Portfolio of Compositions and Technical Commentary

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Abstract

During this doctoral project, I sought to find within intellectually appealing works the techniques that would enable me to write music that I personally found intuitively engaging, physically exciting, and that would reconcile the different aesthetic tendencies and influences in my music which attempts to inhabit the borders of the vibrant Brazilian popular musics, jazz and European twentieth-century art music. The six compositions in this portfolio are the result of this research project which can be separated into two phases. In the first phase prevailed the study and appropriation of specific techniques identified in works by well established composers, namely Carter's use of hexachords, Birtwistle's layerings and Ligeti's 'consonant atonality'. These techniques were explored intuitively, reinterpreted and juxtaposed in different sections of the first three compositions present in the portfolio which are: ***Um Pequeno Ensaio*** (for piano, clarinet in Bb, violin and cello), ***Digressões*** (for clarinet in Bb, violin, cello, double bass and piano) and ***Resolute*** (for string quartet and guitar). In the second phase, these techniques were completely reconsidered and virtually abandoned in favour of a more unified and personal approach to harmony and composition through the use of 'static harmonisation', 'static counterpoint' and 'compositional feedback loops', culminating in the final three pieces of the portfolio: ***Shades*** (for an ensemble of eleven players), ***Of Instance and Memory*** (for an ensemble of ten players) and ***Different Sevens*** (for orchestra). During this research for appropriate harmonic techniques, I also explored the appropriation and reinterpretation of a number of textures and rhythms derived form jazz and Brazilian popular music albeit in different musical contexts. These textures all have as central thematic the pianist's role as accompanist within these popular musics, an aspect which is indebted to the fact that the piano is my constant source of compositional ideas and experimentation through improvisation and performance.

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1.0 Introduction

My relationship with music from an early age has been tightly connected with performance. Sadly, at the age of 21, an injury that debilitated my left hand's strength and coordination led me to move away from any type of career as a pianist/composer, I can still play and feel the constant need to physically engage with music, in fact most of my creative ideas come from moments of improvisation at the piano, but since the injury, performance has become a private and personal affair. This was a significant event in my life nonetheless, and challenged my intuitive and physical relationship with music. Composing was still an engaging activity, but the limitations to performance were not an easy situation to deal with.

My undergraduate education was heavily influenced by serialism and the 1950's Avant garde, and while I found this music intellectually stimulating, it failed to reach me physically. True, I am fascinated by Schoenberg and Webern's work, and even some avant garde music, but I have never had any desire to play much of it besides Berg's *Piano Sonata*. I was therefore faced with a complicated dilemma. Even though I found most of this music rhythmically, harmonically and melodically problematic, I still felt I had to engage with it at some level as I felt more academic incentive towards composing music that though intellectually stimulating, inspired no desire of performance in me.

Alongside my composition studies, I began to study jazz harmony and improvisation, and eventually became deeply engaged with this music under the guidance of Claudio Dauelsberg. Jazz provided me with an immensely appealing palette of harmony, musical thought and freedom, along with an abundance of rhythmic possibilities. The way in which pianist Cesar Camargo Mariano

developed samba accompaniments at the piano was of particular interest, changing my approach to the instrument. More importantly, it was through the performance of Brazilian rhythms and jazz that I began to reconnect with my performer's instinct. Therefore, since my undergraduate years, my compositional research has been directed towards finding some way of reconciling these different impulses, attempting to find within intellectually appealing works the techniques that would enable me to write music that I personally found intuitively engaging, physically exciting, and that would somehow inhabit the borders of the vibrant Brazilian popular musics, jazz and European twentieth-century art music.

As my knowledge of twentieth-century music developed, I started to find composers that were more appealing to me such as Knussen, Birtwistle and even Murail. Yet, while I do enjoy the harmonic colours and textures in Murail's *Ethers* (1978) and *Winter Fragments* (2000), I am still discouraged by the limited melodic material and lack of rhythmic vitality in these pieces. It was in Ligeti's work that I found immediate connection and attraction, particularly in his first *String Quartet* and the *Piano Studies*. It seemed that his techniques would aid me in bridging the gap between the intellectual and the intuitive. Therefore, I set out to experiment with techniques I found in other composers that seemed to resonate my personal compositional aspirations.

The works in this portfolio of compositions explore a number of selected techniques and textures, derived both from the vernacular of Brazil and European art music and may be divided in two stages. The first phase includes the first three pieces of the portfolio (*Um Pequeno ensaio*, *Digressões* and *Resolute*) and the second comprises *Shades*, *Of Instance and Memory* and *Different Sevens*. Behind all of these works lies the desire to create music that inhabits the borders of tonality and atonality, but there was a significant change to the way in which I sought this out in each of these phases.

Throughout the first phase I studied numerous scores and learned techniques from the works of other composers such as Elliott Carter, Harrison Birtwistle and Gyorgy Ligeti, and appropriated or reinterpreted them freely, namely Carter's use of Hexachords in works such as *Gra* and *Retrouvailles*, Birtwistle's layered writing in *Saraband* and *Pulse Shadows*, and what Ligeti calls 'consonant atonality' in his fourth piano study *Fanfares*. As I worked with these techniques I gradually found my own path which eventually led me to completely abandon them altogether, in favour of my own variants and techniques.

The second chapter of this commentary deals with my rhythmic appropriation from jazz and Brazilian popular music within the whole portfolio. This chapter is shorter than the others due to the fact that there was little change to the way in which rhythms were appropriated in the portfolio. The third chapter addresses the compositional techniques used in the first phase, while the fourth focuses on the techniques present in the second phase. Given that most of the research was concerned with harmony, this shall be the major focus of both chapters three and four. Chapter three describes the techniques appropriated from other composers such as Ligeti's consonant atonality, Carter's hexachords and Birtwistle's layerings and how they appeared in the first three pieces of the project. Chapter four focuses on static harmonisation and feedback loops that appeared in the final three pieces as a consequence of the appropriations made in phase one. At the end of chapter three and four, there is a discussion of the implications of the harmonic techniques relative to each phase with regards to musical form and overall compositional approach.

2.0 Jazz, Brazilian rhythms and the piano

I have always been interested in the background and yet important role of the piano as accompanist within different jazz formations, particularly in three different settings: as the main harmonic accompanist within the standard jazz rhythm-section (piano, bass and drums), as a central figure when the music or the accompaniment is based around repetitive pianistic patterns or grooves, and finally as sole accompanist performing Brazilian rhythms. These accompaniment textures from jazz and Brazilian rhythms were a major source of influence, inspiration, appropriation and experimentation throughout the composition of the works in this portfolio.

2.1 Piano and bass within a jazz ensemble

When a jazz ensemble has a standard piano trio rhythm section accompanying a small number of soloists, the piano and bass interact intensely and are responsible for a significant part of the rhythmic feel and drive of the music. While the bassist provides the root of each chord, the pianist normally plays a sequence of rootless chords alternating rhythmic patterns with much variation. Pianist Herbie Hancock is a perhaps one of my strongest influences when it comes to accompanying Jazz soloists, particularly in his work as a sideman in Wayne Shorter albums such as *Juju, Adam's Apple*, *Speak no Evil*, and *Schizophrenia*, and with Miles Davis during the sixties in albums such as *E.S.P.*, *Filles de Kilimanjaro* and *Miles Smiles*.

I created and explored variants of this accompanimental texture five times within three pieces of the portfolio. The first time was in *Um Pequeno Ensaio*, from bars 13 to 32. *Digressões* presents three

instances of it: bars 90-120, bars 297 to 319, and the final from bars 425 to 447. The final variant occurs a number of times throughout the *Misterioso* movement of *Shades*, one of which extends from bar 31 to 64. In all cases, I strived to create a floating, free flowing, non-linear sequence of chords for the piano that at times contradicts the occurring time signatures, and would not necessarily be governed by tonal or modal structure. In every variant – except in *Shades* where I started from the bass melody – composition began by creating a chord sequence at the piano.

The extract from *Um Pequeno Ensaio* shown in Figure 1, is the first appearance of a variant of this accompaniment texture in the portfolio. Here, the chord sequence appears in the piano, while the bass line is played by the cello, which alternates between sustained tremolo gestures and brief pizzicato phrases. This texture functions as an accompaniment to a duet played by clarinet and violin. The rhythmically independent cello and piano parts eventually combine into a defined rhythmic pattern at bar 28, changing the character of the section and adding drive towards its climax. The piano chord sequence up to bar 28 is comprised of differently sized groupings of sustained chords that always conclude through descending motion on a staccato chord. The alternation between staccato and sustained chords is used in all the variants of this texture creating motivic figures within the long sequences of chords.

Figure 1. Bass and piano accompaniment texture from Um Pequeno Ensaio bars 22 to 31. From an independent seven bars, bass and piano converge into unified rhythmic pattern at bar 29.

Although jazz played a significant influence in the genesis of this section, the resulting texture is perhaps quite distant from it, as is also the case in the first variant in *Digressões* (bar 90 to 120). Both these variants are in fact the least 'jazzy' of all five within the portfolio. This is related to the fact that over the course of this doctoral project, popular rhythms and harmonies only enter the surface of the music gradually. Alongside the increased influence of popular music was an interest in exploring and expanding this type of texture. In *Shades*, the use of a larger ensemble allowed me to reinterpret this type of texture without needing to recourse to extra layers. Accordingly, I selected a number of chords from the sequence, in no particular pattern but with careful attention to the melodic strata, and orchestrated them within the woodwind and brass with crescendo gestures (e.g. bar bar 31 to 64 of the *Misterioso* movement from *Shades*). The idea was to enhance the piano part, without adding an independent musical layer and maintaining the piano/bass accompaniment relation as the basis.

