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Doctor of Philosophy in Musical Composition

Section 1

Abstract and Commentary on the five scores

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Abstract

Contents of the portfolio -

Commentary

Scores:

1 After Haydn's 'Farewell'

2 She Solus

3 Two Pieces for clarinet and piano

4 Wings ... dreams

5 Piano Symphony

Advising the young Iannis Xenakis in the late 1940s¹, Olivier Messiaen recommended that he should cease his conventional musical training and '...just listen to music and compose.' Xenakis took his advice, and followed his own convictions. Having myself pursued a lifelong traditional training, this period of research has provided a golden opportunity to adopt just such a path - a new and freer path, which could revitalise my creative work.

The five works in the portfolio form a progression, the culmination of which is the two-part *Piano Symphony*. In each work it has been the aim to explore different techniques, with a view to extending my musical language in such a way that

¹ Quoted in: Iannis Xenakis, *Music and Architecture* (New York, Pendragon Press, 2008) preface, xviii

successive discoveries could eventually be applied, thoroughly and radically, in that final large-scale piece.

The objective was to find a language which fulfilled a number of personal criteria. It should be a language which could embrace an inclusive vocabulary – one wide enough to contain the simplest major triad and the densest cluster. It should be a fully chromatic language, but one which incorporated certain points of reference which could ideally be recognized – at some level at least – by an audience, the composer's essential collaborator. The expressive range of the language should be clearly matched to the subject matter or meaning of the music, but should have an overall consistency, so that while admitting real variety, it would not be diffuse or stylistically incoherent.

The earliest work – *After Haydn's 'Farewell'* – explores transformation of material and mood – the latter from the original's whimsical humour to a state of real despair. It also contains some initial experimentation with golden section proportions, something applied much more extensively in the *Piano Symphony*. This follows the example of Bartók in a whole host of works, and of Debussy – for example in *La Mer*. The solo cantata, *She Solus*, while further developing techniques of transformation, aims to achieve a greater variety and flexibility of mood, appropriate to its subject, and to match a range of different kinds of vocal deliveries to the states of mind described. It also uses a more strikingly chromatic harmonic and melodic

language. The *Two Pieces* for clarinet and piano are in many respects simpler in concept (for reasons which are explained in the *Commentary*). They are less chromatic in language, but no less flexible in varying their moods as was the case in *She Solus. Wings ... dreams* considerably extends modes of vocal delivery beyond those of the solo work. Its material is organized in a wholly different, less distinctly narrative way. A feature of its construction is that its phrasing and rhythm patterns are derived directly from the intervals of the cello's opening melody. Thus mode, melody, harmony and rhythm are all united in a single scheme.

The sense of suspended time that characterizes *Wings* ... *dreams* is found too in many passages of the *Piano Symphony* – especially in the slower sections of both movements. The rhythmic energy of the faster music, which is a distinctive feature of the work, considerably extends the use of similar vital rhythms in the earlier scores. The nearest approach is to be found in *She Solus*, although it is evident at times in the other pieces.

The musical language of the *Piano Symphony* aims to embrace total chromaticism. Some of its material is dodecaphonic: through use of serial pitch collections, or conflation of complementary whole tone collections; through contradictory layering of more tonally oriented octatonic collections or other modal formations. Both movements are built on an almost unchanging underlying pulse which allows the music to be manipulated through a range of tempi. An analogy would be the

apparent variation in speed of nearer and more distant objects when viewed from a

moving vehicle. The different tempi are thereby layered, one on top of another. The

effect to the listener should be that of a seamless shifting between different tempi

levels.

A sense of the development the techniques outlined above will be gleaned from the

bibliography at the end of the Commentary. It includes a number of theoretical and

analytical works, but by far the majority of sources found to be most useful for my

purposes were scores, together with a number of distinctive recordings. Because

music is a constant presence – and was throughout the period of research – only a

representative number of sources are included. Numerous live performances and

broadcasts, might be said to have been equally influential, but do not form part of

this list. It was a case of following Messiaen's advice to 'listen ... and compose'.

[Word count: 814]

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Commentary on the Portfolio of Compositions

submitted for the degree of Doctor of Philosophy at The University of Birmingham

ROBERT SPEARING

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Commentary: towards a renewed personal musical language

Introduction

The portfolio contains five works that represent a journey towards a renewed

personal musical language. This journey was the purpose of my research and its

destination is the large-scale two-movement Piano Symphony. Like many a

destination, however, this work is also a starting-point for further travel, as the

techniques which I have explored – generally and deliberately from first principles –

contain almost limitless possibilities for yet more discovery. It will be with this

work that this commentary is chiefly concerned.

First I should define what I mean by first principles. If one fundamental quality of

music is that it is a language of the emotions, then I needed to reassess both how that

language had operated in the past, and how a vast array of developments and

experimentation had contributed to its present state of enrichment. Like all

composers, I was confronted with the truth that the common practice period of tonal

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music had given the world a language extraordinarily perfect at expressing and satisfying our spiritual and emotional demands. Equally, a lifelong fascination for the extension – even abandonment – of this language, demanded that I look afresh at the fundamentals of musical expression and see how I might use the lessons of the past – distant and recent – to bring new life to my own creativity. With the firm conviction that each age must express itself artistically through thorough engagement with its own times, it has been my experience that whatever influences, teachings or aesthetic ideas are encountered, the creative artist must ultimately discover each of these for him- or herself by painstaking empirical means. So consideration of first principles had to mean a re-examination of rhythm, melody, harmony and timbre. It had to embrace abstract qualities such as expectation and fulfilment (or denial), the role of pattern and form, and of complexity and simplicity. All of these needed to be re-examined for their significance in the underlying dialogue that has to exist between the composer and the listener. It could not be forgotten that by listener, we must also mean the performer, who is the necessary intermediary in bringing the music to life. The performer must both receive (from the composer) and give (to the audience) in this process.

