Portfolio of Original Compositions

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The portfolio eight of scores and recordings can be downloaded from the following Google Drive address;

https://drive.google.com/drive/folders/1DyElqA7YQROdvPM8WczfDB_FxQBJFd8c?usp=sharing

Alternatively, each recording can be streamed from the individual links given below.

Details of Recordings

1.  *Pure Cold Water* (orchestra), Will Frampton, 2016 (8’55): The Orchestra of Opera North, conducted by Davide Levi, recorded November 10th 2016, Cosmo Rodewald Concert Hall, University of Manchester, UK. **N.B.** Please note this was a workshop performance and the orchestration has subsequently been revised, particularly at bars 83-86.

   Link: https://soundcloud.com/user-386138607/1-pure-cold-water/s-A9y3hLEDiOp

2.  *The Greening Variations* (piano trio), Will Frampton, 2016 (10’41):

   Psappha Ensemble, recorded March 27, 2017, St. Michaels, Ancoats, Manchester, UK.

   Link: https://soundcloud.com/user-386138607/the-greening-variations/s-v2Zn4kGkH60

3.  *Dunford Chorale* (Soprano, Alto, Tenor, Bass and Saxophone), Will Frampton, 2016 (6’36): Benjamin Marrington-Reeve (saxophone) with Sophie Proctor, Anna Harrison, Zahid Siddiqui, Max Thomas (SATB), conducted by Will Frampton, recorded on June 18th 2019, The Church of the Holy Name, Manchester, UK.

   Link: https://soundcloud.com/user-386138607/3-dunford-chorale/s-

Link: [https://soundcloud.com/user-386138607/4-the-wish-to-disappear/s-DsL1gs5tUiw](https://soundcloud.com/user-386138607/4-the-wish-to-disappear/s-DsL1gs5tUiw)


Link: [https://soundcloud.com/user-386138607/5-music-alone/s-KJJleCV1pkN](https://soundcloud.com/user-386138607/5-music-alone/s-KJJleCV1pkN)

6. *Sinfonia Malacia* (orchestra), Will Frampton, 2018 (16’15): University of Manchester Symphony Orchestra, conducted by Jasmin Allpress, October 20th 2018, Cosmo Rodewald Concert Hall, University of Manchester, UK.

Link: [https://soundcloud.com/user-386138607/6-sinfonia-malacia/s-UbysMKTsdxR](https://soundcloud.com/user-386138607/6-sinfonia-malacia/s-UbysMKTsdxR)


Link: [https://soundcloud.com/user-386138607/7-watermark/s-xoQiutt4RkT](https://soundcloud.com/user-386138607/7-watermark/s-xoQiutt4RkT)

8. *Nordhaus Litany* (mixed octet), Will Frampton, 2019 (9’52): performers from Manchester University Music Society, conducted by Robert Guy, recorded October 31st 2019, Cosmo Rodewald Concert Hall, University of Manchester, UK.

Link: [https://soundcloud.com/user-386138607/8-nordhaus-litany/s-4t6PImdpWtf](https://soundcloud.com/user-386138607/8-nordhaus-litany/s-4t6PImdpWtf)
Abstract


The accompanying commentary discusses a number of research threads explored throughout the compositions. This includes an interest in teleological structures informed by the large works of Sibelius. These structural concerns are nuanced by a number of other elements which are concerned with repetition and cycles. One such element is ostinati which, influenced by minimalism, is often the bedrock of my work. Informed by Ligeti I explored ways in which the repetitive ostinati could take a form which helps articulate the teleological elements of my work. My harmonic language also makes use of repetitive cycles. I also discuss the influence of medieval techniques upon my work.
Declaration

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I would also like to thank my parents for unwavering support, Rob (did you think I'd let you outdo me on this one?), Clare (for your intellectual support and interest), Benjamin (who knows the truths behind these fictions), and Rhiannon for always finding calm waters and exploring the wonders of Venice with me.

Additional gratitude goes to the various performers and conductors who I have worked with throughout this PhD, your advice has been invaluable.
Introduction

The primary aims for this research are as follows:

• To develop compositions that integrate micro-level non-teleology with macro-level teleology;
• To develop forms of ostinato (including transitional ostinato);
• To develop a new approach to cyclical harmony (with specific focus on the relationship between horizontal and vertical);
• To develop upon Medieval and Renaissance techniques such as hocket and canon;
• To embrace stylistic eclecticism in response to 21st Century listening practices.

During my Masters degree, I began to examine possible relationships between number and music. I developed a methodology for exploring these relationships by applying Allen Forte's pitch and interval class set numbers to various compositional parameters. This work was greatly inspired by Guillaume Dufay's motet *Nuper rosarum flores* [1436] which uses the proportions of the Florence Cathedral, the 1436 consecration for which it was commissioned, as structural guidelines. While I continued this approach into the early stages of my PhD, I soon found that the strict use of number led to compositions which lacked musical comprehensibility and my concern for structure developed into a preoccupation with teleology; in particular the symphonic works of Sibelius. I nuanced these interests by working with devices such as ostinato, cyclical harmonic schemes, as well as my pre-existing interest in medieval techniques.
During my PhD the apparent breadth of stylistic reference points in my work, often made within a single piece, became increasingly apparent. These references which range from stylistic allusion to near pastiche, manifest most prominently with moments of lyrical romanticism and the incorporation of near functional tonality. These are not conscious attempts at pastiche or reference but, I would argue, a genuine approach towards style by an engaged and explorative 21st century composer. Technologies such as Spotify and YouTube have led to the emergence of new listening practices which allow the listener to experience music in a way that is close to being context-free. Music of all times and places can be accessed through the same means and heard directly, through headphones. I would argue this has created a 'flat-line' landscape in which all musics, mediated by the technology, become music of now. My own approach has been influenced by Thomas Adès. Dominic Wells suggests that rather than a polystylist, Adès is a “stylistic pluralist, allowing his music to converse with whatever he hears, be it 'low' or 'high' art, historical or contemporary”. 1 Adès himself has said, “it's not just a pluralistic world that we live in, it's also one where times and eras no longer have to be put in a particular order. In a sense, we live closer to the extreme past than we ever have before because we can hear music from any period at the click of a switch or press of a mouse.” 2 I would go further and suggest that in popular musics there is often a breadth of reference. When a pop artist uses orchestral forces, it is generally seen as a positive and artistically challenging attribute; the reverse does not appear to be true for acoustic composers. Therefore, the moments of romanticism, or any other broad stylistic reference, in my work are not

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intended to be ironic, political, or make any other type of statement; it is simply
the music which I believe best expresses my intentions and ideas.

Throughout my research I have been able to develop my compositions in
workshops with established ensembles such as The Orchestra of Opera North, the
Quatuor Danel and Psappha Ensemble. The latter led to a commission and the
opportunity to collaborate closely with Benedict Holland in composing a work for
solo violin. I also attended a number of composition courses held in situ at major
festivals including: Cheltenham Festival, Val Of Glamorgan Festival, and
Aberystwyth MusicFest. During these courses I developed compositions in
collaboration with ensembles such as The Ligeti Quartet, Armida Quartet, Orion
Orchestra, and Trio Aquilae. These festivals were also fantastic opportunities to
meet with peers and discuss ideas, as well as to present my own work. I also
presented an early draft of chapter 5 from this commentary at the University of
Manchester as part of a composer's forum.