2.2 Piano grooves

Herbie Hancock's *Cantaloupe Island* from the album *Empyrean Isles* in one of the most famous examples of the type of jazz songs and themes that are built around repetitive pianistic patterns. This is the second way in which pianistic accompaniment textures from vernacular music, be it jazz or Brazilian, have been explored in this portfolio. However, in this instance, *Fingerprints* from Chick Corea's album *Past & Present*, and Finnish pianist Alexi Tuomarilla's *Changes* from the album *Voices of Pohjola* were more significant influences that Hancock's piece.

In this type of piano based texture, a pianistic pattern, that in most cases includes a bass line, is presented either as an accompaniment or on its own. These patterns do not necessarily exhibit much melodic variation, their identity and character primarily lies in their rhythmic vibrancy and the drive brought about by the means of repetition, thus lending well to the role of accompanimental figures. The first occurrence of a piano groove in the portfolio is in *Digressões* from bars to 320-356, which contrary to common practice in jazz, exhibits some variation. Figure 2 presents an extract of this accompaniment from which it is possible to appreciate the variations between the four constituent phrases by means of additive rhythms, anticipations, retardations and motivic sequences providing unpredictability to an otherwise fixed pattern. This piano pattern serves as an accompaniment to a chromatic melody doubled in the flute and clarinet almost exclusively in major seconds, while strings are responsible for adding to the overall texture with tremolos and fast quaver note gestures. Both these gestures in the strings and the variations applied to the pattern contribute to distancing the music from jazz and turning it into something more akin to art music.

Figure 2. First piano groove from Digressões showing motivic variations and irregular entries.

The second pianistic accompaniment pattern from *Digressões* in bars 379 to 398 is much 'jazzier' than the first in the sense that there are no motivic variations, it is fixed and completely based around a 5/4 piano groove (figure 3). Within the ensemble, the piano's left hand line is doubled by the bass. This section leads into music that mimics a piano jazz solo where the pianist's left hand merely punctuates the right hand melody through carefully placed chords.

Figure 3. 5/4 Piano groove from Shades.

Although the final piano groove that appears in *Shades*, *Alegre, Leve* from bars 81 to 94 (figure 4) is similar to the others, it makes use of a predetermined rhythmic sequence. I created the pattern at

the piano as with the others, but this time I had a pre-defined rhythmic sequence to use as foundation for the accompaniment groove. This pattern therefore combines two fundamental rhythmic approaches used in this portfolio, namely the use of accompaniments and rhythms from popular music and the use of fixed rhythmic patterns.

Figure 4. Piano accompaniment pattern or groove from Shades, Alegre, Leve and its generating rhythmic sequence.

2.3 Brazilian rhythms

Three pieces in the portfolio use Brazilian rhythms to various extents, ranging from a slightly veiled presence through the use of syncopation in *Um Pequeno Ensaio*, to a bossa-nova variant in *Resolute* and a much more explicit appropriation of samba in *Of Instance and Memory's* final movement. Figure 5 shows the piano part from bars 69 to 100 of *Um Pequeno Ensaio* that serves as an accompaniment to what appears to be a set improvised melodies. The piano right hand plays a pre-composed line while the left hand has its homophonic counterpart. The intention was to create an accompaniment that, while fixed and repetitive in essence, had an improvised melodic feel. Therefore as seen in figure 4, I based the right hand melody on three phrases that present rhythmic displacements of variants of 'motive a' and brief melodic semiquaver runs. Although this

accompaniment is by no means a literal representation of any Brazilian rhythm, the syncopated nature of 'motive a' can be traced to my being influenced by rhythms such as samba and choro. This piano part, like in all the cases discussed previously in this chapter was the first stratum created in the music.

Figure 5. Long accompaniment figure from Um Pequeno Ensaio, showing the phrase structure and the variants of motive a.

The other two appropriations are partly related to my experience in studying and playing samba and bossa nova at the piano under the guidance of Claudio Dauelsberg, but more directly to my study of Cesar Camargo Mariano's extremely polished and elegant style, which can be seen throughout his album *Duo* with guitarist Romero Lubambo. Along with eloquent bass lines and rhythmic precision, Mariano explores the use of two rhythmic layers in the right hand, creating intense activity and variation, relinquishing and emulating the machine like semi-quaver patterning characteristic if much Brazilian rhythms.

In order to demonstrate this technique, figure 6 shows a purposely composed simple samba accompaniment over a ii - V chord sequence. I started with a basic two-bar samba cell on the right hand, and a simple crotchet bass line which is used as reference for developing a more elaborate accompaniment. In the second staff I explored bass-line variation, and in the third staff I introduced a second rhythmic layer to the right hand in ways similar to Cesar Camargo Mariano's technique. This three-part layered rhythmic structure adds significant vibrance and vitality to these rhythms and is the basis for the appropriations that appear both in *Resolute* and *Of Instance and Memory*.

Figure 6. Example of samba playing at the piano, from the basic two bar cell to more complex variations influenced by Cesar Camargo Mariano's three-part layered performance style.

In *Resolute's* episodic second movement *Numb*, from bar 163 to 232, the initial inspiration was a guitar accompaniment to bossa nova. However the resulting rhythm is quite free and ultimately independent from this original model and is not intended to be heard as bossa nova. Despite having the guitar in mind, the overall texture was derived from the afore mentioned pianistic three-part rhythmic structure, combining the string quartet in pizzicato with the guitar mimicking and expanding the plucked chord texture used in Brazilian popular music. While the guitar and the two violins combine to form the principal rhythmic chordal line, the viola is mostly responsible for occasionally adding the machine like semi-quaver patterning. As the episode evolves, bowed notes start to appear with increased regularity leading to episode C (b. 232 to 263) where the guitar becomes exclusively responsible for the accompanying chords, as melodies gradually appear and interact within the string quartet.

Finally, in *Of Instance and Memory* I appropriated a modified samba accompaniment in the *Final Instance*. This is the single case study of this chapter where the accompaniment was composed after the foreground melody. I started with the entire melody of the movement and attempted to score the above three-part layered samba piano texture using the strings and harp as accompaniment. The scoring technique was similar to *Resolute*, although more faithful to a genuine samba in result, except for the fact that this time, the second violin is responsible for the constant quaver machine-like element, while the harp intercalates the principal rhythmic chord line with first violin and viola pizzicato chords. Moreover, here I also attempted to allude to a cuíca (a very unique sounding percussion instrument extremely idiosyncratic to samba) through the use of chords placed in a higher register in the harp. Figure 7 shows a basic typical cuíca part for samba.

Figure 7. Basic samba cuíca part.

Figure 8 shows the first six bars from the *Final Instance*, where a 5/2 samba-variant was created. The pattern is written as a 2/2 and 3/2 bar-sequence, where the first is a literal samba bar, and the second expands the basic samba rhythm by prolonging the ending. In bar 6 the 3/2 bar is replaced by a 2/2 bar creating a more genuine samba, although as the piece progresses, constant time signature changes occur in order to expand and contract the basic samba cell, creating variation and unpredictability.

Figure 8. Extract of samba accompaniment from O.I.A.M. With a 5/2 samba guide rhythmic line pointing out cuíca allusions in the harp.

3.0 First phase: *Um Pequeno Ensaio, Digressões* and *Resolute*

As outlined in the introduction, initially I was drawn to exploring compositionally the hexachordal techniques evident in Carter's *Gra* and *Retrouvailles*, Birtwistle's layered writing in *Saraband* and *Pulse Shadows*, and what Ligeti calls 'consonant atonality' as manifested in his fourth piano study *Fanfares*. In each of the first three pieces more than one technique was explored, and although I sought out ways of synthesising these differing techniques into unified compositional processes, at this stage of the portfolio, they are mainly juxtaposed within the pieces. This chapter will explain each technique in order to present how these were appropriated in specific parts of the first three pieces, *Um Pequeno Ensaio*, *Digressões* and *Resolute*.

3.1 Hexachords and melody

My taste for chromatic and angular melodies, with 'awkward' or 'rough edges', but with neither obligation for chromatic completion nor resource to Messiaen's modes of limited transposition, led me to explore the use of unordered hexachords. Elliott Carter's approach to hexachords and melody, particularly in *Gra* for solo clarinet provided a strong influence. In *Gra* for solo clarinet and *Retrouvailles* for solo piano, Carter is quite rigorous in restricting the source of pitches in the music to specific transpositions of an unordered chosen hexachord. Choice of transposition level seems to be determined by the presence or absence of common tones, enabling local pitch centricity when necessary. In his late compositions Carter used extensively all-triad-hexachords (i.e. hexachords that contain all possible triads as subsets) which enabled him to focus on specific triads throughout a piece.

