University of Adelaide<br>Elder Conservatorium of Music<br>Faculty of Humanities and Social Sciences

## Portfolio of

## Original Compositions and Exegesis:

# a personal exploration of 

 modal processes.Submitted in fulfilment of the requirements for the degree of

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## Volume Two

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## INTRODUCTION :

## A Personal Exploration of Modal Processes

The eleven works contained and discussed in this submission investigate various methods of incorporating modes into the harmonic and melodic structure of a musical work. Each work incorporates and explores various modal processes as best suited to the medium for which it is written. For this reason, a variety of ensembles is represented in the eleven works: symphony orchestra with soloist, chamber orchestra, large chamber ensemble, guitar quintet, string quartet with soprano soloist, SATBtB choir, vocal trio, string quartet, piano solo and brass ensemble. The exploration of various modal processes is accomplished through the pieces themselves, and the accompanying material is included in the submission to support this.

This submission consists of two volumes. The primary material of my submission is presented in the eight original compositions found in Volume 1. This exegesis, the three compositions found in the Appendix, and the sound recordings (all contained within Volume 2) act as secondary material, given to support the works presented in Volume 1. The eight works in Volume 1 are considered the main submission by virtue of their length and the forces for which they are written. Furthermore, these works present clear modal structures and processes that I believe may be used again, in the composition of other works. The three works contained in the Appendix are minor works that provide fewer examples of modal processes than the works in Volume 1. They are included in the submission as they were composed during my candidature and do explore some compositional processes involving modes, although to a lesser extent than the works in Volume 1. The works in Volume 1 are presented in an order that reflects the instrumentation of each work: large orchestra is followed by chamber orchestra and large chamber ensemble, followed by smaller chamber ensembles, and finishing with large and small vocal ensembles. The three works in the Appendix are presented in order of relevance to the discussion of modal processes.

The compositions found in Volume 1 (and to a lesser extent, those found in the Appendix) explore how sonorities can be transformed by applying traditional harmonic practices, in
particular modulation and key relationships, to a modal scheme, and the degree of flexibility possible within a modal framework as opposed to the major-minor system. The modal systems used in the works rely heavily upon use of the seven church modes, but there is also reference to various folk modes and synthetic modes. The exegesis offers a commentary on the genesis of the eleven works submitted in this folio. In particular, it discusses the choice of modes contained within each piece, and identifies possible causes for the resulting preference for church modes, as well as examining the different options and structures made available by the use of synthetic modes. The exegesis provides information regarding the overall structure of each work, the modal processes used, and any problems that were encountered along the way. The influence of the music of Joseph Schwantner is discussed, in particular his use of interval projections and equal interval sets. ${ }^{1}$ Finally, each commentary attempts to show how the discoveries made during the composition of one work were used (or not used) in the composition of later works, through discussion, comparison and cross-referencing within each commentary.

[^0]
# SKIN-METAL-WOOD <br> CONCERTO FOR SOLO PERCUSSION AND ORCHESTRA : <br> Interval Projection and the Music of Joseph Schwantner 

Three Movement Concerto for Solo Percussion and Orchestra<br>(Solo Per, Picc, 2 Flt, 2 Ob, Cor Ang, 2 Clt, Bass Clt, 2 Bsn, Contra Bsn, 4<br>Horn, 3 Tpt, 2 Ten Tbn, Bass Tbn, Tuba, 3 Perc, Timp, Harp, Strings)

The desire to compose a Percussion Concerto came from studying Joseph Schwantner's three movement Concerto for Percussion and Orchestra, composed for the New York Philharmonic's $150^{\text {th }}$ anniversary celebrations and premiered in 1995. This work clearly displays two of the features most recognisable in Schwantner's music- the use of equal interval structures, and modes created from the combination of two chords or note sets. Schwantner's unique harmonic language, as observed in Concerto for Percussion and Orchestra and other works, is often based upon interval projections. These projections create note sets or modes (often synthetic, but sometimes equivalent to church or folk modes) and it is in his use of these modes that we see a preference for chords, harmonies and melodic figures built upon equal intervals.

An interval projection ${ }^{2}$ occurs when one interval is superimposed upon another. A short projection of two or three notes creates a short 'note set', which can be used harmonically (vertically) or melodically (horizontally). Interval projections can create note sets consisting of as many notes as are required, until the set begins to repeat itself. Note sets, especially those of 5-6 notes or more, may operate in the same way as modes do: the tonal centre is the note upon which the projection began, and the set can be moulded and transformed using whatever means the composer sees fit. In some cases, note sets produced by certain interval projections are identical to recognisable church or exotic

[^1]modes. The benefit of constructing a mode in such a manner, be it traditional or synthetic, is that it is possible to create a musical work that has a focus on modes and exploration of Harmonic Modality ${ }^{3}$ equally alongside a focus on a particular interval. The chosen interval becomes an integral part of the work, providing a stimulus for melodic writing (linear presentation of an interval) as well as harmonic writing (triadic, quartal or quintal harmonies).

Schwantner's choice of intervals to use in a projection is specific to the aesthetic requirements of his music. The intervals he most commonly uses in projections are minor and major thirds, perfect fourths and perfect fifths. An interval is chosen depending on the sound world that is desired, as each intervallic projection creates a different colour, feel and modal suggestion. For example, Schwantner prefers major thirds for soft, gentle passages, perfect fourths for more aggressive gestures, and perfect fifths in his most lyrical music. ${ }^{4}$

In my own exploration of interval projections, I came to realise that not all projections result in note sets that are of great use. Projections of a major second/minor seventh result in a whole tone mode, whilst minor second/major seventh projections form a chromatic scale. Neither of these is particularly useful, unless only a short note set is selected, or a specific effect using either mode is required.

Major 2nd Projection


[^2]

Major and minor thirds (together with their inversions minor and major sixths) create 3 and 4 note sets, which due to their limited note span can only be effectively used if a specific diminished (minor third/major sixth) or augmented (major third/minor sixth) effect is required.


It is the perfect fourth and perfect fifth projections that provided me the greatest creative potential, and these are the projections that are most commonly seen in the works included in this folio. If allowed to complete a full cycle, each projection creates a complete chromatic pitch field. However, if one selects only the first seven notes, each projection creates a church mode: perfect fifth, the most 'sharp' mode, lydian, and perfect fourth, the most 'flat' mode, locrian. The first five notes of the perfect fifth projection also provide a pentatonic pitch field.


Several of the works in this folio evolved from experiments with these projections (Musaic, FourTune, Song Without Words and Elegy from Three Processionals, Song from Rossetti Songs). Other works, although they do not contain interval projections, do show the relationship between interval and modes, in particular perfect fourths and the lydian mode (Imperfect Fourth being the most evident of this, but also Fanfare).

In an effort further to widen the modal framework created by interval projection, the concerto Skin-Metal-Wood focuses primarily on modes created by combining two interval projections beginning on different notes; for example, by adding a major third projection beginning on F to the original one on C , a six note synthetic mode is created, featuring the intervals of major third and minor second.


This procedure of combining interval projections is a common method by which Schwantner creates a synthetic mode. In doing so, Schwantner's dual harmonic focus is the chosen interval and the mode created from the combined projections. Often, Schwantner chooses to shorten an interval projection (that is, not continue it through to when the initial tone is repeated) and combine the small note sets (usually 2 to 4 notes)
together to create a mode. Most commonly, we see this in the juxtaposition of two 3-note projections built upon different notes.

Sometimes Schwantner chooses to mix intervals in his projections, creating a note set out of alternating major and minor 3rds, or any other pair of intervals. If the intervals being projected are allowed to change, a whole new area of opportunity opens up for the creation of new note sets. One can now add chords together: major triads can be combined with minor triads of a differing root. Two diminished seventh chords of differing roots may be added together, as may any combination of seventh chords. Even chords of different intervallic constructions, such as triads and quartal chords, may be amalgamated to further increase the harmonic possibilities of the music. Schwantner's music provides us with countless examples of the harmonic possibilities available to the composer through such intervallic combinations. The following examples from various works by Schwantner demonstrate his varied usage of interval projections, and display some of the many synthetic modes created from the combination of two note sets or chords.

Use of minor 3rds:

## From a Dark Millennium

Piano b. 1


Linear presentation of two diminished 7ths
Tuned Percussion b. 54 (projected minor 3rds) a semitone apart.


Use of major 3rds:


Use of major and minor 3rds:


Use of Perfect 4ths through quartal chords:

## Percussion Concerto 3rd Movt.



Various melodic passages created by combining major triads with quartal chords

## Use of Perfect 5ths:



Sets of Perfect 5ths, separated by expanding intervals (Minor 3rd, Perfect 4th, Minor 6th, Minor 7th)


Sparrows (Soprano b. 19)


Melody created from 5 th projection- although projection is complete, the contour of the melody and sparing $G \sharp$ until the end also suggests 2 sets a tone apart.

Sparrows (Piano b. 40)


-Note lowest note of each pair (highlighted above)-forms a descending pattern of Major thirds a semitone apart. Schwantner continues this progression for 24 bars until the full circle of possibilities are explored.


In each movement of Schwantner's Concerto for Percussion and Orchestra, he uses modes that are derived from equal interval structures created from the combination of two chords or note sets. Such compositional technique is especially obvious in passages using tuned percussion, where a harmonic 'wash', created by the linear presentation of one of these sets/modes, takes the place of a distinct melody line. This acts like an upper register ostinato, which has enough rhythmic interest (through changing metre, displaced accents and syncopation) and tonal variation (through changing intervals and chords and the addition of new tones) to warrant the omission of a more traditional melodic line or phrase. Below are a couple of examples of such linear harmonic 'washes', as found in Schwantner's Concerto for Percussion and Orchestra. The first is from early in the first movement. Here, three percussionists (on marimba, vibraphone and xylophone) double the solo marimba line. The solo line is also doubled by the piano, harp and upper woodwinds.



The suspended almglocken solo in the second movement has its harmonic origins in a number of slightly different compositional procedures. The melodic contour is comparable to that of the marimba melody shown above, so its construction could be built in a similar way (the combination of two chords), but using two $7^{\text {th }}$ chords rather than triads to create modal contrast. By compressing the notes of the melody into a scalar format, we discover a concealed octatonic mode, made up of alternating tones and semitones. Another possible derivation of this passage is the interlocking of two minor third projections (or diminished $7^{\text {th }}$ chords) which form an octatonic mode. This explanation seems most likely, as it is in keeping with Schwantner's fascination for modes constructed by equal interval sets.


Two minor 3rd projections a semitone apart:


As is the case in these and other examples in Schwantner's Concerto, Skin-Metal-Wood aims to explore the orchestral sonorities available through the doubling of tuned percussion with other percussion, strings and woodwind. In many cases, foreground melody is forfeited in favour for linear harmonic 'washes', as used by Schwantner in the above examples. Skin-Metal-Wood also explores how melody can be superimposed over a percussion ostinato or harmonic wash. In passages where a particular 'wash' or harmonic backdrop is continued for an extended period of time, interest is maintained by exact transposition of the ostinato by a selected interval, and the subsequent variation of linear phrases.

Schwantner's choice of interval and chord structures remains free and random throughout the three movements of his concerto. As expressed earlier, the choice of interval or chordal set seems dependent upon what mood or sonority is required at that particular time in the music. Skin-Metal-Wood takes a more structured approach to the selection of interval and modal material, with each movement examining one interval or chordal set. The first movement 'Skin' is based upon quintal harmonies, and the modes created by combining two three-note sets spaced in perfect fifths. The distance between the two sets is varied in order to create a diversity of modes and sonorities. The second movement 'Metal' explores the combination of two major seventh chords spaced a tone apart. A contrasting middle section in this movement transforms the major seventh chords to minor seventh chords, and thus examines the dorian mode that this combination creates. The third movement 'Wood' is largely quartal in its harmonic and melodic structure, using both small sets of notes spaced in perfect and augmented fourths, and modes created from projected perfect fourths. Each movement remains an individual entity with its own internal structure, and there is no conscious attempt to reference any phrases, intervals or ideas between different movements.

By selecting a different interval construction for each movement ( $1^{\text {st }}=$ fifths, $2^{\text {nd }}=$ thirds, $3^{\text {rd }}=$ fourths) it is hoped that they each will display a sound world that is distinct and different from each other. This is assisted by the focus on different sets of percussion instruments for each movement. In each movement, the soloist plays only instruments of the type suggested by the title- in the first movement, only skin percussion (bass drum, tom toms, timbales and bongos); the second movement, only metal percussion (principally vibraphone, but also triangle, cymbals, crotales, water gong, tubular bells, tam-tam and glockenspiel); and in the third movement, wood percussion (solo marimba throughout the movement). In the first and third movements, the other percussionists are asked to play instruments other than the type suggested by the title and played by the soloist. This organization of instrumentation helps to create a structure out of the vast and varied possibilities of percussion, as well as distinguishing between the sonorities and musical language of each movement.

