* (revised version), Editions Alphonse Leduc, Paris, 1991.

400 years old. I decided to open with a Prelude containing largely my own music, and use the sonority of the most common chords in Byrd's music – the major and minor triads – as a bridging device from his music to mine.

In the first draft of the Pavan, I wrote out the first half of Byrd's piece note-for-note, followed by the version in which the oboe d'amore plays the main melody in canon with the repeat of the original (it was a great delight to discover how well this worked). However, I felt the resulting stylistic difference with my music too jarring, and so I altered Byrd's music, sometimes gently, sometimes rather less so, to fit with the non-functional tonal language of the Prelude. After that, I thought it would be fun to write a contrasting 'anti-Pavan' which took melodic fragments from Byrd's original and placed them in a completely different rhythmic and textural context. Eventually, the music returns to the second half of Byrd's piece to round off the movement where it began: this created the feelings of resolution and homecoming found in both Byrd's dances and Hepworth's sculptures.

The distortion of rhythm and metre of the Pavan was taken further in the livelier Galliard, in which Byrd's melodic material is submerged in a more complex piano texture, and the oboe d'amore plays new material. I kept Byrd's own structure this time, including the repeat of the first half of the Galliard (b.11⁵-28).

The fourth movement derives its material from Byrd's Fantasia⁴⁰ from *My Ladye Nevells Booke*. This work has long been a favourite, mostly because of the rhythmic foreshortening of the imitation point towards the end, leading to a nine-crotchet pattern distorting the underlying 4/2 metre in b.93-94. Here, I have the oboe d'amore play the soprano line of the opening exactly as Byrd wrote it (the version in *My Ladye Nevells Booke* starts at b.46³ of the edition published in *Musica Britannica*), but surrounded by complementary music of my own on the piano. Later on, some of Byrd's points of imitation

⁴⁰ Byrd, William: Fantasia, No.27 in *Musica Britannica*, Vol.27, 3rd revised edition, Stainer & Bell, London, 2000.

are selected for my own treatment before the piano's opening music gradually transforms into the music of the Prelude, leading to the main climax and resolution in a harmonic language a little closer to the diatonicism of Byrd.

Prelude

At the initial stages of composing this movement, I had in mind the unforgettable triadic sonorities (a pair of second-inversion triads of D-flat major and A major) of the opening of Messiaen's 'Action de grâces', the first song of *Poèmes pour mi*.⁴¹ This is similarly an introductory movement to a cycle of pieces for a soprano voice with much the same range as the oboe d'amore. My own opening refers to this, avoiding a triad in the LH to elude too bald a reminiscence. I also avoid Messiaen's rhythmic canon for the same reason, having instead a freer approach to the durations of the chords, but bringing the hands together as the oboe d'amore enters, like the chords just before the vocal entries in Messiaen's work. I also change the type of sonority at this moment, as Messiaen does in moving suddenly from the simultaneous use of the third mode of limited transposition (RH) and the second (LH) to both hands using the sixth mode.

The oboe d'amore initially plays arabesques, later introducing snippets of Byrd's Pavan as a premonition; for example, in b.25, the melody from b.3-4 of Byrd's Pavan is played with slightly altered durations.

Pavan

The movement opens with a rendition of Byrd's original piece in the manner of a distorted reminiscence, keeping his music within the realm of the harmonic and rhythmic language introduced in the Prelude. On occasion, some quite overt tonal practices are alluded to, especially the A-minor ii^o-V-i sequence in b.7⁸-9. From b.9, Byrd's melody is played in canon at the fifth between the RH of the piano and the oboe d'amore, significantly re-harmonised

⁴¹ Messiaen, Olivier: *Poèmes pour mi*, Editions Durand, Paris, 1937.

but still with some tonal references. The harmony becomes more complex from b.17 (though never losing sight of its grounding in triads) as the transition is made to the 'anti-Pavan' in b.23. From this point, melodic fragments from Byrd's piece are treated to motivic development.