My approach however is probably less abstract that Carter's as I rely primarily on improvisation. Generally I create a melody or gesture at the piano from which I abstract a hexachord, which in turn serves as the basis to both harmony and the development of the melody itself. For instance, figure 1 shows a clarinet melody based on a transposition of a [012457] source hexachord from *Um Pequeno Ensaio* appearing as [G-F#-F-Eb-D-C] which is freely permutated from bar 15 to 30 with the aim of creating an expressive melodic contour. This pitch collection is an abstraction from the gesture presented at the piano in bar 1 with an added pitch C (figure 2). The starting material of this piece was in fact the improvised right hand gesture, which could be regarded as a subgroup of a G-harmonic-major scale. The rationale for the five-note left-hand counterpart was to create an almost entirely mirrored second voice in counterpoint using major seconds and thirds major seconds and thirds.
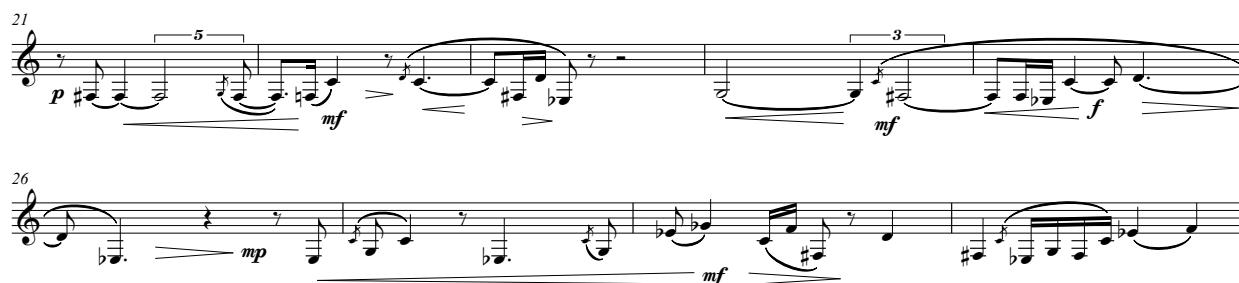
Figure 1. Clarinet melody from Um Pequeno Ensaio based on permutations of a [012457] hexachord.
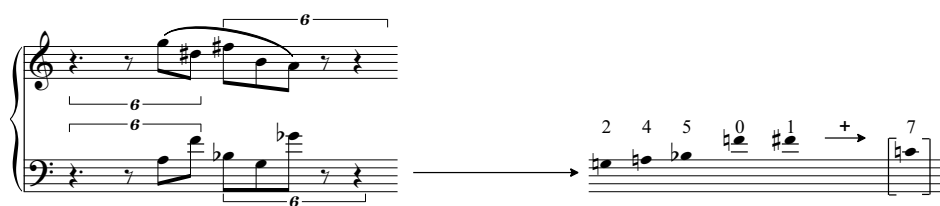

Figure 2. Initial gesture from Um Pequeno Ensaio and the derived hexachord.

The third movement from *Digressões*, *Poema,* involves another melody completely focused around a hexachord. This time I strived to create a longer and flowing melodic line which appears on the flute at bar 155, instead of the more constricted example from *Um Pequeno Ensaio*. The section extending from bars 142 to 175, sees the melody rise from a chromatic canon in the strings and clarinet. This canon is a two-part structure with the first part exploring the chromatic collection from C to F in bars 142 to 155, and the second exploring the interval from F# to B, in bars 155 to 170. The flute melody is initially tangled within the canon exploring the low Eb to Gb chromatic region (bars 142 to155), but it comes to the fore between bars 155 to 175 exploring the [Db-C-Bb-A-Gb-F] collection   which is a transposition of the [013478] source hexachord. The contrasting section extending from bar 175 to 221 does not develop motivic material from the first part. Instead, a completely unrelated texture appears using transpositions of the aforementioned hexachord in a texture involving a double bass melody and a more vertical and rhythmic layer played by the piano. This layering of numerous strata is characteristic of the way that I use hexachords.

3.2 Combining layers that follow distinct processes

The recourse to combining layers that follow distinct rules or processes is a common trait in much contemporary music. Figure 3 shows an example of its use in Harrison Birtwistle's *Saraband* for solo piano. Two chord layers with distinct formation principles rigorously maintained throughout the whole piece combine to form a harmonic background strand while the melody that explores chromatic pitch collections completes the three-layer texture. Each layer maintains its own harmonic integrity while combining with the others through no particular rule other than the maintenance of its specific individual orientation, thus creating a variety of unpredictable colours and environments.
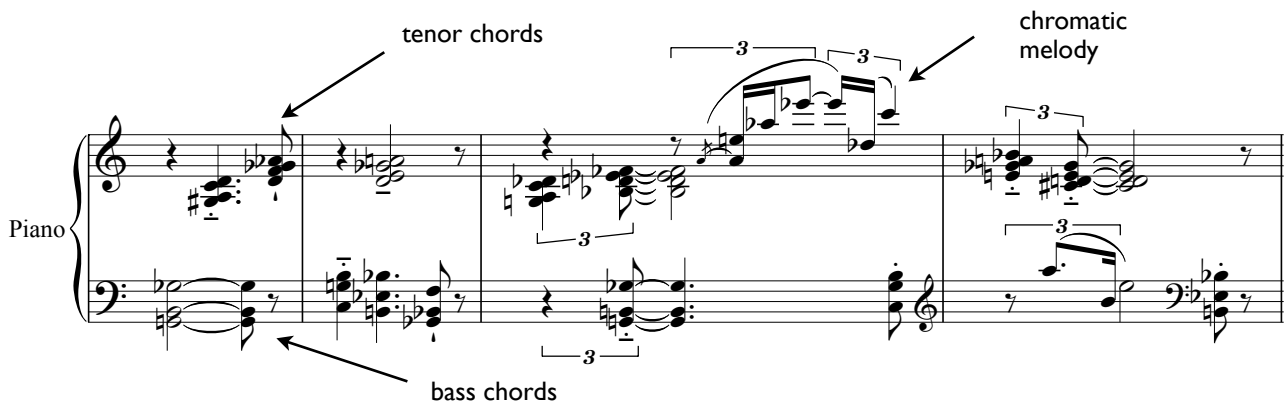
Figure 3. Birtwistle's Saraband extract. Three structural layers.

The combination of harmonic unpredictability with some sort of identity or inner consistency, be it melodic, harmonic, linear, spatial (placing in register) or textural interests me immensely. In the case of Birtwistle's *Saraband*, I was also drawn by the unpredictable way in which the melody is developed while always maintaining some sort of self-reference in its unfolding as well as the rich harmonies that accompany it. Although I personally would have never guessed the underlying logic that governs the chords' elaboration, I heard some sort of captivating continuity that led me to analyse the piece. With this idea of combination and unpredictability in mind, I experimented with different types of independent layering particularly in the first three pieces of the portfolio. They range from the most direct experiment involving the layering of two different transpositions of a hexachord used in the aforementioned B section of the *Poema* (bars 175 to 221), to others that involve more complex strata and layers with different individual orientations.

3.3 Layering of hexachordally determined material to create a variety of degrees of tonal motivation

Throughout *Digressões*, layering was used in a variety of ways, both as a technique to generate large sections of music and as a local procedure for disrupting modality. Figure 4 shows an extract of the *Desvio Lúdico* completely built through layering, in which a total of five layers acting as

either 'melody' or 'accompaniment' may be observed. In this melodic layer, the flute is doubled almost consistently a major second below by the clarinet. The 'accompaniment' combines three transpositions of the [013478] that was also used in the *Poema*. The three transpositions of the hexachord were chosen and voiced carefully in order to create a sense of E-minor, an allusion that was facilitated due to the presence of E and B in the two transpositions of the hexachord used in the lower register of the accompaniment.


Figure 4. Layers in the first part of the Desvío Lúdico.

In my music, the main motivation for using a particular harmonic technique is always to express my ideas adequately. In this case, perhaps ironically, I use three superimposed hexachord transpositions to both approximate and deny a suggested modality.

In another experiment from *Um Pequeno Ensaio*, I sought after a different type of ambiguity. By applying a number of processes to a single transposition of a hexachord I aimed at creating an

unpredictable and floating chord sequence played by the piano (bar 11 to 33). The sequence is based on the [0,1,2,4,5,7] source hexachord which I have already mentioned in relation to this work. Figure 5 shows the intervening steps in its transformation:

1. Selection of a specific transposition → [B-Bb-A-G-F#-E] (piano, bar 11);

2. Division of the chord into three dyads → [B-F#], [A-G], [E-Bb];

3. re-writing the remaining tetrachord of the hexachord above these dyads;

4. filtering of one note from each tetrad leaving a different triad above each dyad;

5. maintaining the dyads unaltered while transposing their accompanying triads freely.

Fig 5. Creation of chords for piano sequence in section B.

This process can be observed in the piano chords of subsection B, where the left hand alternates between the above dyads while the right hand plays their accompanying triads in different inversions and transpositions. This resulted in a chord sequence that is not goal oriented and floats or hovers 'as if' around itself. This procedure generated a self-referential sequence of harmonies that while maintaining some degree of intervallic similarity between successive chords, results in a succession of chords with continuously shifting intervallic constitution.

3.4 Layering with at least one stratum exhibiting diatonic features

Both techniques I described in the previous sections were used only once within the portfolio. On other occasions, instead of superimposing hexachords to hint to a mode, I superimposed hexachords or chromatic strata on an actual mode. A clear instance of this occurs in the first movement of *Resolute* in the sense that it presents a dichotomy between chromatic and diatonic material through layering. A modal melody in the Dorian mode on C is played by the guitar accompanied by chromatic chords played by the string quartet. Figure 6 presents the first three chords of *Resolute 1,* labelled as A, B and B' in which the third chord is a transposition of the second. The two musical layers, melody and accompaniment start to interact at bar 36 as the guitar plays forceful versions of the quartet's chords that are prolonged in high string tremolo harmonic gestures leading to a harmonic role reversal in the second part of the movement. From bars 52 to 77, the string quartet continues to play accompanimental figures, but now it is harmonically from the superimposition of two Dorian scales (F#m and Gm). These two scales are present in the second violin and viola, creating a bimodal texture. The guitar plays a largely chromatic melody and even gestures derived from one of the chords belonging to the first part. Figure 7 shows an extract of the guitar melody from bar 61 that is constructed with the pitch collection from chord B.

