

**Portfolio of Original Compositions**

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in the Faculty of Humanities

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Final Word Count: 16,511

## Portfolio of Musical Works

### Audio CD 1

1. *Lamenting* (2011) 10'58
2. *192* (2011) 8'04
3. *All Along the Bell Tower* (2012) 12'30
4. *Oz* (2012) 26'40
5. *The Thing about listening is....* (2013) 13'43

### Audio CD 2

1. *A Bit Closer to Home* (2013) 14'40

### USB 1

1.	<i>Lamenting</i>	2011	5.1 Stereo	10'58	6 mono files 1 stereo file	24 bit, 44.1 kHz
2.	<i>192</i>	2011	Stereo	8'04	Stereo aiff file	24 bit, 48kHz
3.	<i>All Along the Bell Tower</i>	2012	5.1 Stereo	12'30	6 mono files 1 stereo file	24 bit, 48 kHz
4.	<i>OZ</i>	2012	5.1 Stereo	26'40	6 mono files 1 stereo file	24 bit, 96 kHz

### USB 2

1.	<i>The Thing about Listening is....</i>	2013	8-Channel Stereo	13'43	8 mono files 1 stereo file	24 bit, 96 kHz
2.	<i>A Bit Closer to Home</i>	2013	8-Channel Stereo	14'40	8 mono files 1 stereo file	24 bit, 96 kHz

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## **Abstract**

Electroacoustic music has a unique ability to connect the listener to places, space and stories both real and imaginary. Each work within the portfolio explores specific objects, spaces and places. The intrinsic sonic qualities are explored and a musical narrative takes the listener through a newly composed imaginary space.

Six original compositions are presented in this portfolio. The titles of these works are as follows: *Lamenting*, *192*, *All Along the Bell Tower*, *Oz*, *The Thing About Listening is....* and *A Bit Closer to Home*.

Narrative structures that simulate a journey are used as a guide for the listener through immersive, virtual soundworlds. These spoken word and musical narratives also serve as a structural tool for the composer. Imagined and real sonic layers within stories and soundscapes are analysed, deconstructed and manipulated. These works convey a message, story or sense of place to the listener, while revealing sonic qualities that are not normally the focus of listening.

My aim as a composer is to enhance the daily listening experiences of the listener, as they become more aware and appreciative of the sounds around them, through the sounds and spaces they experience in my music.

## **Declaration**

I hereby declare that no portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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## Acknowledgements

I would like to thank my supervisor Professor David Berezan and Professor Ricardo Climent for their constant support and encouragement over the last four years. I am also grateful to all the students at NOVARS who provided me with a constant supply of inspiration, critique and friendship.

My research at NOVARS was mostly self-funded. However I would like to thank the Irish Arts Council for the Travel and Training award (2011).



Finally I would like to thank my parents Emmet and Orla and my brother Tiernan for their constant support, financially and emotionally over the last 4 years. Thank you for all the emails and phone calls.



## Technical information

### List of Portfolio of Works

<i>Lamenting</i> (2011), 5.1	10'58
<i>192</i> (2011), stereo	8'04
<i>All along the bell tower</i> , (2012), 5.1	12'30
<i>Oz</i> (2012), 5.1	26'40
<i>The thing about listening is....</i> (2013), 8-channel	13'43
<i>A bit closer to home</i> (2013), 8-channel	14'40

These fixed media works are presented in their original high-resolution format on USB. Each surround sound work is also presented as a high-resolution stereo mix on the USB for reference purposes.

The works are presented as a stereo mix in 16 bit, 44.1 kHz on Audio CD for reference purposes.

### Surround Works

#### 5.1:

#### *Lamenting, All along the bell tower, Oz*

The USB contains the 5.1 version of each of these works. Each work has six mono files. Each file is labeled with the title of the piece and loudspeaker location. For example *Lamenting* is labeled as follows:

1\_Lamenting\_L.aif  
2\_Lamenting\_C.aif  
3\_Lamenting\_R.aif  
4\_Lamenting\_Ls.aif  
5\_Lamenting\_Rs.aif  
6\_Lamenting\_LFE.aif

These files correspond to the following 5.1 loudspeaker setup:

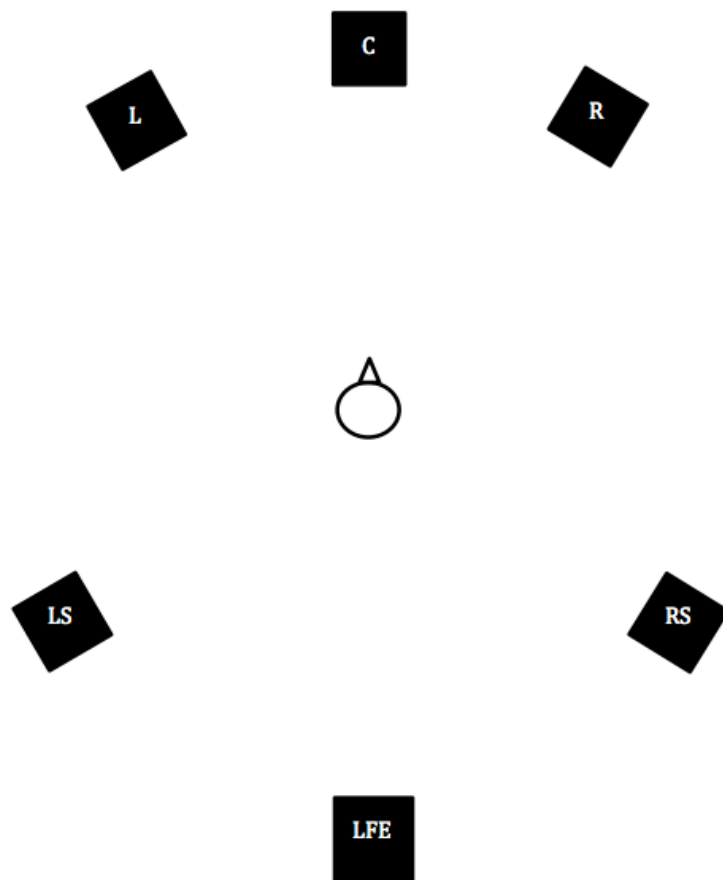


Diagram 1: 5.1 loudspeaker setup for *Lamenting*, *All Along the Bell Tower* and *OZ*

## 8 – Channel:

### *The thing about listening is... and A bit closer to home*

The USB contains the 8-channel version of each of these works. Each work has 8 mono files. The file name includes the title of the piece and the loudspeaker location. For example *The thing about listening is...* is labeled as follows:

The\_Thing\_About\_1.aif

The\_Thing\_About\_2.aif

The\_Thing\_About\_3.aif

The\_Thing\_About\_4.aif

The\_Thing\_About\_5.aif

The\_Thing\_About\_6.aif

The\_Thing\_About\_7.aif

The\_Thing\_About\_8.aif

These files correspond to the following 8-channel loudspeaker setup:

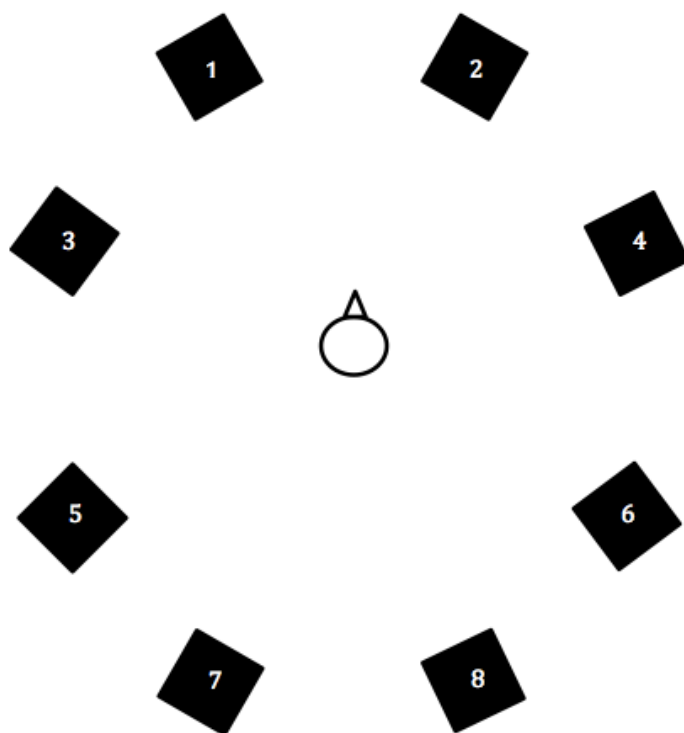


Diagram 2: 8-channel loudspeaker setup for *The Thing About Listening is...* and *A Bit closer to home*

## Introduction

My research explores metaphorical and real-world representations of diverse soundworlds, images and experiences. My aim is to reveal particular sonic characters that are not normally the focus of listening. This portfolio of works explores the layers and textures of sounds that contribute to the overall sonic-makeup of specific places both real and imaginary. Through listening, recording and processing the layers of a soundworld are studied and analysed. Processing of these materials reveals the sonic qualities and the internal behaviour of specific sounds.

Examples from my works include the creaking sound of a hand rubbing the neck of a banjo, the rise and fall of engine tones, the drone of a church pew being dragged across the floor of a cathedral and the melodic call of the pied butcherbird.

The theories on listening awareness developed by Schafer, Westerkamp, Truax, Krause and Norman have had a significant influence on my compositional process. After meeting Westerkamp at the Global Composition Conference<sup>1</sup> (Germany, 2012) and hearing many influential composers and researchers gave talks and presentations, I made the decision to share some of this knowledge with members of the public starting with my hometown in Banagher, Co. Offaly, Ireland by organising a soundwalk. My engagement with the community was inspiring and the soundwalk was a catalyst for my final two 8-channel works in this portfolio.

The portfolio represents the application of these theories on a practical level where recording and compositional techniques are explored and utilised to capture and represent the sounds within our soundscapes, the textures within these sounds and objects while also reflecting on the experience of listening. Texture is an important part of each work. Textures within the environment are analysed and enhanced, isolated from the original environment to enhance the listener's awareness before gradually placing the sounds back into a virtual sound environment based on the original context. The aim is to create immersive listening environments where the aesthetic qualities of place and sound objects are explored.

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<sup>1</sup> More information about this conference here: <http://www.the-global-composition-2012.org/> (accessed 2 August 2014).

The portfolio offers an in depth and alternative listening perspective and experience where the complexity of everyday sounds are examined and rearranged into a new context. References are also made to the design of the acoustic environment where noise pollution often masks the more pleasant sounds of the natural environment.

The relationship of the listener to the aural environment is pertinent to my research. The aim of each work is to engage the listener with a specific soundworld offering different perspectives of these environments. This is done through the interplay of real-world sounds with processed materials. This ensures that the original context of the sound is conveyed to the listener while allowing the composer to explore the sounds using electroacoustic techniques.

The works in the portfolio are discussed using both language and categorisation methods from Smalley, Truax, Krause and Lane. Smalley's *Spectromorphology* (1997) and *Space-form* (2007) are used to explain sound-shapes and spatial concepts represented in the work. To categorise soundscape<sup>2</sup> related sound sources I have used the theories of Schafer (1994), Truax (1999, 2001) and Krause (2012). To explain my compositional techniques that utilise spoken word I have used categories created by Lane (2006).

---

<sup>2</sup> Soundscape: 'An environment of sound with emphasis on the way it is perceived and understood by the individual, or by a society. It thus depends on the relationship between the individual and any such environment. The term may refer to actual environments, or to abstract constructions such as musical compositions and tape montages, particularly when considered as an artificial environment.' Barry Truax, *Handbook for Acoustic Ecology*. (Cambridge Street Publishing, 1999), CD-ROM Edition.

## Chapter 1: Symbols and Narrative

### *Lamenting*, 2011. Duration: 10'58.

As composers we have the ability to communicate stories and senses of place to our audiences through the creation of sonic metaphors, images and symbols, using electroacoustic techniques. Surround sound also facilitates the creation of imaginary and virtual soundworlds.

#### 1.1 Narration and Imagery

*Lamenting* is inspired by the Irish mythical tale of the Bean Si (Banshee). The Banshee was a spirit who warned of death through melancholic wailing. She is often depicted as a terrifying old woman who comes at night.

‘The Banshee mournful wails, In the midst of the silent, lonely night;  
Plaintive she sings the song of death’.<sup>3</sup>

In *Lamenting* a mythical world is created where themes, characters and sonic imagery are explored within 5.1 surround sound. The piece responds to the imagined behavior of the characters and the mood and darkness within this mythical tale. It is also reminiscent of the ancient Irish tradition of keening, a mournful song that appears and floats throughout the piece. Certain aspects and images of the myth such as wailing, singing and the movement of the banshee and spirits, determines the spatialisation of textures within the piece.

Irish composer Ailís Ní Ríán’s use of Irish Sean-Nos (old style) singing in her work *Street Song* (2006) was of particular interest to me, combining sound materials such as Sean-Nós singing, bells and Irish flute. Similarly, *Lamenting* resurrects the ancient tradition of keening and the ancient myth of the Banshee.

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<sup>3</sup> Sophie Chester Coursen, ‘Irish Music’, *Art and Life*, 11(1919), 5: 271-273; here, 272.

## 1.2 Something to hold on to

In his book *Understanding the Art of Sound Organization* (2007), Landy discusses the “something to hold on to” factor. He discusses the idea of creating a strategy that allows the audience to navigate through a sound based work. In order to prepare the audience for their listening journey into a world of dense textures and an enveloping spatialised soundworld, *Lamenting* begins with the unprocessed creaking sounds of a hand rubbing the neck of the banjo. This provides the audience with ‘something to hold on to’, where the original sound is heard first allowing the listener to access the material. This introduction is quiet and slow before similar textures at different pitches are introduced (0’44). The development of the material and the creation of new sounds is a focus for the listener as they are gradually led into a mythical lamenting sound world.<sup>4</sup> As the piece progresses the source of the sound is no longer apparent and the audience can submerge themselves into a ‘reduced listening’<sup>5</sup> state, where they can begin ‘to appreciate the inner features of the sound’.<sup>6</sup>

## 1.3 Sound Material and Structure

*Lamenting* embraces the extended playing techniques of the banjo. The methods include bowing the strings and also rubbing the neck of the banjo – these sounds are used to help articulate the structuring processes that form the piece in two parts.

Symbols play an important role in this work determining the choices and functions of materials and spatial design. An example of this is the female voice, which has been manipulated, layered and spatialised to create a sonic image of female mourners, immersing the listener in the centre of this event.

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<sup>4</sup> This relates to one of Landy’s ‘Something to hold on to’ factors; ‘homogeneity of sounds and the search for new sounds, e.g., pieces based on one or a few pitches, homogeneous textures, new sounds, and the voice’, Leigh Landy, *Understanding the Art of Sound Organization* (Cambridge, Massachusetts/London, England: The MIT Press, 2007), 28.

<sup>5</sup> Reduced Listening: ‘Pierre Schaeffer gave the name reduced listening to the listening mode that focuses on the traits of the sound itself independent of its cause and of its meaning’. Michel Chion, *Audio-Vision, Sound on Screen* (New York: Columbia University Press, 1994), 29. quoting Pierre Schaeffer, *Traité des objets musicaux*, Rev. edn. Paris: Seuil, 1967, 270.

<sup>6</sup> Daniel Barreiro, ‘Sonic Image and Acousmatic Listening’, *Organised Sound*, 15 (2010), 1:35-42; here, 35.

## Section One

0'00 to 5'43 is built around the creaking sounds of the unprocessed banjo neck at the beginning of the piece, exploring the use of 'fingers rubbing the wood' as the basic material. In the introduction to the piece the movement of the hand on the neck of the banjo is left unprocessed so that the audience have something to hold on to/grab on to, (0'00 – 0'44). As this section progresses the listener is slowly introduced to the processed material, with the first encounter at 0'44. This is the original sound of the banjo neck pitch-shifted using Pitch Shift in Pro Tools, which enhances the resonance of the wood. Its location in the rear right loudspeaker opens up the space within the piece in contrast to the opening stereo image.

From 0'53 the creaking, squeaking sound of the banjo neck is slowly engulfed by the processed versions. New material appears achieved by time-stretching the original material in SPEAR. Spatialisation of this material symbolises the presence of a mythical spirit. Higher resonant frequencies are panned in the rear loudspeakers from 1'09 – 1'34. This material is then time stretched again to create a similar texture that is lower in frequency (1'10 – 2'50), panned within the front loudspeakers. This is in contrast to the shorter, dense, lower and slightly resonant materials (1'04, 1'07, 1'17, 1'23). At 1'47 a reverberant and turbulent sound appears, again symbolising roaming spirits. This was created using the SoundHack phase vocoder pitch-shifter, which stretches the sample temporally while maintaining the original pitch. Panning throughout the five loudspeakers enhances the iterative textural motion within this sound, symbolising the movement of the roaming spirits.