The research submission is a portfolio of eight compositions: Pure Cold Water
(orchestra, 2016), The Greening Variations (piano trio, 2016-17), Dunford
Chorale (alto saxophone and SATB, 2017), The Wish to Disappear (string quartet,
2017) Music Alone (violin solo, 2017-18), Sinfonia Malacia (orchestra, 2018),
Watermark (string quartet, 2018-19), Nordhaus Litany (mixed octet, 2019).

I will use the aforementioned research aims to guide the structure of this
commentary. Chapters 1-4 will broadly discuss these issues with particular
reference to Pure Cold Water, The Greening Variations, Sinfonia Malacia and
Nordhaus Litany. To avoid repetition Dunford Choral, The Wish to Disappear and
Music Alone will be explored in less detail. Chapter 1 will focus on teleology as the overarching structural principal for the works in the portfolio. I will also introduce the idea of local and global telos, which are my own developments of James Hepokoski's concepts.3 The combination of teleological with non-teleological, as outlined in the first research aim, will not be dealt with in this chapter. This will be explored in Chapter 2 through an investigation of the use of ostinati throughout the portfolio. In this chapter, I will highlight the influence of minimalist music as well as traditional approaches to ostinato and introduce the idea of 'transformational ostinato'. Chapter 3 will outline the various harmonic principles used throughout the portfolio and explore the use of related cyclical devices such as passacaglia. Chapter 4 will be a discussion of the influence of medieval practices focusing on hocket and canon. These principles will be used as the starting point for a broader discussion, as my own techniques often move far away from the original medieval techniques. The final chapter will take an in-depth look at Watermark. Despite not being the largest work in terms of instrumental forces, Watermark is the longest piece, and, for me, it is the most substantial in the portfolio. It is the work that most clearly brings together and explores the different research questions.

Chapter 1. Teleology

The creation of teleological pieces – that is, compositions in which the achievement of a goal determines the composition's structure – has been my primary focus since the beginning of this research. The form of Sibelius's compositions, particularly his large orchestral works, has had a profound impact on me and I aimed to create long-form works in this mold. In my exploration of contemporary music, I have perceived a tendency for much composition to rely upon micro-gestures and fragmented structures. I saw potential for practices grounded in the forms of Sibelius to offset and even subvert this trend. Teleology has historically been an area of preoccupation for many composers, but I found that there is still scope for a distinctive approach. In my work I often combine teleological structures with material and strategies that are repetitive, circular, or in some other way not teleological. In short there is an underlying tension in much of my work: the micro-structure is non-teleological, while the macro-structure is teleological. This chapter will focus on the macro-structure, leaving the discussion of micro-structure to chapters 2-4.

James Hepokoski's analysis of Sibelius's 5\textsuperscript{th} Symphony [1915-1919] provides important codification of compositional teleology. He argues that, “As an individual composition's processes unfold, the mature Sibelius often uses them as a matrix within which something else is engendered, usually a decisive climax or final goal\,(telos). The concept of a composition as gradually generative towards the revelation of a higher or fuller condition is characteristic of the modern composers.”\(^4\) My work has been informed by the idea of a 'fuller condition'

emerging throughout the composition. I often use structures that initially present material in a partial manner which is then fulfilled as the piece unfolds. One of the most important ways this is done is through register. Material is presented in an outer register and developed through ascending or descending curves until a filled in register is employed: this generally represents the fulfilment or telos of the piece. An important influence on this aspect of my work was David Bedford's Recorder Concerto [1994] which has an X-shaped structure. Starting with the strings high and the recorder low, the recorder gradually ascends while the strings descend until the registers are inverted in the final movement. Bedford describes the central movement - when the two contours meet - as, “The emotional heart of the concerto”.

*Pure Cold Water* (orchestra, 2016) builds to a single moment of orchestral tutti, which is the work's *Telos*. The narrative towards this moment is articulated through a combination of timbral stratification and register.

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5 David Bedford, notes to David Bedford, *Recorder Concerto* (1997), CD, NMC D045S.
Figure 1.1 shows a sketch for *Pure Cold Water* aligned with the figures from the final score. Figure A is predominantly scored for strings and is juxtaposed by new material at figure B, which is predominantly scored for winds. A registral structure runs concurrently to this timbral stratification. The piece starts low and ascends until figure C, when only high violins and piccolo are employed. During figures D and E, instruments gradually enter in lowering registers until the entry of the horns at figure F, which marks the *telos* of the piece as both a full registral and timbral gambit is employed. The boldness of the horn melody and the climatic nature of this section stresses the teleological importance of this moment (Ex. 1.1). In his writing on goal-orientation in Beethoven's music, Nicolas Marston uses the term 'closure' analogously to Hepokoski's use of the term 'fulfillment'. Marston states that upon closure, 'whatever follows this can only be a reinforcement of the close – a coda.'\(^6\) This is demonstrated by the freer approach to orchestration and register during coda of *Pure Cold Water* at figure G.

*The Greening Variations* (piano trio, 2016-17) is cast in three sections, each starting with a soloist in an outer register, before the ensemble moves to a tutti using a full and wide register. The solos are:

- Violin – high (bar 1)
- Cello – low (bar 42)
- Piano – high and low (Bar 96)

As well as a global *telos*, that is the moment of fulfilment for the entire piece, I

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began to explore what I will call local telos: the moment of fulfilment for a
section within a larger piece. Each of the three sections in *The Greening
Variations* has a local telos, creating a larger teleological structure where the first
climax is the telos of only the first section, the second climax is the telos of the
first and second sections, and the final climax is the telos for the entire work (Fig.
1.2). This structure is reflected in the work’s large-scale proportions and pacing.
The second local telos is placed at roughly the midpoint of the work and marks a
break, at bar 96, between a slow, or mid-tempo, first half and the fast second half.
These proportions mean the work’s third section is roughly the same length as the
first two sections combined, allowing for a period of extended tension before the
global telos.

Fig. 1.2, Teleology in *The Greening Variations*.

The strategy behind *Dunford Chorale* (alto saxophone and SATB, 2017) was to
combine a single registral ascent, as in *Pure Cold Water*, with local and global
teleology, as in *The Greening Variations*. Figure 1.3 is a structural plan made
during the sketching process for the work. Reading from left to right, the sketch
shows that the piece was broken into choruses and verses. The row labelled
'register' shows a gradual ascent in register throughout the piece. Each chorus is
built around a saxophone pedal note which is an octave higher each time, in line
with the global registral ascent. At the end of the second and third choruses there
is a local telos which acts as the telos for the chorus and preceding verse (as
indicated by the arrows). Finally, there is a synthesis of chorus and verse to create
the global telos. Due to practical considerations, such as the ability of singers to sing in their top register for prolonged periods of time and the need to use multiple saxophones to achieve ascending pedals, the final composition differs from this initial sketch.

Fig. 1.3, Formal sketch for Dunford Chorale.
*The Wish to Disappear* (string quartet, 2017) maintains the strategy of using register to articulate teleology. The work was built from a single melodic idea (Ex. 1.2).