Figure 6. First three chords of Resolute I

Figure 7. Melodic extract based on chord B

The dichotomy of chromatic and modal layers is revisited in *Resolute II*, in which both sections of the first movement return, but with a different treatment. While the final section, which returns in bar 423, is almost unaltered, the melody of the first section of *Resolute I* appears in a thoroughly altered musical context between bars 355 to 379. The melody on Dorian mode on C of the first movement returns, along with the accompanying chords, but these chords are texturally reworked.

3.5 Layering to disrupt tonality

A different use of layering where the material is neither hexachordally or chromatically determined was explored in the second movement of *Digressões*, *Tema*. Figure 8 shows a particular chord succession of tonal origin that is highly relevant to the movement. After this chordal sequence is introduced at bar 90, the chords disconnect from the original bass line, generating two distinct layers, each of which is subjected to different transposing principles, thus resulting in an ambiguous quasi-tonal environment.

Figure 8. Bar [90] Tema accompaniment.

3.6 Consonant Atonality

Music is for me in the first instance something intuitive. Then, however, I begin to work conceptually, making concrete the original purely acoustic or musical vision. In finding a conceptual development that matches the musical vision, during which I prescribe rules for myself as to composition or form, something concrete emerges from the general vision, and that is the score. [1]

Ligeti (1998)

I have always been fascinated by virtually everything Ligeti wrote, but his approach to rhythm and harmony in the piano studies have been particularly influential to me. According to Steinitz, Ligeti referred to a procedure that interested me in *Fanfares* as 'consonant atonality'[2]. *Fanfares* can be understood as essentially consisting of a layered structure comprising a constant ascending quaver pattern and melodic chord phrases. The quaver ostinato figure ascends stepwise in a mode that combines the first four notes of a C-major scale followed by the first four of an F#-major scale in sequence, with the melodic chord phrases alternating as if there were two voices, one above and the other below the ostinato. While the chords are all consonant they are tonally unrelated. Each one is carefully composed in relation to the ostinato forming specific chords with the coinciding ostinato pitch, creating a fantastic soundscape where vertical consonance is not supported by tonal progression. In each section of the piece individual chord constitution is changed, but their relation with the ostinato is always controlled. This results in successions of triads (as in figure 9) as well as various types of triads with added sevenths. So while it is possible, through understanding of form, to predict the type of chord to be expected, their transposition is always surprising as it is not governed by tonal functionality. In instances where the chords that form the melodic strata are reduced to one line, each pitch is still carefully composed against the ostinato favouring intervals of fifths or thirds, but mostly the later.

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[1] Ligeti; Hausler, (1998). p.401.

[2] Steinitz, p.291.

Figure 9. Ligeti Fanfares extract showing which major triads are formed between right hand dyads and left hand coinciding pitch.

The use of constant counterpoint in relation to a continuous ostinato was an important preoccupation in the early stages of this project. The most literal experiment with this technique appears in the first movement of *Digressões*. *Introdução* explores two elements, the main motif of the piece (figure 10) and an extended whole-tone descending sequence (figure 11), which are bound together through contrapuntal relations similar to those found in *Fanfares*. Both the chords played by the piano as well as the string pizzicato chords form major triads with added major sevenths with the coinciding descending scale pitch, occasionally also with an added augmented fourth. This relationship is virtually constant from bar 1 to 22. At the point when a flute melody emerges (bar 23) instead I used minor chords with added minor sevenths. For instance this is evident at bar 23 where the flute melody has an A, the piano ostinato has a B, and the pizzicato strings contribute a D and an F# the B-minor-seventh chord (Bm^7). Minor-seventh chords are present all the way through this section until bar 42, when the initial motif returns in the piano, and with it so do the major

triads with added major sevenths. In this way, much like Ligeti, I used the change in resulting chords to reinforce important formal moments.

Figure 10. Motif, first appearance in the piano. Introdução, bars [1-2].
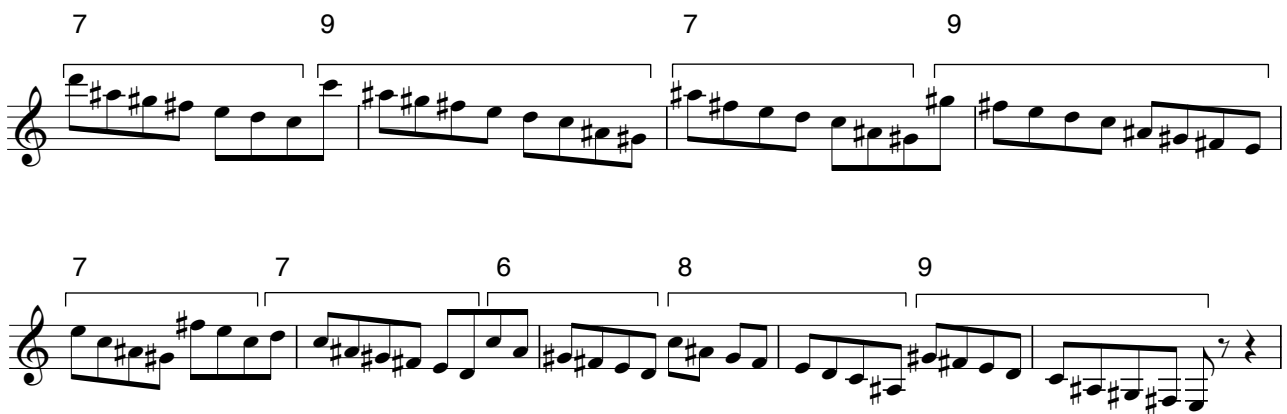
Figure 11. Introdução, ostinato.

In *Um Pequeno ensaio* I experimented with a slightly different version of consonant atonality. From bars 71 to 100, stepwise modal quaver sequence was replaced with a repetitive ostinato in the piano that has much more character, and a stronger rhythmic and melodic identity. Instead of chordal phrases, I created a three-part counterpoint between violin, clarinet and cello over the two-part piano ostinato. Each individual melodic line is constructed by using pitches that form intervals of thirds and fifths with the ostinato. Yet the idea of consonant atonality was not exclusive to the counterpoint strata, but it was also used to elaborate the underlying piano ostinato itself. While the

left hand part of the accompaniment is based on the D-dorian mode, the right hand part was composed to favour intervals of a third.

In *Digressões* I also experimented briefly with another variant of consonant atonality to accompany melodies. Figure 12 presents an extract from *Final* where a chord within a sequence of modal harmonies was transformed into a [0,1,3,4,6,8] hexachord, which becomes the predominant sonority from there on. At bar 500, while the three top notes of the piano chord move upward within the respective Gb-major mode, the two bottom notes shift down chromatically creating an 'out of mode chord'. This new chord is then fixed and a number of its transpositions and rotations are used to accompany the modal melody. While all piano chords are transpositions of the same [0,1,3,4,6,8] chord, their sequence is determined by the melodic considerations, as they were devised as having an obligatory common-tone with the melodic pitch with which they coincide, and thus complying with the basic principle of consonant atonality.

Figure 12. Local application of layering disrupting an otherwise modal environment to introduce a hexachord as accompaniment.

3.7 Tonality and modes

In the earlier pieces of the portfolio I experimented with a variety of techniques of tonal and modal writing particularly *Digressões* and to a lesser extent in *Resolute*, always with the intention of hinting at unstable and ambiguous or 'blurred' harmonic environments. As already explained, at that

stage, an accompaniment figure was the source of harmony and was written before the melodic foreground. It was only in the last piece of the portfolio that the order of the genesis of the roles were reversed and melody became the initial source of composition. This change in compositional approach to tonality is concomitant to the change from hexachord layerings to hexachordal accompaniment textures and from 'consonant atonality' to 'static harmonisation'.

An example of the way I tended to proceed in the earlier earlier phase can be seen in figure 13 which is an extract from the accompaniment pattern seen in the *Tema* movement of *Digressões*. In this accompaniment, a modal progression from I to iii in Gb-major is expanded through awkward voice-leading, chromatic passing notes and symmetric transpositions. The specific sound of modally unrelated minor triads with an added ninth is sought after and realised by means of chromatic voice-leading. The strangeness of the sequence is made stronger by the fact that the resolutions do not occur always in the expected voice. Once the modal Bbm^9 chord is reached it is transposed sequentially through major thirds in a symmetrical pattern, resulting in another process that further undermines modal stability. This chord sequence is the source of harmony for bars 90 to 120 and accompanies a violin melody in Gb that makes extensive use of chromaticism within the mode. This is an example of what I mean by background defining melodic foreground.

Figure 13. Bar [90] Tema accompaniment analysis: 'passing minor chords', chromatic voice leading and symmetric transpositions.

3.8 Observations on Form

The first three pieces of the portfolio all explore ternary and episodic forms within the same work. *Um Pequeno Ensaio* presents a large ternary form, where the first part is a binary AB, of which only the B returns at the end after an episodic middle section. The idea of writing pieces that start with binary AB forms of which only the B section (i.e. the musical consequence) returns unaltered has always interested me. I believe the resultant shift in hierarchy achieved by this formal scheme creates a certain ambiguity in overall form, as in this case a musical consequence defines the piece more than its antecedent. *Resolute*, despite being written in three movements has a similar overall structure.