At 2'23 the first vocal sounds appear symbolising the human presence of the mourners. They are dispersed amongst the loudspeakers to expand the space creating the illusion of multiple mourners.

At 4'38 samples of the banjo neck are pitch-shifted lower, layered and sent to the LFE channel gradually increasing in volume. This sense of growth symbolises the threat of the banshee, where multiple layers of dense textures agglomerate, slowly overlap, ascend and fade out. A prayer-like vocal sample remains, symbolising the female mourners.



## Section Two

5'57 to 11'01 is based on material created from the bowing of the strings of the banjo. Similar to section one, vocal samples also play an important role adding contrast in texture while also suggesting the presence of women mourning. A rhythmic death march opens section two: there is a slow growth process as the march slowly leads the listener to a more diverse, uncomfortable and tense soundscape with multidirectional spatial motion. High-pitched bowing penetrates the dense prolonged rhythms, created by multiple layers of low resonant textures. The rhythmic death march creates tension and anticipation, as the arrival of death is imminent, made more apparent by the pitch shifted bowing of the banjo (6'22, 6'35, 6'43, 6'53). This also introduces a variation in timbre of the bowed banjo with a mixture of high and low frequency sounds that are sporadic and irregular in contrast to the rhythmic bowing of the banjo that introduces this section.

### 1.4 Spatialisation

The use of 5.1<sup>7</sup> loudspeaker configuration allows the audience to be immersed within this mythical and virtual world. The imagery of roaming spirits is better represented in an extended spatial image.

The shrieks of the Banshee, represented by the high-pitched bowing of the banjo, are scattered among the loudspeakers as the unpredictable movement intensifies the unsettling and uncomfortable feeling of the high-pitched bowing.

Dense textures are also separated within the 5.1 mix adding more depth and volume to the piece and reflecting the darkness and mystery of the theme. This can be heard at the end of the first section where multiple layers of the same sound are spread amongst the loudspeakers.

Spatialisation is used to enhance the movement of specific sounds. In the second part of the piece the motion of bowing is emphasised by panning left to right or vice versa. This can be heard at 6'42 where the bow moves from the front left loudspeaker to the front right.

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<sup>7</sup> 5.1 Surround Sound: 6 loudspeakers, 3 in the front (L, C,R), 2 in the rear (Ls, Rs) and a subwoofer.

Similarly at 6'54, the bowing of the banjo retains a stereo image in the front loudspeakers but is panned backwards to the rear loudspeakers at the pace of the movement of the bow.

### **1.5 Performance**

*Lamenting* was performed at Sound, Sight, Space, Play (SSSP)<sup>8</sup> 2013 at De Montfort University, Leicester. The performance space for this event was the Performance Arts Centre of Excellence (PACE) building, which is a very dry acoustic space. The space enhanced the quieter moments within the piece. The beginning of the piece was intentionally quiet but during my rehearsal I really appreciated how quiet it was, slowly developing gradually drawing the listener in.

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<sup>8</sup> SSSP (Sound Sight Space Play) is an annual postgraduate conference at De Monfort University, Leicester.

## **Chapter 2: Urban Sounds**

**192, 2011. Duration: 8'04.**

Those that live in cities become accustomed to unique sets of sounds. These might range from the constant flow of traffic, to the screech of brakes, the screech of the tram, the ticking of the traffic lights when it is safe to walk, ambulances and police sirens, church bells, the shouting of crowds after a football game or during a protest, – all familiar sounds within an urban setting.

### **2.1 The Urban Soundscape**

The 192 is one of the busiest bus routes in Manchester. As a frequent passenger on this bus I became very aware of people's behavior and the arising sounds while commuting. Technology played a very important role in the rising volume levels on the 192. Some people made phone calls speaking loudly due to the overall volume of noise on the bus. Others listened to music on their phones to pass the time. Travelers on this bus were a mixed group of people: English, Irish, Indian, Romanian, Pakistani and Somalian to name a few. As a result, the mixture of accents and languages contributed to the overall character of sound on the bus.

Westerkamp discusses a similar experience to mine:

'I was sitting in the train to Stockholm. I had a Eurailpass, so I could travel first class. Within ten minutes after the train's departure the businessmen around me (I was the only woman) started to make calls on their cell phones. Since I wanted to do some work I got very irritated. I got up and said to the two gentlemen closest to me, "Excuse me, but is this an office or a train?" One of them answered, "If you don't want to listen to our phone calls there is a room you can go to," and he pointed to the back of the car. I answered, "I don't feel I should have to move, as this is my reserved seat. Perhaps those who make phone calls should go to that room". We were both agitated. He then said that if two people were having a conversation near me they would talk just as loudly, and I said, "No, in my experience people who are on the phone speak much

more loudly". He said that that was not his experience and besides he had not wanted to talk to me this morning.'<sup>9</sup>

## **2.2 Approaches to Recording**

When recording on public transport it is necessary to be inconspicuous to avoid making people uncomfortable and to avoid people asking you questions. Firstly I started recording using a H4n<sup>10</sup> portable recorder hidden in my bag or up my sleeve. This was not very convenient as rustling from my clothes and bag were captured on the recording. It was difficult to hide and I felt uncomfortable with it.

For this reason I decided to switch to DPA<sup>11</sup> omnidirectional microphones, with the H4n recorder, which produced better quality recordings and also captured the overall space within the bus while being discreet. These microphones were put down the sleeves of my coat and taped to each of my wrists. This allowed greater control over the width of the stereo image, which could be narrowed or widened by moving my arms. I also used binaural microphones<sup>12</sup>, which allowed me to record secretly providing a good representation of my own journey.

These recording techniques allowed me to record unobserved. However it was not my intent to invade the privacy of commuters. Recording unobserved captured the overall sonic experience as a commuter without interruption. The manipulation and mixing of materials has resulted in a work where people's voices and conversations cannot be recognised or identified.

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<sup>9</sup> Hildegard Westerkamp, 'Speaking from Inside the Soundscape', 1998, <http://www.sfu.ca/~westerka/writings%20page/articles%20pages/speakingsound.html>, (accessed 12 July 2013).

<sup>10</sup> H4n Zoom: More information available here: <http://www.zoom.co.jp/products/h4n>, (accessed 2 December, 2013).

<sup>11</sup> Miniature omnidirectional microphones available at <http://www.dpamicrophones.com/en>

<sup>12</sup> The recordings are reproductions of what the ear hears.

## 2.3 Compositional Techniques<sup>13</sup>

### Structure

Barry Truax's *Pendlerdrøm* (1997) also recreates a commuter's trip using recordings that were made at Central Station, Copenhagen.<sup>14</sup>

*'Pendlerdrøm* (or "Commuterdream") is a soundscape composition that recreates a commuter's trip home from the Central Train Station in Copenhagen. At two points, one in the station and the other on the train, the commuter lapses into a daydream in which the sounds that were only half heard in the station return to reveal their musical qualities. It is hoped that the next day the commuter will hear the musicality of the station's soundscape in a different manner as a result of the dream; the rest of us may discover the very same aspects the second time we hear the work.'<sup>15</sup>

Similarly *192* is a recreation of a commuter's journey. However focus is given to a wide variety of sounds that contribute to this soundworld such as the rise and fall of engine sounds, vibrations, tones, screeching rubber from doors opening and closing and screeching brakes. The enclosed space of the bus reflects a dense soundworld, particularly at peak travel times. This piece is an in-depth study of the sound materials gathered, which are analysed to reveal their spectromorphological content. The recordings used were made outside and inside many different 192 buses and journeys, at different times of the day. There is a contrast between the use of real-world<sup>16</sup> sound materials and sounds that are evocative of the sound environment, imitating and reflecting the ambience and feelings that are experienced on the bus. The bus journey also articulates the structuring process, as some phrases are shaped around real-world sound events such as the bus slowing down, doors opening and the rise and fall of the engine sounds.

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<sup>13</sup> Smalley's Spectromorphology Syntax (1997) is used to describe some of the sound-shapes within the piece. These words are in italics.

<sup>14</sup> More information about *Pendlerdrøm* can be found here: <http://www.sfu.ca/~truax/pendler.html>, (accessed 13 September, 2014).

<sup>15</sup> Barry Truax, 'Pendlerdrøm', *Islands*, Linear Notes, Cambridge Street, CSR 010, 2001.

<sup>16</sup> 'Real-world' sounds refer to field recordings that have not been processed, where the source is recognisable.

## Section 1

A spectral approach is taken in the first section. Single, and bands of frequencies are extracted from a sound recording of the bus engine, using SPEAR. This analysis of the frequency content assisted me in better understanding the sonic makeup of the source material.

The piece opens with the gradual *convergence*<sup>17</sup> of single frequencies, which have been extracted and gradually layered together. They are introduced slowly, *prolonged* and *sustained*. At 0'21 a series of short gestures interact with the sustained material, which leads to lower frequency material creating a wider spectral space (0'50).

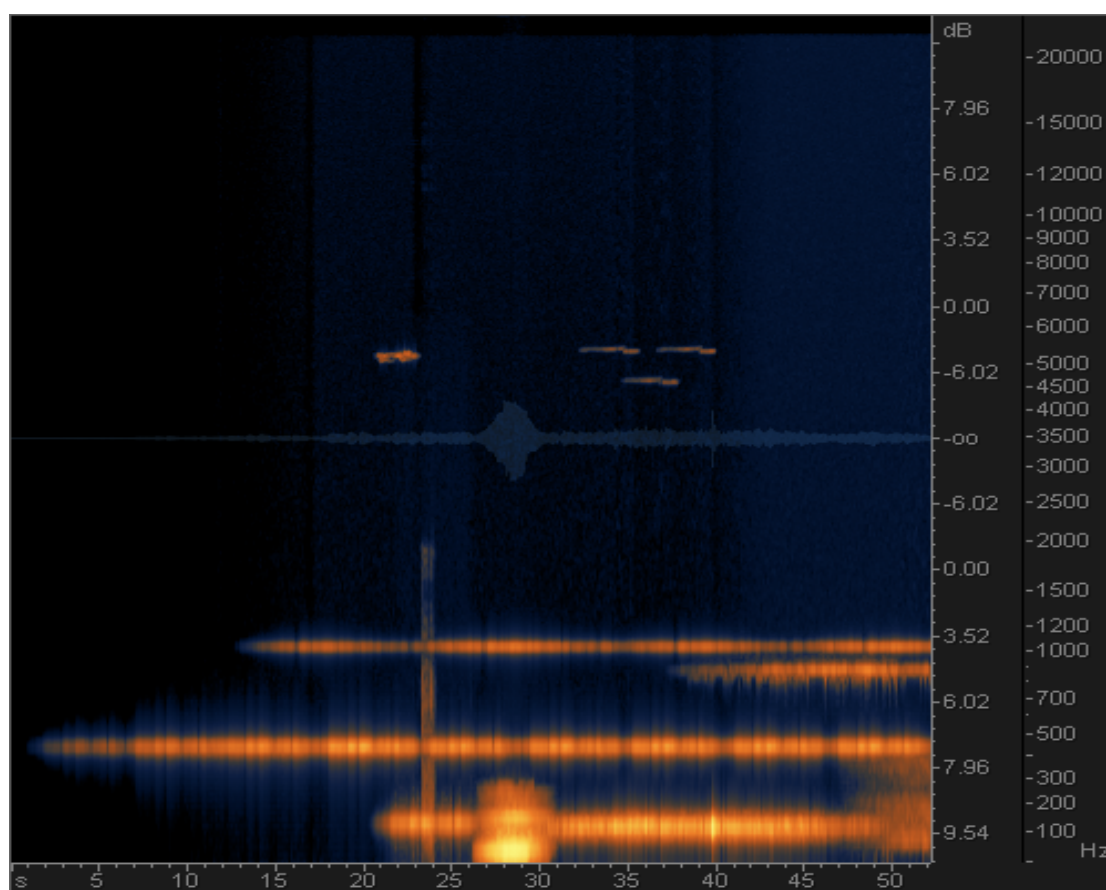


Figure 1: Displaying the spectral growth in the opening section, 192.

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<sup>17</sup> Smalley's spectromorphology syntax (1997) is used to describe the sound-shapes within this piece and are shown in italics.

The motion is *continuous* and *unidirectional* throughout as time is propelled forwards with a slow build up of materials, increasing in density and richness.

At 1'27 other materials that were recorded inside the bus appear, in a transformed state. The granulated sound of a woman's high heels on the bus floor (1'27) imitate the sound of an engine starting, similar to the opening of Jonty Harrison's *Internal Combustion* (2005-06).

At 1'31 the introduction of a *streamed* texture with a *turbulent* interior, gradually increases in amplitude. It adds richness and depth to this section along with some sporadic tones peaking through, enhancing those that we hear within the bus recording. This leads to a change in dynamics caused by a build up of textures and an increase in amplitude leading to a short section where the material originates from the sounds of passenger's voices.

Snippets of muffled conversation can be heard at 1'53 and 2'02. A sustained granulated texture grows beneath this material, which originates from the sound of a man singing, transformed using GRM Freeze. The rise in amplitude of this material creates a tension build up, which abruptly terminates at 2'17, leading to a short section that explores sounds commonly heard from inside the bus such as people's voices (2'17) and an ambulance siren (2'30). The first half of section one comes to an end as the bus can be heard slowing down at a bus stop and the doors opening.

At 3'08 the bus takes off again, where the lower frequencies have been extracted creating textures where the musical content of the sounds are revealed. Tones rise and fall in pitch, creating a glissando effect. The virtual and real-world sounds converge where recordings of passing cars are heard (3'17). The musical tones continue to rise and fall, with real-world bus sounds appearing (4'19) (4'39) to reconnect the listener to the real-world soundscape. This section comes to an end as the bus slows down and comes to a halt.

## Vocal Imitation

‘Hums and drones form many of the keynote<sup>18</sup> sounds of contemporary society. Their low-level constancy allows them to stay in the background of perception, provided that they do not interfere too greatly with foreground signals’.<sup>19</sup>

The ‘hum’ of the bus engine is something that became very apparent through sonogram analysis. Truax refers to these types of sounds as *flatline sounds*<sup>20</sup> or drones as they remain steady throughout. Therefore it is quite easy for the human voice to imitate this drone. I made some studio recordings of my voice imitating the drone of the engine and used them to enhance the textures within the work (4’12 - 4’38). These vocal pitched drones are combined with real-world bus sounds to enhance the natural rise and fall of the bus engine.

## Section 2

The theme of this piece is also similar to Chris Watson’s *El Tren Fantasma* (2011), where he recreates a commuter’s experience on a train that travels across Mexico from coast to coast:

‘The journey of the ‘ghost train’ is recreated, evoking memories of a recent past, capturing the atmosphere, rhythms and sounds of human life, wildlife and the journey itself along the tracks of one of Mexico’s greatest engineering projects’.<sup>21</sup>

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<sup>18</sup> Keynote Sound: In soundscape studies, keynote sounds are those sounds, which are heard by a particular society continuously or frequently enough to form a background against which other sounds are perceived. Examples might be the sound of the sea for a maritime community or the sound of the internal combustion engine in the modern city. Often keynotes are not consciously perceived, but they act as conditioning agents in the perception of other sound signals. R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World*. (New York: Knopf, Inc, 1994), 272.

<sup>19</sup> Barry Truax, *Acoustic Communication*, 2<sup>nd</sup> edn. (Connecticut/London: Ablex Publishing, 2001), 139.

<sup>20</sup> Flatline sounds: Mechanical or electrical sounds (e.g. Hums) are usually examples of stationary sounds that are almost completely unchanging. They may be called flatline sounds or drones because of their steadiness. Truax, *Handbook for Acoustic Ecology*.

<sup>21</sup> *El Tren Fantasma*, ‘Touch Records’, [http://touchshop.org/product\\_info.php?products\\_id=482](http://touchshop.org/product_info.php?products_id=482). (accessed 31st July 2014).



The second part of the piece explores other interior bus sounds: the rhythmic patterns created by people, air conditioning fans and the vibration of poles and windows.

The section opens with the repeated granulated sound of a woman's heels (heard previously at 1'27) symbolising the sound of the engine starting. The gradual accumulation of gestures reflects the intensity and disorder that are often experienced on the bus as people come and go, compete for space, struggle to get off the bus with luggage and buggies alongside people competing to be heard.

