The Significant Other: A Flutist’s Role in Performer-Composer Collaborations

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Abstract

Flutists and composers have been collaborating for decades but it is only in recent years that the phenomenon of performer-composer collaboration has emerged as an area of research interest. Within the small core of existing resources there are few that address both the creative and pragmatic elements of collaboration from inception to performance. This project documents and critically evaluates flutist-composer collaborations with the aim of creating new sound worlds for the flute. It examines how my own contributions, knowledge and specialist skills influenced composers’ musical decisions and brought to light the embodied musical knowledge of both performer and composer through workshops and performances.

Seven composers were commissioned to write new works for flute, working collaboratively with me as the flutist-researcher over the course of twelve months. Several new sounds, new fingerings for existing sounds and new ways of notating flute sounds emerged. Many performative elements were discussed, including costume, staging and prop requirements, Performance Notes, prescribed physical movements and interaction with technologies.

This thesis demonstrates that the flute’s sound world can be expanded when a flutist and composer work together collaboratively, and opens up the processes of collaboration for purposeful exploration and inquiry. Creative and idiomatic solutions to questions of sound, notation and performative elements have been identified as a result of the flutist’s experimentations with the composers’ conceptual ideas. This research adds to a growing field of academic inquiry into performer-composer collaboration and lays the foundations for further investigation into many areas of this discipline.
Declaration by author

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly-authored works that I have included in my thesis.

I have clearly stated the contribution of others to my thesis as a whole, including statistical assistance, survey design, data analysis, significant technical procedures, professional editorial advice, and any other original research work used or reported in my thesis. The content of my thesis is the result of work I have carried out since the commencement of my research higher degree candidature and does not include a substantial part of work that has been submitted to qualify for the award of any other degree or diploma in any university or other tertiary institution. I have clearly stated which parts of my thesis, if any, have been submitted to qualify for another award.

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Publications during candidature

None

Publications included in this thesis

No publications included.
Contributions by others to the thesis

None.

Statement of parts of the thesis submitted to qualify for the award of another degree

None.
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This thesis is dedicated to the memory of my father, KMM, who didn’t get to see me finish.
Keywords

Flute, extended techniques, composition, collaboration, music notation, performance, music – 21st century.

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## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>ii</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>vi</td>
</tr>
<tr>
<td>List of Musical Examples</td>
<td>x</td>
</tr>
<tr>
<td>List of Figures</td>
<td>xii</td>
</tr>
<tr>
<td>List of Tables</td>
<td>xiii</td>
</tr>
<tr>
<td>Glossary</td>
<td>xiv</td>
</tr>
</tbody>
</table>

### Chapter 1  INTRODUCTION AND LITERATURE REVIEW

1.1 BACKGROUND AND CONTEXT TO THE RESEARCH .................................. 1

1.2 LITERATURE REVIEW ........................................................................ 2

1.2.1 HISTORICAL PRECEDENTS .................................................................. 5

1.2.2 PERFORMER COMPOSER COLLABORATION ........................................ 5

1.3 RESEARCH AIM AND OBJECTIVES ....................................................... 6

1.4 METHODS ......................................................................................... 9

1.5 OVERVIEW OF THE PROJECT .................................................................. 11

1.5.1 PHASE 1 – MODELS OF FLUTIST COMPOSER COLLABORATION .............. 11

1.5.2 PHASE 2 – CURRENT COLLABORATIONS ........................................ 15

### Chapter 2  WORKSHOP PROCESSES

2.1 AUSTRALIAN COMPOSERS ...................................................................... 17

2.1.1 STEPHEN ADAMS – Overpainting ............................................... 17

2.1.2 DAMIAN BARBELER – Significant Other ......................................... 18

2.1.3 AMANDA COLE – Node .................................................................... 20

2.1.4 TIMOTHY TATE – of memory, of desire ........................................ 21

2.2 AMERICAN COMPOSERS ...................................................................... 22

2.2.1 NOMI EPSTEIN – Structure for layered flute ............................. 23

2.2.2 JENNY OLIVIA JOHNSON – magnificent//breaking point .............. 24

2.2.3 JEN WANG – for each person who gets stuck in time gets stuck alone 24

### Chapter 3  DEVELOPMENT OF SOUNDS AND FINGERINGS .......................... 28

3.1 AUSTRALIAN COMPOSERS .................................................................... 28

3.1.1 STEPHEN ADAMS .......................................................................... 28

3.1.2 DAMIAN BARBELER ........................................................................ 31
3.1.3 AMANDA COLE ................................................................. 32
3.1.4 TIMOTHY TATE ................................................................. 36
3.2 AMERICAN COMPOSERS ......................................................... 39
  3.2.1 NOMI EPSTEIN ............................................................... 39
  3.2.2 JENNY OLIVIA JOHNSON ................................................... 41
  3.2.3 JEN WANG ................................................................. 42

Chapter 4 NOTATION ........................................................................ 45
  4.1 AUSTRALIAN COMPOSERS ..................................................... 45
    4.1.1 STEPHEN ADAMS ............................................................ 45
    4.1.2 DAMIAN BARBELER ......................................................... 48
    4.1.3 AMANDA COLE ............................................................... 50
    4.1.4 TIMOTHY TATE ............................................................... 52

Chapter 5 PERFORMATIVE ELEMENTS ........................................... 56
  5.1 AUSTRALIAN COMPOSERS ..................................................... 56
    5.1.1 STEPHEN ADAMS ............................................................ 56
    5.1.2 DAMIAN BARBELER ......................................................... 58
    5.1.3 TIMOTHY TATE ............................................................... 60
  5.2 AMERICAN COMPOSERS ....................................................... 61
    5.2.1 NOMI EPSTEIN ............................................................... 61
    5.2.2 JENNY OLIVIA JOHNSON ................................................... 63
    5.2.3 JEN WANG ................................................................. 65

Chapter 6 CONCLUSION ................................................................. 69

APPENDIX 1: Full Scores of Commissioned Works ................................ 82
Stephen Adams, Overpainting ......................................................... 83
Damian Barbeler, Significant Other .................................................. 92
Amanda Cole, Node ......................................................................... 98
Timothy Tate, of memory, of desire .................................................. 103
Nomi Epstein, Structure for layered flute .......................................... 111
Jenny Olivia Johnson, magnificent/breaking point ............................. 121
Jen Wang, for each person who gets stuck in time gets stuck alone ...... 125

APPENDIX 2: Biographies of Commissioned Composers ..................... 129

APPENDIX 3: Recital Programs ......................................................... 133
List of Musical Examples

Example 1.1  George Crumb, *Eleven Echoes of Autumn, 1965*, Eco 10: Breath Tone
(“ghost tones”). ................................................................. 12
Example 1.2  George Crumb, *Eleven Echoes of Autumn, 1965*, Eco 5: Vibrato
Modification (“molto vibr.”). .................................................. 12
Example 1.3  George Crumb, *Eleven Echoes of Autumn, 1965*, Cadenza 1: Overblowing. ... 13
the Mouthpiece................................................................. 13
Example 1.5  Salvatore Sciarrino, *Esplorazione del Bianco II*, bars 11-13: Closed
Embouchure Hole Flutter Tonguing, indicated by "R~~~". .................. 13
Example 1.6  Salvatore Sciarrino, *Esplorazione del Bianco II*, bar 14: Very Soft, Rapid
Tongue Rams. ................................................................. 14
Example 1.7  Kaija Saariaho, *Dolce Tormento*, first line: Speaking Whilst Playing. ............... 14
Example 1.8  Kaija Saariaho, *Dolce Tormento*, first line: Vibrato Modification (“molto
vibr.” and “senza vibr.”). ...................................................... 14
Example 2.1  Jen Wang, *for each person who gets stuck in time gets stuck alone*, bars 71-94. ................................................................. 26
Example 2.2  Jen Wang, *for each person that gets stuck in time gets stuck alone*, draft
score. .................................................................................. 27
Example 3.1  Stephen Adams, *Overpainting*, third system: Overlap of Key Clicks and
Whistle Tones. ..................................................................... 29
Example 3.2  Stephen Adams, *Overpainting*, page 4, first system: A-flat numbering
system.................................................................................. 31
Example 3.3  Stephen Adams, *Overpainting*, page 1, third system: E numbering system........ 31
Example 3.4  Damian Barbeler, *Significant Other*, page 2, third system:
*Klangfarbenmelodie*............................................................. 32
Example 3.5  Flute Undertones, as notated by McKay and Tate. The uppermost pitch on
each stem is the original fingering, and the lower pitches indicate the
undertones produced with thosefingerings. ................................... 36
Example 3.6  Kaija Saariaho, *Laconisme de l’Aile*, lines 21-22: Notation of Inhalations....... 38
Example 3.7  Timothy Tate, *Of Memory, Of Desire*, Mvt III, bars 19-20: Inhalation. .......... 39
Example 3.8  Nomi Epstein, *Structure for layered flute*: Air Sound 2 notation................. 40
Example 3.9  Jenny Olivia Johnson, magnificent//breaking point, bars 169-182: Spoken Story. .................................................................................................................................................................................. 41

Example 3.10 Jen Wang, for each person who gets stuck in time gets stuck alone, bars 18-29: Example of microtonal indications “M”. ................................................................. 42

Example 4.1 Michael Smetanin, Nontiscordardime I, page 3: Numbering System for Fingerings (top of excerpt and above the lower stave). ..................................................... 46

Example 4.2 Stephen Adams, Overpainting: Excerpt from Performance Notes.................. 46

Example 4.3 Stephen Adams, Overpainting, page 1, third system: No Flute Tone notation........................................................................................................................................................................ 47

Example 4.4 Stephen Adams, Overpainting, page 6, first system: Singing whilst Playing (upper stave is flute, lower stave is voice). ................................................................. 48

Example 4.5 Damian Barbeler, Significant Other, page 3, third system: Proportional Notation................................................................................................................................. 49

Example 4.6 Damian Barbeler, Significant Other, page 5, first system: Standard Rhythmic Notation ............................................................................................................................. 49

Example 4.7 Damian Barbeler, Significant Other, page 5, fifth system: Klangfarbenmelodie notation.......................................................................................................................... 50

Example 4.8 Timothy Tate, Of Memory, Of Desire, Performance Notes: Description and Notation of Tongue Trill. ............................................................................................................. 53

Example 4.9 Timothy Tate, Of Memory, Of Desire, Mvt II, bar 31: Notation of Undertones. ........................................................................................................................................... 54

Example 5.1 Stephen Adams, Overpainting, page 1, first system: First Draft Score........... 57

Example 5.2 Stephen Adams, Overpainting, page 7, second and third systems: First Draft Score........................................................................................................................................ 57

Example 5.3 Stephen Adams, Overpainting, page 1, first and second systems: Final Score............................................................................................................................................. 58

Example 5.4 Nomi Epstein, Structure for layered flute, score excerpt. The numbers below the coloured bars indicate minutes and seconds. ................................................................. 62
List of Figures

Figure 1.1 The score of Nomi Epstein’s *Structure for layered flute*. “Dreams, Layers, Obsessions”, 12 March, 2015, Judith Wright Centre of Contemporary Arts, Brisbane. .................................................................................................................................................. 1

Figure 2.1 Damian Barbeler, preliminary sketch 1 from composition journal ..................... 19
Figure 2.2 Damian Barbeler, preliminary sketch 2 from composition journal ................. 20
Figure 4.1 Amanda Cole, *Node*, Fingering Chart: Microtonal Accidentals. ................. 51
Figure 4.2 Diagram showing the gizmo key (red), C-sharp trill key (green) and low B key (blue). ................................................................................................................................. 52
Figure 5.1 Damian Barbeler, *Significant Other*: Final Stage Setting.............................. 59
Figure 5.2 Looping Pedal used in Epstein's work ................................................................. 61
Figure 5.3 McKay wearing a prototype piezoelectric choker.............................................. 65
Figure 5.4 Screen-shot of QLab cueing program for Wang's piece .................................. 67
List of Tables

Table 2.1  Timothy Tate, Table of Extended Techniques ............................................. 22
Table 3.1  Amanda Cole, Node, table of pitches based on the C harmonic series ............. 33
Table 3.2  Amanda Cole, Node, flute fingering chart as devised by McKay ...................... 35
Table 3.3  Summary of flute sounds explored during collaborations ................................. 44
Table 4.1  Summary of notation issues encountered during collaborations ....................... 55
Table 5.1  Table of Flute Fingerings by McKay ......................................................... 64
Table 6.1  List of contributions by McKay ..................................................................... 75
Glossary

**Bisbigliando**
Alternate fingerings for the same pitch that create a change in timbre or a very slight change in pitch.

**Equal Temperament / 12TET**
The tuning system in current usage in the 21st century, whereby each pair of adjacent notes has an identical frequency ratio.

**Flutter Tonguing**
Rolling the tongue (rrrrr, as in the Spanish/Italian language) whilst playing to produce a fluttering effect to the sound.

**Key Click**
A percussive sound made by deliberately tapping the flute’s keys, with or without flute tone.

**Klangfarbenmelodie**
A term originally used by Arnold Schoenberg to describe the movement of a melodic line between different instruments. It has also been described by others as a variation of timbre being substituted for a variation of pitch.

**MaxMSP**
A computer programming language for music and multimedia.

**Microtone**
Any interval smaller than one semitone.

**Multiphonic**
Playing two or more pitches on the flute simultaneously.

**Performative Elements**
I use this term to describe the various performance elements that are not directly related to flute-playing/sound production but ultimately still have an effect on the performance itself. As noted in Margaret Kartomi’s article “Concepts, Terminology and Methodology in Music Performativity Research”, “The concept of music performativity . . . includes not only the . . . production of sounds and movements, persona (stage presence), competence, approach, and style, but also . . . the venue, the arrangement of the stage or arena, audience seating, the lighting, and . . . indeed everyone involved in the process of bringing a performance to fruition.”
**Pizzicato Tonguing**
A method of tonguing to create a very short, dry pizzicato effect by placing the tongue between the lips and drawing it back quickly.

**Proportional Notation**
A notation practice whereby composers do not indicate specific durations for pitches, instead implying duration by their relative proximity to one another.

**Tongue Ram**
A percussive technique played with the flute rolled inwards (mouth completely covering the embouchure hole) and tongue thrust forward between the lips.

**Vamp**
A section of music repeated an indefinite number of times in order to fit with on-stage dialogue or action (in Musical Theatre).

**Vibrato Modification**
Dictating the speed and/or amplitude of the vibrato used, e.g. *senza vibrato*, *molto vibrato*, etc.

**Whistle-Tone**
High-pitched whistle sound created by a very slow airstream.
Chapter 1 INTRODUCTION AND LITERATURE REVIEW

The particular nature of the composer-performer relationship is emphasized: the interpreter is the ‘cantore’ (singer) and, since all traditional form is denied, a new virtuosity is required of him or her. It is a new sound event and a new and provocative listening. (Fabbriciani “Walking with Gigi”, 12)

Figure 1.1 The score of Nomi Epstein’s Structure for layered flute. “Dreams, Layers, Obsessions”, 12 March, 2015, Judith Wright Centre of Contemporary Arts, Brisbane.

I have long been fascinated by the potential of the flute, my chosen instrument, to produce a vast array of sounds. My outlook on music changed fundamentally in 1999 when I played my first truly avant-garde work – Cassandra’s Dream Song by Brian Ferneyhough – and the world of new music opened up before me like a hidden cave of precious jewels. My avid exploration of this new world of sounds, techniques and experiences soon led me to the works of George Crumb, Kaija Saariaho and Salvatore Sciarrino. These composers seemed able to entice a range of sounds out of the flute that I had not experienced previously, and it was some time later that I learned of their
close working relationships with flutists. This inspired me to seek out my own peer composers to work further on the exploration of new sound worlds for the flute and since 2007 I have commissioned seventeen new works for solo flute (e.g. Figure 1.1). Although the existing sound world for the instrument is already quite expansive, it has by no means been exhausted, and it is this premise upon which my research project is based. This exegesis provides a critical commentary on the performance and collaborative processes and outcomes of a practice-led research project that took place between January 1, 2012 and March 12, 2015.

1.1 BACKGROUND AND CONTEXT TO THE RESEARCH

The sound world of the flute has undergone rapid metamorphosis since Theobald Boehm introduced his silver, cylindrical-bored, fully keyed instrument in 1847 (Toff, 55). This “new” flute opened up a vast array of previously inaccessible sounds due to its improved system of keywork, larger tone holes, greater projection, and less air resistance than its wooden, conical-bored predecessor. Once widespread acceptance of the revolutionised flute had been achieved, in the first half of the 20th century, forward-thinking composers (e.g. André Jolivet, Kazuo Fukushima, Pierre Boulez, Luciano Berio) and flutists (e.g. Robert Aitken, Pierre-Yves Artaud, Harvey Sollberger) began to explore its timbral and textural potential, pushing the boundaries of what was possible and what was expected. It is particularly notable that from the early- to mid-1960s more composers began writing works for flute that incorporated extended techniques – methods of sound production other than the standard blowing technique (de Wetter-Smith, 20). Composers were thus able to explore an expanded range of sounds to reflect their increasingly adventurous forays into more experimental musical forms and techniques. Luciano Berio’s Sequenza from 1958 is a classic example of proportional notation combined with extended flute techniques, and Brian Ferneyhough’s works, including Unity Capsule (1973-6) and Cassandra’s Dream Song (1971) push to extremes of instrument, physicality, interpretation and notation. Flutists such as Severino Gazzelloni, Pierre-Yves Artaud and Harvey Sollberger are considered trailblazers for their early collaborative work with composers using extended flute techniques in the mid-20th century (McGregor, Artaud “Pierre-Yves Artaud”, Isaac). These musicians have played a major role in the evolution of extended techniques for the instrument and their integration into the language of a vast number of composers.

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1 I have chosen to use the term flutist (rather than flautist) throughout my writing as I believe it is a more appropriate term for a person who plays the flute. Indeed, it is much older than the alternative term “flautist”, which “is derived from the Italian flauto and, in Britain, has been retained as a hangover from the 18th century domination of Italian music and musicians (Groves).”
Many composers over the past hundred years have explored and exploited the wide palette of extended techniques available on the flute, and ever-advancing technologies, to manipulate the instrument’s sound. Tentative explorations into alternative flute sounds began as early as 1936, with Varese’s seminal flute work *Density 21.5* which included the first notated key clicks (de Wetter-Smith, 17). Further expansion of the flute’s sound world became possible with the rise in use of electronics to enhance and manipulate the sound of acoustic instruments. As technology has evolved considerably over the years, so the possibilities for interactions with electronics have flourished. The first work to use electronics with the flute was Bruno Maderna’s *Music in Two Dimensions* for flute, percussion and tape from 1958 (Bassingthwaighte, 30). In some particularly striking instances new sounds have been discovered as a result of a close working relationship between a flutist and a composer, and it is this phenomenon around which this research project is based.

Three of the most significant flutist-composer collaborations to unearth new sounds – and who are all still alive today – have been those of flutist Roberto Fabbriciani and composer Salvatore Sciarrino, flutist Camilla Hoitenga and composer Kaija Saariaho, and flutist Robert Aitken and composer George Crumb. The study of these three partnerships formed an historical backdrop to this research project. Through email interviews with Crumb and Fabbriciani and a Skype interview with Hoitenga, these musicians shared with me the ways that they as flutists or composers have influenced the evolution, discovery and integration of new extended techniques – or variations on existing ones – through close collaboration. Composers Salvatore Sciarrino and Kaija Saariaho and flutist Robert Aitken were not contactable for interviews.