Halfway through the movement (b.48), attention turns to the second section of Byrd's original; the oboe d'amore part in b.50-51 derives from the LH, b.8⁴-9⁴ in the original Pavan. The original is more explicitly heard at the end of the movement; at first in the solo oboe d'amore (echoing the use of solo piano at the beginning of the movement), then with piano.

Galliard

Byrd's own melodic ideas are placed in the middle of the piano texture, whilst the oboe d'amore plays entirely original material. The harmonic language bears a similarity to the tetrachordal system first used in *Arcturus* (see Chapter 5), with a tonal triad at the top and a note dissonant to it at the bottom. The points of imitation in Byrd's *Galliard* are taken in turn in my piece, so Byrd's b.1-4¹ correspond to my b.2-6, his b.5¹⁻² to my b.7-10. After a varied repeat, reference is made to Byrd's b.8 alto part in the oboe d'amore at the climax of the movement in b.25⁸-26⁴, and then immediately to the point of imitation opening the second half in my b.27. Bar 40 in my piece refers to Byrd's final point from his b.12, and the oboe d'amore concludes with a reference to the tenor part in Byrd's last bar in my b.51.

Fantasia

In b.1-20, the piano uses church-bell change-ringing permutations through two modes (one for each hand). I chose to use this because I thought it would be fun to expand on the idea of the bell-sounds used in the *Bagatelles* as well as reflect the geographical origins of Byrd's music by employing this English permutational system which developed at around Byrd's own lifetime (rather than using a more modern one), even though, thanks to there being

two simultaneous change-ringing processes, it may not be obvious. The idea of using change-ringing in contemporary music was inspired by the third of Rob Keeley's *Études de Cloches* for piano.

In order to fit with the untransposed Aeolian mode of the straight quotation of the soprano line of Byrd's original *Fantasia*, the RH employs exactly this mode, whilst the LH uses a chromatic 6-note mode which shares only two pitches with the RH, leading to 11 pitches being used overall and for, once, avoiding the total chromatic. The RH permutes its mode (Ex.6.1) through the 'Plain Bob Triples' pattern (Table 6.1). 'Triples' indicates a permutation through seven bells, appropriate to the seven different pitches of the mode. Pitch number 8 (marked in parentheses) is always sounded at the end of each sequence, like the tenor bell in a peal tower, and is not included in the permutations in Table 6.1. The LH permutes the mode in Ex.6.2 through the 'Grandsire Minor' pattern (Table 6.2), used to contrast with the Plain Bob pattern of the RH; however, it does not have a tenor-bell note at the end of each sequence, in contrast to the RH.

Ex.6.1: *Forms in Movement, Fantasia*, mode in RH, b. 1-21'.



Table 6.1: *Forms in Movement, Fantasia*, Plain Bob Triples permutations I-IX as used in RH b.1-21'.

Permutation	Sequence	Starting point
I	1-2-3-4-5-6-7	b.1
II	2-1-4-3-6-5-7	b.8 ^{4½}
III	2-4-1-6-3-7-5	b.11 ^{4½}
IV	4-2-6-1-7-3-5	b.13 ^{3½}
V	4-6-2-7-1-5-3	b.14 ^{3½}
VI	6-4-7-2-5-1-3	b.16 ^{1½}
VII	6-7-4-5-2-3-1	b.17 ^{2½}
VIII	7-6-5-4-3-2-1	b.19 ²
IX	7-5-6-3-4-1-2	b.20 ²

Ex.6.2: *Forms in Movement, Fantasia, mode in LH, b. 1-21*¹.

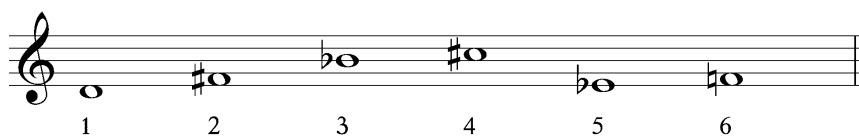


Table 6.2: *Forms in Movement, Fantasia, Grandsire Minor permutations I-VIII as used in LH b.1-21*¹.