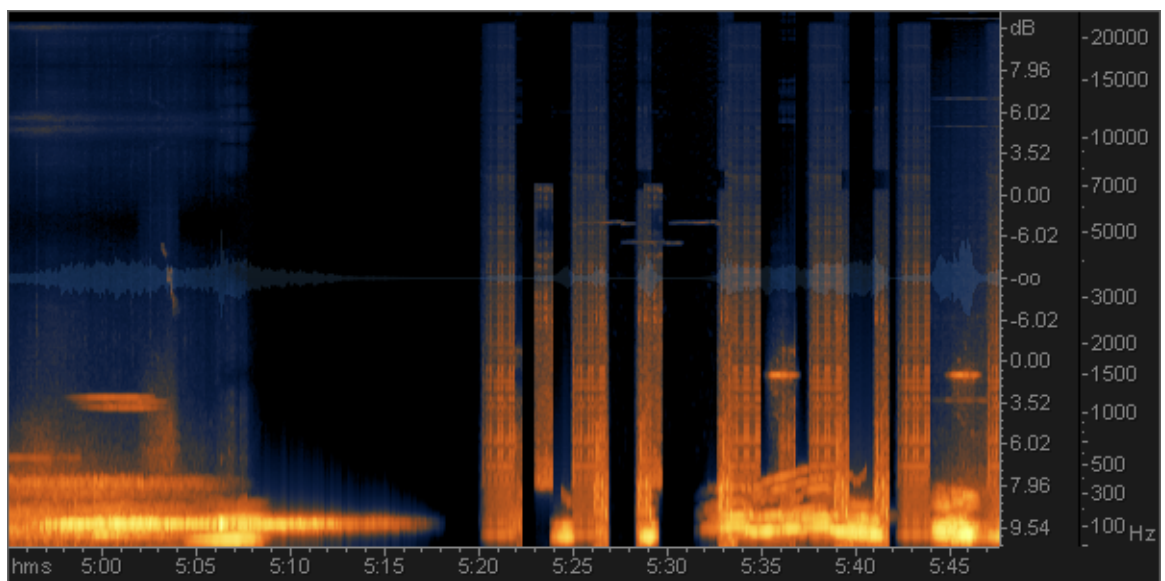


Figure 2: Transition of section 1 to section 2, 192.

Granulated material (5'55) symbolises the inner workings of the bus engine. The original recording of a man singing (6'04) is a catalyst for an increase in intensity and activity within the sound world, with an accompanying increase of granulated material and shorter gestures. At 6'29 the connection with the outside world is re-established with the sound of a passing ambulance.

At 6'35 a rich vocal texture is created by using the Michael Norris Spectral Averaging plugin. This creates rich turbulent textures where the internal pitches are constantly changing. The inner turbulence becomes sustained creating a climax that leads to a door being slammed (7'11). The virtual internal atmosphere of the bus returns with people talking, doors banging, breaks screeching with underlying glissando-like tones reflecting the hum of the engine. A door bangs shut for the last time (7'36) as the bus continues on its journey, gradually fading out and bringing the journey to an end.

## **2.4 192 and Locative Audio**

An excerpt of *192* featured in the Locative Audio Event<sup>22</sup>, Sonic Meta-ontology 1 in June 2011. This event focused on the theme of ‘what are the sounds of Manchester and how can we experience it and understand it?’ Participants were taken on a soundwalk through the city using audioguides and smartphones that allowed them to engage with compositions that were created in response to the theme. *192* was one of these compositions which participants experienced in the form of a Geolocated Audioguide Tour using smartphones and GPS.

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<sup>22</sup> More information at: [locativeaudio.org](http://locativeaudio.org)

### Chapter 3: Sacred and Spiritual Electroacoustic Music

***All along the bell tower*, 2012. Duration: 12'30.**

*All along the Bell Tower* is an electroacoustic work composed in 5.1 that explores the sonic world of western religious places, such as Catholic churches and cathedrals in Manchester, Madrid and Cuenca, Spain. These landmarks dominate the landscape of towns and cities all over the world. It is the sounds that emanate from these landmarks rather than the religious connotations associated with these buildings that are of interest to the listener.

The church bell is a sound that is most identifiable with these buildings. The role of the bell is to anchor the listener to the context of the piece, where different perspectives of this soundmark are conveyed to the listener. It serves as a connection between the exterior and interior soundworld of the church building. The church bell as a soundmark is also discussed in Chapter 5 in *A bit closer to home*. Schafer discusses the church bell, an important soundmark:

‘It was during the fourteenth century that the church bell was wedded to a technical invention of great significance for European civilization: the mechanical clock. Together they became the most inescapable signals of the soundscape, for like the church bell, and even with even more merciless punctuality, the clock measures the passing of time audibly.

The clock had a great advantage over the clock dial, for to see the dial one must face it, while the bell sends the sounds of time rolling out uniformly in all directions.’<sup>23</sup>

‘Two aural components contribute to a listener’s association to a particular space: its unique sounds and its characteristic acoustics’.<sup>24</sup> The church/cathedral building is treated as a sound object, which is deconstructed exposing the multiple layers within. The aural architecture (discussed below) of the building is also explored where the experience of the church space and its acoustic properties are reflected in the work. It is also a spiritual

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<sup>23</sup> Schafer, *The Soundscape*, 55.

<sup>24</sup> Barry Blesser and Linda Salter, *Spaces speak, are you listening? Experiencing aural architecture*. (Cambridge, Massachusetts/London: MIT Press, 2009), 175.

journey, where elements of the composition reflect a sense of reverence and peace that are associated with these sacred buildings.

### 3.1 Aural Architecture and Virtual Space

‘Aural architecture refers to the properties of a space that can be experienced by listening. Aural architects focus on the way that listeners experience the space’.<sup>25</sup>

Religious buildings and their acoustic architecture are designed to create a certain type of mood and experience:

‘The acoustics of a grand cathedral can create an exalted mood; those of a chapel can enhance the privacy of quiet contemplation. In certain religious spaces, they (acoustic attributes) can produce a reverberation that conveys a sense of awe and reverence’.<sup>26</sup>

Size, reverberation, religious decorations and the mass itself all contribute to create a spiritual and religious place. Reverberation emphasises the enormity of the space, which magnifies every sound within the building such as footsteps, singing and praying.

Barry Truax discusses his work *Temple* (2002) and its Christian and spiritual references and the techniques he used to replicate a reverberant cathedral:

*Temple* is composed of choral voices and appears to take place in the reverberant cathedral of San Bartolommeo, in Busetto, Italy. This effect is achieved by convolving the three studio recorded voices (counter-tenor, alto, bass) with the impulse response of the cathedral which makes the voices appear to have been recorded in that space.

However, lacking any specific Christian reference other than the cathedral acoustics, the work can be heard as a spiritual voyage in an imaginary temple (the choice of title being deliberately the more general term) whose acoustic

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<sup>25</sup> Ibid., 5.

<sup>26</sup> Ibid., 3.

properties not only reverberate the choral voices but reflect them back as ghostly after-images that suggest an inner space of vast dimensions.’<sup>27</sup>

### **3.2 Compositional Techniques**

The narrative structure within this piece takes the listener through a virtual soundscape of the church building exploring the different spaces outside and inside the church/cathedral building. Many different types of space are represented in this piece to create the illusion of a church space. Smalley’s *Space-form* (2007) terminology is used to discuss the compositional techniques used to recreate specific spaces within the work.

#### **5.1 loudspeaker setup**

The piece is composed in 5.1 to create a virtual representation of the church/cathedral space. Diagram 1 illustrates how loudspeakers are used in the piece in stereo pairs or as individual loudspeakers for discrete sound placement. The LFE is used to enhance the bass frequencies of certain sounds throughout the piece. Sounds such as the priests voice are placed on the front loudspeakers creating an illusion that the priest is speaking from the front of the audience. More examples of 5.1 spatialisation are given throughout the chapter.

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<sup>27</sup> Barry Truax, Artist Presentation: ‘Journeys of the Human Spirit’, <http://www.sfu.ca/~truax/AIS2.html>, (accessed 15 May 2014).

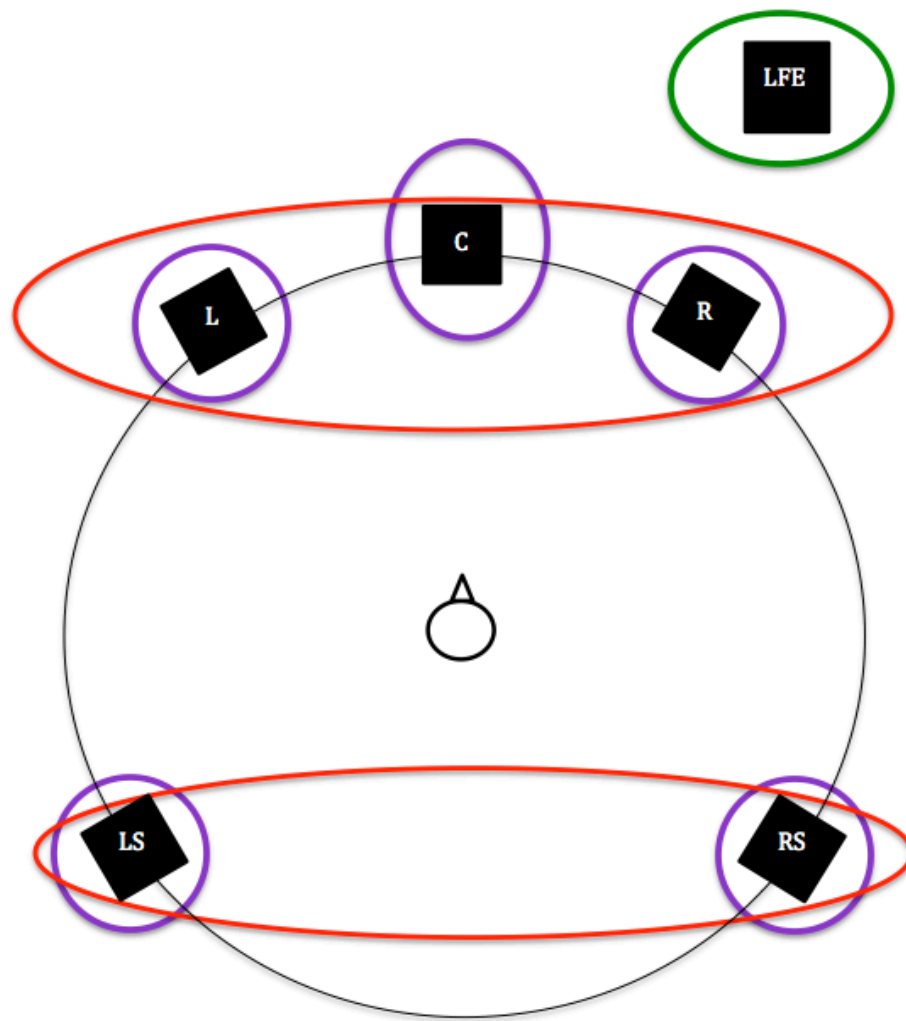


Diagram 3: 5.1 loudspeaker setup, *All Along the Bell Tower*.

### ***Proximate and Distal Space***

The introduction of the piece focuses on the exterior of the building, which is perceived at a distance. The church bell is a source-bonded<sup>28</sup> sound and introduces the listener to the virtual church/cathedral world, located in the front loudspeakers. Distal space<sup>29</sup> embedded within this recording is retained so that the bells remain distant to the listener as they were

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<sup>28</sup> Source bonding: ‘the natural tendency to relate sounds to supposed sources and causes, and to relate sounds to each other because they appear to have shared or associated origins’. Denis Smalley, ‘Space-form and the Acousmatic Image’. *Organised Sound*, 12 (2007), 1: 35-58, here 37.

<sup>29</sup> Distal Space: Space furthest away from the listener. The relationship between proximate and distal space creates depth of image. (Ibid., 36).

at the time of recording. The context of the recording therefore remains within the composition. To change the *perspectival space*,<sup>30</sup> another layer of the bell material is added and placed in the centre of the front and rear speakers. This widens the stereo image as the distal space gradually changes to proximate space<sup>31</sup>, as the sounds of the bells are closer to the listener.

Jonathan Harvey's work *Mortuos Plango, Vivos Voco* (1980) explores the intrinsic qualities of a bell sound.

'The pitch and time structure of my work is entirely based on the bell's rich, irregular harmonic spectrum, a structure neither tonal nor dodecaphonic nor modal in any western or oriental sense, but unique to itself. The eight sections are each based on one of the principal eight lowest partials. Chords are constructed from the repertoire of 33 partials; modulations from one area of the spectrum to another are effected by glissandi. Constant transformations between the spectrum of a vocal vowel and that of the bell are made by internal manipulation of the two sounds' components. The walls of the concert hall are conceived as the sides of the bell inside which is the audience, and around which (especially in the original 8-channel version) flies the free spirit of the boy.'<sup>32</sup>

Similarly the intrinsic features of the bell sound are revealed and explored by reinforcing higher and lower frequency content using Audiosculpt. The lower frequency content of the bell sound is isolated and reversed, which changes its bell-like rhythm. These processed materials work in contrast with the real-world bell sounds enriching the *spectral space*<sup>33</sup>. Reverberation is also added to the bell material, where the decay time is gradually increased to infinity, causing the bell sounds to become blurred. Here there is a transition

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<sup>30</sup> Perspectival space: The relations of spatial position, movement and scale, viewed from the listener's vantage point. Ibid.

<sup>31</sup> Proximate space: Space closest to the listener. Ibid.

<sup>32</sup> Jonathan Harvey, '*Mortuos Plango, Vivos Voco*, (1980), Programme Notes, <http://www.fabermusic.com/repertoire/mortuos-plango-vivos-voco-1154>, (accessed 14 September 2014).

<sup>33</sup> Spectral space: The impression of space and spaciousness produced by the occupancy of, and motion within, the range of audible frequencies. (Smalley, 'Space-form', 56)

from the outside world into an imaginary space of the bell tower. At 1'13 a door opens to allow the listener into the bell-tower.

The imaginary space of the bell tower has been created uses recordings of bolts from a door that were opened and closed which have been pitch-shifted to create a sense of mechanical movement. Pitch-shifted Sanctus bells<sup>34</sup> (1'48, 1'57, 2'07) are combined with synthesised and real-world bell sounds, dispersed throughout the 5.1 image to create an immersive imaginary space. An increase in the overall dynamic level occurs at 2'27. Recordings of distant bells were put through the GRM Freeze plugin and then granular synthesis was applied using the StochGrains3 module in Cecilia. This created a turbulent bell-like texture material with chaotic internal motion that is further enhanced by an increase in volume and the addition of similar material. This material reaches a climax and is released abruptly using volume curves. It is an example of causality,<sup>35</sup> leading to a short excerpt of a Spanish mass heard at 2'36 on the front left and right loudspeakers, where the exploration of the interior sound world of the church begins.

### ***Enacted Space*<sup>36</sup> and religious references**

#### ***Agential Space***

Agential space is expressed through small movements within the church such as a person knocking against the wooden pew, people lighting candles or walking on the marble floor. At 4'59 a knock against a wooden pew is heard, in the rear right loudspeaker. This is combined with a whispering voice in the front right loudspeaker and footsteps on the church marble floor that are panned from the rear to the front loudspeakers to enhance the movement of the person entering the church and walking towards the front.

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<sup>34</sup> Sanctus Bells: 'Sanctus bells have been rung as part of the celebration of the Holy Sacrifice of the Mass in the Church for over 8—years. Most Sanctus bells used today are small handheld bells or assemblies of three to five bells that may be rung during the Mass as directed in Chapter IV, paragraph 150, *general instruction of the Roman Missal (GIRM)*: "A little before the consecration, when appropriate, a server rings a bell as a signal to the faithful. According to local custom, the server also rings the bell as the priest shows the host and then the chalice". Matthew D. Herrera, 'Sanctus Bells: History and use in the Catholic Church', <https://www.ewtn.com/library/Liturgy/sanctusbells.pdf>, 2004, 14, (accessed 18 May 2014).

<sup>35</sup> Causality: 'Where one event seems to cause the onset of a successor'. (Smalley, 'Spectromorphology', 118).

<sup>36</sup> Smalley divides 'enacted space' into two categories: '*Utterance Spaces*, which are articulated by vocal sound, and *agential spaces*, where space is produced by human movement and (inter)action with objects, surfaces, substances, and built structures; we can also include human intervention in the landscape.' (Smalley, 'Space-form', 38).