Roberto Fabbriciani described himself and Salvatore Sciarrino as having a “great mutual enthusiasm” (Fabbriciani “Intervista”) for working together. He went on to describe their collaborative sessions, stating: “I, like musician and performer, with my fantasy and my style, stimulated the fantasy and the creativity of the composer. I created many new sounds, many colours of sound never used before in the music. It was like broadening the possibilities of the flute and creating a new instrument” (Fabbriciani “Intervista”). Fabbriciani recalled that Sciarrino would usually ask him to improvise on certain textures or musical ideas. From these guided improvisations many new sounds were revealed and Sciarrino would then seek to refine these sounds with Fabbriciani’s guidance – to “choose, arrange and give meaning to the found material” (Fabbriciani “Intervista”).
Flutist Camilla Hoitenga and composer Kaija Saariaho first met at the Darmstadt Summer Course for New Music in 1982 and ten years later Saariaho wrote her first piece for Hoitenga – NoaNoa. This was the beginning of a lengthy and ongoing collaborative partnership between the two that has resulted in numerous works for flute in solo, chamber and orchestral settings. Hoitenga describes her input to the composition of NoaNoa as minimal, mostly testing out particular phrases with the electronics and also checking the sound of some of the required multiphonics (Hoitenga “Flute Music of Kaija Saariaho”). When talking about one of their most recent collaborations – on the work Sombre, for bass flute, baritone, harp, percussion and contrabass – Hoitenga described some of the processes involved in generating the piece. She had visited the Rothko Chapel (where the work was to be premiered) and, inspired by Rothko’s artworks in the building, improvised on many of the ideas Saariaho had sketched whilst the composer guided further exploration of sounds throughout the session (Hoitenga 13 Mar. 2013).

In the email I received from George Crumb he mentioned a few of the unique sounds used in his chamber works with flute, including the fact that he learned about whistle tones (used in his 1986 work An Idyll For The Misbegotten, for flute and drums) from flutist Robert Aitken, and the “turtle-dove effect” from flutist Sue Ann Kahn. Interestingly, Crumb mentioned that it was his own experimentation with the flute that led to his discovery and subsequent use of the technique of singing through the flute’s tube: “One thing I did invent myself was the ‘sing-flute’ technique (used in the beginning of Vox Balaenae). I borrowed a flute from my brother William (an amateur flute player), and even though I play no flute at all, I experimented with this sing-play combination. Later on, someone told me that a jazz flutist had used something similar to this before my Vox (I guess I can still claim that I invented the effect independently!) (Crumb “Re Your Research Project”)."

Several other collaborations are also worthy of mention, including Karlheinz Stockhausen with Kathinka Pasveer, Mario Lavista with Marielena Arizpe and Luigi Nono with Fabbriciani, however the three partnerships discussed above are those in which all parties are still living at the time of writing. It is clear from the interviews that the flutists and composers primarily enjoyed strong friendships and mutual musical perspectives. They rarely documented their actual collaborative processes, though Hoitenga has recently started reflecting on her past and present collaborations with Saariaho in a more public manner, with web and print articles on their

2 Although not specified by Crumb, it is assumed that he was referring to the jazz musician Rahsaan Roland Kirk, who was widely renowned for his use of the sing-and-play technique on flute in his many performances and recordings in the 1960s and 1970s.
substantial body of collaborative work. My project builds upon these important antecedents by purposefully documenting and reflecting on my own collaborative work with composers and the resulting performances of their works.

1.2 LITERATURE REVIEW

1.2.1 HISTORICAL PRECEDENTS

The existing literature on flutist-composer collaborations comprises primarily dissertations, journal articles and web articles. There is a considerable amount written about the compositional style and elements of George Crumb, Kaija Saariaho and Salvatore Sciarrino, with some passing references to their collaborations with the three flutists in question as well as other musicians (Bruns, Howell et al, Lanz). There are a small number of print and web articles that focus on flutists Aitken, Fabbriciani and Hoitenga, however the most relevant information came directly from the performers in our interview sessions. In general, the actual processes of collaboration, from the performer’s perspective, are not explicitly discussed in detail in any of the relevant literature.

In Hsiao-Chieh Lin’s 2009 dissertation “George Crumb’s Chamber Music for the Flute: an overview with an analysis of ‘An Idyll for the Misbegotten,’” she discusses and explains the extended techniques used in each piece, but not how they were brought into existence, or brought to Crumb’s vocabulary. She mentions Aitken’s collaborations with Crumb, but goes into no detail about what form these collaborations took, for how long they collaborated, nor what Aitken’s input and/or influence was on Crumb’s flute writing. She does mention that “considering how a non-flutist composer applied extended techniques to his work when the composer doesn’t even know exactly how to play them is an intriguing point” (10), but does not expand upon the idea.

Similarly, when researching the flute writing of Salvatore Sciarrino, much emphasis is placed on the unique flute sounds that Sciarrino employs in his works. In particular, the set of solo flute works collectively entitled L’Opera per Flauto (1977-1990) is discussed at length in several sources, but barely any in-depth discussion is evident of Sciarrino’s very close and long-term friendship and collaborations with Roberto Fabbriciani, to whom most of the works in L’Opera are dedicated. Megan Lanz’s 2010 dissertation “Silence: An Exploration of Salvatore Sciarrino’s Style Through ‘L’Opera Per Flauto’” confirms that Sciarrino has had a long and fruitful working relationship with Fabbriciani. She goes on to mention that Fabbriciani did indeed help the composer
to shape and refine the sounds they discovered together (52). Once again, however, there is no discussion of how the sounds were generated in the first instance, nor how Fabbriciani actually contributed to their refinement in a more practical and detailed sense.

Kaija Saariaho’s compositional style is discussed at length in several articles and dissertations, although her flute writing tends to be studied more in relation to spectralism rather than her creation of new sound worlds for the instrument. Camilla Hoitenga has herself written articles about her collaborations with Saariaho, and detailed performance guides to some of the composer’s most popular flute works. Hoitenga’s innate understanding of Saariaho’s musical language is evident here, and helps to clarify some of the problems of execution that may be encountered. She also offers a brief personal history of her working relationship with the composer, outlining the genesis and background of each of the flute works (Hoitenga “The Flute Music of Kaija Saariaho”).

1.2.2 PERFORMER COMPOSER COLLABORATION

Practice-led research into performer-composer collaboration has only recently been embraced as an area of significant interest in academic circles, thus the literature is quite sparse. There are, however, several examples of similar research projects to my own, primarily the dissertations by Heather Roche (2011), Mark McGregor (2012) and Zubin Kanga (2014).

Heather Roche, a clarinettist, delves into the processes of her collaboration with ten composers. Specifically, she cites her interest in the way that dialogue informs and affects performer composer collaborations as a primary interest in her research (7). Roche collaborated with eight composers on new works for clarinet (some also including bass clarinet and piano) and has documented and reflected on the processes and outcomes of each. Hers is a personally revealing account of her collaborative experiences and includes many instances where the collaborative relationship was somewhat strained and where realities differed from expectations. This was refreshing to read, and helped me to be more accepting of both positive and negative interactions with my own group of composers.

In Zubin Kanga’s thesis the focus is on the patterns of collaboration that emerged through his research. Kanga writes about his collaborations with ten composers on new works for piano, interspersing these with a range of ‘Mythologies’: “in place of a conventional literature survey, the
mythologies (found before and between the case study chapters) address the practice, and statements about practice, of composers, performers and musicologists as well as addressing the literature relevant to each topic (15).” Kanga focuses on collaborative strategies when working with composers, both in a general sense and in relation to his own personal approach to collaborative relationships and outcomes. His approach to documentation of workshop sessions, artistic outcomes (i.e. performances of commissioned works) and underlying inspiration for his project are not dissimilar to my own. The greatest point of difference is that whilst Kanga seeks to explore much of the psychology and sociology of collaborative partnerships, my own research is driven more by an intense interest in expanding the sonic vocabulary of the flute and how performer composer collaborations might help to achieve this.

Mark McGregor’s research seemed to follow a similar path to my own in that he selected two historically important flutist-composer collaborations to investigate, and followed this with his own experience of collaborating on new works with a group of four composers. In the chapter on his own collaborations, McGregor never really explicitly details the content or processes involved in his sessions with the composers (McGregor). There is a broad overview of, amongst other things, the extended techniques employed in each piece, and some mention of the flutist’s input, but this seems almost incidental rather than the main focus of the research project.

The Literature Review reveals that it has been uncommon historically for performers and composers to discuss in detail their involvement in the processes of collaborating, rehearsing, performing and composing, suggesting an element of protectiveness and vulnerability to the art of collaboration and the methods used to explore new sounds and techniques. Prior to 2010 there is very little mention in any literature of how composers’ flute collaborator colleagues helped to unearth and refine the sounds that are now so deeply embedded in their compositional language for the instrument. There appear to be no sources that investigate in detail the role of the flutist in creating new sounds and other performance matters, therefore this research project aims to contribute to greater understanding of this area, and to the growing interest in the field of artistic practice as research. It has been my aim to help bring to light this aspect of collaboration, from a flutist’s perspective, with a view to encouraging more transparent communication between composers and performers in the future. This then leads to more informed performances and increased approachability by other flutists in the future. It is this transparency of process that I was most interested to explore in this project, achieved through regular communications with the collaborating parties.
1.3 RESEARCH AIM AND OBJECTIVES

The nature of collaborative processes between performers and composers is only beginning to be explored in the research literature, with most research focussing on the results of collaboration rather than the process, or (in recent literature) on the process but not the results. The aim of this project, therefore, was to document both the collaborative processes and results in detail, giving a more complete picture of the relationship between process and product in performer composer collaborations. The resulting performances of the works discussed in this exegesis contain significant new knowledge from an artistic perspective, particularly the first performances of the commissioned collaborative works.

AIM

- To explore the potential for new sounds on the flute through collaboration with composers.

OBJECTIVES

- Investigate significant historical precedents in the field of flutist-composer collaboration.
- Commission seven composers to write new works for solo flute.
- Undertake and document a series of workshops with composers throughout the compositional process.
- Engage in practical exploration of sounds and techniques, fingerings, notation possibilities and performative elements.
- Perform each commissioned work in public, to embrace and contextualize new sounds, techniques, fingerings, notations and performative elements.
- Create audio and video documentation of each performance to provide dissemination of findings and reflect on material for further development.

I was able to address these aims and objectives by using my own experiences of collaboration as examples, and in doing so bring to light the inner workings of a collaborative performer-composer relationship from a flutist’s perspective. The research was further consolidated in the form of three public recitals that incorporated works by Crumb, Saariaho and Sciarrino as well as the new works composed collaboratively for this project (see APPENDIX 3: Recital Programs). Due to video equipment failure there were sections of the first recital (“Where Time Suffers”, December 1, 2012) that were not captured on the video recording, however the performance was audio recorded in its entirety.
1.4 METHODS

This project was driven primarily by the performance outcomes – these were the main research objects and thus the common reference points during the research process. My methodology incorporated practice-led and autoethnographic approaches. Autoethnography is becoming increasingly popular in music performance research because it enables the performer to “reflect critically upon their personal and professional creative experiences” (Pace). This allowed me to incorporate my own experiences as the performer-researcher and provided a framework for reflective consideration of my role in the collaborative process. The specific elements discussed in the main body of the thesis (Chapters 3, 4 and 5) are those in which my input as a performer was necessary. There were many other interesting elements of the compositions that did not require my input and these have not been included in this discussion. An autoethnographic approach helped to address certain aspects of my role as a collaborative flutist and in doing so revealed the “personal and vulnerable parts of [our] creative lives (Bartleet).”

Research through my own artistic practice has allowed me to arrive at “a knowing that arises through handling materials in practice (Bolt, 5).” It was only through the handling of the musical materials that I, and the composers, learned their qualities, their idiosyncrasies, their practicalities and their aesthetic properties. Dr Robyn Stewart articulates the practice-led research process as one that “metamorphoses experience into practice, where the researcher practitioner seeks to uncover, record, interpret and position, using an insider’s perspective and experience, the processes they use within the context of professional contemporary practices in the field (2).” This practice-led perspective helped to steer the interview questions for Crumb, Fabbriciani and Hoitenga in Phase 1 and the workshops with composers in Phase 2 of the project by ensuring the focus remained on the performer’s (my) experience in and contribution to the collaborations.

The project had two phases – the first was to research some of the most influential flutist-composer partnerships in recent history, in order to better understand the impact of the flutist on the composers’ processes and the exchange of information that led to new sounds being incorporated into the flute works of the composers involved. For the second and more substantial phase of the project a selected group of early-to-mid career composers from Australia and the United States of America were commissioned to each write a new work for solo flute. There was regular communication with each composer during the compositional process, and through an experience-
centred narrative we investigated the potential for new sounds and techniques on the flute to be incorporated into the commissioned works.\textsuperscript{3}

During the first phase of research I formulated a series of interview questions to which each of the three participants (George Crumb, Roberto Fabbriciani and Camilla Hoitenga) replied in a different manner. Hoitenga’s interview was conducted in person via Skype – using this medium I was able to proceed in a conversational manner and to steer the discussion effectively. Fabbriciani responded specifically to each question in a text document, and this offered a moderate amount of detail. I submitted my interview questions to George Crumb via an email to his assistant and later received a reply directly from Crumb. The response did not address the interview questions in a methodical manner, however there were some useful pieces of information in his writing such as his own experimentations on the flute, and his work with flutists Robert Aitken and Sue Ann Kahn.

In the second phase, seven composers from Australia and the United States of America were commissioned to create new works for flute, with a view to further exploring the possibilities for new sounds on the instrument through collaboration with a flutist. I developed the following parameters within which the composers and I would work, to maintain consistency in our approach whilst still allowing for the variables of each individual collaborative relationship to develop:

\begin{itemize}
\item The work should be for one player, on any instrument in the flute family (piccolo, C flute, alto flute or bass flute);
\item The work may include electronics of any kind, as long as they can be operated by the performer;
\item The work should aim to explore and build upon existing extended techniques for the flute;
\item The work should be approximately 8-12 minutes in length, but this is negotiable;
\item A completed work should be delivered by early October 2013 (for the Australian composers) or October 2014 (for the US composers);
\item Composers should keep a journal or blog (written, web, spoken, other) when writing and working on or thinking about the piece;
\item The researcher will also keep a journal in response to sessions with the composers and the draft materials they present throughout the year;
\item Meetings should be regular and reasonably frequent – at least monthly;
\end{itemize}

\textsuperscript{3} The commissioned works were performed in public recitals as per the assessment requirements for the Ph.D. (Performance). The recitals were also audio and video recorded. Refer to Appendix 3 for a list of works performed in each of the three assessment recitals.
• Meetings will discuss progress of the piece, workshop ideas, and talk about notation and technical aspects of the work;
• The flutist’s input will pertain only to the technical, notational and performative aspects of the work. The overall aesthetic and musical content will be entirely the composer’s domain (unless they seek input from the flutist).

All Skype and face-to-face sessions were documented on an audio recorder and some also on video. Email communication provided a very effective and comprehensive “trail” of discussions with each composer throughout the period of our collaboration. In total I met with each composer via Skype and/or in person between four and eight times over a twelve-month period. Email communications numbered between approximately 50 and 100 for each composer within the period of collaboration. From this data I extracted specific conversations and processes surrounding the exploration of new sounds, fingerings, notations and performative elements into which I had direct input, and collated these into the themes discussed in the main body of this document: Development of Sounds and Fingerings; Notation; and Performative Elements. Analysis of the communications also highlighted the variance in levels of collaboration with each composer, existing on a spectrum from High Level Collaboration (flutist contribution to 6 or more aspects of the work), to Low Level Collaboration (flutist contribution to 1-2 aspects of the work). These levels are not truly indicative of the quality of the collaborative relationships, nor the significance of the aspects on which we collaborated, however they can serve as an interesting comparison between my actual contributions as a flutist and the final performance outcomes.

1.5 OVERVIEW OF THE PROJECT

1.5.1 PHASE 1 – MODELS OF FLUTIST COMPOSER COLLABORATION

The following examples represent some new sounds for flute that have been incorporated into the instrument’s language as a result of close work between composers and flutists as discussed above. Each of the following compositions includes sounds or techniques unique to the composers in question.

This is a very early work by Crumb, and his first to include flute (in this case, alto flute). It is also quite an early work in the broader context of use of extended techniques on flute. The work shows the first published examples of breath tone (Example 1.1), vibrato modification (Example 1.2), overblowing (Example 1.3), and whispering over the mouthpiece (Example 1.4). Crumb’s use of these sounds, in combination with the extended techniques on the other instruments in the *Eleven Echoes* ensemble (violin, clarinet, piano), demonstrates his fascination with sonic texture that emerged during the early 1960s, and his attraction to sounds that have a strong expressive quality (Bruns 39-42).

![Example 1.1](image1.png)


![Example 1.2](image2.png)


**Salvatore Sciarrino, *Esplorazione del Bianco II* (1986), for flute, bass clarinet, violin, guitar.**

This piece was composed during a very active period of flute writing for Sciarrino, and demonstrates two new techniques. The first is closed embouchure hole flutter tonguing, first used in Sciarrino’s 1977 work *All’Aure in una Lontananza*, and the second is very soft, rapid tongue rams, which Sciarrino used as the main fabric of his 1985 work *Come Vengono Prodotti Gli Incantesimi*?. Flutter tonguing itself was at this time not a new technique. In fact it had been used frequently as early as 1896⁴ (Toff, 120), however this is the first notated example of the technique being used with the embouchure hole closed (Example 1.5). Similarly, tongue rams were not a new technique, but they had never been used consistently at such a soft dynamic nor in such rapid succession, and thus Sciarrino created an entirely new texture using this variation of technique (Example 1.6).

Example 1.5  Salvatore Sciarrino, *Esplorazione del Bianco II*, bars 11-13: Closed Embouchure Hole Flutter Tonguing, indicated by "R~~~".

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⁴ Richard Strauss’s *Don Quixote* (1897) used flutter tonguing on various instruments, including flute.


Written as a birthday gift for flutist Camilla Hoitenga (Hoitenga “The Flute Music of Kaija Saariaho”), this is Saariaho’s first work for piccolo and highlights the differences in character, timbre and response between the piccolo and the C flute. The composer has employed flute techniques that have been adapted for piccolo to create the desired texture and effect. For example, the more narrow bore of the piccolo means that air sounds and speaking whilst playing will inevitably have less projection of tone, so Saariaho has extended the temporal value of these notes and effects, to allow them to be heard more easily (Example 1.7). She also employs vibrato modification, however has adopted a different notation from that in Crumb’s score (Example 1.8).


Example 1.8  Kaija Saariaho, *Dolce Tormento*, first line: Vibrato Modification (“molto vibr.” and “senza vibr.”).
The flutists being explored in the first phase of this project have each contributed significantly to the evolution of the flute’s sound world via the musical language of their composer collaborators. In the second phase I used these examples as inspiration and guidance for my own collaborative work.

1.5.2 PHASE 2 – CURRENT COLLABORATIONS

The composers with whom I collaborated in the second phase of the project were: Stephen Adams (Sydney), Damian Barbeler (Sydney), Amanda Cole (Sydney), Nomi Epstein (Chicago), Jenny Olivia Johnson (Boston), Timothy Tate (Brisbane) and Jen Wang (San Francisco). This group of composers was selected for their diverse aesthetic approach, and their keen interest both in expanding the sound world of an instrument and working collaboratively with performers.