## $1^{\text {st }}$ Movement: 'Skin'

The first movement aims to be short and direct in its presentation of modal and intervallic material. As this movement was designed to feature untuned skin percussion, care was taken to ensure enough harmonic and melodic interest was generated by the orchestra to carry the soloist, yet also that the percussion part was not a mere accompaniment or obbligato to an already complete and interesting orchestral piece. To avoid this, the melodic passages are kept short, the orchestration continually varies to feature different instrument families (which in turn reflects the separation of percussion families between the three movements), and short percussion solos are featured throughout the movement, as well as a short cadenza.

The harmonic structure of the movement comes from five different arrangements of two perfect-fifth projections. Each arrangement varies the distance between the two projections, altering the mode created by combining the sets, and also creating contrasting and varied tonal possibilities. These are labelled below:

A Minor 2nd = Chromatic


B Major 2nd = Pentatonic

(D) Major 3rd = Implied Lydian


E Perfect 4th $=$ Implied Ionian

'Skin' is constructed of short episodes each harmonically based around one of these five sets. Variation between each episode arises through changing orchestration, modulation, and the varied harmonic inflections that occur when the mode suggested by one set contrasts with the mode suggested by the next. For example, a move from (C) Aeolian to (D) Lydian brings about a sense of lightening as the music moves from a minor flavoured to a major flavoured mode. The following examples show how each set is used to form an episode, and how the characteristics of each set help define its usage as either different from or similar to the other sets.

## Set A:



## Set B:



## Set C:

Tuned Percussion; Bar 17
Set C - Aeolian feel. Chordal construction maintained in harmonic wash; acts also as two short 5 th projections.


## Set D:

Strings; Bar 49


## Set E:

Strings; Bar 100
Set E - Less tones provide fewer distiguishing features, but more variation in modal possibilities.
Used only briefly, suggesting Ionian and Mixolydian Modes.


The following table outlines in more detail the overall structure of the first movement: which episodes are derived from which set, and how variation occurs, through orchestration and modulation of sets. Note that the majority of modulations are to a mode related by the dominant or sub-dominant. By focussing on the implications of a harmonic modal framework, simple modulations to closely related tonal centres (for example, the dominant or sub-dominant) may offer a whole new aural palette. Such modulations exploit new harmonic options through the use of modes rather than major and minor keys, all the while keeping to a strict and recognisable harmonic structure. These borrowings from the major-minor harmonic system are common throughout all the works in this folio, and will be commented on where appropriate. ${ }^{5}$

| Bar | Set Used | Description | Modulation |
| :--- | :--- | :--- | :--- |
| 1 | A | Brass fanfare. | - |
| 17 | C | Tuned percussion harmonic wash; <br> woodwind melody. | Up 4ths |
| 40 | C | Strings harmonic wash; Brass melody. | Up 4ths |
| 49 | D | As before with added percussion, <br> woodwind counter-melody. | Up 4ths |

[^3]| 57 | B | Interlude- descending 5 note sets in <br> woodwind and tuned percussion. | Down major 6ths |
| :--- | :--- | :--- | :--- |
| 59 | A | Brass fanfare. | Up 5th (dominant) <br> from previous <br> fanfare. |
| 69 | C | Woodwind harmonic wash with string <br> accompaniment, brief melodic fragments <br> in brass. | Up 5ths |
| 86 | B | Interlude- descending 5 note sets in <br> woodwind, pizzicato strings and tuned <br> percussion. | Down major 6ths |
| 88 | C | Tutti orchestra. | Up 5ths |
| 94 | D | More tuned percussion, less heavy <br> orchestra. | Up 5ths |
| 112 | - | E | Predominantly strings with woodwind <br> melody. |
| 122 | A and E | Brass fanfare (A) and woodwind/strings <br> (E) | Up 4ths |
| 100 |  |  |  |

## $2^{\text {nd }}$ Movement: 'Metal'

The mode created by combining two major 7th chords a tone apart is an eight-note mode, most easily described as a Lydian mode with an added semitone above the tonic (or a flattened second). ${ }^{6}$ This is the chordal structure and mode from which the majority of the second movement, 'Metal' is derived. The eight-note mode gives the opportunity for richer sounds and a greater possibility in harmony than a seven note mode.


The vibraphone solo at the start of the movement modulates freely from one note set to another. Sometimes, the desire for a particular new tone will determine the choice of a new note set. Often however, note sets/modes modulate by a consistent interval, as is the case at the beginning of this movement. The vibraphone solo, which is taken over by strings at Bar 11, modulates up a perfect fourth (to the sub-dominant) each time a new note set is required. The diagram below shows this melodic theme and the various note sets from which it is constructed.

## Opening Theme



[^4]

Modulation of Sets by Perfect Fourths


This theme returns in various guises throughout the movement. Another of the main ideas in 'Metal' begins at bar 57. For a number of bars, the harmonic accompaniment appears to be in a Lydian mode. This mode results from combining two major triads a tone apart, and appears in the running harp and string accompaniment as a five-note 5th projection. As the accompaniment grows in exuberance and strength, the harmonic backdrop builds from the initial eight quavers to sixteen semiquavers, amongst which are the added tones to build the note sets up to combined major 7th chords. Heard at first only in the high woodwind, this complete note set is heard in the solo vibraphone at the start of the next section at bar 107. As in the opening 20 bars, the note sets modulate up by perfect fourths.


At bar 200, the harmonic structure of the work changes for the first and only time. Here begins a canon, starting with only the violins, using Ab dorian mode. This mode is derived from the combination of two minor $7^{\text {th }}$ chords.


The canon continues, modulating to the dominant (up a fifth) upon the completion of the main theme. Through this modal modulation, the canon passes through five different modes before returning to themes heard earlier in the movement.

## $3^{\text {rd }}$ Movement: 'Wood'

In regards to intervallic structure and the repetition and modulation of note sets, 'Wood' is less restricted and more improvisational in its nature than the earlier two movements. The entire movement spawned from two initial ideas: the first is a six-bar, four-note melody for marimba, constructed from two perfect fourths a tone apart. The theme needed to have enough rhythmic vitality to warrant repetition, but also be simple enough to be lengthened, shortened, added to and generally rearranged, without losing its flavour and recognisable features.


This opening theme is gradually built upon by the marimba and the rest of the orchestra, adding first a syncopated bass line of fourths to the original melody, then adding fourths above the melody, followed by another layer of 4ths again. At bar 33, a countermelody is introduced in the woodwind. This uses all the tones from the marimba melody (when harmonised by a single fourth) in a linear, melodic fashion.


As more layers of fourths are added and the harmonic palate changes, so too does the modal inflection of the music, moving from its tetratonic beginnings, through to pentatonic and then dorian modes. At all times, the notes added are included due to their quartal relationships with either a melody, counter melody or bass line. In this way, the modal inflections produced are coincidental, and not the main focus of the music.


The second idea was in creating a cadenza for marimba that flowed quickly and smoothly between a number of varied themes. Each of these ideas was composed as a separate and unique entity, exploring techniques possible on the marimba, various rhythmic configurations, challenging scale and arpeggio passages, and contrasting harmonic arrangements. Each individual idea has one thing in common- it is related in some way to the intervals of perfect and augmented fourths. These ideas were then transposed where needed and grouped together to create the marimba cadenza. Some of the individual ideas are referenced, repeated and developed in the main body of the movement. The diagrams on the following pages show the relationship between themes in the main body of the third movement and the cadenza, and points out their relationship to the overall intervallic theme of fourths that dominates the entire movement.


Emphasise $\quad . \quad . \quad . \quad$ rhythm (main rhythmic motive); 2 Perfect 4ths a tone, then a semitone apart. Interlocking chords easier to play when one includes all/some black keys.


Cadenza Bar 256


Three-note fourth projections


Maintains d. . ل rhythm, highlighting change to compound time and straight d.
Change of time signature brings with it a new set of notes.


Sets of Perfect Fourths (3 or 4 notes), either descending or ascending, moving by tones or semitones.

Much of the music discussed up to this point has related to the interval of a fourth through harmonic connections. The woodwind at bar 63 introduce a second melodic theme, featuring melodic perfect fourth intervals. This acts as another link between the various sections of the piece, and allows for development of a linear melody, a refreshing break from the countless harmonic-based themes and harmonic fourth relationships.


The entire third movement consists of interspersing various statements of the original marimba theme with episodes (some without marimba in the primary role) related to themes heard in the cadenza. The table below summarises this structure, describing briefly the differences between each recapitulation of the opening theme, and the major features of the episodes between them.

| Bar(s) | Section | Description | Role of Soloist |
| :---: | :---: | :---: | :---: |
| 1-60 | Theme | No Modulation-all in C. Gradual build with brief interruption (bar 41). | Main theme. |
| 61-88 | Interlude 1 | Woodwind introduce and develop $2^{\text {nd }}$ melodic theme. | Two Perfect 4ths a tone apart, emphasising .. e. . |
| 89-113 | Interlude 2 | d. d. d rhythm with compound interruption, repeated 3 times with gradual build of fourths and varied orchestration. | Introduces rhythmic and melodic idea, before changing to a countermelody. |
| 114-122 | Interlude 3 | $2^{\text {nd }}$ melodic theme in high strings, accompanied by d. .... | None |
| 123-128 | Marimba Interlude | Sparse accompaniment onlydescending quartal chords. | Virtuosic scale runs. |
| 129-148 | Theme (2) | Brass introduce main theme in C, orchestra gradually builds before modulating up by fourths, first to $F$, then to $B b$. | Gradual development of a running solo line in $\quad \delta$ and A. |


| 149-154 | Climax of <br> Theme | Call and response of two quartal sets a tone apart, between marimba and the orchestra. | Marimba doubled by low strings, Harp and Percussion- otherwise solo. |
| :---: | :---: | :---: | :---: |
| 155-177 | Interlude 4 | Two variations on $2^{\text {nd }}$ melodic theme in brass, accompanied by shimmering strings and harp. | Two fourth-related chords interspersed and overlapped to create wavelike accompaniment. |
| 178-193 | Interlude 5 | Brass d. d. d rhythm repeated twice, second time with high strings adding $2^{\text {nd }}$ melodic theme. Horns then build melodic theme to climax. | Accompany d. . . d rhythm with brass, then return to wave accompaniment for horns. |
| 194-195 | Marimba Interlude | No Orchestra. | Fourths descending by whole tones. |
| 196-217 | Theme (3) | Countermelody immediately in woodwind. All in B, no modulation. Quick build as opening theme heard in high brass and tuned percussion. | New part, emphasising rhythm d.d.d.d |
| 218-369 | Cadenza | No Orchestra | Marimba Cadenza |
| 370-391 | Theme (4) | Unison and Octave strings play opening theme. Gradual build with no modulation, using previous material. End with recap of Climax (bars 151-56) | Counter melody in octaves, before return to the quartal chords of the climax in last four bars. |

## ROY G BIV :

# Experiments in Strict Modal Organisation 

A setting of the poem 'ROY G BIV' by Peter Goldsworthy, for Soprano and Chamber Orchestra (Flt, Ob, Clt, Bsn, Hrn, Vln1, Vln 2, Vla, Vc, Db, Harp and Percussion.)

This Chamber Orchestra setting of Adelaide author Peter Goldsworthy's seven verse poem ROY G BIV is an attempt cohesively to link the thematic structure of a literary work with the harmonic modal construction of a musical work. Goldsworthy's poem takes its title from the acronym used to remember the colours of the rainbow and their order: Red, Orange, Yellow, Green, Blue, Indigo and Violet. Each of the seven verses of the poem devotes itself to the discussion of the relationship between the colour of its title and the physical, emotional and aesthetic world.

