Escapee Gloss:

A Symphony of Polymedia

by

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M.Mus (UMelb)

Folder 1 - Exegesis

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Signed ________________________

Brigid Burke Rigo
Abstract

Escapee Gloss: A Symphony of Polymedia has explored the methods and meaning of polymedia processes through the composition and subsequent performance of a folio of interactive works, particularly a large seven-movement piece, *Escapee Gloss*. The creative work contained in the folio has been documented in musical and graphic scores and polymedia recordings, including my own performance as a clarinetist and polymedia artist and is contextualised and analysed in the accompanying exegesis.

The feature work of the folio, *Escapee Gloss*, embodies a personal creative response to some old, used clarinets, irreparable and unplayable, and sundry discarded clarinet parts. It integrates these physically and emotionally into experiments with sound, art works, layering of light, reflections and manipulated art work and music in performance through multi-channel audio and video mixing. The composition combines digitally processed clarinet sounds, live acoustic instruments (flute, Eb/Bb and bass clarinets, double bass and piano), live processed acoustic environmental sounds, props and projections. These components reinvent the disintegrated clarinets through video samples and stills of broken clarinet parts, grey pencil drawings, water footage and Japanese artwork. *Escapee Gloss* explores the possibilities of layering and reflections of light and texture in images and sound and deliberately referencing paint textures in the titles of the movements.
The composition folio contains five other works: *Hats, A Snapper is a Feast, Grainger’s Bridge, A Song is Here and Blooms and Death*. Each of these works present a single thematic idea which is realised in performance with acoustic and electronic art music, paintings, mixed media works on paper and wood, line drawings of notations, live interactive performance, traditional notation, improvisation and videos. In each case, polymedia processes and multi-art forms cohere in live performance through a deliberate strategy of layering to represent the complexity and depth of the images we see and of the sounds we hear.
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**Folder 2 – Folio of polymedia compositions – Scores, Artworks, Music and Videos**

The compositions should be listened to and watched first as this is the crux of my work.

The respective weighting is 80% folio 20% exegesis.

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Preface

I am a polymedia artist who is passionate and excited by the desire to create an art form that shows all my creative potential. The two folders in this doctoral submission contain two hours of original music which include scores, electronic media and computer-facilitated interactivity plus all associated art work – silk-screens, pen and ink drawings, acrylics and mixed media on canvas and wood, water colours, glass plates, mosaics, photography and all video realizations – animations and recordings. This is all original work created by myself. Throughout my professional career I have been driven by the need to explore new synergies between the visual and musical arts. All performances and creative outputs that are included in this doctoral research submission are ascribed under the professional name of the candidate, Brigid Burke.

These interests inform my compositional work, which is grounded in improvisation and uses various ancillary creative practices drawn from the visual arts. My composing also relies heavily on my performing skills and practices. Along with a strong grounding in the classical canon, my instrumental style includes many extended techniques, some from accepted practice and many of that I have developed myself.

As a researcher, discussing my creative practice presents me with some challenges. I am a performer, composer, visual artist, music technologist and media artist and how I combine these various components into a unique composition-performance practice is the subject of this exegesis.
I was born in Melbourne in 1960 into a musical family of three sisters and one brother who are all practicing artists today. My mother, father and grandmother were abundant in their encouragement from an early age for my many musical and artistic pursuits. It all commenced for me with piano lessons at four years of age followed by clarinet lessons at thirteen. Although by the time I was nineteen I had gained diplomas in the flute and saxophone, the clarinet remained my primary instrument. During this time, family and mentors also supported art and composition in my early teens with intervals of private instruction.

I moved to Canberra in 1981 to study at the Australian National University School of Music under Donald Westlake and Dr. Peter Clinch. I majored in clarinet with electives in saxophone and in printmaking at the Canberra School of Art. During this time, I developed a greater passion for composition, studying that as a second major under Larry Sitsky and Dan Senn.

After ANU, I pursued further studies in both performance and composition with Gerard F. Errante at the University of Virginia in the USA, with attendance at contemporary clarinet performance workshops. This was followed by workshops in advanced composition and multimedia techniques with Warren Burt at his Melbourne Studios as well as workshops in extended clarinet, improvisation and composition under William O. Smith (also known as Bill Smith, a permanent member of the Dave Brubeck quartet for many years).

In 1997, I began a Master of Music in Composition at the University of Melbourne under the
supervision of Dr. Alistair Riddell and Prof. Brenton Broadstock which I completed in 1999.

I will describe and analyze my compositional method, which I call *A Symphony of Polymedia*. In its essence, this method involves capturing old art forms, creating new technologies and abstract themes through sound and visuals and combining them in such a way as to create a new art form.

The present research project explores the methods and meaning of a major seven-movement composition, *Escapee Gloss*, and five related, interactive performance compositions, *Hats, A Snapper is a Feast, Grainger’s Bridge, A Song is Here* and *Blooms and Death*. The submission is presented as a folio of compositions, scores and polymedia recordings accompanied by an exegesis that contextualizes *Escapee Gloss*. The respective weighting of the components is 80% folio and 20% exegesis.

The other works in the folio also illustrate polymedia processes, including acoustic notated compositions, electronic art music, paintings, mixed media works on paper and wood, line drawings of notations, live interactive performance, traditional notation, improvisation and videos.

The exegesis aims to clarify how all the multi-art processes used in live performance result in a cohesive composition. Chapter 3 in particular will detail how all facets of composition and performance are controlled by a single idea.
Playing the clarinet has always been at the centre of all my creative endeavors, and the clarinet is featured prominently in all these compositions. The audible and visual art have both developed from the pursuit of virtuosity on the clarinet and the extension of its palette in performance. This pursuit has always been projected into my compositional ideas.

I have analyzed in detail the compositional techniques of each piece and each movement of *Escapee Gloss*, breaking down each separate movement and clarifying its component parts in order to elucidate the creative process. Also showing such formal ideas as the process of staging each of the movements, and the logistics and components of media working cohesively as a whole. *Escapee Gloss: A Symphony of Polymedia* combines various musical styles with the visual outcomes at one creative performance moment, extending my palette of performance concepts. Improvisation as well plays an important role in most of the compositions. Many of my works call for sections of improvisation, which are highly graphic and explanatory in their instructions for the performer, and most of the notated music retains an improvisatory feel. Through technical investigation into microtonal clarinet, voice/text and percussive sounds with electronic elements and interactive video devices both in real time and pre-recorded; I have extended my own intuitive thinking in the creative process.

*Escapee Gloss* presents acoustic sound, visuals and electronics equally and the balance and
equality of sound and visual is aiming to be cohesive and to make memorable musical statements.

From the outset of my career, I have been marrying visual and aural techniques. The musical and visual elements are as two separate, but equal, streams in Escapee Gloss.

In brief, this PhD explores the crossover of composition and visual art as equal identities, answering two questions about the creation and performance of these compositions. How was polymedia integrated in the process of the composition? And, how will polymedia be integrated in the process of performance?
Contents of DVD of Videos and PDFs

Folio Scores & Recordings

Escape Gloss (2009 – 2014)

Duration – 57 minutes

Movement 1 – Shine – 10 minutes

Brigid Burke – Bb clarinet and video

Recorded by Glen Bardwell, 24th April 2013 Ian Roach Hall, Scotch College, Melbourne, Australia

Video realized by Brigid Burke, Studio, Melbourne, Australia

Movement 2 – Scintillating – 6 minutes

Acousmatic Sound and Video realized by Brigid Burke, Studio, Melbourne, Australia

Source sounds: Recorded by Glen Bardwell, 24th April 2013 Ian Roach Hall Scotch College, Melbourne, Australia

Brigid Burke – Bb clarinet, Grania Burke – Bass clarinet

Movement 3 – Silk – 13 minutes

Brigid Burke – Bass clarinet, electronics and video

Grania Burke – Eb/Bass clarinet

Megan Kenny – Flute

David McNicol – Piano
Recorded by Glen Bardwell, 24th April 2013 Ian Roach Hall, Scotch College, Melbourne, Australia

Video realized by Brigid Burke, Studio, Melbourne, Australia

Movement 4 – *Pantone* – 8 minutes 55 seconds

Brigid Burke – Bass clarinet, electronics and video

Ian Wilmot – Double Bass

Recorded by Glen Bardwell, 24th April 2013 Ian Roach Hall, Scotch College, Melbourne, Australia

Video realized by Brigid Burke, Studio, Melbourne, Australia

Movement 5 – *Matte* – 8 minutes

Acousmatic Sound and Video realized by Brigid Burke, Studio, Melbourne, Australia

Movement 6 – *Sheen* – 11 minutes 6 Seconds

Brigid Burke – Bass clarinet, electronics and video

Recorded by Glen Bardwell, 24th April 2013 Ian Roach Hall, Scotch College, Melbourne, Australia

Video realized by Brigid Burke, Studio, Melbourne, Australia
Movement 7 – *Gloss* – 13 minutes 12 seconds

Brigid Burke – Bb/Bass clarinet, electronics and video

Grania Burke – Eb/Bass clarinet

Megan Kenny – Flute

Ian Wilmot – Double Bass

David McNicol – Piano

Recorded by Glen Bardwell, 24th April 2013 Ian Roach Hall, Scotch College, Melbourne, Australia

Video realized by Brigid Burke, Studio, Melbourne, Australia

*Hats* (2009) – 9 minutes 25 seconds

Brigid Burke – Bb/Bass clarinet, electronics and video

Recorded by Brigid Burke, Studio, Melbourne, Australia

*A Snapper is a Feast* (2010) – 8 minutes 34 seconds

Brigid Burke – Bb clarinet, electronics and video

Recorded by Brigid Burke, Studio, Melbourne, Australia

*Blooms and Death* (2011) – 31 minutes

*Prelude* – (4 minutes 40 seconds)

Brigid Burke – Bb clarinet and video

Recorded by ABC Classic FM, March 6th 2011, Recital Hall,
Conservatorium of Music, Hobart, Conservatorium of Music, Hobart, Australia

Blooms and Death 1 (7 minutes 25 seconds)

Brigid Burke – Bb clarinet fan and 2 video projections

David Mc Nicol – Piano

Recorded by ABC Classic FM, March 6th 2011, Recital Hall,

Conservatorium of Music, Hobart, Conservatorium of Music, Hobart, Australia

Blooms and Death 2 (8 minutes 19 seconds)

Brigid Burke – Bb clarinet, electronic, fan and 2 video projections

David Mc Nicol – Piano

Recorded by ABC Classic FM, March 6th 2011, Recital Hall,

Conservatorium of Music, Hobart, Conservatorium of Music, Hobart, Australia

Interlude (3 minutes 22 seconds)

Brigid Burke – Bb clarinet, electronics, video projections

Recorded September 16th 2011, Recital Hall, Conservatorium of Music,

Hobart, Conservatorium of Music, Hobart Australia

Blooms and Death 3 (8 minutes 19 seconds)

Brigid Burke – Bb clarinet, electronics, dead rose petals and video projections.

Recorded September 16th 2011, Recital Hall, Conservatorium of Music,
Grainger’s Bridge (2012) – 8 minutes 16 seconds

Brigid Burke – Bass clarinet, electronics and video

Recorded September 26th 2012, Recital Hall, Conservatorium of Music, Hobart, Conservatorium of Music, Hobart, Australia

A Song is Here (2010) 11 minutes 5 seconds

Brigid Burke – Bb clarinet, electronics and video

Grania Burke – Eb/Bass clarinet

Recorded by Glen Bardwell, 24th April 2013 Ian Roach Hall, Scotch College, Melbourne, Australia

Video realized by Brigid Burke, Studio, Melbourne, Australia
Chapter 1 – Introduction

The tranquility and peace that a scholar needs is something as sweet and exhilarating as love. Unspeakable joys are showered on us by the exertion of our mental faculties; the quest of ideas and the tranquil contemplation of knowledge; delights indescribable, because purely intellectual and impalpable to our senses.¹

Honoré De Balzac

The Ideas behind Escapee Gloss

The initial idea for Escapee Gloss came to me when I was given 32 old, used clarinets, irreparable and unplayable, from Kilvington Grammar School in Ormond, Melbourne. Then Wesley College in Prahran said they had a drawer of old clarinet parts that had been sitting there since 1930. These inoperable instruments became the inspiration and foundation of Escapee Gloss, a seven-movement sound art composition.

The subtitle of Escapee Gloss is A Symphony of Polymedia. Polymedia is an unusual term and might be seen as a synonym for multimedia, so my use of the term needs explanation. It is, of course, like multimedia in that it refers to using several different media simultaneously. But, whereas multimedia expresses the simple fact of presence, polymedia, to my mind, expresses a sense of unity, too a sense that this mélange of media works towards a common

¹Honore de Balzac, The Magic Skin. Ellen Marriage (Translator), Clara Bell (Translator) (part of the Etudes) philosophiques (1831) http://quotes.dictionary.com/the_tranquility_and_peace_that_a_scholar_needs
goal and makes up a single coherent work of art. This is why I have also used the word symphony, which implies unity in diversity. Whether one takes the word symphony with the Greek translation (symphonia), or Mahler’s idea about the symphony or that of Sibelius, a symphony is something that melds many diverse voices and many diverse elements into a unified whole. A polymedia symphonist does that and melds many other elements as well. Images, video, graphic scores, extended techniques, fragments of other works, even using the video as a moving score for improvisation, all working together, ideally, to express a single idea, or, better, to express the diversity and multiplicity of a single idea.

Roger Alsop\(^2\), whose research is mainly into cross art forms, defines the term thus:

"Poly-Media" is a term I have chosen to create a distinction from "Multi-Media". Here poly-media art making is considered as a collaborative system in which all collaborators, such as composers, video artists, choreographers, actors and writers contribute to the final product by interacting collaboratively throughout the development process to the eventual presentation of the work. This system is distinct from a "multi-media" approach where the different aspects may be developed independently and marshaled towards the end of the development process.

My practice of polymedia differs from Roger Alsop in that me the performer, composer and visual artist creates the identity of the whole, integrating acoustic sound, live audio mulching and acousmatic sound, all composed for reception via multiple loudspeakers, live video mixing and fixed video during performance.

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In the context of polymedia, *Escapee Gloss* transmutes the energy produced by music into a visual form, recognisable to the eye and exposing the inner necessity of the artist to explore the values both fragile and strong, common to both sonic and visual worlds. The different sensory worlds created in each movement are intended to encourage the listener to think about how music and visuals complement each other, and gain new strength from their combination.

In Italo Calvino's *Visibility*, I found this description of his creative process that is uncannily similar to my own process in making the visual aspects of *Escapee Gloss*.

The first thing that comes to my mind is an image that for some reason strikes me as charged with meaning, even if I cannot formulate this meaning in discursive or conceptual terms. As soon as the image has become sufficiently clear in my mind, I set about developing it into a story, or better yet, it is the images themselves that develop their own implicit potentialities, the story they carry within them. Around each image others come into being, forming a field of analogies, symmetries, confrontations. Into the organization of this material which is no longer purely visual but also conceptual, their now enters my deliberate intent to give order and sense to the development of the story.³

Indeed, it not only expresses very much my own experience in making *Escapee Gloss*, but also articulates how the piece works in performance, especially the description of how other images come into being, “forming a field of analogies, symmetries, confrontations.”

---

Each movement of *Escapee Gloss* is named after a veneer of paint and explores avenues of texture, reflection, layers, light, colour, timbre, structure and the interaction of different media and acoustic sound and space. *Shine, Scintillating, Gloss, Pantone, Matte, Sheen, Silk*. Each name evokes a different thought or abstract meaning that I associate with the clarinet. The musical/visual idea each veneer evokes is a different texture, literally, as each veneer has its own individual attributes.

Each movement of this composition explores a different disembodiment of the clarinet, from the plain presentation of instrument pieces in *Sheen* and the glimpses of clarinet parts in *Silk* to the kaleidoscope of sound and visuals in *Pantone*, in which the clarinet, sound and visuals both is not recognizable. And, in *Gloss*, for a further extreme, the exploration has been extended into different sound worlds and visual layers using electronics and other instruments.
Escapee Gloss: A symphony of polymedia in seven movements

Movement 1 – *Shine*

For Solo Bb Clarinet and Visuals

*Shine* explores a palette of extended clarinet techniques, focusing particularly on breath and timbre. The pitch organization is drawn from a twelve-tone spiral with a converging and diverging whole-tone scale. The clarinet part is also scored in graphic notation that indicates the contour and duration for use of the scale throughout the piece. The visual elements consist of delicate lines and bubbles crossing between greys, blues and sepia gradations. These intersect with the timbres of the clarinet part and the angular contours of the musical phrases.

Figure 1.1 Brigid Burke *Shine No 10* (still image)
**Movement 2 – Scintillating**

For Electronics and visuals

*Scintillating* was inspired by portraits of two clarinetists, one of myself and the other of my sister, Grania. The portraits have been placed side by side as the opening visual in the film, as if in conversation (See Figure 1.2 and 1.3).

*Scintillating* began as a fully notated score for Bb clarinet and bass clarinet that was then transformed into an acousmatic composition through filters, fragmentation, rhythmic manipulations, layering and visual elements. The colors and texture are bold and simple as is the relentless pulse, two strong characters, forever voicing their intention, creating at times anguish and stimulation.

**Figure 1.2** Brigid Burke *Self Portrait*  
**Figure 1.3** Brigid Burke *Portrait of Grania*
Movement 3 – Silk

For Bass/Eb clarinet, bass clarinet/voice, flute/voice, prepared piano, electronics and visuals.