Permutation	Sequence	Starting point
I	1-2-3-4-5-6	b.1
II	2-1-3-5-4-6	b.8 ^{3/2}
III	2-3-1-4-5-6	b.10 ^{4/2}
IV	3-2-4-1-6-5	b.12 ^{2 1/2}
V	3-4-2-6-1-5	b.13 ^{2 1/2}
VI	4-3-6-2-5-1	b.14 ^{3 1/2}
VII	4-6-3-5-2-1	b.16 ^{4 1/2}
VIII	6-4-5-3-1-(2)	b.18 ^{4 1/2}

The first time through the modes, the sequence of pitches is repeated, continued and restarted several times, as a more gentle way into the movement than would otherwise have been possible had the permutation begun immediately. From b.7, Permutation I is heard straight through all in one go, and after a small hiccup at the beginning of Permutation II (b.9³⁻⁴), the permutations are followed strictly. As in previous modal usage, free octave transposition of the pitches is used. In both hands the durations are freely chosen; until b.13, the notes in both hands are sounded simultaneously, but thereafter gradually separate rhythmically. Note that the very last number in Permutation VIII of the Grandsire Minor does not occur, as the next section begins at this point.

At b.21, the music changes significantly to a free chromatic development of a point of imitation from Byrd's *Fantasia* (Byrd, b.56), with rather dark undertones after the relative brightness of the opening section. The end of this passage (b.41) overlaps with a quick return to the opening in the piano before the next Byrd point (his b.72) arrives in the oboe

d'amore in b. 44⁴, signalling the return of the triads of the Prelude in the piano. The lengthening of durational values at this point in the music reflects the same process in Byrd's original. From here on, Byrd's points of imitation and the material from my Prelude are freely intertwined, with the increasing intensity reflecting the increasing closeness of imitation in Byrd's original, until dissipating into a single line in the piano after the climax. The work concludes with a final note-for-note quotation in the oboe d'amore: Byrd's b.97-8 in the Alto part, the final melodic point.

On hearing the first performance, I was struck by the delicacy of the oboe d'amore sound, which was closer to the cor anglais than I had imagined when composing the piece. However, this fits the overall character of the piece rather well, and I feel added a vocal character to the timbre, enhancing the connection with Byrd and his choral music. It is an instrument that I would like to explore further soon.

CHAPTER 7: SYMPHONY NO. I (September 2012-February 2014)

Quotation

This two-movement Symphony is composed in memory of my father, who nurtured my interest in music from a very young age. I wanted to try and represent his character in the music: his animated sense of humour, and his love of puns, music and nature. Having just written an English piece, I wanted to pay homage to our home country by using his favourite Scottish bagpipe melody, *Lochanside*, as a principal source for the piece (Ex.7.1).

Ex.7.1: 'Lochanside', by Pipe Major John MacLellan, DCM.

Retreat march

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

I considered retaining at least some of the grace notes peculiar to the bagpipes, but finally felt that they wouldn't transfer well to orchestral instruments, which are built in a more complex way than the keyless bagpipe chanter. This is especially so as the grace notes are performed with great rapidity on the bagpipes, and serve more as a means of articulation than decoration to the otherwise unbreakable flow of melody inherent in the instrument.

Lochanside is monodic, allowing me to explore it in different ways from Byrd's music in *Forms in Movement*. This includes building cluster chords out of the melody notes (Mvt.1, b.21, brass; b.26-27, woodwind; b.32-34, bassoons, horns, violas, cellos), using it as part of a longer melodic line (Mvt.2, b.31²-34 & b.40³-42, violin 1), and using a direct quotation as the principal melodic material harmonised in a fairly tonal style (Mvt.2, b.190-198).

Models I: Symphonic works

There are three works that had a strong influence on my Symphony: Hugh Wood's Symphony,⁴² Oliver Knussen's Symphony No.3,⁴³ and Robin Holloway's Second Concerto for Orchestra.⁴⁴ Knussen's Symphony was influential in terms of its scale: being a tautly-constructed work of only fifteen minutes, it seemed a sensible model to follow in what is my first essay in symphonic form. Knussen's use of the chaconne in the final movement inspired me to conclude with the similar passacaglia, and his running together of separate movements suggested the slow movement–intermezzo–finale sequence in my second (and final) movement.