The primary mode of communication throughout the collaborative process was email. This allowed participants to respond at their convenience, which was particularly effective when working with the American composers due to the significant time differences. The ability to attach score excerpts and audio files to emails further enhanced the medium in this context. One minor problem with this form of communication was the lack of immediacy – sometimes when an urgent response was required it took much longer than anticipated for the respondent to reply. Secondary to email, several meetings took place via Skype – this was particularly useful because experimentation with sounds and techniques could take place with those who lived in Sydney and the U.S.A. While occasional problems with sound clarity and consistent internet connectivity resulted in some frustrations with Skype, overall this proved to be a very effective communication medium. Finally, all composers were able to meet with me for a number of face-to-face workshops. All meetings with Timothy Tate were in person in Brisbane; Stephen Adams, Damian Barbeler and Amanda Cole met with me on three separate occasions – twice during a research trip to Sydney in April 2013, and once during a research trip to Sydney in September 2013; and Nomi Epstein, Jenny Olivia Johnson and Jen Wang workshoped with me in Chicago in August 2014, with each able to schedule two sessions with me during my time there. The face-to-face meetings were in most cases very limited in number due to distance, but they proved to be highly productive sessions that resulted in valuable insights that were not otherwise apparent through the other modes of communication. These will be discussed throughout the following chapters.
Early discussions with the composers – in the first two to three months of our collaborations – focussed on the composers’ overall concept for their pieces, which typically involved a great deal of exploration of and improvisation on some of their initial sound concepts. In the middle few months of the collaborative process there was generally less communication and input from me as composers narrowed down their ideas and started to form them into more cohesive and focussed works. The final phase of collaboration – the two months leading up to the performance date – was consistently the busiest, with negotiations on finalising notation, wording performance directions, considering score layout and formatting fingering charts. This was of course in addition to the impending performance date and the need for sufficient practice time in order for each piece to be presented convincingly.

The structure of this exegesis is based on the primary points of discussion and collaboration that emerged as a result of the collaborative process with the seven selected composers. Chapter 2: Overview of Workshop Processes introduces each composer and details the circumstances leading to our collaboration and the initial discussions on the direction that each work might take; Chapter 3: Development of Sounds and Fingerings discusses in more depth the specific sounds and fingerings that were developed and/or workshopped with each composer; Chapter 4: Notation focuses on the four Australian composers, for whom issues of notation were most pertinent; and Chapter 5: Performative Elements brings to light some of the non-notated aspects of their works, including staging and props, physical movement, and use of electronics.

To use Henk Borgdorff’s terminology (6-7), in this research project the *Objects* of the research were my performances of the collaborative works as well as works by Crumb, Saariaho, Sciarrino, Smetanin and Vali. The *Processes* of the research were the interviews, workshops and Skype/email discussions as well as my own personal practice, improvisation and rehearsal sessions. The *Context* of the research was the existing body of works for flute that use extended techniques, specifically those that have involved collaboration with a flutist, as well as the public reception and feedback from my three performances.
Chapter 2  WORKSHOP PROCESSES

This chapter provides a description of my collaborative sessions with the composers involved in the research project. I had prior professional relationships with all seven composers, including four who had written works for me previously. Each composer was selected for their compositional and aesthetic strengths and interests, and the ways in which these contrasted with and complemented the other composers involved. I will discuss some of the general aspects of the workshops and compositional processes that I experienced with each composer with the aim of establishing a context for our work on the project, as well as an overview of the creation of the new works.

2.1  AUSTRALIAN COMPOSERS

2.1.1  STEPHEN ADAMS – Overpainting

I met Stephen Adams while I was living in Sydney some years ago. Having heard Adams’ vocal work *A Short Service* I was intrigued by his use of vocal sounds and imagined similar sounds being translated to the flute, whether by using the voice or by finding similar sounds on the flute itself. Following this performance Adams and I discussed the creation of a solo flute work.

Our first collaboration in 2009 resulted in *Reverse* for flute and Korg MS20 synthesiser (with a later version for solo flute). Discussions for this current project began with some considerable reflection on *Reverse* and the particular elements that were of sufficient interest to explore further and expand upon. Additionally, Adams articulated his interest in the paintings of Australian artist Ian Fairweather. Whilst Adams was not seeking to create a musically literal interpretation of any one of Fairweather’s works, the rediscovery of the artist and Adams’ fascination with particular paintings led him to focus on specific aspects of both painting technique and the effect that the artworks had on Adams as an observer. As to the former, Adams was most interested in the juxtaposition of very bold, thick, dark brushstrokes over seemingly transparent, watery, more delicate images. He shared some examples of these concepts from Fairweather’s collection and noted to me that the images that were most striking to him were *Composition in 5*.

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5 This performance of *A Short Service* by The Song Company and Ensemble Offspring took place at ‘Cage Uncaged’, Carriageworks (Sydney), on September 15th, 2007.
Orange and Yellow (1963) and War and Peace (1959), describing some of the techniques used in Adams’ journal entries:

27/1/13
Inspired by looking at reproductions of Ian Fairweather’s paintings - a plane filled with soft-edged, painterly colours in the grey-brown spectrum (such as ‘Painting’ p.162) is structured by a handful of strong lateral and longitudinal lines, and a ‘nest’ of calligraphic lines above and to the left of the centre of the painting.

28/1/13
The other thing that’s been on my mind from the paintings is those thickly-worked ghostly pale grey pathways through the painting. Ghost tracks? (Adams “Re: Sydney Meetings”)

During the first live workshop we experimented with combining flute sounds with voice, searching for a delicate and original way of blending the two that was not the standard sing-and-play technique. We also experimented with whistle-tones using non-standard bisbigliando fingerings. Whistle-tones using these fingerings were much more unpredictable in their pitch range, as acoustically they did not conform to the typical harmonic series as a standard fingering would. Adams selected a number of these specific whistle-tones and fingerings for use in the work. “Fairweather, whose wonderful mix of the figurative and the abstract, the earthy materiality of paint and ‘canvass’ and the almost disappearing-ness of the image/referential presence provided the starting point for the piece (Adams “Re: Overpainting for Flute – Vers2”).” The whistle-tones captured Adams’ concept of “disappearing-ness” perfectly, and the harmonic unpredictability inherent in the bisbigliando fingerings added an extra layer of both fragility and complexity to the sound. This particular sound was so effective that Adams integrated it as the primary sonic fabric of the work.

2.1.2 DAMIAN BARBELER – Significant Other

Barbeler and I have known each other since our undergraduate studies at the Queensland Conservatorium in the mid-1990s when I was involved with some of his performance projects through the composer collective Compost. In 2002 Barbeler and I began discussing the possibility of collaborating on a flute solo. We spent some time recording sounds and musical concepts, using graphic notation as a catalyst for guided improvisation. Unfortunately, Barbeler lost all the recorded

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6 Singing-and-playing typically calls for the flutist to balance the flute and voice sounds as equally as possible.
material so an indefinite hold was placed on the composition process. This research project offered us the opportunity to finally realise our collaborative goals.

We recalled some of the insights we gained from our earlier recording sessions and discussions, and this formed a basis upon which to start the new composition. The new work was to address notions of intimacy – emotional, auditory, and physical. During our first face-to-face session Barbeler asked me to give feedback on some score excerpts.

The first section (Figure 2.1) sought to replicate the sound of a pencil on paper – the sound of Barbeler’s pencil when he was sketching out the piece, in fact. He envisaged a very airy, almost percussive tone from the flute played very softly. Barbeler noted to me that it was not necessary to play the exact rhythms written, but to aim to approximate the sound of a pencil on paper. The next section (Figure 2.2) was more melodic, and would later develop to be infused with Klangfarbenmelodie-like textures at certain points – Barbeler wanted the flute’s sound to disappear into a veil of diffuse tone in between the short conversational melodic fragments. Arnold Schoenberg was the first composer to use the term Klangfarbenmelodie in relation to music, to describe the effect of a melodic line being passed amongst several different instruments (Rushton). Barbeler uses the term slightly differently, to describe a sense of melodic shape and texture by changing the tone colour of a single note on the flute. This is similar to the description by Arnold Whittall, where he states that Klangfarbenmelodie is an effect where “variation of timbre is substituted for the variation of pitch” (Whittall).

![Figure 2.1](image.png)  
Damian Barbeler, preliminary sketch 1 from composition journal (flute).
Although it was not determined until much later in the compositional process, this latter section would end up being the one Barbeler developed for the performance and the one that drew us into deeper discussion as part of this critical reflection. Barbeler’s creative vision for the work (this section, and the larger work overall) addresses the theme of intimacy within the scope of women’s role and identity in society, and society’s relationships with machines (phones, computers, televisions, etc.). Further elaboration of this concept is contained in Chapter 5 (Section 5.1.2).

2.1.3 AMANDA COLE – Node

I had never previously worked collaboratively with Cole, though I was aware of her work. We met after a concert one evening and discussed the possibility of Cole writing a flute solo for me. I invited Cole to be a part of this project due to my interest in her microtonal compositional language.

Our preliminary discussions clarified Cole’s preference for using a standard flute tone (i.e. no extended techniques that overtly altered the timbre of the instrument), but within a completely microtonal language. Many microtonal flute works, such as those by Stockhausen, Ferneyhough,
Holliger and Hosokawa, use equal divisions of the 12-tone Equal Tempered scale (e.g. quarter tones, sixth tones, etc) and my own experience with microtones had been within this particular realm. Cole has formulated many MaxMSP patches and other computer programs to calculate precise pitches. We discussed at length, with me playing several examples, the timbral effect that alternative fingerings can have on the sound of the flute, and this interested Cole a great deal. I felt, and she agreed, that it would be very interesting to hear these slight timbral inflections only as a consequence of the necessary fingerings used for each pitch, rather than an additional or overt performance instruction that directed the player to change the timbre. This heterogeneity of timbre is rarely explicitly called for in works that employ alternate fingerings and microtones, other than in the case of timbral trills or other specific changes of tone colour. Most of our face-to-face workshops were spent interacting with Cole at her computer, devising and amending the microtonal scale, determining accurate fingerings, and listening to the timbral changes between various possible fingerings for a single pitch.

2.1.4 TIMOTHY TATE – of memory, of desire

I met Timothy Tate several years ago in a composition workshop I was teaching at the Queensland Conservatorium of Music, where he was a student at the time. The workshop project was to write a short work for solo flute that used some of the extended techniques I had been discussing and demonstrating in the class. Tate’s work stood out to me as one that had potential, and I maintained contact with him and his musical activities. For several years he had been involved with the Brisbane-based new music group Ensemble Fabrique as co-director, composer and performer/improviser on viola. I invited Tate to perform an improvisation for viola and quarter-inch tape as part of the UNDER_SCORED Micro Festival of New Sounds in 2011 – for which I was Artistic Director – and soon afterwards invited him to write a solo flute work for me as part of this research project.

We began by talking about Tate’s interest in multiple layers of sound. I suggested some of the most obvious ways to create this on the flute – multiphonics and singing-and-playing, both of which create a counterpoint of sorts on an instrument that traditionally performs only single lines of music. His interest in layering also went beyond the conventional use of two lines of musical information and consequently Tate began to investigate layering of techniques, with a view to creating new sounds via these combinations. We discussed at length the various types of sound available on the flute, grouping these into three broad categories of techniques:
1. Pitch – alteration or combinations of pitch
2. Rhythm – percussive sounds

Within each category there are many possibilities, for example pitch can include whistle-tones, multiphonics, singing-and-playing, and microtones; rhythm covers techniques such as key clicks, pizzicato tonguing, tongue rams, etc.; and timbre can include bissbigliando, vibrato modifications and flutter-tonguing, amongst other techniques. Tate formulated a table of techniques to determine all possible combinations and through a process of experimentation and elimination we arrived at a small collection of sounds that were integrated into his work (Table 2.1).

I’ve decided to keep it to six overall techniques that are more easily combined and utilised than others. . . My aim is to have two opposing voices or ideas in the piece both using the techniques below and it is the conflict/co-operation between those two voices/ideas that leads to new sounds being explored and created. It is almost a reverse style form where everything is present but as new sounds are explored the simple idea at the heart of the work is finally exposed. (Tate “Progress”)

<table>
<thead>
<tr>
<th>Pitch</th>
<th>Rhythm</th>
<th>Timbre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiphonics (incl. undertones and harmonics)</td>
<td>Tremolo/Trill/Flutter-tongue</td>
<td>Bisbigliando</td>
</tr>
<tr>
<td>Singing (held note) whilst fingering separate pitches</td>
<td>Pizzicato/Key Click</td>
<td>Flutter-tongue/Vibrato/Smorzando</td>
</tr>
</tbody>
</table>

Table 2.1 Timothy Tate, Table of Extended Techniques

2.2 AMERICAN COMPOSERS

I was fortunate to meet three young American composers – Nomi Epstein, Jenny Olivia Johnson and Jen Wang – whilst a participant at the Bang on a Can Summer Festival in 2006. In addition to rehearsing and premiering their new ensemble works at the festival, we participated in other more spontaneous performances and had many long discussions about the flute, their musical influences and our experiences of collaboration.
2.2.1 NOMI EPSTEIN – *Structure for layered flute*

Based in Chicago, Epstein’s music appealed to me with its attention to delicate nuance. Most of her works involve very soft and fragile sounds (Epstein “Nomi Epstein Composer”), and this area of flute playing has long been an interest of mine. Epstein’s work for this project – *Structure for layered flute* – is composed for solo flute with looping pedal, and involves the layering of nine discrete textural elements: two types of air sounds, microtonal trills, two types of multiphonics, tongue rams, and three melodic fragments.

Epstein had previously written a work for me in 2009 – *Two Flutes and Tape* – in which there was no significant element of collaboration. This research project opened up the opportunity for me to understand her compositional approach on a deeper level and for the composer to explore more of the flute’s textural capabilities. Epstein has a keen interest in the flute and its extended techniques and had previously worked closely with local Chicago flutist Shanna Gutierrez on earlier chamber works involving flute. For Epstein the appeal of the instrument and its extended techniques are firstly the broad range of sonic textures possible, and secondly the ability of the flute to play at extremely soft dynamics for sustained periods through the use of whistle tones, air sounds, and other easily-controlled soft playing techniques (McKay 19 Feb. 2014).

My contributions to this piece include:

- “Air Sound 2”, which was the result of a series of experiments with playing non-pitched air sounds on various unconventional parts of the instrument such as the tube ends and key cups;
- fingerings used for the “Microtonal Trills”, which were workshopped in order to find comfortable sequences that also offered interesting pitch and tone colour fluctuations;
- selection of multiphonics, whereby the composer sent a list of multiphonic clusters which I then experimented with and annotated as to their ease of fingering, ease of speaking at soft dynamics and balance of sound across all pitches.

Epstein’s interest in sounds that border on the fringes of perceptibility prompted me to think of Salvatore Sciarrino’s musical language, which is also renowned for exploring the edges of audibility. The expansion of this realm of the flute’s sonic vocabulary, incorporated into Epstein’s existing musical language, was one of the defining features of this collaboration.
2.2.2 JENNY OLIVIA JOHNSON – *magnificent//breaking point*

Jenny Olivia Johnson’s research into the correlation between music, sound, trauma, and memory is fundamental to her compositional style, which also reflects her synaesthesia – the phenomenon of linking senses. In Johnson’s case this means that she sees colour in response to sound or music. Her work *magnificent//breaking point* for solo flute/voice, electronics, video and piezoelectric sensor is a companion piece to an earlier work she composed for me – *beautiful//fragment* (2007) for flute, voice, reverse delay and DVD. Johnson’s work is a multi-sensory glimpse into the confronting world of a character that is approaching an emotional breaking point.

Through our work on *beautiful//fragment*, Johnson was aware of my interest and confidence in using the performer’s voice in combination with the flute. She also knew of my openness to staging, costuming and other performative elements. In one early discussion Johnson mentioned her current experimentations with placing sensors on a performer’s body in order to trigger effects through MaxMSP (McKay, 20 Mar. 2013). I found this a fascinating concept and discussed with Johnson some of the limitations that this might introduce for a flutist – the primary one being that the fingers must remain uncovered in order to seal the holes of the instrument’s keys. Further discussion over the next several months helped Johnson develop her ideas to a point that would be musically effective and logistically practical for the performer. Incorporating sensors on an instrument is not particularly new, however it is also not especially common. In 2003 flutist-improviser-composer Cléo Palacio-Quintin presented details of a “Hyper-Flute” with sensors affixed to specific parts of the instrument itself (Palacio-Quintin). More recently, Zubin Kanga worked with composer Patrick Nunn on a work for piano with sensors attached to the player’s wrists and hands (Kanga, “Building an Instrument”). As Johnson and I learned through our workshops, the placement of sensors on a flutist’s body requires a great deal of consideration due to the somewhat restricted physicality of playing the flute.

2.2.3 JEN WANG – *for each person who gets stuck in time gets stuck alone*

The sound world in which many of Jen Wang’s compositions reside is one of ethereal calm juxtaposed with an underlying sense of building tension. Her works are typically melodic with some exploration of extended techniques to enhance the texture. Wang first wrote a solo work for me in 2009, entitled *Searchlight Songs*. This work consisted of a lyrical melodic line that was
developed through the incorporation of several extended flute techniques (Wang “Searchlight Songs”).

Jen Wang’s new work is scored for eight performers (seven doubling on alto/bass flute, and one soloist on piccolo/alto/bass), or solo performer with pre-recorded ensemble. The composer has used as her inspiration a novel entitled “Einstein’s Dreams” in which a young Albert Einstein explores various concepts of relativity that have been inspired by his dreams (Lightman). Wang constructed a musical representation of the phenomenon of getting stuck in time, as portrayed in one chapter of Lightman’s book. To achieve this she composed a work wherein each player performs similar or identical material. At various points the players get “stuck” repeating a phrase or musical idea – not dissimilar to a “vamp” in a musical theatre score – before the soloist cues the ensemble to move on to the next phrase.

I contributed to two main elements of this piece – use of the alto flute, bass flute and piccolo; and recording of the ensemble parts. Wang was particularly drawn to the earthy and mysterious tone colours of the alto and bass flutes, as well as the lowest octave of the piccolo. In early communications Wang sent me short excerpts of musical material that I would then record and forward to her (Wang “Sketches”). Initially these were short score fragments and improvisations on the alto flute, bass flute and piccolo in order for Wang to hear the specific tone qualities of the lower registers of each instrument as well as microtones and whistle tones. These became the three primary musical elements of her piece, with only occasional forays into upper registers on each instrument before they return to the first octave (Example 2.1).
Example 2.1 Jen Wang, *for each person who gets stuck in time gets stuck alone*, bars 71-94 (bass flutes).

In the first excerpt, received on June 26, 2014 (Example 2.2), Wang instructed the performers to play each note for one full breath before moving on to the next note in the sequence. I was able to comfortably sustain each note for 20 seconds or more, which was considerably longer than Wang had anticipated. This meant that this one section lasted for around eight or nine minutes, which was the proposed duration of the entire piece. She was pleased with the overall sound world of this section but decided to revert to more conventional notation that specified rhythmic values (McKay 26 Jun. 2014). Players are still instructed to perform with freedom of pulse so they are not in complete synchronisation with one another. The musical ideas from this first draft excerpt formed the bulk of the opening section of the finished piece, and were also interspersed in shorter fragments throughout the remainder of the work.
Example 2.2 Jen Wang, *for each person that gets stuck in time gets stuck alone*, draft score (bass flute).