As my intimate thoughts of how I feel in the process of creation are usually not verbalized but expressed in music and visuals, for this doctoral research project I have written Silk, which is made up of random verbalizations about my art. Silk is dark and joyous with unexpected “circus” moments. It contextualizes thoughts into an elaborate score with vibrant interactions of different mediums of sound, performance and visuals.

Silk is a strong, soft and lustrous fabric of melodic lines and text combined with natural colours of red, blue and ochre. The interweaving of the melodic line, textures, timbres and refraction of light creates the feel of smooth textures. The silk screenings of text, clarinet parts and lines superimposed create this depth in the visuals and music as seen in Figure 1.4.
Movement 4 – *Pantone*

For Bass clarinet, double bass, electronics and visuals.

The finished video is the actual score. The performers react to the moving images to create the audio. This is an interactive electronic audio performance that includes spatialized sound and live visual elements. The images of *Pantone* are an ever-dynamic kaleidoscope, interrupted by gentle water moving through the seascape of the glass plate as seen in figure 1.5. The audio from the bass clarinet, double bass and sampled water electronics makes a subtle counter-point that punctuates and accentuates these delicate moving images, creating depth and interesting nuances.
Figure 1.5 Brigid Burke Glass plate with kaleidoscope

Movement 5 – Matte

For Visuals and electronics.

Matte was inspired by the soft environmental soundscapes of rainforests. The clarinet produces wind sounds throughout. The clicking of clarinet keys, percussive cymbal and bowed vibraphone metallic sounds mimic the sounds of rain. This was then visualized in the artwork of Matte using round pieces of coloured glass, small broken clarinet parts and both wooden and silver keys, which were moved through water in a glass bowl. These images were combined with a series of blue mixed-media works and coloured pencil drawings on
paper formed in the shapes of droplets, a series of squiggle-based mixed media works using acrylic paint, pen and ink and charcoal works on paper which were then photographed as seen in figure 1.6.

Figure 1.6 Brigid Burke Matte, Glass plate with kaleidoscope

Movement 6 – Sheen

For Bass clarinet, live electronics/laptop and live feed and pre-recorded video projection.

Sheen is an improvised quartet for clarinet and real-time audio mulching with live video feed and prerecorded video. Sheen has an intrinsic glistening quality and the keys of the clarinet are the focal point for this shining and resplendent movement as seen in Figure 1.7.
Microphones and a laptop are used to control the synthesis of acoustic material sampled during the performance. The live clarinet interacts with these visual components: a camera filming a bowl of water filled with clarinet parts, another one filming the fingers and keys of the bass clarinet and a prerecorded version of clarinet parts on video that has already been processed. The bubbles and water movement are controlled by an aquatic pump. A pulse is created through such effects as strobes and finger movements from the prerecorded image and live feed of the bass clarinet.

All audio processing is done with Audio Mulch, including the live acoustic bass clarinet manipulated during performance.

Figure 1.7 Brigid Burke Sheen, Bent Clarinet

For Electronics, Bb clarinet/bass Clarinet, Eb clarinet/bass clarinet, flute/pic, piano, double bass and visuals.

1. Bb clarinet, bass clarinet, flute, piano and electronics
2. Electronics
3. Bb clarinet, flute, double bass and electronics
4. Bass clarinet, piano, electronics and flute
5. Electronics
6. Piano, double bass and electronics
7. Bass clarinet, Bb clarinet, double bass, flute and electronics
8. Eb clarinet, bass clarinet, flute, piano, double bass and electronics
9. Bass clarinet, bass clarinet, flute, double bass, piano and electronics

*Gloss* was inspired by a series of nine pen and ink drawings, which were used as graphic notation for the different instrumental combinations and live electronics. The nine graphics were then integrated into the video art work which shows glimpses of the graphics in superimposed layers in conjunction with pencil drawings of squiggles depicting wire as seen in Figure 1.8. These were then photographed. The depiction of wire glosses the image with a superficial lustre.
While *Escapee Gloss* is the core work of the doctoral research folio, during the course of the candidature, I composed a number of other works, all exploring different possibilities of polymedia. The submission is presented as a folio of compositions, scores and polymedia recordings accompanied by an exegesis that contextualizes the works in the folio.
**Hats**

For Bass clarinet, live electronics/laptop and live feed and pre-recorded video projection.

The inspiration behind *Hats* was simply a dancer wearing a hat. The starting point was representation of pure motion through a large space, the hat (as seen in figure 1.9) being the focal point throughout the composition in which there is extreme diversity in the sound world and in the exploration of colours. It is, in a sense, the epic journey of the traveling hat.

**Figure 1.9** Brigid Burke *Hats 5*
A Snapper is a Feast

For Bb clarinet, live electronics/laptop and live feed and pre-recorded video projection.

A Snapper is a Feast was inspired by the joy of food, eating and the process of transformation from the live product to the finished banquet. One can almost taste the food and feel the fish swimming through the tanks (as seen in figure 1.10). This sense is not in any other work in the folio. The sounds and images are based on a series I created from different restaurants where my son, chef Oscar Rigo, prepared banquets.

Figure 1.10 Brigid Burke A Snapper is a Feast 8
**Blooms and Death**

*Blooms and Death* incorporates sounds and images from a series of graphics that follow the transformation of a freshly cut bunch of yellow roses to their grey death of decay. The visuals (video samples and stills) (as seen in figure 1.11) are layers of video footage displaying blowing yellow flowers, grey pencil drawings and layered scrolls (silk screened prints, pen and ink on rolls of rice paper). All the visual material has been treated extensively in various computer software packages.

*Blooms and Death* explores many facets of polymedia in live performance, integrating live audio digitally processed clarinet with percussive processed piano sounds, live processed acoustic environmental sounds, electric fans, and sampled video projections.

*Blooms and Death* is in five movements:

1. *Prelude* Solo clarinet and pre-recorded video projection.
2. *Blooms and Death* 1 Bb clarinet, piano, 2 pre-recorded video projections and fan.
3. *Blooms and Death* 2 Bb clarinet, piano, live electronics/laptop and fan live feed and pre-recorded video projection.
4. *Interlude* Bb clarinet, live electronics/laptop and live feed and pre-recorded video projection.
5. *Blooms and Death* 3 Bb clarinet, live electronics/laptop, dead rose petals, live feed and pre-recorded video projection.
Figure 1.11 Brigid Burke *Blooms and Death* 22
**Grainger’s Bridge**

For Bass clarinet, live electronics/laptop and live feed and pre-recorded video projection.

*Grainger’s Bridge* explores the evolution and transformation of Prince’s Bridge that spans the Yarra River in Melbourne, Australia. The piece refers to Percy Grainger’s first free music experiments in beatless music and gliding tones and in the video to his father's architectural achievements as the architect of the nineteenth-century bridge.

**Figure 1.12** Brigid Burke *Grainger’s Bridge* 19
A Song is Here

For Bb clarinet, Bass clarinet, live electronics/laptop and pre-recorded video.

The video shows the Victorian coastline down the famous Great Ocean Road to Lorne and a figure standing in water, which gives this composition a sense of stillness and contemplation (as seen in figure 1.13), complemented by the quarter-tone movement and the timbral shifts of the clarinets and electronics.

Figure 1.13 Brigid Burke Bliss 15
Chapter 2

Escapee Gloss: Historical context, influences and aesthetic approach

As a polymedia composition Escapee Gloss has roots in many different media, and not just each medium itself, but in the many ways various precursors have combined the media or have recognized possible combinations. These extend from graphic scores, which use images to elicit musical responses, to abstract films, which use colour and shape in a way to how composers use sounds, to other pieces that have attempted to balance sound, movement, colour and shape on stage in integrated, multimedia performances.

The musical and notational roots of Escapee Gloss reach back to late fourteenth century France, the France of the Chantilly Codex and the Ars Subtilior. Theorist Fred Thomas has anticipated my own relationship to this era and these artists, which he expresses in a way that resonates with my own practice:

Fourteenth century France was a place of radical musical developments, particularly in rhythmic structures, polyphony and notation systems. The greatest testament to this style is the Chantilly Codex, a book of music by Ars Subtilior composers featuring the exquisite mannerist notation of the time. This Codex, with its heart-shaped musical scores, staves representing the strings of a harp and riddle canons set out in 33-bar spirals, has become something of an obsession, hugely influencing my own composition. The experimentation of such composers as Solage, Johannes Ciconia and Baude Cordier gave birth to a brief effervescence of richness and complexity, a period of highly idiosyncratic art, which left little in the way of posterity. In this respect, it
seems to me to have the capacity to connect deeply with contemporary artists; this fleeting and isolated style, in leaving no immediate descendants, retains its perennial novelty and remains forever gilded in mystery.\footnote{Fred, Thomas, \textit{A New Series} presented by F-IRE Collective and Kammer Klang, curated by Fred Thomas., URL: http://fred-thomas.co.uk/f-ire-klang-codex/ (accessed September 23, 2013).}

\textbf{Figure 2.1} Baude Cordier \textit{Belle Bonne Sage} 1350\footnote{Baude Cordier \textit{Belle Bonne Sage} 1350 http://commons.wikimedia.org/wiki/File:CordierColor.jpg#mediaviewer/File:CordierColor.jpg (accessed September 23, 2013).}

The roots of the visual elements of the piece reach back even farther, to twelfth century Florence, in particular the Florence Baptistery. I found this space a revelation, especially in how it creates a sense of movement in a static image, as can be seen in the ceiling of the

\begin{figure}
\centering
\includegraphics[width=\textwidth]{CordierColor.jpg}
\caption{Baude Cordier \textit{Belle Bonne Sage} 1350}
\end{figure}
baptistery. The detailed mosaic work, the acoustics of the space and grandeur of the architecture has influenced many facets of Escapee Gloss. In Escapee Gloss, the images and video are constructed of different layers, each with a different sense of light focus.

**Figure 2.2** Florence Baptistery *Florence Mosaic 12th century* 

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6Florence, Baptistery *Florence Mosaic 12th century*  
In the eighteenth century, we can see expressed the first notion of combining sound and colour that is so important to the polymedia presentation. Bertrand Castel,⁷ for instance, a mathematician, physicist and Jesuit monk, made a direct relationship between the seven colours and seven units of the scale, and in 1742, proposed an instrument a *clavecin oculaire* or light-organ—that would simultaneously produce pitches and colours: B/(dark) violet, Bb/agate, A/violet, Ab/crimson, G/red and so forth to C blue.⁸

More pertinent, and more recent, is the work of artist and composer Mikalojus Konstantinas Čiurlionis⁹, who uses strong connections to symbolism in his artwork as seen in Figure 2.3. His compositions are seen throughout *Escapee Gloss* using old art forms such as notation, acoustic instrumentation and the use of colour and lines.

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⁹Mikalojus Konstantinas “Čiurlionis die sechste/Sternensonate, Allegro 1908 Tempera auf papier (tempera on paper 72.2 x61.4 cm Kaunas” in *Light Art in Artificial Light, Light As a Medium in the Art of the 20th And 21st Centuries*, edited by Peter Weibel and Gregor Jansen, (Ostfildern: Hatje Cantz Publishers 2006), 146.
Figure 2.3 Mikalojus Konstantinas Čiurlionis Allegro 1908
Even more recently, Fred Callopy has researched the relationship of colour and music and has compiled a summary of mapping these elements in his website\textsuperscript{10}. He discusses in depth how different colours activate different tones and octaves.

This composition by Johannes Itten and Faber Birren\textsuperscript{11} uses a colour wheel that was devised by scientists and artists as seen in Figure 2.4. This influence is predominately seen in \textit{Pantone} and \textit{Shine} with many images overlaid, spinning in kaleidoscopes, colours and circles.

\textbf{Figure 2.4} Johannes Itten and Faber Birren \textit{Colour Wheel} \textsuperscript{12}

\textsuperscript{10}Fred Callopy, \textit{A historical account of colour and music in literature}, URL: http://RhythmicLight.com (accessed May 11, 2011).
\textsuperscript{11}Matt Woolman, \textit{Sonic Graphics Seeing Sound}, (London: Thames & Hudson, 2000), 41
Most important, of course, is the influence of twentieth century film making, particularly that of Absolute Film. Absolute Film can be defined as abstract and non-narrative. It is a combination of light, form, movement and sound to create one single idea that is totally abstract and not connected to anything tangible.

Mary E. Bute's description of Absolute Film matches my intention in *Escapee Gloss*:

> It stimulates our aural senses directly with color, form, rhythm and sound... by its own inherent powers of sensation, without the encumbrance of literary meaning, photographic imitation, or symbolism.... Here the artist creates a world of color, form and sound in which the elements are in a controllable flux, the two materials (visual and aural) being subject to interrelation and modification.
> Mary E. Bute

The sensations of *Absolute Film* are similar to the feeling when listening to surround sound, for example the travelling of the sound in a performance space, which I have endeavored to reproduce through the combination of using acoustic instrumentalists, electronic spatialisation, projections and props.

Corroboration of *Absolute Film*, if it is needed, comes from the Symposium for the Creative Sonic Arts in Leicester in 2010:

> To make a model appropriate for electroacoustic audio-visual music it is essential to first remove any focus upon the visual narrative...Visual music, absolute film,

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cinedance, light shows, lumia, videomusique and audio-visual music are all terms used by practitioners to describe their work.\textsuperscript{14}

There have been artists from the 1920s onwards who belong to the category of \textit{Absolute Film} makers, projection artists and colour projectionists. The artists from this period, who shared similar intentions but worked mainly independently, include the Italians Bruno Corra and Arnoldo Ginna, the American Stanton MacDonald, the Russian born artist Leopold Survage and the Germans Hans Richter, Walter Ruttman and Werner Graeff.\textsuperscript{15}

\ldots As Peter Weibel and Gregor Hanson pointed out, these artists made truly abstract films that were as liberated from reality as absolute color was from the world of figuration...\textsuperscript{16}

This movement of filmmakers/artists has also been termed \textit{Colour Music}, which can be defined as using colour, sound and movement to create compositions. Hirrschfield-Mack, Joseph Hartwig and Kurt Schwerdtfeger began working on \textit{Colour Light} plays during the early 1920s.

This aesthetic creates the impetus for a polymedia artist. Creating movement within still images is a driving force behind \textit{Escapee Gloss}. Adrian B. Klein, an abstract painter, says of Colour Music that it is.

\textsuperscript{14}Motje Wolf & Andrew Hill (eds.) \textit{Proceedings of Sound, Sight, Space and Play} 2010 Postgraduate Symposium for the Creative Sonic Arts De Montfort University Leicester, (United Kingdom, 2-4 June 2010 http://www.mti.dmu.ac.uk/events-conferences/sssp2010), 42.

\textsuperscript{15}Sara Selwood. \textit{Color Music and Abstract Film} in \textit{Light Art in Artificial Light, Light As a Medium in the Art of the 20th And 21st Centuries}, edited by Peter Weibel and Gregor Jansen, (Ostfildern: Hatje Cantz Publishers 2006), 409.

\textsuperscript{16}Peter Weibel, in \textit{Light Art in Artificial Light, Light As a Medium in the Art of the 20th And 21st Centuries}, edited by Peter Weibel and Gregor Jansen, (Ostfildern: Hatje Cantz Publishers 2006), 167.
....a world of shapes and colours .....a never ever flow of movement$^{17}$

**Figure 2.5** Len Lye *Colour Box* 1935 35mm, Film

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$^{17}$Klein, *Light Art from Artificial Light*, in *Light Art in Artificial Light, Light As a Medium in the Art of the 20th And 21st Centuries*, edited by Peter Weibel and Gregor Jansen, (Ostfildern: Hatje Cantz Publishers 2006), 118.
Len Lye\textsuperscript{18} was a New Zealand experimental film-maker, poet, painter and sculptor. Lye was inspired by motion, energy and the possibility of composing as a form of art. He became known as an intensely creative film-maker and kinetic sculptor. As one can see in this example of his work, the sense of movement and freedom has strong links with many movements of \textit{Escapee Gloss}.

Jordon Belson, Len Lye, Stan Brakhage and Otto Pienne edged away from traditional art form aesthetics through dense layering of generated captured sound and image. These artists, leaders in non-narrative filmmaking, were considered the most important figures in 20th-century experimental film.

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{18}Len Lye, “Colour Box” in \textit{Light Art in Artificial Light, Light As a Medium in the Art of the 20th And 21st Centuries}, edited by Peter Weibel and Gregor Jansen, (Ostfildern: Hatje Cantz Publishers 2006), 184.
\end{itemize}
\end{footnotesize}
Figure 2.6 Otto Pienne *Grid Picture 1958*¹⁹

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Grid Picture is a type of stenciled painting made from half-tone screens with regularly arranged points in single colours (yellow, silver, white or gold), as is also Pure Energy (1958; New York, MOMA). The vibrating pattern and slight shadow in these works, which were first shown in September 1957 at the first evening exhibition in Piene’s studio in Düsseldorf as avant-garde manifestations of the West German art scene, seemed to take the play of light itself as their theme.

These artists explored a variety of formats, approaches and techniques that included handheld camera work, painting directly onto celluloid, fast cutting, in-camera editing, scratching on film, collage film and the use of multiple exposures. They were inspired by music, poetry, and visual phenomena. Brakhage's films are often noted for their expression and lyricism. Their collage of imagery and flow of lines are the stimulus behind Escapee Gloss.