Wood's and Holloway's pieces both use quotation: Holloway as amusing and ironic references to popular melodies in wild juxtapositions with his own music, Wood integrating quotations from Wagner and Mozart into the fabric of his own music, growing out of what comes before. Holloway's piece was also used as a source for textures and melodic inspiration, particularly the use of florid parallel major thirds. For example, the passage first heard in the violins and upper woodwind in Holloway's piece, 2 bars before fig.12, inspired similar passages in the first movement of my Symphony, such as b.36-38. It also showed me how to harmonise a quotation of a tonal melody in a language that sits alongside the Third Mode used throughout the piece. Holloway's quotation of *Arrivederci Roma* at 4 bars before

⁴² Wood, Hugh: Symphony, Chester Music, London, 1995.

⁴³ Knussen, Oliver: Symphony No.3, Faber Music, London, 1987.

⁴⁴ Holloway, Robin: Second Concerto for Orchestra, Boosey & Hawkes, London 1979.

fig.37 has a combination of seventh or ninth chords in the key of the melody, and others which use the same pitches of the melody but as part of another key (see Ex.7.2).

Ex.7.2: Robin Holloway: *Second Concerto for Orchestra*, harmonisation of *Arrivederci Roma*, 4 bars before fig.37.

(Some of the pitches have been re-spelled from the original to make the tonal references clearer)

This passage was a model for the second Movement of the Symphony, where the last third of *Lochanside* appears complete in the first trumpet (b.190): the brass harmonise the melody in parallel seventh chords in the key of A major, with the bass instruments providing a pedal on D (the 'tonic' of the Symphony). Meanwhile the upper strings and woodwind highlight selected notes from the melody with out-of-key added-sixth chords, gradually getting closer to A major.

Hugh Wood's Symphony uses a passacaglia as its Finale. A nine-bar, twelve-tone passacaglia theme is used variously as a bassline, melody, and interior line, in a coherent movement spanning a variety of tempi and moods. This variety was influential in the structure of my final movement, as well as in using the passacaglia line throughout the range of the orchestra and texture. Towards the Finale's conclusion, Wood returns to his opening material, then transforms the music into a free coda settling in A major, eventually dropping the passacaglia line. I do a similar thing by abandoning the passacaglia line after b.152 and leading to a full statement of the final part of the *Lochanside* melody based in D major, which has been alluded to during the course of the movement.

Models 2: Passacaglias

I examined David Matthews's Chaconne⁴⁵ (in which I found the chaconne bass to be rather short, but liked the idea of contrasting interludes, deciding in the end to have sections of the passacaglia in different tempi), Webern's Passacaglia, Op.1⁴⁶ (particularly his concealment of the beginning and end of the passacaglia line), Lutosławski's Concerto for Orchestra,⁴⁷ third movement (opening with a passacaglia section based on a D major triad and adjacent notes, as does the opening of my passacaglia line) and the last movement of Brahms's Symphony No.4 (as an example of how to pace a passacaglia symphonic finale with changes of key and mood).

The Mode

For the pitches not referring to *Lochanside*, Symphony No.1 uses one particular nine-note mode: Messiaen's 'third mode of limited transposition',⁴⁸ (Ex.7.3).

Ex.7.3: *Symphony No. 1: the nine-note mode in its four transpositions.*

Transposition i

Transposition ii

Transposition iii

Transposition iv

⁴⁵ Matthews, David: Chaconne, Faber Music, London, 1987.

⁴⁶ Webern, Anton: Passacaglia, Op.1, Universal Edition, Vienna, 1908.

⁴⁷ Lutosławski, Witold: Concerto for Orchestra, Chester Music, London, 1972.

⁴⁸ Messiaen, Olivier: Technique de mon langage musical, translated by John Satterfield, Editions Alphonse Leduc, Paris, 1956, p.60.