On reflection the collaborative relationship with the four Australian composers was in many ways more exploratory and more balanced in terms of my own input as a flutist than the collaborations with the composers from the U.S.A. I received many more drafts and preliminary excerpts from the Australian composers than the American composers over the course of our collaboration and this helped me to give constructive feedback as the pieces developed. There were of course a number of elements to which I contributed in the latter three works (those of Epstein, Johnson and Wang) but there were overall fewer draft scores, notation conundrums and exploratory sounds for me to contribute to over the period of collaboration. The incorporation of various technologies in their works gave me the greatest opportunity for feedback and involvement during the performance preparation phase. The following chapters will discuss in more detail each discrete element that evolved through collaboration, divided into the categories of Development of Sounds and Fingerings (Chapter 3), Notation (Chapter 4) and Performative Elements (Chapter 5).
Chapter 3  DEVELOPMENT OF SOUNDS AND FINGERINGS

One of the primary aims of this research project is to explore and build upon, through collaboration with composers, existing sound worlds and extended techniques for the flute. There is already a vast catalogue of alternate sounds for the flute, set out in texts such as those by Dick, Mitropoulos-Bott, Artaud (Flûtes au Présent) and the websites of Matthias Ziegler and Gergely Ittzés amongst many others. In addition, countless composers over the past century have explored extended techniques in their works, both published and unpublished, so that the complete repertoire of sounds and techniques can perhaps never be fully known. Potential always exists, however, for more exploration of, experimentation with and expansion of the flute’s language and this chapter will bring to light some of the processes involved in developing new sounds for the instrument. As this research is being undertaken from my perspective as a performer, special emphasis will be given to examining my role as the performer in order to underscore the autoethnographic nature of the project.

When creating new sounds one must also consider the creation of new fingerings and fingering systems. Two works in this project required significant research into and experimentation with fingerings in order to produce accurately the desired effects and pitches. Stephen Adams’ work Overpainting led to much discussion around the subtleties of various bisbigliando fingering sequences. Amanda Cole’s work Node involved many hours researching and testing microtonal flute fingerings and experimenting with creating new ones.

3.1  AUSTRALIAN COMPOSERS

3.1.1  STEPHEN ADAMS

Whistle Tones and Key Clicks

Adams wanted to explore transparent, papery sounds that retained a purity or clarity of tone – this immediately eliminated many of the more common air sounds and diffuse tones available on the flute and focussed the sonic environment on techniques such as multiphonics, whistle-tones and singing-and-playing. To add textural contrast in the work, Adams often combined techniques: the simultaneous use of key clicks with whistle-tones for example, which creates a shimmering effect (Example 3.1). The context in which he wrote this particular combination allows the transition between sounds to be seamless. It took a lot of careful and detailed practice to achieve this fluidity.
from key click to the overlap with whistle-tone to the pure whistle-tone, with the dynamic shadings bringing a sense of natural emergence to the effect.

Example 3.1 Stephen Adams, Overpainting, third system: Overlap of Key Clicks and Whistle Tones (flute – top stave; voice – bottom stave).

**Singing and Multiphonics**

A different type of overlapping was the combination of singing with multiphonics. Singing-and-playing is nothing new for the flute in the context of extended techniques. Indeed, it is one of the most common of the extended techniques in contemporary flute literature, and appears to have stemmed from jazz flute players such as Roland Kirk who, in turn, may have appropriated the technique from the traditional tambin flute of west Africa (Leroux, 4). Similarly, multiphonics are a common feature of much avant-garde music for flute. The combination of the two techniques, however, resulted in some surprising sounds. Multiphonics require a delicate splitting of the airstream in order to produce two or more pitches simultaneously and with equal intensity. The addition of the voice disrupts the airstream – when vocalising the air is already vibrating before it reaches the flute’s tube – so production of an already precarious multiphonic requires far more control and precision of the blowing angle and velocity. The additional pitch from the voice added to the multiphonic created some fascinating vibrations, resulting in even more instability. Performing this combination of techniques was enlightening both in regard to the control necessary to achieve the desired result, and the sonic result itself. I found that the tone was very unstable as a consequence of the voice-and-multiphonic combination of airstreams and vibrations, but embraced this as a feature rather than something that needed to be homogenised or stabilised.

**Singing Across the Flute**

Adams has a strong background in vocal writing, and this permeates his instrumental writing in different ways. After our work on Reverse, in which the voice played a significant role, we were both keen to explore further ways of integrating the voice into the language of the flute. Adams expressed an interest in using the flute only as a resonating tube for modifying the voice, meaning that he did not want the flute to produce a tone but to act only as a resonating tube for the
voice. Initial discussions about this concept centered around one particular composer who had used a similar technique to stunning effect – George Crumb in his seminal work *Vox Balaenae*. I sent Adams a score sample and recording of *Vox Balaenae* that demonstrated the technique, and we then worked through various ways of extending or somehow expanding upon it. Firstly, Adams asked me to sing across the flute’s embouchure hole, without deliberately trying to produce a tone on the instrument. A very soft, airy flute tone was somewhat audible but only as a consequence of the air required to sing. When Adams asked me to repeat this but while changing the fingerings on the flute, the effect was extremely subtle and barely audible. Adams was attracted to this sound, but decided that it would become lost within the texture of the piece as a whole. We reverted to singing through the flute (i.e. with embouchure hole completely covered by the mouth) while changing fingerings. This effect was more apparent though still subtle, and was better-suited to the aesthetic of the work (McKay 25 Sept. 2013).

**Fingerings**

Adams and I had various conversations about fingerings and notation for the *bisbigliando*-style notes. Adams was not concerned with notating a specific pitch, but rather a timbral alteration brought about by using a non-standard fingering that consequently resulted in a very slight change of pitch (Adams “Re: Schedule for Next Week’s Meetings”). These alternate fingerings were, by and large, facilitated by the addition or removal of one or more fingers from keys. One example of this is found in the A-flat sequences (Example 3.2) – Adams starts with the standard fingering for A-flat, and then progressively adds a key/finger to produce a very slight glissando effect (falling pitch) while also muting the tone colour of the original A-flat. Alternate fingerings were used in a similar way, but with very different technique, with the series of E pitches. With this series, Adams made some use of multiphonics to alter the timbre, and also used trill keys to produce an altered tone colour and pitch (Example 3.3). This type of ‘venting’ of a note with trill keys has a very different timbral effect to that of the A-flat sequence – the trill keys open out the tone, as opposed to the muffling effect of the added keys in the A-flat sequence. Pitch is usually affected by sharpness on these vented notes whereas the A-flat sequence resulted in flattening of pitch with each additional finger/key (refer to Section 4.1.1 for explanation of the score markings in the following examples).

Example 3.3  Stephen Adams, *Overpainting*, page 1, third system: E numbering system (flute – top stave; voice – bottom stave).

### 3.1.2 DAMIAN BARBELER

*Significant Other* requires the performer to interact musically with an on-stage vintage radio. The appliance would communicate via an internal speaker, transmitting pre-recorded sounds of flute (me), viola (James Humberstone) and piano (Bethany Cook). Barbeler travelled to Brisbane in December 2013 to record me performing the accompanying flute tracks on alto and bass flute, and it was during this session that his concepts of sound began to really take shape for me as the player (Barbeler *Recording Session*). He had sent me sections of the score to prepare for recording with instruction based on our previous workshop (September 2013) to include elements of *Klangfarbenmelodie* at many points through the work, indicated by a wide pencil-line of varying intensity and texture (Example 3.4). Barbeler wanted these sounds to be quite distinct and pronounced in their fluctuations, as opposed to more gradual transitions between tone colours as seen in the flute works of such composers as Kaija Saariaho and Wil Offermans.8 This was

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8 Kaija Saariaho’s flute works, including *Dolce Tormento* for solo piccolo, *NoaNoa* for flute with electronics, *Laconisme de l’Aile* for solo flute, and *Couleurs du Vent* for solo alto flute, often incorporate this technique of gradually shifting from one tone colour to another. Wil Offermans’ work for solo flute, *Honami*, also includes transitional tone colour changes.
somewhat counter-intuitive for me, having played so much repertoire that called for the latter, so it was a considerable challenge to make the required abrupt and frequent shifts of tone colour.

Example 3.4 Damian Barbeler, *Significant Other*, page 2, third system: *Klangfarbenmelodie* (flute – top stave; recorded track – bottom stave).

When it came to performing the solo flute line, I discovered that it was actually much more cumbersome to make those distinct colour shifts on the C-flute than it had been on alto and bass flute. It is not immediately apparent whether this was the nature of the instruments – alto and bass flutes being wider-bored generally produce a greater range of diffuse sounds – or simply the impact of my previous experiences with gradual shifts, or a combination of the two, but I found I had to work much harder to create a similar range of tone colours on the C-flute as I had achieved on the alto and bass flutes. I devised a practice regimen that incorporated sustained tones across all registers of the flute, whilst manipulating the airstream and embouchure shape with as much variety as possible. Once I had achieved a good understanding of the scope of sounds available and the ways that these were produced, I was able to improvise on combinations of these sounds and discover a wide range of variations for use in the performance.

3.1.3 AMANDA COLE

Although she had never written a work for flute before this one, I was interested in collaborating with Cole to unlock some of the more intricate elements of playing microtones on the flute. One such peculiarity is the fact that microtones have a unique and variable tone quality on the flute. This is because in order to play an accurate pitch the player must either use alternate fingerings (i.e. non-standard 12TET fingerings for which the orchestral flute is designed) or manipulate the angle of the airstream using the embouchure. Each of these factors play in to the resultant variable tone quality – classical flute students are traditionally taught to strive towards an homogenous tone quality, but I find that the subtle and natural variations created by alternate fingerings and airstream manipulation create a fascinating and heterogenous beauty of tone colour.
Cole began by formulating a pitch sequence derived from the harmonics of the C and G strings of a cello. These pitches were then narrowed down to those that fall within the flute's range. Cole calculated the exact frequency of each pitch (Table 3.1) and then assigned me the task of sourcing or creating accurate and user-friendly fingerings for use in the piece.

<table>
<thead>
<tr>
<th>Harmonic</th>
<th>Frequency</th>
<th>Deviation in Hertz</th>
<th>Deviation in Cents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C2 65.4 Hz</td>
<td>0 Hz</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>C3 130.8 Hz</td>
<td>0 Hz</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>G3 196.2 Hz</td>
<td>+0.2 Hz</td>
<td>+2</td>
</tr>
<tr>
<td>4</td>
<td>C4 261.6 Hz</td>
<td>0 Hz</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>E4 327.0 Hz</td>
<td>-2.6 Hz</td>
<td>-14</td>
</tr>
<tr>
<td>6</td>
<td>G4 392.4 Hz</td>
<td>+0.4 Hz</td>
<td>+2</td>
</tr>
<tr>
<td>7</td>
<td>Bb4 457.8 Hz</td>
<td>-8.3 Hz</td>
<td>-31</td>
</tr>
<tr>
<td>8</td>
<td>C5 523.3 Hz</td>
<td>0 Hz</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>D5 588.7 Hz</td>
<td>+1.4 Hz</td>
<td>+4</td>
</tr>
<tr>
<td>10</td>
<td>E5 654.1 Hz</td>
<td>-5.2 Hz</td>
<td>-14</td>
</tr>
<tr>
<td>11</td>
<td>F#5 719.5 Hz</td>
<td>-20.5 Hz</td>
<td>-49</td>
</tr>
<tr>
<td>12</td>
<td>G5 784.9 Hz</td>
<td>+0.9 Hz</td>
<td>+2</td>
</tr>
<tr>
<td>13</td>
<td>Ab 850.3 Hz</td>
<td>+19.6 Hz</td>
<td>+41</td>
</tr>
<tr>
<td>14</td>
<td>Bb5 915.7 Hz</td>
<td>-16.6 Hz</td>
<td>-31</td>
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<tr>
<td>15</td>
<td>B5 981.1 Hz</td>
<td>-6.7 Hz</td>
<td>-12</td>
</tr>
<tr>
<td>16</td>
<td>C6 1046.5 Hz</td>
<td>0 Hz</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 3.1  Amanda Cole, *Node*, table of pitches based on the C harmonic series.

**Fingerings**

Once Cole had confirmed the pitch sequence and the specific Hertz/cents for each note, my task was to find all of the possible fingerings for every pitch. I spent dozens of hours trawling through fingering resources, only to discover that they all contained troublesome limitations. My first port of call was the online resource *The Virtual Flute* (Botros), which I have used on many occasions over the past several years. This interactive website offers three search tools, one of which involves inputting a specific pitch and the program offering all possible fingerings to achieve that pitch. The first limitation I noticed was that all pitches in the program had been rounded up or down to the nearest 5 cents. Whilst this increment is barely noticeable to the human ear it did not fit my objective of finding fingerings as near as possible to the required pitch as set out by Cole. Additionally, there were often hundreds of alternative fingerings offered up by the program for a single pitch, meaning much work in reading through and narrowing down to the easiest or most stable fingering or the nearest pitch. The final significant limitation was that none of the fingerings
included open-hole keys (or rims, half-holes, etc.). This would have increased the number of possible fingerings exponentially, but it would have also allowed for more pitch inflections on each note.

Another resource was the microtonal fingering chart contained in Christina Mitropoulos-Bott and Carin Levine’s book *The Techniques of Flute Playing*. Once again this contained a significant limitation, in that it dealt only with imprecise pitches – “somewhat higher” and “somewhat lower” (Mitropoulos-Bott) – and quarter-tones. This turned out to be a common limitation through much of the literature I investigated – the fingering charts were often either imprecise in their notation of pitch, or based on equal divisions of the semitone (quarter-tones, sixth-tones, eighth-tones, etc.). Cole ended up devising a microtonal tuner in MaxMSP that I was able to interact with, and that functioned in a similar way to a standard chromatic tuner. There was a circle in the centre of the screen that would light up when the exact pitch was achieved, then several smaller circles on either side that lit up when I was playing slightly above or below the required pitch. In this way I was able to determine more easily and accurately which fingerings were nearest to the required pitch, and then find manipulations of these fingerings in order to precisely achieve the necessary pitch.

Finally, using a combination of these resources, I arrived at an accurate, relatively intuitive sequence of fingerings for Cole’s pitch series (Table 3.2):
| C series 4 (C1 +0c; 261.6 Hz): | C series 22 (F#3 -49c; 1438.8 Hz): |
| C series 5 (E1 -14c; 327.0 Hz): | C series 23 (F#3 +31c; 1504.2 Hz): |
| C series 6 (G1 +2c; 392.4 Hz): | C series 24 (G3 +2c; 1569.6 Hz): |
| C series 7 (Bb1 -31c; 457.8 Hz): | G series 4 (G1 +0c; 392 Hz): |
| C series 8 (C2 +0c; 523.2 Hz): | G series 5 (B1 -14c; 784 Hz): |
| C series 9 (D2 +4c; 588.6 Hz): | G series 6 (D2 +2c; 588 Hz): |
| C series 10 (E2 -14c; 719.4 Hz): | G series 7 (F2 -31c; 686 Hz): |
| C series 11 (F# -49c; 719.4 Hz): | G series 8 (G2 +0c; 784 Hz): |
| C series 12 (G2 +2c; 748.8 Hz): | G series 9 (A2 +4c; 882 Hz): |
| C series 13 (Ab2 +41c; 850.2 Hz): | G series 10 (B2 -14c; 980 Hz): |
| C series 14 (Bb2 -31c; 915.6 Hz): | G series 11 (C#3 -49c; 1078 Hz): |
| C series 15 (B2 -12c; 981.0 Hz): | G series 12 (D3 +2c; 1176 Hz): |
| C series 16 (C3 +0c; 1046.4 Hz): | G series 13 (Eb3 +41c; 1274 Hz): |
| C series 17 (C#3 +4c; 1111.8 Hz): | G series 14 (F3 -31c; 1372 Hz): |
| C series 18 (D3 +4c; 1177.2 Hz): | G series 15 (F#3 -12c; 1470 Hz): |
| C series 19 (Eb3 -2c; 1242.6 Hz): | G series 16 (G3 +0c; 1568 Hz): |
| C series 20 (E3 -14c; 1308.0 Hz): | |
| C series 21 (F3 -31c; 1373.4 Hz): | |

Table 3.2 Amanda Cole, *Node*, flute fingering chart as devised by McKay.
3.1.4 TIMOTHY TATE

Undertones

From the outset, Tate was interested in writing for layers of sound. This led to much discussion around multiphonics in particular, this being one of the more obvious methods to achieve more than one note simultaneously on the flute. I described to Tate a particular type of multiphonic named ‘undertones’ and he was keen to include these in his composition. These undertones are played using the standard fingering for a third or fourth-octave note with the airstream much lower than in standard playing in order to reveal the pitches that reside under the highest note. I played each note from third-octave D to fourth-octave C and Tate notated the undertone pitches to the nearest quarter-tone (Example 3.5). We discussed which clusters were easier to produce and more stable at different dynamic levels, and from here Tate selected a number of undertones to incorporate into his piece. Musically, Tate described to me the positioning of the undertones in the work as points where the flute reaches a critical mass of sorts and the cluster of pitches reflects a musical bottleneck which is then cleared to proceed into the next musical idea (McKay 4 Mar. 2013).

Example 3.5 Flute Undertones, as notated by McKay and Tate. The uppermost pitch on each stem is the original fingering, and the lower pitches indicate the undertones produced with those fingerings.

Tongue Trill

Upon receipt of the draft one note stood out to me – a first octave E-flat with instructions to perform a colour trill (also known as a timbral trill). This technique was impossible on the written note as there would be no fingers or keys to spare, so no possibility to alter the fingering to achieve the timbral variation required. I suggested some options that might achieve a similar effect: 1. Rewrite the E-flat an octave higher, where a colour trill would be possible; 2. Re-write with a different but neighbouring pitch in the same register (first-octave D or E, both of which would facilitate a colour trill); or 3. Flutter-tongue on the first-octave E-flat (McKay 17 Oct. 2013). I then spent some
time trialling various mouth movements to determine how this may affect the tone colour and eventually concluded that it must be the tongue that actually creates the change of timbre. I realised that Baroque flute articulation held the key – J. J. Quantz’s book *On Playing the Flute* describes some inflections of the tongue that are seldom used in standard flute playing today. In particular I was drawn to the syllable *did’ll*, which in Baroque flute playing would have been used as the standard method of double-tonguing (most commonly played as *t-k* or *d-g* in modern times):

*To make the tone of the flute speak properly with the aid of the tongue and the wind that allows it to escape, you must, as you blow, pronounce certain syllables, in accordance with the nature of the notes to be played. These syllables are of three kinds. The first is *ti* or *di*, the second *tiri*, and the third *did’ll*. (Quantz, 71).*

I quickly discovered that this technique (*did’ll*) was capable of creating a subtle colour change to the sound of the E-flat. I modified the technique somewhat from what Quantz described – firstly I started the articulation with the ‘l’ stroke rather than the ‘d’, secondly I created a far more rapid exchange between ‘l’ and ‘d’ than would have been necessary in Baroque flute playing, and thirdly I made the articulation quite legato so there was no discernable rhythm or separation of sounds (as there would be with double-tonguing, for example) but retaining a sense of a fluctuating timbre.

**Inhalation**

Some composers have used inhalation as a playing technique in and of itself to further explore and expand the flute’s sound world. One example is in Kaija Saariaho’s *Laconisme de l’Aile*, where in the opening section (spoken text) she notates inhalations that are to be performed overtly, and on lines 21-22 where the flutist is instructed to inhale through the tube of the instrument, with the embouchure hole covered by the mouth – indicated by the black triangle figures in the following score excerpt (Example 3.6).
Tate was fascinated by these inhalation techniques and decided to incorporate them into the final movement of his work. This movement was scored for bass flute, so we spent some time with the instrument experimenting around the sounds. Due to its wider bore diameter, the bass flute speaks very well on air-sounds, including inhalations. The opening phrases of the final movement worked quite intuitively from a performance perspective and did not require much attention. Several bars later, however, there is a phrase where Tate had written a second-octave A-sharp to be, amongst other things, “inhaled” through the tube (Tate “Of Memory, Of Desire”). This was troublesome as it was a sustained note that had progressed from a slightly airy tone, through a more diffuse tone, to a complete air tone and then to inhalation. The effect of suddenly turning the instrument inwards to inhale would be too disruptive to the seamless line Tate had sought to create. In addition, the pitch of the A-sharp would not be sustained as when the instrument’s embouchure hole is covered the pitch drops by a major seventh. After considering these matters, Tate suggested that perhaps inhaling across the embouchure hole would create the desired effect. This was a good strategy, but one that still needed some refinement. Simply inhaling with an open mouth would create no sound or pitch, so we experimented with various types of “noisy inhalations”, including the phonemes “fff”, “thh” and “shh”. Through our experimentations, it was mutually agreed that inhaling noisily through clenched teeth with the phoneme “shh” produced the best result for our purposes in this work (Example 3.7) (McKay 17 Oct. 2013).
Example 3.7 Timothy Tate, *Of Memory, Of Desire*, Mvt III, bars 19-20: Inhalation (flute – top stave; voice – bottom stave).