The text of ROY G BIV is saturated with references to synaesthesia, a condition where one sensory modality causes perception in another modality. In other words, a person experiences a mixing of the senses or 'co-sensation', whereby a colour sensation is brought on either by sight (of something other than the colour itself, ie. a letter of the alphabet) sound, taste or smell. The form of synaesthesia addressed in ROY G BIV is when a sound causes a colour sensation. ${ }^{7}$ This suggestion is seen in the following two examples.
"Indigo is another sound that's justice to it's sight
A noise that looks like inky dusks..., ${ }^{8}$
"More cello coloured than viola
More iodine than violin
Violet is the bloom of the double bass wavelength..."9

[^5]In order to suggest the theme of co-sensation, it was decided that each verse of the poem would be set using one mode. The original plan involved creating a synthetic mode for each verse, as well as specifying a unique instrument, tempo and chord that would suitably express the sentiment of the words of each verse and represent the colour currently under discussion. This plan was abandoned as the proposed structure became much too convoluted, and the many conditions placed upon the composition of the music became a hindrance rather than helpful guidelines. The new, simplified structure involved using the seven church modes to represent the seven colours. Just as the colours appear in their correct order in the poem, so to the modes are kept in their 'theoretical' order of Lydian to Locrian. Starting with the sharpest of modes and gradually adding flats creates this order, shown below, which reveals a gradual sound progression from the "brightest" mode to the "darkest" mode, ${ }^{10}$ particularly when played over a constant bass.

## Modal Shift from light to dark:



Alexander Scriabin was one of many composers and musicians who claimed to possess and was fascinated by synaesthesia. ${ }^{11}$ Infamously, he took his fascination further than most in his 1911 orchestral work 'Prometheus', in which a colour organ projected colours

[^6]to match his music. ${ }^{12}$ Referencing this work and its creator, the Prometheus mode (also referred to as a Lydian-dominant mode) is used in ROY G BIV for both the extended introduction and the resolution at the conclusion of 'Violet'. The notes of the Prometheus mode in C are also used individually as the tonics upon which each of the seven church modes are built. Thus, the following modal structure is formed:

## Modes used in ROY G BIV



This modal structure proved to be a more than appropriate base for the piece. The brighter, 'happier' sounds available in the major modes suited the light, whimsical texts of orange and yellow, whilst the darker sounds of the minor modes matched the richer words and melancholy tone of blue, indigo and violet. Green, set apart as an individual letter in the acronym, as well as the central colour in the set of seven, acts as a turning point. The Dorian mode works well for introducing the beginning of the minor sounds, whilst retaining a lighter, 'folky' feel due to the major sixth interval.

ROY G BIV was the first work in which I adhered to a strict modal framework throughout the entirety of a piece. It became necessary at this point to differentiate between what I was attempting to achieve in this work - keeping each verse of the poem within the modal

[^7]confines of one specified church mode, without modulation to a mode containing different tones- and other modal modulations, where new tones and tonal centres are introduced.

Modulation in both the major-minor and the harmonic modal systems takes place when a minimum of two of the following variables (tonal centre, key signature and mode type) is changed. This then means that there are four different types of modulation available within both tonal/modal systems. For the purposes of this commentary, each of the four possible modulations within the Harmonic Modal system have been given one of the following titles.

The first is taken from John Vincent's treatises on modal theory. ${ }^{13}$ Interchangeable modes occur when only the tonal centre remains constant. This is the modal equivalent of parallel major-minor keys.

The title Related or Relative Modes comes directly from the major-minor system and operates the same way as relative major-minor scales- they have the same key signature, but different tonal centres and mode types.

Modal Modulation is a term common in modal theory with various opposing definitions, but my discussions in this exegesis will use the definition given by Persichetti ${ }^{14}$ as it best serves to differentiate between the four types of modal modulation discussed in this folio and exegesis. Modal modulation occurs when both the key signature and tonal centre vary, but the mode type remains the same- the equivalent of a standard modulation from tonic to dominant in any major or minor key.

Lastly, if all three variables change, we have an Unrelated modulation. As there can be a great or small distance between two unrelated modes, it becomes necessary to stipulate whether an unrelated modulation is close or distant. One does this by considering how many new tones are introduced once the modulation has taken place. For instance, a move from A dorian (F\#) to E phrygian (no \# or b) is a close unrelated modulation, as only one

[^8]new tone is introduced. By comparison, modulating from A lydian (F\#,C\#,G\# and D\#) to C mixolydian ( Bb ) involves a distant unrelated modulation, as many more new tones (five) are introduced.

The following table displays the different types of modulation, and their comparison in the major-minor system.

|  | Modulation Type | Tonal Centre | Key Signature | Mode Type |
| :---: | :---: | :---: | :---: | :---: |
| Major/Minor | Relative ${ }^{15}$ <br> (eg. C Major-A minor) | $x$ | $\checkmark$ | $x$ |
|  | Parallel <br> (D Major-D minor) | $\checkmark$ | $x$ | $x$ |
|  | Common Modulation (C Major-G Major) | $x$ | $x$ | $\checkmark$ |
|  | Uncommon Modulation (F Major-E minor) | $x$ | x | $x$ |
| Harmonic <br> Modal | Interchangeable <br> (C Dorian-C Lydian) | $\checkmark$ | $x$ | $x$ |
|  | Relative <br> (D Phrygian-F Mixolydian) | $x$ | $\checkmark$ | $x$ |
|  | Modal Modulation <br> (A Aeolian-C Aeolian) | $x$ | $x$ | $\checkmark$ |
|  | Unrelated/Distant (G Lydian-B flat Dorian) | $x$ | $x$ | $x$ |

[^9]ROY G BIV is unique in this folio of compositions, in that it is the only work that disallows modulation within each defined section of the work. ${ }^{16}$ Various modal inflections can be found within each verse as bass notes emphasise new and brief tonal centres. Clear examples of modulation in ROY G BIV are confined to the movement from one verse to another, where the music transfers to the designated mode for that verse/colour, built upon the next note of the prometheus mode. This progression of modes includes both close unrelated modulations (eg. from Red through to Green, one sharp is added at each mode change) and further removed modulations (eg. the change from the four sharps of Green to all naturals at Blue). However, the structure avoids interchangeable and related modes, thus allowing at least one new tone as well as a new tonal centre to be introduced at each colour change. This allows each colour/mode to maintain its individuality from adjacent colours/modes, and to help create the movement and renewed interest required in a 20 minute work.

Of special note is the opening theme, heard first in the clarinet, then repeated with an echo an octave higher in the flute. The notes of this theme were the first composed for the piece, and originally constituted the melody of the opening lines of my personal favourite verse, 'Violet'. Following the refinement of the structure of the work, the melody was transposed into a C locrian mode, and is heard in this mode unaccompanied (except a few pedal tones in the strings) at bar 426, echoing the C prometheus version that opens the piece at bar 2. This idea of 'book-ending' a work with a recognisable, repeated theme is common in my compositions, as I feel this type of internal referencing helps to create a balanced structure, particularly in longer works.

[^10]

Each verse in ROY G BIV remains diatonic to its specified mode, and moves effectively and efficiently to the next mode upon completion of its text. The first verse, Red, is the only exception in this, as it begins by echoing the prometheus mode of the introduction (bars 42-51), and then hovers in a pentatonic/hexatonic mode ${ }^{17}$ before eventually arriving at its designated mode of C lydian in bar 65 . The pitches within each verse are used freely, so that many modal inflections to other church modes can be found within the music. These modal inflections enrich the harmonic language of the music, but every attempt was made to ensure that each verse and its colour maintained a unique reference to its assigned mode and the tonal implications suggested by it.

To enforce this sense of modal structure, it is necessary to not only emphasise each verse as being diatonic to its chosen mode, but also to plainly express the modulations when they occur. To do this, any new tone(s) resulting from a modulation are clearly introduced, and any unique features of the new mode are emphasised. For example, this could include emphasis of the augmented fourth in the lydian mode, the minor seventh in the mixolydian, and the flattened second in either the phrygian or locrian modes. These concepts have been expanded upon and employed more frequently in the works that were composed after ROY G BIV. In works where more frequent modulation was possible and indeed

[^11]necessary, other methods of highlighting a modulation were explored. Emphasis on a chord that is unique to a particular mode can help establish a modulation. For example, the use of a major triad will distinguish a change from a minor mode, or a diminished triad will suggest use of the locrian mode. For modulation or modal inflection to a related mode, where no new tones are introduced, it is necessary to emphasise the arrival of the new tonal centre. Often it is unsatisfactory to do this via harmonic variation, as there are no new tones available to grab the listener's interest, and so rhythmic accentuation, structural change and variation of orchestration are required. ${ }^{18}$

In ROY G BIV, the relationship of each verse/colour to its designated mode is enhanced by the changes of instrumentation, tempo, metre and the role and range of the soprano line between each verse. This process aims to emphasise the unique harmonic qualities and implications of each section of music, and to distinguish the verses from one another.

| Verse | Tempo | Metre | Instrumentation | Soprano |
| :--- | :--- | :--- | :--- | :--- |
| Introduction | $d^{\prime}=75$ | $4 / 4$ | Clarinet/Flute duet <br> main theme. | Descant counter <br> melody in second <br> half. |
| Red/ <br> Lydian | $d_{=70,}$ | $3 / 4$ | Clarinet/Flute and <br> strings alternate <br> pentatonic wash; use of <br> celesta. | Middle-low range; <br> highest note F\#. |
| Orange/ <br> Ionian | $d=120$ | $3 / 4$ | Fast, rhythmic <br> accompaniment in <br> strings; use of marimba <br> and tambourine. | Middle-high range. |

[^12]| Yellow/ Mixolydian | - $=160$ | 2/4, 3/8 emphasise change from sets of 2 to 3 quavers | Constant staccato quaver accompaniment; use of marimba, pizzicato strings | High range, rhythmic. |
| :---: | :---: | :---: | :---: | :---: |
| Green/ <br> Dorian | d. $=130$ | 12/8 | Ternary form, with cannon in both A sections. Irish jig influenced theme. | Joins canon at second time with non-canonic solo line. |
| Blue/ <br> Aeolian | -. $=55$, accel. <br> then rit. <br> toward end. | 9/8, 6/8; Free flowing compound time with changing metre. | Emphasis on harp, later joined by low strings for running quaver accompaniment | Starts low range, before word 'blue', when ascends to middle-high range. |
| Indigo/ <br> Phrygian | d=80 | 4/4 | Chordal, chorale like accompaniment, features separation of strings and winds | Acts as countermelody to chordal accompaniment. Middle-high range. |
| Violet/ <br> Locrian | - $=60$; <br> instrumental $d=76,84 .$ | Free opening, then 3/4 | Full ensemble (minus percussion) in solo section. Long string chordal accompaniment. | Solo opening. <br> Long, slow moving melody in high range, incorporating some soloistic counter melodies. |

## FOURTUNE :

## Experiences in Collaboration

For Chamber Ensemble (Flt, Clt, Vla, Db, Piano, Harp, Percussion). Composed for 2006 Bodytorque program, in conjunction with National Music Camp and The Australian Ballet. Choreographed by Paul Knobloch, premiered by the Sonic Art Ensemble and dancers from the Australian Ballet, Sydney Theatre, June 2006. Conducted by Nicolette Fraillon.

Two primary aims arose from the early sketches of FourTune. Firstly, the unusual group of instruments allocated to the Bodytorque program would require careful treatment, due to the prevalence of lower pitched instruments and percussive sounds. The decision was made to make a majority of the piece based around alternating flute/clarinet/viola melodies, accompanied by a rhythm section of double bass, piano, harp and marimba. Pizzicati in the viola and double bass were also used to increase the range of percussive effects.

Secondly, choreographer Paul Knobloch created a structure for the piece that, for a large part, was adhered to throughout the creation of the work. The only major change was taking Knobloch's vision of a series of separate, individual dances, each 2-3 minutes in duration, and combining them to create a cohesive, single movement work. This allows the work a multitude of uses, as it can now be presented as a single unified musical work in its own right, without accompanying dance.

Knobloch's vision for the work was to employ a classical ballet choreographic style, and to complement this he sought a largely melodic, tonal work. The original opening theme, heard on the clarinet, was a series of rising and falling fourths. This was later changed at Knobloch's request (and at the pleasure of the composer!) to a more melodic and tuneful phrase, as seen below. This alteration inspired the title of the work, FourTune. The original quartal clarinet theme was created through an imperfect fourth projection within

Eb lydian, beginning at the tonic. The six-note projection was split into four sets of three notes, and from this construction the melodic shape was created, before being embellished and made more 'tuneful'. The original version of the melody is heard at the end of the work to tie together the prevailing theme of the perfect fourth, and to reference the original concept behind the work.

## FourTune- Original and New Clarinet Themes




Final statement of original Clarinet theme Bar 231


Combination of $\mathrm{A}, \mathrm{B}$ and C on $\mathrm{Flt/Clt/Vla}-$ quartal theme and quartal chords

Interval projections also exist in the opening piano part, which consists of two interlocking perfect fifths. The use of a black note fifth against a white note fifth facilitates performance and exploits the placement of black and white keys on the piano. It also happens to arise from a four note fifth projection, allowing reference to the main thematic idea (a perfect fifth being the inversion of a perfect fourth), while still remaining faithful to Eb lydian.