I wanted to return to what I felt was a successful modal technique used in the *Three Latin Motets*, but explore a more complex mode suited to the instrumental context. The mode consists of a symmetrical scale with three groups of a pair of rising semitones each separated by a tone. It provides scope to create many major and minor triads and sevenths as the basis for the harmony, fitting in with the tonality of *Lochanside*. Having written pieces when a teenager using Messiaen's second mode, I was keen to use a different mode of his and see how I could make it my own. I enjoyed using the brighter sound of parallel major thirds (as opposed to the minor thirds inherent in the second mode), as well as the different harmonic results obtained from aggregating the third mode's pitches into widely-spaced chords based on diatonic triads. I was careful to avoid using Messiaen's own characteristic chord formations in this mode, except at brief moments of deliberate homage.

As with the hexachords in the *Three Latin Motets*, modulations between transpositions were chosen for the sake of a change in sonority or tonal colour. An example of this can be seen in Ex.7.4, where the chords in Movement I, b.44-49 belong to Transposition iii, but the chord in b.50 is in Transposition iv.

Ex.7.4: *Symphony No. I, 1st movement: woodwind chords in b.44-50.*

The musical score for Ex.7.4 shows woodwind chords in measures 44-50. The notation is in 4/4 time and consists of two staves, treble and bass clef. Measure 44 starts with a 7-measure rest in the treble staff and a chord in the bass staff. Measure 45 continues with chords in both staves. Measure 46 has a 5-measure rest in the treble staff and a chord in the bass staff. Measure 47 has a 4-measure rest in the treble staff and a chord in the bass staff. Measure 48 has chords in both staves. Measure 49 has chords in both staves. Measure 50 has chords in both staves and is followed by '&c.'. Dynamics are indicated as *p dolce* for measures 44-45, *mf p* for measures 46-47, and *f* for measures 48-50.

The chords in b.44-45 occur alone as an event in themselves; in b.48-49, however, they act not only as a re-voiced repeat, but also as an accompaniment to the flutes, and to assist the transition towards a return of the opening material in the cellos in b.50. For this

purpose, the final chord comes from a different transposition of the mode to signal that a new musical direction is about to be taken: the re-appearance of elements of the First Subject in the lower strings.

Tetrachords

The tetrachord set from *Arcturus* (on p.45) reappears in the first movement of Symphony No.1 as the basis for much of the harmony. I was delighted to find that all but one of the twelve (chord L) could be accommodated in the third mode, and this gave me the opportunity to explore their sonorities in a different context, as well as using them as the basis for larger chord aggregates. For example, in Movement I, b.43², the chord in the upper strings and brass is tetrachord A up two semitones. In the woodwinds (except flutes) and 2nd horn in b.44-50, the harmonies are pentachords constructed in a similar fashion to the string pentachords in b.55-77 of the first movement of *Arcturus*. The chords are shown in Ex.7.4, and Table 7.1 explains their construction. It should be noted that, for this Symphony, tetrachord F in Ex.5.1 is altered to have an E \flat in place of the original E \flat .

Table 7.1: Symphony No.1, 1st movement, b.44-50: construction of woodwind pentachords.

Chord	Tetrachord letter	Transposition from original	Basic chord	Extra note: diatonic	Extra note(s): chromatic
44 ²	C	0	B minor	G \sharp	C \flat
45 ¹	F	+2	C ⁷ without G	G \sharp (=A \flat , part of F minor)	F \sharp
45 ²	F	0	E ⁷ without B	C	B \flat
48 ²	C	0	B minor	G \sharp	C \flat
49 ³	F	+2	C ⁷ without G	G \sharp (=A \flat , part of F minor)	F \sharp
50 ¹	M	+2	C \sharp dim.	F (part of D minor)	B \flat

It could be argued that all the chords above are extensions of, and additions to, the dominant seventh chord, or ‘altered dominants’, as termed by Steve Reich in his programme note to *The Desert Music*.⁴⁹ However, that was not how I conceived of them; they were instead derived from the tetrachords within the nine-pitch mode. The chords are also inspired by the twelve pentachords making up the repeated sequence used as the harmonic basis of the final movement of Oliver Knussen’s *Symphony No.3* (Ex.7.5); four of these (of which three form the same pitch-class set) also happen to be subsets of the 6-34 hexachord used in my *Motets*.