### 3.2 AMERICAN COMPOSERS

#### 3.2.1 NOMI EPSTEIN

I spent many early workshop sessions discussing with Epstein some of the less-explored timbres available on the flute. In particular she was interested in exploring diffuse sounds that were very quiet and not necessarily pitch-centred. In one early meeting we investigated the sounds created by blowing across various parts of the flute such as the key cups and the open tube ends of each of the three sections of the instrument – in shakuhachi-style (across the opening) and didjeridu-style (into the opening, where possible) (McKay 19 Feb. 2014). I then spent several practice sessions exploring this concept further on my own and recording the resulting sounds to send to Epstein. I formulated a methodical approach, by recording each type of sound on each of four members of the flute family in sequence: piccolo, C flute, alto flute and bass flute.

1. *Shakuhachi*-style blowing across end of head joint
2. *Shakuhachi*-style blowing across end of body joint, with movement of keys in a scale-like progression
3. *As above on foot joint* (not for piccolo – it doesn't have a foot joint!)
4. *Blowing across the key-holes from the front of the body* ('trilling' on each single key from the bottom to the top, then at the back with the G# and B/Bb keys)
5. *As above on foot joint* (not piccolo)
6. *Blowing across end of head joint with embouchure hole closed* (using finger), then sliding open-closed-open etc.
7. *Blowing into head joint with embouchure hole closed* (using mouth), then opening/closing end of head joint with palm of right hand. (McKay “Flute Samples”)

\[
\frac{\text{d}}{\text{t}} = 60
\]
Ultimately the composer chose to use the seventh sound – created by blowing diffuse air through the C flute’s headjoint, with embouchure hole covered by the player’s mouth, and the headjoint detached from the body of the instrument, whilst partially covering and uncovering the tube end with one hand. She defined this as Air Sound 2 in her score (Example 3.8). This particular sound involves the disassembly of the instrument, so the composer has instructed the performer to pre-record the sound into the looping pedal prior to performance. This ensures that continuity is maintained in the performance as the flute remains fully assembled throughout.

![Air Sound 2 notation](image)

Example 3.8  Nomi Epstein, *Structure for layered flute*: Air Sound 2 notation (flute).

Multiphonics are a relatively common feature of much contemporary music for flute. The use of multiphonics in Epstein’s piece is for purely textural, rather than for melodic or harmonic reasons. There are two different types of multiphonics used in the piece – firstly “multiphonic-to-air”, where the performer must produce a diminuendo into an air sound; and secondly “multiphonic to single pitch”, where the performer chooses one pitch from each cluster to sustain at the end of the multiphonic (alternating between upper, middle and lower pitches as the sequence progresses).

The clusters selected by the composer are the result of a process of elimination in which my feedback was required. Epstein forwarded a list of multiphonics that she felt would sit well in the piece, taken from “The Techniques of Flute Playing”. I then tested each one for its ease of speaking, particularly at very soft dynamics; for its balance and stability between the pitches (sometimes 2 pitches, other times 3); and for its ease of fingering. Two of the multiphonics ended up being eliminated due to their awkward fingering positions and less stable tone:
#22
#111
#139
#265
#434
#444 – slightly awkward fingering
#563
#655 – a bit resistant, hard to get all 4 pitches to sound equally (not used in final piece)
#715 – awkward fingering but good response (not used in final piece)
#744 – slightly awkward fingering
#875 – slightly awkward
#986 – a bit resistant at first. (McKay “Notes from Practice Session”)

3.2.2 JENNY OLIVIA JOHNSON

The very detached and rhythmic opening section of Johnson’s piece progresses into more flowing rhythms and sustained upper register playing before a sung vocal line emerges. This simple melody precedes the telling of a story from the performer’s own life (or alternatively a purely fictional monologue) which is spoken through the flute tube, thereby rendering it largely unintelligible (Example 3.9).

Example 3.9 Jenny Olivia Johnson, magnificent//breaking point, bars 169-182: Spoken Story (voice).

The techniques of speaking through and across the flute had been workshopped with Johnson, involving experimentation with various positions of the instrument. I proposed several options, including speaking through the flute tube, whispering across the embouchure hole, and combining these with various fingering patterns. Speaking through the flute tube is in some respects similar to the technique of singing through the flute as seen in George Crumb’s work Vox Balaenae. Although this was appealing to Johnson, it meant that there would be no actual flute sound. The second option of whispering across the embouchure hole gave a more percussive effect, and by employing a very exaggerated approach to consonants during the spoken section, it would be possible to hear distinct, though airy, pitches from the flute itself. The composer felt that this
technique would open up the possibility of using pitch sequences whilst creating a sound that was very dramatic and punctuated. It would also distinguish the section clearly from the other vocal sections of the piece (i.e. singing without flute, and singing into the flute) (McKay, 5 Aug. 2014).

### 3.2.3 JEN WANG

Microtones are used frequently throughout Wang’s work, and we spent some considerable time discussing possibilities for notating these sections through experimentation with fingering diagrams and various forms of microtonal notation (McKay, 1 May 2014). Wang chose not to prescribe specific pitches or fingerings, but rather to allow the performer to select those with which they are comfortable. This has simplified the appearance of the score by eliminating the need for fingering diagrams or microtonal notation – a simple “M” is written above each note for which a microtonal inflection is required (Example 3.10). Wang explained that she is seeking an overall effect of pitch-shifting so she does not feel the need to specify precise pitches or fingerings for these notes (McKay, 1 May 2014). This approach allows for a lot more freedom of inflection in each individual flute part, so resulting in a richer musical fabric.

![Example of microtonal indications “M” (alto flutes).](image)

**Example 3.10** Jen Wang, *for each person who gets stuck in time gets stuck alone*, bars 18-29: Example of microtonal indications “M” (alto flutes).

Many unconventional sounds were explored during the workshops with all seven composers – most of which were either previously existing sounds or minor variations on existing sounds (see Table 3.3). Through experimentation guided by both the composer’s desired sonic result and the flutist’s capability to manipulate existing sounds and seek out previously unexplored methods of tone production, several new sounds were incorporated into the commissioned works. In essence...
these were tongue trill, singing with multiphonics, and whistle tone plus key clicks. Additionally, new fingerings were created for some microtones in order to play more precisely the very specific pitches required. The pre-existing sounds that were included in the new works were undertones, inhalations, singing into the flute tube, Klangfarbenmelodie, unpitched headjoint sounds, multiphonics to air, multiphonics to single pitch and speaking across the flute. Whilst all of these techniques already exist in other scores it was still a process of discovery to workshop the sounds directly with the composers. This allowed for much discussion regarding the context of the sounds within their works, the physical techniques of playing each sound, how to incorporate the sounds in a manner that is idiomatic for the instrument, and considering the wording of the performance notes relating to each sound. When all these factors are thoroughly explored the end result is a score that is more simple and clear for the performer to read and interpret, leading to a satisfying rehearsal and performance experience.
Table 3.3 Summary of flute sounds explored during collaborations

<table>
<thead>
<tr>
<th>Composer</th>
<th>Sound/Fingerings</th>
<th>Precedents</th>
<th>Our Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephen Adams</td>
<td>Whistle Tones and Key Clicks</td>
<td>Performance improved a monophonic, and</td>
<td>Composers are usually noted in a score.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Performer produces a monophonic, in</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>to perform the percussive phonemes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Achieved a melody between different instruments.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Achieved good articulation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Achieved a smooth combination.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Achieved balance between voice and</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Whistle Tones balanced with Key Clicks</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Whistle Tones and Key Clicks</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sounding Across the Flute</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sounding Across the Flute</td>
<td></td>
</tr>
<tr>
<td>John Heimann</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jenny Olivia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damion Henry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amanda Cole</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timothy Tate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nomi Epstein</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jenny Olivia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amanda Cole</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Timothy Tate</td>
<td></td>
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</tr>
<tr>
<td>Nomi Epstein</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jenny Olivia</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Amanda Cole</td>
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<td></td>
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<tr>
<td>Timothy Tate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nomi Epstein</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These techniques are common in isolation.

Whistle Tones and Key Clicks

Sounding Across the Flute

Precursors
Chapter 4   NOTATION

When a new sound is incorporated into an instrument’s vocabulary it naturally follows that a method of notating that sound must be determined. Through my practice-led research in this area I have worked with each collaborating composer to explore existing and alternative approaches to notation with the aim of creating a score that is more clear and easier to understand. It is impossible to know the full gamut of notations in use simply due to the overwhelmingly large number of existing published and unpublished scores. The notational language of extended techniques is still being developed and standardised – there exist countless scores that use alternative methods of notating the same effect. In this regard, significant advances have been made since the 1980s with the emergence of the flute-specific texts as mentioned previously (Dick, Artaud, Levine, etc.). It could, however, be an endless task to continually update such references to include new sounds, or indeed more intuitive or clearer ways of notating existing sounds that have already had a standard notation allocated to them.

The most significant discussions and experimentations with notation occurred with the four Australian composers – Stephen Adams, Damian Barbeler, Amanda Cole and Timothy Tate. The other composers had interesting approaches to notation, particularly Nomi Epstein, however there was little or no collaborative process involved in their notational choices so discussion of these is not relevant in this instance.

4.1   AUSTRALIAN COMPOSERS

4.1.1   STEPHEN ADAMS

Numbering System for Fingerings

The use of several *bisbigliando* fingerings in *Overpainting* necessitated the creation of a clear and simple system of notation. As we were discussing the options, I recalled a work I had recently performed that used a numbering system to indicate minor pitch and timbre inflections – Michael Smetanin’s *Nontiscordardime I*. I showed Adams the relevant section of the work and we agreed that the numbering system used by Smetanin offered the opportunity for a less cluttered performance score (Example 4.1).
Example 4.1 Michael Smetanin, *Nontiscordardime I* (solo flute), page 3: Numbering System for Flute Fingerings (top of excerpt and above the lower stave).

Adams decided to adopt a similar numbering system approach, and together we formulated a chart for the various pitches on which he wanted inflections (A-flat, E, etc) (Example 4.2) (McKay, 25 Sept. 2013). Although some of the fingerings used do not follow a strict sequential movement of fingers or keys, I still found it an intuitive way of notating the fingering changes, and it resulted in a relatively uncluttered score. We decided to include occasional fingering diagrams on the score itself to serve as reminders, and again this proved a useful strategy so that the performer does not have to refer constantly to the front matter for fingerings.

**Fingerings - individual microtonal tunings**

<table>
<thead>
<tr>
<th>E3</th>
<th>(E5+30cents)</th>
<th>E5</th>
<th>(E5+10cents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A♭1</td>
<td>(A♭4-20cents)</td>
<td>A♭2</td>
<td>(A♭4-30cents)</td>
</tr>
<tr>
<td>A♭3</td>
<td>(A♭4-30cents)</td>
<td>A♭4</td>
<td>(A♭4-35cents)</td>
</tr>
<tr>
<td>A♭5</td>
<td>(A♭4-35cents)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C1</td>
<td>(C5+15cents)</td>
<td>D♭1</td>
<td>(D♭5+10cents)</td>
</tr>
<tr>
<td>D♭1</td>
<td>(D♭5-30cents)</td>
<td>E♭1</td>
<td>(E♭5-5cents)</td>
</tr>
</tbody>
</table>

Example 4.2 Stephen Adams, *Overpainting*: Excerpt from Performance Notes.
No Flute Tone

In considering a notation for the “no flute tone” section of *Overpainting*, my first point of reference was Crumb’s score for *Vox Balaenae*, in which the composer uses a similar effect to that of Adams. Upon looking at Crumb’s score, however, I noticed that his notation for the flute fingerings was written using “x” noteheads – a notation that has, since the composition of *Vox Balaenae* in 1971, become more commonly used to indicate the technique of key clicks. As a result it was decided that Adams should not use Crumb’s notation, but to explore different note heads that might suit this technique.

After proposing a few alternatives, most of which are in common usage for other extended techniques on the flute, it was decided to use open square note-heads for this technique (Example 4.3), and to then describe in more detail the actual technique and its resultant sound in the Performance Notes preceding the score. I felt that leaving the note-heads open (i.e. not coloured-in) would reflect the absence of flute tone during this passage, as opposed to the sing-and-play passages that have regular note-heads in the flute part (Example 4.4). The open square notes would not be able to accurately reflect any rhythmic value smaller than a minim, but the rhythms that Adams had written were minims and semibreves, so this was not a relevant consideration.

![Example 4.3](image)

Example 4.3 Stephen Adams, *Overpainting*, page 1, third system: No Flute Tone notation (flute – top stave; voice – bottom stave).
4.1.2 DAMIAN BARBELER

Rhythmic Freedom

Barbeler described the flow of the phrases in the opening pages of Significant Other as needing to have a sense of continuity and momentum, but with a great deal of flexibility and freedom in terms of their rhythmic structure. To this end, he proposed two possible scenarios for notation:

1. Use traditional rhythmic notation, with other indications for rubato, tempo change, etc.; Barbeler felt that this method would be too limiting, as the performer would instinctively revert to attempting to play precisely the notated rhythms, resulting in less flow and spontaneity. He did, however, write the middle sections of the work using standard rhythmic notation as these sections suggested a very different feeling from the opening;

2. Use proportional notation. This approach would potentially have the performer play too freely, so would need to be considered carefully in terms of how the performer would be instructed to interpret the notation.

Barbeler decided on a compromise. The outer sections of the work were notated somewhat proportionally, with small lines marked at the top of the stave to indicate approximately one beat at fifty beats per minute. There are many instances of the solo and accompaniment lines weaving together, and it is crucial that the performer understands clearly where these events occur. The proportional approach to notation is also very visually significant in this case, as it is quite apparent where notes move on or flow together, and where there is more of a sense of repose and suspension.
of the melodic line (Example 4.5). The inner sections of the work are notated with traditional rhythmic notation, including time signatures (Example 4.6). This then reflects the shift from the contemplative outer sections, and implies that the music is moving forward with more connectivity both within the solo line and together with the accompaniment (which is also traditionally notated with regard to rhythm). Whilst Barbeler is adamant that there should still be a sense of spontaneity in these sections, merely noticing the changed density of notes from the outer sections – and the change of tempo – tells the performer that the energy is quite different in these parts.

Example 4.5  Damian Barbeler, *Significant Other*, page 3, third system: Proportional Notation (flute – top stave; recorded track – bottom stave).

Example 4.6  Damian Barbeler, *Significant Other*, page 5, first system: Standard Rhythmic Notation (flute – top stave; recorded track – bottom stave).

*Klangfarbenmelodie* Notes

*Klangfarbenmelodie* is most commonly seen as the distribution of a melody amongst several different instruments. Julian Rushton, in his article “Klangfarbenmelodie” reinforces the concept set out by Schoenberg by stating that “he implied that the timbral transformation of a single pitch could be perceived as equivalent to a melodic succession.” Barbeler wanted to explore this concept through the use of extended techniques on the flute. The single solo flute line would therefore be coloured by changes in the flute’s timbre through techniques such as varying degrees of diffuse tone, alternate fingerings that colour the tone and inflect the pitch very slightly, flutter tonguing, singing and playing, etc.
As there is no universally standard method of notating *Klangfarbenmelodie* on a single instrumental line in this way, Barbeler devised his own system of notating the desired changes of colour. In his hand-written score he used wide pencil strokes of varying texture and darkness, drawn with the side of the pencil rather than the tip, including wavering lines and spatters of pencil dots plus occasional strong vertical lines to indicate more sudden changes of tone colour within a particular note (Example 4.7). These graphic suggestions of tone colour made interpretation of the score very straightforward, although Barbeler also suggested that they should merely be used as a guide for the performer rather than a strict sequence of colours to be performed (McKay, 5 Apr. 2013). Thus the performer is afforded a significant level of agency in creating the *Klangfarbenmelodie* effects.

Example 4.7 Damian Barbeler, *Significant Other*, page 5, fifth system: *Klangfarbenmelodie* notation (flute).

4.1.3 AMANDA COLE

**Microtonal Accidentals**

Quite a significant number of resources exist for the notation of microtonal music, many of which were consulted when considering the notation system for *Node*. Some alternatives were explored, including Saggital notation (Secor), coloured note heads, no accidentals, and rounding to the nearest quarter-tone (thereby employing standard quarter-tone notation).

Cole and I discussed at great length the options available in order to notate the required pitches on the score, but also with a view to determining which method would be clearest for the performer. I suggested two things – coloured note-heads to represent the pitches from each harmonic spectrum (e.g. red for the notes derived from the C string, and green for those derived from the G string); or no accidentals at all – just a fingering chart and list of pitches in the performance directions at the front of the score (Cole, “Re: Microtonal Accidentals”). Cole sent through a sample score using coloured note-heads, and upon seeing it we both decided that this
would not be the most effective or instinctive method of notation. The problem with my second suggestion of using no accidentals was that some notes had several permutations of pitch (e.g. there were several inflections of the note B) so this option would be quite unclear.

After many trials, Cole devised a set of accidentals that are not already associated with a specific pitch. These were assigned to the notes in Coles’ series, and would be repeated where a pitch had the same number of cents sharp/flat (Figure 4.1). Although this meant a time-consuming process of learning an entirely new language of accidentals and having to remember which accidental referred to which pitch, it also seemed the most logical and least confusing method of notation in this instance.

![Figure 4.1](http://fingering.bretpimentel.com/#!/flute)


**Fingering Chart**

To create the fingering diagrams used in the Fingering Chart for *Node*, I used the Flute Fingering Generator program, Version 0.51 from Bret Pimentel’s website. This interactive tool allows the user to set many parameters such as which keys are visible in the diagram, showing or hiding open holes and half-holes (either horizontal or vertical), and the appearance of “extra” keys that are not universally standard on all flutes, such as the gizmo, C-sharp trill and low B keys (Figure 4.2). Once the custom configurations had been set it was a very swift process to input each fingering and create and save the resulting image. The final step in the process was to import the images into a document and align them with the pitches as notated on the stave by Cole – a process that is still being refined at the time of writing this document.

---

9 [http://fingering.bretpimentel.com/#!/flute/]
Figure 4.2 Diagram showing the flute’s gizmo key (red), C-sharp trill key (green) and low B key (blue).

4.1.4 TIMOTHY TATE

**Tongue Trill**

As this was by all accounts a new sound, we had an option to devise an entirely new notation for it – in other words, a new note-head or other indicative symbol. Alternatively we could have adhered to standard pitch and rhythm notation and added a symbol or brief explanation above the note with additional information in the Performance Notes. Above all we needed to make the technique and description of the desired sound as clear as possible for future performers.

It was decided that the simplest method of notation would be to use a standard note-head, add the indications ‘l’d’l’d’l’d’ and *tongue trill* above the note (Example 4.8) and provide a more lengthy explanation in the Performance Notes. Description of the execution of this technique is difficult as it so closely resembles the far more common flutter-tonguing but is a considerably slowed-down version of this. I felt it was important to include a description of the desired sonic result (i.e. “it should sound like a timbral trill”) so that future performers could better understand what is required in executing the technique. Tate’s final draft of the Performance Notes reads “Tongue trill: a rapid movement of the tip of the tongue behind the teeth – similar to a flutter tongue in action and a colour trill in sound” (Tate “Of Memory, of Desire”).
Example 4.8 Timothy Tate, Of Memory, Of Desire, Performance Notes: Description and Notation of Tongue Trill (flute).