After an opening that is diatonic in Eb lydian, the modal references within the piece become more intricate. Modal inflections are brought on by the gradual addition and subtraction of sharps, so although a regular tonal centre is present, the sense of modality is ever changing. This leads to bar 79, where a movable A\# creates modal ambiguity between F \# mixolydian and F \# dorian. There is a tension between major and minor modal inflections, brought about by harmonising the piano theme with perfect fifths.


After the rhythmic opening, Knobloch requested the middle sections of the piece be more piano orientated, slower and more legato. After a brief piano solo at bar 101 to instigate
this change of direction, bar 115 sees a flute melody harmonised by parallel $7^{\text {th }}$ chords. Here we hear a type of pseudo-modality, common in works by Debussy, ${ }^{19}$ where modal practices are imposed upon a major mode, in this case Bb major. The free use of all the tones within a major scale, the preference for non-conventional progressions, the parallelism and the lack of a strong tonal centre (for at least the opening phrase) creates a mood of peace and tranquillity. The climax of this section is assisted by a modal shift, when an added Ab at bar 130 forces the music into F dorian.

From Bar 159, a growth in energy and momentum is assisted by quick changes between 2 different modes, the same technique used in 'Stanzas' in A Woman's Song. ${ }^{20}$ The first pairing is A aeolian and F\# aeolian, the second E aeolian and C lydian, and the third G mixolydian and Eb lydian. The first pair demonstrates modal modulation, the second related modes, and the third uses the contrast between two unrelated modes to increase tension and help build a climax.

The final section from bar 197 is a return to themes from the start, although this time with more energy, and less focus on developing the melodic themes, which are well known by this point. The music here is clearly divided into sections of two phrases each, with each section remaining diatonic within the given mode. A change of mode/section is indicated most clearly by the marimba, which plays a constant semiquaver pattern that begins with the tonic, then adds the fifth and/or the fourth of the mode. This both references and leads us back to the opening piano interlocking fifth pattern, which reoccurs at bar 230.

[^13]
## Modulation in final section

 back to home key

# MUSAIC : <br> A Continuing Fascination with Dance 

For Chamber Ensemble (Flt, Ob, Clt, Bsn, Hrn, Piano, Harp, 3 Percussion, Strings (2-1-1-1)) Commissioned by the Cybec Foundation for the Cybec/MSO $21^{\text {st }}$ Century Composer's Program. First performance by players from the Melbourne Symphony Orchestra, May 5 ${ }^{\text {th }}$, 2007. Conducted by Kevin Field.

When offered the Cybec/MSO commission, I decided to use the opportunity to compose a companion piece for FourTune, ${ }^{21}$ given the similarities in instrumentation and the required length of 10 minutes. Musaic is a work designed for dance; highly melodic, rhythmically varied yet suitable for choreography, and structured to consist of six short dances of varied mood, texture, tempo and instrumentation that are linked together as one musical work. As FourTune investigated composition using perfect-fourth projections, Musaic focuses on the inversion, perfect-fifth projections. The six sections that make up the work each use a different method of constructing modes out of fifth projections, and investigate how to transform the harmonic parameters of a piece through modulation by a set interval.

Following a brief exposition of the primary theme of fifths via the opening quintal chords, the piano begins a slow, gentle, sustained ostinato that is maintained throughout the first dance (bars 3-39). This ostinato is in two parts; the first constructed from a note set made of fifth projections built upon the notes of a minor triad, and the second from the same projections built upon a major triad. The first projection creates a dorian mode on C , the second a lydian mode on Eb. Various melodic themes develop above and around the ostinato, which remains unchanged in pitch, but is added to by vibraphone, glockenspiel and harp, which all play the same ostinato at different ranges and tempos.

[^14]

The second dance (bars 40-90) begins with a harmonic accompaniment in the low strings. The mode here is constructed from two four-note fifth projections a major third apart. This creates a lydian mode with an added flattened second. ${ }^{22}$


As the melodic themes are developed, the harmonic accompaniment moves up a tone. Each change of mode/tonal centre provides impetus for an orchestration, melodic or metre change.


[^15]

Bar 75: 3/4, oboe and horn melody.

Bar 81: 3/4 full ensemble, string melody.

The third dance (bars 91-111) is the simplest and shortest of the six. It features descending scale passages that overlap and cycle through repeated phrases, moving first in the strings, piano and woodwind, before being replaced by tuned percussion and harp. The descending figure played on piano and harp is constructed of a pattern of fifths, in which the lowest note of the opening fifth in each bar becomes the highest note of the following bar's initial fifth. The only abnormality to the pattern is the G-Db diminished fifth. This passage is modally ambiguous, due to the lack of a strong tonal centre and free treatment of all the pitches, although a resolution on Eb at bar 110 could suggest a leaning toward Eb mixolydian.

Descending phrase in Piano/Harp


The next dance (bars 112-145) comprises many changes of mood and development of new thematic ideas. Harmonically, it is based upon the lydian mode, and features melodic themes strongly based upon four-note fifth projections.


The mode modulates by perfect fourths for a time, before moving to Bb (bar 128), where it picks up the progression by perfect fourths again. From here, the progression can be followed all the way through to bar 144, at which point the cycle has completed itself and returns once more to Bb .


Completed cycle of Perfect 4ths and point at which they occur.


The fifth dance (bars 146-198) was the first composed, and provides the main climax for the work. The harmonic basis for this section of the piece can be found most clearly in the piano part, which plainly states the two three-note fifth projections that form the basis of the music.


A four bar rhythmic presentation of the projections is established right from the start, and this continues unchanged as the mode modulates up a perfect fifth after each four bar statement. The entire dance moves through a complete cycle of fifths, dividing the twelve pitches into four groups of three and giving a unique treatment and orchestration to each group.

| Tonal Centre <br> Group | Orchestration | Texture |
| :--- | :--- | :--- |
| C-G-D <br> (Bar 146-158) | Melodic material in woodwind- one <br> instrument to begin phrase, then <br> joined by another in harmony. | Running quaver accompaniment <br> carried by piano, with small <br> assistance by strings and harp. |
| A-E-B <br> (Bar 159-169) | Add tuned percussion. More counter <br> melodies introduced in woodwind. <br> Strings have greater role. | Running semiquaver accompaniment <br> in piano and high strings. Bell-like <br> effects on high piano and harp <br> emphasise changes in metre. |
| F\#-C\#-G\# <br> (Bar 170-181) | Woodwind supply extended melody, <br> harmonised in block chords (some <br> quintal) | String pizzicato, harp and vibes carry <br> quaver accompaniment. Sudden <br> reduction in volume. |
| Eb-Bb-F <br> (Bar 182-194) | Woodwind continue melody, <br> harmonised in 8ves and 5ths. <br> Tubular bells and cymbals increase <br> tension and build climax. | Piano returns with semiquaver <br> passages, supported by harp. Strings <br> provide strong arco presentation of <br> fifth projection accompaniment. |

This section ends with two gentle fifth projection piano sweeps, the first on C , and the second moving up a fourth to F , thus disrupting the progression by fifths that has controlled the previous 50 bars.

The sixth and final dance (bars 199-210) begins with the piano, glockenspiel, harp, tubular bells and triangle stating the following two bar phrase, constructed from two perfect fifth projections a major third apart.


Aside from the addition of strings and horn, there is no change to the harmonic or textural backdrop. Each woodwind instrument proceeds to add a melodic phrase, derived from an earlier melody. Each phrase is transposed up a perfect fifth (with some adjustment of accidentals to remain true to Db lydian) before being handed onto the next instrument, creating a gently ascending, peaceful close to the work, whilst still bearing a relationship to the thematic material stated throughout.


## IMPERFECT FOURTH :

# The Well-Tuned String Quartet 

Guitar Quintet in 3 Movements. Commissioned by the Zephyr Quartet, and premiered with Aleksandr Tsiboulski (guitar) in Adelaide, August 2004.

The title of this piece comes from the prominence of perfect fourth intervals in each movement, and the regular tuning of the guitar- E A D G B E, where all but the G and B strings are tuned a perfect fourth apart. ${ }^{23}$ Each movement shows a preference for a number of modes, however the prominence of quartal harmonies often suppresses the influence of the mode. Texturally, the aim was to provide an even mix between guitar as soloist and as ensemble member, providing harmony and accompaniment to the strings. Each movement begins with an extended introduction, featuring the guitar with little or no string accompaniment. These prologues not only set the mood for each movement, but also introduce the stylistic and compositional themes that are explored in the ensuing bars.

## $1^{\text {st }}$ Movement- Con Fuoco

The main themes introduced at the start of this movement are the mixolydian mode (in E), a four-note melodic motif, and a quartal chord strummed in a recognisable rhythm. Once the strings are properly introduced at bar 32 , the guitar proceeds to feature a number of short melodic motives constructed primarily of fourths. However, the opening guitar theme disrupts this pattern by making a feature of omitting the fourth in a five-note group.

[^16]
## 1st Movement Themes



E Mixolydian

The primary modes used in the first movement are lydian and mixolydian. Modulation between these and other modes occurs in various ways. Tonic/dominant relationships cause a modulation from G lydian (V) to C lydian (I) at bar 63. The repeated guitar motive acts as a pivot between the two modes, as the notes are common to both. Care is also taken to avoid the sharpened fourth $(\mathrm{C} \#)$ of G lydian in the bars leading up to modulation, so that the change of mode is smooth.


With the feature of the lydian mode being its raised fourth, a stepwise bass progression from the first scale degree to the fourth results in whole tones. The example below shows how continuing this progression another two tones results in a modulation to a far removed mode.


Bars 115-137 is an example of how a series of brief modal inflections can lead to a modal modulation. The inflections are caused by momentary changes to the tonal centre and the gradual removal of flats.

| Bar | Mode | Key Signature | Relationship to Previous Mode |
| :--- | :--- | :--- | :--- |
| 115 | Bb Mixolydian | Bb Eb Ab | - |
| 122 | C Aeolian | Bb Eb Ab | related |
| 127 | Eb Lydian | Bb Eb | unrelated |
| 129 | G Aeolian | Bb Eb | related |
| 131 | Bb Lydian | Bb | unrelated |
| 137 | G Mixolydian | - | unrelated |

The strummed chord noted earlier as a rhythmic theme is used not only for marking the end of sections, but as a way of modulating. The brash energy of the chord becomes the
pivot point between the ambiguous transitory passage in G mixolydian and a strong return of the opening theme in E mixolydian.


## $2^{\text {nd }}$ Movement- Adagio

As the emotional core of the quintet, the second movement focuses on the presentation of melody and melodic fragments built around perfect fourths and minor seconds. In regards to tonality, the piece passes through various modal areas, although the emphasis on quartal harmonies at times fails to give a strong sense of mode, despite the tones used being common to whichever mode is intended.

As melody is of fundamental importance in this movement, care was taken to create a melodic line that both satisfied the emotional requirements of the movement, and remained faithful to the presentation of perfect fourths and minor seconds. The following motivic analysis of the opening guitar and violin melodies show the saturation level of these two intervals. The perfect fourth naturally relates to the title and overall theme of the quintet, whilst the minor second that opens the second movement is a creative nod to Joaquin Rodrigo's Guitar Concerto de Aranjuez. ${ }^{24}$


[^17]

Violin bar 26


The movement begins and ends in E dorian, the use of a minor mode providing a point of contrast between this and the outer movements. A recurring crotchet B pulse begins the piece, and is maintained throughout the entire first section, passed between guitar and strings. It first acts as the dominant of E dorian, then the tonic of B aeolian (bar 24), then part of a quintal chord (A-E-B) harmonising A lydian (bar 36), and finally subsides at bar 40 at the arrival of E lydian. Here we see a reference to the traditional harmonic practice
of modulating from a minor key to its own major (ie. E minor - E major) through the modal equivalent of interchanging between $E$ dorian and $E$ lydian.

The modal relationships in this movement are decidedly less complicated than the first movement. The primary focus here is tonic/dominant/sub-dominant relationships and interchanging modes. The harmonic structure can be summarised as follows:

Modal structure in Imperfect Fourth 2nd Movement


The middle section of this movement is more free flowing and harmonically conventional than elsewhere in the piece. The accompanying guitar figure reiterates a pedal E-A fourth, the two lowest strings on the guitar. These notes are neither foreign to the harmonies, nor act as a tonal centre. Instead, their constant presence means we are never too far away from the opening mode of E dorian, nor its major interchange of E ionian, to which the music returns at bar 66 .