![Ex. 1.2, The Wish to Disappear, melodic sketch, Will Frampton, 2017.](image)

The ascending profile of x suggested a form based on subverting the course of ascending material when the physical limits of the instrument are reached. There are four examples of this happening in the piece. First, at figure B the violins sound the melodic idea in hocket ascending to a high F-sharp in bar 23 before a gradual descent allows a new lower texture to be introduced. Second, at figure C where the chords are voiced so that the highest line is played by the viola and the next highest by the cello, this allows the violins more scope to extend the register of the chords at bar 62 (Ex. 1.3). This is followed by the third example, and the global *telos* of the piece, at figure D. Quasi-graphic notation is used to indicate that the violins and viola should play the highest possible note on the given string. This is then followed by a scordatura low A in the cello; extending the registral range of the quartet. This is the only use of the scordatura A, or indeed the fourth string itself, in the piece. The final high point is reached during the coda when - from figure E - the cello and viola drop out as they reach their registral limit, and the remaining violin duet continues until they too reach the top of the instrument.
Nordhaus Litany (mixed octet, 2019) was the final work completed for the portfolio and when compared to the first completed work, Pure Cold Water, the development of my approach to structure and teleology is marked. Pure Cold Water explores a structure based around a single-minded teleology and all parameters of the composition are focused on enhancing this single goal. Nordhaus Litany demonstrates a broader approach where a number of different strategies and structures are employed concurrently. Inspired by T.S. Elliot's Four Quartets [1943], the octet is split into four different quartets:

1. piano, percussion, clarinet, flute
2. violin I, violin II, viola, cello
3. piano, viola, violin I, flute
4. piano, cello, violin II, clarinet

Quartets 3 and 4 relate to the stage plan for Nordhaus Litany. Quartet 3 runs along stage-right while Quartet 4 runs along stage-left (Fig. 1.4). This is used to created 'panning' effects in section C (Ex. 1.4). The interplay of the quartets helps shape the teleology of the piece. During figures F and I the quartets have independent roles – discussed in greater detail in chapter 4 – which leads to moments of telos when they combine at figures G and J.

![STAGE PLAN](image)

Fig. 1.4, Stage plan for Nordhaus Litany.
Figure 1.5 shows a structural diagram of *Nordhaus Litan*y. Inspired by Alban Berg's Kammerkonzert für Klavier und Geige mit 13 Bläsern [1927], as well as T.S. Elliot's writings on the circularity of time, there is a large, near exact, repeat during the second half of *Nordhaus Litan*y. During a preconcert interview with Oliver Knussen, who was conducting Berg's Chamber Concerto, he suggested that the large repeat in Berg's work was not due to numerology, symmetry, or personal

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7 T.S. Elliot, *Four Quartets* (Faber and Faber: 1914).
program, as some have posited, but was instead because the music was 'so busy' it
needed to be heard twice.\(^8\) Regardless of whether Knussen was correct or not, this
idea inspired *Nordhaus Litany*. When composing figure E, I aimed to make the
section detailed enough for it to be heard twice in a row. It is only in the repetition
of this section that the 'fuller idea' - to return to Heposoki's language - emerges.
Similarly, the opening passage of *Nordhaus Litany*, which is designed to work
both forwards and backwards, is not fully revealed until the retrograde is heard in
the final section of the piece (Fig. 1.5). The climaxes throughout the piece act as
the local *telos* for the subsections of the piece while there is no global *telos*. The
desired effect is for the B and C sections to feel like self-contained structures
which are bookended by the introduction and coda (Fig. 1.5).

Informed initially by Sibelius, I have developed an approach to teleology
influenced by the idea of the revelation of the 'fuller condition', as defined by
Hepokoski. The use of register as a structural strategy is prominent throughout my
work. I often expose material in an outer register which is then developed and
'fulfilled' by the use of a full register at the moment of *telos*. The incorporation of
local *telos* allowed me to create far more varied structures whilst maintaining a
cohesive sense of teleology.

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\(^8\) Oliver Knussen, *Oliver Knussen: Britten Sinfonia In Focus*, Pre-concert talk (Milton Court:
London, October 20\(^{th}\) 2015).
Fig. 1.5, Structure of *Nordhaus Litany.*
Chapter 2. Ostinati

Ostinato is 'a term used to refer to the repetition of a musical pattern many times in succession while other musical elements are generally changing.' As ostinati are unchanging a possible inference is that they are non-teleological. Stravinsky would often use ostinati in this way, for example in the first movement of his *Trois Pièces pour Quatuor à Cordes* [1914]. My ostinati, which are generally continuous and pulse based, are informed by the repetitive patterns found in minimalism where the influence of Stravinsky, particularly upon Steve Reich, is well documented. These influences are at odds with my teleological preoccupations, as Schwarz says, “Like so much non-Western music, minimalist pieces do not drive towards climaxes, do not build up patterns of tension and release, and do not provide emotional catharses”. Schwarz's comment supports the notion that minimalist inspired ostinati help to generate non-teleological structures. John Adams’ music deals with concerns around ostinato and teleology. This may be due to his move away from strict minimalist beginnings to a broader style and technique, as illustrated by works such as his Violin Concerto [1993]. Of Adams music Richard Powell says that, “While strict repetitive operations rarely threaten to override the structural flow, they are still identifiable. Atomised at local levels within post-Romantic shapes and gestures, they contribute to a more varied aural experience than the single-minded processes of hard-line minimalism can offer.” My work takes a step further than the creation of a ‘varied aural

---

experience’ and instead establishes a broad and nuanced relationship between the teleological and non-teleological.

At bar 68 of *The Greening Variations*, the ostinato in the right hand of the piano remains constant whilst the elements around it change (Ex. 2.1). Throughout this section the music is moving towards a moment of climax at bar 85: the first moment of local *telos*. The sense of movement is created by the bass line and the ascending register of the string parts whilst the ostinato helps to build tension by prolonging an F minor sub-dominant harmonic area before the release of tension.

at bar 85 onto a brighter C major tonic area. This illustrates how the repetitive, and seemingly non-teleological, ostinato can, in fact, help to articulate the overarching teleological structure by building tension towards a moment of telos.

At bar 209 a new ostinato figure is heard which also has the function of being a consistent part around which other voices move. The ostinato is arrived at through gradual transition over a number of bars. From bar 155-209 the piano, which stays rhythmically unaltered - except for a brief decoration at bar 178, gradually filters out extreme registers and unwanted pitches to arrive at the ostinato in bar 209.

Row A of Figure 2.1 shows the initial 16 pitch row, which corresponds to the piano part in bar 155. The Row is transformed four times by altering every third note to a new pitch which forms part of the final ostinato (illustrated by the arrows in Fig. 2.1). This creates a ‘sieve’ whereby unwanted pitches are filtered out through alteration, until Row E, which contains the pitches of the final ostinato (see Ex. 2.2). The pattern of altering every third pitch is broken at Row D. The F-natural, marked with an X (Fig. 2.1), which should have been the third pitch to alter between Row C and row D, is reserved for alteration into row E. There is a chromatic alteration of F-natural to F-sharp between Row D and Row E; this is marked with an open arrow.

Once applied to the piece, this filtering process is extended in a number of ways. First, pitches are freely replaced, which often occurs when there are repeated pitches in the Row. Example 2.3 shows the alteration of the first pitch of row B from F-natural to G-natural. Rows are also repeated and placed in different orders to extend the material. For example, row C starts on the third quaver beat of bar 182 and is proceeded by row B in bar 185; this is then followed by row C again on
the fifth quaver beat of bar 187. Further extension of the rows themselves is done by using tropes of alternative pitch material (Ex. 2.3). This was informed by the medieval practice of troping and will be discussed further in chapter 4.13

Fig. 2.1, 'Sieve' in The Greening Variations.


Row B is extended by a trope of its own pitch material in free variation, between bars 178-182 (Ex. 2.3). The Row continues in order from the F-natural which corresponds to the ninth pitch of Row B (see Fig. 2.1). The order of pitches within the rows is at times freely altered. For example, the last pitches from row D are swapped in bar 192 (Ex. 2.4). There is also an alteration of the preceding pitch from G-sharp to F-sharp.