## **The church pew**

The organ-like drone of a church pew being dragged across the floor (recorded in a cathedral in Madrid) is used throughout the piece. At 3'11 this sound is located in the front loudspeakers. At 3'46 the pew is heard again in the rear loudspeakers reflecting a sense of space and motion. A low pass filter is used to enhance the bass frequencies. The intrinsic sound qualities of the church pew, magnified by the low pass filter highlight the gestural movement and pitch variations that are caused as the pew is dragged across the floor. The abrupt ending of this gesture creates a sense of expectation where a new section begins exploring the more intimate and proximate soundworld of the religious building.

At 6'29 and 6'49 the deep rumbles of the church pew are heard again, pitch-shifted lower than previously. This provides a continuous drone that extends the spectral space, enhanced by the LFE and adding depth to the virtual church space. It is a sonic metaphor for evil and sin that is part of the Catholic teaching, a menacing, mythical and dark sound panned around the 5.1 image, in contrast with the real-world sounds of the congregation singing.

## **Church Candles**

Recordings of candles that were made in the church are explored. The normal candles that were used in the church are silent, therefore I used thin longer candles sourced from Estonia and placed them in the candleholder. These candles were lit and their spitting, static sound was recorded using DPA microphones inside the church. Recording these sounds allowed me to create a contrast between proximate and distal space: at 4'33 the candles are heard in the foreground at slightly different pitches where some seem further away than others, located in different loudspeakers.

## ***Utterance Space***

Utterance space is created using the excerpts from hymns and prayers such as 'O sacrament most holy' (5'45), 'The Our Father' (6'58) and the 'Alleluia' (6'51). At this point there is a flow of excerpts of singing from a Catholic mass that would usually not occur together, one after the other. The interaction of the singing with the church building can be heard within the recording of the mass as vocal sounds echo and reflect within the concrete structure.

Gilles Gobeil's *Descente au tombeau* (2005) from *Ombres, espaces, silences* is an electroacoustic work that contains religious references. This work opens with a choir of monks which directly relates to the theme:

'The universe of noises rests upon one of the History of Christianity's fascinating phenomenon: the hermits, or "Desert Fathers" from the first centuries of the Christian era. These men had knowingly chosen to seek isolation, to cut their ties with society, for they believed the answer to the issue of human destiny could be found only outside society.

I have attempted to describe, through a number of tableaux, the surprising life of these men, their religious fervour (the same fervour that gave birth to the first polyphonic music), by evoking the physical locations, the aridity and threat of the desert, but mostly by evoking their fabulous spiritual imagination.'<sup>37</sup>

This choir of monks sets a religious and sacred scene enhanced by the reverberant quality of the recording space and the addition of a church bell that accompanies their voices.

### **Utterance space and illusion**

The use of reverberation in electroacoustic composition varies amongst composers, with some refusing to use it as it affects the quality of the sound (often masking and blurring frequency content). The recordings used in *All Along the Bell Tower* have a direct connection with their original context, i.e. religious buildings; therefore reverberation is a necessary compositional tool not only to create a sense of space/place but also to create new material.

To create the illusion of people praying in the church I added reverberation to vocal recordings that were made in the studio. These sounds were combined with some drier vocal recordings creating a contrast between distal and proximate utterance space within the piece where some 'mumblings' seem further away than others. Volume curves

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<sup>37</sup> Gilles Gobeil, 'Ombres, espaces, silences', Linear Notes, *Trans-Canada*, (Empreintes DIGITALes, IMED 09100, 2009).

emphasise this sense of distance and proximity. The location of this material is also spread amongst the 5.1 loudspeaker array to create the illusion of the church space. Examples of this can be heard through 8'27–11'40.

Reverberation is also used to create new textures. This can be heard at 4'59 where reverberation was used on the recording of the church choir. Their voices become blurred but a musical vocal quality remains creating a spiritual atmosphere.

### 3.3 Performance Space and Sound Diffusion<sup>38</sup>

As a composer I know that once a composition is complete and removed from the studio it will not sound the same within the performance space. As I was composing this work I was always thinking about the *composed space*<sup>39</sup> and it how it would work within the *listening space*<sup>40</sup> such as a concert hall.

In 2012 I performed the piece as a work-in-progress in the Cosmo Rodewald Concert Hall, at the Martin Harris Building at the University of Manchester. This was a MANTIS<sup>41</sup> (Manchester Theatre in Sound) concert using a 48 loudspeaker setup. My main concern was how the reverberation on some of the recordings made in church buildings along with artificial reverberation would work in a reverberant space such as a concert hall. How would the *superimposed space*<sup>42</sup> be perceived within the concert hall? The MANTIS diffusion system helped with the transition.

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<sup>38</sup> 'The real-time (usually manual) control of the relative levels and spatial deployment during performance', Jonty Harrison, 'Sound, space, sculpture: some thoughts on the 'what', 'how' and 'why' of sound diffusion,' *Organised Sound*, 3 (1999) 2: 117-27, here, 117.

<sup>39</sup> 'Spatial imaging considered by the composer and composed into the music'. Denis Smalley, 'Spatial Experience in Electro-acoustic Music', in Francis Dhomont (ed.), *L'espace du son II*. Special issue of *Lien*. (Ohain: Musiques et Recherches, 2008), 123.

<sup>40</sup> 'In music-listening the composed space is transferred to and experienced in a *listening space* which may be either private and personal, or shared with others in the public. While the composed space is imbedded in the determined, musical content of a work, the listening space, which can vary from listening to listening, usually lies outside the composer's control', (Ibid.).

<sup>41</sup> MANTIS (Manchester Theatre in Sound), 'biannually presents concerts of music and sound, featuring compositions and performances enhanced by the use of new technology and digital media. MANTIS combines a broad array of sonic events, which range from the live diffusion of acousmatic works on a 48-loudspeaker sound system (using the unique MANTIS System), to Live Instrumental and Electronics events'. <http://mantisfestival.com/>, (accessed 24 March 2014).

<sup>42</sup> The 'ultimate space where the listener perceives is therefore a *superimposed space*, a nesting of the composed spaces within a listening space. (Smalley, 'Spatial experience', 123).

'In terms of concert performance, the electroacoustic work *must* be adapted to the acoustic of the hall or space and literally performed for it, both in the design of speaker placement and in the real-time control of the level, equalisation, and channeling, a process called diffusion'.<sup>43</sup>

'Diffusion is an extension of the compositional approach'.<sup>44</sup> This new listening space, the *diffusion space*,<sup>45</sup> enhances the illusion of the vast and immense church/cathedral space. Sound diffusion allows the composer to interpret the composed space. The sense of distal space can be extended using distant loudspeakers that are elevated or located in the ceiling, suitable for sounds such as distant church bells.

Loudspeakers placed on the floor very close to the audience creates the illusion that the sound of the people praying are close and intimate, where each person praying comes from a different loudspeaker. These 'praying voices' can also be spread on loudspeakers further away to create the illusion of multiple voices spread out within the church building.

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<sup>43</sup> Truax, '*Acoustic Communication*', 246.

<sup>44</sup> Harrison, 'Sound, space, sculpture', 125.

<sup>45</sup> Smalley discusses how sound diffusion assists with the transference of the composition from the studio (composed space) to the listening space. 'A whole art - sound diffusion - has arisen to deal with this act of transference. This experience of listening space I refer to as a *diffused space*'. (Smalley, 'Spatial experience', 123).

## Chapter 4 ‘The Great Animal Orchestra’<sup>46</sup>

**OZ, 2012. Duration: 26’40.**

*OZ* is a study of very specific natural environments in Eastern Australia. It investigates the rhythms, textures and musicality of a set of sounds from this area. The recordings used are a mixture of daytime and night-time sounds from the suburbs of Arana Hills, North of Brisbane and along the Eastern Pacific coast of Australia at places such as Rainbow Beach, Fraser Island, Hervey Bay and Lady Elliott Island, an eco resort Island on the Great Barrier Reef. Terminology coined by Bernie Krause (2012) is used to categorise the materials used within the work. *Oz* is an exploration of the *geophony*<sup>47</sup> (wind, rain, water) and *biophony*<sup>48</sup> (sounds of plants and animals) of these places. It also raises the issue of the impact of human sound, (*anthropophony*)<sup>49</sup> on these soundscapes and how it can take over and mask natural sound.

### 4.1 Compositional strategies

There is a delicate balance between allowing the natural morphology of sounds to remain intact – to ‘speak’ – whilst articulating a new context for the materials that will maximise their impact, laying bare the composer’s listening as an essential agent in the creative process’.<sup>50</sup>

While composing *OZ* I strived to maintain a balance between real-world sounds that retain their natural characteristics while creatively exploring the intrinsic qualities of the sounds and their textures.

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<sup>46</sup> This is the title of a book by Bernie Krause (2012), which is referenced throughout the chapter.

<sup>47</sup> Geophony: ‘Natural sounds springing from nonbiological subcategories such as wind, water earth movement and rain’. ‘Nonbiological natural sounds’, Bernie Krause, *The Great Animal Orchestra* (London: Profile Books, USA: Little, Brown and Company, 2012), 39,

<sup>48</sup> Biophony: ‘Sounds originating from nonhuman, nondomestic biological sources’, ‘The sounds of living organisms’, *Ibid.*, 80, 68.

<sup>49</sup> Anthropophony: ‘Human-generated sound’. ‘Anthropophony comprises four basic types of human-generated sound: electromechanical sound, physiological sound, controlled sound and incidental sound’. *Ibid.*, 80, 157. (*Anthropophony* was previously *Anthrophony*. *Anthrophony* is the term used in *the Great Animal Orchestra*. Krause has since updated this term to *Anthropophony*).

<sup>50</sup> John Young, ‘Inventing Memory: Documentary and imagination in Acousmatic Music’, in Mine Doğanatan-Dack (ed.), *Recorded Music: Philosophical and Critical Reflections*. (Middlesex University Press, 2008), 314-332; here, 321.

Musical qualities are embedded within natural sounds such as pitch and rhythmic patterns. It is the natural musical patterns within these sounds that I then take and embellish using electroacoustic techniques. This allows the listener to experience different modes of listening such as causal<sup>51</sup> and reduced, which, can also be experienced when listening to the environment. This approach is common throughout my portfolio. Pete Stollery discusses these listening modes in his own work:

‘The acousmatic listening environment I try to create is one where there is uninhibited movement along a continuum from causal listening to reduced listening’.<sup>52</sup>

*OZ* was created in 5.1 surround sound in order to recreate the essence of space experience in a natural environment within a new virtual space. Through the layering of sounds the listener is immersed in a dense and immersive environment, which was enhanced by the 5.1 loudspeaker configuration.

## 4.2 Soundscape Analysis

Bernie Krause<sup>53</sup> uses sonograms to gain a better understanding of the habitats that he is studying.

‘But even a short, unedited sound recording captured in a calibrated and comprehensive way does not lie. Wild soundscapes are full of detailed information, and while a picture may indeed be worth a thousand words, a natural soundscape is worth a thousand pictures’.<sup>54</sup>

Sonogram analysis facilitated my understanding of the soundscape as it provides a visual representation of the soundscape. The layers of the soundscape can be seen such as the sound frogs in the lower frequencies and the constant sound of cicadas in the mid-

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<sup>51</sup> Causal Listening: ‘listening to a sound in order to gather information about its cause (or source)’, Chion, *Audio-Vision*, 25.

<sup>52</sup> Pete Stollery, ‘Capture, manipulate, project, preserve: A compositional journey’, *Journal of Music, Technology and Education*, 6 (2013), 3: 285-298; here, 288.

<sup>53</sup> Bernie Krause is a prominent researcher in the area of soundscape studies. I have used his terminology, in retrospect to analyse and categorise the sounds used and created within the work.

<sup>54</sup> Krause, *The Great Animal Orchestra*, 71.

frequencies. As we can see the sounds in the sonogram we can anticipate their arrival, which allows us to hear some of the quieter sounds that we may have missed during the initial listening of the recording.

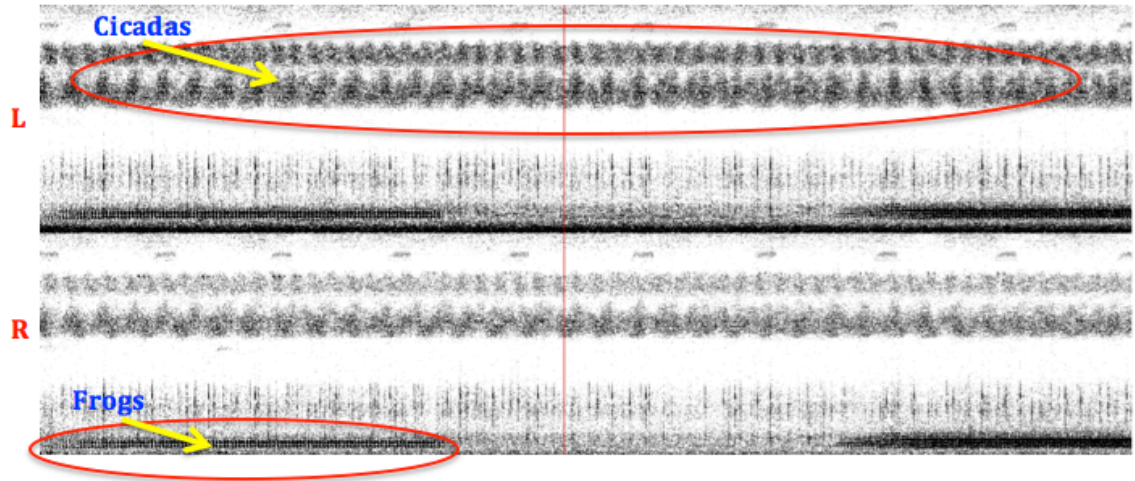


Figure 3: Displays a night recording of frogs and cicadas, Arana Hills, Brisbane.

### 4.3 Compositional Techniques

#### Biophony

#### Birdsong Manipulation

The pied butcherbird<sup>55</sup> is presented in many guises within the piece. I recorded this bird at a campsite in Hervey Bay and was amazed at its pitch perfect melody.

‘Pied butcherbird songs display an astonishing degree of complexity, inventiveness and dynamicism, as evidenced by almost complete inter-individual differences in the repertoires of mature birds; thus, the point of departure in pied butcherbird song varies with each singer’.<sup>56</sup>

I made only one recording of the butcherbird, which is manipulated throughout the work. The opening section (0’00 – 1’26) is slow and dream-like using recordings of the calls of

<sup>55</sup> A medium-sized black and white bird found on the Australian mainland, <http://www.birdsinbackyards.net/species/Cracticus-nigrogularis>, (accessed 19 July 2014).

<sup>56</sup> Hollis Taylor, ‘Blowin’ in Birdland: Improvisation and the Australian Pied Butcherbird’, *Leonardo Music Journal*, 20 (2010), 79-85; here, 79.

the pied butcherbird, which has been pitch-shifted to slow down the melody, revealing a haunting birdsong.

The first section (1'26) opens with a pitch-shifted version of the opening material derived from the butcherbird recording creating a long slowly evolving texture placed in the front loudspeakers. In contrast to this, granulated bell-like birdsong (1'32) using the StochGrains3 module in Cecilia is placed in the rear loudspeakers, which gradually increases in volume and density. The material is varied, where the grains are set at different pitches, dispersed amongst the 5.1 image. The long form structure of this work allows this section to slowly develop, where other elements of the soundscape such as frog calls (1'59) and rain (3'45) appear so that the listener moves from a reduced to a causal listening state where both real-world environmental sounds can be experienced in contrast with heavily processed sounds.

At 2'34 the real-world birdcall of the pied butcherbird is revealed amongst the transformed material. The ending of the final birdcall (3'19) is sustained, using the freeze treatment in AudioSculpt, which leads to granulated birdsong (3'26) again using the StochGrains3 module in Cecilia.

The second part of the piece (13'28) opens with similar granulated material. The original sound source, which can be heard at 22'56, is from an unknown single birdcall where the focus is on the lower pitches embedded within the material. This quiet murmuring is layered and gradually spread amongst the 5.1 loudspeaker array.

At 21'19 the exploration of the sounds of the bell miner<sup>57</sup> begins:

'The bell minor<sup>58</sup> bird (*Manorina melanophrys*) heard around Melbourne, with its persistent bell-like ring always sounding at approximately the same pitch (E<sub>4</sub> –F<sub>4</sub> ♯), gives rise to a soundscape as dense as that created by cicadas, but different in that it maintains a certain spatial perspective; for the bird sounds issue from recognisable points, unlike the stridulations of the cicadas,

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<sup>57</sup> The Bell Miner (bellbird), found in eastern and southeastern Australia restricted to coastal and mountain regions. They emit a bell-like sound. <http://www.birdsinbackyards.net/species/Manorina-melanophrys>. (accessed 19th July 2014).