## $3^{\text {rd }}$ Movement - Con Anima

The final movement presents modal material in a straightforward manner, preferring to explore rhythmic processes and focusing more on fourths than it does on the manipulation of modes.

The guitar introduction begins with a rhythmically driven pattern in A lydian. After four repetitions, the riff undergoes two transformations in related modes- first B mixolydian, then C\# aeolian. Each change of mode is clarified with tonal references unique to the mode, as indicated below.

3rd Movement-Guitar


This opening guitar theme continues throughout a majority of the movement, both in the guitar and string parts. Added to it are melodic passages featuring fourths. Here, unlike the second movement, there is less emphasis on expressive qualities and more on the structural concerns of presenting perfect and augmented fourths. There are also multiple references to the perfect fourth/tone motive from the second movement.


This movement again references traditional practices of tonic-dominant modulations through its main key areas. The first modulation from the opening mode of A lydian is to its dominant, E lydian, at bar 107. Up until this point, brief reference is given to D lydian at bar 73 , but other than this modal modulation, the only change in the modal landscape is to related modes. These operate more as brief modal inflections brought about by a change in bass note (for example, G\# phrygian at bar 59).

From bar 115, the guitar returns to the opening theme (transposed down a perfect fourth) supported by quartal harmonies in the strings. Beginning in E Lydian, it passes through A and D lydian, modes which are each a fourth apart. This leads to a modally flexible passage at bar 135, where A\# and A natural are exchanged freely, resulting in shades of E lydian and E major.

# A WOMAN'S SONG : <br> Word Painting in a Modal Context Part 1 

Three songs for Soprano and String Quartet. First Performance by Emma Horwood and the Zephyr Quartet, Pilgrim Uniting Church, Adelaide 2005

Each of these settings aims to explore contrasting modes and modal procedures. The intent was to choose modes that complimented the expressive nature of each individual text, and where possible, to link the modal structure of the music with the composition of the text.

Chanson Text by Purnette du Guillet (1520-45?)

Chanson is an exercise in modulating only to related modes. This means that the key signature of F \# and $\mathrm{C} \#$ is constant throughout the work, and no accidentals are present in the entire piece. The form of the poem - 6 quatrains with the repeated final line 'How should I know/This I do know' - allowed for a single mode to be assigned to each verse, and by using two modes in verse four, each of the seven church modes is represented throughout the song.

Chanson: Modes Used


Due to the restricted tonal parameters, every effort was made to not only maintain variety throughout the song, but to emphasise the arrival of each new mode as clearly as possible. The most common way of doing this is through emphasis of particular intervals relating specifically to a mode, eg. the tritone in the Lydian mode; a minor seventh in the mixolydian mode. When moving from one verse to the next, changes in tempo, metre, rhythmic feel, dynamic and texture help to maintain a feeling of movement and development without the introduction of a new pitch or pivot tone.

| Verse | Mode | Tempo | Metre | Rhythm | Dynamic |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | F\# Phrygian | . $=40$, Gently | 4/4 | Steady $\cdot$ pulse in viola and cello. | p to pp |
| 2 | G Lydian | - $=45$, With quiet energy | 4/4 | Rhythmic accompaniment between three lowest strings. | mp to p |
| 3 | B Aeolian | d=60, Piu <br> Mosso | 4/4 | Alternating oin viola, pulse in cello. | f-mp |
| 4 | C\# Locrian / <br> E Dorian | . $=40$ ( $=_{\text {- }}$ ) | 6/8 | Triplet feel, strong d. bass. | mf-p |
| 5 | A Mixolydian | d=50 <br> Largamente | 3/4 | •. . . continued pulse, then triplet bass added. | mp-p |
| 6 | D Ionian | . $=40$, Largo | 4/4 | Steady • pulse. | ff-pp |

## June Text by Amy Levy (1861-89)

The poem June required a nostalgic, melancholic setting that made a feature of the mood changes between the three verses. The following process was employed in the composition of this piece:
(1) Eight modes were chosen, using the tonal centres of D, F, G and Ab. This selection offers equal numbers of major and minor modes, and variety in related, unrelated and interchangeable modes.

June: Modes Used

(arrows show related modes)
(2) Using the selected modes, a chordal progression (primarily triads) was devised as the harmonic basis for the song. Each chord was chosen with a modal change in mind, even if it did not result in a tone foreign to the previous mode.
(3) A melody was written above the chordal progression, using the tones of the specified mode. This allowed for some of the missing tones to be filled in to create stronger references to the chosen mode.
(4) Counter melodies, harmonics, trills, and echoes of the main melody were added to the largely triadic accompaniment to add variation to the continual crotchet pulse, and to further fill in the missing tones of the mode.

The result is that not every intended modal change is heard as such. For example, a move from the tonic triad of D dorian to the tonic triad of G mixolydian does not indicate a
modulation, but a I-IV progression (as seen below). The concern here is not the function of the G mixolydian chord, but the aural effect of the strings leaping a fourth from one major chord to another, and its influence in painting the word 'sunlight'. The music at this moment was constructed with two separate modes in mind, but the harmonic outcome and its origins are less significant than the word painting effect achieved.


## Stanzas Text by Emily Bronte (1818-48)

Bronte's poem contrasts two opposing worlds, and explores the choice a woman must make between these disparate realms- wealth versus learning, the real and the unreal, glory and grief, heaven and hell, the present and the past. The theme of dualism is reflected in the harmonic construction of the piece through the use of pairs of modes that alternate from bar to bar. ${ }^{25}$ This creates a shifting, at times uneasy tonality that compliments the uncertain and questioning voice in the song lyric.

Mode pairings are chosen to give as great a variety of harmonic landscapes as possible. The pairs include related and unrelated modes, modal modulation, and every possible combination and order of major and minor modes. The unrelated modal pairings show a contrast between close (eg. Bb major-D aeolian) and distant (eg. G\# dorian-F lydian) relationships.

| Bar | Modal Pair | Relationship | Major(M)/Minor(m) |
| :--- | :--- | :--- | :---: |
| $1-15$ | D Major - F\# Dorian | Unrelated (close) | $\mathrm{M} / \mathrm{m}$ |
| $17-24$ | E Phrygian - C\# Locrian | Unrelated (close) | $\mathrm{m} / \mathrm{m}$ |
| $35-40$ | G\# Dorian - F Lydian | Unrelated (distant) | $\mathrm{m} / \mathrm{M}$ |
| $55-58$ | F\# Aeolian - D Lydian | Related | $\mathrm{m} / \mathrm{M}$ |
| $59-63$ | G Lydian - C Lydian | Modal Modulation | $\mathrm{m} / \mathrm{M}$ |
| $70-73$ | Bb Major - D Aeolian | Unrelated (close) | $\mathrm{M} / \mathrm{m}$ |
| $74-78$ | Bb Major - D Major | Unrelated (distant) | $\mathrm{M} / \mathrm{M}$ |

The other main unifying element is a melodic motive, heard at bar 1 in the $1^{\text {st }}$ violin, which is repeated in various forms throughout the work. As the mode changes, so to does the

[^18]intervallic structure of the motive. Because the motive remains aurally recognisable, it assists our perception of modal change, particularly from major to minor modes.

Melodic Fragment from Stanzas


Bar 55 Cello


F\# Aeolian- Minor 3rd, Minor 6th, Minor 7th
Bar 70 Violin 1


Bb Major- Recaps opening (bar 1)

Bar 59 Viola

G Lydian- Major 3rd, Major 6th, Major 7th
Bar 74-5 Violin 1


Bb major / D Major- modal shift in the middle of the motive.

## SONG OF AMERGIN :

## Folklore in Song

Setting of 'The Mystery of Amergin', an ancient Irish text of unknown origins, for SATBtB choir with multiple divisi. Commissioned by the Adelaide

Chamber Singers, first performance at St. Peters Cathedral, Adelaide, March
2006. Conducted by Carl Crossin.

When asked to compose a piece for the Adelaide Chamber Singers, the challenge was given to find a theme which would be equally at home in both a sacred and a secular context. The beautiful, evocative text 'The Mystery of Amergin' achieves this goal through its pantheistic ${ }^{26}$ views and origin in Celtic mythology. The text, which currently circulates in many different translations, is believed to be the first words spoken by Amergin, the leader of the 'Men of Mil', who was one of the first men to colonise Ireland many hundreds of years before Christ. ${ }^{27}$

The structure of the original poem consists of thirteen statements beginning 'I Am', followed by three questions beginning 'Who'. For this musical setting, the text was rearranged to create a verse-refrain organization. Four 'I Am' statements act as a verse, followed by a refrain of two 'Who' questions. The thirteenth 'I Am' statement, 'I Am the God who creates in the head the fire' is used as a Coda, as it provides an answer to the repeated 'Who' questions heard in the refrain.

Each verse aligns particular voices with the key melodic roles, and others with providing a rhythmic harmonic setting. A different modal scheme, incorporating both traditional and non-traditional modulations, occurs in each verse, as outlined in the following table.

[^19]| Verse 1 |  |
| :---: | :---: |
| F Mixolydian | Tonic. |
| Bb Major | Subdominant of F Mixolydian- relative mode. |
| G Aeolian | Submediant of F Mixolydian- relative mode. |
| C Mixolydian | $1^{\text {st }}$ non-related modulation (E natural)- but dominant of F Mixolydian. |
| Ab Lydian | Most removed mode; allows modal modulation to F Lydian. |
| F Lydian | Interchangeable with F Mixolydian- tonal centre of F 'bookends' the verse. |
| Verse 2 |  |
| E Melodic Minor | Tonic |
| E Major | Interchangeable; major/minor shift between E Melodic Minor and E Major. |
| D Lydian | Related to the Tonic. |
| C Lydian | Modal Modulation from D Lydian. |
| Verse 3 |  |
| Db Lydian | Tonic. |
| Ab Major | Dominant of Db Lydian; related mode. |
| Eb Overtone | Dominant of Ab Major; unrelated mode |
| Bb Mixolydian | Dominant of Eb Overtone; unrelated mode |
| G Aeolian | Modal equivalent to relative minor relationship with Bb Mixolydian. |
| A Locrian | Related to G Aeolian. |
| A Major | Interchangeable with A Locrian, bur large change in accidentals (from 2 flats to 3 sharps). |
| B Mixolydian | Continuation of rising tonal centre, unrelated mode |
| C Lydian altered (add G\#) | Continuation of rising tonal centre, leads back to Db . |
| $\begin{array}{lll} \hline(\mathrm{Db} & \text { Lydian } & \text { on } \\ \text { repeat } \end{array}$ | Verse book ended by Db Lydian. |

The piece begins with a brief introduction in C lydian, and ends with a coda in that same mode. As shown above, the lydian mode consumes a fair proportion of the harmonic structure of the work. The concept of 'book ending' a section of music with either the same mode or an interchangeable mode is presented in two of the three verses.

The strongest presentation of the lydian mode is in the interposing Refrains, all three of which solely use notes from within the D lydian mode. The one exception to this rule is at bar 169 in the third refrain, where a C natural implies D overtone mode. Aside from this climax, all three verses are built upon the same harmonic material, which is simply extended and developed further from one refrain to the next. The challenge of prolonging each refrain, particularly the $3^{\text {rd }}$ and final one, whilst using only the melodic material and harmonic resources chosen, was met through continued rhythmic variation, increased emphasis on the tritone through a I-\#IV bass movement, and the reintroduction of the solo soprano line from the introduction.


# ROSSETTI SONGS : Word Painting in a Modal Context Part 2 

Four settings of poems by Christina Rossetti for unaccompanied S S MS. Commissioned by Eve Vocal Trio, and first performed by them on July $25^{\text {th }}$, 2005, Pilgrim Uniting Church, Adelaide.

As with A Woman's Song, each song in this cycle aims to investigate a different method of working with modes, and to link the formal construction of the piece in some way with the themes of the lyric.

## Echo

The straightforward three-verse structure and lullaby feel of this poem called for a simple, gentle and in many ways conventional setting; any harsh harmonic changes or melodic twists would seem out of place. As the diagram below shows, the music features a limited number of modes, and a majority ( F aeolian, Db lydian, Bb dorian and C phrygian) are related modes, requiring only a change in tonal centre to bring about modulation. This allows the music to 'float' through various modal inflections, and creates a stronger sense of arrival and variation when a clear modulation to an unrelated mode occurs.