The gradual process at which the ostinato in bar 209 is arrived at suggested potential for organising ostinati within the teleological structure of a piece. I developed this idea further by incorporating 'transformational ostinati' into my work. This is a technique used in Ligeti's Sonatas for Solo Cello [1948/1953] and
Solo Viola [1991-1994].\textsuperscript{14} Ligeti takes simple, often melodic, fragments of material and, while looping them, alters them to create more complex material.\textsuperscript{15} In *The Greening Variations* I used transformation to *create* an ostinato, whereas Ligeti uses transformation to *develop* the ostinato itself. Ligeti's technique suggested a means to add a teleological imperative to the ostinati in my work.

*Sinfonia Malacia* features an ostinato built from three motifs; A, B, and C (Ex. 2.5).

<table>
<thead>
<tr>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>falling tone motion</td>
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<table>
<thead>
<tr>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>rising tone motion</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>ascending stepwise motion</td>
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</table>

Each motif has its own principle of development which it follows while being looped:

<table>
<thead>
<tr>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>morphs into motif C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>always five quavers in length - varies in shape and pitch content</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>lengthens</td>
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</table>


\textsuperscript{15} Ibid, 19-20.
Using these principles, a transformational ostinato is scored between the flutes at figure B (Ex. 2.6).

The ostinato is then reintroduced and heard three times at figures K, L and M, each time with alterations of pitch to create changes of mode. The linear material is orchestrated out across the entire orchestra in heterotrophy by altering the rhythmic value of the pitches to create harmony. An example of this is from bar 248 when the bassoon plays every other quaver pitch from the ostinato as crotchets (Ex. 2.7). This approach to orchestration eventually led me to explore hocket, which will be discussed further in chapter 4.


Both *The Greening Variations* and *Sinfonia Malacia* are built from melodic and harmonic material which is then supported or developed by ostinati. In *Music Alone* (violin solo, 2017-18) I used the opportunity of writing for a solo instrument to explore ostinato not as accompaniment, but as the main material around which the composition is focused. The first performance took place with the audience standing in a gallery with the violinist playing from a balcony above. The sense of isolation this created around the violinist, as well as the altered acoustic setting, affected my approach to the composition of this piece, both technically and poetically. *Music Alone* was influenced by David Lang's *Mystery Sonatas* [2014], in particular No.4 'Sorrow' and No. 5 'After Sorrow', both of which use ostinato as central material. I wanted to combine Lang's more straight forward approach to writing for violin with the colouristic effects and techniques used in Saariaho's *Nocturne* [2003] for solo violin.

The opening melody of *Music Alone* contains a three-quaver motif, $x$, (Ex. 2.8) which is drawn out to form the basis of the main ostinato pattern of the piece. From bar 22, the ostinato figure repeats and develops motif $x$ against a bass note; creating implied harmonic centres. Motif $x$ freely shifts between being a tone ($x$ in Ex. 2.9) and a semi-tone ($x'$ in Ex. 2.9), creating changes of mode. The ostinato is interrupted by fragments of contrasting material characterised by trills and harmonics (Ex. 2.9). From bar 79-104, the three-note motif is used to blur the lines between the ostinato material and a return of the introductory melodic material (Ex. 2.10).

I initially approached ostinato as a non-teleological event happening on the micro-level as a means of prolonging or offsetting a compositions’ macro-level
teleology. With the incorporation of transformational ostinati, as informed by Ligeti’s work, I developed strategies for giving the ostinati a teleological imperative. In combination with heterophonic orchestration ostinati became an important source of harmony within a piece.


Chapter 3. Harmony – Cyclical Approaches

The use of cyclical harmony in my work has been informed by the harmonic language of Thomas Adès and Pierre Boulez. In particular I have been influenced by Adès's use of transposition to create constantly ascending or descending material. His piano concerto *In Seven Days* [2008] demonstrates a number of the approaches that were influential for me. The work is built from a descending progression of six chords, heard at the beginning of the piece,\(^{16}\) and also employs a self-transposing tone-row - that is, a row continuously transposed onto its last pitch – to create harmonic cycles.\(^{17}\) I have also been inspired by the way Adès's harmony operates simultaneously on the horizontal and vertical level; in his own words it, “can be felt as counterpoint and harmony.”\(^{18}\) Establishing a relationship between the horizontal and vertical has been of great concern to me throughout this research and I have explored the possibilities of applying serial techniques such as rotation and permutation to develop this aspect of my work. This has also been informed by the harmonic practices of Boulez, whose 'SACHER' works,\(^{19}\) such as *Derive I* [1984], use rotation as a way of proliferating material and creating harmonic logic, both horizontally and vertically, throughout a piece. The serial aspects of my approach will be discussed in greater detail in chapter 5.

A characteristic of my harmonic language is the employment of semi-tonal alterations and the abundance of leading notes. Figure 3.1 shows a pitch cell used at figure C of *Pure Cold Water*.

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\(^{17}\) Ibid, 151.
\(^{18}\) Ibid, 151.
\(^{19}\) 'SACHER' refers to a hexachordal cryptogram used in a number of Boulez's middle and late pieces.
This material has latent potential which can be explored in different ways. The first seven pitches (marked as *original cell*) contain three semi-tones, each of which has the potential to have a leading tone to tonic relationship: A-sharp leading to a B-natural tonal area; the falling D-natural to C-sharp suggesting a D tonal area; and the F-natural to G-flat suggesting a G-flat tonality. Another potential way to view this material is that the A-sharp and D-natural have mediant qualities. If the F-sharp to A-sharp is viewed as setting up an F-sharp major expectation the D-natural can be heard as a change of mode: from the expected B-major to B-minor. Building these potentialities into my harmonic material allows me different options when the material is employed as part of cyclical processes. The semi-tonal inflections can facilitate either continuing the cycle or breaking free from it.

In *Pure Cold Water* I used self-transposition to create a large quantity of pitch material. Starting with the *original cell* I realised there was an inbuilt transposition of motif $x$. By extending $x$ to include the C-sharp upon which the transposition starts, labelled as $y$, the first five pitches of the original cell neatly transpose up a perfect fifth onto their last pitch, C-sharp, labelled as *transposition of* $y$. This means the C-sharp acts as both the last pitch of $y$ and the first pitch of $y$ *transposed*. As this transposition takes place at the interval of a perfect fifth twelve transpositions of $y$ are needed before cycling back to the original pitch.
The aforementioned potentialities of this pitch material are now enclosed within the tonal structure of the circle of fifths. This gave me a large recourse of pitch material, with various potentialities, which is used during figures C and D of Pure Cold Water.

My original idea for Music Alone was to continue the tradition, starting with J.S. Bach and Heinrich Bieber, of writing a chaconne or passacaglia for solo violin. (Given the interchangeability of these two terms, I will use passacaglia from here on to refer to either). The pitch material for the passacaglia is labelled as Prime in Figure 3.2. Developing upon more contemporary examples of passacaglia such as Camden Reeves Night Descending [2001] and Robert Saxton's Chacony [1988]. I used this material to create a self-transposing bass line (Fig. 3.2).

![Fig. 3.2, Self-transposing passacaglia in Music Alone.](image.jpg)

The passacaglia repeats not at the unison or octave but at the compound major sixth (Fig. 3.3). This gives four repetitions of the row before it cycles back to the prime transposition. Figure 3.2 also shows that the first and last intervals of the row are a perfect fifth.