Resolute II is a return of *Resolute I*, which is also a binary AB. The main difference with respect to *Um Pequeno Ensaio* lies in the fact that the two-part *Resolute I* returns with A using a different texture while a fantasy-like development precedes the return of the unaltered B in *Resolute II*. The episodic central movement (namely the section entitled *Numb* in this work) completes the form in *Resolute*. These episodic movements lend themselves well to an environment where different techniques are juxtaposed within a piece, a characteristic that was explored extensively in *Digressões* which was composed using a vast number of different techniques.

4.0 Second Phase: *Shades, Of Instance and Memory* and *Different Sevens*

The later compositions in my portfolio exhibit a different set of approaches to composition with hexachords, layering and 'consonant atonality'. This chapter discusses the use of hexachordal accompaniment textures and static counterpoint as well as the transformation of the 'consonant atonality' of Ligeti into a sort of 'static harmonisation'.

4.1 Hexachord as accompaniment

I got to know Oliver Knussen's *Songs Without Voices* for the first time during the composition of *Shades* and became particularly interested by their accompaniment textures. While the melodies appear to be based on ordered hexachords, the remainder of the ensemble has either the same or different rotations of the hexachord spread around into a number of discreet gestures that combine into an accompanying texture. Within the accompaniment, notes may be repeated or transferred to a different octave. In addition, while the melody sternly follows a given ordering of the hexachord, the accompaniment is looser in construction. Knussen's way of using hexachords to create the accompaniment as well as the type of textures he created interested me immediately, particularly as up till then I had only superimposed distinct layers that were largely independent and self-sufficient. I also realised that using this would allow me to explore timbre in the accompaniment with more ease, as well as offering me the possibility to explore a sort of heterophony.

4.2 Hexachord accompaniments and the *Expressivo* from *Shades*

In the *Expressivo* middle movement from *Shades* a free flowing melody emerges from a texture of long notes harshly articulated by fast trumpet figures and marimba chords. The melody grows and gradually dominates, leading to a clarinet solo that eventually fades away into a light piano and flute conclusion. *Expressivo* is the only movement based on a hexachord —[0,1,3,4,6,8]— in *Shades*. However, this source hexachord is a subgroup of the melodic-minor-mode (figure 1) which is extensively used throughout the piece, providing continuity in overall harmonic colour in *Shades* regardless of the different organisational principles applied locally.
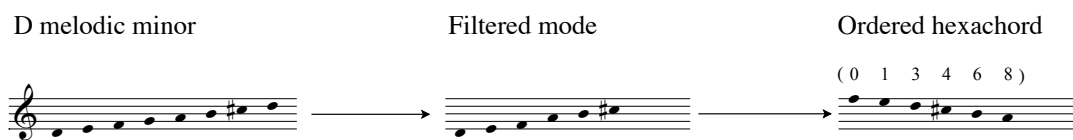
Figure 1. [013468] hexachord and the melodic minor scale

Since using one version of this hexachord at a time would merely create a melodic minor modal environment, different versions of this chord are used simultaneously. They are presented in layers of distinctive gestures, that unfold avoiding dissonant clashes and using a specific hexachord transposition in each layer. I will use the opening from bars 1 to 22 to exemplify how these hexachords were used.

The initial thirteen bars of the piece focus on two transpositions of the [0,1,3,4,6,8] source hexachord presented in three layers: 1) a common tone B pedal on the trombone, 2) a transposition in a low register chord in the marimba, and 3) another transposition in the long notes articulated by the flutes, reeds and double bass. In bar 13 a fourth layer of fast irregular gestures in quintuplets in the trumpet enters with another transposition of the chord, completing the texture of the opening

section. Figure 2 shows the pitch content and register distribution of each layer from bar 13 to 22. All these pitch configurations are rotations of [0,1,3,4,6,8] around the B played on the trombone and double bass.
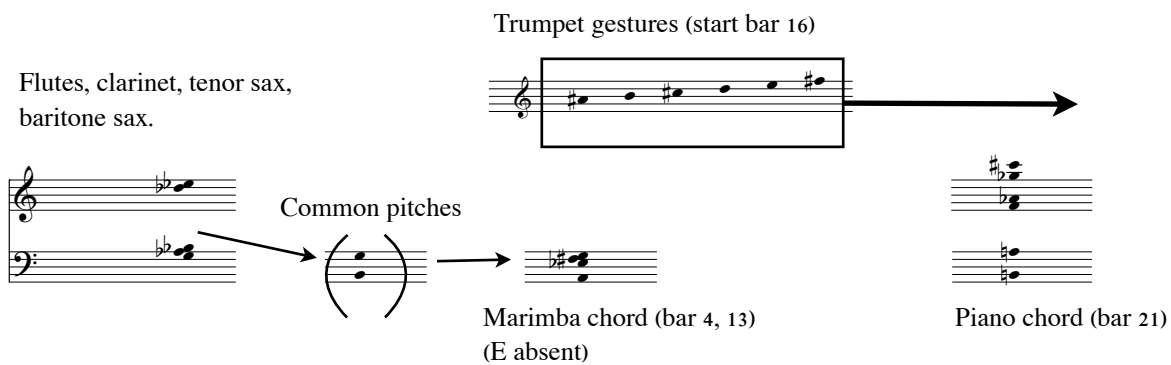
Figure 2. Expressivo. Spatial distribution of [0,1,3,4,6,8] hexachords layers. In bar 21 the marimba chord no longer occurs, the instrument plays trills on notes derived from the piano chords.

The trumpet gesture occurs in the same register as the long notes on the flutes. Here the flutes are relegated to provide a surrounding background envelope blurring the trumpet gestures. When the piano enters at bar 21 the accompaniment gesture changes as the accompaniment starts to centre around the piano preparing for the surfacing of the main melody, reinforced by the harmonic transition from bar 20 to 22. The flutes pick up D and E, two notes from the trumpet chord, before uniting with both the trumpet and piano in one hexachord in bar 23. This convergence into a single chord suggests a harmonic resolution, reinforcing a structural point and the emergence of the clarinet melody. However the resolution is intrinsically challenged as the clarinet melody emerges, flowing through a different transposition of [0,1,3,4,6,8].

4.3 Use of hexachords in *Of Instance and Memory*

In *Of Instance and Memory*, virtually all melodic material comes from hexachords. My impulse in creating this piece was to experiment with a variety of ways in which to accompany and develop a pre-composed hexachord melody, but perhaps the most significant difference between this piece and the earlier compositions of the portfolio was that now the accompaniments are always harmonically bound to the melodies in question. This means that there were no harmonically independent layers as in the previous pieces, even though all that may have connected vertical and horizontal or harmony and melody was a common pitch.

In this work, hexachords were used to accompany a melody both at the very beginning of the *First Instance* movement and again in *Fragment*. In both cases, melody was the starting point of composition. While in the *First Instance* the melody was modified, extended and varied, in *Fragment*, it was left almost intact. The original phrase of the melody from the *First Instance*, based on [0,1,3,6,7,9] is shown in figure 3. I combined two minor triads a tritone apart creating a hexachord and improvised until the ideal shape was found. However, instead of a straight forward presentation of the melody, I repeated its first half a number of times in the horn. This first part of the melody is permutated, varied and interspersed with improvisational gestures delaying the emergence of the second half which only occurs at bar 30 in the clarinet. Indeed, formal closure of the movement is achieved through completion of this melody.

Figure 3. Main melody from Of Instance an Memory

This melody is further surrounded by a number of gestures, all of which use transpositions of the [0,1,3,6,7,9] source hexachord. However, the rate of change of the accompaniment hexachord is significantly slower than that in all previous pieces. Considering I thought of these hexachords as combinations of two minor triads throughout composition, I'll address them as such here, particularly since I allowed myself to add the ninth of either triad involved whenever desired. The first transposition of the source hexachord used as accompaniment is the Cm/F#m combination which is the same used in the first part of the melody. This is followed at bar 13 by Bm/Fm (also used to compose the second half of the melody), while the final transposition (Am/Ebm)does not appear until bar 30. The slower pacing of the accompanying chords is a deliberate attempt to create environments where a change in the accompanying chord is clearly discernible.

In *Fragment* although a different source hexachord is used − [0,2,3,6,7,9] − , the compositional process is similar. The hexachord melody was composed first, with the various accompaniment textures being added later. However, contrary to the *First instance*, the initial hexachord melody was significantly longer and remained unaltered as the accompaniment was added. Figure 4, which shows the original melody for *Fragment,* with brackets indicating changes in transposition clearly shows the repetitive nature of the melody as well as its rhythmic rhythmic variations. These rhythmic alterations were somewhat influenced by Messiaen's *Quartet for the End of* Time*, particularly the Danse *de la Fureur*, but without any intention of reproducing the same process or texture. By comparing bars 6 to 11 of Figure 11 to rehearsal mark S in *Fragment* we can observe a particular instance where the original melodic line was developed by splitting it into two similar lines in flute and piccolo.

Figure 4. Entire melody for Fragment, with hexachord changes pointed out in brackets.