The start of each verse obscures the harmonic centre by inverting an open fifth accompaniment so that the tonal centre is the middle pitch, not the lowest. By making the tonality ambiguous, added strength is given to the modulations further on in the verse, where the mode is clear and pronounced. For example, bar 23 is the clearest presentation of F aeolian, and the clarity of the mode at this point helps build the first climax of the piece.

## Echo Bar 24



## Remember Me

As the most formally structured poem in the song cycle, this sonnet required a setting that both emphasised the quatrains within the text, and allowed the lyric to flow as a song would and not be stilted by the strict ten syllable lines and formal rhyming scheme. The unusual form of this sonnet (ABBA ABBA CD DECE) allowed for an intermission at lines 9 and 10 , which break up the song and prepare for the final quatrain.

Modally, this song is less strict than the other settings, loosely incorporating polymodality. The main melody (Soprano 1) adheres to A dorian (Verse 1) then A melodic minor (Verse 2) and finishes with touches of both through use of both $\mathrm{G} \#$ and G natural. The two accompanying voices alternate between different modes, predominately B dorian and B harmonic minor. Any strong polymodal clashes (eg. semitones) are avoided by deliberately excluding notes that would cause such clashes (ie. avoiding G\# in the A dorian melody when accompaniment is B dorian) or changing modes before clashes occur (ie.moving accompaniment to B harmonic minor when G natural is required in melody). Of course, this limits the polymodal effect of the music, as a majority of the time the notes can be reasoned to belong to one mode, not two. However, as both the melodic and harmonic components of the piece were created independently of one another and relating to different tonal centres, the overall effect is not strongly related to one particular mode, but more a harmonically floating sound with a variety of modal inflections.

Semitone Clashes Between Modes


## Song

Song bears similarities to Echo in its structure- three equal verses, each featuring one voice of the trio. Thematically, it is the lightest of the four songs, and so provides contrast and relief through its faster tempo and preference for major modes. Despite this however, the growing melancholy of the lyric is reflected through the modal changes towards the end of the song.

The opening figure of Song introduces the compositional themes of the piece- the dual focus of both a major mode (within three bars, the melody/Soprano 1 introduces a prominent G\#, which confirms the mode as D lydian) and the perfect fifth interval.


The fifth projection from the opening is echoed in the Adagio towards the end of the piece. Reference is also made to the two prominent modes used in the work- D and F lydian.


At times, the reliance upon the perfect fifth overrides the modal scheme as the unifying element. For example, the start of verse 2 contains notes common to D lydian, but avoids the tonic D , opting instead for an open fifth harmonic structure based upon F , $\mathrm{C} \#$ and $\mathrm{G} \#$ (see below). Thus, the music reflects the related mode of $\mathrm{F} \#$ aeolian, before falling a tone to another related mode, E mixolydian, then another tone, to arrive finally at D lydian. From there, the step wise descending harmony continues to introduce C natural, leading the music through C lydian, then resting on its subdominant, F lydian.


## When I Am Dead, My Dearest

Although all the Rossetti texts chosen for this cycle focus on themes of death, When I Am Dead is the most directly funereal, and so a chorale treatment seemed appropriate for the setting. By using the natural rhythms of the lyric to influence the rhythmic flow of the song, a dirge-like atmosphere was created. Specific word painting momentarily breaks this up, eg. onomatopoeic play with 'dew drops wet' at bar 15-16, and the nightingale's brief song at bar 34 .

The modal structure of the song revolves around three modes all with D as tonal centre: hungarian minor, lydian minor, and the synthetic 'melodic overtone' (an overtone mode with raised $6^{\text {th }}$ and $7^{\text {th }}$ ). There are a few variants in the notes of these modes (shown by arrows below) but also some carefully chosen common notes- the tritone, G\#, and the pitches D E and A. This allows a melodic theme of the pitches D-E-A-D to open both verses.

When I Am Dead: Modes Used


A change of mode occurs at predetermined moments in the text- words that the composer felt protruded from the texture and acted as catalysts for change of mood, direction or theme. By changing mode at these moments, two new tones and therefore new harmonic possibilities are introduced to highlight that particular word or phrase. The modal organization is as follows:

| Lyric | Mode | Structure |
| :--- | :--- | :---: |
| 'When I am dead...' | Hungarian Minor | A |
| 'Sing no sad...' | Melodic Overtone | B |
| 'No roses...' | Lydian minor | C |
| 'Green grass...' | Melodic Overtone | B |
| 'If thou wilt...' | Hungarian Minor | A |
| 'Fear the rain...' | Melodic Overtone | B |
| 'Dreaming through...' | Lydian Minor | C |
| 'And set...' | Melodic Overtone | B |
| '(re)member...' | Hungarian Minor | A |

Once a mode is designated to a phrase, its pitches are used freely, without any specific or intended reference to harmonic functions (eg. tonic, dominant etc.) The only conscious choice made in choosing pitches was to implement the two new tones immediately. Aurally, what the mode has changed to is not important, but the fact that some change is noticed is desirable to maintain variety and interest within the song.

# INTRODUCTION, THEME AND VARIATIONS : <br> A Tribute to Beethoven 

For Piano Solo. Composed for Leigh Harrold, Artist in Residence for The Firm, who premiered the piece at Pilgrim Uniting Church, Adelaide, October 2004.

Introduction, Theme and Variations was commissioned by The Firm, a group of Adelaide composers who present an annual series of chamber music concerts. Each year, as well as featuring a local artist in residence, they program the works of a posthumous 'composer in residence'. 2004 was the turn of Beethoven, and so it was requested that I relate my composition in some way to Beethoven's final Sonata, the momentous Sonata in C Minor, Opus 111, which was also to feature in the October concert. Delight at the request soon turned to despair as the concept of trying to pay decent homage to such a great work seemed as insurmountable an obstacle as trying to play the Opus 111 myself.

The solution to the problem arose in taking the general form of the piece and writing my own in the same form, using a few of Beethoven's variation techniques to create a subtle link between the two works. Introduction, Theme and Variations adheres to the following form, taken from Opus 111:

| Section | Bar | Description |
| :--- | :--- | :--- |
| Introduction | 1 | Virtuosic establishment of key. |
| Theme | 33 | Form AABB, with slight variations between the first and <br> second version of both A and B. |
| Variation 1 | 65 | Form AABB: identical repetition of A and B. |


| Variation 2 | 83 | Form AABB; identical repetition of A and B. |
| :--- | :--- | :--- |
| Variation 3 | 102 | Form AB |
| Variation 4 | 117 | Form AB |
| Variation 5 | 137 | Form AA, with variation. ${ }^{28}$ |
| Variation 6 | 168 | Open form, cadenza leads back to opening key and final <br> statement of theme. |

As with Beethoven's final sonata, Introduction, Theme and Variations treats formal theme and variation form with a great deal of freedom. By the third variation, the original theme is mostly obscured by trills, fast scale passages and heavy chords. The incessant trills, double dotted rhythms and virtuosic passages correspond to features prevalent in Opus 111 and other late works by Beethoven.

Harmonically, Introduction, Theme and Variations is constructed upon a modal system rather than the major/minor tonality used by Beethoven. While Beethoven wrote his Sonata in C minor, this work opens its introduction and main theme in C phrygian, with touches of C aeolian brought on by an unstable D natural. Attempts were made to reference the tonal language of Beethoven, through the prominent tonic-dominant and tonic-subdominant relationships seen in the two halves of each variation.

[^20]The following represents the harmonic structure and primary modal areas of Introduction,
Theme and Variations:

| Variation | Mode | Key Signature | Relationship |
| :---: | :---: | :---: | :---: |
| Introduction | C Aeolian C Phrygian | Bb Eb Ab <br> Bb Eb Ab Db | Db is unstable; combination of two interchangeable modes establishes mode as minor. |
| Theme | C Phrygian G Phrygian | Bb Eb Ab Db <br> Bb Eb Ab | Tonic <br> Dominant- Modal Modulation |
| Variation 1 | C Melodic Minor G Aeolian | $\begin{aligned} & \mathrm{Eb} \\ & \mathrm{Bb} \mathrm{~Eb} \end{aligned}$ | Tonic (C pedal throughout) <br> Dominant- unrelated modulation. |
| Variation 2 | Db Lydian <br> Gb Lydian <br> Gb Major | Bb Eb Ab Db <br> Bb Eb Ab Db Gb <br> Bb Eb Ab Db Gb Cb | Tonic <br> Sub Dominant <br> Interchangeable modulation to Major mode. |
| Variation 3 | C Dorian <br> C Aeolian <br> F Aeolian <br> F Major | Bb Eb <br> Bb Eb Ab <br> Bb Eb Ab Db <br> Bb | C Tonic with unstable Ab. <br> Sub Dominant- interchangeable modes on F. Contrast between Major and Minor modes. |
| Variation 4 | Bb Lydian <br> F Mixolydian <br> (plus other modal inflections*) | Bb <br> Bb Eb | Tonic (related modulation (V-I) from F Major) <br> Dominant |
| Variation 5 | A Major <br> A Mixolydian | F\# C\# G\# <br> F\# C\# | Tonic (move from it's Dominant E Major at end of var. 4) <br> Interchangeable mode. |

$\left.\begin{array}{|l|l|l|l|}\hline \text { Variation 6 } & \text { E Mixolydian } & \text { F\# C\# G\# } & \begin{array}{l}\text { Dominant of A Mixolydian- Modal } \\ \text { Modulation. } \\ \text { E Major } \\ \text { A Major }\end{array} \\ \hline \text { F\# C\# G\# D\# } \\ \text { F\# C\# G\# }\end{array} \quad \begin{array}{l}\text { Interchangeable Mode. } \\ \text { Return to Tonic via V-I. }\end{array}\right\}$
*A steadily rising bass line brings on the modal inflections in this passage of music. As new tones are introduced, so are new modes. The preference for major modes further helps distinguish this variation from its predecessors, and prepare for the resolute A Major of Variation 5.

Intro Theme and Variations, Bar 126


# THREE PROCESSIONALS : 

## Two Weddings and a Funeral

Three short pieces for String Quartet. Commissioned by the Zephyr Quartet, first performed by them as part of their 'Generation Next' Concert at The Jade Monkey, Adelaide, October 2006.

The intention with Three Processionals was to write short pieces of 'functional' music, ie. accessible music that would warrant a place in a classical repertoire, yet also be suitable for preludes or entr'actes to an event, either joyous or sad. The first two movements have already been utilised in this way. Each piece can be played as an individual work, or grouped together to form a three-movement quartet. The first piece, Song Without Words was composed for string quartet to be played as entrance music for a wedding. The second piece, Impromptu, is a string arrangement of a piano piece, again composed as entrance music for a wedding. The third piece, Elegy was composed to complete the trilogy of processionals, and to provide an emotional contrast to the other two movements.

## $1^{\text {st }}$ Movement: Song Without Words

This first movement is a highly melodic work that features a strong lydian presence. The lydian mode can be constructed of a seven-note fifth projection, and this relationship between the mode and the perfect fifth interval is exploited throughout the work. The strong presence of fifths is seen in the opening harmonic 'wash' in the $2^{\text {nd }}$ violin, viola and 'cello, where the complete seven note projection is heard in its correct order. The 'cello also makes special reference to the perfect fifth, through its regular tonic-dominant movement, and short sets of projected fifths.


## Violoncello Bar 28



## Violoncello Bar 61



A large part of the piece is in F lydian- it acts as a 'home' key, in which every return to the opening $1^{\text {st }}$ violin theme is heard. Modulation to a new mode is most commonly brought about by a stepwise progression in the bass, or by extending a particular intervallic pattern. By introducing a new tone in the 'cello, the music is shifted suddenly into a new modal region. The more obscure the shift, the greater the interest and the effect on momentum. The following examples demonstrate different ways in which a change of tonal centre is brought about by the 'cello. The notes in the upper string parts conform to the mode indicated.


Bar 89


A Lydian $\qquad$ F Lydian

## $2^{\text {nd }}$ Movement: Impromptu

The main theme of Impromptu is taken from a love theme I composed for a NIDA performance of 'Romeo and Juliet' in June 2006. This theme explored both the mixolydian and lydian modes, in particular how the intervallic relationships within a short motive can remain unaltered, but the tune still has a sense of development as the tonal centre and modal reference changes.


As in Song Without Words, much of Impromptu consists of a strong melodic line in the $1^{\text {st }}$ violin, supported by a running accompaniment in the other three strings. The four-note motive taken from the Romeo and Juliet love theme is incessant in its repetition: practically all main melodic ideas contain it either intervalically or rhythmically. Because
of the brevity of the main thematic idea and its consistent repetition, this movement requires more modal changes and modulations than Song Without Words, in order to maintain interest and variety.