<sup>58</sup> Schafer's spelling, *minor* instead of *miner*.



which create a continual presence, seemingly without foreground or background'.<sup>59</sup>

The bell-like sound of this bird is embellished using granulation in Cecilia. The real-world sound can be heard at 21'19 and 21'36 where their call has been isolated using AudioSculpt.

### **Frogs and Cicadas**

Another exploration within the biophony category slowly emerges at 4'52. The night recordings of frogs and cicadas are explored and manipulated, rising and falling beneath the rain. GRM Delay is added to the recording of frogs and cicadas, blending their sounds together. The dynamics of this texture rise and fall using volume curves, imitating the natural crescendo and decrescendo of real-world cicadas. At 5'56 real-world frog sounds are added, which rapidly rise in volume acting as a catalyst for louder frog material that appears closer to the listener. There is a mixture of transformed and real-world frog sounds at this point (6'22–13'26) so that the listener remains connected to the environment. The transformations are delicate so the morphology of the sounds remains.

At 14'14 another nighttime scene begins with the sounds of frogs and cicadas (14'28). The environment becomes louder as layers of more night recordings are added. Some of these sounds are slightly manipulated using Pitch Shift, which slowed the pace of the wildlife and allowed the rhythms and musicality of the sounds to be heard more clearly. At 16'15 frog sounds are pitch-shifted lower creating a heart beat rhythm, as a transition from night to day takes place (16'49), with the slow build up of daytime cicadas that were recorded by the sea.

### **Geophony**

'Around six hundred million years ago, geophonies were the only sounds on the planet, and no living organism would have been around to hear them'.<sup>60</sup>

The first instance of geophony is represented by the sounds of rainfall (3'43).

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<sup>59</sup> Schafer, *The Soundscape*, 29.

<sup>60</sup> Krause, *The Great Animal Orchestra*, 53.

‘Rain creates different acoustic expressions depending on the force of the downpour and environment – urban, rural, or natural. In the best of stereo or surround recordings, we are able to capture this illusion of both near and distant rain events all at once’.<sup>61</sup>

The layering of different types of rain creates contrasting spatial perspectives, distal and proximate, where distant rain recordings are combined with close-up recordings of raindrops that fall heavily on the concrete patio, creating a realistic image of a rainy day on the east coast.

The delicate sound of the wind by the sea (17’46) is another example of geophony. A gentle breeze blows with the sound of the sea in the distance. This coastal scene gradually brings the listener closer to the waters edge with the sound of the sea appearing at 18’04. Perspectives change from distal to proximate as the middle and lower spectral components of the sea are enhanced using pitch-shift and EQ. This reveals the detail and presence of the motion of the waves and the sounds of the water going over pebbles and shells.

The long form of this work allowed me to reveal the different layers of this coastal environment. Changes in proximity to the water’s edge afford a sense of movement through this environment. There is a contrast between being completely immersed in recordings of the sea, while experiencing other sounds within this environment that may not be the focus of the listener. Examples of this include the sounds of cicadas (17’21), the gentle breeze of the wind blowing on the grass (17’57), walking on seashells (19’18) and the crunch of dry grass as it is walked upon (19’24).

### **Anthropophony**

From 8’21 – 13’26 there is the interplay of anthropophony with biophony. From 8’21 rhythmic material derived from didgeridoo recordings<sup>62</sup> emerges gradually so its presence is not immediately obvious to the listener. As the didgeridoo was used to imitate animal

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<sup>61</sup> Ibid., 46-47.

<sup>62</sup> While shopping in Brisbane city I passed a man, Callum Wheeler, playing the Didgeridoo outside an Australian souvenir shop. I asked him could I record him and he agreed. I have permission to use these recordings in my work.

calls I manipulated the material using GRM delay and AudioSuite Pitch Shift in such a way that it retained a similar morphology and timbre to the sounds of the frogs. In order for the listener to identify the sound source of this material, the didgeridoo sound is revealed in its natural state at 12'03.

The ending of the piece begins at 22'40 with a close recording of small plane taking off. This section of the piece is dominated by anthropophonic sounds conveying the message of how human presence and man-made noise often mask natural sounds, scaring away animals, as they cannot compete with man-made noise. This causes problems when animals are looking for a mate but cannot be heard over noise such as traffic.

'Human-generated noise affects entire biophonies. Midmorning while I was recording in the Amazon in the early 1990s, a multiengine plane flew at two or three thousand feet directly over our research site. The engine roar was so loud that it completely masked the chorus of birds and insects'.<sup>63</sup>

There is a mixture of sounds such as passing planes overhead, a jeep revving, the tailboard of a ferry dragging along the concrete and bin men collecting bins. The freeze tool in Audiosculpt is applied to the sounds of the ferry tailboard screeching against the concrete (22'54), creating a long grating texture that is sustained amongst the other sound events. The same techniques are applied to the noise of the bin collecting truck (23'28). The untreated bin sounds are revealed at 23'27 and 23'34. Biophonic sounds weave amongst the anthropophonic material with the pied butcherbird appearing again at 23'11 and a crescendo of laughing kookaburras (24'01) symbolising nature's attempt to compete with man-made sounds.

Material from the opening of the piece brings the listener back to a more peaceful listening space in contrast with the previous section. Due to the long form of the work I felt it was important to remind the listener of previous material that may have evoked a more peaceful and tranquil listening experience.

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<sup>63</sup> Krause, *The Great Animal Orchestra*, 181.

#### 4.4 Structure

*Oz* is the longest work in the portfolio. In response to the long-form structure the narrative and sections within the piece were established beforehand, where each section explores a specific layer or scene within the soundscape. Biophonic, anthropophonic and geophonic occurring at different times of the day are isolated, explored and transformed. The sequence of the sections was established during the compositional process. The structure of the work is outlined in the following sonograms:

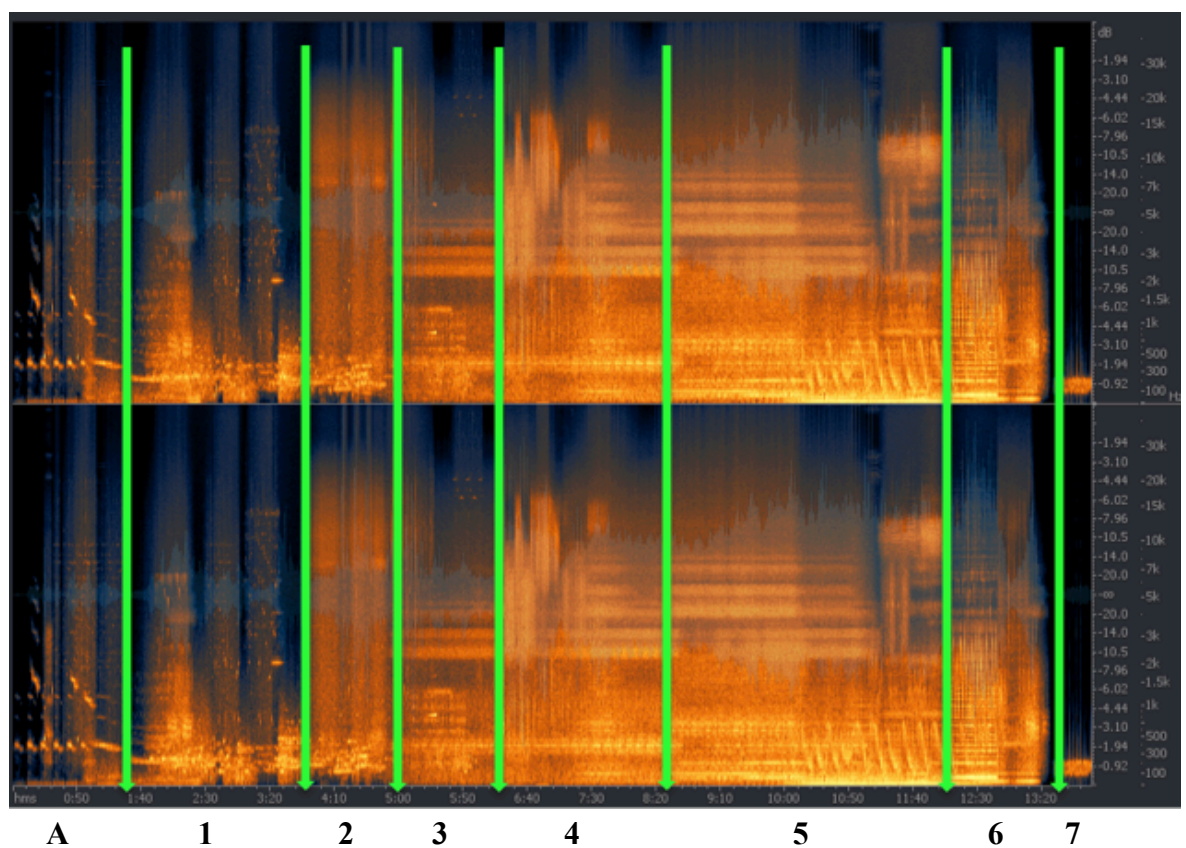


Figure 4: Structural divisions within section 1 of *Oz*

A: This is the opening of the piece, a mixture of melodic haunting birdsong and undulating crickets and frogs.

1: A combination of processed birdsong, crickets and frogs with real-world sounds, which are gradually revealed to connect the listener to the natural soundscape.

- 2: The scene of a rainy day gradually emerges from the floating birdsong. Perspectives change with a combination of distant rain and closer recordings of water dribbling into gutters and rain bouncing off concrete.
- 3: A slow transition begins from a rainy day to the dense rhythmic soundworld of cicadas and frogs, which leads to a frog scene, at 6'22.
- 4: Night recordings of frogs are explored with a brief burst of kookaburras at 7'00 and 7'26. The scene becomes more dynamic and dense with the didgeridoo introduced at 8'21.
- 5: This scene explores the interplay of anthropophony with biophony where the didgeridoo imitates the frog calls. The sound of the didgeridoo is revealed at 12'03.
- 6: The didgeridoo appears in its original state with some processed didgeridoo sounds in the background. At 12'45 this material ends leading to a biophonic soundscape with the didgeridoo in the background gradually fading out bringing section 1 to a close.

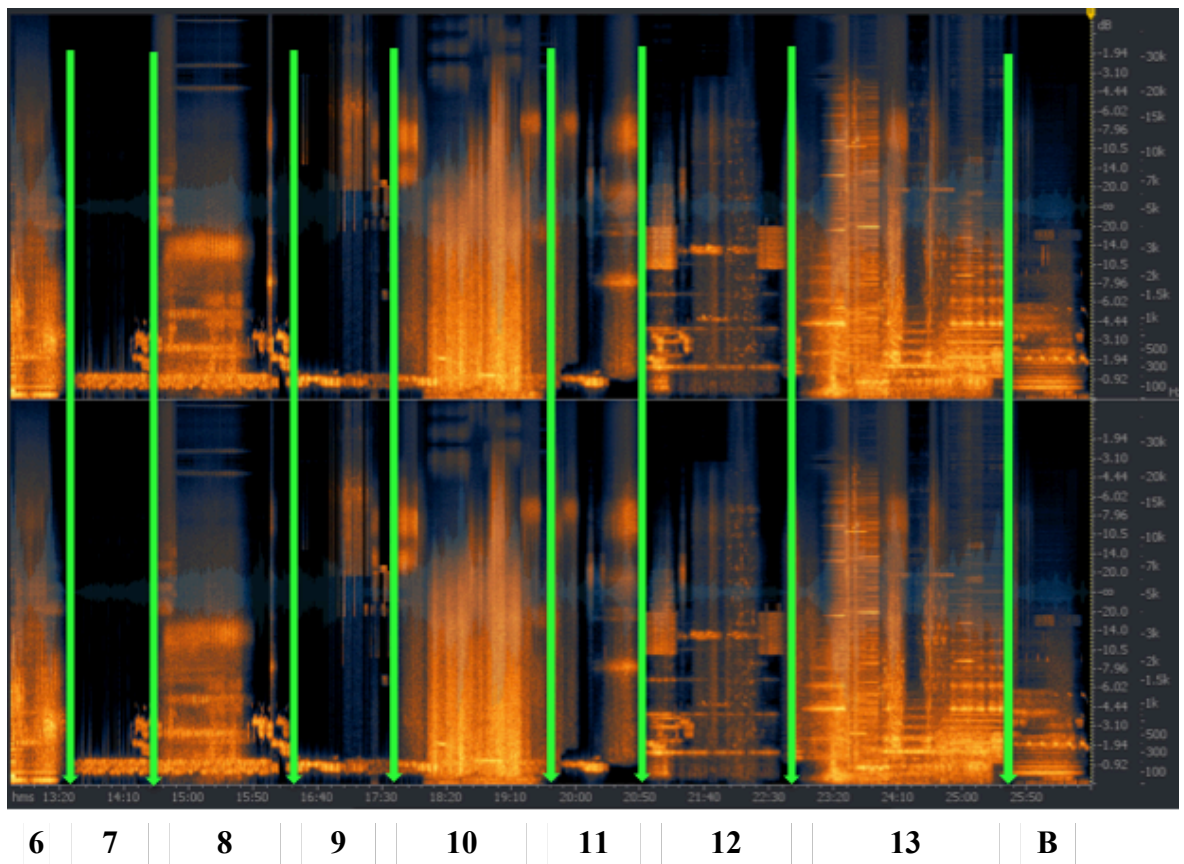


Figure 5: Structural divisions within section 2 of *Oz*

7: The opening of section 2 is subtle in contrast with section 6 with the quiet murmurings of birdsong leading into scene 8.

8: Scene 8, night-time explores the sounds of crickets and frogs recorded by a small river in Arana Hills, Brisbane, an interplay of real-world and processed sounds.

9: A transition from night-time to day-time soundscapes begins. Isolated cricket calls appear against the rhythmic heartbeat of frog calls. The crickets and cicadas become prominent as the heartbeat fades out which leads into scene 10.

10: Scene 10 explores a seascape, the sounds of the sea and those around it. Different perspectives of this geophonic and biophonic environment are revealed with a combination of close up and distant sea recordings leading to scene 11.

11: This is an exploration of the area near the sea such as the sounds of coral and dry grass under foot, small birds, crickets in the grass, other birdcalls and an airplane overhead. This gradually fades out leading to scene 12.

12: The calls of the bellbird is explored and processed in this section with the original call revealed at 21'18 high in the hills of Mount Glorious. The inner spectral content of the bellbird call is enhanced using pitch-shift, which slows down the brief call of the bird.

13: This section explores the relationship between biophonic and anthropophonic sound where sounds of animals compete to be heard over louder manmade sounds. It aims to highlight issues arising in soundscape studies and noise pollution.

B: The piece is brought to an end with the sounds of footsteps, crickets and frogs combined with the haunting birdsong from the introduction bringing the piece to a tranquil and calm end in contrast to the previous section.

## Chapter 5: Spoken Word, Soundscape and Electroacoustic music

*The thing about listening is...*, 2013. Duration: 13'43.

*A bit closer to home*, 2013. Duration: 14'40.

In July 2012 when I attended the Global Composition Conference in Dieburg, Germany, I went on a soundwalk with Hildegard Westerkamp, whose works and teaching has had an influence on my own work. To share some of Westerkamp's teachings and my own research ideas I decided to organise my own soundwalk in my hometown of Banagher, Co. Offaly Ireland. The aim of the soundwalk was to introduce people to soundwalking and how to listen to their sonic environments.<sup>64</sup> The soundwalk resulted in the composition of two 8-channel works: *The thing about listening is...* and *A bit closer to home*.

### 5.1 Compositional Aims

*The Thing about listening is...* communicates the principles and teachings of Westerkamp, which were discussed during the soundwalk. This work combines excerpts from the soundwalk with spoken word, field recordings and processed material. *A bit closer to home* focuses on sounds from the past and how the remembrance of sounds can evoke memories and feelings.

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<sup>64</sup> See Appendix A (1) for a list of questions that help the listener engage with their environment.

<b>Title</b>	<i>The thing about listening is...</i>	<i>A bit closer to home</i>
<b>Duration</b>	13'43	14'40
<b>Format</b>	8-channel	8-channel
<b>Materials</b>	Spoken word, field recordings, electroacoustically transformed sounds	Spoken word, field recordings, electroacoustically transformed sounds
<b>Type of spoken word</b>	Conversation (a general conversation about listening)	Interview (a question was posed and answered)
<b>Theme</b>	The importance of listening, how to listen, personal experience, soundwalking, noise pollution	Sound romances, aural history, nostalgia, soundmarks, keynotes
<b>Context</b>	Soundscape studies, soundwalking, education	Soundscape studies, education, sound preservation

Table 1: Comparative overview of *The thing about listening is...* and *A Bit closer to home*.