Listening of course, is a process of attention, and attention is the necessary prerequisite of consciousness. Only consciousness – that is, thought – 'determines

whether a given sensum or emotion is attended to or not¹. Thus, for the composer, it is of profound importance to consider how this degree of attention is to be arrived at, or at least encouraged. In the tonal system, elaborate paraphernalia exist to aid this: hierarchies of chord relationships, of keys, broad symmetry of phrase structure. In earlier periods, conventions of rhythm, of counterpoint, of mode, or simply of tonic-centricity also operated. Such devices rely to a great extent on pattern, or at least patterns of expectation. The satisfaction of arrival at a cadence is an obvious example. The restless yearning of Wagner's Tristan wonderfully exploits, by denial, such an expectation. Therefore I wanted to consider anew, how such emotional demands might be met, without recourse to conventional devices, but by learning from their fundamental properties. In the *Piano Symphony*, for example, I wanted to construct a journey of pitch centres that required – more or less consciously – an ultimate and necessary resolution. I wanted this to be done without the traditional mechanisms of keys or even modes, and without heavy reliance on pedal points or like devices. By contrast, in the concerto After Haydn's 'Farewell', while pitch centres again play their part, the overall formal solution is different. The journey takes us to a foreign location, where resolution is conspicuously absent.

The ground plan of the *Piano Symphony*, just described, leads on to a consideration

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¹ R.G. Collingwood, *The Principles of Art* (London, Oxford University Press, 1938), 225

note by 'sensum', Collingwood distinguishes a narrow meaning: 'That which we sense ... [by] 'seeing, 'hearing', smelling' &c. ... 'colours', 'sounds', scents' &c.' i.e excluding what we experience as imagination.

of the extent to which we are capable of keeping before us a complex array of information of this kind. Douglas Hofstadter, writing primarily as a mathematician and physicist asserts:

that we hear music recursively – in particular, that we maintain a mental stack of keys, and that each new modulation pushes a new key onto the stack \dots further that we want to hear that sequence of keys retraced \dots^2

For his 'stack of keys' we may substitute any more or less elaborate arrangement of musical phenomena, which are designed to control structure. While I could not be confident that an elaborate succession of pitch centres would inevitably be perceived by the listener as logical, it could be hoped that the final closing of the sequence would be recognized as in some way fulfilling. The question ever before me was how to achieve that level of attention that would aid this process. One solution that suggested itself was the use of isomorphic techniques. Principally this consists in the presentation of many of the work's main themes in mimetic format. The first movement's fugue theme has four regular segments, the first of which is the prime form (to borrow serial terminology). The remaining three are built from its retrograde inversion, the inversion itself and lastly the retrograde, with the added twist of some transposition along the way. By organizing certain other themes in precisely the same manner, I sought to create structural and functional

² Douglas R. Hofstadter, *Gödel, Escher, Bach: an Eternal Golden Braid* (London, Harvester Press Ltd., 1979) 129

interrelationships between otherwise unconnected material. Linked to this notion was the quest to enlist pattern generally as an agent for achieving that all-important attention. By attention, I do not mean that the listener must ever be aware – at the surface, so to speak – of the operation of such devices. Rather, I assume that much will, and should, operate at a subliminal level, for it is the experience of the organic flow of the music that is paramount, not its technicalities. This is nothing more or less than a way of utilizing the fundamental compositional principles of repetition and varied repetition, but in an individual way.

In this pursuit of pattern recognition, it is assumed that similarity of shape – specifically of pitch contour – as well as that of internal structure will be a further means both for cohesion and for easing the composer-listener dialogue. Evidence of this will be found in all five works in the portfolio. The transformation of material by mode, or by intervallic expansion or contraction, is a well-established technique, and is one I have used extensively. It is to be found in the earliest of the pieces – *After Haydn's 'Farewell'*. And it is developed further in its successors, the cantata *She Solus*, and in the *Two Pieces* for clarinet and piano, but most thoroughly in the *Piano Symphony*. The remaining work, *Wings ... dreams*, alone avoids this method.

A further line of inquiry to be pursued on my journey was the question of simplicity and complexity. A tendency to ever-greater complexity has been a characteristic of the history – especially the recent history – of Western musical development.

Coupled with this has been a fascination for many composers with extending the boundaries of virtuosity. Composers such as Boulez, Berio and especially perhaps Ligeti, provide examples. On the other hand, there have been those who have deliberately pursued an opposing direction – Cage and especially the American minimalists come to mind. So part of my voyage had to steer me into those waters also. It is well known that the early minimalist movement set out to oppose the tendency to ever-greater complexity. It aimed to rediscover the simple beauties of a triad of C major for example. While this has resulted in much music that achieves little more than kaleidoscopic shiftings of sound, there have been some interesting discoveries along the way. For me, Reich is one of the more creative thinkers here. His technique of phasing in particular has been revealing and influential. There are crosscurrents too between this and Cage's preoccupation with chance. However, the naivety of much of the musical material, and the emotional limitations of much of the minimalists' idiom, leave it too often a poor substitute for what I referred to above as a 'language extraordinarily perfect'. It must be acknowledged though, that it can - if on a somewhat limited scale - engage with its audience, and at its best achieve the goal of attention. So there were clearly some lessons at least to be learnt here. It was just that on their own, such techniques would not be enough for my purposes.

Viewing the other side of the coin – that of complexity – led me into the rich timbral worlds of Boulez, Berio and Ligeti While not neglecting their various formal,

technical – and often iconoclastic – innovations, it was above all, the imaginative sound-worlds of these three very different composers that first demanded close attention. From the outset, I saw the role of timbre and instrumental texture as vital and integral to the composition of the Piano Symphony. It was my intention that certain ideas were to establish their presence to the listener through their individual sounds or colours. The passage from Part 1, marked 'opaque' (figure 21, p.24), owes something to a work like Ligeti's Atmosphères. When this passage reappears, it owes more perhaps to the glittering tapestry of Boulez's sur Incises. But in respects other than timbre and texture, the resultant music is quite distinct from either model. Throughout my research, I have sought to collect as wide a range of techniques as possible to extend my musical language, but always with a view to applying them in my own way. Each entry of the fugal theme in this first movement is presented in a distinctive scoring, and this greatly affects each new presentation of the theme. At root, the importance of timbre is captured in the choice of the word symphony in the work's title. My meaning here is that literal 'sounding together', intended by Stravinsky when he used it for his Symphonies of Wind Instruments. The solo piano is at the centre of the sound world of the piece – a sun around which the other instruments orbit or from which they derive their own life or colour. The piece is emphatically not a concerto – other than perhaps a concerto for orchestra – as the demands made upon all players are scarcely less than those required of the pianist.

Wings ... dreams it will be seen, is a piece very much concerned with colour and texture and focuses even more than the symphony does on these qualities. This is reflected in the way in which the words become part of the musical sounds themselves and in the way in which the whole texture evokes a dreamlike, mystical state. This last quality has its parallels in portions at least, of all the other pieces in the portfolio, and this brings me to the question of mood. It can already be seen that this plays an important part in the conception of each of the five works. The downward spiral of After Haydn's 'Farewell' or the uncertain hot and cold of She Solus come to mind, and this was to be no less the case for the Piano Symphony.