In the 1920s, Oskar Fischinger created a series of non-narrative films, synchronizing abstract imaginary with popular music. Each of the films is three minutes long and includes almost five thousand drawings. This process of creating thousands of images is used throughout Escapee Gloss with thousands of still images created on paper, wood, canvas and cloth then manipulated in the computer through various software packages. The process then continues when the images are taken from computer and used as plates to be silk screened into the pieces of art work, adding another layer onto the already created works. The final process is to scan/photograph the images back into the computer to be animated in the video editing
program to form another series of layers, this time with light diffusion and opacity. The way he synchronized the music with the film influenced the way I created the movement in Gloss.

**Figure 2.7** Oskar Fischinger *Diagram zur Synchronisazion von Ton und Bild*\(^{20}\)

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Fischinger also collaborated with composer Alexander Laszlo on *Color-Light-Music*, a visual music extravaganza that toured throughout Germany in 1925 and 1926. Fischinger projected hand-colored films over Laszlo's compositions.

Walter Ruttmann, another pioneer artist.

….called for “painting with time” (1912/1920), an art for the eye that differed from painting by unfolding in time – like music. Brushstrokes painted on glass and cut-

out hand – colored shapes were filmed as individual frames. Ruttmann himself made the appliances he required for the animation of the film material.\textsuperscript{21}

Many of these cinematic experiments in creating sound without external sources began in the 1920s with the recognition that patterns read optically can produce sound. Many of the films were highly abstract pieces with abstract art work. Many of the techniques these early abstract film makers used are now accessible due to the development of computer animation and computer manipulation. \textit{Escapee Gloss}, uses many of these devices in the compositional process.

In creating light, sound, musical environments, architectural creativity and layers of media, Iannis Xenakis pioneered many forms an example was his compositional distribution of sound in architectural spaces. As early as the 1940s, he broke new ground with his architectural renderings, technical drawings, nature-inspired music and distribution of orchestral and electronic sound. The mere transporting of the sounds within the space between the instruments and electronic sounds is revolutionary, as seen in Study for \textit{Terretktorh}\textsuperscript{22}, which represents his interest in nature and open space.

\textsuperscript{21}Peter Weibel, “The Development of Art”, in \textit{Light Art in Artificial Light, Light As a Medium in the Art of the 20th And 21st Centuries}, edited by Peter Weibel and Gregor Jansen, (Ostfildern: Hatje Cantz Publishers 2006), 168.

Figure 2.8 Iannis Xenakis Study for Terretktorh 1965\textsuperscript{23}

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\textsuperscript{23}Xenakis, 62.
Iannis Xenakis used physics and mathematics to organize sound in a manner refers to Pythagoras, who designed scales, as shown here.

**Figure 2.9** The Pythagorean *Theory of Music and Colour*²⁴

In the Pythagorean concept of the music of the spheres, the interval between the earth and the sphere of the fixed stars was considered to be a diapason—the most perfect harmonic interval. The following arrangement is most generally accepted for the musical intervals of the planets between the earth and the sphere of the fixed stars: From the sphere of the earth to the sphere of the moon; one tone; from the sphere of the moon to that of Mercury, one half-tone; from Mercury to Venus, one-half; from Venus to the sun, one and one-half tones; from the sun to Mars, one tone; from Mars to Jupiter, one-half tone; from Jupiter to Saturn, one-half tone; from

Saturn to the fixed stars, one-half tone. The sum of these intervals equals the six whole tones of the octave.\textsuperscript{24}

Xenakis graphically designed relationships through mathematical calculations that were pleasing to the eye and enchanting to the ears. His \textit{Polytopes} were created for the interior of the French Pavilion at the 1967 Montreal Expo.

During the six-minute performance, some 1,200 white and coloured flashing lights lying along cables were programmed to create dazzling patterns that changed every twenty fifth second (as seen in Figure 2.10). Simultaneously, a symphony recorded by four separate “orchestras” of identical instrumentation was transmitted via four sets of loud speakers, one in each corner of the hall (as seen in Figure 2.8). The product was dramatically strident sustained tones, unbroken glissandi, and percussive accents reminiscent of Noh music (as seen in the graphic score Figure 2.12). The public was free to experience the spectacle from many levels on the six-story-high buildings suspended by platforms, linked by staircases (as seen in Figure 2.11).\textsuperscript{25}

\textsuperscript{25}Xenakis, 62.
Figure 2.10 Iannis Xenakis *Polytope de Montreal*\(^{26}\)

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\(^{26}\) Xenakis, 67.
Figure 2.11 Iannis Xenakis Study for *Polytope de Montreal*\(^{27}\)

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\(^{27}\)Xenakis 64.
The twentieth century witnessed not only the use of images (moving or still) to accompany music or to be accompanied by it but encountered as well a significant new way to produce music, the graphic score.

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28Xenakis, 68.
Figure 2.13 Cathy Berberian's *Stripsody*\textsuperscript{29}

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Graphic scores, while sometimes accompanied by detailed instructions for interpreting the lines and shapes, encourage unpredictability and indeterminacy. Graphic scores are a very efficient way of getting those results. While all scores give scope for interpretation, graphic scores encourage it in a way notated scores do not, even such a detailed score as Figure 2.14 Stockhausen’s *Cosmic Pulses*, which also comes with equally detailed instructions for interpreting the shapes.

\textsuperscript{29} Cathy Berberian, *Stripsody Notations 21* edited by Theresa Saucer, (New York: Notations 21 Mark Batty 2009), 32.
Figure 2.14 Karlheinz Stockhausen *Cosmic Pulses*\textsuperscript{30}

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\textsuperscript{30} Stockhausen, *Cosmic Pulses*, 241.
**Figure 2.14** (continued) Karlheinz Stockhausen *Cosmic Pulses*

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I have used both graphics and traditional Western notation with detailed instructions’ throughout *Shine* and *Silk of Escapee Gloss*. In *Gloss* only graphic notation is used. In addition, some videos are also used as scores, moving scores as seen and heard in *Pantone and Sheen*.

For a polymedia composer interested in intersections and blending of disparate media, it is further interesting to see that many graphic scores have transcended their function as sonic maps for time and space to become artifacts of the synthesis of sound and image.
Graphic scores also encourage explorations of unconventional sonic possibilities, often referred to as ‘extended techniques.’ The unusual and unique sounds of electronic music and free jazz of the 1950s also fed this impulse, challenging professional composers to do something different from the norm of traditional orchestral techniques and forcing performers to alter their traditional approach. These new techniques pushed performers and composers to new heights once viewed as unattainable and introduced a whole new style of composing. The different forms of extended techniques that have now become part of the

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normal clarinet technique that I regularly use were notated fifty years ago by Bruno Bartolozzi, Ronald Caravan and William O. Smith. Bruno Bartolozzi was one of the founding explorers of these extended techniques and he investigated them extensively. His book *New Sounds for Woodwinds*\(^{32}\) may have been good for other wind instruments, but I found his fingerings clumsy and in most cases unusable. However, I found books by Ronald Caravan,\(^{33}\) William O. Smith and Harry Spathaay to be totally performer friendly.

My first encounter with extended techniques was through Elsa Ludewig-Verdehr who in an academic capacity, she visited Canberra in 1982. This was the first time I heard extended clarinet techniques played in the most lyrical and romantic manner and it transformed the direction of my clarinet performance. Through taking lessons and master classes from her, I acquired probably the most comprehensive books at the time and to this da Ronald L. Caravan’s *Etudes on Timbre Variation for Clarinet*\(^{34}\) and *Preliminary Exercises & Etudes in Contemporary Techniques for Clarinet*.\(^{35}\)


In 1992, I composed *Three Sounds on Buildings* (as seen Figure 2.16), which exemplifies all the techniques.

**Figure 2.16** Brigid Burke *Three Sounds on Buildings* 1991
In 1993, at a workshop at University of Tasmania, clarinet virtuoso and theorist William O. Smith attended a performance of *Three Sounds on Buildings*.\(^{36}\) He asked if he could keep a copy as he had enjoyed the performance very much. Bill’s expertise with multiphonics, and with a physical extension on the clarinet and in his use of the voice was free, graceful, fluid and exact. These workshops gave me permission to develop individual techniques as well as the way to approach multiphonics and to push the boundaries of performance capabilities on the clarinet with extensions and pulling the clarinet apart—not to be too precious but adventurous.

In the 1980s and 1990s, F. Gerard Errante, Harry Sparnaay, William O. Smith, Daniel Goode\(^ {37}\) and Peter Clinch all influenced and supported my quest to incorporate new techniques and sounds into my performances and compositions. The impact these performer/composers have had on my compositional process can be heard throughout *Escapee Gloss*.

After meeting Elsa Ludewig-Verdehr, the most influential encounter in the early 1980s for me was meeting (and studying with) Harry Sparnaay\(^ {38}\) who visited Australia as Artist in Residence in 1982 at the Victorian College of Arts and introduced me to *Sonata for Clarinet* by John Cage.\(^ {39}\) The work is highly chromatic, with huge leaps, and uses a 12-tone row and row fragments; the last movement is a retrograde of the first. Harry Sparnaay's input was to add


pitch bends, articulations, flutter tonguing and dynamics to give the work a sense of surprise or theatre in performance.

**Figure 2.17** John Cage *Sonata for Clarinet* 1933\(^{40}\)

\(^{40}\) Cage, *Sonata for Clarinet* 1933.
Working with both Harry Sparnaay and with the music of John Cage (who I met briefly in 1984) has affected nearly every part of my creative output. My performance in 1982 of Cage’s *Water Music*, (for piano, radio, whistles, water, deck of cards, wooden stick, objects for preparing a piano) had practical implications that informed my composition and performance of *Escapee Gloss*.

**Figure 2.18 John Cage *Water Music*[^41]**

I created a set of slides of the score overlaid with original graphics in that performance, which took place at the Canberra School of Music. The graphics included metal figurines of flies, pieces of raw vegetables, red and black ink. I used coloured filters on the lenses to create surreal scenes. These early experiments with photography, scores and using props in still images have formed the basis of my approach to visuals in *Escapee Gloss*.

The next influence in the 1980s on my work was Dr. F. Gerard Errante, who visited Canberra
School of Music in 1983. He gave one of the first performances and commissioned Reynold Weidenaar’s *Love of Line, of Light and Shadow: The Brooklyn Bridge for Clarinet, Color Video, and Electronic Sound*. The visual beauty of the bridge is complemented by the massive sonic resonance of its motor traffic. Both are major elements in *Love of Line, of Light and Shadow*: Location recordings of bridge visuals and sounds were processed using many analog video and audio devices. The visual interplay of light and heavy materials has no sonic equivalent at the bridge even its lightest sounds evoke the dense drone of a gigantic beehive. Hence, synthesized sounds and the clarinet part were created to provide contrasting elements.\(^\text{42}\)

Dr. Gerard F. Errante did much interactive work with Martin Wesley-Smith\(^\text{43}\) in the 1980s. I had heard the first performance of Wesley-Smith’s *Dodgson’s Dream* at Sydney University in 1979. This incorporated many overlapping slides of Dr. Errante performing with live clarinet, layering of light and electronic gestures.

In 1984, I commenced study with Dr. Errante in the USA. This included the exploration of compositional techniques, refinement, American composers and improvisation. These influences can be heard in the movement *Sheen* that includes live camera work both on the performer (clarinetist/props) and interactive audio between the acoustic and electronic performance. Each media was supported by conversation between all the art forms.


Dr. Errante's many articles on the extended clarinet, especially with his use of electronics, and his approach to gesture, space, and breath has influenced my use of time and spacialization in both my clarinet performance and the way I compose for electronics.

Daniel Goode’s recordings encountered in the 1980s were inspirational. These included his renditions of bird song, The Thrush from Upper Dunakyn; his use of drone: Clarinet Songs and Circular Thoughts, and his explorations of Indonesian gamelan music: Eine Kleine Gamelan Music as seen in (Figure 2.19) and Slendro Clarinet.

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46Daniel Goode, *The Thrush from Upper Dunakyn (bass recorder, Pete Rose)*, on Opus One Records.
49Daniel Goode, *Eine Kleine Gamelan Music* performed by Nick Didkovsky and Mark Stewart, guitars.
50Daniel Goode, *Slendro Clarinet* on *New Gamelan/New York* performed by Gamelan Son of Lion, GSOL. CD 1.
Eine Kleine Gamelan Music

by Daniel Goode

CONTRAST 3-note melodies of a step followed by a skip, or a skip followed by a step in any scale mode, key, in any tuning, either upward or downward (but not both in the same melody).

Apply these melodies to the motive above, which gives the rhythm and order of the three tones. Play the same melody for at least two times through the motive. You can also play the motive in reverse fashion, from the highest to the lowest and so on.

KEEP the same note(s), the same variant for at least two repeats before changing or resting.

ENDING: When all instruments are playing the rhythmic variant (eights in place of long notes), that becomes the last time.

VARIANTS:

- Accent either the lowest or highest notes on both.
- Omit all but the accented notes.
- Play only the long notes and fill them in with eights including an eighth on the next beat after * The last beat, as it.
- A calming instrument may play a long tone in place of the written eights, and rest for the long notes of the motive.
- Gongs or gong-like sounds and other percussion instruments can be added to the long notes.

Note: Melodic underlay in score above.
In 1997, I performed with Daniel Goode and Warren Burt at the Grainger Museum, Melbourne University. We did a series of improvisations, Daniel’s closely linked to his bird songs, drones and Gamelan influences, mine more about inserting extension pipes\textsuperscript{51} into the clarinet and creating repetitive gestures with timbre. One can hear these influences throughout \textit{Escapee Gloss}, especially in \textit{Gloss}, which uses microtonal pitches in the acoustic instruments and Indonesian gamelan throughout the electronic parts. One can also hear in \textit{Matte} the interplay of Indonesian Gamelan and western percussion.

Another work that influenced me in the early 1980s was \textit{PLC Extract} by Dorrance Stalvey (as seen in Figure 2.20). I designed a series of slides to go with this work in 1983, one of the first times I had added visual elements to a piece of music. I later found out there was a series of slides Dorrance Stalvey had created for the work.

Figure 2.20 *PLC Extract* by Dorrance Stalvey
Peter Clinch, one of my key clarinet teachers during the 1980’s, was performing many new Australian works with German/Australian composer Felix Werder during the 1970’s and 1980’s. Dr. Clinch’s work with Werder inspired me to have many Australian composers write works for me during the 1980s and 90s. One result was a recording made with the kind support of the Australian Broadcasting Commission, ABC, made possible by Rainer Linz of NMA Publications. The three compositions chosen for the recording was Stephen Leek’s *Seashells*, Neil Kelly’s *Arc*, and Ros Hazeldine’s *Hector Zooming*, all for solo clarinet. Peter Clinch wrote:

> It is refreshing to discover a young Australian musician who is prepared to record music written by her contemporary Australian composers, this happens far too rarely. Brigid Burke is a very capable clarinetist who has presented the music on this cassette in a very musical manner.

These works were starting points for my compositions, improvisations and electronic works. Water sounds and visuals were key manifestations in these works. Pipes are used in *Seashells*, and *Hector Zooming* and *Arc* use voice with clarinet and virtuosic gestures. Influences of these extended techniques can be heard in the movements *Shine* and *Gloss*.

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Other Australian composers that influenced this approach to interdisciplinary works and crossed many boundaries in the use of extended clarinet were Rainer Linz, Warren Burt and Ernie Althoff. In 1998 and 99, Ernie Althoff, composer and sound sculptor, made a series of twenty-six solar powered sound sculptures.

“That's the piece I've been wanting to write for years." Ernie is out there with the unpredictability of physical systems and the real world, making a music that is both intricate and complex, and yet open and calming as well.

One can also see the influence of Althoff's graphic scores in *Gloss*, working with different gestures in a time-based composition. In Figure 2.21 these are my interpretations of the graphics.

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Figure 2.21 Ernie Althoff *March for May* for solo clarinet
Reflections for Clarinet (solo) by André Laporte, a Flemish composer and a champion of contemporary music, uses fractional tones, extended articulation techniques, multiphonics and contemporary notation. This composition influenced Escapee Gloss towards the attitude of creating an atmosphere, as if the whole work is one breath of an idea or could be interpreted as breath does not exist. Only the moment is important.

Donald Scavarda, was one of the first clarinetists/composers to investigate and notate extended clarinet techniques in an innovative manner, wrote a piece called Matrix for Clarinetist in 1963. The composer's performance from this time can be heard online. In August 2009, I made a recording of Matrix as part of a study/comparison for a high school student, Olivia Candarmo, into how, with the developments of extended clarinet techniques and instrument refinement, we play these works forty years later. In addition, many of the audio samples/gestures from that later recording of Matrix have been manipulated through electronic means and can be heard in a highly processed manner in Sheen.

\footnote{André Laporte, Reflections for Clarinet (solo), (Brussels: Chester, 1971).}
\footnote{Donald Scavarda, Matrix for Clarinetist, (San Diego: Lingua Press, 1962).}
Matrix for Clarinetist
1962
DONALD SCAVARDA

INSTRUCTIONS

Matrix for Clarinetist: It intended for performance with a clarinet of "E".

The player may use either, or both hands, placing the headjoint, by which is meant the nut and mouthpiece, in the keys and thus produce the desired notes. It is possible to designate the notes without a mouthpiece, column or staff, providing the musette in the column or staff always completed. The notes may be read from right to left in this guide and the chart below for reading diagrams.