## 5.2 The Banagher Soundwalk

‘A Soundwalk is any excursion whose main purpose is listening to the environment. It is exposing our ears to every sound around us no matter where we are’.<sup>65</sup>

My aim for the Banagher soundwalk was to take people into an environment that they were familiar with and make them more aware of the sounds within it. I took 15 people on this 50-minute walk and the group ranged from about 3 to 65 years of age. As we walked I had selected some listening points where we would stop and listen and have a brief discussion. Usually on a soundwalk there is complete silence for the duration of the walk. However as I was talking to people who had never experienced a soundwalk before, I felt it was necessary to ease them into the walk and explain the reasons for the stops, e.g. birds tweeting in the tree above us and changes in the sounds of our footsteps as we moved from concrete to gravel. This effectively engaged with the younger members of the group and revealed what they had to say about their surroundings.

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<sup>65</sup> Hildegard Westerkamp, ‘Soundwalking’, in Angus Carlyle (ed.), *Autumn Leaves: Sound and the Environment in Artistic Practice*. (Paris: Double Entendre, 2007), 49-54, here, 49.



My own soundwalking experience has helped me as a listener and composer to better understand the soundscape. The importance of soundwalking for composers is discussed in the writings of Truax and Westerkamp:

‘My own practical suggestion with regard to soundscape recording and composition is to begin not with recording or processing in the studio, but rather with the experience of soundwalking in the soundscape.’ ‘It is arguably the most direct aural involvement possible with a soundscape and one where repetition does not dull its effectiveness, since each walk is unique and unrepeatable’.<sup>66</sup>

‘Unless we listen with attention, there is a danger that some of the more delicate and quiet sounds may pass unnoticed by numbed ears, and among the many mechanized voices of modern soundscapes and may eventually disappear entirely’.<sup>67</sup>

Throughout my compositional research my aim is to engage listeners with particular soundscapes. Soundwalking is another extension of this. The soundwalk placed me as a composer and listener amongst people, place and sound. The function of the soundwalk was to engage participants with their environment, creating a dialogue between me (the composer), locals and their soundscape.

### **5.3 Chance Encounters: Discussing the Soundscape**

The spoken word within both of these works can be categorised as ‘work where the material is gathered from either everyday conversations or through interviews’ rather than scripted.<sup>68</sup>

#### **Everyday conversations:**

*The thing about listening is...* features excerpts of a conversation that I had with two

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<sup>66</sup> Barry Truax, ‘Sounds, Listening and Place: The Aesthetic Dilemma’, *Organised Sound*, 17 (2012), 1:1-9, here, 4.

<sup>67</sup> Westerkamp, ‘Soundwalking’, 49.

<sup>68</sup> Cathy Lane, ‘Voices from the Past: compositional approaches to using recorded speech’, *Organised Sound*, 11 (2006), 1:3-11, here, 4.

natives of Banagher: Rosemary Porter and her brother Brian Johnson.<sup>69</sup> The conversation is based around my research ideas, their thoughts on listening, the soundwalk and the poetry that Porter has written. The recorded speech is informal, natural and relaxed with no scripted material. Trevor Wishart discusses the importance of capturing ‘as far as possible, an everyday, ‘natural’ mode of speaking’, when recording people’s voices for his work *Encounters in the Republic of Heaven*.<sup>70</sup> This was important for my own recordings as Porter and Johnson’s enthusiasm and interest in listening were conveyed within the arising narrative text.<sup>71</sup>

## Interviews:

The spoken word used in *A bit closer to home* is taken from an interview that I had with Tiernan Martin<sup>72</sup> a few days after the soundwalk. The interview is an earwitness<sup>73</sup> account that recalls and discusses sounds from the past. The recording can be classified as a piece of aural history<sup>74</sup> as the interview is recorded rather than transcribed (oral history). This piece of aural history can be defined as ‘a voice or voices reminiscing about the events of the past (*recall*)’.<sup>75</sup>

Martin, who grew up in Banagher, agreed to an interview and I enquired: *what are the sounds that you remember from growing up in Banagher?* The arising interview<sup>76</sup>

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<sup>69</sup> I met Rosemary by chance in the local churchyard, when I went to look for the parish newsletter to see if my soundwalk had been advertised. The church was locked and Rosemary was the only one left in the car park. She had the newsletter under her arm and I asked her if I could read it. The soundwalk was advertised and I invited her along. Unfortunately she couldn’t attend but read me some of her poetry that contained many descriptions about sound. The next day her brother Brian phoned me and we also talked about listening. I was invited to their house for tea, and I recorded the conversation that we had about listening with their permission. I have permission to use excerpts of the conversation in my work.

<sup>70</sup> Trevor Wishart, *Encounters in the Republic of Heaven* (2010), 21.

<sup>71</sup> Excerpts from the conversations that were used in the composition and their location within the work are shown in Appendix A2, table 2, illustrating the structure within the piece.

<sup>72</sup> Tiernan Martin is my uncle and grew up in Banagher. I have permission to use excerpts of the interview in my work.

<sup>73</sup> Earwitness: ‘The author of verbal or written descriptions of sounds, usually those of the past. Collections of earwitness accounts form one of the few sources of historical soundscape documentation. Truax, *Handbook for Acoustic Ecology*.

<sup>74</sup> Aural History: ‘A recent evolution in the traditional concept of oral history has been termed *aural history* in order to shift the emphasis from the transcript as a final document to the sound itself recorded on tape. Thus, aural history involves the creation of a document in sound which, by virtue of being tape recorded, is historical as soon as it is made.’ Ibid., (Within the definition of Oral History).

<sup>75</sup> Ibid.,

<sup>76</sup> Excerpts from the interview and their location in *A bit closer to home* are shown in, Appendix A3, Table 3 illustrating the structure of the piece.

discusses and reflects his personal connection with his hometown, focusing on sound romances.

#### 5.4 Soundwalking and Composing

In *Kits Beach Soundwalk* (1989), Westerkamp uses her voice and narration to draw the listener's attention to some of the quieter sounds around her, which are masked by traffic noise. Here her ideas about soundwalking are echoed in her compositional approach as her voice guides the listener through the soundscape uncovering the layers within it. Similarly within *The Thing about listening is....* there is a strong connection between soundwalking and composing.

Within *The Thing about listening is....*, the listener is taken to different places along the soundwalk route. The spoken word and field recordings are all separate events that are brought together to create a 'virtual, electroacoustically, dramatised critical reflection on place, time and feeling, as sensed and articulated through sound'.<sup>77</sup>

#### 5.5 Compositional techniques: *The thing about listening is...*

*The thing about listening is...* is divided into five sections. Each section focuses on a topic or place that was discussed or experienced as a result of the soundwalk. The sections are as follows<sup>78</sup>:

##### 1) Listen (0'00 – 2'32)

The first part asks the listener to listen, reflecting the principles of a soundwalk. This section is framed around the spoken word of Johnson, suggesting ways in which we might listen more effectively. The piece opens with a sonically rich texture (7+8) that introduces whispers of the word 'listen' repeated throughout the eight loudspeakers. This gesture repeats at 0'19 (1+2) (7+8) accompanied by heavily processed spoken word using reverberation and pitch shift. At 0'44 (1+2) the narrative text begins with the words 'The thing about listening is'. A climax builds with rapid short bursts of granulated vocal sounds dispersed amongst the eight loudspeakers. The volume of this material increases resulting

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<sup>77</sup> Young, 'Inventing Memory', 321.

<sup>78</sup> Examples include the time-code within the work and loudspeaker location, e.g. 0'44 (1+2) refers to 44 seconds, located in loudspeakers 1 and 2. For reference to the 8-channel loudspeaker set-up please refer to diagram 5, P. 62.

in the revelation of the answer at 0'55, 'That when you listen you must suspend all your judgment'. At 1'06 (3) and 1'08 (1) the soundwalk space emerges providing a contrast between the indoor (conversation space) and the outdoor (soundwalk space).

## **2) Rosemary's river walk (2'32 – 5'55)**

At 2'32 (1+2) a new section begins with an introduction of a field recording taken from the banks of the River Shannon of a passing boat, which was encountered along the soundwalk route. This section concerns Porter's experience of sounds as she was walking by the river. At 2'41 (1+2) she begins 'Although you would say it was a very quiet place and there was nothing happening, when you stop to listen there is so much going on'. This reflects Westerkamp's soundwalk ideology that 'unless we listen with attention, there is a danger that some of the more delicate and quiet sounds may pass unnoticed by numbed ears'.<sup>79</sup>

Porter discusses both natural and machine sounds, which are represented using field recordings and processed engine sounds using GRM Freeze to create a drone-like texture. At 3'03 (1+2) a drone begins representing machine noise, which continues throughout the section. Excerpts from the soundwalk are combined with other field recordings reflecting the existence of natural sound and machine noise together within the soundscape.

## **3) Over the bridge (5'55 – 8'02)**

This section of the piece explores the recordings that were made on the soundwalk as we walked across the bridge over the River Shannon. Participants were invited to make sounds with pencils and umbrellas against the railing of the bridge as we walked across, which was particularly enjoyed by the younger soundwalkers. On soundwalks Westerkamp often invites participants to explore the sounds of objects along the soundwalk.

'It is appropriate to mention another type of soundwalk which does not only include attentive listening but also active physical participation in the music of our environment. There are many opportunities for this kind of activity in the soundscape, which children often demonstrate to us quite naturally. But to

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<sup>79</sup> Westerkamp, 'Soundwalking', 49.

many of us adults, the idea of creating our own sounds, of composing or orchestrating our environmental may seem silly and contrived'.<sup>80</sup>

This section has no spoken word but explores the resonance of metal and the rhythmic movement of the pencils against the railings. The listener is immersed within the movement of the soundwalkers as recordings from the soundwalk are layered in stereo pairs, throughout the eight loudspeakers.

#### **4) The sound of people's voices (7'58 – 10'35)**

This section opens with the murmuring and whispering of voices. Most of the material within this section is created by vocal processing using granular synthesis in Soundgrain. The word 'somebody' was extracted from a sentence spoken by Porter in the recording and manipulated using the Soundgrain software. By using this technique I was able to create various textures at different pitches that weave in and out amongst the narrative text as Porter is discussing 'the sounds of people's voices'. Examples can be heard at 8'33 (5+6), 8'38 (7+8), 8'49 (5+6) and 9'01 (3+4).

#### **5) Listening is just so important (10'33 – 13'43)**

Porter concludes the piece with her thoughts on listening and the impact of noise, at 10'42 (1+2). The ending of the piece allows the listener to reflect on the message and ideas within the piece structured around Porter's thoughts and concerns about listening. Porter's words echo the concerns of acoustic ecologists and the impact of noise on our soundscape. Westerkamp states:

'If we – who are specialists in listening and sound-making are not concerned about the acoustic environment, then who will be? Some biologists have made it their calling to use their special knowledge and education to look at the natural world from the ecological perspectives. Why then should composers

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<sup>80</sup> Ibid., 52.

and musicians not make it their calling to use their special knowledge and education to listen to the world from the ecological perspective?’<sup>81</sup>

Porter’s statements, ‘Value the sounds you hear, your sense of hearing,’ and ‘Listening is just so important,’ reflect the teaching and ideas within soundscape studies. Westerkamp also raises the question:

‘How can the soundscape composer raise listening awareness in an already overloaded soundworld with yet another sound piece?’<sup>82</sup>

In response to Westerkamp’s question I feel that it is not simply about creating a new composition. It is everything that happens during the compositional process, before and after, beginning with the soundwalk. ‘Listening awareness’ is at the forefront of this composition as people were taught how to listen<sup>83</sup> during the soundwalk. ‘Listening awareness’ is reflected within contents of the spoken word recordings, which is evidence of how composers can ‘inspire ideas about balanced soundscapes and acoustic ecology’.<sup>84</sup> This inspiration was not only reflected within the conversations that I had with people but also in an article written by a participant about her experience on the soundwalk.<sup>85</sup>

## **5.6 Compositional approaches using spoken word**

### **Spoken Word and Soundscape**

Many soundscape composers have worked with spoken word and soundscape material. Cathy Lane’s work *On The Machair* (2008) from *The Hebrides Suite* is ‘a mixture of field recordings, audio diaries, conversations, interviews and oral histories drawn from archives

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<sup>81</sup> Hildegard Westerkamp, ‘Linking soundscape composition and acoustic ecology’, *Organised Sound*, 7 (2002), 1:51-56; here, 52.

<sup>82</sup> Ibid.

<sup>83</sup> Using the questions outlined in Appendix A1.

<sup>84</sup> Westerkamp, ‘Linking soundscape composition and acoustic ecology’, 52.

<sup>85</sup> This article was published in the local magazine, ‘The Banagher Review’, in December 2012. Refer to Appendix A4.

across Scotland'.<sup>86</sup> The aim of the work is 'to explore aspects of island life past and present through the medium of composed sound.'<sup>87</sup>

### **Compositional approaches to using spoken word**

In order to discuss the compositional techniques and approaches that I used when working with the spoken word recordings I use the categories<sup>88</sup> discussed by Cathy Lane in her paper *Voices from the Past: Compositional approaches to using recorded speech*.<sup>89</sup>

#### **1) Retention of Meaning. Words are presented as recorded with no apparent processing.**

The spoken word, which is used as the narrative text within both works, is left unprocessed, to retain the original context. The spoken word recordings remain in their natural state to retain accents, emotions and idioms, which also reflect a sense of place and identity. Minimal processing such as editing the spoken word into smaller pieces, EQ and noise removal were used.

#### **2) Dissolution of semantic meaning through processing. The semantic meaning of a word or phrase is dissolved through a processing effect such as layering, overwhelming reverberation, reversed echo or spectral processing.**

Example: *The Thing about listening is...*

An example of this type of processing can be heard at 0'10 (1+2), 0'27 panned L-R (3+4) and 0'34 panned R-L (3+4) where spoken word is heavily processed with reverberation. The words are incoherent and difficult to understand until they are revealed in their natural state at 0'44 (1+2) with the words 'The thing about listening is' where the text narrative begins.

#### **3) Dissolution of semantic meaning through deconstruction. Words are split into their component syllables or smaller units and are used acoustically.**

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<sup>86</sup> Cheryl Tipp, 'Review of the Hebrides Suite, <http://thefieldreporter.wordpress.com/2014/02/13/9176>, (accessed 10 June 2014).

<sup>87</sup> Description of the work on Gruenrekorder: [http://www.gruenrekorder.de/?page\\_id=10760](http://www.gruenrekorder.de/?page_id=10760), (accessed 23 February 2014).

<sup>88</sup> These categories were not used as a compositional tool. This is a retrospective categorisation.

<sup>89</sup> Lane, 'Voices from the Past', 5-7.

Example: *The Thing about listening is...*

The first instance of this technique can be heard at 2'05 where the word 'listen' is deconstructed using 'Granul8'. The 'Splatter' patch take the first syllable 'list' and distributes it using a random sequence across the eight loudspeakers, repeated until 2'10 ending with the complete word 'listen' at 2'11 (1+2). The semantic meaning is lost as the word is deconstructed but as the full word is revealed at 2'11 the meaning is re-established.

**4) Narrative suggestion. Vocal events are not foregrounded but used to indicate human presence or human activity.**

Example: *The Thing about listening is...*

Throughout the piece excerpts from the soundwalk can be heard. At 1'08 (3+1) a young girl and a woman's voice can be heard. At 3'46 (1+2) we hear the young girl again on the soundwalk saying 'look' when she sees a bottle floating in the water.

**5) Accumulation of meaning by semantic extension or elaboration. This is often achieved through processing.**

Example: *A bit closer to home*

Recognisable processing of the voice appears once in *A bit closer to home*. This occurs at 7'04 where the phrase 'there was a constant' is repeated 26 times and rotated anti-clockwise as an 8-channel image. This was created using the 'Circul8' patch in BEASTtools. The processing of this phrase emphasises the meaning of the word 'constant' through the repetition of the phrase and its continuous circulation, lasting 27 seconds.

**6) Accumulation of meaning by sonic association. Semantic meaning of words is reinforced by the additional use of other sounds relating to the text, e.g. The sound of the object that is mentioned (the sea for the sea), or by morphologically similar material, e.g. text about the sea is complemented with 'flowing' or 'undulating' sounds.**

Example: *A bit closer to home*

Sonic association can be heard in the third section when the sounds of the church bells are being discussed. At 12'51 Martin describes the sounds of the bells in the distance. Throughout this description the sound of distant church bells, a recording that was made in



Banagher in August 2012 can be heard accompanied by other bell-like material.