At the start, I opened my list of first principles with the elements: rhythm, melody, harmony and timbre. With the exception of the last, these have barely been touched on in this introduction. They will be explored in the context of the individual scores. What follows then, is a close examination of each of the works, beginning with the earliest and concluding with a detailed description of the techniques and processes – but also the philosophy – that lies behind the *Piano Symphony*.

After Haydn's 'Farewell'

- concerto for oboe and strings

The compositional principle underlying this piece is transformation. On the technical level, this is the transformation of the material quoted from Haydn's symphony. On the emotional level, it is the transformation of mood, from that of the original, towards a darker exploration – of departure, separation, or loss. The closing bars of the symphony are quoted literatim. The key is F sharp major, and the first challenge was to undermine the security of this tonality. The ethereal G from the orchestra's first violins (fig 2) is both a flattened supertonic, and a tentative step in the direction of diametrically opposed C major. At figure 3, this opposition becomes more explicit, with the dominant-tonic harmonies, ghosted-in in both keys, while the quartet's music proceeds unchanged. By the time Haydn's symphony finally fades away, the bitonal language is fully established. With the slight quickening of tempo at figure 6, the diatonic theme is treated in canon between oboe and quartet in the two simultaneous keys. At the same time, the cellos of the orchestra draw out a new rhythmic version of Haydn's second phrase, played pizzicato (Ex 1). This too is heard bitonally and canonically. The increasing activity



of the texture, involving simple cross-rhythms, tremolandi and exaggerated waves of dynamics, when added to the bitonal canons, creates a growing sense of disorientation. The twin tonal centres endure beyond figure 11 when the music finally quits major diatonicism for a new mode (Ex 2). The move away from



Haydn's original material is completed with the disappearance of the triplet patterns around figure 12. In this same passage the process of distortion is still apparent however. The phrase which had always up to now begun with a rest, takes on a 5/8 shape against the underlying 4/8 (Ex 3). As the oboe increasingly embellishes the



material, the quartet joins in, introducing trills in layers of contrapuntal phrases. The quintuplet figure grows to predominate, while the oboe's line becomes more and more free and cadenza-like, until at figure 19 – when Haydn's world has been all but forgotten – his music suddenly returns on the quartet, *lontano*, against an unworldly background of oboe multiphonics and contradictory harmony from the orchestra.

This moment of recall is a reminder of how far the language has travelled. Once it is over, at figure 21, the music moves into a fugal section based on a new form of Haydn's theme (Ex 4). The mood is harsh, even aggressive, with sudden contrasts of



dynamics. The aggression – exemplified by the oboe's coarse flutter-tonguing – spills over into a breathless flow of quavers (figure 25). The violins interject squealing, fragmentary phrases and in due course the five-note figure recurs, with a suggestion of the original rest restored (four bars after fig 27). This is punched out with vigour *pizzicato* (Ex 5). With the atmosphere ever more threatening, the oboe



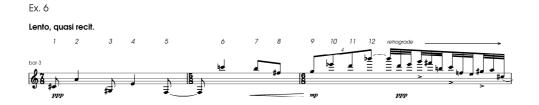
portamento. The atmosphere of menace does eventually subside, and from figure 36, against a background of notes *senza vibrato* from the quartet, a simple two-against-three tapping is introduced with the wood of the bows. This cross-rhythm has been implicit in much of the foregoing development. At last this is all that remains, providing a bleak tapestry of sounds against which the lonely oboe plays its

last desolate phrases. Finally nothing but the tapping is left, hesitant and winding-down to a stop.

She Solus³

- cantata for tenor voice and piano

This work takes the techniques of transformation explored in *After Haydn's 'Farewell'* to a further stage. There they followed a more or less straight path, but here they aim to respond continually to the shifting and inconstant moods, appropriate to the course of love. As a further metaphor for the stresses of yet unrequited passion, the melodic and harmonic material is deliberately highly chromatic. It is built from a twelve-note series characterized by minor sixth intervals that strain tortuously upwards before spilling over into a cascade of notes (Ex 6). The singer's line, by contrast, keeps nervously steady at first, through this



tonally uncertain world.

Throughout the piece, the voice is required to adopt a range of different styles of delivery, appropriate to the extremes of emotion or the sensual allusions of the text. The writing of medieval welsh poet Dafydd ap Gwilym, is famously passionate and graphic in its imagery, and I have aimed to match particular techniques to its

³ The full text is appended to this commentary

differing emotional tones. Such modes of delivery as *sprechstimme* or a near jazzy huskiness, are applied to those parts of the text which seemed almost to demand them. An instance of this occurs at the line '... but derisive beneath her tangled crop of copper ...'. It is as if the emotion felt is beyond song and can only be expressed by a deep-throated form of speech. After the opening phase of the work (up to bar 47) – a sort of given in which we are introduced to the 'softly-spoken girl' – some lines from Shakespeare have been interpolated; lines that capture precisely the eager frustration of lovers' separation:

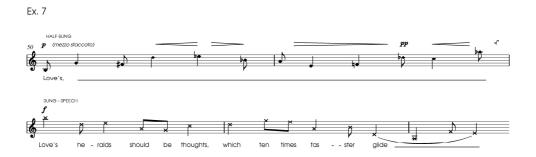
... Love's heralds should be thoughts,

Which ten times faster glide than the sun's beams,

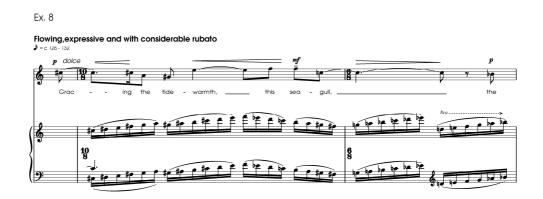
Driving back shadows over louring hills:

Romeo and Juliet, Act II, Sc.5

Here again, the intense energy of the emotion behind the words cannot find the focus of a precisely pitched line and it is rendered in an almost wild, half-sung or heightened speech. The rhythm too, is jagged and nervy, and throughout the piece I have sought to bring a greater flexibility of rhythm to my musical language than perhaps was the case hitherto (Ex 7).