4.4 A necessary Interlude, returning to *Resolute*

At the time of writing *Resolute*, I saw some limitations regarding my use of both layered hexachords and consonant atonality. I still found that using hexachords could provide me with a fruitful source for melodic writing and development, but the layering of numerous hexachord stratum as I had done in the previous pieces was not suited for what I had in mind. Moreover, as interesting as I found the consonant atonality technique, I felt bound by the constant need for an ostinato and its systematic nature, though I still found the harmonic quality of fixed vertical chord structures appealing. Therefore in *Resolute,* I started to explore different alternatives, but it was only in the writing of *Shades* that all these previous influences started to merge.

An instance of a transitional technique used in *Resolute* appears in the second movement. *Numb,* is in four episodes, of which the first three are based on the same pre-composed chord sequence. In order to create this harmonic foundation, I wrote a chromatic melody that explores the consecutive intervals of a third and a semitone and subsequently set out to harmonise it using unrelated collections of diatonic pitches. The pentachord collections consist of the first five pitches of either a major scale or a minor scale, with two exceptions that replace the second degree of the scale with the seventh rendering a $Cm^{7(11)}$ and a $C^{M7(11)}$ chord respectively. Figure 5 presents the chord

sequence with the generating chromatic melody in the top voice. Since the major-pentachord is merely an inversion of a minor-pentachord, and that all chords have a common tone with a generating melody, this technique could be construed as a variant of consonant atonality. However, once the sequence was created, it was fixed as an ordered sequence and used as a source of harmony for three different episodes within the *Final* movement, two of which used a bass layer extracted from the combination of two chords.

Figure 5. Numb chord sequence, with pitch collections labelled (m: minor pentachord; M: major pentachord), and with filtered triads shown in the lower staff.

The lower stave of figure 5 represents a selection of three pitches contained in either of the chords above it. Each pentachord has either one or two notes in common with the corresponding triad but seldom three. These triads were devised to compose the bass melody of Section B (bars 164 to 231) and C (bars 232 to 263) of *Numb*. For instance, from bars 163 to 169 the cello is restricted to the triad below the two first pentachords, allowing the guitar to move freely between both pentachords above it. Once the bass changes to the next triad, the guitar chords focus on the subsequent pentachords related to it. Although this approach to harmony was not used further in the portfolio, for the purposes of *Resolute* it allowed for an intuitive exploration of the rhythm and it was an important step towards 'static harmonisation'.

4.5 Static Harmonisation in *Shades*

When composing *Shades,* I was interested in exploring further the chromatic/diatonic dichotomy also present *Resolute*. However, exploring consonant atonality to determine a static accompaniment chord sequence to a melody as I had done briefly in *Digressões* (figure 12 from chapter three) proved more appealing than the processes used in *Resolute*. This type of harmonisation yielded very appealing results and is what I refer to as 'static harmonisation'. It consists of harmonising a given melody through the constant use of transpositions of a specific chord that always has a common tone with its coinciding melody note. In this context, any given note within a melody may determine the accompanying chord, be it a strong pivotal pitch or a passing tone, and I can alter both the rate and rhythmic pattern in which new chords appear. It also allows me to work with melodies of any harmonic origin, be it diatonic, chromatic, hexachordal or other, considering the harmonic chord sequence has its own organising principle. While 'consonant atonality' is quite different from this, my use of 'static harmonisation' might have never occurred had I not previously experimented with consonant atonality.

The most straight forward use of 'static harmonisation' occurs in the *Misterioso* movement from *Shades* (figure 6). A D-melodic-minor melody is harmonised through the use of minor chords with an added seventh and ninth; even a cursory look makes it evident that no tonal logic lies behind the sequence.
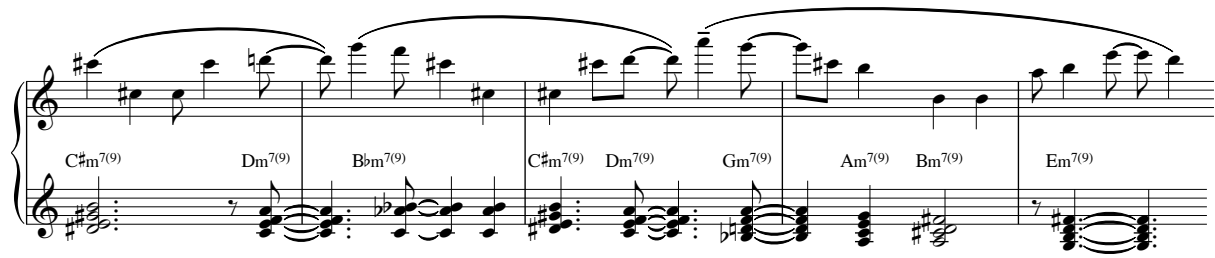
Figure 6. Extract from Misterioso, Shades, bars 93 to 97 showing the chords derived from static harmonisation.

Once the idea of 'static harmonisation' was settled, I immediately explored the possibilities it presented and gradually envisioned new ways in which this technique could lead to the creation of different music and textures.

4.6 Consequences of the use of Static Harmonisation

In my first experiment with static harmonisation I combined it with two modes, D-melodic-minor and E-melodic-minor. Together they can be considered as the three gravitational forces in the *Alegre, Leve* movement from *Shades*. Although each of these dominates at specific points, the other two are usually present in different degrees, colouring the harmonic environment.

Figure 7 shows a harmonic outline of bars 1-22, where fixed vertical chords dominate initially only to be layered with E-melodic-minor material later. The fixed chords originate from the 'static harmonisation' of D# pedal (beamed in the figure), quickly to become an individual layer of vertically fixed X^{M7} chords. A D^{M7} chord (bar 17) makes room for an apparently diatonically related melody. However, this melody proves to be in fact in the E-melodic-minor mode, merging with the D# ostinato and consequently opposing the descending layer of $X^{M7(\#11)}$ chords. Tension is built and

the merged D# pedal leads to what could be a modal resolution in E in bar 22. This in fact occurs, but is not stable and straightforward, as the pitch class E that continues the ostinato in bar 22 (piano) is a member of all three co-existing harmonic tendencies: both D and E melodic minor modes, and the fixed chords as it is the #11 of the $Bb^{M7(\#11)}$ marimba chord.

Figure 7. Alegre, Leve. Bars 1-22 harmonic summary.

At bar 22, two musical elements created by using different techniques (as shown in figure 8) are juxtaposed. A melody in D-melodic-minor in the marimba is harmonised through 'static harmonisation' and is juxtaposed to an E-melodic-minor melody in the flute. Considering that both occur in the context of an E-melodic-minor ostinato (piano), the D-melodic-minor mode and its accompanying chords disrupt an otherwise straightforward modal environment. This is how 'static harmonisation' (henceforth SH) was used in the first movement, i.e. as a diversion from a mode, thus bringing different levels of tension and harmonic colour to the music.

This procedure reaches a climax from bar 88 to the end. Two SH layers are coupled with an E-melodic-minor mode. A double-bass line and an ostinato in piano right hand, both in E-melodic-minor, are coloured by stacked fourths in the lower register of the piano (left-hand chords) and a

sequence of mostly major triads on the woodwinds. These two layers are introduced through SH but have a tendency to detach themselves from the mode. In the final three bars the SH layers are present and extremely active, generating strong ambiguity and harmonic movement, challenging modal focus further than any part of the first movement, thus leading into the 'post-serial' world of the *Expressivo*.

Figure 8. 'a' and 'b' motives from Alegre, Leve

4.7 From static harmonisation to feedback loops

Shades also explores deriving a chord sequence from two melodic lines as in the *Misterioso* movement. A melody and an accompanying bass line in D-melodic-minor (bar 12 of the *Misterioso* and shown in figure 9)were statically harmonised simultaneously using dominant chords that have both a sharp ninth and an augmented eleventh –commonly used chord in jazz– generally referred to as an altered dominant. In Figure 9, I have pointed out which pitch was used to determine each chord by showing what function it has in the generated chord. For example, the first chord (a $C\#^{7(\#9,\#11)}$) has the C# pitch in the bass and the E pitch in the melody as generators, functioning as tonic and sharp ninth respectively. However, once generated, this chord sequence becomes a fixed entity that functions as the harmonic basis of all following episode D variants from the *Misterioso*. From bar 33 to 45, while the bass line is unaltered, the chord sequence is

repeated twice, creating a different relation with the bass line in the repetition due to their different durations. The lack of harmonic relation between bass line and chord sequence gets even more significant when the later is transposed by a tritone in the following repetitions (bars 46 to 58).

Figure 9. Extract from Misterioso showing sax and bass lines used to generate a sequence of chords through static harmonisation. The pitches used to generate the chords have a symbol above or below denoting its function within the chord.

Treating the bass line and a fixed chord sequence differently is not a new form of layering in this portfolio, whereas using the generated chord sequence as harmonic basis to develop the melody initially responsible for its generation is. This is in fact how all melodic material was developed in all variants of episode D from *Misterioso*. Figure 10 shows two variants of the melody above the accompanying chord sequence. The first is the initial version of the melody from bar 12 in D-melodic-minor responsible for generating the chords. The other is a variant derived from bar 33 that initially suggests a possible F melodic minor but goes a different path accommodating itself to the accompanying harmonies. This procedure creates an elegant conceptual feedback loop: a chord sequence that is generated from an initial melody, based

on a different harmonic principle, goes to determine subsequent harmonic content and variations of precisely that initial melody.

Figure 10. Melodic comparison from Misterioso showing the original D-melodic-minor melody and a variant that explores the modes and harmonies suggested by the generated chord sequence bellow.