Modally, the piece moves regularly between lydian and mixolydian modes. Often a change of mode will be brought about by the 'cello voice leading or leaping to an unrelated tone, as in Song Without Words. The major keys of Ab and Eb create a climax in bars 3540, which contrasts with the malleable, shifting modes in the previous sections. From bar 44, Lydian modes are used freely to the end, with gradual addition and subtraction of
sharps leading the music through various tonal centres, before a final unrelated modal modulation to G major. The movement between modes references traditional harmonic modulations through tonic-dominant relationships.

| Bar | Mode | Key Signature | Accidental change | Relationship |
| :--- | :--- | :--- | :--- | :--- |
| 44 | C Lydian | F\# | - | I |
| 48 | G Lydian | F\# C\# | +1 sharp | V |
| 52 | D Lydian | F\# C\# G\# | +1 sharp | V/V |
| 54 | G Lydian | F\# C\# | -1 sharp | V |
| 59 | C Lydian | F\# | -1 sharp | I (V of F Lydian) |
| 60 | F Lydian | - | -1 sharp | I |
| 66 | B flat Lydian | Bb | -1 sharp | IV |
| 69 | E flat Lydian | Bb Eb | -1 sharp | IV/IV |
| 71 | G Major | F\# | +3 sharps | V of C Lydian |

## $3^{\text {rd }}$ Movement: Elegy

Elegy begins with a similar harmonic 'wash' to Song Without Words, although instead of a fifth projection, it uses a fourth projection to achieve the desired modal resonance. A five note fourth projection beginning on Bb suggests Bb aeolian. Two more fourth projections, beginning on F and then C , are heard before bar 13, but as these do not introduce any tones foreign to Bb aeolian, there is no obvious modulation.


A fifth projection is used at bar 33 to create a lydian then a mixolydian/ionian harmonic wash. These two modal areas are interchanged in two bar sets, the same way 'Stanzas' from A Woman's Song interchanges two contrasting modes.

## Fifth Harmonic Wash

Bar 33


As in the other two movements, modulation to a new mode most often occurs through voice leading, particularly in the 'cello. At bar 25 , the music moves from F aeolian into the far removed key of B major, via a rising bass of F-G-Ab-Bb-B natural. At bar 40, A ionian slips into Bb ionian (a modal modulation) via the strong pull of step-wise contrary motion between the outer two voices, the $1^{\text {st }}$ violin and the 'cello. These methods of modulation allow the piece to move to distant modes much faster and more easily than more traditional modulations through closely related keys. For example, in bars 78-80, a C\# mixolydian scale in the 'cello rises from B to a C natural instead of a C\#, allowing an unrelated modulation into C lydian. This sudden, removed modal change from a key signature of six sharps to one sharp helps prepare for the climax at bar 84 by creating tension and instability of mode.

The melody of the two choral sections, heard at bar 52 and 97 of the piece, is taken from Impromptu. Harmonically, each establishes a lydian feel through the accompaniment of adjacent major triads- a feature of the lydian mode due to its raised fourth. Throughout both chorales, triadic and quartal harmonies are used freely. No conscious effort was made to suggest any particular key or mode, but simply to provide varied and interesting harmonic support to the $1^{\text {st }}$ violin's melodic motive.


Theme from 'Impromptu'
Rearranged Chorale theme


## FANFARE :

## A Short Ride in a Fast Machine

For Brass Ensemble (4 Tpt, Hrn, 3 Ten Tb, 2 Bass Tb). Premiered by the Elder
Conservatorium Brass Ensemble at Adelaide University Graduation
Ceremonies, Dec. 2004. Conducted by Howard Parkinson.

The aim in writing this short fanfare was to largely avoid the chordal structure of most brass fanfares, and use a broader, flowing accompaniment to create excitement and momentum. The piece makes prominent use of the lydian mode, which has a bright, jubilant quality appropriate for a fanfare, and highlights the interval of a fourth (both perfect and augmented) through melodic phrases and quartal harmonies.

## Fanfare- Use of Fourths



Tpt 1 Bar 29


The three main keys used in Fanfare are G, D and C lydian. This borrows from the classical harmonic structure of relying primarily on tonic, subdominant and dominant
relationships. G lydian (I) begins and ends the piece, D lydian (V) is established after the introduction at bar 23, and C lydian (IV in major, bIV in lydian) is introduced along with the second theme at bar 47 .

The focus on fourths leads to some moments of uncertainty regarding mode. Bar 47 sees a prominent C pedal strongly suggest C lydian. An oscillating quartal harmony part in the trombones fails to provide the F \# required to confirm C lydian as the mode. This is provided in the $4^{\text {th }}$ trumpet, who harmonises the melody of the $2^{\text {nd }}$ trumpet- however, these two parts could suggest either G or C lydian, both which include $\mathrm{F} \#$. By avoiding C , they fail to commit to either mode. As long as the pedal C is in place, we hear this passage in C lydian, but it could also be read as G lydian with a C natural bass.

## CONCLUSION

The eleven works in this folio of compositions all make use of modes as a basis for creating harmonic and melodic material. More often than not, it is the ecclesiastical modes which form the basis for the modal structure. This is most evident in the pieces ROY $G$ BIV and A Woman's Song. At other times, as in Song of Amergin and When I Am Dead, the modal scheme is stretched to include more exotic modes such as the overtone mode and the Hungarian minor mode. Continuing farther away from the seven church modes, pieces such as Skin, Metal, Wood and Musaic show the use of synthetic modes, aimed to both emphasis the intervallic structure of the work and to broaden the modal palate.

Throughout the creation of these compositions, emphasis has been placed equally on the choice of mode and the method of moving from one mode to another. In choosing a mode to use, the desired effect, overall modal structure, variety, mode construction and relevance to theme of the piece were all considered. At times, a particular interval, such as the fourths in Imperfect Fourth, or a melodic phrase, as in Impromptu, becomes the central theme of the piece, and the modal construction becomes simply a means to an end, offering a harmonic basis upon which the melodic material can be presented. The movement or modulation from one mode to another is often arrived at instinctively through voice leading and the continuance of certain rhythmic, melodic and harmonic patterns. Although intuitively conceived, these points of modulation more often than not form or lead towards the climactic moments of the piece, creating important structural cornerstones, momentum and expressive contrasts.

My study of the music of Joseph Schwantner has led to a growing freedom and spirit of experimentation in the way modes are used. A difference can certainly be seen between earlier works such as ROY G BIV and later works, such as the $3^{\text {rd }}$ movement of Skin, Metal, Wood. These differences include more flexible modal treatments, freedom to either engage notes outside the chosen mode or use only a selection of notes from within a mode, and increased emphasis on orchestration effects over presentation of the mode. The impact of an organising intervallic structure and choice of certain intervals to portray required moods, as seen in Schwantner's music, is certainly evident, particularly in the latter works in this folio.

Works such as ROY G BIV and Chanson have been important in my growing understanding and exploration of the use of modes, and I have certainly felt them to be relevant, well-constructed and pleasing pieces. However, due to their overtly strict modal structures, I do not feel that they offer a system that could be used regularly in the composition of other works. Other works in this folio however, such as When I Am Dead, June and Wood from Skin, Metal, Wood were composed using systems and structural ideas that I feel could be further explored and expanded upon, and I am keen to implement these ideas in future works.

Upon reflection at the completion of this folio and exegesis, I recognise the differences in my approach to composing depending on the scale and instrumentation used within a piece. When composing for voice, the presentation of the text becomes of primary importance, and the choice of text will always dictate the structure and style of the piece. If the required work is to fulfil a certain role (be it procession, dance soundtrack, fanfare etc.) then fulfilling this role is of paramount importance, and often will lead to the establishment of structure, use of instrumentation, mood, techniques used etc. It is in composing music to fulfil such roles that I feel most confident. The prospect of writing an instrumental work for concert presentation only is certainly achievable, but often leaves me with too many variables, and I find such tasks harder to start.

Throughout the process of composing these eleven works, it has been a joyous discovery to realise just how many varied moods, textures and genres of music can be created using the constraints of the harmonic modal system. My discoveries of how to manipulate musical material to create varied styles of works leaves me confident that future compositions will also be able to adhere to the compositional systems I have explored in this folio.

## $\sim$ Appendix A ~

Minor Works

## ~1~

## Introduction, Theme and Variations

# Introduction, Theme and Variations For Piano Solo 

After Beethoven's Piano Sonata in CMinor, Op. 111

Total Duration : 13'30"

## Introduction, Theme and Variations

After Beethoven's Piano Sonata in C minor, Op. 111
For Leigh Harrold
Anne Cawrse






Più mosso $q=72$













(8)

(8)


rall.
Tempo primo $q$. $=48$


$$
\sim 2 \sim
$$

## Three Processionals

# Three Processionals 

## For String Quartet

1/ Song Without Words ..... 4'10"
2/ Impromptu. ..... 3"30"
3/ Elegy ..... 6'40"

## Three Processionals <br> I : Song Without Words

Anne Cawrse


Vln. I

Vln. II


Vln. I


Vln. II

Vla.

Vc.


Vln. II

Vla.

Vc.


Vln. I

Vln. II

Vla.

Vc.



Vln. I

Vln. II

Vc.


Vln. II

Vc.



Vln. I

Vln. II

Vla.

Vc.


Vln. I

Vln. II

Vla.


Vln. I

Vln. II

Vla.

Vc.


Vln. I

Vln. II

Vla.

Vc.


Vln. I

Vln. II

Vla.

Vc.


Vln. I

Vln. II

Vla.

Vc.


Vln. I

Vln. II


Vln. I

Vln. II


Vln. I

Vln. II



Vln. II

Va.

Vc.


Vln. I

Vln. II


Vln. I

Vla.

Vc.


A tempo $q=114$

Vln. I

Vln. II


Vln. I

Vln. II

Vla.

Vc.


Vln. I


Vln. I

Vln. II

Vla.

Vc.


Vln. I


Vln. I


Vln. I


Vln. I

Vln. II

Vla.

Vc.


Vln. II

Vla.

Vc.


# Three Processionals <br> <br> \section*{II : Impromptu} 

 <br> <br> \section*{II : Impromptu}}

$$
\text { Gently } q=46
$$

Anne Cawrse















## Three Processionals <br> III : Elegy

Anne Cawrse
Doloroso $q=65$









Vln. I




~3~
Fanfare

## Fanfare

# For Brass Ensemble 

Score in C

Instrumentation:

4 Trumpets in B flat
Horn in F
3 Tenor Trombones
2 Bass Trombones

Duration : 2'00"

## Fanfare

SCORE IN C
Anne Cawrse


Tpt. 1

Tpt. 2

Tpt. 3

Tpt. 4

Hn.



Tpt. 1

Tpt. 2

Tpt. 3


Tpt. 1

Tpt. 2

Tpt. 3

Tpt. 4

Hn.

Tbn. 1

Tbn. 2

Tbn. 3
B. Tbn. 1
B. Tbn. 2


Tpt. 2


Tpt. 1

Tpt. 2

Tpt. 3

Tpt. 4

Hn.

Tbn. 1

Tbn. 2

Tbn. 3
B. Tbn. 1
B. Tbn. 2

28

6
6
6
6

Tpt. 1
Tpt. 2

Tpt. 3



Tpt. 1

Tpt. 2

Tpt. 3

Tpt. 4

Hn.

Tbn. 1

Tbn. 2

Tbn. 3
B. Tbn. 1
B. Tbn. 2



Tpt. 1

Tpt. 2

Tpt. 3

Tpt. 4

Hn.

Tbn. 1

Tbn. 2

Tbn. 3
B. Tbn. 1
B. Tbn. 2



Tpt. 1
Tpt. 2

Tpt. 3


Tpt. 1

Tpt. 2

Tpt. 3

Tpt. 4

Hn.

Tbn. 1

Tbn. 2

Tbn. 3
B. Tbn. 1
B. Tbn. 2


Tpt. 1

Tpt. 2

Tpt. 3

Tpt. 4

Hn.

Tbn. 1

Tbn. 2

Tbn. 3
B. Tbn. 1
B. Tbn. 2



Tpt.

Tpt. 2
63

Tpt. 3

Tpt. 4

Hn.

Tbn. 1

Tbn. 2

Tbn. 3
B. Tbn. 1
B. Tbn. 2



Tpt.

Tpt. 2

Tpt. 3

Tpt. 4

Hn.

Tbn. 1

Tbn. 2

Tbn. 3
B. Tbn. 1
B. Tbn. 2


Tpt. 1

Tpt. 2

Tpt. 3

Tpt. 4

Hn.