### 5.7 Soundscapes of the past

Murray Schafer's book *The Soundscape* (1994) discusses the changes in the soundscape over time from the very first soundscapes to the sounds of the industrial revolution. He raises the question:

‘What is the relationship between man and the sounds of his environment and what happens when those sounds change?’<sup>90</sup>

John Young explores the theme of past soundscapes, place and identity, memory and narrative in his work *Ricordiamo Forli* (2005):

‘This radiophonic/electroacoustic work uses narration, realistic sound imagery and electroacoustically transformed sounds to tell the story of my parents in Italy during the WW2, using sounds recorded on location in Forli, Italy, as well as historical recordings of war correspondence reports and actuality recordings supplied by the New Zealand Sound Archive, the BBC and the Imperial war museum.’ These works explore the interaction of memory and experience, narrative and evocation bringing sounds and voices from the past and present together in imaginary soundscapes’.<sup>91</sup>

### *Sound Romance*

‘The romance associated with a past sound arises from a nostalgia for a time and circumstance that no longer exists. The sound seems romantic because it has the power both to evoke the past context and to idealize it’.<sup>92</sup>

Sound romances are a theme explored by composer Pete Stollery. In his work *Resound* (2005) he uses field recordings and interviews as his source material. He describes this work as a:

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<sup>90</sup> Schafer, *The Soundscape*, 3.

<sup>91</sup> John Young, ‘Ricordiamo Forli’, Programme note, <http://sounz.org.nz/works/show/18018>, (accessed 14 February, 2013).

<sup>92</sup> Truax, *Acoustic Communication*, 29.

‘Sound Documentary; five interviews with people remembering and talking about sounds that no longer exist, interwoven with present days sounds which have replaced them’.<sup>93</sup>

In his work *Still Voices* (2005), Stollery uses ‘sounds recorded in a whisky distillery, some of which were about to disappear as the manufacturing process changed’.<sup>94</sup> He discusses the importance of his recordings here:

‘In 2011, I was asked to perform the piece in the distillery; this had a fascinating effect on the workers who, on hearing the sounds again, discussed openly the fact that they somehow ‘missed’ these sounds, which, they now realized, had been an important part of their working environment. These links between sound and memory – and loss, perhaps, all of which are associated with a particular place are what R. Murray Schafer referred to as a sound romance.’<sup>95</sup>

In *A bit closer to home*, the detailed descriptions of sound romances in the interview prompted me to recreate the sounds using electroacoustic techniques and field recordings. The structure of this piece is based on the descriptions of the sound romances where each section focuses on a sound romance from the narrator’s childhood in the early 1970s. The sections are as follows:

- 1) The Bridge of Banagher (0’00 – 5’02).
- 2) Waller’s Mill (4’53 – 8’48).
- 3) The Church Bell (8’28 – 14’40).

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<sup>93</sup> Stollery, ‘Capture, manipulate, project, preserve’, 290.

<sup>94</sup> Ibid.

<sup>95</sup> Ibid.

## 5.8 Compositional techniques: *A bit closer to home*

### Recreating Sounds from the past<sup>96</sup>

#### Soundmarks

The first section explores the sound romance of ‘The bridge of Banagher’ (0’00 – 5’02). In this section the narrator discusses the sounds of the cars as they passed over the wooden planks of the bridge. This soundmark<sup>97</sup> is described as a roll of thunder.

The rumbling of the car driving over the planks was created using a recording that I made with contact microphones<sup>98</sup> placed inside an old upright piano. When the foot pedal was used a rumbling sound was created. This was further processed using EQ to enhance the lower frequencies. As the narrator describes the sound of the cars driving over the bridge, the created sound can be heard at 1’15 (5+6) panned L-R, 1’21 (5+6) panned R-L, and 1’56 where the sound is dispersed amongst all loudspeakers.

Section three of the piece, 8’28 – 14’40, (The Church bell) represents the importance of the church bell as a soundmark. John Young discusses the importance of the church bell when he first went to Forli in Italy:

‘Standing in the center of the city’s Piazza Aurelio Saffi listening to bells from churches clearly audible over great distances gave me a strong sense of experiencing the sounds as something resonating of the place and its history...that these were ‘voices’ from the past — something permanent, yet alive — evoking a sense of being touched by the physicality of sounds that others had experience with the same immediacy over many years and through some dark, violent times’<sup>99</sup>

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<sup>96</sup> Terminology from Truax’s *Handbook of Acoustic Ecology* (1999) is used to categorise and discuss the work. This is a retrospective analysis, used to articulate the role of the sound within the soundscape.

<sup>97</sup> Soundmark: The term soundmark is derived from landmark and refers to a community sound, which is unique, or possess qualities which make it specially regarded or noticed by the people in that community. (Schafer, *The Soundscape*, 274).

<sup>98</sup> The contact microphones were borrowed from Jez Riley French and can be purchased here: <http://hydrophones.blogspot.co.uk/2009/05/contact-microphones-by-jrf.html>

<sup>99</sup> John Young, ‘Ricordiamo Forli’, Linear Notes, on *Lieu-Temps* (Empreintes DIGITALes, IMED 0787, 2007).

The onset of section 3 begins at 8'28 with short gestures of reverberant bell sounds, created using volume curves, each occurring in a sequence of different stereo pairs: (1+2) (3+4) (7+8) (5+6). Accompanying these shorter gestures is a longer continuous gesture created from the same material: spread across the 8 loudspeakers, slowly increasing in amplitude, holding for 26 seconds and then gradually fading out.

The overall texture of the piece is enhanced at 9'42 (5+6) with granular bell-like material processed using the StochGrains3 module in Cecilia 4. As the narrator explains the importance of the sounds of the bells 'as you are out on the river', short snippets of water sounds appear at 12'21, 12'24, 12'31 and 12'43. These sounds are located in different loudspeakers weaving in and out amongst the processed bell sounds enhancing the image of the narrator, on a boat in the middle of the river listening to the church bells.

### **Keynotes**

In the second section the keynote<sup>100</sup> sound of Waller's Mill (4'53 – 8'48) is discussed. The aim of this section is not only to represent the keynote sound of the mill but also to reflect the descriptions of the mill sound as described by the narrator. At 5'06 (1+2, 5+6) a single machine-like low frequency tone, with a real-world mill sound appearing at 5'09 (1+2, 3+4). This is a modern recording of the mill as it is today, combined with processed materials. Shorter gestures create a contrast amongst the sustained tones as they increase in volume and pace reaching a climax at 7'09 as the words 'there was a constant' rotate around the loudspeakers, ending with machine-like tones that gradually disappear.

### **Sacred Noise**

At 3'35 a change in space occurs and the listener is immersed within purely environmental, real-world sound material where the idea of 'Sacred Noise'<sup>101</sup> is explored. The sound of

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<sup>100</sup> Keynote Sound: In soundscape studies, keynote sounds are those sounds, which are heard by a particular society continuously or frequently enough to form a background against which other sounds are perceived. Examples might be the sound of the sea for a maritime community or the sound of the internal combustion engine in the modern city. Often keynotes are not consciously perceived, but they act as conditioning agents in the perception of other sound signals. (Schafer 1994: 272).

<sup>101</sup> Sacred Noise: 'Any prodigious sound or noise which is exempt from social proscription. Originally, such natural phenomena as thunder, volcanic eruptions, storms, and so on, were regarded as sacred noise, as they were believed to represent divine combats or divine displeasure with humankind'. Truax, *Handbook for Acoustic Ecology*.

thunder may also be categorised as geophony (Krause). However, Sacred Noise is more appropriate due to the spoken word narrative of the piece, which affords a symbolic listening experience towards this sound.

The listener has the opportunity to experience the ‘natural phenomenon’ of rain and thunder in their natural state, a contrast between the sonic metaphors created to reflect the idea of ‘sounds like thunder’ experienced in the first part of section 1.

This is further enhanced by eight-channel spatialisation of multiple layers of the thunder and rain samples placed in stereo pairs: (1+2), (3+4), (5+6) and (7+8). Processing using EQ was used to enhance the bass frequencies so that the thunder appears louder and closer.

## **5.9 Space and Sound Diffusion**

### **Composing in 8-channels**

*The thing about listening...* and *A bit closer to home* were written for 8-channels. Multi-channel composition allows the composer to recreate specific soundscapes where the compositional space is extended from stereo to increased channel formats (for example, quadraphonic or octophonic). This allows the composer to create a realistic version of the original sound environment especially when field recordings are the material being used.

‘Even just eight channels of discrete source material create a convincing soundscape where composed sounds can be localised in the manner experienced in acoustic environments’.<sup>102</sup>

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<sup>102</sup> Barry Truax, ‘Soundscape Composition as Global Music: Electroacoustic Music as Soundscape’, *Organised Sound*, 13 (2008), 2:103-109, here, 105.

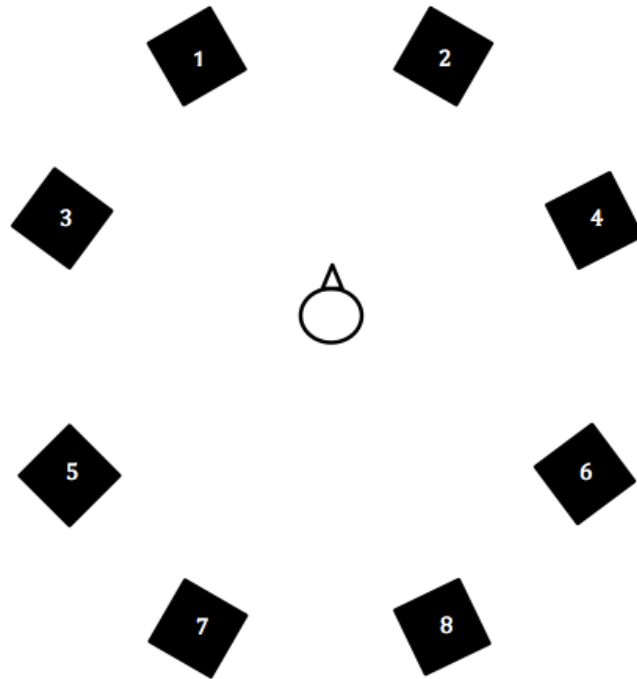


Diagram 4: 8-channel loudspeaker setup for *The Thing about Listening is...* and *A Bit Closer to Home*

The approach I have taken is as Barreiro describes:

‘based on a more generalised (or diffused) distribution of the sounds, not concerned with their precise localisation. In this case, the identification of spatial regions such as ‘frontal’, ‘lateral’, ‘at the periphery of the space’, ‘close’ and ‘distant’, for example, are considered to be significant enough to articulate the spatial dimension of a work. With multi-channel systems, this generalised or diffused spatial approach can generate sounds that envelop the whole audience, causing the sensation that the sounds are the space’.<sup>103</sup>

My approach may be generalised as discussed by Barreiro, but the localisation of certain sounds is also very important. Discrete localisation of sounds such as birdsong and people’s voices is very effective when working with two/three dimensional space to make the space and the virtual soundscape more believable.

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<sup>103</sup> Barreiro, ‘Considerations on the handling of Space’, 291.

## **Spatialisation of Spoken Word**

As I was composing I experimented with the location of the spoken word such as placing it in the front loudspeakers (one and two) with the next phrase coming from the rear speakers (seven and eight). However, as the composition developed I felt that the movement of the spoken word within the eight-channel ring disrupted the flow of the piece. The spoken word in both works now remains fixed on front loudspeakers (1+2), creating an illusion that the narrator is sitting in front of the audience.

## **Performance and Sound Diffusion**

When working with spoken word and multi-channel space there are some compositional dilemmas that the composer has to deal with. For me this was in relation to the format of the work: composed in the studio in 8-channels. When it is performed in another environment with a circle of eight loudspeakers, the composition remains fixed.

The sound diffusion of *A bit closer to home* on a 48-channel system at the MANTIS Festival in October 2013 posed a challenge. The spoken word was fixed on loudspeakers one and two. When diffusing the work the 8-channel image could be spread across multiple rings of eight loudspeakers, which also included loudspeakers located in the ceiling and on the floor. At certain points throughout the piece the spoken word could be heard on the loudspeakers in the ceiling which disrupted the illusion of the narrator sitting in front of the audience. The solution was to change the format of the piece from 8-channels to 10-channels when sound diffusion was an option during performances. The extra two channels (A+B) are reserved exclusively for the spoken word and remain fixed and separate from the rest of the material, located on a separate pair of loudspeakers. The diagram below represents the 10-channel format of both *The thing about listening is...* and *A bit closer to home* used for sound diffusion.

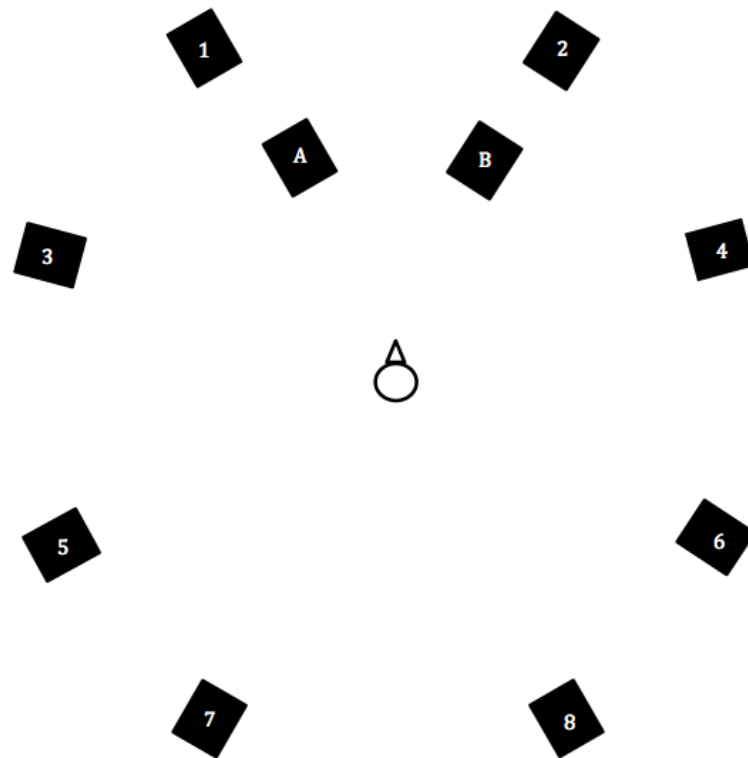


Diagram 5: 10-channel loudspeaker setup for diffusion of *The Thing about Listening is...* and *A Bit Closer to Home*. Spoken word is fixed on loudspeakers A + B.

This ten-channel format was used at a concert at DMU in Leicester on the 15<sup>th</sup> January 2013 and I was very happy with the results: I no longer had to worry about moving the spoken word and disrupting the illusion.



## Conclusion

Communication of place, story and identity has been the focus of my compositional aims. The use of field and studio recordings and spoken word as sonic material has resulted in a portfolio of works that stimulates a diverse communicational listening experience through the creation of both real and virtual environments. Electroacoustic techniques have been employed to reveal and highlight the layers and their intrinsic sound qualities within these soundworlds. While these aspects are common throughout this portfolio the listener is presented with diverse soundworlds and listening experiences.

*Lamenting* explores the themes of mortality and afterlife through the myth of the Irish banshee. Through the use of extended banjo playing techniques the sonic and folk qualities of the instrument are manipulated to create textures and timbres, which symbolise the motion and imagery within the mythical tale of the banshee.

*192* delves into the complex soundscape of a commuter's journey which is so easily blocked out with modern technology such as MP3 players. This piece explores spectral sound isolation techniques to reveal the intrinsic sonic qualities embedded within the sounds of the bus, while creating real and symbolic representations of the sounds experienced by a commuter on a bus.

*All along the bell tower* simulates a journey where the sounds within and outside the church/cathedral building are explored. The church/cathedral building is treated as a sound object, which is deconstructed exposing the multiple sonic layers that contribute to the sense of reverence and spiritual peace evocative of these sacred buildings.

*Oz* is a virtual journey through the east coast Australian soundscape. This develops my sonogram analysis techniques to create a better understanding of the soundscape. The intrinsic qualities of the environment (geophony, anthropophony and biophony) are reflected throughout the piece. The long form of this work allows for the investigation of a variety of sounds from different environments to be explored.

*The thing about listening is...* and *A bit closer to home* are an exploration of the sonic imagery that arises from interviews and conversations. From this a spoken word narrative emerges and forms the structure not only of the pieces but how sounds are transformed and used to reflect the contents of the spoken word.