Ex.7.5: Oliver Knussen: *Symphony No.3*, pentachords of final movement, figs.26-30.

5-Z38 5-13 5-28 (subset of 6-34) 5-19 5-28 (subset of 6-34) 5-Z18 5-13 5-20 5-28 (subset of 6-34) 5-Z18 5-33 (subset of 6-34) 5-10

Isorhythm

After enjoying using isorhythm in the final movement of *Arcturus*, I wanted to return to it in the *Symphony*. However, I decided to keep things simple and not use serial techniques on the *color* or change the durational unit of the *talea* very much, so that the audience had a chance to hear the isorhythm in a way that was almost impossible in the earlier work. I only use isorhythm in Movement II: instead of a conventional passacaglia, I treat the repeating bass-line isorhythmically, so that the pitch repetitions do not coincide with the durational ones. I hoped to preserve a recognisable passacaglia bass without a sense of its being too repetitious. It was important to me to retain the 3/4 metre associated with passacaglias, so I

⁴⁹ Reich, Steve: *The Desert Music* (1984), Boosey & Hawkes, 1985. Composer’s notes – <http://www.boosey.com/cr/music/Steve-Reich-The-Desert-Music/549> – accessed on 21 July 2014.

chose a nine-duration *talea* which had a total durational value of a multiple of 3, in this case 30, giving a five-bar bass pattern when the *talea* is expressed in quavers (as is the case for most of the movement). The eleven-pitch *color* is derived in part from *Lochanside* (its first five pitches correspond to the first five notes in the bagpipe tune), and the others fill up the remaining pitches from Transposition i of the mode, their falling pattern opposing the rise in the first five pitches (Ex.7.6).

Ex.7.6: *Symphony No. 1, 2nd movement, color of the Passacaglia bass, b.9-14³*.



The order of pitches was deliberately chosen to give the possibility of having consecutive notes from the same triad; in the transposition given above, D major (interpolated with E) and F minor are apparent, the repeated notes extending the focus on them. The isorhythmic passacaglia line runs through the movement up to b.152, at the bottom, middle or top of the texture.

Structure: Movement I

The first movement is fairly fragmented, not allowing ideas to take flight for long except towards its climax. It is structured in this way in part as a reflection of the many different aspects of my father's character, but also so as to avoid giving the movement too much weight relative to the second movement – rather like the diverting smaller panels in a polyptych which gradually draw the eye towards the main painted image. It begins with an animated bass melody with a developing cluster of the mode in the treble. The violins add scurrying melodic fragments before the music arrives at the first reference to D major and the *Lochanside* melody in the brass and strings in b.21. These two ideas form the First Subject of the movement. There is now a gradual dissipation of energy (the Transition),

along with further references to *Lochanside* (oboe I, b.26-27) until a contrasting set of more tranquil melodies forming the Second Subject begins with the clarinets in b.31. The *Lochanside* references continue in the wind and brass up to b.69. A varied repeat of the Exposition then begins, incorporating further references to *Lochanside*.

At b.107, a Development section starts with more instruments playing in pairs (derived from the Second Subject), and later the opening bass melody of the First Subject. The two Subjects are gradually combined, and the climax of the movement is approached by chords with *Lochanside* b.14³-15³ at their top. The Recapitulation begins at b.163⁴ in the surprise key of G \flat major, and quickly follows into Second Subject material. In reality, however, the Development and Recapitulation merge: it did not seem right in a brief symphony to make too much of a first-movement Recapitulation, and I felt it better to leave the real sense of return until the end of the whole work.

Movement II

The second movement has a strongly goal-directed structure leading to a triumphant coda – a celebration of my father’s whole life. It opens with the same chord that concluded the first, but differently orchestrated (similarly to the first and second movements of Peter Maxwell Davies’s *Symphony No.1*),⁵⁰ assisting a sense of connection between the movements. The passacaglia begins at b.9 with a principal melody in the violas: this is the ‘Slow movement’ portion. A different transposition of the mode occurs in b.29 with the passacaglia line in the bassoon and vibraphone, while the violin melody and woodwind solos make brief references to *Lochanside*.