Donald Scavarda, Matrix

1. Near normal and upward clusters, the diamond-shaped head indicates the need to be filled. The entire background of these clusters are emptied and may vary slightly from one performer to another. The systems required for producing these clusters are given in the guide.

2. Indicates a fingered harmonic. The finger is located to produce the notes or harmonies. The notes to the left of the note are then played. The notes to the right of the note are played. Thus all the notes are played.

6. Indicates a silence. The duration of all written silence is to be determined by the performer, according to the expression and the nature of the whole piece. The notes and those which occur from technical preparations for succeeding sound. On the order that the written silence occurs, it is to be treated as silence.

The 1, 2, and 3 horizontal lines of the staff indicate the duration of the silence. The 1, 2, and 3 staff indicates the time of the silence.

The symbols A and B are used in reference to silence and are to be interpreted as silence.

(© Copyright 1962 by Donald Scavarda

Published by Leque Press)
Figure 2.22 (continued) Donald Scavarda, *Matrix*
Several other pieces have left their mark on *Escapee Gloss* and other compositions in the folio. The subtle, gestural use of silence and the multiphonics of Berio's *Sequenza IX* can be heard throughout, and the repetitive notes with dramatic dynamic changes of Berio's *Lied* are evident in *Scintillating* and in *Blooms and Death*. The extremely wide intervallic leaps of Bill Smith's *Five Pieces for Clarinet Alone* can be heard in the bass clarinet line of *Scintillating*. Stockhausen's *Der Kleine Harlekin* mixes graphics and conventional notation, along with detailed instructions on how to perform the graphics, a practice used throughout *Escapee Gloss*. 
Der Kleine Harlekin

Es gelten die gleichen allgemeinen Spielanweisungen, wie für die Komposition Harlekin. Auch die Bemerkung ist wie beim Harlekin.
Der Kostüm muss jedoch ganz anders sein (als Beispiel siehe Foto).

Marschantanz i ca. 112

Auf- und Abbeugung der Athamale mit Klarinette
Rechte Hand weit vorgebeugt
linker Arm weit vorn

Klarinette

Harlekinartig
Vom rechten Knieen eine Halbkreisbewegung bis an die linke Seite
Rechte Hand weg von der Seite

Fußbühne

Anforderungen mit Kopf mitmachen

Etwas langsamer

Bei langeren Dauern (Sequenzen) mit H. wird die Fuesserbeine, bei langen Klamotten
Fuß aufs Hutboden und dann mit dem gleichen Fuß eine Bewegung über
den Boden über der Luft gemacht (Stoßbewegung etwas schneller, elliptisch nach vorne).
Paul Doornbusch's *Strepidus Somnus* for four singers (SATB) and short-wave radio anticipates many of the nuances of tonality and timbre used in *Silk*.

The electronic part functions, as a counterpoint to the vocal part, but it is a counterpoint of tonal dimensions, of transformations and shifting timbre. It has been understood for many years that electronic music articulates form through timbral variation, and the counterpoint of timbral *Strepidus Somnus* also contributes to the articulation of form along with the vocal transformations.⁶²

Three Australian electronic music composers who have had a huge impact on my approach to electronic music are Warren Burt, Ross Bercina and Rainer Linz⁶³. I have worked with these three composers and developers in collaborative compositions.

Rainer Linz and I worked in a collaboration for many years during the 1980s and as the live electronic music duo Intersect, formed in 1993 with the aim of developing interactive computer technologies in a series of compositions that led to numerous live performances.

These two quotes describe our work:

Dr Joel Crotty, *The Age* (1997)

....meaningful formal structures and a clarity of purpose...fine electroacoustic craftsmanship.

Dr Ros Bandt, *In a Nutshell* (1998)

Linz's highly personalised electronic system including sensor activated arm driven

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interface coupled with Burke's elaborate digital effects made us wonder who was driving the sound at times. The effect was dazzling.

Intersect specialised in interactive work using a variety of real time performance interfaces coupled with multimedia technologies. Using processed clarinet, ultra sound and Hall Sensors to control a range of midi devices, customised software, computer graphics and synchronised slide projectors, this collaboration pushed many boundaries in my performance practice.

Each of the pieces we devised has influenced much of the interplay I practice today working with the live electronics, even though I now work in Audio Mulch and don’t use pedals and pressure pads any more.

Below are program notes taken for three of the pieces Linz and I presented on CD and in performances during the 1990’s. These three works influenced many of the gestures, technical setups, performance strategies that have been embedded in many of the works of Escapee Gloss.

**SHOUT**

A duo for effected clarinet and computer employing a vast and constantly changing sound world. With virtually each new note, the clarinetist is required to change register, timbre, dynamic, voice, duration. The computer, which is operated by a

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number of switches and a pressure sensor in real time, counterpoints its own complex and highly variable texture. The result is a colourful, pointillistic work which merges the sounds of clarinet and computer into a cohesive whole.

**PHYSIC**

A minimal piece in which the long, sustained tones of the clarinet are “framed” in the upper and lower registers by the computer controlled sounds. The use of quarter-tones and microtonal slides animates the clarinet line and creates a forward momentum, the computer part is generated by interactive software confining tones in extreme registers.

**IN THE WHIRLING CAME REMOTENESS AND INTIMACY**

A pitch shifter is used to generate artificial clarinet overtones, mono and multiphonics which utilise quartertones. A complex layering of upper partials results, controlled in performance by a number of foot pedals. The computer part contributes with its own overtone rich texture, creating a work where movement takes place “within” static sounds.

Rainer Linz's work with live electronics instrument design also included work with Stelarc and John Rose, described in depth on his website. As a composer and sound artist, Rainer has a long involvement with radio, music theatre, instrumental and electronic music. He is also an author and publisher. The Oxford Companion to Music in Australia (OUP 1999) notes

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"Linz’s innovative and entrepreneurial work in Melbourne has been a significant factor in the city’s prominence in experimental music."

I heard the first performances Ross Bencina did in the late 1990s. I have performed with Bencina using AudioMulch. The sounds were beautifully crafted, and the control over the whole sound world was an architectural delight. When I started using it in 2006, it was intuitive and worked well in performance so I could play the clarinet and operate my video mixer simultaneously with ease.

AudioMulch allows you to make music by patching together a range of sound producing and processing modules. Unlike some patch-based programming environments, AudioMulch’s modules perform high-level musical functions, so you don't have to create things from the ground up using individual oscillators and filters. AudioMulch is designed for live performance and improvisation ...67

The other composer who worked with me collaboratively, whom I have been supported by, taught by and has co-curated a New Experimental Music series with for ten years is Warren Burt68. Attitudes to experimental music and the actual possibilities of putting sound, electronics, theatre and visuals together as visual music were embedded very early in my career by Burt. Also his research into microtonality has hugely influenced my explorations on the clarinet that led to the development of quarter tone and multiphonic charts, as heard throughout Escapee Gloss, and could be said to be the driving force of the composition.

Collaboration with Ros Bandt sound artist, composer and performer—has been an enormous help in bringing all my media together. I have benefited greatly by her thoughts on the relationship to layouts of stage setup, the design of the many installation spaces we collaborated in and her thoughts on sound spatialisation within each individual venue; on kinetic relationships in between the space, composition and time; on creating an environment that transforms the theatre. *Carte Blanche* is our innovative duo in sound, live electronics, visual media and performance. Our collaborative work investigates how sound, sculptural objects, screens and performance collide in real time. We both have, separately and together, developed unique audio visual practices (video, photography, sound sculpture, installation, site specific recordings, live electronics, instrumental practices in wind and strings). The sound videos are often artworks in their own right, just as the sound can also stand alone, to different degrees in the various works on our program. We exhibited these sound art films as part of sound and vision series in art galleries both nationally and internationally. Within these spaces we performed with live interactive video, cameras and sound.

Another performer and researcher with whom I worked for many years is Wendy Couch, a percussionist and musicologist. Couch was awarded a Churchill Fellowship to study with Anthony J. Cirone in California. She has presented solo recitals and concertos in Australia and the U.S.A. As a freelance musician, she has frequently performed with major orchestras throughout Australia and has a vast repertoire of chamber music and contemporary percussion works.
Couch is the source of many of the sampled percussive instruments heard throughout

*Escapee Gloss*, always in altered state through much filtering and layering of overtone

frequencies. Her research into Percy Grainger’s tuned and untuned instruments also had a
great effect on the way I perceived many percussive instruments when altering them within

*Escapee Gloss*. This is a description of the percussion instruments used in three of the works

I composed in our collaboration.
Mary’s Voice

Bb Clarinet and Percussion instruments – Vibraphone, small Indonesian gong, siren.

Figure 2.24 Brigid Burke Mary’s Voice
Mary’s Voice is written for three percussion instruments. It requires maximum concentration as the percussion part follows the cues from the clarinet and voice precisely throughout the work as seen in Figure 2.24.

The piece begins with a series of strategically placed notes on the gong which accompany the extended techniques on the clarinet and set up an irregular pulse. A section with fast fragments on the vibraphone follows, leading to a repeated section where rhythmic vibraphone phrases are punctuated by a siren. The pulse varies each time this section is repeated and the mood becomes more frenzied. Soft, slow chordal sections are then interspersed with rhythmic patterns on the vibraphone and soft notes on the gong lead to a quiet, reflective ending.
The consistency of the tone produced by the gong throughout this piece is very important.

The player must empathize with the clarinet soloist and remain flexible and attentive at all times.

Grey is a Highway

Bb Clarinet, Percussion instruments: Vibraphone, large and smaller gongs, 2 cymbals, rain stick, scraper, bow, electronics and visuals.

Figure 2.25 Brigid Burke Grey is a Highway
Figure 2.26 Brigid Burke *Grey is a Highway* (still image)

Figure 2.27 Brigid Burke *Grey is a Highway* (Audio mulch Patch)
The percussion part begins with very soft, slow chords on the vibraphone and occasional notes on the small gong (as seen in Figure 2.25). After three minutes, a clarinet trill signals an abrasive metallic section where the cymbals and tam tam are scraped and the vibraphone is bowed. Short, sharp, intrusive sounds are explored before soft, slow sustained octaves are played on the vibraphone. A free section follows with chords on the vibraphone. Then more soft, sustained octaves return on the vibraphone and depicted in this image in Figure 2.26.

The calm, lyrical vibraphone part featured throughout this work contrasts sharply with the aggressive, grungy background tape (as seen in the Figure 2.27) featuring ugly urban sounds which are triggered through this patch in audio mulch. Most of the percussion part is quite relaxed, calm and legato.

Lands Collide

Bb clarinet, Bass clarinet, Percussion instruments: 2 tom toms, 5 temple blocks, glockenspiel, crash cymbals, whistle, electronics and visuals.
Figure 2.28 Brigid Burke *Lands Collide*
Figure 2.29 Brigid Burke *Lands Collide* (video stills)
This piece begins with rhythmic ostinato passages on the tom toms, followed by the temple blocks and then the cymbals. These sequences give way to sparse passages featuring shorter, softer random phrases on these instruments, punctuated by single notes on the whistle. In the second half of the piece these free sections continue with a greater range of dynamics from ‘pp’ to ‘fff’. The piece ends with the tom toms again playing a repetitive ostinato, but this time at a softer dynamic level. The pattern eventually slows to half tempo and is followed by a soft glockenspiel ostinato. The percussion part contrasts the rhythmic, staccato character of the drums and wooden temple blocks with the metallic, sustained harmonic colours of the glockenspiel and cymbals. These timbres are occasionally interrupted by the shrill tone of the whistle, creating an interesting palette of contrasting tones and rhythms and offering the performer many opportunities to explore diverse technical and musical possibilities.

My most recent collaboration has been with Ollie Bown, a British electronic musician and programmer working with generative and interactive music software. After a chance meeting in Melbourne, Bown and I began improvising together, finding freedom in the harmony between our playing styles and musical ideas. In this collaboration, I played bass clarinet performing new and improvised music with some works using generative video.

We released an album, *Erase*, to record our musical collaboration over a short period in 2009 in Melbourne, in the form of live performance and edited material. It is an amalgamation of simple textures, bursts of glitch, squawks, whoops and duck whistles, mashed up gamelan,
scattergun drums, and hacked MIDI sax. *Erase* is sparse, with gestural outbursts from the clarinet provoking momentary jolts of activity in what would otherwise be a repetitive electronic layer.

Improvisation is a key element in *Escapee Gloss* and in the other folio works, from free improvisation to free interpretation of graphic scores and of moving images. In the US, an improviser I worked with in the 1980s was Joel Futterman, a pianist and saxophone improviser. He encouraged one to take notation as a starting point, to listen, to think about the space, silence, the acoustic moment. Futterman always made one think about the moment in the compositional process. He is very well renowned and now internationally successful performing in the USA and Europe.

Several improvisers since the 1980s have influenced me and collaborated with me and have had a profound impact which one hears throughout *Escapee Gloss*. To name just a few: Gary Costello, Ian Wilmot, Ros Bandt, Tony Hicks, Karen Heath, Grania Burke, Robert Zocchi, Ian Wilmot, Megan Kenny, David McNicol, Ren Walters, Adrian Sherriff, Carolyn Connors, Dan Senn, David Means, Mark Zanter, Rainer Linz, Warren Burt, Nick Haywood, Margery Smith, the Monash Gamelan Ensemble and Ollie Bown. Their input on all aspects of chance, spontaneity, addressing the moment and exploration is prevalent throughout my

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70 DAVID TOLLEY: *PASSING MINIATURES*, by David Tolley, The performance project, TPP 1004, 3 CDs, (Melbourne: 2000).
compositions. Working with these performers/composers/improvisers has helped to extend my vocabulary and techniques on the clarinet to create this large polymedia composition.

There are very few composer/performers combining their compositions and their own imagery into an aesthetical whole. So it has been individuals creating in these specialized fields who have most influenced this journey of creation. But the following are composers/artists/performers who are exceptional in attempting to create a balance of senses on the stage with no component dominating.

Ge-Suk Yeo\(^\text{72}\) audiovisual performances/dance (German/Korean)

The reason for Ge-Suk Yeo to get involved with electroacoustic music was her search for ways to expand her expression as well as the discovery of new worlds of sound. Since then she gets supported by samplers and computer on stage and in studio. .......

*Time Sculptures* is based on a series of electroacoustic compositions. biga oda - it's raining: "a fish ... in a fishbowl ... listens to the rain...". Audio performance and multimedia concert with video animation (as seen in Figure 2.30), electro acoustic music, live vocals and dance.

\(^{72}\text{Ge-Suk Yeo } Time Sculptures
Dennis Miller 3-D Animations and Music Composition (American)

Unlike some mixed media works, where parameters of the music directly control aspects of the picture (or vice versa), I view music and animation as two separate but equal streams that happen to coexist in the same time frame. My goal is to apply the same principles of continuity and development to both the visual and musical elements; in other words, to unify the works by making thematic connections that are more or less transparent to the viewer.  

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The author of ‘Sounding Visual Experimental Video and Music Combinations’ based in Edbura website is Maura McDonnell74 also Cindy O’Keefe Centre for Visual Music75 There resources, research and artistic interest is in the area of sound and image, and in exploring the possibilities of presenting music with moving image/visuals.
The merging of sound and visual has been a long journey, starting with that meeting with Elsa Ludewig-Verdehr at the Australian National University in 1982, which allowed me to discover what purpose there was in playing the clarinet and then to merge the sound with image as one. *Escapee Gloss* embodies and exemplifies this journey of discovery.
Chapter 3

Escapee Gloss

This poem has been removed for copyright or proprietary reasons.

E. E. Cummings (1894 - 1962)\textsuperscript{76}

This poem by E. E. Cummings invites the listener to participate, which includes listening and visualizing. Cummings was a painter as well as a poet, and he seemed to want this piece to be a visual work of art as well as a verbal one similar way as to how I have perceived *Escapee Gloss* to be both a visual and aural experience.

*Escapee Gloss* is a polymedia symphony it is for Bb clarinet/bass clarinet, Eb clarinet/bass clarinet, flute/pic, piano, double bass, electronics, and visuals. It has seven movements titled *Shine, Scintillating, Silk, Matte, Pantone, Sheen* and *Gloss* on the theme of the disembodied clarinet. My goal in this work was to create an integrated and coherent piece that also had the qualities of spontaneity and freedom. One person has created every aspect—audible and visual—, and each movement conveys a different aspect of the disembodied clarinet. My decisions within each movement, both musically and visually, were random, spasmodic and erratic, and I gave improvisatory freedom to all performers throughout.

The main structural technique of this composition is layering—both in the audio and in the video—which quickly and efficiently create a variety of complex stories or situations from a simple pile of unusable clarinets. These clarinets and clarinet parts have evoked many avenues, inspiring me to create sound worlds from the intimate to the extreme. This range is also projected in the visual from literally smashed up clarinets and glass to gorgeous bubbles, fine shadows and lines.