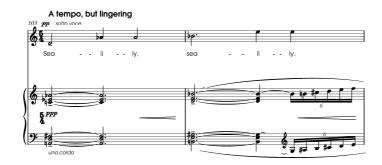
The main body of the text is drawn from Dafydd's *Yr Wylan* (The Seagull), and is an outstanding example of the Welsh tradition of messenger poems. Here the poet invokes the aid of the bird to seek out his beloved and carry his words of adulation. The simple contours of the piano writing suggest both the rising and falling of the waves and the corresponding emotions in the speaker. All the material is derived from the initial serial theme, including the scale patterns, which are built from octatonic fragments (Ex 8).



The succeeding section, at the lines 'Sea-lily, fly to this anchor to me,' (bar 97)

becomes rhythmically freer as it bends to the ever-altering pace of the text. The harmonies are warm and sensual as befits the poet's mood and frequently simply oppose triads a tritone apart (Ex 9). His excitement soon overflows into the *vivace*

Ex. 9



section (bar 117), whose irregular rhythms and angular melody recall those of the earlier 'Love's heralds' passage. It is not until its latter stages however, that the singer has once again to resort to passionate speech in preference to song. This occurs at the lines:

Stress your finesse to the fastidious one;

Use honeyed diplomacy, hinting

I cannot remain extant without her.

Once again all the material is developed closely from the core series. What follows this emotional climax is a revisiting of the music from earlier passages (from bar 195 onwards) as the poet muses more quietly, but no less ardently, on a succession of images of his adored girl. At the words 'Cypress shapely', the vocalist's sung

speech forms a distorted mirror image with one or other line of the accompaniment – the three strands forming a sinuous and sensuous counterpoint (Ex 10). The very



opening music returns (bar 222) pitched a tone higher, as the tenor makes his final impassioned plea. The chromatic sweeps of the piano recur as before to support the closing lines:

... this girl will bring

Annihilation upon me, should your answer

Sound, Gull, no relenting note.

At the closing four bars we hear again the signature chord that superimposes two augmented triads with added major sevenths. This formation first appeared at bar 5 and is the harmony, which is the counterpart of those melodic contours that strain tortuously upward. By contrast, the octatonic-flavoured chords of opposing tritones (Ex 9) are warm and seem to embrace or press inwards. Together these two harmonies set much of the tone of the piece. They represent the anxious strain between opposite poles implicit in the subject matter.

Two Pieces for clarinet and piano

1 The Stag

2 The Owl

These two pieces share something in common with She Solus in that they too aim at

an idiom that bends very readily to a range of moods and at a near pictorial kind of

imagery. But at the same time, they belong to that part of my output that is directed

less markedly towards the musical professional. A body of work, at the extreme end

of which, lies a quantity of didactic pieces: violin accompaniments (for teachers) and

elementary string quartets⁴. While *The Stag* and *The Owl*, demand more than the

majority of these both technically and musically, they are included here as

representative of this side of my work.

The Stag contrasts two very different moods and tempi. The first is still and

expressive; the second is swift and mercurial. Further to this, the first section itself

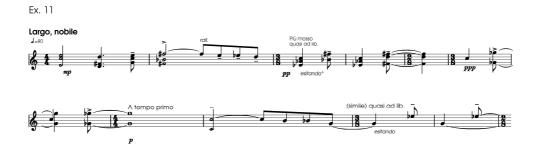
contains a contrast of ideas - the one confidant, the other hesitant and nervous. The

music draws on the rich harmonies and strong melodic outlines typical of

⁴ published by Faber Music and by the Associated Board

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Messiaen's Mode 3 (Ex 11). This harmony admits of some grinding dissonances –



for example at bar 26 - but nothing that would frighten the horses. Again they typically derive, as in *She Solus*, from collisions of familiar triadic harmonies, sometimes peppered with added notes. The didactic objective in all such usages is to employ a language at the edge of the absolutely familiar; one that may in time - through a certain transparency, or simplicity - draw in the more timid performer or listener to a world of greater experimentation.

The Owl, naturally enough, is a nocturnal piece, full of dark and heavy sonorities. Apart from the obvious reference to its cries, it is not intended as a portrait of the creature itself, but rather as an evocation of a mood of tortured brooding – perhaps a little Mahlerian in flavour. A strongly shaped theme is heard at the outset in the piano's left hand; the chords above are deliberately thick-textured and oppressive. The clarinet takes up the theme in counterpoint with the piano, before a mysterious undulating figure enters at bar 5. This figure is constructed in mirror image between the two hands (Ex 12). The clarinet has a brief freer passage culminating in a harsh



flutter-tonguing, before joining the process of mirror image with the piano at bar 12. At bar 17 a new version of the opening theme is heard, in which the intervals have been contracted to half their original size (Ex13). This changes its character from a



strong arching phrase to something more intimate and mysterious – a change aided by its initially monodic treatment. The clarinet repeats the new melody in a high register in an overall texture as open and wide-spaced as it was once dense. This is immediately followed by an *agitato* passage which introduces the cries of the owl *glissando*. The various ideas are recycled as the piece unfolds. At bar 55 the clarinet takes the triplets previously the preserve of the piano, but its most notable passage is an extended chromatic melody all in flutter-tonguing (from bar 76). This passage derives from the earlier undulating figures. The final four bars see a return of strong opening phrase, but now serene and consoling.

Wings ... dreams

- for voices (SATB), solo amplified cello, and piano/percussion duo

The text evokes what were for Wordsworth, essential pleasures: reading, wild nature

and the transforming power of the imagination. For him, books are a 'substantial'

world; dreams by implication, are insubstantial. Yet he sees the imagination as fed

equally by the solid word and the impalpable experience of 'wilderness'. Musically

this oscillation between firm and elusive qualities is highly suggestive. It captures

the essence of music itself – so powerful to evoke moods and emotions – yet so apt

to evade definition as to how it actually does so. Here is the full text:

Wings have we – and as far as we can go

We may find pleasure: wilderness and wood,

Blank ocean and mere sky, support that mood

Which with the lofty sanctifies the low.

Dreams, books, are each a world; and books we know,

Are a substantial world both pure and good ...

The words themselves naturally conjure up a wealth of associations – 'ocean' and

'sky' for example – whose very sound contributes to this process. For the late

C18th, 'mere' meant pure or clear, but the suggestion of infinite expanse – the

subliminal allusion to water – gives a particular flavour to 'mere sky'. Such phrases

are the starting point for their musical treatment in my setting. The listener should

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experience the undertow of the shingle in the sound of the word 'ocean', the sway and murmur of trees in 'wilderness and wood', and in 'dreams' – the dwelling on the 'z' sound should help to suggest a dreamlike, exalted state.