The faster ‘Intermezzo’ portion of the movement begins in b.52. The passacaglia line jumps around the texture, and its melodic intervals are gradually widened by use of octave displacement, before it becomes buried in the middle of chords. There is a

⁵⁰ Maxwell Davies, Peter: *Symphony No.1*, Boosey & Hawkes, London, 1976.

decorated version in the cor anglais and violas at b.89. The third section of *Lochanside* appears for the first time (bassoons and 1st violin, b.84-86), foreshadowing its appearance in the coda.

In b.101 the *talea* unit value in the isorhythmic passacaglia changes briefly to dotted quaver (roughly) to smooth the transition to the still faster tempo of the 'Finale' portion at b.106, where the *talea* unit value doubles to dotted crotchet, resulting in a sense of suspension of pulse at the change in tempo. Bar 109 features scurrying strings figures, as well as the passacaglia line (with *talea* unit duration now a crotchet) played with acciaccaturas in the brass; these are some of the increasing references back to the first movement, making this portion of the second movement the kind of extended Recapitulation that the first movement lacked.

In the Coda, the final third of *Lochanside* is heard clearly and complete for the first time in trumpet I. The arrival of this melody banishes the modal system used up to this point, and the harmonic language becomes a version of extended tonality centred on D, embedding *Lochanside* in its own natural tonal context. The inspiration for much of the harmony in this coda came from Magnus Lindberg's *Cantigas*,⁵¹ which opens out from its chromatic language into a bright conclusion (b.504) with several added-sixth and other extended chords in different keys, culminating in a wide-spaced D-A dyad on timpani and all the strings on the final page. Whereas Lindberg's piece concludes with a dark twelve-tone cluster, however, mine ends with the more optimistic sonority of a chord expanded from A major, built up from the final reminiscence in b.204 of the opening *Lochanside* reference.

⁵¹ Lindberg, Magnus: *Cantigas*, Boosey & Hawkes, London, 1999.

CHAPTER 8: CONCLUSION

In this portfolio, I have sought to explore the use of several compositional techniques that were entirely new to me in an attempt to move my music from a chromatic tonal language to one that uses familiar diatonic formations outside a tonal context. I also looked for alternatives to a regular, subdivided pulse. The systems consequently focused on the pitch and rhythmic content of the compositions, leaving me greater musical freedom over other aspects. I researched the use of these techniques in pieces by several contemporary composers, such as Benjamin, Berg, Birtwistle, Boulez, Carter and Messaien. I have also created my own variations on them, such as using isorhythm serially and as the basis of a passacaglia. In addition, I found myself on occasion wanting to alter the systems at particular moments in order to achieve a greater sense of musical satisfaction with the result.

My compositions are now, I feel, more tightly organised and coherent, leaner and more focused, so that my controlled freedom is more meaningful. There is now a greater sense of intellectual satisfaction in the structures I have crafted. I feel that, by growing out of the structural processes within, the sound of the music has a deeper purpose behind it, and that I have, paradoxically, more freedom to be inventive and expressive.

I am particularly happy with the combination in the second movement of the Symphony of the nine-pitch mode, the isorhythmic passacaglia and the use of 'found' material in the bagpipe melody. I feel that this is a starting point for a way forward in three ways. First, the use of a restricted number of pitches, avoiding the total chromatic in the foreground (it would be interesting to experiment with using a variety of pitch numbers, either a smaller amount using limited modulation, or a larger collection without modulation – I am finding the works of Stefan Wolpe particularly inspiring in this case). Second, the use of isorhythm, or a similar system of my own invention in organising pitch and rhythm as the basis for middleground organisation, perhaps with chords (like a chaconne) as well as single notes. Finally, working with quoted material (or least references to such music) as a basis

for the background structure. I am currently planning my next pieces for small chamber groups which will involve my work colleagues, starting with a piano trio: I would like to explore the textures and timbres of this ensemble, and I have always been fascinated by Beethoven's trios. I see many possible ways of working within these meaningful, inspiring limitations in my next pieces.

Total Words: 14,762

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