This series of compositions investigates the core of the music: tones, notation, instruments, composition, colour, design, line and texture. The following quote from Harry Partch contextualises how I have aimed to find a tangible meaning in *Escapee Gloss* through all the media presented, how I have taken these abandoned clarinets and transformed them into an exciting and sensitive polymedia work:

> The forms that imagination may devise transform the primitive sound-generation ideas into vehicles for new and exciting adventures, and the act of transforming in
itself, like a fire by a stream, is an antidote to this age, a transcendence of its materials. And it is a small reaching back, through many thousands of years, to the first men who wished to find meaning for their lives through art.\textsuperscript{77}

The title of each movement of Escapee Gloss is the name of a different texture of paint, and the bold colors of red, yellow and black are prominent in the videos. Silver, gold and white paint were used in different layers with the bold colours which transmuted many graduations of light continually transforming each piece of art or stills of the videos. Text prevails throughout this composition in all forms, extending to the writing of this exegesis and, in Silk, to vocalize thoughts of how and why the music has come about. While the musical composition was usually written first, without the fragments of texts and the visuals of the disembodied clarinet (as seen in the Figure 3.1 of the drawings broken clarinets, Figure 3.2 the broken clarinets with glass and Figure 3.3 the broken clarinet parts photographed on pieces of textured art work), underpinning the whole it is these that provide the concept.

Figure 3.1 Brigid Burke *Pencil drawings broken instruments*
Figure 3.2 Brigid Burke *Series of keys, broken instruments and glass*
Figure 3.3 Brigid Burke *Broken clarinets on wood*
*Escapee Gloss* is characterized by an extensive use of extended clarinet techniques:
multiphonics, microtones, flutter tongue, color fingerings, vocalizing while playing, pitch bends and vibrato.

In *Escapee Gloss*, as in Berio’s clarinet *Sequenza*, the movements are not simply clarinet pieces utilizing extended techniques, but rather pieces in which these techniques form the building blocks for all the components of the movements.

The finished movements involved layering of different sounds and visuals, this layering of different textures in the sounds and light diffusions in the visuals created the pulse of the composition that drives the movement in *Escapee Gloss*. This keeps the composition moving both audibly and visually, so that no matter how complex or chaotic the combinations, the idea is never lost. The essence is to create a traveling moment with a start, middle and end, with many subtle and boisterous gestures and a sense of surprise and humour.

The different combinations of media create an overall effect that is immersive and contagious in its energy. A simple deconstructed clarinet, a whispering motor, a screeching bird, a dying rose or a clarinet overtone can be projected in so many ways. Audible, visual, taste and smell senses feed off each other, giving me inspiration. The rhythm of the moment excites me with all the layers of sound and visuals.
In performance, the musician plays Bb clarinet and controls the audio samples through the laptop and visual samples through the interactive responses on the video mixer, which is directly influenced by the sonic output of the system (see Figure 3.4 for a picture of Escapee Gloss setup).

**Figure 3.4 Escapee Gloss set up**

*Gloss, Shine, and Silk* involve other performers who are directed through notated/graphic/visual scores and cues, while *Pantone, Sheen* and *Matte* rely on the visual output screened in real time. During the performance, one is continually creating new musical ideas that trigger fresh sonic improvisations that then influence different combinations of visual layering that continually and fluidly change the balance between the visual and audio output. Both are reacting off each other at all times. The visual output is based on an abstract representation of how the music is progressing. The audio is affected by
the live video feed, by the lighting and by the amount the performers interact with the footage in real-time. Being a polymedia symphonist is about integrating the sound and image structurally.

All audio processing during performance is created using Audio Mulch, a live audio interface for real-time audio performance.

The audio and visuals are all triggered manually. This is purely by choice, as I treat all the components individually in a polyphonic manner. The natural state for an instrumentalist is to have no attachments to the instrument; so, reaction to musical moments is spontaneous. However adding a laptop provides another line of the control that influences the outcome, resulting in a fluid and reactive performance.

The instrumentation, props and media included are the combination clarinet parts, added contraptions – microphones and cameras, multimedia visual works using parts of the clarinet and related woodwind instruments, improvisations, notated solo clarinet compositions and an electro-acoustic sound art installation. The audio works are inspired by and based on a series of short films.

Examples of electronic plug-ins I have used in the processing of the audio samples include delay, stereo delay, transposition, granulation, grain duration, pan and ring modulation. The process continues with manipulation of files into different layers and different channels,
concentrating on microtonal interaction between the samples. A similar process is applied to the visual materials, including analysis of brightness, colour, contrast, duration, speed and complexity. The images have two categories: graphic-based images and film/still images. The sound and image influences the shape and analysis of each of the works. The audio in the compositions uses a real-time environment of acoustic sound and generative structures.

The imagery in Escapee Gloss is all about the dissolve and the transformation of the images. Very little manipulation is involved to fade one image to the next; only the length of the fade is calculated. The layering of the transparencies with luma, chroma, speed (pulse), and cutouts dominate many of the visual samples. The aim is to make the still images move through these effects through different diffusions of light. All these techniques have allowed me the freedom to process and affect the outcome of the piece. As the music is usually written first and the animated video samples added afterwards, the correlation between the musical and video layers is something that happens as the piece is performed, as each element recognizes and reacts to each other element.
**Movement 1 – Shine**

For acoustic sound - Bb clarinet – graphic/traditional notation, fixed video and bubble machine.

“I thought the most beautiful thing in the world must be shadow.”

Sylvia Plath (1932-63)

In the context of *Shine* this quote might seem inapposite. But the idea of the piece was to create a translucent scene of beauty through shadows. A pulse was created through the gentle movement of bubbles and lines both visually and audibly. My palette of extended clarinet techniques and flourishes focuses here particularly on breath and timbre. This, along with a virtuosic use of quartertones in melodic passages, both romantic and lyrical, aims to create an intensely personal, moving and transfixing bubble of fragility. In performance, one should use the acoustics of the space to create stillness and a sense of anticipation. There is grace and tenderness in this scene with the translucent surfaces and twisting lines traveling between the different layers.

*Shine* is to be played in an intimate, subtle and lyrical manner, taking time over single notes with little interruptions throughout the work. The atmosphere both visually and audibly is driven by the movement of the bubbles, fragile and impermanent. The aim of the musical score was to try and convey moments of stillness with simple and guttural sounds, all gestures played in an intimate, very soft manner with flourishes of fast passages only.

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occasionally breaking from the pianissimo ambience so as give moments of surprise or disturbance. This is all replicated in the slow moving pulse of the sepia bubbles that prevails throughout, a kaleidoscope of graphics in sepia and blue gradients (see figure 3.5) that at times dominates the space, appears to be a haze and an irregular pulse over the whole visual experience. The clarinet score and the video are a conversation, creating a layer of sensory completeness in the most intimate way.
Figure 3.5 Brigid Burke *Shine* Video stills
The pitch organization of the score is drawn from a twelve-tone spiral with a converging and diverging whole-tone scale taken from Slonimsky’s *Thesaurus and Melodic Patterns*.

**Figure 3.6** Nicolas Slonimsky\(^79\)

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\(^79\) Nicolas Slonimsky, *Thesaurus of Scales and Melodic Patterns* scale, (New York: Charles Scribner's Sons 1947), 123.
Figure 3.7 Brigid Burke Pencil and pen and ink drawings of graphic notations in Shine
All of this shows the influence of Harry Sparnaay’s teachings of extended techniques in *Sonata for Clarinet* by John Cage.\textsuperscript{80} *Shine* contains micro-tonality, key clicks, whispers, air sounds, extreme dynamics, undertones, multiphonics, monophonics, quarter tones and interrupted tones (as seen in figure 3.8 page one of the score). Many of these extended devices on the clarinet are reorganised and work cohesively to create ambient sounds by just changing how each of the devices are orchestrated. The graphic notations throughout can be either literally or intuitively interpreted according to the ambience and the acoustic space and visual setup at the time of the performance, as can be seen on the first page of the score in figure 3.8.

Shine

for Bb Clarinet and video

multiphonic

dedicated to Grania Burke my sister

Brigid Burke 2012

00:21, graphic out-lines with bubbles
whispering ghost sounds, exploring extremities in register

Bb-Clarinet

* diamond noteheads= ghost tone

Fish figures with kaleidoscope images

01:30, Outlined graphic images
whispering, scattered notes with space

Distant, whispering sounds

01:24, Bubbles

winding notes around similar pitches with staccato notes and pitch bends

Kaleidoscope images spinning

2:15, Spinning kaleidoscope images

staccato notes, very soft, add length and with subtle pitch bends.

0:00?, Bubbles subtle shaking

add lib pitches in barely audible manner with much air

0:00:00, Bubbles
Distant, whispering sounds

Brigid Burke

Page 1 of score
Visually *Shine* uses bubbles (video) to start the journey of *Escapee Gloss*. It fuses the bubbles as shadows into hinted, layered digital images. The broken, hand drawn keys and graphic notations are only seen in the distance as part of the many layers that make the movement.

Atmosphere is created through the pulse of the visuals created by subtle swirling with hollow sounds that are notated with big graphic notes in the score. These graphic notations are interpreted by the performer using their intuition and timing so they can take between half a second to four seconds according to the acoustics of the space.

Explorations of timbre are the central component of *Shine*. The interest in expanding the clarinet sound resources available through the extended clarinet is prevalent throughout. Many sections of this movement indicate that the timbre is the most significant element, rather than the melody, harmony or rhythm. *Shine* is a timbral, dynamic and spatial composition, built on a series of gestures that can be seen in an earlier composition, *Gestures*, composed in 1997 (as seen in figure 3.9 page 1 of score of *Gestures* for solo Bb clarinet).
Figure 3.9 Brigid Burke *Gestures* Page 1 of score

**Gestures**

*dedicated to Rob Burke*

*for Bb Clarinet/Bass Clarinet*

Brigid Burke 1997

*Agitated*

$J = 84$

---

Gestures page 1
These two works can be defined by their timbre, dynamic level and the space in which they are executed rather than by pitch, even though the melodic material is built around a twelve-tone spiral scale of tri-tones (scale 21 from figure 3.10).

**Figure 3.10** Nicolas Slonimsky\(^{81}\) *Thesaurus of Scales and Melodic Pattern No 21*

Multiphonics occur throughout *Shine*, not as melodic motifs, but as specific timbres. Quarter tones are also used extensively to create the effect of subtly changing tone colours rather than melodic lines, and specific dynamics are marked in almost every bar, with frequent crescendos and decrescendos, (as seen in figure 3.11 page five of the score of *Shine*).

\(^{81}\) Slonimsky, 21.
**Figure 3.11 Brigid Burke *Shine* page five**

- *4:07*
  - To be played literally through registers and with space.
  - Moving spinning black and white pics.

- *4:15*
  - Frematic fast notes all over the place.
  - But to be played in a subtle manner.

- *4:30*
  - Even layers.

- *5 sec.*
  - Slower.

- *7:48*
Figures 3.12 to 3.14 are fragments of *Gestures* and demonstrate different subtle sounds and pitch explorations, which are reminiscent of *Shine*. In figure 3.15 these subtle flourishes take the microtonal gestures to another world of exploration.

**Figure 3.12** Brigid Burke *Gestures* Multiphonics

![Multiphonics notation](image)

**Figure 3.13** Brigid Burke *Gestures* - timbre notes

![Timbre notes notation](image)

**Figure 3.14** Brigid Burke *Gestures* - Sub-tones/breath sounds

![Sub-tones/breath sounds notation](image)
Figure 3.15 Brigid Burke *Shine* - Flourishes used in the score

These tri-tone patterns of the flourishes are taken from Nicolas Slonimsky's *Thesaurus of Scales and Melodic Patterns*\(^{82}\) as seen in Figure 3.6

The 12-tone scale used throughout *Shine* opened up endless possibilities. When the melody or gesture was stationary and went into the graphics within the score, the order of the positions of the notes became free. This freedom resulted in several tonalities having successive major and minor harmonies.

The visual component is bubbles blown from bubble machines images of hand drawn keys and graphic notations seen in the distance throughout *Shine*.

\(^{82}\) Slonimsky, 174.
**SHINE (analysis) for Bb clarinet and video**

<table>
<thead>
<tr>
<th>Time</th>
<th>Clarinet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong> 00’00”</td>
<td>Whispering ghost sounds between short gestures made up of a mixture of long and short sounds and multiphonics. Quaver rests appear between fragments creating a sense of space and distance.</td>
</tr>
<tr>
<td>00’21”</td>
<td>Graphics indicating bubbles whereby whispering ghost sounds are to be continued in all registers in an extreme manner, referring to pitch range. These become sparse and barely audible.</td>
</tr>
<tr>
<td>1’05”</td>
<td>Long and short gestures with multiphonics, using quaver and semiquaver rests.</td>
</tr>
<tr>
<td>1’20”</td>
<td>Graphic image of bubbles – more subtle whisper sounds created.</td>
</tr>
<tr>
<td>1’48”</td>
<td>Graphic image of thick dark lines allowing for random notes to take form of the shape represented incorporating extreme dynamic fluctuations.</td>
</tr>
<tr>
<td></td>
<td>Subtle long tones with quarter tone movement and whisper sounds</td>
</tr>
<tr>
<td>1’50”</td>
<td>Graphic notation of thick curly line indicating winding notes and pitch bends. The notation becomes dark spots indicating random pitches, soft with subtle pitch bend and use of voice.</td>
</tr>
<tr>
<td>2’00”</td>
<td>Subtle longer tones with use of quarter tone.</td>
</tr>
<tr>
<td>2’20”</td>
<td>Develops into gestures and fragments comparable to opening with quarter tone movements, multiphonics, whisper sounds. Graphic included indicating ascending glissando run.</td>
</tr>
<tr>
<td></td>
<td>Subtle pianissimo ambience interrupted with fast flourishes that move in conjunct motion due to the 12 tone nature of the pitches. Amongst the flourishes fragments of quarter tone and long tone phrases appear.</td>
</tr>
<tr>
<td></td>
<td>Graphic notation of thick dark shapes depict gliding tones.</td>
</tr>
<tr>
<td>3’44”</td>
<td>Whisper sounds, pianissimo</td>
</tr>
<tr>
<td>Time</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5’22”</td>
<td><strong>SHINE (analysis) continued for Bb clarinet and video</strong></td>
</tr>
<tr>
<td></td>
<td>All the timbral elements present during this middle section - short</td>
</tr>
<tr>
<td></td>
<td>fragments of flourishes interspersed with breathy, hollow sounds</td>
</tr>
<tr>
<td></td>
<td>depicted by shapes some hollow some filled in, multiphonics, whisper</td>
</tr>
<tr>
<td></td>
<td>sounds and long tones with quarter tones.</td>
</tr>
<tr>
<td>5’35”</td>
<td>Multiphonics feature amongst opening fragments with rests, including</td>
</tr>
<tr>
<td></td>
<td>crotchets rests creating sense of space and subtleness.</td>
</tr>
<tr>
<td>5’57”</td>
<td>Flourishes repeated, interrupting long tones with quarter tones and</td>
</tr>
<tr>
<td></td>
<td>held multiphonics.</td>
</tr>
<tr>
<td>8’47”</td>
<td>Fast spinning, playful flourishes built on 12 tone structure. Tempo and</td>
</tr>
<tr>
<td></td>
<td>dynamics fluctuate between extremities.</td>
</tr>
<tr>
<td>9’30”</td>
<td>Hollow shapes in graphics indicate pianissimo hollow sounds.</td>
</tr>
<tr>
<td>10’20”</td>
<td>Held long tones of multiphonics and quaver tones.</td>
</tr>
<tr>
<td>10’55”</td>
<td>Fragments of whisper sounds and multiphonics repeated throughout this</td>
</tr>
<tr>
<td></td>
<td>ending section</td>
</tr>
<tr>
<td>11’27”</td>
<td>Colour graphic images represent sub tones played as if in the distance</td>
</tr>
<tr>
<td>11’37”</td>
<td>Delicate notes heard in rhythmic pattern of whisper sounds at 11’27”.</td>
</tr>
<tr>
<td>12’07”</td>
<td>Graphic images of spots/ bubbles indicate subtle sounds representative</td>
</tr>
<tr>
<td></td>
<td>of floating bubbles.</td>
</tr>
<tr>
<td>12’ (end)</td>
<td>Even though <em>Shine</em> only employs minimal graphic notation in the score,</td>
</tr>
<tr>
<td></td>
<td>the use of short gestures and space create an effect of spontaneity and</td>
</tr>
<tr>
<td></td>
<td>the piece has an improvisational character despite the fact it is mostly</td>
</tr>
<tr>
<td></td>
<td>traditionally notated.</td>
</tr>
</tbody>
</table>
Movement 2 – Scintillating

For electronics and visuals

Let everything happen to you
Beauty and terror
Just keep going
No feeling is final”

Rainer Maria Rilke83

Scintillating was inspired by portraits of two clarinetists, one of myself and the other of my sister, Grania Burke. The two portraits have been placed side by side and angled towards each other as if in conversation. They throw off sparks, flash, sparkle, shine are animated and above all show brilliance. The intent of is to express the message of extremities in the poem above by Rilke.

The creative process evolved from reflection upon these portraits: two strong characters, forever voicing their intention, creating at times anguish and stimulation. These dramatic figures were then transformed into a ghostly presence with intense black ink strokes to create, in the words of Clarence Barlow, “a metamorphosis of dancing objects.”84

The opening is sombre and atmospheric, but this mood is very shortly interrupted by vibrant and energetic motifs. Syncopation and punctuations of repeated rhythms work against each

other and timbral alterations move in and out of sustained tones. These repeated rhythms make an amalgam of tonality and pulse that keeps the work in total harmony with itself.

The clarinets and electronics constitute an ensemble of two people as if they are talking to each other throughout.