A range of vocal techniques is called for. These include a projected stage whisper, ordinary speech, humming with open or closed lips, sibilant and other consonantal sounds (some percussive in effect) as well as normal singing. Some of these techniques are superimposed, or blended, or subjected to undulations of pitch, and the platform arrangement is designed to make use of antiphony. To re-emphasize the point, it is the very sounds of the words that are integral to the music itself.

The musical material develops out of a scale that fans out symmetrically from the note C (Ex 14). A seven-note melody utilising this scale is first heard on the solo



cello (Ex 15) soon to be answered by the metal beater on the low strings inside the



piano (bar 2). Also derived from the scale is a rotating pattern of harmonies – essentially major chords with dissonant elements, which are achieved through a

simple canonic device (Ex 16). The initial sung rising phrase culminates in a seven-

Ex. 16



part chord, combining all of the scale degrees - a cluster that later reappears at bars 36 and 52.

The effects called for from inside the piano, amplify or complement those called for from the singers, as do those - to a slightly lesser extent - from the pianist at the keyboard and the cellist. The cello should be subtly amplified, not just for the sake of balance, but in order to modify its natural sound and reverberation. The keyboard player too, through strict control of the sustaining pedal, is involved in this blending process of the overall sound. One particular effect to draw attention to is the combination of sung with whispered sounds. An example of this is the treatment of the word 'wings' in bar 2. The airy colouring which this imparts to the word, alludes to flight while enriching the initial 'w'. As 'wings' here is Wordsworth's metaphor for imagination, this is essential to the spirit of the whole piece - a dreamlike meditation on the text, whose constant ebb and flow of rhythm is intended to suggest both the apparent freedom of nature and the musings of the poet's mind.

Piano Symphony

Each of the foregoing scores is, in a practical sense, a preparation for this work. It was always my intention to apply, extend and add substantially to techniques variously experimented with in those pieces, on this much broader canvas. The two equal parts of the work are designed to complement each other. They were originally conceived almost literally as negative and positive images. But this oversimplifies the case, and in the making – as is so often the case – the symphony took charge to some extent of its own character and direction. Following an analysis of each of the two parts, and more detailed discussion of particular aspects to which I would like to draw attention, I shall attempt to summarize the underlying ideas and philosophy behind its composition.

- part 1

The structure of Part 1 divides broadly into seven sections, the first and last of which are fugal in character. This framework is preceded, however, by an introductory passage of nine bars which, in slightly varied guises, recurs a number of times in both movements of the symphony. From this brief passage, much of the generic material of the work derives: the rhythmic play of twos and threes and the

fundamental conflict of pitch centres A and B flat. It contains a motif (Ex 17) that



by figure 1 becomes a theme of five bars centred on A and given to the piano. Tonally this is placed in immediate conflict with the low strings, who repeat it *pizzicato*, but built on Bb. The introductory phase of the movement properly lasts until figure 3 when the first of the seven main sections begins. By now the theme has grown to a full thirteen bars (Ex 18). Also contained within this passage are certain



harmonic structures that play an important role in the work overall, colouring or emphasizing particular pitch centres. These will be discussed later.

So at figure 3 the first fugal exposition begins. This lasts until figure 20, when a brief transitional passage, marked 'tense' forms a link to apparently new material – slow moving and textural – which constitutes the movement's principal contrast to the rhythmic energy of the fugal writing. There is a later abbreviated fugal recapitulation, beginning at figure 65, which forms the final section of the

movement, abruptly cut off to end Part 1. This in turn is preceded by a transformed version of the textural material, characterized by sweeping arpeggios from piano, harp, marimba and glockenspiel, beginning at figure 60. The movement's outer sections therefore reflect each other and their layout may be summarized thus:

The three central sections form a developing narrative. The first emerges naturally out of the densely clouded textures that precede it, and is dreamlike in character. Tension gradually builds however, and this eventually explodes in a vigorous and incisive passage that foreshadows important material from Part 2 (Ex 19). Far from



dissipating the tension, this second section propels us into a third that is a furious and wild development of the earlier fugal material (Ex 20). A brief silence ensues



before a return of the introductory nine bars. These lead directly into the

transformed recapitulation. The whole structure is outlined in Ex 21.

Ex. 21

Introduction F1 T1 "DREAM JOURNEY" vigorous & incisive "FURY" Intro. recap. 12 F

I would like now to consider the structure and processes in more detail. The use of the term 'fugal' is deliberate, as neither of these extended passages is a fugue in the conventional sense, although they share many characteristics of that method. For convenience however, I shall continue to use the term 'fugue' in this narrative. There are certainly 'entries' – around twelve in each in fact – but no 'answers', countersubjects or episodes, let alone *stretti*, augmentations or diminutions, though there is some use of pedal points. The technique owes as much to layering as to fugue, and each entry is presented in a different light, by means principally of its instrumentation. Each entry is distinguished not only by its pitch centre but by its textural or timbral treatment. The entries, as in Bartók's in *Music for Strings*, *Percussion and Celesta* (1936), circumnavigate the twelve chromatic pitch centres, but unlike in that fugue they do not unfold as a pattern of alternately rising and falling fifths, but rather as one derived from the subject itself. The generic motif A - G - C# (Ex 17) and its conflicting B flat counterpart establish the pattern. The B flat version is inverted Bb - C - F#, and by conflating the two, the sequence A –

Bb - G - C - C# - F# is arrived at (Ex 22) and by extension, the full pattern of



twelve discrete pitches (Ex 23). In addition to dictating the fugal entries, this series



is used independently in the movement, along with a second one that plays an important role in the sections T1 and T2 – of which more will be said later. The two series are identified as (X^1) and (X^2) respectively. As a further element in the mirroring of the two fugues, the entries of F2 follow a reversed sequence, beginning from B flat (Ex 24). Like the movement itself, the process is abruptly curtailed after



eleven entries, the resolution only occurring with the commencement of Part 2.