**Undertones**

The motivation in this instance was to find a way of notating undertones that somehow distinguished them from standard multiphonics. The options discussed were:

1. Notate all pitches that the composer wishes to hear, as per a standard multiphonic notation. The difficulty with this is that we wanted to somehow highlight the difference of the undertone technique – i.e. that the “fundamental” note is in fact the uppermost note of the cluster, and all lower pitches are based on the standard fingering for this note.
2. Notate only the upper pitch but include a brief explanation above the stave. This method of notation would be less cluttered in terms of its presentation in the score, but would not accurately reflect the resultant sound required by the use of this technique.
3. Specify the fingering in addition to the notes. It is common practice for composers to include small fingering diagrams on scores where alternative or non-standard fingerings are employed. In this case, however, the technique is in fact based on a standard fingering, so inclusion of a fingering diagram would prove redundant (McKay 4 Mar. 2013).

It was decided that it would be best to notate all pitches of the undertone cluster on a single stem, as would occur with standard multiphonic notation. In order to distinguish the undertones from standard multiphonics Tate used a system of placing the lower undertones in parentheses and the upper “fundamental” pitch with no parentheses (Example 4.9). Visually, this serves to clarify that the fingering and multiphonic effect is based on the uppermost note, but the lower notes should also sound (though using the standard fingering for the upper note). A detailed performance note is also included in the front matter in order to further clarify the execution of this technique and what the resultant sound should be.
Example 4.9  Timothy Tate, *Of Memory, Of Desire*, Mvt II, bar 31: Notation of Undertones (flute).

Notation is a crucial consideration for composers, particularly when incorporating extended techniques and non-standard methods of playing. The score is typically the only means by which the composer communicates with the performer so it is important to ensure that the choices made by the composer will be clear enough for all performers to interpret effectively. With this in mind my contributions to the notation decisions of the composers in this project have had the performer in mind first and foremost. I had to imagine seeing their works for the first time, not having had any opportunity to communicate directly with the composers, and having to interpret their scores according only to what was written on the page. I feel that this has been achieved with a combination of innovative notation devices and clear, concise performance notes (see Table 4.1). This particular aspect of the collaborative process is certainly worthy of more sustained and in-depth investigation however the limits of this research project prevent such discussion at this time.
<table>
<thead>
<tr>
<th>COMPOSER</th>
<th>NOTATION QUESTION</th>
<th>PRECEDENT/S</th>
<th>OUR SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephen Adams</td>
<td>Numbering system for</td>
<td>“Nontiscordardime III”, by Michael Smetanin uses numbered fingering</td>
<td>Use this numbering method, with reference to a fingering chart in the Performance Notes for the piece.</td>
</tr>
<tr>
<td></td>
<td>fingerings</td>
<td>sequences.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No flute tone</td>
<td>George Crumb used an ‘x’ notehead in <em>Vox Balaenae</em>.</td>
<td>Adams used an open square notehead.</td>
</tr>
<tr>
<td>Damian Barbeler</td>
<td>Rhythmic Freedom</td>
<td>Written directions for changes of tempo; proportional notation.</td>
<td>Proportional notation, but within loosely prescribed tempo/bars.</td>
</tr>
<tr>
<td></td>
<td>Klangfarbenmelodie</td>
<td>Usually not notated as the melody is distributed between different</td>
<td>Different densities/textures of pencil line were used to suggest changes of tone colour.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>instruments.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fingering Chart</td>
<td>Common in contemporary flute works that use non-standard fingerings.</td>
<td>Still under development.</td>
</tr>
<tr>
<td>Timothy Tate</td>
<td>Tongue Trill</td>
<td>No precedent that McKay and Tate were aware of.</td>
<td>Written indication in the score plus description in Performance Notes.</td>
</tr>
<tr>
<td></td>
<td>Undertones</td>
<td>Typically notated as standard multiphonics.</td>
<td>Tate chose to notate the undertones in colour (red) to identify them as distinct from standard multiphonics.</td>
</tr>
</tbody>
</table>

Table 4.1 Summary of notation issues encountered during collaborations.
Chapter 5  PERFORMATIVE ELEMENTS

Several of the works composed for this project incorporated an array of performative elements, adding an extra layer to the collaborative process and the performance outcomes. These elements include physical actions, staging requirements and props, and the use of electronic equipment. Many existing contemporary works include examples of these performative elements. Oliver Knussen’s work *Masks* for solo flute with glass chimes incorporates physical movements from the performer, such as dramatic turns to the front and back of the stage whilst playing. Karlheinz Stockhausen was another composer who used prescribed physical actions in many of his works, including *Zangenspitzen Tanz* for solo piccolo, in which the performer is required to move across the stage according to a designated pattern of diagonal movements. George Crumb’s chamber work *Vox Balaenae* instructs the performers to wear black masks whilst playing, and to perform under blue lighting where possible. With regard to the use of electronics, as mentioned in Chapter 1 of this document, the first flute work to incorporate electronics was Bruno Maderna’s *Music in Two Dimensions* in 1952. Since this time, countless composers have included all manner of electronic elements into their works, including backing tracks, effects pedals and interactive computer programs such as Ableton Live and MaxMSP. Performative elements are not always notated in the score, but still contribute to the overall sonic result of the performance.

5.1  AUSTRALIAN COMPOSERS

5.1.1  STEPHEN ADAMS

Until the final week before the performance there had been no discussion or suggestion of movement or performative elements for Adams’ work. On hearing a recording of me playing through the first complete draft of the work, Adams decided to make some drastic changes to the ordering and content of the work (Adams “Re: Overpainting for Flute – Vers2”). One such change was to move the strong descending chromatic scales to become the opening gesture (Example 5.1, Example 5.2, Example 5.3). As a result of this, I feel the structure of the work was strengthened considerably. Adams also then saw these gestures in a new light, as a sort of “clearing of the throat” before the far more delicate and intricate sounds that followed for much of the remainder of the work. He then proposed that these bold opening gestures be played with the player’s back to the audience, or even from offstage (Adams “Dress Rehearsal”). Whilst setting up in the venue prior to the performance I reflected on these two choices. The offstage area would be through a small
doorway, which would then have to be shut behind me, so I decided that this would not work as effectively in this instance. I felt that the interference created by opening and closing the door, and the subsequent action of walking to the performance area would result in loss of continuity and too much distraction from the music itself. The option of playing with my back to the audience then had two possibilities – firstly I could walk out of the offstage area/dressing room and into the corner of the space where I would then play the gestures. This would probably suggest to the audience that they should applaud when I walked out, which I was not so keen on as I prefer to challenge such performance conventions by starting my performances in creative and unexpected ways. I chose to stand facing the corner before the audience was let in to the venue, and to stay there – very still and silent – until the doors closed and the performance lights went up. This was my cue to begin the piece.

Example 5.1  Stephen Adams, *Overpainting*, page 1, first system: First Draft Score.

Example 5.3  Stephen Adams, Overpainting, page 1, first and second systems: Final Score.

Once the opening gestures had been performed, I was to turn around to the score, facing the audience, and proceed through in a more standard performance manner. Adams did suggest, however, that I might like to physically reflect the various types of sounds throughout the work as they represented the brushstrokes of a painter. I aimed to do this, but am not sure if the movements were too subtle to be noticeable by the audience – the gestures were not much more pronounced than I would typically utilize in a performance situation, so perhaps they need further refining from me. In particular, Adams was keen for me to “show” the key click sections as having a spattering effect, which I interpreted physically as small, rapid gestures from my arms/flute in various directions – up, down, forward, back, etc. Finally, Adams indicated that the closing section (Coda) be performed having stepped back from the stand somewhat, as if surveying a finished artwork on an easel. I am not sure if this element was performed with too much subtlety for the audience to notice, but I did take a few steps back, and walked slowly from one side of the music stands to the other, with head tilted in contemplation. The sonic effects of these movements were also very subtle, but still significant. When performing with my back to the audience the flute’s sound was directed towards the wall and therefore did not project outwards to the listeners as it would have if I had been facing the audience. I therefore made sure to perform the opening gestures more strongly/loudly in order for them to be heard clearly in this position.

5.1.2 DAMIAN BARBELER

From the outset, Barbeler had intended his work to be semi-theatrical. Most importantly, the accompanying audio track would be played through a vintage television (with internal components removed and modern speaker inserted). After a fruitless search effort over many weeks Barbeler
ultimately found a vintage radio rather than a television, so this then became the core around which the rest of the props (floor lamp, armchair, dress, shoes) were sourced (Figure 5.1).

Figure 5.1 Damian Barbeler, *Significant Other*: Final Stage Setting.

The function of the props would be two-fold. Firstly to visually transport the audience to the 1950s, with all the traits and assumptions which are associated with that era. This is important to Barbeler’s work, as the title *Significant Other* plays on the assumption that there is a human partner involved somewhere. Yet we never see this “other”, nor hear any human voice. There is no visual or sonic reference to another human within the work. This then leads us to the second function of the props – the radio in particular. That is, to contribute a non-human second presence to the performance (Barbeler “Progress”).

My role as the performer was to not only perform the musical score, but to also take on the character of a tired, lonely 1950s housewife. Barbeler explained that the track being played through the radio (i.e. the flute, viola and piano tracks that had been previously recorded) would be wooing me, enticing me into a sonic world that seemed so much more exciting and engaging than the real world. Throughout the work there are moments in which the radio/recorded track takes a leading role, other sections where the live performer takes the lead role, and still other sections where the parts are intended to be in equal balance. I found this an intriguing process, though not without significant personal challenge from the performative aspect. As a performer I often think of the
music I play as having certain characters, plots and imagery, but Barbeler’s work was pushing these concepts into a far more theatrical realm than I had experienced. In the following quote Barbeler describes his vision:

*I think the instrument that the TV will play is going to vary during this segment. It makes sense that the tv would use many timbres at it’s disposal to appeal to you. Yes a lower, masculine flute at times, especially the end. But also viola and piano. This will be a nice extra pushing of the idea of the surreal concept of a tv companion. It is really the perfect companion in that it can be whatever you need it to be... at least aesthetically... and yet...* (Barbeler “Progress”)

When rehearsing and performing this work I was challenged to explore different tone colours to blend and contrast with the recorded parts as appropriate. It was relatively effortless to blend with the flute parts as I had recorded these (albeit on alto and bass flutes rather than C flute), so the tone colour, vibrato, etc. were my own. I found that when the recording introduced violin and piano parts I approached my playing differently – I aimed to contrast, rather than blend, in these sections. This also highlighted the very different characters that the violin and piano parts were suggesting, with my character (the housewife) remaining as consistent as possible throughout the performance.

5.1.3 TIMOTHY TATE

Similar to Adams, there were no specific performative elements discussed during workshop meetings with Tate or in email discussions about the piece. In the final stages of composition, however, Tate decided that the work should be performed with the music stands in a triangle formation – one stand for each movement of the piece (Tate “Re: The Piece?”). This served to delineate clearly between the three movements, and to highlight the progression of the music – from the first movement that laid out the melodic and harmonic material, to the second where this material was developed with addition of many textural elements as well, and finally the third on bass flute, which is a deconstruction of all that goes before. This final movement had the greatest impact visually, not only for its use of the considerably larger bass flute, but also because Tate specifies that this movement is to be played with the performer’s back to the audience. His reasoning was that this would help to reinforce the disembodied nature of the movement, to take away some of the personality that can be implied when we see a performer’s face, and to create an element of mystery around how exactly some of the diffuse sounds were being produced (McKay, 7 Jan. 2014). The impact was also of a sonic nature, similar to that described in relation to Stephen
Adams’ work above (Section 5.1.1). Due to the sound being directed away from the audience many of the very quiet gestures such as inhaling and exhaling through the bass flute may not have been audible. This is not necessarily a negative outcome as many composers enjoy writing effects that are barely audible – Salvatore Sciarrino being one relevant example. It is, however, an important consideration for the performer in terms of ensuring these effects are played convincingly and perhaps a little more strongly than indicated in the score in order to project their intent to the audience.

5.2 AMERICAN COMPOSERS

5.2.1 NOMI EPSTEIN

The use of a looping pedal in Epstein’s piece proved to be a significant challenge during rehearsal and performance. The pedal used was a Boss RC-20XL, most commonly used by guitarists in amplified folk or rock performance (Figure 5.2).

Figure 5.2 Looping Pedal used in Epstein's work.

I had used guitar effects pedals in previous performances over the course of my career, so the concept of using a looping pedal was not intimidating to me. The actual operation of the pedal
within the piece was considerably more than I had encountered previously and led to many practice sessions devoted entirely to coordinating the correct foot movements at the correct times. I used a stopwatch to ensure that my timings were precise. There were three different foot movements necessary through the piece – pressing the left pedal once (for live recording/overdubbing into the looping pedal), pressing the right pedal once (to stop the live recording), and holding the right pedal down for three seconds (to clear the loops/recorded phrases). Although the composer’s coloured score indicated the various playing states, I added my own cues below the timeline to remind me of the required foot movements. These indications will not be included in the composer’s score as different players may be using different looping pedals (or even computer programs in place of a pedal) in which case my indications will not apply.

In most instances I was able to integrate the foot movements reasonably fluently. There were two sections of the piece in which multiple foot movements were required, and these took a lot longer to coordinate fully. The sections were at seven minutes and ten minutes, the two points in the piece where the looped phrases had to be cleared, then immediately begin recording a new sound into the pedal (Example 5.4).

Example 5.4 Nomi Epstein, *Structure for layered flute*, score excerpt. The numbers below the coloured bars indicate minutes and seconds. Delay pedal annotations (e.g. LEFT x 1; RIGHT x 1) added by McKay.
One challenge of rehearsing and performing with amplification and associated effects – in this instance the looping pedal – is the access to high quality equipment. Unfortunately in rehearsal I was only able to access a very small practice amplifier, from which the sound was very unclear. This meant that I was not able to fully replicate the performance conditions (where I was able to use a high quality sound system and audio technician), so I was unaware of the actual sonic outcome until the day of the performance when I was able to rehearse in the venue.

Once in the venue and working to balance the sound levels from the speakers, it became apparent that there was a significant amount of static in the sound. This was traced back to the looping pedal, and was not able to be removed by the audio technician. There were times when the static seemed to completely override the flute sound, however due to time constraints I had to proceed with the performance without resolving this issue. When listening back to the recording of the performance, however, the static sound was much less prominent than I had recalled, so perhaps my perception of it was heightened by my knowledge of the score or my proximity to the speakers.

5.2.2 JENNY OLIVIA JOHNSON

There was considerable time spent discussing the various technologies employed in Johnson’s piece, in particular the electronic sensor that triggers video images in the MaxMSP patch. Johnson’s first instinct was to affix the sensor to one of my fingers, meaning that it would be activated each time that finger was depressed or raised (McKay, 16 Jul. 2014). I proceeded to formulate a table of standard fingerings across the flute’s range in order to determine which combinations of pitches would involve the greatest amount of action from a single finger (Table 5.1).
The composer, after considering this information, and after having me play through some draft sections of the work, determined that there would be too many restrictions on pitch and rhythm to make the finger-trigger a viable solution. At this point I suggested somehow attaching the sensor to my neck area – this would pick up the rapid articulation movements of the tongue as well as the vocal utterances throughout the work (McKay, 5 Aug. 2014). Johnson proceeded to construct a choker containing the sensor, which I was to wear around my neck whilst playing (Figure 5.3). It was highly successful in our workshops, but unfortunately the composer was not able to finalise a satisfactory prototype for the choker for this performance. Instead she instructed me to use a standard vocal microphone – this created the same effects through the MaxMSP patch, however without the added costume effect of wearing a choker.

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There was no impact on the flute sound from use of either the prototype choker or the vocal microphone as they were not being used for amplification, but solely for triggering of video images. Johnson added a light reverb effect to the MaxMSP patch for the premiere performance, as she felt that this would help the live flute sound to blend with the pre-recorded track more convincingly. The reverb was barely noticeable to me as a performer, and therefore did not prove to be distracting or challenging in any way.

Ideally Johnson envisages the piece being performed in a semi-theatrical manner, with the performer in costume (“gothic” style black clothing, long black wig, piezoelectric choker) and a 1980s era television set as a prop. She feels that this will help to immerse the audience and the performer more fully into the emotional world of the work’s protagonist. In this way her vision was very similar to that of Damian Barbeler’s in Significant Other, even down to the use of a vintage television, however the two pieces have very contrasting aesthetics and fundamental compositional styles.

Figure 5.3 McKay wearing a prototype piezoelectric choker.

5.2.3 JEN WANG

Jen Wang’s composition offered the option of performing with a live ensemble of eight flutists, or solo flute with pre-recorded ensemble. Unfortunately there is limited access to high quality bass and alto flutes (i.e. instruments) in Brisbane so I made the decision to proceed with the
pre-recorded option. The first stage of preparation involved Wang sending through a list of sections for me to record. These sections varied in length from one to 24 bars, corresponding to the sections of the piece between “vamp” bars (see Section 2.2.3, Chapter 2).

1.) m. 1 breath noise
2-5.) mm. 2-5, please record each box separately
6.) m. 6 fermata
7.) mm. 7-16
8.) m. 17
9.) mm. 18-40
10.) mm. 41-44
11.) mm. 45-69
12.) m. 70
13.) mm. 71-94
14.) mm. 95-100 (slight separation between notes)
15.) mm. 101-120
16.) mm. 121-124 (switch to whistle tones whenever you want, as written)
17-20.) m. 125 (please record a few samples of whistle tones, gestures about 10” long)

Last measure: the other parts might arrive at m. 125 before Flute 1, so what happens here is that Flute 1 plays for 20” and then gives the cue, but Flutes 2-8 may play this measure for longer than 30” if they arrive earlier. (Wang)

Due to time constraints I was not able to organise a professional recording of the parts. Instead I recorded the tracks at my home using a Roland portable hard-disk recorder. Whilst the resulting sound from this device is clear and true, it lacked some of the finesse that a studio recording might have offered. The composer added a light reverb on each track, which helped the overall sound to be more blended and refined.

Each section was recorded a minimum of seven times. This was necessary in order to simulate the individual discrepancies that live performers would have in an ensemble setting. The composer specifically wanted each performer to have a sense of agency and freedom in playing through each section at their own pace, rather than playing strictly in time with the ensemble. Providing multiple tracks also allowed me to experiment with many different microtonal inflections when indicated in the score.

Once all sections had been recorded I emailed these to Wang, who then set about editing them and adding them into a computerized cueing program called QLab (Figure 5.4). This program allows a performer to cue pre-recorded sounds by pressing the space bar key of a computer. The audio files are retained in a separate but linked folder, and the QLab program finds each file at the time of cueing (i.e. when the space bar is pressed). When Wang sent me the finished QLab file it emitted short crackling sounds whenever I pressed the space bar. Whilst the ultimate cause of the
extraneous sounds was not identified, several hours of constant communication to trouble-shoot the problem eventually led to a solution. The program was modified slightly so that each individual track was actually embedded into the program rather than being sourced from an external folder.

Figure 5.4 Screen-shot of QLab cueing program for Wang's piece.

I decided that pressing the space bar myself during performance would be too difficult to coordinate as it would mean having to stop playing at each cue, thereby interrupting the flow of the solo line. Instead I recruited an assistant to respond to my cues to operate the space bar. For future performances I aim to configure a foot pedal to replace the space bar, meaning that I will be able to do the entire performance alone instead of having a second person to take on the cueing actions. I also look forward to having an opportunity to perform the work with a live ensemble and am interested in how the two versions of the work might differ.