*Scintillating* began as a fully notated score for Bb clarinet and bass clarinet that was then transformed into an acousmatic composition through filters, fragmentation, layering and visual elements. The materials that have been employed in the creation of the artworks associated with *Scintillating* are canvas, gold, bronze and silver leaf, resin, impasto, acrylic and house paint, silk screen prints, pen and ink and hand printed paper. The video footage used throughout takes as its starting point the two portraits, which includes flames seen through green luscious leaves. The colors used for the portraits are contrasting: red, black and silver in my portrait and yellow, gold and black for bass clarinet. These choices of colors and texture are bold and simple as is the relentless pulse, which operates in *Scintillating* much as in Francisco Kröpfl's description of the relationship between visual and sound sequences.

> Pulsation of a sound sequence creates a first level of organization in articulating visual sequences….The sound sequence imposes a meaning as a consequence of a divergence of meaning between both dimensions....

---

The images grow smaller or switch all over the screen, depicting rhythms in the audio. The squares expand, merge with different fields of light. The images float as a field of space (see figure 3.16 of images).

**Figure 3.16** Brigid Burke *Scintillating* Video Stills
The plates shown in figure 3.6 are a selection of parts of the portraits processed digitally, creating layered and refined artworks. The video takes the viewer on a journey with parts of the portraits emerging from each other to result in snapshots traveling over the screen. The original concept in the notated Bb and bass clarinet score (see figure 3.17 for page 1 of the score) was to make it seem as though only one person was performing while in fact, the Bb clarinet and bass clarinet are in conversation, almost in unison at times, but as the piece progresses the separation evolves musically as well as visually.
Figure 3.17 Brigid Burke *Scintillating* Score Bb clarinet and bass clarinet Page 1.

Scintillating
for Bb clarinet and Bass clarinet  
Brigid Burke 2012

Clarinet in Bb

Bass Clarinet

B♭ Cl.

B. Cl.

B♭ Cl.

B. Cl.

B♭ Cl.

B. Cl.

B♭ Cl.

B. Cl.

B♭ Cl.

B. Cl.

B♭ Cl.

B. Cl.

B♭ Cl.

B. Cl.

B♭ Cl.

B. Cl.
The music for Scintillating is based on the progression of different shapes moving through erratic intervals (as seen in Page 1 of the score on figure 3.17). This is heard in the final version with these transformed clarinet sounds. The work commences with a monotone colour, with sepia and black and white images and this evolves into boxes of images that become brighter with pop art references and comic overtones. The final image is a return to the two original portraits facing each other.

Scintillating is in ternary form (ABA) and in the original notated score in common time, with bar lines. Section A comprises 10 bars of the work. There are moments when the clarinets/electronics are in transition periods that form a new character which is more lively as they work in counterpoint with each other, echoing each other’s nuances.
Movement 3 - *Silk*

For prepared piano, Eb/bass clarinet, bass clarinet/voice, flute/voice and live electronics

...this kind of film gives memory nothing to hang on. At the mercy of “feeling”, reduced to going with the rhythm according to the successive rise and fall of the breath and the heartbeat, we are given a sense of what feeling and perceiving really is: a process –MOVEMENT.

Hans Richter 1924

*Silk* is based on a feeling, a moment that can go anywhere. The opening musical and visual statements could develop into array an of focuses. The work is in two sections connected by an electronic interlude of the material previously played and an introduction to the next section. This is performed as one continuous movement.

This is the text I created for Silk and is used throughout in the images (as seen in figures 3.18 and 3.20) and verbalized aurally throughout the score in the flute and 1st Bass clarinet parts (as seen in figure 3.19 page 6 of the score).

Reaction to space, moments of time, state of mind, balance of body, interaction with audience, acoustics of space, feeling space, colour, open, theme of work if notational moments are present, reaction to the senses, openness, flexibility to think of nothing, have no premeditated thoughts, text, excitement, serenity can be a starting point, visual thoughts, a painting, free, a series of paintings, moving image, textual surface, getting inside the movement, motion of the moment, anticipation of the unexpected,

---

silence do not overuse, indulge, feeling of pulse, timbre, chaos, colour, sensuality, excitement, prediction, warmth….

_Silk_ is a significant work in the folio, displaying many facets of my compositional skill as a composer. In this instance, the words, quoted above, preceded the piece, coming about when I was thinking about how I could verbalize my random thoughts when conceiving my art form and expressing the theme of the disembodiment of the clarinets. These are interpreted through vocalizations, improvisations, notations and artwork. I had been using these devices in the other movements, however they appear in _Silk_ as an ensemble composition.

_Silk_ evokes beautiful lines of fabric, colors and texture, a strong, soft and lustrous fabric of melodic lines and text combined with natural colours of red, blue and ochre.

The text used in the visuals and score (as seen in figures 3.18, 3.19 and 3.20), is the essence of my sensory palette in this movement. It is vocalised through all the audio and visual parts and again morphed, layered manipulated and dissected. The disintegration of the text is mirrored in the clarinets, the flute and piano, at times taking on a vaudeville chamber orchestra sound.

I approached this movement with so much vigor. The personalities of the performers Megan Kenny, Grania Burke, David McNicol, Ian Wilmot and myself were a big inspiration behind writing the notated score of this movement. It gave me so much joy, as I have collaborated
with all of them for many years. *Silk* is a celebration of these collaborations, bringing out all
the wonderful attributes of these skilled artists, all well known Melbourne and international
performers who aim for excellence and have a proven record of performing in major local
and international festivals, universities, events, art galleries, concert halls, broadcasts and
recordings.

Megan Kenny: flute/voice—thick warm, full sound and explorative overtones with pure
extremities in the upper register, always projected with magical dreaminess.

Grania Burke: bass/Eb clarinet—somber, warm sound on the bass clarinet and wildness with
precision of interpretation on the Eb clarinet.

Brigid Burke: bass clarinet/voice—flamboyant and bright projection with much freedom in
interpretation of graphic notations.

David McNicol: piano—total precision of articulation, pulse and touch along with freedom in
exploration of the piano. His interpretation of the notations is always a surprise.

*Silk* is divided into two sections, connected by the electronics. Section one (duration 5’30”)
starts with metallic prepared piano chords followed by the two bass clarinets interplaying with
each other with multiphonics and low single notes, with whistle tones from the flute growing
in and out of each other. Repeated chords from the piano quickly interrupt the long ambient
sounds. Then the action starts with these verbal utterances of fragments of text from both the flute and bass clarinet performer as they interpret the graphic notation. The sounds from the flautist are spoken into the mouthpiece creating a more intimate breathiness with accented starts and ends to the fragmentation of the words. The bass clarinet on the other hand is uttering words that come across as random moments with guttural utterances, gestures and individual notes with melodic gestural flourishes in the lower part of the instrument. The subtle melodic gestural flourishes of the second bass clarinet add to this excitement.

The textures are thick and conjure up thoughts of a surreal vaudeville circus. The work feels like a bubble of joviality and excitement. There is a freshness that prevails throughout. The extremity of registers from all the wind instruments with the bass clarinet changing to Eb clarinet at 3min18sec, to add to the structured chaos and extremity of sounds with the continuous metallic and distorted pulse from the piano.

The second section begins with sombre and playful electronic vocal sounds, a long section of almost solo melodic angular phrases from the bass clarinet that are punctuated at times by the fragmented piano rhythms and electronic outbursts.

The electronics are derived from voice utterance and these add another layer of suspense with the long sustained multiphonics, whistle tones and passages of melodic phrases in the bass clarinet. These are in conjunction with the extreme high, low and speech-like abrupt sounds produced from double bass, speech, flute and clarinet sources. All sounds are
processed, fragmented, manipulated, and mixed through computer software sound
ox packages. The ‘peaks’ and subtle layers, and repeated notes in the piano ostinato passages of
repeated rhythms and dynamically erratic clusters from the wind instruments give the work
an conversational feel.

The prepared piano motives and clarinet extended sounds which included voice and
multiphonics were notated and recorded then divided into small samples to create the
electronic sounds heard throughout. As the process of creating the score was recorded
throughout the rehearsal process, the final score became audible and the video samples of
both the still images and video clips were added. The refining the audio electronic music
samples was similar to the rehearsal refinement of the notated score and this was done in
the multi-channel program Adobe Audition.

The score and acousmatic pre-recorded audio is a combination of extended clarinet and
piano techniques. Bass and Eb clarinet techniques include throat sounds, hums, voice
utterances, tongue clicking, screams, multiphonics, monophonics and over-blowing. The
piano techniques include prepared piano in the improvisational sections, transferred clusters,
tone clusters, repeated notes at changeable speeds, glissando, extreme registers, erratic
rhythmic patterns with indeterminate durations and pedal effects (fluctuating at different
speeds with differing pressures) and improvisation on graphic notations. Flute techniques
include whistle tones, throat sounds, hums, voice utterances, kissing sounds, micro-tonality,
tones and over-blowing. Many of these extended devices on the clarinets, flute and piano are
reorganized and work cohesively to create sound clusters simply by changing how each of
the devices are orchestrated. The graphic notations throughout the work can be either
literally or intuitively interpreted according to the ambience and sound world the musicians
are creating and the visual setup of the space at the time of the performance.

The way the voice was used is one of the most interesting techniques used in the
improvisational section. It adds another dimension, especially on the bass clarinet and flute
with acoustic sounds and manipulated and random accented vowels that peak with
unexpected utterances, as if each of the instruments are in conversation with each other.
This improvisational technique adds to the overall timbre and movement of the work.
Another technique used is singing higher melodies and playing lower notes. One hears the
breaking down of sounds with fragments and imitations of other instruments which leaves
the bass clarinet and flute sounding quite extreme. It can be heard especially in the bass
clarinet line of Sheen and in Silk in which it is based around text that is accented with
sampled vocal percussive sounds manipulated live electronically in the computer, prepared
piano and verbal utterances from wind instruments using different vowels and vocal sounds
while playing the wind instruments.

The text at times evolves into complex paths that are made up of an array of lines and
shapes. This is achieved using simple plug-ins and effects which are reapplied to the image.
The same process is used in the audio samples from the clarinets, piano and flute. Every
still/moving image and audio sample is analysed so the visuals/audio shift, add and subtract
from each other. The results are appealing patterns that emerge and continually evolve and grow.

The visual media also included wood, gold, bronze, silver leaf, resin, impasto, house paint, silk screen prints, pen and water color paper, pencil drawings, video footage of which the text was printed into and superimposed over to create these series of images. The superimposed multiple images create a flickering effect throughout Silk. The silkscreen prints ghostly register of fussiness suggests the difficulty of pinning down the text more than a traditional typeset of black and white text would have done. The role that these mediums play in communicating the expressive intent of Silk is expressed through this technique of layering the silk-screened prints of the text. The effect is soft and lustrous fabric as the title infers with the connection of the flamboyant interlocking of the melodic lines, rhythms and text combined with natural the colours of red, blue and ochre which are floating through the layers of images.

The video footage throughout Silk is the layered text with stills from artwork and subtle silkscreen prints of the smashed up clarinets. The visual output is based on the performers' interpretations of the text, the electronic audio and an abstract representation of the visual film clips. The acoustic sounds relate to how they have been digitally processed. The clarinet flutter tongues, sings while playing, speaks and whispers words. The percussive sounds from the prepared piano with repeated chords have been muted by paper inserted across the strings of the piano. The flute whispers, voice fragmentations and whistle tones prevail
throughout. Thick woodwind textures with layering of virtuosic melodic and angular phrases are supported by the prevailing pulse from the prepared piano.

The acoustic samples are processed electronically and combined with the samples of the text, sound and sampled video projections. These visual components are then layered and manipulated in the computer. The words are manipulated by the instrumentalists using a notated score. They interpret them by accentuating certain parts of the vowels and words which are graphically pictured.
Figure 3.18 Brigid Burke Silk - Text notations used in score
Figure 3.19 Brigid Burke *Silk* Excerpt from Score Page 6
Each component of sound and visual parts is based on the manipulation of rhythmic pulses created through the selected text that has been spoken, sung and played in different ways by the performers.

The sonic overtones of the woodwinds are explored in detail over the whole work, relating how they are digitally processed from the clarinet flutter tongues, singing while playing, verbal utterances and whispers along with percussive sounds from the prepared piano. The acoustic samples are processed electronically and combined with the pre-recorded samples of the text and sampled video projections. The disintegration of the clarinets is mirrored in the disintegration of text, heightened by the use of polymedia that enables communication on this complex sensory plane.

The visual tools employed in Silk are gold, bronze, silver leaf, resin, impasto, house paint, silkscreen prints, pencil drawings and text on paper. The video footage throughout Silk is layered text, stills from artwork and images of smashed up clarinets and lines almost depicting buildings (as seen in figure 3.20). These visual components are then layered and manipulated in the computer to create video animations and this series of plates. The colors of intense reds and lashings of inks across the paper with the wild fonts and swirl been integrated into the text adds to the joyous feel of the composition.
Figure 3.20 Brigid Burke Silk video stills
Timbre is a significant element in *Escapee Gloss*, and this is especially apparent in *Silk*. The use of the prepared piano, where paper is layered on the strings inside the piano, creates quite a unique timbre character. Other timbral motifs in this piece include extended techniques and the melodic fanfare ideas.

The prepared piano creates a prevailing pulse with the repetitive quaver and crotchet chords. These chords were inspired by the repetitive sounds in the piano part of Malcolm Arnold’s Sonatina. While Arnold’s chords in Sonatina (as seen in figure 3.21) are consonant and form part of the harmonic structure, in *Silk* the chords have been assorted in no cohesive order and play no role within the harmonic structure. By replicating and distorting (due to the paper inserted into the piano) these chords, the timbral effect created is harsh, unresolved and dissonant. The chords are played as block chords or glissando chords and repeated throughout the piece.

**Figure 3.21** Malcolm Arnold’s Sonatina for Clarinet and Piano

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The second timbral motif is the use of extended techniques, including multiphonics, overblowing and tongue clicks. However many of the extended techniques, such as voice utterances, hums, screams, whispers, whistle tones and throat sounds, stem from the use of the text. The text plays a significant role throughout and is derived from words and phrases including, “state of mind, a painting, free, chaos, colour, warmth, randomness, stillness, tranquility...” The performer may choose to make sounds using the text by sounding the
vowel sounds, a single letter, utter the word or sound fragments of the word. These words or phrases sometimes appear within the graphic notation, improvised sections where the performer is able to draw on their palette of techniques including extended techniques.

Inspired by Arnold’s fanfare flourishes in Sonatina and Fantasy for Clarinet88 melodic flourishes appear in the wind parts of Silk, however these are employed more for their timbral qualities rather than melodic qualities. Fragments of flourishes appear throughout the piece although they are more prominent in the middle section. It is during this time that the texture thickens as the tutti sections become more frequent. Prior to this build up, the texture is not as thick as instrumental lines interweave with melodic, timbral and rhythmic motifs. These flourishes are disjunct, with complex rhythms. There are fragments of sequences within the motif that are repeated. For example at 4’33” in the bass clarinet, the triplet ascending idea repeats three times in a short fragmented section. Another example is the ascending first half of the second group of sextuplets at 3’18” (Bb, G#, E) and the descending second half (high E, A, A),- repeated within the fragment at 3’40”.

The electronic part is a mix of sombre and playful outbursts derived from samples of the text from the voice utterances, and from the percussive piano sounds. The opening begins with a low pulsing drone motif that continues and is fragmented throughout the work. Metallic motifs enter throughout as short fragments or longer passages and the distorted sounds of the prepared piano chords are evident in the second section

**Silk (analysis) for 2 Bass clarinet, Eb clarinet, flute, piano, electronic and video**

<table>
<thead>
<tr>
<th>Instruments</th>
<th>Time</th>
<th>Electronics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening idea: prepared piano plays pianissimo sustained Eb octave chord and then metallic mp glissando chords as crotchets.</td>
<td>SECTION 1</td>
<td>Low pulsing drone gradually enters</td>
</tr>
<tr>
<td>These chords are followed by two bass clarinets interplaying with each other with sustained multiphonics and low single tones. The flute enters with sustained pp whistle tones.</td>
<td>0’00’’</td>
<td>Drone continues and low sustained tones introduced similar to bass clarinet timbre</td>
</tr>
<tr>
<td>Prepared piano distorted block chords (crotchets and quavers) interrupted by long ambient sounds of clarinet and flute</td>
<td>0’05’’</td>
<td></td>
</tr>
<tr>
<td>Chord 1 (G Bb D) with mf staccato quaver accompaniment in left hand while whistle tones continue in flute</td>
<td>0’10’’</td>
<td></td>
</tr>
<tr>
<td>Verbal utterances of fragments of text appear employing sprung rhythm.</td>
<td>0’18’’</td>
<td></td>
</tr>
<tr>
<td>Verbal utterances of words combined with notes</td>
<td>0’28’’</td>
<td></td>
</tr>
<tr>
<td>Glissando ff crotchet chords employ different harmonic character chord 2 (G D G)</td>
<td>0’39’’</td>
<td></td>
</tr>
<tr>
<td>Prepared piano blocked chords appear with crotchet/ quaver rhythms</td>
<td>1’07’’</td>
<td></td>
</tr>
<tr>
<td>Verbal utterances by flute are fragments of words accented but with a breathy quality</td>
<td>1’08’’</td>
<td>Thick texture employing drone, sustained low tones, extended techniques on clarinet and metallic fragments.</td>
</tr>
<tr>
<td>Verbal utterances (bass clarinet)</td>
<td>1’10’’</td>
<td></td>
</tr>
<tr>
<td>Fanfare flourishes between the two bass clarinets creating an element of conversation; supported underneath by the dotted crotchet glissando chords of the piano.</td>
<td>1’19’’</td>
<td></td>
</tr>
<tr>
<td>While flourishes continue in the third bass clarinet part the second bass clarinet part interjects with verbal utterances and the piano accompaniment changes to ff blocked chords</td>
<td>1’25’’</td>
<td>Texture not as thick with only delicate pianissimo sounds</td>
</tr>
<tr>
<td>The flute enters with forte triplets adding to fanfare</td>
<td>1’45’’</td>
<td>Short low pulsing drone motifs</td>
</tr>
<tr>
<td></td>
<td>1’50’’</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2’07’’</td>
<td>Metallic motifs re-enter</td>
</tr>
</tbody>
</table>
**Silk - analysis (continued)**

flourishes.