At figure 21, the first textural passage (T1) begins. The strings are divided into twelve parts to form a dense web of sound. Though apparently new – as previously noted – the material is in fact a much slowed-down version of the fugue subject

itself, harmonized in four parts, yet doubled across a wide compass. The woodwind, plus trumpet, are given similar blocks of slow chords, this time inverted in melodic direction, and together these broad and opaque waves of sound form the underlay for a new serial theme, introduced in pointillist fashion by the piano (X^2) . This theme, with the simplest construction of fourths and fifths, is literally picked out against the dense background and very soon imitative treatment of it is given to harp, marimba, vibraphone, and to the brass. Echoes of the preceding fugue continue to punctuate the texture. The serial theme is treated as consisting of thirteen notes, by constantly biting its own tail, so each repetition involves a simple rotation forward by one note $(Ex\ 25)$. From the layered patterns thus created, a scalic idea eventually emerges



(around figure 31) which like a ground bass underpins the increasingly tense web derived from the serial theme. This tension is released as previously stated at figure 38. Whereas the material and tonality of T1 are fixed and relentless – and the atmosphere is even claustrophobic – in T2 there is much more fluidity. The implied inability to escape of the former – while perpetuated in T2 – is now at least subjected to an intensified struggle to do so, in the form of greater tonal instability or sense of restlessness.

Returning to Ex 19, closer examination of this theme reveals how it too is closely

connected to the fugue subject. The connection is most obviously through its rhythmic structure, which closely mimics that of the fugue. This is what I referred to in the Introduction as mimetic format. It uses similar devices in its melodic formation too as, like the fugue, the phrases unfold in prime, retrograde inversion, inversion and retrograde patterns. This technique is not intended to be formulaic, but rather is one of a number of ways in which I have tried to establish shapes or patterns of musical organization that are more or less consciously discernible to the listener. To provide another example of this, I quote the recurrent idea from Part 2 of the symphony labelled (R). It is derived from the second serial theme (X²) appearing in all four guises familiar from the fugue. At the same time however, the theme has taken on a new character. It has been 'filled-in' so to speak, by stepwise movement which itself connects with the whole tone nature of Part 1. At figure 10 (p.100), the prime version appears; at figure 27 (p.116) we encounter the retrograde inversion, and so on (Ex 26). A further instance will be found in the material (E) in



Part 2 which is mentioned below.

- *part 2*

The tonal resolution of Part 1's second fugue at the outset, is symptomatic of the complementary nature of the two halves of the symphony. In a number of ways, Part 2 is designed to resolve the issues and conflicts of the first, and its structure for that reason, closely resembles it, though also differing from it in significant respects. The introductory nine bars again play a milestone-like role in the overall structure. As in Part 1, though more immediately, they lead into fast-moving music – a dizzying swirl of semiquavers scattered through wind and percussion (S1) (Ex 27).



The material is not fugal however, but recurs as before a number of times in the course of the movement. These recurrences are more like *ritornelli* than the extensive flanking blocks of the Part 1 fugues. Again this swirling *perpetuum mobile* (S) is contrasted with music of different character – consciously expressive with rubato (R) though maintaining an underlying sense of the prevailing fast tempo. A third element, energetic and rhythmic (E) also joins the mix – a new

transformation of the fugue theme from Part 1. The sequence of material can be outlined thus:

introd. –
$$S1$$
, $R1$, $E1$ - $S2$, $R2$, $E2$ - [interruption] – $R3$ – introd. – [central dream sequence, subsuming $R4$] - $S3$, $E3$ – $S4$, $E4$ – combined $S4$ + $E4$ – coda: $T5$ transformed

It should be noted that this outline, like that for Part 1, gives no indication of proportion, which is an important aspect and will be accounted for later. It also disguises the similarity of framework for the two parts, which is perhaps clarified by the following comparative table. It will be seen how a regular pattern of shifting tonal centres underpins both halves of the symphony:

b 1	b 109	b 163	b 197	b 267	b 313	b 355
introd - F1	T1			[disruption]	introd -T2	F2
A	Е	В	F#	C	F	Bb

b10*	b 58	b 110	<i>b132</i>	b158	b 210	b (404) 443
S1	R1 > E1	S2	R2 > E2	[disruption]	dream seq.	S4/E4 >coda
Bb	Eb	Ab	Db	\boldsymbol{G}	D	A

The pattern, consisting largely of fifths, forms a link with the second serial theme (X^2) – versions of which appear in both movements, including the passage beginning at bar 280 – a passage which is emotionally central, both to this movement and to the work as a whole. It will also be seen how the cycle of fifths is broken at a certain point in each movement. At these key moments, a further disruptive element

in the form of a fundamental shift in the musical language occurs – in effect a swapping of languages between Parts 1 and 2. The essentially whole tone basis of the first is exchanged with the largely octatonic basis of the second. This oversimplifies the question of language rather (I shall discuss this question further too) but the notion of structural blocks, associated tonalities and signal devices like that just described, should – with the help of the above tables – go some way towards clarifying the broad architecture.

The passage, which for ease of identification I have dubbed 'dream sequence', begins at bar 210, and is ushered in by another, now mysterious version of the introductory nine bars. Tonally focused by a resounding D, a slow unfolding begins – a succession of notes that is a reappearance of the series X^1 . The circling of this theme is passacaglia-like, and sets in motion imitation, and overlapping of distinctively individual sound-combinations, spread widely through the ensemble. Once again, timbre and texture are central to this passage, which is all about subtly shifting colours and soft clashings of lines. As in the central portion of Part 1, such textures also form a background to references to other material. The drums, for example at figure 42, recall the rhythms and contours of the swirling music (S). The clashings of lines create incidental harmonies which too are drawn out of the texture by distinct combinations of instruments. The atmosphere again is misty, but beguiling and mystical rather than dense and claustrophobic as earlier. At figure 54, this section gives way to a tenderly expressive idea, built from the second serial

theme from Part 1, now inverted (Ex 28). The theme is richly harmonized over a



slowly shifting bass line, and emerges in three waves divided by returns of the material (R). The passage is intended to evoke a positive, if fragile mood of warmth or hope, and is crucial to the overall emotional flavour of the movement. The third and greatest wave launches the reprise of swirling semiquavers (S3), but also foreshadows the serenity of the coda (which begins at figure 77).

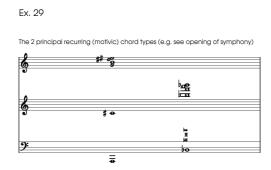
This recapitulation of the energetic music (S and E) presents the material in different proportions to those of their earlier appearances. Here, as throughout the work, these involve complex manipulation of golden ratio relationships. Typically – though not slavishly – these are allied to the Fibonacci or Lucas sequences⁵ in Parts 1 and 2 respectively. While the scorings in the recapitulated material make reference to their previous treatment, they are nonetheless varied in a number of ways – chiefly through a freer and sometimes fuller mixing of instrumentation throughout the orchestra. The energy builds, latterly against an accumulating pedal of string harmonics, to a point where suddenly two principal themes are combined in counterpoint: the swirling *presto* (S) and the incisive theme (Ex 3), thus underlining the fundamental connection between them. This 'incisive' theme was the one which

 5 Fibonacci: 1 1 2 3 5 8 &c; Lucas: 1 3 4 7 11 &c

originally broke into the flow of ideas of Part 1, and its sudden reappearance here occasions an inevitable, climactic coming together of ideas, helping to drive the work towards its conclusion.