Tbn. 1

Tbn. 2

Tbn. 3
B. Tbn. 1
B. Tbn. 2


Tpt. 2

Tpt. 3

Tpt. 4

Hn.



Tpt. 1

Tpt. 2

Tpt. 3

$\sim$ Appendix B ~
List Of Sources

## Bibliography

Abraham, Gerald. "The Apogee and Decline of Romanticism: 1890-1914." In The Modern Age 1890-1960. Martin Cooper, ed. London: Oxford University Press 1974.

Crump, R. W., ed. Complete Poems of Christina Rossetti. Baton Rouge: Louisiana State University Press, 1990.

Dahlhaus, Carl. Studies On The Origin of Harmonic Tonality. Trans. Robert O. Gjerdingen. New Jersey: Princeton University Press, 1990.

Galeyev, Bulat M. "What is Synaesthesia: Myths and Reality". http://prometheus.kai.ru/mif_e.htm (15 June 2004).

Goldsworthy, Peter. New Selected Poems. Sydney: Duffy \& Snellgrove, 2001.

Graves, Alfred Perceval. Irish Literary and Musical Studies. New York: Books for Libraries Inc., Freeport, 1967.

Hanson, Howard. Harmonic Materials of Modern Music- Resources of the Tempered Scale. New York: Appleton-Century-Crofts Inc., 1960.

Persichetti, Vincent. Twentieth Century Harmony - Creative Aspects and Practices. London: Faber \& Faber, 1962.

Simon, Klaus. Notes to Joseph Schwantner: Chamber Music. Trans. Keith Anderson. With Britta Stallmeister, Florian Holscher and Klaus Simon. Holst-Sinfonietta. Compact Disk. Naxos 8.559206 .

Vincent, John. The Diatonic Modes in Modern Music. California: Curlew Music Publishers Inc., 1974.

## Musical Scores

Beethoven, Ludwig van. "Sonata in C Minor Op. 111." In Beethoven Klaviersonaten Band II. Munchen: G. Henle Verlag.

Rodrigo, Joaquin. Concierto de Aranjuez. London: Eulenburg, c. 1957.

Schwantner, Joseph. Sparrows. Pennsylvania: Helicon Music Corporation, 1980.

Schwantner, Joseph. From A Dark Millennium. Pennsylvania: Helicon Music Corporation, 1981.

Schwantner, Joseph. Velocities (Moto Perpetuo). Pennsylvania: Helicon Music Corporation, 1990.

Schwantner, Joseph. Concerto for Percussion and Orchestra. Pennsylvania: Helicon Music Corporation, 1994.

## Recordings

MacMillan, James. Veni, Veni, Emmanuel- Music of James MacMillan. Evelyn Glennie, Percussion. Scottish Chamber Orchestra. Catalyst 09026-61916-2, 1993.

Rodrigo, Joaquin. Concierto do Aranjuez. Pepe Romero, guitar. Cond. Neville Marriner. Academy of St. Martin-in-the-Fields. Philips 411 440-2, 1979.

Schwantner, Joseph. The Music of Joseph Schwantner. With Evelyn Glennie, Vernon E. Jordan Jr. Cond. Leonard Slatkin. National Symphony Orchestra. BMG Music, 09026-68692-2, 1997.

Schwantner, Joseph. Joseph Schwantner: Chamber Music. With Britta Stallmeister, Florian Holscher and Klaus Simon. Holst-Sinfonietta. Compact Disk. Naxos 8.559206, 2004.

Schwantner, Joseph. Angelfire, September Canticle, Cond. Andrew Litton. With Anne Akiko Meyers, Gregory Hustis \& James Diaz. Dallas Symphony Orchestra. Compact Disc. Hyperion CDA67493, 2005.

Schwantner, Joseph. Works by Alber, Druckman, Schwantner. The Julliard Orchestra. Cond. Leonard Slatkin, Lukas Foss \& Gerard Schwarz. With Gary Lakes. Compact Disc. NW 381-2, 1989

Tsiboulski, Aleksandr. Fandangos Y Boleros. Compact Disc. APT-CD 101, 2003

# $\sim$ Appendix C ~ 

Recordings

## Recordings

## CD 1 : Instrumental Works

Track 1 Musaic $\mathbf{1 0 : 4 0}$
For large chamber ensemble.
Performed by members of the Melbourne Symphony Orchestra at the CUB Malthouse, Southbank, Melbourne, $5^{\text {th }}$ May 2007. Conducted by Kevin Field.

| Track 2 | FourTune |
| :--- | :--- |
|  | For chamber ensemble; Bodytorque - Face the Music. |
|  | Performed by staff ensemble at National Music Camp. Recorded at |
|  | Llewelyn Hall, Canberra, 20 $0^{\text {th }}$ January 2006. Conducted by Fabian |
| Russell. |  |

Track 3-5 Imperfect Fourth
I : Con Fuoco 4:38
II : Adagio 7:22
III : Con Anima 4:38
Three movements for guitar quintet.
Performed by Aleksandr Tsiboulski (Guitar) and the Zephyr Quartet. Recorded at ABC Studio 520, June 2007. Produced by Alice Keath, Sound Engineer: Tom Henry.
Track 6 Introduction, Theme and Variations 13:36
Piano solo.
Performed by Leigh Harrold. Recorded at Elder Hall, Adelaide, $21^{\text {st }}$
December, 2004.

## CD 2 : Vocal and Instrumental Works

Track 1-3 A Woman's Song
I : Chanson 6:09
II : June 4:36
III : Stanzas 4:45
Song cycle for soprano and string quartet.
Performed by Emma Horwood (Soprano) and the Zephyr Quartet.
Recorded at ABC Studio 520, June 2007. Produced by Alice Keath,
Sound Engineer: Tom Henry.
Track 4 Song of Amergin ..... 9:47
For SATB choir with multiple divisi.Performed by the Adelaide Chamber Singers, Elder Hall March $24^{\text {th }}$2006. Conducted by Carl Crossin. Recorded by Radio Adelaide.
Track 5-8 Rossetti Songs
I : Echo ..... 3:59
II : Remember Me ..... 2:42
III : Song ..... 2:47
IV : When I Am Dead ..... 3:01
Four songs for vocal trio (S S MS).Performed by the Eve Vocal Trio. Track 9 \& 12 taken from the CDMuse, recorded at St Peter's College Chapel, Adelaide. Produced byHaig Burnell for HaigelBagel Productions, August/September 2005.Track 10 \& 11 recorded live at Pilgrim Uniting Church, Adelaide,$25^{\text {th }}$ July 2005.

Music CDs are held in the University of Adelaide Library - Special Collections


[^0]:    ${ }^{1}$ See pages 6-13 of this volume for further information and definitions.

[^1]:    ${ }^{2}$ Howard Hanson. Harmonic Materials of Modern Music- Resources of the Tempered Scale. (New York: Appleton-Century-Crofts Inc., 1960) pg 28
    Schwantner is by no means the first composer to use interval projections for melodic and harmonic material. In his book, Hanson provides countless examples of both the harmonic structures available through the use of projections, and also specific examples by composers ranging from Beethoven to Stravinsky.

[^2]:    ${ }^{3}$ See John Vincent The Diatonic Modes in Modern Music. (California: Curlew Music Publishers Inc., 1974) pg vi, 14. Vincent refers to the use of Harmonic modes as the tonal language explored in the early $20^{\text {th }}$ century by composers such as Debussy, Ravel, Stravinsky and Faure, who sought harmonic material beyond the major and minor scales, without exploring the 12 tone system and atonality.
    ${ }^{4}$ Klaus Simon. Notes to Joseph Schwantner: Chamber Music. Trans. Keith Anderson. With Britta Stallmeister, Florian Holscher and Klaus Simon. Holst-Sinfonietta. Compact Disc. (Naxos 8.559206) pg 3.

[^3]:    ${ }^{5}$ The different types of modulation found in the major-minor system and the harmonic modal system are discussed in detail on pages 33-34 of this volume.

[^4]:    ${ }^{6}$ This same synthetic mode is used in the second section of Musaic (see page 46), however in this instance its genesis is different. A comparison of the presentation of this mode in each of these pieces shows how the intervallic construction of a mode can affect its usage, especially through the intervals it most clearly pronounces.

[^5]:    ${ }^{7}$ It is important to note that synaesthesiatic sensations such as those described or suggested in ROY G BIV are purely subjective, and the effectiveness of the poetry of Goldsworthy's lyrics and the music they are set to does not rely upon an understanding or experience of synaesthesia.
    ${ }^{8}$ Peter Goldsworthy. New Selected Poems. (Sydney: Duffy \& Snellgrove, 2001), 34
    ${ }^{9}$ Goldsworthy 34.

[^6]:    ${ }^{10}$ Vincent Persichetti Twentieth Century Harmony - Creative Aspects and Practice. (London: Faber and Faber, 1962) 35.
    Note that along with the condition of synaesthesia, one's perception of this kind of modal 'colour change' remains purely subjective.
    ${ }^{11}$ It is fitting to note here that the music and compositional approaches of Messiaen, the most famous case of synaesthesia in music history, has not influenced the composition of my work.

[^7]:    ${ }^{12}$ Gerald Abraham. ‘The Apogee and Decline of Romanticism: 1890-1914.' In The Modern Age 1890-1960. Martin Cooper, ed. (London: Oxford University Press, 1974) 35-36.

[^8]:    ${ }^{13}$ Refer to Chapter 4 of Vincent The Diatonic Modes in Modern Music.
    ${ }^{14}$ Persichetti 40.
    An differing description of Modal Modulation is given by Howard Hanson in Harmonic Materials of Modern Music- Resources of the Tempered Scale. (New York: Appleton-Century-Crofts Inc., 1960) 57.

[^9]:    ${ }^{15}$ Note that the description of relative major and minor scales having the same key signature is dependant upon the use of the natural minor rather than the harmonic minor scale. 'Relative' modes in the harmonic modal system are unique, as they are the only modal relationship where by no new tones are introduced upon modulation.

[^10]:    ${ }^{16}$ A close comparison is 'Chanson' from A Woman's Song (see pages 60-61) where the entire song makes free use of the pitches of D major, yet each verse emphasises a different tonal centre, thereby suggesting a series of related modes.

[^11]:    ${ }^{17}$ This is due to the exclusion of some of the pitches of C lydian, not due to the use of an unrelated pentatonic mode. B is introduced at bar 56, briefly suggesting a hexatonic mode, before the F\# indicating a complete C lydian mode is introduced at bar 65 .

[^12]:    ${ }^{18}$ See 'Chanson' from A Woman's Song (pages 60-61 in this volume) for a clear example of this.

[^13]:    ${ }^{19}$ Refer to works by Debussy such as La Cathedrale Engloutie and the opening of Le Martyre De Saint Sebastien, for examples of this feature.
    ${ }^{20}$ See 'Stanzas', pg. 64-5 in this volume.

[^14]:    ${ }^{21}$ A commentary for FourTune is found on pages 39-44 of this volume.

[^15]:    ${ }^{22}$ See the $2^{\text {nd }}$ movement of Skin-Metal-Wood for another way of constructing and using this mode (page 21 in this volume).

[^16]:    ${ }^{23}$ On a more personal note, my friends in the Zephyr Quartet had recently commented on how I often test their tuning proficiency by demanding of them a great number of perfect fourths in my music. When they asked me to compose a Guitar Quintet, I saw this as a perfect opportunity to make good use of all the practice they had had!

[^17]:    ${ }^{24}$ Joaquin Rodrigo. Concierto de Aranjuez: for Guitar and Orchestra. London:Eulenberg, c. 1957.

[^18]:    ${ }^{25}$ A brief passage in FourTune explores this same idea of pairing modes. See page 63 in this volume.

[^19]:    ${ }^{26}$ A doctrine that states that God and the universe are identical.
    ${ }^{27}$ Alfred Perceval Graves. Irish Literary and Musical Studies. (New York: Books for Libraries Inc., 1967) 129.

[^20]:    ${ }^{28}$ The repeat of A, beginning on bar 155, began life at the same tempo as A heard at bar 137. Upon completion of the work, I emailed a pdf of the score to pianist Leigh Harrold, who was residing in Melbourne at the time. My first hearing of the piece was a few days before its premier performance, and Leigh played the section beginning at bar 155 much faster than I expected. Upon investigation, we realised that somehow the pdf had made the metronome mark quite hard to read, and Leigh had misread my intended speed. However, I really liked the faster tempo, and so it was kept and the score was revised. Such is the carefully considered work of a composer!