Bass clarinet continues with fanfare fragments with flute sustained tones and second bass clarinet improvising and incorporating verbal utterances and throat sounds and quarter tones. Interjecting are the dissonant block chords and glissando chords of the piano. These glissando chords are repeated from the opening.

Piano chords repeated from 1’03”

Dissonant block chords relentlessly repeated while bass clarinet continues with fragments of forte and fortissimo flourishes

Second bass clarinet short verbal utterance idea

Thick polyphonic texture. Piano presents dissonant repetitive block chords. Fanfare flourishes appear throughout three wind parts, mostly between flute and third clarinet part. They are made up of complex syncopated rhythms articulated with accents and staccato, disjunct melodic lines and are mostly forte and fortissimo. Segments of verbal improvisations and melodic flourishes appear within the second clarinet part.

Verbal improvisations in both clarinet and flute part

Verbal improvisations in both clarinet and flute part

All three winds improvising, piano part silent

Bass clarinet verbal utterance incorporating vowel sounds and parts of words.

<table>
<thead>
<tr>
<th>Time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2’32”</td>
<td>Distorted prepared piano motifs</td>
</tr>
<tr>
<td>3’00”</td>
<td>Brief metallic motifs</td>
</tr>
<tr>
<td>3’12”</td>
<td>Low drone</td>
</tr>
<tr>
<td>3’34”</td>
<td>Pianissimo metallic motifs</td>
</tr>
<tr>
<td>3’50”</td>
<td>Silence</td>
</tr>
<tr>
<td>3’55”</td>
<td>Metallic motifs and oscillating sounds</td>
</tr>
<tr>
<td>4’07”</td>
<td>Opening low pulsing drone sounds repeated; metallic motifs interweave over the drone</td>
</tr>
<tr>
<td>4’35”</td>
<td>Metallic motifs repeated and pianissimo distorted prepared piano chords</td>
</tr>
<tr>
<td>4’50”</td>
<td>Low pulsing drone</td>
</tr>
<tr>
<td>5’40”</td>
<td>Distorted metallic motif begins mf diminuendo to pp</td>
</tr>
<tr>
<td>5’58” – 6’03”</td>
<td></td>
</tr>
<tr>
<td>6’06”</td>
<td></td>
</tr>
<tr>
<td>6’13” – 6’17”</td>
<td></td>
</tr>
<tr>
<td>6’25”</td>
<td></td>
</tr>
<tr>
<td>6’40”</td>
<td></td>
</tr>
<tr>
<td>6’44”</td>
<td></td>
</tr>
<tr>
<td>6’54”</td>
<td></td>
</tr>
</tbody>
</table>
### Silk - analysis (continued)

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repetitive block chords reappear in piano</td>
<td>7'16''</td>
</tr>
<tr>
<td>Flute enters with verbal sounds and improvisational elements, joining the bass clarinet.</td>
<td>7'41''</td>
</tr>
<tr>
<td>Piano is silent/soli between flute and bass clarinet</td>
<td>8'00''</td>
</tr>
<tr>
<td>Piano solo</td>
<td>8'38''</td>
</tr>
<tr>
<td>Short silence</td>
<td>8'44''</td>
</tr>
<tr>
<td>Fanfare solo (ff) by bass clarinet (third part) accompanied with fragments of block chords in the piano. The fanfare solo is highly chromatic, utilizing complex rhythmic patterns with extreme fluctuating dynamics</td>
<td>8'50''</td>
</tr>
<tr>
<td>Fragments of the flourishes in the flute part with fluctuating dynamics, creating an element of conversation</td>
<td>9'09''</td>
</tr>
<tr>
<td>Bass clarinet verbal improvisation interjects solo</td>
<td>9'12''</td>
</tr>
<tr>
<td>Whistle tones in the flute</td>
<td>9'30''</td>
</tr>
<tr>
<td>Winds present verbal improvisation then fall silent</td>
<td>9'40''</td>
</tr>
<tr>
<td>Repetitive chords utilizing octave leaps in the piano</td>
<td>9'47''</td>
</tr>
<tr>
<td>Tutti verbal utterances, improvisations utilizing elements such as, tone clusters, tremolo, harmonics and quarter tones, key clicks, and screams</td>
<td>9'55''</td>
</tr>
<tr>
<td>Silence</td>
<td>10'20''</td>
</tr>
<tr>
<td>Short burst of repetitive piano block chords</td>
<td>10'30''</td>
</tr>
<tr>
<td>Clarinet verbal utterances and improvised segments intertwined with short melodic flourishes between the flute and third clarinet part. Sections of piano block chords</td>
<td>10'56''</td>
</tr>
<tr>
<td>Block chords – held in the right hand, off beat quavers in the left, repeated until the end.</td>
<td></td>
</tr>
</tbody>
</table>

Other musical events:
- Pianissimo metallic fragments over drone
- Metallic fragments crescendo to mf
- Fortissimo drone and metallic motifs
- Silence
- Distorted prepared piano chords repeated. First enter ff then diminuendo to mf
- Low pulsing drone enters fluctuating in dynamics with crescendo and diminuendo pattern
- Distorted prepared piano chords repeated pianissimo
- Drone fluctuates in dynamics to end pianissimo
Movement 4 – Pantone

For bass clarinet, double bass, electronics and visuals

.....Insoon, she is called,
Dancing to the beat
Of different drums,
Laughing in rhythm
With the humming bird
Floating on the wings of time.....

Kaleidoscope by E. J. Barnett

Kaleidoscope by E.J. Barnett is a collection of poetry that takes a glimpse of how we reflect our dark secrets as well as our beautiful dreams. Just as the kaleidoscope that emerges in Pantone, a collage of ever-changing colorful pantone patterns, portraying stained glass images (as seen in figure 3.23). The visuals and music as depicted in the poem continually float from dark to light, exposing a prism of our inner thoughts.

The complex pattern of frequently changing shapes and colours, combined with lines and patterns that are embedded into the ever-changing images, creates both a complicated set of circumstances and a beautiful pulse of events.

In performance, the moving imagery dominates as the landscape glass plate is modulated with the movement of water, while the gentle pulse of the evolving kaleidoscope softens the

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imagery. Furthermore, the relationship between the two instrumentalists and the hypnotic kaleidoscopic pulse creates spontaneity with every moment in time.

The audio from the bass clarinet, double bass and sampled water electronics is a subtle counterpoint that punctuates and accentuates these delicate moving images, creating depth and interesting nuances.

The aim was to take the sonic world to the next level of real-time interaction in which compositional decisions are made continually through the graphic notations in the score during the performance. There are many random computer audio samples, which open up the free improvisational shaping, leaving many of the decisions to the performers being intuitive with the pre-formulated video material. This means no two performances are identical but have the same energy.

Two performances were created from this score of imagery, both with different performers. The similarities in the outcome are quite remarkable even though both performers came from quite different backgrounds. The similarities of work were the pulse and energy of intent, which is set up in the pulse of kaleidoscope and the flow of water through the glass plate imagery. The differences were the melodic lines created by each bass player and the way each player reacted within these performance situations with the same electronic audio and visual material. Both performances of Pantone achieved what I envisaged the work would be.
The kaleidoscope that prevails throughout *Pantone* is an integrated color system that excels in color management of special colors such as pantone and house/designer colors. The kaleidoscope color management combines CMYK (colorimetric) profiles with patented special color (spectral) profiles.

At times the assemblage of line drawings, water, soft colours and glass portray a moving image of lace (as seen in figure 3.23). It is this compilation of imagery throughout *Pantone* that illustrates the role of computer in an instrumental improvisational context. The plug-in utilised throughout *Pantone* creates a mirroring effect, resulting in multiple screens within the one screen to synthesise complex, delicate shapes and lines. The effect selects certain parts of the colour spectrum controlled between the two images and is analysed so the visuals shift, add and subtract from each other. The results are visually appealing patterns that continually evolve and grow. This ever-moving kaleidoscope is continually interrupted by the diffusion of water through the reflection of the glass plate (as seen in figure 3.24) and is further diversified by the changing tempo at which it diffuses.
Figure 3.23 Brigid Burke Pantone Video stills
The finished video functions as the score with the musicians/performers reacting to the moving images to create the audio.

The images of *Pantone* capture an ever-dynamic kaleidoscope, interrupted by gentle water moving through the seascape of the glass plate (as seen in figure 3.24 and 3.25).

**Figure 3.24** Brigid Burke *Pantone* - Coloured glass plate
Figure 3.25 Brigid Burke *Pantone* - Coloured Elaborate image of a kaleidoscope incorporating both the seascape plate and line drawings.
The compilation of imagery throughout *Pantone* illustrates the role of computer in an instrumental improvisational context. The kaleidoscope is generated in the program through a plug-in.

There are four dominant sound and visual voices throughout. Each becomes more obscure, hidden and filtered through deconstruction and reconstruction of imagery and sound. My original images have very little resemblance to the image in the finished kaleidoscope as the image went through intense digital editing with computer imagery software before it was again manipulated in live performance.

*Pantone* is an intimate exploration of how an evolving kaleidoscope of line drawings, water, soft colors and glass, created as a moving images, are reflected in a emotional way throughout the work both audibly and visually.
Movement 5 – Matte
For electronics and visuals

Le silence éternel de ces espaces infinis m'effraie. (The eternal silence of these infinite spaces frightens me.)

Blaise Pascal⁹⁰

Matte is a drone minimalist musical piece that emphasizes the use of sustained notes and tone-clusters, characterized by lengthy sounds with slight harmonic variations throughout each moment, what La Monte Young, one of its 1960s originators, defined in 2000 as "the sustained tone branch of minimalism"⁹¹.

Matte was inspired by the soft environmental soundscapes of rainforests, mimicked in the whisperings and air sounds of the clarinet, as well as in the clicking of clarinet keys, percussive cymbal and bowed vibraphone metallic sounds. The aim was to make an immersive and intimate sound world of familiar nature sounds. This was accomplished with rhythmic semiquaver passages on the vibraphone and punctuated by the wind chimes and sustained cymbal strokes, with lethargic swirls of the rain stick, with gong-like sounds of the suspended bowls and the piano chimes and long sustained, bowed vibraphone notes. All the vibraphone samples are played with soft mallets.

⁹¹La Monte Young, La Monte Young 2000 http://www.last.fm/music/La+Monte+Young (accessed 10 May, 2013).
These sounds evoke the colours and shapes of the visuals, which are watery greens, oranges, and reds layered with light and water. The artwork of Matte consists of round pieces of coloured glass, small broken clarinet parts and both wooden and silver keys, which were moved through water in a glass bowl. These images were combined with a series of blue mixed-media works and coloured pencil drawings on paper formed in the shapes of droplets, a glass slab filled with bubbles and sand and a series of squiggle-based mixed media works using acrylic paint, pen and ink and charcoal works on paper which were then photographed. Much of the three-dimensional work on paper was achieved with thick house and impasto cement poured and scraped on to the canvas. The visual components are layered and digitally processed to form coloristic timbres and intricate lines of beautiful gestures. In performance, the combination of the visual elements from the live feed with the fixed video creates a multi-faceted visual experience.

The sounds and visuals in Matte are unique, like the wind, full of rich sonorities just waiting to be transformed or left alone. This work explores various frequency changes with these sound and visual worlds through extreme contraction, expansion, panning and pitch modification.

The clarinet parts are processed live with video mixing that incorporates effects that warp and laminate and are mixed with synthetic samples of computerised water samples. They are reminiscent of the behaviour of water reflecting and distorting the patterns of light and wave
shapes. The abstraction it creates is like discovering a new enchantment with unusual structures.

Percussion and clarinets sampled and treated throughout *Matte* are the vibraphone, mark tree (wind chimes), piano tuning peg chimes, metal mixing bowls (suspended), bowed cymbals, high cymbal with chain, low cymbal and rain stick, key clicks and voice articulations into lyrically thick percussive sounds overlapping themselves to form complex rhythms. These subtle patterns are overlaid and textured into ten channels in a multichannel program.

The visuals of the tank of clarinet parts and marbles move in subtle ways through a spectrum of colours to depict the environmental aspects first envisaged for this composition, with added inks being dropped into the water to create different environments throughout the composition. A series of blue images (as seen in figure 3.26 of *Blue Stills* pen and ink silkscreen) depicts the reflections created by water as seen in these images.
Figure 3.26 Brigid Burke *Matte* Blue Stills pen and ink silkscreen
The coloured inks moving through the water outline the gentle movement in the water and a pulse is created through many effects such as strobe, simulated water, soft wind effects on the blue images and blurred photography through glass. The components of the water flowing around clarinet bells video, charcoal drawings, drips (portrayed in the pencil drawings), bubbles create a sense of peace throughout, (as seen in the video stills of figure 3.27).
Figure 3.27 Brigid Burke  *Matte* Video Stills
A series of photographs that diminish to a blank screen and moving water add to the timeless and changing pulse of *Matte* (as seen in the video stills of figure 3.28).

**Figure 3.28** Brigid Burke *Matte* drawings processed
A series of images of shaded sculptured petals were then created with another layer of subtle movement that adds to the layers of moving water throughout *Matte* (as seen in the video stills of figure 3.29).

**Figure 3.29** Brigid Burke *Matte petals in movement.*
Movement 6 – *Sheen*

For Bass clarinet, live electronics/laptop and live feed, bowl of water with keys and pre-recorded video projection

The theatrical aspects of the work are inherent in the structure itself, most of all, a structure of actions: to be listened to as theatre and to be viewed as music.\(^9^2\)

Luciano Berio

The performance develops from what seems like odd, broken pieces of clarinet in their still form. The opening clarinet gestures are sampled and spawn ‘bubbles’ from both audio and visual sources that symbolize underwater space.

At times the sounds and graphics of the broken clarinets can seem strange and horrifying as they take on twisted, biomorphic forms and patterns extreme electronic distortions (as seen in the video stills of figure 3.30). *Sheen* has darkness about it with the abruptness of attacks from both the bass clarinet and electronics juxtaposed with similarly abrupt changes in the visuals. Japanese influences are prevalent, (as seen in the pen and ink art work done on rice paper of figure 3.30 3rd row middle image) with the splashes of yellows and reds that convey this spiritual feel.

Components that come into play include audio mulching on laptop, a live camera on a bowl of water filled with clarinet parts, another camera on the fingers/keys of the bass clarinet

and a prerecorded version of clarinet parts on video that has already been processed. It uses air, plucked and rhythmic forces from computer generated sounds with clarinet and air sounds to create live and audio mulched sounds to create this energetic and pulse driven work. A layer of processed improvisations from the clarinet and voice dances above an intense and thick rhythmic pulse.

Microphones and laptop control the granular synthesis of acoustic material sampled during the performance. This takes my work to the next step of exploration in live performance, with many exciting practical and creative possibilities for media art practices.

The video is taken from stills of works on wood, canvas and paper-using pieces of the clarinet that have been smashed up with a sledgehammer. Seen in the video stills of figure 3.30 of smashed up clarinets and of processed and filtered images.
Figure 3.30 Brigid Burke Sheen Video Stills
The composer and performer controls the samples through the laptop and the video mixer and decides what to play, which as an improvisation is directly influenced by the sonic output of the system. The live clarinet triggers and modifies the timbre through a microphone which sends a live feed into the computer. The modification is by pitch-shifters and sweeping after microtonal sounds to create artificial clarinet overtones, mono and multiphonic sounds. In performance terms, this creates new musical ideas that trigger fresh improvisations.

Timbre also plays an important role in *Sheen*, particularly in the improvisation sections of the bass clarinet. The process of articulating specific electronic frequencies replicates the acoustic sound. The electronic part also contributes to the overall texture through the percussive sounds that derive from the destruction of the clarinet samples. The overall effect creates complex mesmerizing visuals and audio patterns.

Subsequent acoustic and visual motifs are captured and emerge sonically and visually creating rhythmic reflections of the clarinet lines. As the layers accumulate, they rise up, overpowering their acoustic and visual origins. When the performer stops performing, the objects begin to sink slowly to the bottom; algorithmic explorations of the stored audio material then create counterpoints on the original themes. When they have sunk out of view, the piece ends.

The composition/performance could perhaps be conceived as creating counterpoints on player-defined fragments, effectively enabling the musician to perform a time-extended
improvisation. The visual output is based on an abstract representation of how the music is progressing with the audio. This was also affected by the live video feed samples taken which affected the lighting and the amount the performer interacts with the footage in real time. The bubbles and water movement that the camera is pointed at is controlled by a fish tank pump. The movement and pulse in the water is then filtered through such effects as strobes and finger movements from the prerecorded image and live feed.