- further observations on language: harmony and melody

In my opening remarks on the symphony, the role of harmony was referred to. I should like to conclude this section of the Commentary with some discussion of this aspect and of the basis of the work's musical language generally. The low and fragmentary pulsing As at the start are heard against a background chord of (mainly) viola and cello harmonics. This chord draws out from the harmonic series five pitches that impart a whole tone colouring to the fundamental A. At the sixth bar, a second chord picks out a complementary group of five that more emphatically focuses on the fundamental – this time B flat – though with a dissonant A still present. Both chords, which are given in Ex 29, remain fixed in format and spacing



and have a structural function throughout the work. It is envisaged that in performance, the tuning of these harmonies will be adjusted towards a natural, acoustic intonation. This colouristic approach to harmony is found elsewhere also. In Part 2, two further chord types colour the overtones of fundamental bass notes in distinctive ways (Ex 30). These especially are associated with the passage from

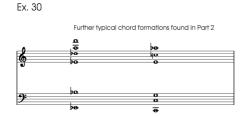


figure 54.

The linear language of Part 1 is predominantly whole tone, but the two possible and complementary whole tone collections are constantly juxtaposed. This, together with the often dense layering of the texture, drives the harmonic language towards full chromaticism. In other words, there is frequently dodecophony in the vertical, while there is diatonicism (whole tone) in the horizontal. In much the same way, the linear language of Part 2 is largely octatonic, and similarly occupies a no-man's-land between diatonic and chromatic worlds. The various serial themes bridge this territory – they straddle as it were the endless conflict between A and B flat. It is only in the coda that the struggle is finally resolved. There we hear the final transformation of the fugue theme, now translated into the Phrygian scale on A-a

scale of course which subsumes the note B flat (Ex 31).



Turning now to the use of the orchestra, there are a number of distinctive features which greatly affect the overall sound world of the piece, and which also differentiate between Parts 1 and 2. The woodwind section is a little larger than the standard orchestral line-up. It includes alto flute, bass clarinet and contrabassoon as well as – more strikingly – two saxophones. While one of these is a doubling part, interchanging soprano and alto instruments, the other is the much rarer bass saxophone. The section has neither oboe nor cor anglais. It will be seen that the sound of the woodwind therefore has the potential for very dark, even rough sonorities. It does contain brighter elements as well however; the flautist doubles piccolo, the clarinet is frequently used in high register and one of available saxophones is a soprano instrument. But in Part 1 the emphasis on deep bass sonorities is especially exploited as part of the creation of that heaviness and oppressiveness that I especially aimed for.

The brass section, by comparison with the woodwind is unusually small, containing only one each of horn and trumpet alongside two trombones. The range of percussion instruments is extensive (they are listed in full in a preface to the score)

and a notable feature is their subdivision into drums, wood and metal. In addition there are three instruments which are very much used as extensions of the solo piano's own sound spectrum. These are the glockenspiel, vibraphone and marimba. The harp too, is very much part of this inner circle of sound, and for that reason, all of these players are intended to be grouped together in the centre of the platform as can be seen in the diagram at the front of the score. The notion of an extended spectrum is not exclusive however, to this group – it is a principle of the orchestration throughout. This consists of exploiting similarities of timbre wherever they can be found, in particular – and sometimes unusual – combinations of instruments.

The string section is organized in the usual way, but makes more or less continuous use of *divisi*. Despite this, the number of players need not be especially large, although they could be if desired. Clearly balance will be a primary consideration, and part of the intention is that subsections should balance one another more precisely than is usually the case. For example the first and second violins should be equal in number and on opposite, balancing flanks of the ensemble.

The piano writing itself requires some further comment. It is predominantly linear in type, with relatively little chordal writing. It is sometimes percussive or strongly rhythmic in character, although it is at times used very tenderly or expressively – especially in Part 2. Timbre is always an important aspect, and examples of this are

the sound of the very opening low As or the colouristic writing that follows figure 21 in the first movement. Its music is often interwoven into that of other instruments or sections of the orchestra, requiring a chamber music style of approach to performance in terms of listening, blending, and balance. There is no bravura writing for the instrument and there are no cadenzas.

- mood, philosophy

The origin of the *Piano Symphony* was quite specific and related to my unease at certain elements in our contemporary culture and values. I heard as it were, a brutalised sound – one which is encapsulated in the direction 'Heavy and rhythmic' that heads the opening of the work. It was an insistent, mechanical, dehumanised sound that should sweep the listener along in its wake. At the same time, I wanted there to be a second, equal and balancing movement that would attempt to dispel any mood of hopelessness engendered by the first. Both parts would contain a more or less equal amount of fast, energetic music, together with similar quantities of contrasting, slower and contemplative passages. Whereas the energy of Part 1 was to be negative and repressed, that of Part 2 would be positive and life-affirming. In the event, although this scheme was closely adhered to, the mood of the second movement presents only a qualified degree of reassurance. Its more optimistic tone has a certain frailty, which appears provisional and could easily be broken.

Conclusion

In the *Introduction*, I spoke of a journey. The five works in this portfolio represent its various stages, and I summarize these in the accompanying *Abstract*. Central to the journey have been the assorted techniques of material transformation, tonal organization, and handling of voices and instruments – techniques that I have sought to develop progressively through the series of pieces. Allied to these is the question of the listener's ability to retain and manipulate such materials and techniques. The recursive nature of the process is an obvious, but crucial element in the appreciation of an art, the presentation of which is always fleeting. How can the composer express ideas in such a way that what is expressed is received or experienced successfully? A constant preoccupation therefore, has been how to find the best musical apparatus to enable me to enter into that all-important dialogue with an audience. In the end there must be this collaboration, otherwise how does the artist know s/he is telling the truth? To close, I return to Collingwood, who beautifully captures this idea:

'The artist's business is to express emotions; and the only emotions he can express are those which he feels, namely, his own. No one can judge whether he has expressed them except some one who feels them. If they are his own and no one else's, there is no one except himself who can judge whether he has expressed them or not.'6

⁶ R.G. Collingwood, *The Principles of Art* (London, Oxford University Press, 1938), 314