![Fig. 3.3, Passacaglia transpositions (with octave reduction) in Music Alone.](image2.jpg)

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Although this process gave me a large amount of pitch material, I found during the composition of *Music Alone* that I was simply composing to fit around the predetermined passacaglia and that the results were not fluent. I therefore broke free of the constraints of the passacaglia and used it only as a basic guide to the work's harmony and shape. For example, the prime row, with some alterations, provided the basis for the work's introductory melodic material (Ex. 3.1).

![Ex. 3.1, Music Alone, bars 12-17, Will Frampton, 2017-18.](image)

I revisited the technique of the transposing passacaglia in *Nordhaus Litany*. In this work I was concerned with integrating the passacaglia within the composition, rather than trying to work with material written in the abstract, as had happened in *Music Alone*. To do this I combined a self-transposing passacaglia with melodic variation; giving me the freedom to alter the passacaglia, allowing it to flow with the structure and pacing of the music (see Fig. 1.5). The passacaglia is split into four: A Statement followed by three Variations (Ex. 3.2). From bars 33 to 79 the passacaglia material underpins the music by articulating a descent from high piano in bar 33 to low cello in 79. The descent is created by transposing material so that it circles back to the original pitches an octave lower. The Statement and Variations each consist of a prime figure which is then transposed down (Ex. 3.2 - the Statement and Variations are written in the same octave for ease of comparison). For both the Statement and Variation 1, which are heard in the piano from bar 33-44, the prime is transposed down a major third, meaning two transpositions are needed before the prime an octave lower is reached (Fig. 3.4). To mark a cadence point in bar 44 the end of Variation 1 is chromatically altered;
the final F-sharp is replaced by an F-natural (Ex. 3.2). In both Variations 2 and 3
the prime is transposed down a minor third, meaning three transpositions are
needed before reaching the prime an octave lower. Variation 2, which is split
between the viola and cello from bars 45-52, is interrupted by foreign ascending
material at bar 53. The interruption lasts until the commencement of figure D
when Variation 3 is heard in the cello. At bar 78 the passacaglia is altered by a

Ex. 3.2, Nordhaus Litany, passacaglia reduction, Will Frampton, 2019.
descending Phrygian scale which leads to a cadence onto C-natural at bar 79:
bringing the passacaglia to a close.

![Fig. 3.4, Passacaglia transpositions, Nordhaus Litany.]

In *Sinfonia Malacia* I was concerned with applying self-transposition to the
vertical aspect of my harmony. Figures F to G is a section of dense counterpoint
scored across the wind and brass. To achieve this texture I used a sequence of 12
chords (Fig. 3.5).

![Fig. 3.5, Ascending chords in Sinfonia Malacia.]

Like the passacaglia in *Nordhaus Litany*, the chord sequence returns to its first
chord at the octave. Unlike *Nordhaus Litany* however, this is not achieved by
internal transposition but is inherent in the progression itself. The chords are based
on an ascending sequence of whole tones, with an alteration at the end (Fig. 3.5 –
bottom stave). The chords are not heard vertically in the piece but instead act a
collection of pitches which determine the harmony for a given section of music;
all linear material follows the pitch content ascribed by the chords. This method
allows flexibility for changes of mode, or other harmonic variation, within the
progression itself.

Example 3.3 shows a reduction of bars 156-161 with the chords given above (the
number of the chords corresponds with Fig. 3.5). The flutes articulate the harmony by following the chords as arpeggios. In bars 156-157 the first oboe has a rising arpeggio followed by a melodic figure. The alteration from A-sharp (B-flat) to A-natural and from D-sharp (E-flat) to D-natural illustrates how this line is following the pitches proscribed by the chords. During the same two bars the melodic figure in the second oboe ties the change of harmony over the bar line as the shift from A-sharp (B-flat) to A-natural this time occurs during the phrase. By using vertical chords to control the pitch of linear material I was able to maintain harmonic logic over a number of independent lines. Large alterations can be made by small and simple changes to the chords. Example 3.3 shows variation to the harmonic rhythm of different chords, which are either a semi-breve or minim in length. I also made changes to pitch. For example, the F-natural and A-flat in chord 11 (Fig. 3.5) are altered to G-natural and B-flat in chord 11' (Ex. 3.3). In bar 160 chord 3 is altered to contain a C-sharp (chord 3' - Ex. 3.3) in anticipation of chord 4 in bar 161. This change is also anticipated in the second oboe which has an E-sharp in bar 160 that does not feature in the chord. This type of local indiscipline is used throughout this passage.

I have used cyclical harmonic material as another means of opposing the teleological and non-teleology aspects of my work. The cycles are often created by transposing pitch material onto its last pitch so that it continues to self-transpose; however, the abundant use of leading-notes and semi-tone inflections gives opportunities to break from the free cycles at moments of teleological importance. By using chord sets to govern moments of dense counterpoint I am able to maintain harmonic logic over both the horizontal and vertical aspects of the work. This helps to create a fluid tonal style which rarely settles into a single
key and instead moves between different modes to create harmonic development and variation.

Chapter 4. Medieval Influences – Isorhythm, Hocket, Canon, and Tropes

I have incorporated medieval techniques - such as isorhythm, hocket, canon and troping - into my work and have been particularly influenced by the medieval composer Guillaume de Machaut. The Kyrie of his *Messe De Nostre Dame* [c.1300-1377] is isorhythmic in that ‘it takes as its starting point a plainchant Kyrie melody, allotted to the Tenor voice and set to a rhythmic repeating pattern […] the construction of this voice has to precede the composition of the polyphony which will surround it’.21 In his *Hoquetus David* [c.1300-1377], Machaut combines an isorhythmic tenor with a hocket, between the triplum and hoquetus voices to create a three-part texture. These techniques suggested links to my own preoccupations with ostinati and with building vertical harmonies from horizontal material. I have also studied more recent composers who have also been influenced by medieval approaches. Harrison Birtwistle, who has made an arrangement of *Hoquetus David* [1981], incorporates a number of medieval-derived techniques into his work, including isorhythm and hocket. Michael Hall suggests the advantage of isorhythm for Birtwistle “is that it need not have either beginning or end – it is therefore the very antithesis of goal-orientation”.22 As all material within a piece must self-evidently have a beginning and end point, Hall's comment implies that these moments will not be points of interest within Birtwistle’s work. In my work the interesting aspect of using techniques such as isorhythm and canon is to create a relationship between micro-level non-teleology and macro-level teleology and therefore identifying moments of synchronisation is of particular importance. Developing from my use of heterophony, as discussed

in the chapters 2 and 3, I have increasingly used hocket in my compositions.

William Dalglish has observed that in the chanson *A l'entarde d'avrillo* [c.1300]

“...The incorporation of musical material in the hocket is a sophisticated process [...] the object is a balanced and well-proportioned mixture of preexistent and new elements."23 I saw potential for this to relate to the creation of vertical harmony out of horizontal hocket material.

In Chapter 3 I discussed my approach to pitch during figures C and D of *Pure Cold Water*. For this passage I also developed an approach to rhythm that would allow me to have many independently moving parts based on the same rhythmic material. I used three rhythmic *talea*; each of a different length but with the same smallest common denominator of a semi-quaver (Fig. 4.1).

![Fig. 4.1, Taleae in Pure Cold Water.](image)

*Talea* A is 5 crotchet beats long and is taken from the viola rhythm in bar 6. *Talea* B is 3 crotchet beats long and is derived from the oboe rhythm in bar 45. *Talea* C is 9 crotchet beats long and is based on the characteristics of A and B. By setting the *taleae* against each other, isorhythmic patterns are formed. In Figure 4.2 the dashed bar lines breakup each repetition of the *talea*. This shows three repetitions

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of *Talea* A and five of *Talea* B are needed before they synchronise, creating a 15-beat pattern. This pattern is then 'summed' by adding together all the rhythmic impulses from both *talea* to create a new rhythm, A+B.