The performative elements incorporated in the commissioned works can be categorised into three main areas: staging, physical movements and technologies. Whilst it is not a new phenomenon to include such elements in a flute work there are many unexplored aspects to these elements that offer new possibilities. In particular, the area of technology is developing at a very rapid pace. New hardware and software is under continual evolution so it is an ongoing area of investigation as to the most effective technological solutions for a particular composition. It is also therefore accepted that
the current solutions may be superseded in future years by different and more elegant approaches and technologies. Physical movements must always take into consideration the effect on the performer and the sound of the instrument. In the case of the flute, exaggerated physical gestures are often not possible without having a significant (usually negative) impact on the resulting tone. All composers in this project that have included physical movements in their works have done so with this in mind and the flutist is therefore able to maintain integrity of tone production throughout the performance. Similarly, staging elements must be carefully considered so as not to impact negatively on the performance. The most challenging work for me in this regard was Barbeler’s – the armchair was not ideally upholstered and was quite awkward to find a comfortable seated playing position. The dress was also somewhat uncomfortable, with scratchy underskirts and a tight waist area. These minor obstacles did not have a significant impact on the performance itself, but did leave me feeling somewhat unsettled during dress rehearsals. Finally, the various technologies employed were user-friendly and able to be integrated seamlessly into the performances. The looping pedal in Epstein’s work required the most work in coordinating and activating the necessary movements, however with more rehearsal time I am confident that this difficulty will be easily overcome.

Performative elements of a musical work are frequently overlooked by composers, particularly physical actions that are implied (such as interaction with props and technologies) rather than prescribed (such as notated physical movements). By bringing these issues to the attention of the composers I was able to contribute a significant amount of feedback on the performative elements in each work. In doing so I helped the composers consider, from a flutist’s perspective, the implications of including such elements in order to create an effective and integrated performance of new and innovative musical concepts.
Chapter 6  CONCLUSION

The aim of this project was to explore the potential for new sounds on the flute through collaboration with composers. One of the outcomes of this research has been the highlighting of the role of the flutist in developing new sounds, techniques, fingerings and performative elements. Through collaboration on and first performance of new flute works I have explored ways in which these could be integrated into a composer’s vocabulary, thus augmenting and enhancing the flute’s own musical language. A further-expanded palette of sounds can broaden the expressive potential of the instrument, allowing composers more scope to express their musical ideas, and allowing flutists to explore and understand more deeply the instrument and its potential to realise previously unattainable sounds. Working collaboratively can ensure that compositions are well suited to an instrument from an idiomatic aspect, with a flutist able to offer input on matters such as fingerings, limitations of particular techniques, notation, performative elements (such as staging, use of electronic equipment, prescribed physical movements, etc.), and other performance-related matters.

This research project has produced many tangible results. Most notably, seven new works for flute have been created, that I have both premiered in live public performance and documented through video and audio recordings. I have taken a leading role in overcoming obstacles regarding the development of new sounds, ways to notate them, and the generation of relevant fingering systems. I have also given valuable input on staging, technological and other performative elements. On reflection, I can see that my guidance as a flutist on these matters was crucial in encouraging composers to consider the more pragmatic elements of their works from a flutist’s perspective. In turn, this impacted the creative decisions of the composers and in many instances had a significant effect on the resulting work from a musical as well as a practical perspective. There were many occasions on which composers were surprised that a particular technique or notation was unsuitable or unclear, because they were not approaching the matter from a performer’s mindset. Of course each individual flutist brings their own unique set of experiences, knowledge, abilities and understandings, so it is possible that the solutions I have proposed will not suit every other player. By thoroughly experimenting with and trialling several alternatives to each problem we encountered, these compositions are much more idiomatically suited to the flute than they would have otherwise been.

I will now reflect upon the list of parameters that I devised at the outset of my research (Section 1.4). These helped to guide the collaborative processes undertaken throughout this project.
• The work should be for one player, on any instrument in the flute family (piccolo, C flute, alto flute or bass flute);
  o This point was relaxed somewhat, in that two of the works were scored for multiple instruments (but only one player). In Timothy Tate’s work the first two movements were written for C flute, and the third for bass flute; in Jen Wang’s work the solo performer is required to switch between alto flute, bass flute and piccolo throughout the piece.

• The work may include electronics of any kind, as long as they can be operated by the performer;
  o Of the seven works, four incorporated electronic elements. Two of these required an additional person to operate the electronics (Jen Wang’s piece and Damian Barbeler’s piece), however with additional time to explore other options it will be possible to perform these in the future without additional assistance. This will most likely be achieved by use of a foot pedal to cue the audio tracks.

• The work should aim to explore and build upon existing extended techniques for the flute;
  o Each work included many familiar and common extended techniques, with exploration of these in new contexts and combinations both in terms of the sonic results and notation practices.

• The work should be approximately 8-12 minutes in length, but this is negotiable;
  o Only one work exceeded this time limit, that being Nomi Epstein’s work (18 minutes). This was negotiated prior to receiving the completed score, and was not detrimental to the preparation or performance of the work.

• A completed work should be delivered by early October 2013 (for the Australian composers) or October 2014 (for the US composers);
  o Most composers were able to adhere to the due dates. Those who delivered their scores late were in constant communication with me regarding their progress. Due to the fact that our collaboration had been thorough and consistent, I was already aware of the overall concept of the pieces and able to anticipate to some degree what the completed score would look and sound like.

• Composers should keep a journal or blog (written, web, spoken, other) when writing and working on or thinking about the piece;
  o This aspect was less successful than I had anticipated. Time constraints prevented any of the participants from keeping comprehensive notes about their works,
however I feel that sufficient insight was gained from the collaborative workshops and skype meetings throughout the process.

- The researcher will also keep a journal in response to sessions with the composers and the draft materials they present throughout the year;
  - This journal was kept in both hard copy and electronic form, and forms the foundation of the information contained in this document.

- Meetings should be regular and reasonably frequent – at least monthly;
  - Regularity of skype meetings was not always consistent, however email communication was very useful in maintaining contact when meetings were not able to take place.

- Meetings will discuss progress of the piece, workshop ideas, and talk about notation and technical aspects of the work;
  - Meetings were always productive and covered many different aspects of each work. Sometimes a meeting focused on one single problem or issue, whereas in other meetings we discussed several different topics.

- The flutist’s input will pertain only to the technical, notational and performative aspects of the work. The overall aesthetic and musical content will be entirely the composer’s domain (unless they seek input from the flutist).
  - My contributions mostly stayed within the realm of technical, notational and performative input. Some composers, however, drew me in to more aesthetic conversations about their works. Notably these were Stephen Adams, Damian Barbeler, Jen Wang and Jenny Olivia Johnson.

There were a number of factors that contributed to the collaborations being open, and relatively effortless. Firstly, all composers participating in the collaborative phase of this project were known to me. Several composers had worked with me on previous works or projects, with only two (Amanda Cole, Timothy Tate) having never written for/with me in the past. Secondly, composers were participating in this project altruistically, and had agreed that they would not be paid for their work. This allowed a lot more freedom, however in some cases this perhaps contributed to a slight lack of urgency or commitment to the project. Overall, however, I would assess the collaborations as being highly successful from both a personal and musical perspective.

The exploration of new sounds was approached from various angles. Improvisation was a key element in the exploratory process. With the composer giving guidance as to the type of sound they required I had a starting point and a general sense of how such a sound might be produced. The
most revealing experience for me in terms of exploring new sounds was in Nomi Epstein’s piece, where I improvised air sounds on various parts of the flute. This particular session of improvisation and exploration was an area that I had previously not explored, and one that I realise holds a great deal of potential for further exploration and refinement.

Notation emerged as perhaps the most significant element of the entire collaborative process. Using flute-specific texts such as “The Other Flute” and “The Techniques of Flute Playing” was a valuable starting point for determining suitable notations; however, these resources often failed to offer practical solutions to our specific notational needs. The study of other exploratory flute works, such as those by Saairaho, Crumb and Sciarrino, as well as Brian Ferneyhough, Michael Smetanin and Karlheinz Stockhausen to name a few, gave insight into some of the composer-specific notations that have developed over the past half century. Some of these notations have since been appropriated by other composers in a similar way, but others have since evolved to indicate a very different sound (e.g. Crumb’s use of the “x” notehead indicated the sing-and-play technique, whereas in current notation practice it is used to indicate a key click). A consistent and standardized notation system for extended flute techniques has been developed to some extent, however with the ongoing expansion of the flute’s sound world these systems are in constant evolution.

Several performative elements were incorporated into the new works, including props, costumes, physical movements and various technological devices. Each of these was workshopped thoroughly in order to arrive at a comfortable solution that did not negatively impact on the performance outcome. Most of the performative elements had a very minimal effect on the resulting flute sound. The most significant effect was in Nomi Epstein’s work, where the live flute sound is amplified and processed through the looping pedal. This was not completely unexpected, and will undoubtedly be a different experience in each new venue that the work is performed in due to the different audio equipment used. A successful solution was achieved in most instances, but there are a few areas that require further development in order to be more fully and comfortably integrated into the performance. Notably these are the piezo-electric choker in Jenny Olivia Johnson’s work, the foot pedal to trigger QLab cues in Jen Wang’s work, and more confident choreography in Stephen Adams’ work.

These achievements have highlighted the substantial impact that my store of practical knowledge had on these collaborative flutist composer relationships. This is knowledge not only of a technical nature but also inherently creative, and had varying degrees of influence on the resulting works depending on the nature of each individual collaboration.
The following table summarises my contributions to each piece (Table 6.1):
<table>
<thead>
<tr>
<th>Category</th>
<th>Solution / Flutist's Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sounds</td>
<td>Singing and multiphonics (SA)</td>
</tr>
<tr>
<td>Whistle-tones and key clicks (SA)</td>
<td>Workshopped smooth transitions between sounds.</td>
</tr>
<tr>
<td>Klangfarben – sounds and notation (DB)</td>
<td>Came up with many ways of achieving the tone colour with a single accent.</td>
</tr>
<tr>
<td>Microtones – pitch (AC)</td>
<td>Developed the “toning tail”.</td>
</tr>
<tr>
<td>Microweaves – pitch and the note (DB)</td>
<td>Improvised with several note positions.</td>
</tr>
<tr>
<td>Microtones – pitch and the note (AC)</td>
<td>Developed the “toning tail”.</td>
</tr>
<tr>
<td>No Flute Tone notation (SA)</td>
<td>Worked on pitches of flute (NE)</td>
</tr>
<tr>
<td>No Flute Tone notation (SA)</td>
<td>Suggested a number of systems for phrasing that might work.</td>
</tr>
<tr>
<td>No Flute Tone notation (SA)</td>
<td>Suggested alternative versions of phrases that produced an unusual section of whistle tones.</td>
</tr>
<tr>
<td>No Flute Tone notation (SA)</td>
<td>Experimented with alternate fingerings suggested by Adams that produced an unusual section of whistle tones.</td>
</tr>
<tr>
<td>Rhythmic freedom notation (DB)</td>
<td>Worked with Barbeler to better understand the required edph and flow of phrases.</td>
</tr>
<tr>
<td>Rhythmic freedom notation (DB)</td>
<td>Worked out suitable fingering sequences, input into Bret Pimentel generator.</td>
</tr>
<tr>
<td>Rhythmic freedom notation (DB)</td>
<td>Formulated fingering chart for Cole’s microtonal scales.</td>
</tr>
<tr>
<td>No Flute Tone notation (SA)</td>
<td>Worked with Barbeler to better understand the required edph and flow of phrases.</td>
</tr>
<tr>
<td>No Flute Tone notation (SA)</td>
<td>Worked on pitches of flute (NE)</td>
</tr>
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</tr>
<tr>
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<td>Experimented with alternate fingerings suggested by Adams that produced an unusual section of whistle tones.</td>
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<td>Suggested alternative versions of phrases that produced an unusual section of whistle tones.</td>
</tr>
<tr>
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<td>Experimented with alternate fingerings suggested by Adams that produced an unusual section of whistle tones.</td>
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<td>Suggested alternative versions of phrases that produced an unusual section of whistle tones.</td>
</tr>
<tr>
<td>No Flute Tone notation (SA)</td>
<td>Experimented with alternate fingerings suggested by Adams that produced an unusual section of whistle tones.</td>
</tr>
</tbody>
</table>
Piezo-electric sensor (JOJ)

Made a chart of flute fingerings; suggested wearing around the neck as a choker.

Ensemble parts / QLab (JW)

Recorded seven ensemble parts in predetermined sections to create the ensemble backing track.

<table>
<thead>
<tr>
<th>Ensemble parts / QLab (JW)</th>
<th>Made a chart of flute fingerings; suggested wearing around the neck as a choker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Some composers approached our collaboration with more openness about their processes and ideas than others. In many ways this is understandable as composers generally are most accustomed to working in isolation from performers. The purpose of this study, however, was to offer composers the opportunity to use the specific skills and experiences of a flutist to help create a more exploratory work, and one that is better suited to the instrument. In terms of exploring new sounds, I was able to offer the greatest amount of input to the works of Stephen Adams and Timothy Tate. With notation I feel that Stephen Adams, Amanda Cole and Nomi Epstein were the most receptive to my suggestions. Fingerings were a major component of my contribution to Amanda Cole’s work, but also Nomi Epstein and Stephen Adams. Performative Elements were primarily explored in Jenny Olivia Johnson’s, Jen Wang’s and Damian Barbeler’s works. Overall it was the collaboration with Stephen Adams that offered me the opportunity to contribute to the greatest number of areas of the compositional process. Jenny Olivia Johnson’s work represented the fewest areas in number; however, the time invested in development of the piezoelectric sensor was substantial despite the fact that the choker configuration was not finalised in time for the premiere performance. The collaboration with Jen Wang included more discrete areas of collaboration than Johnson, but was not as extensive.

As a flutist and researcher I have discovered new and more open mindsets with which to approach new compositions and collaborative opportunities. I have gained more confidence in the value of my input as a performer, and feel that I can approach composers with more tangible experience and ideas as a result. I have developed a greater appreciation for and understanding of the capabilities of the flute, my ability to work through musical problems and find creative and appropriate solutions, my ability to communicate openly with composers, and most importantly the vast potential for new sounds and musical ideas for the flute. This research adds to the existing and increasing literature on performer composer collaboration and helps to forge a new research pathway that opens up the processes and exchanges between performer and composer to a new level.

Due to the nature of this project and its time constraints, word limit and methodologies, some of the works commissioned for this project remain incomplete or in need of further revision. In particular, there will be future amendments and enhancements to the following works:

**Damian Barbeler – Significant Other**

- Extend the work to realise a multi-movement, semi-theatrical concept
Amanda Cole – *Node*

- Complete the second movement (not included in this project)
- Further revise the existing movement
- Complete the fingering chart

Timothy Tate – *of memory, of desire*

- Revise the third movement

Nomi Epstein – *Structure for layered flute*

- Check that all fingerings are notated correctly

Jenny Olivia Johnson – *magnificent//breaking point*

- Devise a suitable choker to house the piezo-electric sensor

Being a relatively new area of academic research, many doors are as yet unopened in the field of performer composer collaboration. There are therefore several areas that are worthy of further research in the future. These include: evaluating flutist composer collaborations in greater depth, from sociological, psychological and musical perspectives; study of and possible solutions for the problems of notation in contemporary flute music; incorporating elements of technology into compositions for flute – as technology is continually advancing and changing, so research in this area would hold particularly strong potential into the future; flute works that include performative elements such as staging, props and prescribed physical gestures/movement. I am enormously grateful for the opportunity to have been the “Significant Other” in this research and hope that it inspires others to initiate collaborative projects in the future.
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APPENDIX 1: Full Scores of Commissioned Works

Stephen Adams, *Overpainting*

Damian Barbeler, *Significant Other*

Amanda Cole, *Node*

Timothy Tate, *of memory, of desire*

Nomi Epstein, *Structure for layered flute*

Jenny Olivia Johnson, *magnificent//breaking point*

Jen Wang, *for each person who gets stuck in time gets stuck alone*
### Performance directions and technical notes

**Staging** - Clearing of the throat is performed off-stage or with back to audience. Brushstroke after brush-stroke is performed close-up to the score moving back and forth in front of it. **Coda** is performed having stepped back from score.

**Tempo** is approximate and can be treated with some flexibility.

**Pauses** are intended to radically interrupt any sense of pulse/meter.

**Extended techniques** in this piece are employed for their 'papery' timbral qualities and to create layers of sounds.

**Microtonal tunings** below are intended as a rough guide to the player and should not be treated prescriptively.

**Vocalising** - Always use a neutral vowel (between 'oh', 'ooh' and a schwa). With no flute tone - sing directly into embouchure hole, covering the hole (square note-heads in flute part indicate fingering only). At the same time as flute tone - sing and blow, blending the two notes with regard to relative dynamic markings

**Fingerings - multiphonics (with microtonal tunings)**

<table>
<thead>
<tr>
<th>E1</th>
<th>F1</th>
<th>E2</th>
<th>F2</th>
<th>E3</th>
<th>F3</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="multiphonics" /></td>
<td><img src="image" alt="multiphonics" /></td>
<td><img src="image" alt="multiphonics" /></td>
<td><img src="image" alt="multiphonics" /></td>
<td><img src="image" alt="multiphonics" /></td>
<td><img src="image" alt="multiphonics" /></td>
</tr>
</tbody>
</table>

**Fingerings - individual microtonal tunings**

<table>
<thead>
<tr>
<th>E3</th>
<th>A3</th>
<th>A5</th>
<th>C1</th>
<th>D1</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="microtonal tunings" /></td>
<td><img src="image" alt="microtonal tunings" /></td>
<td><img src="image" alt="microtonal tunings" /></td>
<td><img src="image" alt="microtonal tunings" /></td>
<td><img src="image" alt="microtonal tunings" /></td>
</tr>
</tbody>
</table>

©Stephen Adams 2014
Overpainting
for flute

Clearing of the throat \( \uparrow \uparrow \uparrow \)

Brush-stroke after brush-stroke

Flute tone returns

\( \uparrow \uparrow \uparrow \)
©Stephen Adams 2014
random A-flats 1-5 (as above)
as long as possible
©Stephen Adams 2014
Coda $\pi \cdot 72$

$$\text{fl.}$$

$$\text{vox}$$

21 January 2014
Darlington

©Stephen Adams 2014
Damian Barbeler, *Significant Other*
Amanda Cole, *Node*

Flute Solo

**Node**

Movement No.2

Mysterioso
Molto vibr.

$q = 75$

Duration : 5'05"

© 2013

Amanda Cole (b.1979)

© 2013
Timothy Tate, *of memory, of desire*

Timothy **TATE**

*of memory, of desire*

*for solo flute*
Instrumentation

C flute (movement I & II)
Bass flute (movement III)

Duration: ca. 12 minutes

Performance Notes

Each movement is to be performed from one of three music stands in the form of a triangle. As each movement is played the performer should move around the music stands as indicated. The third movement, played from the base of the triangle, faces the audience so that the performer’s back is to the audience.

Movement I: The opening phrase should have a haunting quality. Ideas juxtapose one another in this movement and should be played accordingly e.g., bars 1 – 4 and 25 – 28. The opening phrase thematically dominates the subsequent movements.