4.8 From static harmonisation to counterpoint and feedback loops

The writing of a melody at the start of the compositional process required by static harmonisation marked a departure in my compositional approach. I proceed in this way in *Of Instance and Memory* and *Different Sevens* where harmonies and textures were derived from the melody, either through 'static harmonisation' or 'feedback loops'.

In the *Variations and fugato* movement from *Of Instance and Memory* composition started from a melody in the bass. Here I particularly sought different contrapuntal possibilities within 'static

harmonisation' by exploring a polyphonic texture that has a constant vertical relation between each voice and is completely based on the hexachord cello melody that appears in bar 2 and is shown in figure 11.

Figure 11. Second movement Theme

In order to create the desired texture, I applied a sequence of procedures of which the first was to filter the melody into a simpler version as played by the clarinet in figure 12. This simpler version of the melody was doubled twice almost exclusively in fourths by both flutes, with one stratum being completely identical in rhythm to the clarinet melody and the other presenting more independent movement. It is possible to see from figure 12 that the movement of the three individual voices is varied between direct, contrary and oblique motion to enhance the polyphonic content. I shall refer to the process of creating a polyphony of distinct voices derived from an initial melody where only intervalic vertical relations determine the outcome of generated melodies as 'static counterpoint' for the purposes of this commentary.

All strata of the subsequent variations of the movement use similar processes, including imitations at the octave, filtering and static counterpoint in fourths/fifths. For instance, at bar 15 the bass line from figure 12 is transposed down a major third to start on a Gb and filtered resulting in a new rhythmic profile. The clarinet, retains the equivalent rhythmic profile from figure 12, but now forms intervals of fourths or fifths with the coinciding bass note. In the same bar the horn presents an apparently new melodic line as a result of a different combination of either octaves or fourth/fifth relations with the coinciding bass notes.

Figure 12. Static counterpoint extract from the second movement

In *Different Sevens*, similar processes were used to invent the thematic material of section A extending from bars 69 to 245. The section stems from the short phrase presented in figure 13 that combines a melody in G melodic minor (accented notes) and a figure of continuous quavers that subdivides the 7/8 successively in 2-2-3 pattern. These continuous quaver sequences are a product of 'static harmonisation' of the main melody through $Xm^{(M7)}$ chords as shown in figure 13.

Figure 13. Main melody and 7/8 motive of A

The first step for developing this phrase was to create a longer melody based on the phrase from figure 13 which is presented in the lower staff of figure 14. This line comprises both the G melodic minor melody and the mechanical quaver-accompaniment derived from 'static harmonisation' (the chords used are pointed out above the the staff in the figure). The G-melodic-minor melody is doubled in the the top voice of the top staff of figure 14. I then set out to create a new three-part

homophonic version of the G-minor-melody by adding a second voice using exclusively pitches belonging to the respective static chord, and a third voice recurring to the idea of 'static counterpoint', as it is set to create a forth with either one of the other pitches in the resulting triad. This homophonic chord sequence is played by the three flutes starting from bar 69 (shown in the top staff in figure 14). The rationale of this process was to mildly disturb a texture created with static harmonisation. Finally, I returned to the initial mechanical line and filtered out a number of notes creating the line seen in the middle staff of figure 14. This new line was played simultaneously with the flute triads in bar 69 by the first oboe, and string tremolos using the pitches from the three-part homophonic gesture expand the texture within the orchestra. The original continuous line was actually never used in the piece, it only served as the starting point in this creative process.

Figure 14. Process of construction of the first appearance of motive A

Although perhaps unapparent, the entire section from bar 69 to 245 of *Different Sevens* explores variations of the material described above, based on the oboe melody shown in the middle staff of figure 14, which was completely modified through a cycle of successive compositional 'feedback loops'. First the higher pitches of this line were transposed an octave lower resulting in a new melody. This new melody was then used to generate two new counterparts through 'static counterpoint' favouring intervals of fourths. The resulting polyphony is played by the two clarinets and bassoon now written in 2/4 time from bars 76 to 85. One of these three melodies was chosen

and harmonised by an ordered sequence of three types of chords: $X m^7$ $X m^{M7}$ $X^{M7(\sharp 11)}$. In this case, it is possible to predict what type of chord will appear next in the sequence but its transposition level is always determined by the melodic note it is set with. This sequence of chords was then used as a harmonic basis to write two variants of the melody played from bars 76 to 85, one of which can be seen along with the generating chords in figure 15. The resulting rhythmic chord sequence appears orchestrated in woodwinds and strings for the first time in bar 83, and it is used as harmonic basis for a number of variants occurring from bars 83 to 137, in another instance of a feedback loop.

Figure 15. melody from Different Sevens and its generating harmony.

4.9 From static harmonisation to allusions of tonality

In the *Final Instance* from *Of Instance and Memory,* I harmonised a hexachordal melody exploring the interaction between local static harmonisation, brief diatonicism and pitch centres with the intention of alluding to tonality. Transient tonic centricity was created through reoccurrence of tonics in accompaniment chords, namely G and Bb either in major or minor form. When in major, these are present as the first degree of a Lydian scale, therefore with an augmented eleventh, and when in minor these tonics appear as the first degree of a melodic-minor scale. In accordance with this major minor relation, the main chord values used for 'static harmonisation' were the $X^{M7(\sharp 11)}$, which is first degree of a lydian, and the first degree of melodic-minor (i.e. the $X m^{M7}$ chord). In the next page I present a graph outlining the harmony of the entire movement. All chords related by 'static harmonisation' are connected by a line, with diatonicism and other relations shown in

brackets. From the graph it is possible to see that the piece opens presenting the first tonic, which is Bb in both major and minor form consecutively, followed by a sequence of $X^{M7(\#11)}$ 'static harmonisation' chords over a B pedal. This pedal 'resolves' or ends on a C-Lydian chord, albeit with an A as bass, and over this new bass pedal A, a I - iii Lydian diatonic movement occurs, which is immediately followed by a vii-V$^{(alt)}$-I in G-Lydian, which presents the second tonic. G centricity is explored in both major and minor form up to bar 21, where a vii-I progression in E-Lydian is followed by two dominant chords, E^{7}alt and C#^{7}alt, both seventh degrees of a respective melodic-minor-mode. This sequence of dominants leads to a minor chord, which is immediately instated as the new vertically constant value until the end of the piece.

Harmonic analysis of the Final Instance

4.10 Quasi-tonal harmonisation in Different Sevens

Section B from *Different Sevens*, extending from bars 282 to 356 is based around an accompanied melody in 7/8 time. Here a melody paved way for harmonic quasi-tonal accompaniment without any relation with 'static harmonisation'. All elements within the section, namely melody accompaniment and harmony, are evocative of a more traditional style of composition, and yet there is still contradiction and tension within these elements. While the melody is in the E minor mode with brief chromaticism, the accompaniment focuses around C#-minor, thus creating two distinct tonal focuses. Figure 15 shows the starting segment of the melody from bar 282 and the chords that accompany it, exposing the C#m centricity and the exploration of parallel chords a minor third apart. The figure also shows a false dominant relation introducing the return of C#m with an $A^{7(\#5)}$ chord. The fact that this unrelated dominant is played over a D pedal reinforces C#m centricity and resolution.

Figure 15. Section B melody

4.11 Observations on form

The prevailing formal structure used in the second phase of this project was that of theme and variations, though there is not always a regular theme in the traditional sense of the form. This tendency is intimately intertwined with the harmonic techniques used, as 'static harmonisation' and 'static counterpoint' start from a melody and provide harmonic material for subsequent variations, and 'feedback loops' are essentially a type of variation applied to these melodies.

The extensive use of variations in *Shades* is made evident in the table bellow[3]. There are a number of variants of section A which is defined through the presence of a fourteen-quaver-ostinato that appears for the first time in the glockenspiel at the start of the piece. This rhythmic pattern always appears and is completely redefined in every variant of section A. Figure 4 from the second chapter presents one of its reinterpretations as a pianistic accompaniment groove with the rhythmic line written above for clarification, while figure 6 in this chapter presents the same ostinato but now appearing as a melody.

Movement	Episode		Brief description	Harmonic summary
Alegre, Leve	A	01-21	Introduction	D# pedal + SH $\rightarrow$ layering $X^{M7(\#11)}$ chords
	A^1	22-39	Variation + 'a' and 'b'	$(Dm^{M7} + \underline{Em^{M7}})$ MJ
	B	40-75	Contrast section	$(\underline{Dm^{M7}} + Em^{M7})$ MJ $\rightarrow$ D minor $\rightarrow$ F^{alt} pedal
	A^{1b}	76-80	Variation recap	$(Dm^{M7} + Em^{M7})$ Modal layering
	A^2	81-87	Second variation	$\underline{Em^{M7}} + SH(X^{M7})$
		88-94		$Em^{M7} + SH(fourths) + SH(X, Xm)$
Expressivo	1	01-16	Established background	
	2	17-47	Emergence of melody	
	3	48-65	Clarinet solo	[013468] hexachord
	4	65-79	Conclusion	

[3] In the table M.J. stands for modal juxtaposition, and S.H. for static harmonisation in the table.