All the audio processing was done in Audio Mulch (as seen in figure 3.31 which is the audio mulch patch used in performance), including the live acoustic bass clarinet manipulated during performance. All prerecorded samples were refined and processed in Pro Tools.
As the composer and bass clarinet player of *Sheen*, I am in a natural state; after many years of performance and improvisational situations, I am able to react spontaneously. I see the laptop as another line of the composition/improvisation, and triggering the samples and effects on the acoustic sound with the mouse is how I feel most comfortable. I have used pressure pad attachments and Midi pedals in the past, but this added stress and unpredictability to my performances.
Figure 3.32 Brigid Burke *Sheen* Performance setup

Figure 3.33 Brigid Burke *Sheen* Performing
The transformation of the improvised bass clarinet, electronic sounds live video feed and pre-recorded video component gives the listener/viewer a new experience of colours and density. The visual in this movement is united by the music that at times is an abstraction of the visual rather than a direct obvious replication.
**Movement 7 – Gloss**

1. Bb Clarinet, Bass clarinet, Flute, Piano and electronics
2. Electronics
3. Bb Clarinet, Flute, Double Bass and Electronics
4. Bass Clarinet, Piano, Electronics and Flute
5. Electronics
6. Piano, Double Bass and electronics
7. Bass clarinet, Bb Clarinet Double Bass, Flute and electronics
8. Eb Clarinet, Bass clarinet, Flute, Piano and Double Bass and Electronics

...We hide behind our words.
Why not show them as poems!
We cannot even ink brush two lines
The same. Each is fresh, however
Crude, spontaneous as each of our
Sounds and motions.
Each telegrams us something
Like conversation, ever ongoing.\(^3\)

**Figure 3.34** Paul Reps *Gold and Fish Signatures*

Three images comprising figure 3.34 have been removed for copyright or proprietary reasons.
Figure 3.35 Brigid Burke *Gloss* Graphic Notations and Video Stills
*Gloss*, whose nine sections are to be played as one, continuous movement, takes you through a dream world of line imagery that evokes senses of fantasy, intellect and desire through the movement of the lines and the performers’ interpretations of the notations/graphics (as seen in figure 3.35 and figure 3.34 of Paul Reps *Gold and Fish Signatures* and graphic interpreted notations in the video for Movement 1 in figures 3.37).

The way Vladimir Suchanek describes reality and dreams expresses my ideas of these notations and how they should be interpreted:

...when my prints meet with a sensitive viewer, who is excited by the same angle of view on the world, at the events and their objects, which has the same joys and concerns, he might find in them an echo of his own ideas, dreams and feelings....

The images in *Gloss* evoke clouds of sound that give the work its excitement and create a sonic movement in the space. The sounds throughout may be limited in their vocabulary but are projected with a variety of shapes and gestures in the different layers. The formal control of the sounds, both acoustic and electronic, is built in a cohesive form to create this radical sonic and visual world.

*Gloss* was inspired by a series of nine pen and ink drawings. Each graphic was interpreted by both an acoustic ensemble and live electronics and then combined with a series of black and white drawings, shadow line drawings works and pencil drawings on paper formed into squiggles depicting wire, which were then photographed.

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94 Vladimir Suchanek *Reality and Dreams* 1967 taken from exhibition seen in (Prague, Czech Republic 5th May 2013)
Each graphic contains an event linked with the electronic score. The rhythmic and tonal possibilities can be interpreted according to the reaction of the performers. To make the graphic scores less ambiguous, I have listed instructions under each graphic as to how to interpret it. This is presented on a time line which should be adhered to precisely.

Articulation, tonal qualities, dynamics and rhythmic shapes should be taken into consideration when interpreting each of the graphics. High and low in the graphics correspond to high and low pitches. The denser the graphic, the louder and faster the music should go. Intermingling lines symbolise unrestrained emotion. Above all, the players must be diverse when interacting with each other. They must be free and individual when interpreting each of the lines and circles within the graphics.

_Gloss_ is for five performers: Bb/bass clarinet, bass/Eb clarinet, concert/piccolo flutes, double bass and piano. To this ensemble are added audio mulched electronic music samples, with different instrumental combinations for each of the nine movements and fixed visuals on video. The pen and ink drawings are both digitally processed and presented in the raw state to form a series of intricate explorations.

The aim was to take the sonic world to the next level of real-time interaction in which compositional decisions are made continually through the graphic notations in the score during the performance. There are many random computer samples which open up the free improvisational shaping. Each performance is thus a snapshot of exploration of the combination of five acoustic instrumentalists, live electronics and graphic notations._Gloss_
may be “staged” rather than presented “in concert” in different parts of the space, also with multiple projections of the images if the space permits.

These techniques can also be considered when interpreting the graphics which is left to the performers' discretion.

Hand pops: pop palm of RH against opening of pipe – pitch with LH fingerings.
Key Slaps: slap down any key
Velar clicks: lips around pipe
pitch by changing mouth-shape and/or fingering
Spit tongue: lips against pipe opening, tongue in and out in spitting fashion - single, or multiple either fingering changes.
Key clicks/clatter: mechanism sounds
Lion’air: “vocal fry” inhale or exhale – pitch and filter fingering
Khhh: lips around pipe - dry gargle in back of throat - pitch and filter by mouth shape and/or fingering
Timbre changes: alternative fingerings, vent side keys, add unused keys, under or over blowing, change lip, throat or air.
‘Register key trick’ for clarinet: holding register key, under blow and run fingers....

Some sections of graphic notations are not coordinated. Here the player has liberties to have rests and a choice of notes of indeterminate lengths. Performers must exercise musical judgment as to when and how to play. This judgment should be based on what is happening with the other players and electronic counterparts. “Dots” within graphics should be short but not staccato.
All performers make free use of sul ponticello, tremolo, mutes, special tonguing, harmonics, flutter tongue, glissandi and half note fingerings. It can also be considered to remove the bottom part of instrument and insert finger into bore (index finger best) and change pitch gradually. Place finger inside bore far enough to constrict opening so that a higher partial will sound.

A kiss to the mouthpiece can also be considered by the wind instrumentalists. Vibrato, smorzato, jagged rhythms and articulation should interpreted literally throughout. Mouth noises can be added to pitched notes at any time as well as investigation into the possibilities of vocal sounds through wind instruments.

Here are some further possibilities by a couple of eminent practitioners:

Gardner Read suggests the following techniques.

The flute joint is fully extended then must shake the instrument while playing violently maintaining a pitch.
Press mouth against the mouthpiece and suck air into the mouth-hole, making a “smacking” noise.
Hold sound until breath is exhausted.
Employ gasping sound into flute mouthpiece without tonguing. Use a very wide embouchure so that all the air is expelled from lungs, resulting in more noise than pitch.95

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Erhard Karkoschka has provided further possibilities which I summarise here. That all the performers are left to be free in interpretation and can be stimulated to any interpretation whatever; anything goes. If normal lattice of pitch and duration is imagined to be under the page showing through novel results can be attained. The various graphics can be interpreted as pitches and durations but also as dynamics. As an ensemble any desired agreements as to interpretation may be made. The graphic of the score is the stimulation for the expressive force. Where there are no dynamic symbols the player must perform in a uniform manner. All graphics are to be interpreted to stop watch specification. There is room for performance interpretation and agreement of other performers and acoustics of space. The score is interpreted with reference to time: when white - rests are to be taken and thus there is space between sounds.

The first graphic of Gloss is interpreted literally (as seen in figure 3.38 Graphic Notation), creating layers of staccato short notes with layers of slow moving visual strings in the video.

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Figure 3.36 Brigid Burke *Gloss* Graphic Notations Movement 1
Figure 3.37 Brigid Burke *Gloss* Video stills Movement 1
Movements 2 and 6 involve the disembodiment of the piano (as seen in figure 3.38 Graphic Notation).

The piano is featured both electronically and acoustically. Sepia browns and blues are used (as seen in figure 3.38). The fast pace of the graphics in movement two creates the action, which adds to the overall impact of the movement. The piano sounds derive from the inside
of the piano and are processed to create metallic and squeaky sound worlds that travel from one speaker the next. In movement six, the piano images are reinstated but this time with the acoustic piano, double bass and electronics. The wired graphics merge with bubbles/circles and piano parts. There are shades of colour and swirls that are forever moving.

The third movement of *Gloss* starts out with meandering flute and double bass lines supported by gliding electronic tones with a single line image embedded into a glass plate with water and a tinge of yellow ink, which creates a memorizing effect. The image in the glass changes subtly through the use of outlines and pixilation.

In movement four of *Gloss*, the raw graphic from the score is the basis of the animation in the visuals (as seen in figure 3.39 Graphic Notation). The many effects that have animated the video are black, white and grey, which are affected by the outlines, lighting and shadows of the graphic. These effects on the movement create a sombre feel, but this line of animation also creates an excitement with a delicate touch. Single flute notes and electronics reinforce the subtle movement of the graphic.

*Figure 3.39* Brigid Burke *Gloss* Graphic Notation Movement 4
Figure 3.40 Brigid Burke Gloss Graphic Notation Movement 4
At the six-minute point, the music is again based on a single graphic from the score (as seen in figure 3.40 Graphic Notation). It is stroked with lines that pulse throughout the movement. Musically, the subtle pulse is reinforced with electronically enhanced breath sounds manipulated from the flute and fused with shadings from the graphic.

**Figure 3.41** Brigid Burke *Gloss* Graphic Notation Movement 6

The colouristic moments in *Gloss* are blended in such a way that you can be suddenly engrossed in a world of luscious purple, reds and yellows without losing the flow of the line.
One graphic that looks like a piece of wire is seen spasmodically throughout the whole of *Gloss*, connecting the visual world and giving the audio a focal point (as seen in figure 3.42 a piece of wire).

**Figure 3.42** Brigid Burke *Gloss* - Video Graphic

In movement seven of *Gloss*, the action starts when all the visual material is reinstated in an augmented state. Colour and action from the acoustic instruments with added electronics suddenly occurs. This movement is full of both subtle and abrupt nuances to the end. One
sees the glass plate (as seen in figure 3.45 glass plate) that is filtered through all manner of effects such as lighting, strobes, circles and speed. The distorted graphic from (as seen in figure 3.42) is shown but only a glimpse. There is an added impact in this last part that comes from the gold, glass and broken clarinet parts and a subtle line image from the score in the distance (as seen in figure 3.44 clarinet parts on wood, glass and gold leaf).

Figure 3.43 Brigid Burke Gloss - Graphic Notation Movement 8
**Figure 3.44** Brigid Burke *Gloss* Video still Movement 8
Figure 3.45 Brigid Burke *Gloss* - Video stills of Glass Plate under water Movement 8
Chapter 4

Conclusion

Figure 4.1 Brigid Burke *Glass Mosaic on Gold*

This thesis has examined one major composition, *Escapee Gloss*, and six other works that represent a map of artistic development and a window into my ongoing artistic practice. At the outset of this PhD research project, my goal was to bring together my background and experience as a composer, clarinetist and visual artist with my compositional work which, at the time, was mainly intuitive as a multimedia performing artist working in four fields: a composer of acoustic, live electronic and acousmatic sound works; a clarinetist soloist,
ensemble artist, improviser, traditional orchestral player and collaborator; a visual artist working as a traditional print maker, fine ink and pencil artist, painter, mixed media and mosaic artist; and a filmmaker working with still images and sampled film clips. With the skills accumulated throughout the research process, I can now create highly refined moving images that are competitive in the international market of innovative art in this field. As a clarinet performer, I have always enjoyed the immediacy of live performance and the direct engagement with an audience. While composing the pieces in this folio, I could see infinite possibilities offered through the application of processing to both recorded and live sound.

My compositional approach has been a matter of exploring complex interactions that at times has been overwhelming. As a consequence, I have tried to create a framework for the audio-visual works to make compelling and comprehensible associations between the sound and image.

The analysis of my compositional approach to polymedia in this exegesis, and the broadening of my performance practice, has led to a more intimate engagement with instrumental music and its visual counterparts in relation to electroacoustic music. Exploration of polymedia has demonstrated its richness as a source of creative inspiration for the multimedia composer. The cross section presented in Chapter Two of artists and their compositional works that influenced my education has demonstrated not only the breadth and variety of the compositional work presented in this portfolio but of the world of new music generally.
The audio collaborations in *Sheen, Silk and Gloss* have provided an opportunity to develop skills with Audiomulch. The ability of this software to carry out real-time signal processing techniques and techniques enabled me to accomplish things with live sound and human interplay that are ordinarily only possible in the studio. It also paved the way for the work with real time video mixing.

The mixing of all my art forms as a polymedia symphonist is the major outcome of this portfolio of creative work, the culmination of the ideas and research that represents a union of my live performance practice with my compositional and visual artwork.

The creation of *Escapee Gloss* has helped me establish a unique creative space where as a composer/performer/visual artist I can comment and reflect upon my work process and aesthetic as a whole. *Escapee Gloss* has created a greater immediacy and fluency in my compositional, visual and performance practice, and has provided a unique uniformity to my work as a composer.
Bibliography

Recordings


Gamelan Son of Lion, *Circular Thoughts* by Daniel Goode, CD no number 1974.


Musical scores


**Books**


Cage, John. *Every day is a good day, Where R=Ryoanji; (Rs)*, New York: Harvard, 1983.


Dali Salvador, “*I know what I’m eating. I don’t know what I’m doing*”

http://visualthirst.wordpress.com/tag/salvador-dali/

In Uncategorized on March 23, 2012 at 9:16 pm


Goldstein, Malcolm. *Sounding the Full Circle*, Vermont; Frog Peak Music 1988


Kropfl, Francisco. *Integrating sound and visual image as artform from Relationships Acts VIII.*


Mikalojous Konstantinas. “Ciurlious die sechste/Sternensonate. Allegro 1908 Tempera auf papier (tempera on paper 72.2 x61.4 cm Kaunas” in *Light Art from Artificial Light, Light As a


Young, David. “Drawn from Sound Australian graphic music scores”. Cat Hope, Brisbane: Tura New Music, 2013.


CHROMA 26-27 Inc. PO Box 284, Fitzroy, Victoria, Australia 3065 Double Issue Number 26-27 March 2000 ISSN 1034-8271.
Bute, Mary E. *Light*Form*Movement*Sound*. Centre for Visual Music Library, URL:


Xenakis, Iannis. Study for Polytope de Montreal Composer, Architect, Visionary. The Drawing Centre Essays by Ivan Hewat, Carey Lovelace, Sharon Kanach, Makki Xenakis. 2nd Edition


Russolo, Luigi. The Art of Noises(extracts)1913 Published as a leaflet by Direzione del Movimento Futurista. (A reply to press comment on lectures give by the writer at the 1912 Futurist exhibition in Brussels and Paris) Milan 11 January 1913.


Wong, L Elaine. Augmenting Media Performance with Interactive Technology. Elaine L Wong School of Design, The Hong Kong Polytechnic University, Hung Hom , Hong Kong Email: 08901226r@polyu.

Web references


Lecturer in Sound, School of Production, Victorian College of the Arts, 2010 URL:

Balzac, Honore de. HONORÉ DE BALZAC - BIBLIOGRAPHY, URL:
http://www.egs.edu/library/honore-de-balzac/biography/ The Magic Skin Ellen Marriage (Translator), Clara Bell (Translator) Honoré De Balzac (1799–1850), French novelist. Later appeared as part of Romans etcontes philosophiques (1831), and part of the Etudes philosophiques (1831).http://quotes.dictionary.com/the_tranquility_and_peace_that_a_scholar_

Battey, Bret. composer • generative • audiovisual • electroacoustic. URL:
http://www.mti.dmu.ac.uk/~bbattey/#sthash.bEKLVaUT.dpuf


Bencina, Ross. Ross Bencina - Life Music, Software. URL:

Bencina, Ross. *AudioMulch*, URL:

Bown, Ollie. *Not Applicable – Ollie Bown*. URL:

Burt, Warren. *composer, performer, writer, video artist, instrument builder, etc.* 2010 URL:

Callopy, Fred. *A historical account of colour and music in literature*. URL:

Clinch, Dr Peter. *Move Records.*
L.Mus.A., B.Mus., M.Mus., Ph.D.) 18th August 1990 The University of Melbourne Institute of Education School of Visual and Performing Arts Education MUSIC

Futterman, Joel. *Joel Futterman*, 2009 URL:


Hyde, Joseph. *composer sound and media artist. URL* http://www.josephhyde.co.uk/
(accessed Jan 14, 2014).

Keefer, Cindy. URL;

Linz, Rainer. *Intersect*. 2009 URL:

Linz, Rainer. *Index of published articles/books and CD’s*. URL:


Manl, Gerard. *Sprung rhythm 19th century* in Encyclopaedia Britannica. URL:
McDonnell, Maura. Colour and Sound, Visual Music. 2006 URL:

Miller, Dennis. Pink noise. 2008 URL:

Morris, Miriam. Move Records – Miriam Morris, 2011, URL:

Pascal, Blaise, Pensées (1623–1662). Columbia World of Quotation. 1996 URL:

The Pythagorean Theory of Music and Colour. 2011, URL:


Wesley-Smith, Martin, Martin Wesle-Smith, Australian Composer, 2007, URL:

Yeo, Ge-Suk. 2010, URL:

Dissertations