Movement II: The opening phrase should be played quasi ‘adlib’ but still with a sense of metre. The use of blue note heads indicate the introduction of the second voice whilst the black note heads indicate the original theme which is slowly expanded through the movement. The red note heads indicate the third voice which only consists of underrones. The first voice should always be legato and thought of as complete phrase even when the second voice enters. The second voice should be short and punchy in almost all instances except where articulation suggests otherwise. Dynamic markings in brackets indicate the second voice. Dashed decrescendos indicate phrasing for the first voice. Generally the first and second voice are in opposition dynamically. The third voice, although fleeting in its appearance, should sound like previous the two voices have reached their critical mass with all the notes stacking vertically but with some instability.

Movement III: The flute and voice should be thought of as separate musical lines. Performing the movement facing away from the audience should make the voice seem disembodied. They only interact at the very end of the movement (bars 52 – 55). The vocal line will either sound an octave above or in the same octave as the bass flute depending on the performer’s vocal range. The nature of the writing for the Bass flute favours a very elusive tonal quality. The variety of ‘air sounds’ should be emphasised and dynamic markings taken to their extremes. In loud sections the flute should sound “explosive”.

Techniques
of memory, of desire

Flute

Not too free

Flying forward

Copyright © Timothy Tate 2014
Plucked from the air

\( \text{ca. } \delta = 70 \)

\( \delta = 84 \)

\( p \prec mp \ p \prec mp \succ p \ pp \prec p \ mm \succ p \)

molto rubato espressivo

ord.

\( \delta = 88 - 90 \)

\( \text{accel.} \)

\( \text{sim.} \)

\( \text{c.t.} \)
\textbf{Explosive, but laboured} \\
\textbf{$\bar{J} = 142$}

\textbf{senza tempo} \\
\textbf{$\bar{J} = 200$}
Veiled
\( \text{j} = 50 - 60 \)

Bass Flute

\[ \text{pp} \quad \text{sfz} \quad \text{pp} \quad \text{sfz} \quad \text{pp} \quad \text{sfz} \]

\[ \text{voice} \quad \text{pp} \quad \text{sfz} \quad \text{p} \quad \text{ff} \quad \text{pp} \quad \text{p} \quad \text{sfz} \quad \text{mf} \quad \text{f} \quad \text{mp} \]

\[ \text{accel.} \quad \text{j} = 60 \]

Shallow inhalation through the teeth across the flute. Non-pitched
Structure for layered flute is dedicated to and was commissioned by Janet McKay.

with gratitude

There are 9 sound types involved in the piece: Air Sound 1, Air Sound 2, Microtonal Trill, Multiphonic to Air, Multiphonic to single pitch, Tongue Ram, Melodic Fragment 1, Melodic Fragment 2, Melodic Fragment 3.

Sound types are notated in the attached score, while the structure of the piece is found in the attached structure diagram.

Air Sound 1 - With a very light and diffuse air flow, play a very quick tremolo air sound between the two fingerings. Allow the air sound to waver just a bit between pure air sound and air sound with a tiny bit of whistle in it. Each event should be one breath length and time between events should be a very slow inhale. Repeat for the duration indicated on the diagram.

Air Sound 2 - prerecorded prior to performance. With detached head joint of flute, cover the embouchure hole completely with mouth to produce air sound. use right hand palm to partially cover end of joint. remove palm from covering end of joint.

Microtonal Trill - very slow movement through microtonal variations of a pitch.

Multiphonic to Air - each multiphonic is sustained with diminuendo into an air sound.

Multiphonic to single pitch - each multiphonic is sustained and smoothly settles on any one single pitch within the multiphonic. Player chooses which pitch within the multiphonic to settle on, however the player should not always settle on the highest pitch, or always settle on the lowest pitch through the section. For example, for the first multiphonic, s/he may decide to settle on the lowest pitch (C#), then for the following multiphonic, the lowest note (E) should not be chosen to settle on, but instead either the middle or highest pitches of the chord.

Tongue Ram - should be produced every 8-15".

Melodic Fragment 1 - each note should be sustained for 4-8", and should be unconnected to the note which follows.

Melodic Fragment 2 - each note should be sustained for 4-8", and should be unconnected to the note which follows.

Melodic Fragment 3 - each note should be sustained for 4-8", and should be unconnected to the note which follows.

In the structure diagram, minutes are written across the bottom of each system. All sonic activity starts or stops on the minute, except for 11.15 which marks the end of a live playing tongue ram section.

The diagram should be followed precisely for durations of all sections leading up to the Melodic Fragments. However, each Melodic Fragment need not be the same duration, and does "not" need to follow the durations listed in the diagram. Each note should be sustained, but it is up to the performer just how long each pitch will last, and therefore how long each fragment lasts. Whenever the player finishes the Melodic Fragment section (1, 2 and 3), s/he will end the piece by playing 2 minutes of "Alternate between" (see diagram).

It is possible that the duration of each part (listed in the diagram above) may not allow the player to complete all of the events in a section (i.e. Microtonal Trill, Multiphonic to Air, Multiphonic to single pitch, and Tongue Ram sections). Each time the player returns to or continues to play events from a section, s/he should seek to play an event that has not yet been played (i.e. play the event that follows the last one s/he played), rather than beginning again at the first event of the written section.
The player should rest at each double bar in Microtonal Trill, Multiphonic to Air, and Multiphonic to single pitch sections.

In any section with alternation between 2 or more sound types, the player should seek to space out sounds and allow plenty of silence between events.

Any colored rectangle represents a live playing technique.

- A colored rectangle with thick black line drawn below, indicates that the live sound is recorded into the looper.
- A colored rectangle with gradient color, indicates that the recorded sound should be played back as a loop.

indicates an alternation between 2 types of sounds.

indicates an alternation between 3 types of sounds.
Melodic Fragment 1
Tongue ram

Melodic Fragment 2
Microtonal Trill

Prerecorded Air Sound 2

Alternate Tongue Ram/Multiphonic to Single Pitch

Multiphonic to Air

Tongue ram

(T cont.)

Multiphonic to single pitch

Alternate between

Prerecorded Air Sound 2

Air Sound

Microtonal Trill

Melodic Fragment 3

Melodic Fragment 2

Melodic Fragment 1

Alternate between

Microtonal Triller

Tongue ram
Structure for layered flute
for Janet McKay

Air Sound 1

| Blow through a detached head joint. |
| Cover the embouchure hole entirely with mouth. |

Air Sound 2

© 2014 by Nomi Epstein
Microtonal Trill

\[ \text{Microtonal Trill} \]

\[ \text{Microtonal Trill} \]

\[ \text{Microtonal Trill} \]

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\[ \text{Microtonal Trill} \]

\[ \text{Microtonal Trill} \]
Multiphonic to Air

\[ \frac{KU}{(p)} \]

\[ \frac{LJ}{(p)} \]

\[ \frac{bk}{(p)} \]
Multiphonic to single pitch

(Any single pitch within the multiphonic)
Tongue Ram

Melodic Fragments

1. slow and airy

2. slow and airy

3. slow and airy
Jenny Olivia Johnson, *magnificent//breaking point*

**magnificent // breaking point**

*a companion piece to “beautiful/fragment” (2007) for solo flute, electronics, video, and piezoelectric sensor*

*composed for janet mckay*

*jenny olivia johnson (2014)*
program note

“magnificent // breaking point,” for flute, live electronics, piezoelectric choker (a neck sensor that responds to a performer’s breath patterns), and video stills, was inspired by obsessive internet fan fiction written by fans of 80s sitcoms. I am particularly inspired by the ways in which some of these fans are clearly sublimating the emotional difficulties they experience “IRL” (“in real life”) through the sitcom characters with whom they identify, thus making far more complex the simplified, easily solvable story-lines of half-hour TV plots. I am also fascinated by the ways in which the simple, visually saturated and sometimes audibly distorted stories of TV provide comforting, repetitive refuge for legions of people suffering in silence, and in the ways in which these people offer their literary expansions of these worlds to other fans as tributes, gifts, and artifacts of mutual understanding.

My musical and multi-media response to this phenomenon—written as a companion piece to “beautiful//fragment” (2007), my first solo flute/electronics commission from flutist Janet McKay—thus relies on the additive layering of simplistic flute lines and gestures, and ends with a highly dramatic yet largely unintelligible vocal soliloquy for the flutist, whispered and shouted through the instrument, and blended with thick delay lines, distorted renderings of the TV show’s soundtracks, and emotive images (controlled by the piezo-choker) that also seek to tell the untold stories of those who once watched these shows in silent desperation.

Hardware requirements:
- laptop able to run the latest version of Max Runtime
- external audio interface with two inputs (XLR for microphone, TS/TRS for choker)
- microphone and boom stand to amplify live flute
- stereo powered speaker system or similar PA for amplification/electronics playback
- piezoelectric choker (available from the composer)
- MIDI USB footswitch (one channel only, available from the composer)
- projector and screen for live video
- small old-fashioned TV set able to be turned on to a static channel (volume turned all the way down) - optional but desired

Software requirements:
- “magnificent // breaking point” .app (available from the composer)

Stage setup:
- Piece should be played in the dark; flutist should use a stand light. Flutist should stand in front of the screen, casting a shadow against it. Next to the flutist, an old-fashioned TV set should be set up on a small table or stool, and turned on to a static channel (no sound). This TV set should be on constantly throughout the piece; the flutist should turn it off at the end.
magnificent // breaking point

by jenny obula johnson (2014)

After that, wait exactly 10 seconds, then enter

a difficult, broken narrative begins....
with intensity, with a fervent desire to communicate, yet fighting through noise

back to fl. the going normally

[Music notation with instructions for performance]
Jen Wang, for each person who gets stuck in time gets stuck alone

Transposing Score

—for each person who gets stuck in time gets stuck alone

for Janet McKay

Jen Wang

Rubato

Play the given gestures in any order; repeat gestures as desired. Flute 1 continues to Rehearsal A after about 40". Flutes 2-8 repeat given gestures as needed. When Flute 1 continues to Rehearsal A, finish your current gesture, then continue as well.
From D to E, gradually accelerate while decreasing the line dynamic, keeping attacks loud—attacks effectively become increasingly pronounced accents.

Do not attempt to match the player who shares your line rhythmically; the overall effect should be that of the lines converging as they grow more energetic.

Play m. 54 by drawing material from previous and/or following measures.

> 3

Sim. 3

3

= 152-180

10-15”

Tutti: Repeat measure for 10-15”, beginning on lower pitches. During the repetition, each flute drop out and switch to bass flute, re-entering on upper pitch (no change in sounding pitch). When all have switched instruments, Flute 1 gives cue to continue. At cue, Flutes 2-8 finish current repetition and continue.
Flute 1: repeat until all have arrived at m. 95, then drop out and take Piccolo. Cue continuation to m. 95.

Flutes 2-8: repeat until cued by Flute 1, then finish current measure and go directly to m. 101.

From this point to the end of the piece, all parts continue at their own rate.
APPENDIX 2: Biographies of Commissioned Composers

AUSTRALIAN COMPOSERS

STEPHEN ADAMS
Stephen Adams’s work spans concert scores, song writing, group and solo improvisation, music theatre, and studio and field recording-based sound pieces. In the past decade he has created scores for Sydney Chamber Choir, The Song Company, Sydney Conservatorium Chamber Choir, Haleyon, and Chronology Arts, and audio works for The Opera Project and Radio National’s The Night Air program. His interest in the voice, raw, or filtered through diverse resonating objects, media and traditions, feeds his on-going collaborations with flautist Janet McKay on extended flute techniques, on re-imagining the song recital in ‘A Body of Water’ with mezzo Karen Cummings, and performative studio interpretations of writer Jen Craig’s expanding micro-story blog, ‘Absurd Enticements’. Stephen is also active as a specialist radio and web music producer with ABC Classic FM’s Australian Music Unit, including presenting the weekly New Waves podcast and producing content for the New Music Up Late program.

DAMIAN BARBELER
Damian Barbeler’s award-winning compositions have been performed and broadcast around the world, sung and played by leading Australian and international soloists and ensembles. He is widely recognised for his highly idiosyncratic compositional style and especially his lush, emotional sound worlds inspired by textures and patterns from nature. He is an enthusiastic collaborator often working with creative types from diverse fields like architecture, software design, media arts, dance and more. A distinctive part of Damian’s expertise has been his ability to inspire amateur and especially young musicians to excel in professional settings. His wide-ranging career has taken him to a diverse range of places from famous concert halls to biscuit factories, boardrooms and far-flung parts of regional Australia. Acting out the precept that an artist should also teach, Damian is just as happy in the exquisite, rarefied atmosphere of art music, as he is in the invigorating world of beginners, students and music-loving amateurs.

AMANDA COLE
Amanda Cole is a Sydney based composer who writes instrumental and electronic New Music. Her work has been commissioned, performed and recorded by Australian and International ensembles including Synergy Percussion, Ensemble Offspring and Kroumata (Sweden). Amanda’s compositions feature microtonal pitch structures, relationships between tuning and timbre, fusions
of electronic and acoustic timbres and the use of audible interference beats. Her composition ‘Vibraphone Theories’ for vibraphone and sequenced sine tone interference beats was selected for performance in the 2009 International Society of Contemporary Music (ISCM) festival in Sweden. Her electronic music composition ‘Glisten’ was included in the International Society of Contemporary Music (ISCM) festival in New York in 2010. In 2012 her percussion quartet ‘Intermetallic’ was premiered by Synergy Percussion as part of the Aurora Festival at Casuvala Powerhouse. In 2013, she was awarded an Australia Council of the Arts ‘Creative Australia Fellowship’ to complete a program of interdisciplinary projects combining a range of artforms with music.

TIMOTHY TATE
Born in the United Kingdom and immigrating to Australia early in life, Timothy Tate is a composer and performer whose music has been performed and commissioned by leading performers and ensembles across Australia including: Adelaide Symphony Orchestra, Alpha Crusis Ensemble, The Badinerie Players, Chronology Arts, Sarah Curro, The Song Company, Janet McKay and the Best of Brass Quintet. Timothy is a graduate of the Queensland Conservatorium of Music where he studied composition with Gerard Brophy, receiving a Bachelor of Music with First Class Honours in Composition and both the Silver Harris and Jeff Peck Composition Prize and the Alan Lane Composition Prize. Currently Timothy is undertaking postgraduate study in viola with David Deacon at the Queensland Conservatorium of Music and will be moving to London to undertake a Master of Music in Composition at the Royal Academy of Music later in the year.

AMERICAN COMPOSERS

NOMI EPSTEIN
Nomi Epstein, D.M.A, is a Chicago-based composer, curator, performer and music educator. Her compositions center around her interest in sonic fragility, where structure arises out of textural subtleties. Her music has been performed throughout the US, Europe, and Asia by such artists as ICE, Ensemble SurPlus, Mivos Quartet, Wet Ink, Dal Niente, Noble Fowl Trio, Quince Vocal Ensemble, Rhymes With Opera, Seth Josel, and Eliza Garth, and at festivals such as Ostrava Days, Huddersfield Contemporary Music Festival, Darmstadt, Bang on a Can, and Akademie Schloss Solitude. Epstein is an active and passionate curator and producer, founding and leading a.pe.ri.od.ic, the critically acclaimed experimental music performance collective devoted to notated, acoustic, post-Cagean experimental music. In 2012, she curated and produced the 5-concert John Cage centennial festival in Chicago involving performers, sound artists, dancers, and multi-media
artists from around the Midwest. As an educator, she has served on the faculties of the University of Illinois at Chicago, Northwestern, and Roosevelt Universities. She is currently head of theory at the British School and instructor of theory, composition and aural skills at DePaul. Epstein holds degrees from Columbia University, New England Conservatory, and Northwestern University where her principal teachers included Fred Lerdahl, Michael Gandolfi, Marti Epstein, Amy Williams, Jay Alan Yim, and Augusta Read Thomas.

JENNY OLIVIA JOHNSON
Composer/scholar Jenny Olivia Johnson was born in Santa Monica and raised in Claremont, CA. At 18 she moved to New York City to attend Barnard College, and later earned a Masters in Composition at Manhattan School of Music (2002) and a Ph.D. in Music at New York University (2009). She is currently an Assistant Professor of Music at Wellesley College, where she teaches courses in composition, theory, computer music, and music and philosophy. Her music ranges from compressed electronic operas and epic pop songs to abstract chamber works, multi-media meditations using amplified instruments and video, and, more recently, installation works involving interactive sound and lighting. Jenny’s academic work, which focuses on musical synaesthesia, acoustic memory, and childhood trauma, has been published in The Transcultural Music Review and the academic journal Women and Music. Jenny’s honors and awards include the NYU Dean’s Dissertation Fellowship (2008-09), an ASCAP Morton Gould Young Composer Award (2006), the Prix de Composition from the Conservatoire Americain de Fontainebleau (2004), and an Honorable Mention for the 2007 Lise Waxer Prize from the Society for Ethnomusicology. She has held artist residencies at the Atlantic Center for the Arts (2005, 2008) and the Banff Centre for the Arts (2008), and was also a finalist for the 2008 Gaudeamus Prize.

JEN WANG
Jen Wang’s work has been featured at the Darmstadt Summer Courses, the Wellesley Composers Conference, the Other Minds Festival (Composer Fellowship program), the Bang On A Can Summer Institute, the International Computer Music Conference, the California EAR Unit Residency at Arcosanti, and the MusicX Festival. Her past commissions include works for Talea, Rootstock, Left Coast Chamber Ensemble, the Iktus Percussion Quartet, the UC Berkeley Chamber Chorus, flutist Janet McKay, and carillonist Tiffany Ng; she has also been performed by Gloria Cheng, Lucy Shelton, the California EAR Unit, Onix Ensemble, the Eco Ensemble, and the percussion ensembles of Mannes College and the University of California, Davis. Jen is the recipient of a Staubach Honorarium from the Internationales Musikinstitut Darmstadt. She has held residencies at the MacDowell Colony, where she was a National Endowment for the Arts Fellow,
and the Millay Colony of the Arts, where she was a Robert W. Simpson Fellow. She is a graduate of the University of Cincinnati College-Conservatory of Music (M.M.) and Carleton College (B.A.). Currently, Jen is a doctoral candidate at the University of California, Berkeley, where she has been awarded the Eisner Award in Music, the Nicola de Lorenzo Prize, and the William V. Power Graduate Award.
APPENDIX 3: Recital Programs

RECITAL 1: Where Time Suffers
Nickson Room, University of Queensland
December 1, 2012
Soloist: Janet McKay (flute)
Associate artists: Paul Ballam-Cross (guitar), Nicholas Harmsen (clarinet), Graeme Jennings (violin), Alex Raineri (piano)

Reza Vali    Song (1987)
            solo flute
Salvatore Sciarrino    Esplorazione del Bianco II (1986)
            flute, bass clarinet, violin, guitar
            solo piccolo
George Crumb    Eleven Echoes of Autumn, 1965 (1966)
            alto flute, clarinet, violin, piano
Michael Smetanin    Nontiscordardime I, II, III (1991-3)
            solo bass flute, piccolo, flute

RECITAL 2: Significant Other
Shopfront, Judith Wright Centre of Contemporary Arts
February 6, 2014
Soloist: Janet McKay (flute)

            Solo flute
            Solo flute
Timothy Tate    of memory, of desire (2014) *World Premiere
            Solo flute, bass flute
Damian Barbeler    Significant Other (2013) *World Premiere
            Solo flute with backing track
RECITAL 3: Dreams, Layers, Obsessions
Shopfront, Judith Wright Centre of Contemporary Arts
March 12, 2015
Soloist: Janet McKay (flute)

Jen Wang 

*for each person who gets stuck in time gets stuck alone* (2015) *World Premiere*
Solo alto flute, bass flute, piccolo with backing track

Nomi Epstein

*Structure for layered flute* (2014) *World Premiere*
Solo flute with looping pedal

Jenny Olivia Johnson

*magnificent//breaking point* (2014) *World Premiere*
Solo flute with electronics, video and piezoelectric sensor