![Fig. 4.2, Rhythmic 'summing' in *Pure Cold Water*.](image)

The pitch material, as discussed in chapter 3, is then applied to the summed rhythm. Example 4.1 shows A + B used as the violin rhythm from bar 51 of *Pure Cold Water*.

![Ex. 4.1, *Pure Cold Water*, bars 51-54, Will Frampton, 2016.](image)

I continued this ‘summing’ process to include *Talea* C (Fig. 4.1) which gave me a large resource of rhythmic material; all of which shares common characteristics but is constantly varying due to the underlying isorhythmic relationship. I have used this process in a number of pieces, including *The Greening Variations*, and while the results are always positive it is a long-winded way to produce them. The *Taleae* are not heard sounding against each other at any point in the piece which, in retrospect, I consider a missed opportunity to add rhythmic variation and motivic depth.
I have some reservations over the success of *The Wish To disappear* as a composition. However, the coda, from figure E to the end, was a moment of significance in terms of incorporating hocket and canon into my work. This section takes a single melodic line, shown in the top stave of Example 4.2, and spells it out across the four parts of the quartet using two simple procedures. First, a hocket is created by splitting every other note of the line between two voices (except repeated pitches which are kept in the same voice). Unlike traditional hockets, there are no rests between the hocketing parts. Instead the notes of the hocket are sustained allowing the pitches to spill across each other: creating two-part harmony. Second, the complete hocket is sounded against itself in a half-speed mensuration canon, creating a four-part texture with the original hocket (Ex. 4.2 – second stave). The hocket in original mensuration starts in the viola and cello, while the violins play the mensuration canon. The roles of the viola and second violin swap in bar 93 which is a mechanism to allow the roles to completely swap in bar 97, when the violins play the hocket in the original mensuration and the viola and cello play a new mensuration canon starting from the same point (Ex. 4.2). A new canon was started at this point to avoid false relations, bi-modality, and other clashes of harmony that would have occurred. Like the use of chords or vertical pitch collections, as discussed in chapter 3, the combination of hocket and canon creates a relationship between the horizontal melodic line and the vertical harmony. In this case, however, the vertical is always a by-product of the horizontal which gives little control over the resultant vertical harmony. I address this issue in future pieces.
In *Nordhaus Litany* I combined the use of hocket and canon with the chord or vertical collection approach introduced in *Sinfonia Malacia* (chapter 3). From figure F of *Nordhaus Litany* a set of three, five-note chords are used (Ex. 4.3).
The ensemble is broken into two quartets (Quartet 1 and Quartet 2 - see page 24). Quartet 1 articulates an ascending contour which is differentiated by a descending contour in Quartet 2. The flute and clarinet spell out the chords as dovetailed arpeggios. In bars 112 and 115 the arpeggios are interrupted by tropes of linear material (which is derived from the descending lines in the strings) (Ex. 4.4). Each arpeggio pattern lasts for 16 beats, giving a simple harmonic rhythm where the chord changes every 4 bars. From the last beat of bar 108, the piano has a pattern of five crotchet beats in length, creating an isorhythmic effect against the wind arpeggios (Ex. 4.4). The two patterns synchronise once at the beginning of bar 115 and then again in 120; at which point the piano stays in 4/4. Throughout the section the piano is split into what I perceived as pairs of hypermetric 5/4 bars, marked as A and B in Example 4.4. Bar A always consists of five ascending chords while Bar B starts as five beats of silence which is gradually replaced by the same ascending figure as in A.

The overarching chord set (Ex. 4.3) is used to govern the descending lines which make up the basic material for Quartet 2 (Ex. 4.5 – two top staves). The Viola and Cello hocket the lines by alternating every other note. As each line consists of an odd number of pitches, either 7 or 11, an isorhythmic effect is created within the hocket: the beginning of each line starts on a different beat of the bar (Ex. 4.5). This also means the instrument which 'leads' the hocket switches with each line. For example, the first note of the first line is given by the cello whereas the first note of the second line is given by the viola. This pattern is broken in bar 118 when the cello continues the descending line while the viola starts a new line (Ex. 4.5).
4.5). The violins play a canon of the viola and cello starting two beats later and in a higher octave. The lines are constructed in such a way that when placed in canon they still adhere to the overarching chords, (Ex. 4.5 – third stave). Using the overarching chord set in combination with hocket and canon addresses some of the harmonic problems highlighted in previous pieces.

The passage from figure F of *Nordhaus Litany* is repeated at figure J with some variations (see Fig. 1.5), for example there is no troping in the wind line and the piano plays its five beat ascending figure without any bars of silence. The two quartets have a simultaneous rallentando and accelerando. The idea, initially informed by mensuration canon, is that from a central tempo one group gets faster while the other group gets slower until both are playing at the same speed but at a different mensuration (Fig. 4.3). At figure I the tempo for the whole ensemble is crotchet = 96 which is the mid-point of crotchet = 63 and crotchet = 126. From bars 156-170 Quartet 2 slows from crotchet = 96 to crotchet = 63. From the third beat of bar 160 to the beginning of 168 Quartet 1 increases in tempo from crotchet = 96 to crotchet = 126. At the end of both changes of speed Quartet 1 are at double the tempo of Quartet 2. Quartet 1 is given a bar of material to repeat ad libitum to allow for Quartet 2 to complete its rallentando. A simple metric modulation of semi-breve = crotchet in Quartet 1 at bar 170 allows the two quartets to synchronise into a global tempo of crotchet = 63. The longer rallentando allows for the fact that slowing down takes more time than speeding up.

![Fig. 4.3, Independent tempi in Nordhaus Litany.](image)

I have used a number of medieval devices and techniques as a springboard to develop my own compositional strategies. This has included using isorhythm to generate large quantities of varying rhythmic patterns and troping to extend
timbral and harmonic colours. I have also shown the importance of using hocket to create links between horizontal lines and vertical harmony in my work. Though this created some unwanted harmonic results, in combination with techniques derived from my exploration of cyclical harmony I was able to assert control over the harmony and will continue to explore this in Chapter 5.
Chapter 5. Watermark

*Watermark* (string quartet, 2018), written after *Sinfonia Malacia* and before *Nordhaus Litany*, was the penultimate piece composed for this portfolio. It is the work that best links together the various threads of the research, including: registral teleology, ostinato, cyclical harmony, serial technique, medieval influences, and an engagement with stylistic pluralism. The title for *Watermark* is taken from Joseph Brodsky's eponymous essay of 1992, which is a meditation on the Italian city of Venice.24 A central poetic conceit in the essay is that as music is the twin of water and Venice is the city of water; Venice is therefore the twin of music. Brodsky goes further and at times even suggests that Venice is music itself. This is illustrated by the following passage:

“It really does look like musical sheets, frayed at the edges, constantly played, coming to you in tidal scores, in bars of canals with innumerable obbligati of bridges, mullioned windows, or curved crownings of Coducci cathedrals, not to mention the violin necks of gondolas. In fact, the whole city, especially at night, resembles a gigantic orchestra, with dimly lit music stands of palazzi, with a restless chorus of waves, with the falsetto of a star in the winter sky.”25

The lamenting and descending melodic lines used in *Watermark* are suggestive of my feelings towards the current environmental problems in Venice; the environment is a thematic area that I would like to explore in greater detail after the completion of my PhD. In style and subject *Watermark* was influenced by Adès' string quartet *Arcadiana* [1994]. 'Venezia notturna' which is the first

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25 Ibid, 97.
movement of Arcadiana, is a depiction of Venice at night and includes glissandi representing waves of water and fragments of Venetian waltz's, as though from passing Gondolas. Unlike Adès, my work does not seek to literally depict Venice itself but uses what the city represents, both musically and environmentally, as a source of initial inspiration.