Bibliography

BACH, JOHANN SEBASTIAN, *Musicalisches Opfer* ed. Hans Gal (London, Hawkes Pocket Scores, Boosey & Hawkes Ltd., 1952)

BARTÖK, BÉLA, *Piano Concerto No 1* (Vienna, Philharmonia Partituren, Universal Edition, 1927, rev. edition 1998)

BARTÖK, BÉLA, *Cantata Profana* (Radio-Symphonie-Orchester Berlin, RIAS-Kammerchor, Chor der St.Hedwigs-Kathedrale, Helmut Krebs (tenor), Dietrich Fischer-Dieskau (baritone), cond. Ferenc Fricsay (Deutsche Grammophon, 457 756-2, 1994)

BERG, ALBAN, *Violin Concerto* (Vienna – London, Philharmonia Partituren, Universal Edition, 1936)

BERG, ALBAN, Wozzeck (Vienna, Universal Edition, 1926)

BERIO, LUCIANO, *Coro* (Milan, Universal Edition, 1976)

BERIO, LUCIANO, O King [1968] (London, Universal Edition, 1970)

BERIO, LUCIANO, Points on the curve to find (Milan, Universal Edition, 1974)

BERIO, LUCIANO, Sinfonia (London, Universal Edition, 1969)

BOULEZ, PIERRE, *Notations pour orchestre (I-IV)* (London, Universal Edition, 1978-84)

BOULEZ, PIERRE, *Stocktakings from an Apprenticeship* ed. Paule Thrévenin. trans. Stephen Walsh (Oxford, Clarendon Press 1991)

BOULEZ, PIERRE, sur Incises (Vienna, Universal Edition, 1998)

BRITTEN, BENJAMIN, Symphony for Cello and Orchestra (London, Boosey & Hawkes Ltd., 1963)

BRITTEN, BENJAMIN, Death in Venice (London, Faber Music, 1973)

CAGE, JOHN, First Construction (in metal) (New York, Henmar Press Inc. (C. F.

Peters edition) 1962)

CAGE, JOHN, *Third Construction* (New York, Henmar Press Inc. [C. F. Peters edition] 1970)

COLLINGWOOD, R., G., *The Principles of Art* (London, Oxford University Press, 1938)

CRUMB, GEORGE, Black Angels (New York, C.F. Peters, 1971)

CRUMB, GEORGE, Makrokosmos Vol I (New York, Peters Edition, 1974)

DEBUSSY, CLAUDE, *La Mer* (Edition Eulenburg, after Durand et Cie., Paris, 1905, rev. 1909)

HOFSTADTER, DOUGLAS, R., Gödel, Escher, Bach: an Eternal Golden Braid (London, Harvester Press Ltd., 1979)

HOWAT, ROY, *Debussy in Proportion – A Musical Analysis* (Cambridge, Cambridge University Press, 1983)

LENVAI, ERNÖ, *Béla Bartók – An Analysis of his Music* (London, Stanmore Press Ltd., with Kahn & Averill, 1971, rev. 1979)

LIGETI, GYÖRGY, *Atmosphères* (1961) Sinfonie-Orchester des Südwestfunks, Baden-Baden, dir. Ernest Bour (Wergo, 60162-50, 1966)

LIGETI, GYÖRGY, Chamber Concerto for 13 Instrumentalists (Mainz, Schott & Co., 1974)

LIGETI, GYÖRGY, Cello Concerto (Frankfurt, Peters Edition, 1969)

LIGETI, GYÖRGY, Piano Concerto (Mainz, Schott & Co., 1986)

LIGETI, GYÖRGY, String Quartet No 2 (Mainz, Schott & Co., 1968)

MAHLER, GUSTAV, *Symphony No 3* in D minor (EMI Classics, 5 56657 2, City of Birmingham Symphony Orchestra & Choruses, Birgit Remmert (contralto), (cond., Sir Simon Rattle, 1997)

MESSIAEN, OLIVIER, Quatuor pour la fin du temps (Paris, Durand et Cie. 1942)

MESSIAEN, OLIVIER, *Turangalîla-Symphonie* (Paris, Durand et Cie. 1953)

REICH, STEVE Come Out for tape [phasing], (New York, 1966)

REICH, STEVE Different Trains (New York-London, Boosey & Hawkes, 1988)

SCHWARZ, K., ROBERT, Minimalists (London, Phaidon Press Ltd., 1996)

SCHOENBERG, ARNOLD, 5 Pieces for Orchestra op 16 (Orfeo, C 274 921 B, Symphonieorchester des Bayerischen Rundfunks, cond., Hermann Scherchen, 1957)

SEIFE, CHARLES, Zero: the Biography of a Dangerous Idea (London, Souvenir Press, 2000)

STOCKHAUSEN, KARLHEINZ *Kreuzspiel* 1951, rev. 1963 (London, Universal Edition, 1960/63))

STOCKHAUSEN, KARLHEINZ, *Stimmung*, Singcircle, dir. Gregory Rose (Hyperion, CDA66115, 1983)

STRAVINSKY, IGOR, *Les Noces (Svadebka)* ed. Margarita Mazo (London, Chester Music, 2005)

STRAVINSKY, IGOR, *Symphonies of Wind Instruments* (Paris, Edition Russe de Musique, rev. version, Boosey & Hawkes Inc. (New York) 1952)

TIPPETT, MICHAEL, Boyhood's End (London, Schott & Co. Ltd., 1945)

TIPPETT, MICHAEL, Fantasia Concertante on a theme of Corelli (London, Schott & Co Ltd, 1953)

TIPPETT, MICHAEL, *Piano Concerto* (London, Schott & Co. Ltd., 1957)

TOOP, RICHARD, György Ligeti (London, Phaidon Press Ltd., 1999)

WEBERN, ANTON, *Five Pieces for Orchestra* op. 10, 1913 (Vienna, Philharmonia Partituren, Universal Edition, 1923)

WEBERN, ANTON, *Concerto* op. 24 (Vienna, Philharmonia Partituren, Universal Edition,1948)

WEBERN, ANTON, *Six Pieces for Orchestra* op. 6, 1909 (Vienna, Philharmonia Partituren, Universal Edition, 1961)

VAUGHAN WILLIAMS, RALPH, *Symphony No 9* in E minor (London, Oxford University Press, 1958)

XENAKIS, IANNIS, *Music and Architecture* compilation, translation and commentary, Sharon Kanach (New York, Pendragon Press, 2008)

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