Movement	Episode		Brief description	Harmonic summary
Misterioso	C	01-12	Introduces C	(Dm^{M7} + Fm^{M7}) Modal layering
	D	13-18	Introduces D	Dm^{M7} + SH(X$^{7(\#9,\#11)}$)
	C^1	19-30	Variation	(Dm^{M7} + Bm^{M7}) Modal layering
	D^1	31-65	Variation	D chords repeated, melody developed
	A^{1c}	65-85	Ostinato return	{[013468] + SH(Xm^7)} + Em^{M7}
	A^3	86-104	Ostinato becomes melody	Dm^{M7} melody + SH(Xm$^{7(9)}$)
	A^4	105-118	Variation	Xm$^{M7(\#11)}$ + X$^{M7(\#11)}$ or [013468]
	D^{1b}	119-151	Final	Dm^{M7} + SH(X$^{7(\#9,\#11)}$, some X$^{M7(\#11)}$)

Of Instance and Memory is also a theme and variations in the sense that three of the five movements are based on variants of the same initial melody and separated by movements presenting contrasting musical material. The original melody only appears in its entirety in the *Final Instance*, while shortened variations are differently harmonised in both the *First Instance* and the *Second Instance*.

This formal design, where variants of a theme or melody return in different guises was also used in *Different Sevens*, but the process of creation was quite different. In *Of Instance and Memory*, a single melody gave rise to shorter alternatives used in the first and third movements of the piece, whereas *Different Sevens*, three extended alternative melodies, all derived from the short main phrase of the piece presented in figure 13 of this chapter, were written simultaneously. Initially I struggled to decide which would be the variant with more formal importance and even if all three might be used, until I accepted their equality and chose not to aim at hierarchical distinction, presenting them in different moments of the piece. The first variant appears in bar 36, the second in a string texture in bar 397, and the final variant in bar 463.

5.0 Conclusion

Along this doctoral project, I set out to find the most adequate ways in which to express my personal musical inclinations whilst appropriating a myriad of influences by Carter, Ligeti and Birtwistle, with the intention of creating of music that would inhabit the borders of the Brazilian popular music, jazz and European contemporary art music. The six works in the portfolio present significant chronological evolution and change in the compositional processes as a result of experimenting with these techniques. A variety of textures – some of which were based on accompaniment figures that stemmed from my experience with jazz and Brazilian popular music, albeit using harmonic techniques that were not familiar to this type of music – were freely explored throughout the project alongside other textures, but it was the harmonic techniques used that underwent the most significant change in the course of the project. In the first phase, experimentation with layering, hexachords and consonant atonality prevailed and the resulting pieces were *Um Pequeno Ensaio, Digressões* and *Resolute.* The experiments with these techniques gradually paved the way for elaborating of the compositional techniques used in the second phase of the project in which *Shades, Of Instance and Memory* and *Different Sevens* were composed.

Initially the use of hexachords as the source of melodic writing played an important role and the works written in the first phase of the project experiment with layering these melodies with other strata that could either be based on the same source hexachord, or other techniques. I also superimposed multiple hexachord transpositions to create a fixed accompaniment to a chromatic melody in *Digressões*, and explored the contradiction of superimposing diatonic material with hexachords and chromaticism in *Resolute.* Even though there was constant concern with the relationship among the different strata, at this stage they were largely independent. In the second

phase of the project, influenced by Knussen's *Songs Without Voices*, I moved away from these numerous independent layers towards the creation of accompaniment textures based on hexachords (in *Shades* and *Of Instance and Memory*) which provided more harmonic focus and opportunity for textural and timbral exploration.

Ligeti's 'consonant atonality' technique presented the possibility of using triadic consonances and maintaining a harmonic connection or control between distinct strata without succumbing to traditional tonality or modes. I was particularly interested in the fact that this technique permitted independent strata that were created by using different harmonic principles to be completely connected through fixed vertical intervallic control. However, after the experiments made in the first phase of the project in *Um Pequeno Ensaio* and *Digressões*, the limitation presented by the constant need of an ostinato that the technique implies became apparent, and the harmonisation of a melody (instead of relating to an ostinato) appeared as a more expressive harmonic technique.

By means of a 'static harmonisation' I immediately set out to experiment harmonising individual melodies and duets in *Shades*. Not only were the results expressively satisfying but they presented a number of new possibilities, such as in *Shades* where a chord sequence generated through the 'static harmonisation' of a duet between bass and sax was fixed and used as a source of harmony for posterior developments and variations of the melody responsible for the original chord sequence, introducing the first 'feedback loop' of the portfolio. In the final two pieces, a number of similar 'feedback loops' were applied over source material creating a myriad of melodic variations, or derivations and harmonies. In these pieces, I also experimented with 'static counterpoint', a variant of 'static harmonisation' that fixes an intervallic relation between a number of voices to be developed through counterpoint. This technique renders music where the pitch collection of each melody derived from the original does not necessarily accommodate itself within any mode or

source hexachord, it is ultimately a consequence of the process applied to whatever the source material was, and what is defined is only its intervallic relation to the generating voice.

Paradoxically the latter techniques within the portfolio brought me back to exploring tonality, albeit in a completely different way. The move from 'static harmonisation' to an accompaniment that may suggest a tonal centre is not so far removed when the triadic nature of most chords I use in the technique is considered. As a result, *Of Instance and Memody* presented the first quasi-tonal accompaniment to rise from this technical environment in the *Final Instance*. In the previous pieces, and to be honest, in anything I ever wrote up to this point, I was never certain of how to approach tonality. I explored it in a number of places but the result was far too rigid to my taste. It was only as a result of all this technical exploration that I found a comfortable place for tonality in my music. To the extent that, besides 'static harmonisation', 'static counterpoint' and 'feedback loops', the idea of tonality and distinct vertical and horizontal determinants are paramount in *Different Sevens*.

I believe that the overall fundamental and most positive change in my compositional approach in terms of my development lies in the fact that, while I started with an array of different techniques, I ended up with an overriding idea which is that of deriving harmonic, textural and melodic counterparts from a single melodic line, duet or other combinations through transformations involving 'static harmonisation', 'static counterpoint', 'feedback loops' and 'tonal allusion'. The possibilities are endless, or at least they certainly feel that way.

6.0 Bibliography

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Leonardo B. Margutti Pinto

Um Pequeno Ensaio
(2009)

For Clarinet in Bb, Violin, Violoncello and piano
Full score

Um Pequeno Ensaio
(2009)

First performance by Mercury Quartet on 20 March 2009.

Ensemble

Piano
Clarinet in Bb
Violin
Violoncello

Score in C

Duration: 5 minutes

Um Pequeno Ensaio

Leonardo Margutti

Leonardo B. Margutti Pinto

Digressões
(2010)

For 6 players
Full score

Digressões
(2010)

Commissioned by Odaline de la Martinez for Lontano.

Ensemble

Flute
Clarinet in Bb
Violin
Violoncello
Double Bass
Piano

Score in C
N.B. Double Bass an octave lower

Duration: 12 minutes

Digressões

I. Introdução

Leonardo Margutti

II.Tema

III. Primeira Digressão: Poema

IV. Segunda digressão: Desvio Lúdico

V. Final

Leonardo B. Margutti Pinto

Resolute
(2010)

For String Quartet and guitar
Full score

Resolute
(2010)

For String Quartet and Guitar

Recorded by the Ligeti Quartet and Sam Cave on 3 June 2012.

Duration: 12 minutes

Resolute

I. Resolute I

Leonardo Margutti

II. Numb

III. Resolute II

Leonardo B. Margutti Pinto

Shades
(2011)

For 11 players
Full score e

Shades
(2011)

Recorded by King's Chamber Ensemble conducted by Christian Prior on 27 May 2012.

Ensemble

2 Flutes
1 Clarinet in Bb
1 Tenor Saxophone
1 Baritone Saxophone
1 Trumpet in C
1 Trombone
2 percussionists:
> Triangle
> 5 Wood Blocks
> 4 Temple Blocks
> Suspended cymbal
> Bongos
> Glockenspiel
> Marimba

1 Piano
1 Double Bass

Score in C
N.B. Glockenspiel sounding an octave higher,
Tenor Saxophone, Baritone Saxophone
and Double Bass an octave lower.

Duration: 11 minutes

Shades

Leonardo Margutti

II

III

Leonardo B. Margutti Pinto

Of Instance and Memory
(2012)

For 10 players
Full score

Of Instance and Memory
(2012)

First performed by Lontano conducted by Odaline de la Martinez on 20 March 2012.

Ensemble

Flute (doubling on Alto Flute)
Flute (doubling on piccolo)
Clarinet in Bb
Horn in F
Harp
Violin I
Violin II
Viola
Violoncello
Double Bass

Score in C
N.B. Piccolo sounding an octave higher
and Double Bass an octave lower

Duration: 14'14 minutes.

Of Instance and Memory

I. First Instance

Leonardo Margutti

London 2012

II. Variations and Fugato

III. Second Instance

IV. Fragment

V. Final Instance

Leonardo B. Margutti Pinto

Different Sevens
(2012)

For Orchestra
Full score

Different Sevens
(2012)

Orchestra

3 Flutes (one doubling on piccolo)
2 Oboes
2 Clarinet in Bb
2 Bassoons
2 Horns in F
1 Trumpet in C
1 Trombone
Percussion (3 players)

> 1 Suspended cymbal
> Caxixi
> Guiro
> 5 temple blocks
> 5 wood blocks
> Snare drum
> 5 tomtoms
> 2 cow bells
> 1 small gong
> Glockenspiel
> marimba

Harp
Violin I
Violin II
Viola
Violoncello
Double Bass

Score in C
N.B. Piccolo and Glockenspiel sounding and octave higher
and Double Bass an octave lower.

Duration: 12 minutes

# Different Sevens

Leonardo Margutti