Watermark is the only piece in the portfolio to have undergone a major recomposition after a first draft had been completed and performed. My original idea was to take Figure E from The Wish to Disappear and quote it verbatim at the beginning of Watermark. I was interested in the possibilities of using what was originally a coda and turning it into an introduction (Fig. 5.1).

<table>
<thead>
<tr>
<th>Original version - Material</th>
<th>Ascending hockets – The Wish to Disappear Quote</th>
<th>Double stop antphony</th>
<th>Ostinato with ascending chords</th>
<th>High hockets</th>
<th>Coda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar no. in final composition</td>
<td>Not used</td>
<td>168</td>
<td>200</td>
<td>Not used</td>
<td>Not used</td>
</tr>
</tbody>
</table>

Fig. 5.1, Formal sketch of original version of Watermark.

While the original version fulfilled the idea of recontextualizing the coda of The Wish to Disappear, I felt that in performance it was too close to a compositional exercise and that the approaches I had initially taken in the earlier work were restrictive in themselves. The method of combining hocket with mensuration canon, to create vertical harmonies out of linear material (as discussed in chapter 4), has a number of restrictions. The propensity towards semi-tonal inflections in my harmonic language means that when a line is being heard against itself in mensuration canon, clashes of semitones negate modal or tonal potentialities. I therefore developed a new introduction to Watermark which, while still based on
hocket and canon, avoided these restrictions. The following definition made me rethink my approach to hocket: “The medieval term for a contrapuntal technique of manipulation of silence as a precise mensural value […] a hocket occurs in a single voice or more commonly, in two or more voices which display the dovetailing of sounds and silences, by means of the staggered arrangement of rests.”

I had previously conceived of hocket as the orchestration of a single line across different voices and viewed the rests as simply a consequence of this process. Sanders definition suggests the reverse: the arrangement of rests is the primary mechanism for creating hocket. Webern often combined serial and medieval technique; a prime example is found in the first movement of his String Quartet op.28 [1938] which uses motivic note rows with canon and silences to create a sparse texture. I was particularly influenced by the way in which vertical alignments of notes, which occur as the horizontal lines intersect with each other, sound almost accidental but at the same time have a clear sense of harmonic logic. Webern said of this movement 'At not a single point are notes stacked vertically from the same row!' While Kathryn Bailey's analysis reveals that notes from the same row are at times stacked, the sentiment that the vertical is subordinate to the horizontal is evident in Webern's statement.

The final version of Watermark is built from a single melodic line (Ex. 5.1).

Ex. 5.1, Watermark, melodic material, Will Frampton, 2018-19.

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28 Ibid.
I used the pitches from this melody to create a 14-note row (Fig. 5.2 - A). By transposing the row onto its final pitch, a minor third lower than the first pitch, four statements of the row are needed before it cycles back to the original pitch an octave lower (Fig. 5.2 – A, B, C, D). Each row is then divided into subsets of 4, 3, 3, and 4 pitches (Fig. 5.2 – illustrated by dashed bar lines). While the subsets clearly relate to the symmetrical phrasing of the original melody (Ex. 5.1), my primary concern was with creating subsets that have clear tonal or modal inflections (suggestive tonality, Ex. 5.1). By partitioning the rows into tonal subsets, I am able to have some control over the resultant vertical harmony. In this way the subsets have a similar function to chords or vertical collections used in *Sinfonia Malacia* (as discussed in chapter 3). To create variation of the horizontal material I employed rotation at the level of the subset (Fig. 5.2 – A1, A2, etc.). Each subset is rotated three times giving me a total of 16 rows: A, B, C, and D each with three rotations.

This pitch material is distributed across the quartet using the rhythm of the original melody. The material is either heard in hocket, split every-other note between a pair of instruments, or heard as a single line in one instrument. Figure 5.3 (page 62) shows how the material is structured as a gradual transition from one row, in hocket, to all rows simultaneously, as individual lines, while Example 5.2 shows the manifestation of this in the piece. The prime rows are always played in the first violin. The overlapping of rows, for example rows C and D in bar 11, illustrates how the final pitch of each prime row also operates as the first pitch of the next prime row. Example 5.2 also reveals a number of moments of local indiscipline which are indicative of how this material is treated throughout the piece. In bar 8 the second violin sounds row C2 starting from the second pitch of
the row, D-natural, meaning there is a missing B-flat. In other instances there are a greater number of missing pitches. For example, when the cello plays row D2 in bar 13, the first five pitches of the row are missing. In bar 9 there is an alteration of F-sharp to F-natural in the second violin, which is then echoed 2 beats later in the cello. In bar 13 the cello has a two-note trope of pitch material taken from the second subset of row D which is heard in the following beat in the first violin.

Fig. 5.2, Rows, transposition, and rotation in Watermark.
In previous compositions I lengthened each note of the hocket to create harmony (see chapter 4). In Watermark the notes are shortened, sounding only at the moment of attack (see Ex. 5.2). For ease of reading this is achieved by using tenuto marks with crotchets. Using the rhythm of the basic melody, I wanted to create a rhythmic structure that would gradually introduce the triplet figure \( x \) (see Ex. 5.2, Watermark, bars 1-17, Will Frampton, 2018-19.)
Ex. 5.1) onto every crotchet beat. To do this I employed rhythmic canon (Fig. 5.5).

Throughout the passage canon always occurs at the interval of one crotchet beat, as illustrated by the first entry of the *comes* in bar 5 (Fig. 5.5). At times the canonic relationship is relaxed, for example the free imitation in the viola and cello in bars 7-8, or at the two cadence points (Fig. 5.5). At other points the relationship is strict, for example from bar 8-11 the *dux* is followed strictly by two entries of the *comes*, themselves a beat apart. It is through this strict procedure that figure *x* is heard on every beat. This occurs for the first time in bar 9 and happens thereafter during the sections of canon. From bar 13 there are two independent canons: between the first violin and the cello, and between second violin and viola. The rhythmic structure mirrors the structure of the pitch rows of this passage (see Fig. 5.3). Both start with a single idea which gradually becomes four independent parts. These similarities are illustrated by comparing Figure 5.3 with Figure 5.4.

<table>
<thead>
<tr>
<th>Bar no.</th>
<th>1</th>
<th>5</th>
<th>8</th>
<th>13</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vln. 1</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>A</td>
</tr>
<tr>
<td>Vln. 2</td>
<td>A</td>
<td>B</td>
<td>C2</td>
<td>D1</td>
<td>-</td>
</tr>
<tr>
<td>Vla.</td>
<td>-</td>
<td>B3</td>
<td>C1</td>
<td>D3</td>
<td>-</td>
</tr>
<tr>
<td>Vlc.</td>
<td>-</td>
<td>B3</td>
<td>C1</td>
<td>D2</td>
<td>-</td>
</tr>
</tbody>
</table>

Fig. 5.3, Row structure of bars 1-17 of *Watermark*.

<table>
<thead>
<tr>
<th>Bar no.</th>
<th>1</th>
<th>5</th>
<th>8</th>
<th>13</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vln. 1</td>
<td>Dux</td>
<td>Dux</td>
<td>Dux</td>
<td>Dux 1</td>
<td>Dux</td>
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<tr>
<td>Vln. 2</td>
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<td>Dux</td>
<td>Comes 1</td>
<td>Dux 2</td>
<td>-</td>
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<tr>
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<td>-</td>
<td>Comes</td>
<td>Comes 2</td>
<td>Comes 2</td>
<td>-</td>
</tr>
<tr>
<td>Vlc.</td>
<td>-</td>
<td>Comes</td>
<td>Comes 2</td>
<td>Comes 1</td>
<td>-</td>
</tr>
</tbody>
</table>

Fig. 5.4, Canonic structure, bars 1-17, of *Watermark*.
Hocket and canon are used during the central 'hymn' section (see Fig. 5.7 - at end of chapter) in a way more closely resembling my approach in previous pieces. This section of the work is markedly different in tone and character to the rest of
the piece. This was influenced by 'O Albion' from Adès' *Arcadiana*, which itself seems to have been influenced by 'Arioso interrotto (di Endre Szervánszky)' from Kurtág's string quartet *Officium Breve, in Memoriam Andreae Szervánszky*, Op. 28 [1989]. Both quartets consist of a number of short character pieces and the two movements in question are quiet and slow, with simple melodic figures backed by mostly diatonic harmony. 'O Albion' is the penultimate movement from *Arcadiana*, followed only by a short coda-like movement, while 'Arisoso' is the final movement of Kurtág's quartet. I found both movements deeply moving, however I felt that their placement at the end of the quartet created a sense that they were stuck on for affect and were not intrinsic to the work as a whole. The 'hymn' section of *Watermark* is therefore placed in the centre of the work and takes an ABA' structure reflecting the works larger form, which is discussed further below (see Fig. 5.6 and Fig. 5.7).

<table>
<thead>
<tr>
<th>Bar no:</th>
<th>144</th>
<th>152</th>
<th>160</th>
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</thead>
<tbody>
<tr>
<td>Material</td>
<td>Tune with mensuration canon</td>
<td>Modal changes</td>
<td>Tune with ostinato</td>
</tr>
</tbody>
</table>

Fig. 5.6, Structure of 'Hymn' in *Watermark*.

The melodic material for this section was an attempt to compose a melody in the style of an English hymn tune (in my original sketches I even harmonised it as such). The tune is harmonised by a mensuration canon of itself four times as slow, meaning the first two bars of the mensuration canon will take the same amount of time as the tune heard twice (Ex. 5.3).

The canon, marked by X in Example 5.4, is then divided between different voices with some notes spilling across each other to create further harmony. From bars 148-151 the canon settles in the cello while the second violin and viola have free voices to complete the harmony (Ex. 5.4). During the B section of the hymn, semi-tonal inflections are used to create a series of major seventh chords which leads to a perfect cadence onto D major in bars 159-160 when the tune starts again (Ex. 5.4). These modal changes were employed to help this section feel integrated within the piece as a whole and to leaven any sense that the diatonicism is contrived.

Structurally Watermark is built from a number of ternary forms operating at different levels. X-Y-X' (Fig. 5.7 – upper brace) represents the work’s large-scale structure. X consists of ascending, descending, and transitional material (Fig. 5.7 – 'Material'). During X' the order of this material is reversed to create a palindrome. By including the 'hymn' section into this structure an A-B-C-B'-A' form is created (Fig. 5.7 – 'section'). Each section is then broken into further subsections which themselves have ternary structures (Fig. 5.7 - 'subsections').

Different teleologies work concurrently within the piece. Each of the sections (A, B, C – Fig.5.7) has a global and local telos (Fig. 5.7 - 'Telos'). The quiet, descending, and staccato character of the A material suggested a teleology from quiet to loud, high to low, staccato to legato. Bars 32-33 are a moment of local telos when the cello reaches its low C in bar 32 and the lines, while punctuated by tenuto markings, are increasingly legato. The global telos of A is reserved for the end of the piece, from the cello's low C in bar 268 until bar 279. This passage is marked forte with a wide registral range being used to articulate mostly legato
lines. The harmonic material also suggested a teleological strategy. During section A' (Fig. 5.7) the harmony breaks away from the constant cycling of the prime rows. In bar 279 the last subset of row A is reached (Ex. 5.5 - at end of chapter).

The final E-flat, which would normally become the first note of row B (Fig. 5.2), is used to break the cycle and becomes either the tonic of an E-flat major tonality or the seventh of an F Dorian tonal area, as outlined by the rising scale in the cello line (Ex. 5.5). This tonal ambiguity is left unresolved (Ex. 5.5 – bar 284). The telos for the B material consists of high trills and a declamatory tune in the cello. The Telos for C is the aforementioned perfect cadence into the tonic D major of the 'hymn' tune in bar 160.

*Watermark* brings together many of the ideas explored throughout the research. Like all of the works in the portfolio it is cast in a single movement with teleology central to its structure. In earlier work's such as *Pure Cold Water* and *The Greening Variations* the desire to create teleologically sound compositions became all-encompassing and, at times, the work would suffer for this. In *The Wish to Disappear* the ascending melodic material suggested a teleological strategy for the piece and in subsequent pieces there is an even greater symbiosis between material and teleology. Not only can one suggest the other, but the relationship is nuanced and changeable, leading to structural variety and better integration of material. This approach is found in *Watermark* when, for example, the cyclical note rows (Fig. 5.2) break free from their cycle to strengthen the moment of telos (Ex. 5.5). The exploration of repetitive or non-teleological elements not only helped develop the relationship between material and teleology, it also led me to explore wider influences, including minimalism and serialism. The influence of Webern in particular led to developments in my use of medieval
techniques, while also strengthening my harmonic style. Both *Watermark* and *Music Alone* suggest potential for incorporating programmatic elements into my work which is something I would like to explore further beyond this research. I am particularly interested in exploring environmental themes as I have begun to do in *Watermark*, through the influence of Brosky's writing on Venice, and in *Nordhaus Litany*, William Nordhaus is a climate change economist. By combining melancholic melodic material, such as the descending passacaglia in *Nordhaus Litany* (Ex. 3.2), with pastoral or environmental themes, such as in *Watermark*, I would be able to articulate my environment concerns while continuing to explore the musical preoccupations of this research.
### Fig. 5.7, Structural of Watermark

<table>
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<tr>
<th>Bar Number</th>
<th>X</th>
<th>Y</th>
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<td>168</td>
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<table>
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<th></th>
<th>Transition</th>
<th>'Hymn'</th>
<th>Transition – formation of ostinato</th>
<th>Ascending ostinato and chords</th>
<th>Descending lines and hockets</th>
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<tbody>
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<td>Ascending scales</td>
<td>Transition</td>
<td>'Hymn'</td>
<td>Transition – formation of ostinato</td>
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<th>C</th>
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<td>B local 127</td>
<td>C global 160</td>
<td>B global 237</td>
<td>A global 268-284</td>
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<th>152</th>
<th>160</th>
<th>168</th>
<th>200</th>
<th>233</th>
<th>coda</th>
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<td>b1</td>
<td>a'1</td>
<td>b1</td>
<td>b2</td>
<td>b1'</td>
<td>c1</td>
<td>c2</td>
<td>c1'</td>
<td>b3</td>
<td>b4</td>
<td>b3'</td>
<td>coda</td>
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Trope of B
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Music Alone


Sinfonia Malacia


Watermark


Nordhaus Litany