This body of work contributes to the field of soundscape studies highlighting context, through both musical and spoken word narrative. Through the creation and analysis of these works I have acquired an in-depth knowledge of suitable descriptive vocabularies that focuses on electroacoustic techniques in relation to spectromorphology, space-form (Smalley) and spoken word (Lane). The terminology developed by Schafer, Truax and Krause in the area of soundscape studies and acoustic ecology has also proven to provide the composer with a better understanding towards the functioning of sounds within our soundscape.

The themes explored within this portfolio also contribute to many issues outside electroacoustic music. This body of work has specifically engaged issues such as urban planning, noise pollution, changing soundscapes due to economic and industrial developments and the preservation of disappearing sounds. Each of these has stimulated the use of new techniques and ways of working with sound materials that have enriched my compositional approach. This has established a basis that will allow me to develop further interdisciplinary research and collaboration.

The utilisation of various multi-channel formats such as stereo, 5.1 and 8-channel enables the full realisation of these compositions, affording an immersive and compelling listening experience. The spatial aspects have been particularly important in achieving a sense of place within each piece. This has resulted in a body of work that has proven to be versatile to work in many performance situations.

As my research continued I realised that the acoustic identity of place was not just about the sounds within it but also about the relationship that the inhabitants developed with their environment through sound. Personal identity is strongly associated with place and it has become evident that sound plays a very important role in how people connect with place both past and present. Acoustic experiences can enhance or diminish a person's relationship with a specific place by imposing feelings and emotions on the listener. The final two works convey a sense of place identity including the identity of those that live or lived there. Personal identity was conveyed in the individuality and character of the narrators, their accents and idioms and sounds that connect them to their hometown. I have also explored my own identity with my hometown and the sounds that connect me to that place.

The works reflect concerns and ideas that are prominent in old and new research within soundscape composition such as the changing soundscapes around us. Towards the end of the portfolio engagement with the community created new opportunities for raising awareness about our soundscape opening up another path for the dissemination of research and ideas rather than focusing solely on the concert audience. This proved to be a valuable experience where ideas and thoughts were exchanged during the soundwalk. Not only are the current soundscapes that surround us important to study, but also those of the past. The soundwalk and my engagement with the local community provided an opportunity to discuss relationships both past and present with the sounds of the environment and their significance to the listener. It is also about the role of the listener as a soundmaker within his/her own soundscape. If they are not aware of this then it will be impossible for people to contribute to the improvement of their soundscapes.

The portfolio has provided the basis for further research in many areas. The importance of sound within communities back thousands of years is being studied in archaeoacoustics<sup>104</sup>, which provides an exciting platform for interdisciplinary research and collaboration bringing together the areas of architecture, archaeology, anthropology, sound preservation and sound art. This is an area I would like to engage in with future research.

Composing for multichannel has also opened up endless possibilities in relation to recording and performance that I hope to research in the future. Examples include recording in multi-channel formats using ambisonics and sound diffusion using interactive performance systems.

It is through the medium of electroacoustic music that I have been able to create works that reveal and evoke sonic characteristics that are not normally the focus of listening and by doing so we not only discover the sounds that we may have missed but also change the way in which we hear.

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<sup>104</sup> Archaeoacoustics: The study of sound in archaeological contexts.

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## Appendix A: Additional information for written commentary

### A1. How do we listen properly?

Ask yourself the following questions<sup>105</sup>:

- What is the quietest sound of your body?
- What do you hear? (Make a list) People, natural sounds, mechanical sounds?
- Are there some continuous sounds?
- Are there some interesting rhythms or tones?
- What is the highest/lowest pitch?
- Are there intermittent, discrete, rustles, bangs, thuds?
- Do you know the source of the sound?
- What sounds do you like the most and what sounds do you not?

**A2.** Table 2: Spoken word within each section of *The thing about listening is....*

Section	Speaker	Time	Text
I Listen	Brian	0'44	The thing about listening is....
		0'56	That when you listen you must suspend all your judgment
		1'15	That means you are never preparing an answer
		1'19	Never preparing a rebuttal
		1'28	That all your judgment is suspended while you are listening
		1'36	The thing about listening is that when you listen you must suspend all your judgement
		1'44	If you are going to listen properly
		1'48	And that's, that's the essence of the art of listening
	Rosemary	1'56	Appreciating

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<sup>105</sup> These questions are taken from Hildegard Westerkamp's article 'Soundwalking'. (Westerkamp 2007:50-51)



	Brian	2'11	Listen
II Rosemary's River Walk	Rosemary	2'55	Although you would say it is a very quiet place and there was nothing happening when you stopped to listen there is so much going on.
		3'49	The waves literally lashed into the reeds,
		4'03	and made this sort of swishing movement and sound altogether
		4'17	Because of having met you the night before I, I actually went down with my ears wide open to hear, you know, what was, what was going on around me, and it was very satisfying
		4'31	But the sounds that I noticed yesterday
		4'37	And they are not all natural sounds
III Over the bridge		5'55-8'02	There is no spoken word narration in this section
IV The sound of people's voices	Rosemary	8'16	Even the different sounds of people's voices
		8'32	Just think of all the times we comment on how people spoke to us
		8'42	A very soft voice speaking voice
		8'51	Whether they spoke to us gently or they spoke to us harshly, but it is all to do with what we hear
		9'23	Listening is so important I mean we don't really listen to each other
		9'37	I think a lot of the time we're waiting to kind of, jump in with something we have to say without hearing, now there are times when you have to switch people off and slow them down
		9'51	But generally on the whole we are so anxious to give our side of the story that we perhaps don't let somebody finish what they have to say or
		10'18	Sometimes people say 'well I never meant to say that. I didn't expect that to sound like you heard it'.
V Listening is just so important		10'42	And the noise, em, penetrating people's peace and quiet and their thinking processes.
		11'38	On the surface it is something, it's so very ordinary, but the essence of it is something entirely different isn't it
		12'03	It's, it's more than sound, it's, it's an awareness of your environment
		12'36	Value your sense of hearing.
		12'37	The sounds you hear.
		13'12	Listening is just so important.

**A3.** Table 3: Spoken word within each section of *A bit closer to home*

Section	Time	Text
I The bridge of Banagher	1'08	Do you remember lads when we were young, the bridge of Banagher
	1'13	The noise of the bridge as cars would go over it at night
	1'24	At that time it had planks on it
	1'30	It was a bridge that used to be able to move to let tall boats through
	1'44	It's a solid structure now
	1'51	But at that time it had planks on it and when a car would go over you just hear the roll of the planks like, it was like actually, like a roll of thunder
	2'13	And when you 'd be lying in bed at night this is all you'd hear, this roll of thunder.
II Waller's Mill	3'18	Now of course traffic wasn't as heavy back then so, it it's not like there was a roll of thunder every two minutes, but you would have a roll of thunder every 15 or 20 minutes, right up until maybe 2 or 3 o'clock when cars would stop moving at all, but that's, it just brought me back really, that's a big memory of Banagher that I would have had as a child
	5'37	Em, and then I think of course it brought to mind other sounds as well, em, which was, that there was a constant sound, em, which, particularly during the harvest time, em, there was eh, Waller's down in eh the Crank Road and Waller's used to have, Waller's' used to have, em a milling machine and em the milling machine was, em, would mill right through the night and you'd actually hear that.
	7'41	And you know what it always reminded me a sound of was when I had an earache as a kid, and I would hear maybe this sound, it was like the sound of machinery in your head, and actually it was the exact same sound as that Waller's mill goin' all night
III The Church Bell	10'26	Another great sound actually, as kids growing up and we used to spend a lot of time on the Shannon, and we, we had a boat, a good few people would have a had little rowing boats on the Shannon, so as kids particularly as teenagers we'd a spend a lot of time on the river up or down, and another great sound that we would have had was the bells ringing the church
	11'01	And ok, I know you, you can probably hear those bells ringing even when you're in the town put when you're off out on the river, that has a completely different affect
	12'39	Because it's like as if the bells are hop... the sound of the bells are hopping along the water towards you if you know what I mean, and it really, it vibrates differently. And you know so, you might even be a mile up the river, out of sight of Banagher, but then yet you hear that bell and you're in touch like

	13'08	Especially maybe if you were tired and we didn't have a lot of out board engines back then so a lot of that would be hard work rowing
	13'19	So it, it could be often be quite eh a good sound to hear, the bell, when you were trying to row, row hard and at least you'd know you were a bit closer to home, you know.

#### **A4. The Banagher Soundwalk<sup>106</sup> by Aideen Madden.**

I was intrigued by a notice I read in the Banagher Parish Newsletter in early August. The notice invited anyone interested in taking a 'Sound Walk' around Banagher to meet at the library at two o'clock on Sunday, August 5<sup>th</sup>. I went along motivated by mild curiosity. What would a 'Sound Walk' entail? What would I gain from taking part in such a walk? I was soon to find out.

Brona Martin, a native of Banagher, who is studying musical composition at a very advanced level in Manchester, was the leader of the walk. She explained to us walkers that 'sound walks' are becoming quite a common feature of life internationally. The aim of such walks is to create more awareness in people of the sounds both pleasant and unpleasant that they experience in their environment. Another aim of the walks is the prevention of what has become known as noise pollution.

We began the sound walk by proceeding down the Main Street of Banagher together. Our group consisted of about 15 people ranging in age from a little girl being wheeled in a buggy through most of the seven ages of man and woman.

Our first stop was beside the now vacant Shannon Hotel where Brona, our leader, discussed with us the sounds we had heard as we walked down the street. There were two dominant sounds. First, there was the steady companionable sound of our footfalls. This sound, unfortunately, was almost drowned out completely by the incessant sound of traffic. The noise from some cars was loud, strident and suggestive of violence. Here, on the street there were no sounds of bird-song, there was no indication sound-wise that we were in the heart of rural Ireland.

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A welcome change came about when we took a short walk around the boat harbour by the Shannon. Here we heard the sound of boats moving slowly through the river. Here the children in our group were charmed by the distinctive ‘quack quack’ of the tame ducks being reared at the riverside.

We moved on walking across the bridge over the Shannon. We stopped to listen, to see if we could hear the water flowing in quite strong currents under the arches of the bridge. We could hear no sound. That great torrent of water moved on majestically, powerfully, yet silently. Those of our group who cross the bridge in Wintertime are aware that the more powerful currents of water then can be heard even from the bridge. The sound can be ominous especially at nighttime. Today all is calm, peaceful, and to our ears, silent.

And we experienced more silence as we progressed past Cromwell’s Tower and took the riverside path to its very end. Along the route we heard the sounds of nature-the gentle sound of a Summer breeze, the music of birdsong, the lapping of waves from boats on the riverside rocks below. Leaves rustled as we walked under trees. The quieter the place became as we went along the path, the more silent we became, I noticed.

We concluded our hour-long walk thankful to Brona Martin for guiding us. As a result of taking part in the Banagher Sound Walk, I think we are more conscious of the sounds in our daily lives. Perhaps our greatest gain from the walk is a deeper appreciation of the value and beauty of silence.

## **Appendix B:**

### **Additional Information on the Portfolio Works**

#### **Programme Notes:**

##### ***Lamenting* (2011)**

*Lamenting* is inspired by the ancient female spirit known as the Bean Sidhe (Banshee) common in ancient Irish mythical tales. She is a wailing woman and her mourning call could be heard when a person was about to die. Depending on where the story was being told in Ireland, it was believed that her wail was so sharp that it would shatter glass or else it could be heard as a low pleasant singing. Traditionally in Ireland when someone died the women would lament (weep, wail) at the funeral.

The sound sources for this piece are taken from recordings of voice and banjo in the studio. The sounds of the banjo are explored using extended techniques such as bowing the strings and rubbing the neck of the banjo. The raw sound of the wood on the banjo is left as natural as possible at the beginning so the audience has something to 'grab' onto. 5.1 spatialisation creates an immersive sound environment where textures and rhythms represent the movement of spirits throughout, the coming of death and the mourning of those that have passed.

#### **Performances**

- MANTIS Festival (Manchester Theatre in Sound), 10<sup>th</sup> March 2011. (World Premier).
- EMS (Electroacoustic Music Studies) Conference New York, 17<sup>th</sup> June, 2011.
- Festival Encuentros, Cuenca, Spain, 9-10 September 2011.
- NOISEFLOOR, Stafford University, 3rd May 2013.
- SSSP (Sound Sight Space and Play) De Montfort University, Leicester, 5-7 June 2013.

## **192 (2011)**

### **Programme notes**

'192' explores the city sounds that we choose to ignore on a daily basis. Recordings for this piece were taken from the many bus trips that I have taken from Stockport to Piccadilly Gardens and The University of Manchester. Since moving to Manchester, my reliance on public transport has introduced me to a whole new soundworld, one in which you can choose to ignore with an MP3 player. I decided to study and embrace this environment, becoming more aware of the multiple layers of this soundscape and perhaps embrace this 'noise pollution' that commuters ignore. This piece reflects the rhythms, tones and atmosphere of the '192'.

### **Performances**

- MANTIS Festival (Manchester Theatre in Sound), June 8<sup>th</sup> 2011. (World Premier).

## ***All Along the Bell Tower (2012)***

### **Programme Notes**

This piece investigates the illusion of the internal and external sound world of a church/cathedral space and also the sound world within those sounds. The church building is treated as a sound object, which is deconstructed exposing the multiple layers within. Space is also explored, both intimate/internal and distant. The reverberant acoustic qualities of this sonic environment are examined while also focusing on the smaller, microscopic elements. The aim of the piece is to create an illusion that connects the listener to an environment that one is perhaps very familiar with. It is a spiritual journey created to make the listener aware of the acoustic properties contained within this huge reverberant space, a space that has dominated our landscape for centuries. (Candles were recorded with the help of Irma Catalina Alvarez).

### **Performances**

- MANTIS Festival (Manchester Theatre in Sound), 29th October 2011.
- MANTIS Concert, Kingston University, Coombehurst Studio, London, 22nd March 2012.

- APMC (Australasian Computer Music Conference), Queensland Conservatorium, Griffith University, Brisbane, Australia, 14th July 2012.
- ISSTC (Irish Sound Science and Technology Convocation), 2nd August 2012, CIT, Cork.
- ICMC (International Computer Music Conference), Ljubljana, Slovenia, 9-14 September, 2012.
- iFIMPac (International Festival for Innovations in Music Production and Composition, Leeds, 14th December 2012.
- NYCEMF (New York City Electroacoustic Music Festival), 3rd April 2013.

## ***Oz* (2012)**

### **Programme Notes**

In January 2012 I traveled to Brisbane to visit my parents, to the suburb of Arana Hills, North of the city, where I experienced a whole new soundworld. The birdsong, crickets and frogs presented a new sonic experience. Dawn and dusk presented more excitement in the parks and trees as the animals and birds competed against one another in order to be heard. The unique sounds and melodies of the Bell Bird and the Pied Butcherbird amazed me compared with the harsher calls of the Cockatoo and the Kookaburra. I was a tourist for three weeks and all I had to do was listen.

The field recordings are from the parks around my parents' house, the suburbs of Brisbane, and further up the coast to Rainbow Beach, Hervey Bay, Fraser Island and the Eco resort of Lady Elliott Island in the Great Barrier Reef. In the parks in Arana Hills I was amazed at how nature and man could live together. Even though the parks were busy with people, wildlife was plentiful, evident by the sounds. I became conscious of how much destruction of wildlife occurs around the world as humans intervene in natural habitats, and animals are forced to find an alternative home. This transforms the soundscape of an area.

This piece is an investigation into the natural soundscapes of these places, an exploration of their geophony (wind, rain, water) and biophony (sounds of plants and animals). It also raises the issue of the impact of human sound, (anthropophony) on these soundscapes and how it can take over and mask natural sound.

I would like to thank Callum Wheeler for playing the didgeridoo.

### **Performances**

- MANTIS, (Manchester Theatre in Sound), Manchester University, 28th October 2012.
- Balance-Unbalance International Conference, Noosa, Queensland, Australia, May 31<sup>st</sup> May – 2<sup>nd</sup> June 2013.

### ***The thing about listening is.... (2013)***

### **Programme Notes**

The idea for this piece began in July 2012 when I attended the Global Composition Conference in Dieburg, Germany. I went on a soundwalk with Hildegard Westerkamp and came away feeling very lucky to know and understand what a soundwalk was. I decided to organise a soundwalk in my hometown. The idea was to teach people a little about soundwalking and how to listen to their environment. I took about 15 people on this 50 minute walk and the group ranged from about 3-65 years of age. My interaction with the local community and the creation of the soundwalk had a significance influence on the locations of my recordings and the compositional process. The Thing about listening is.... brings together thoughts, experiences, stories and sounds that were discussed and recorded as a result of the soundwalk. I would like to thank Rosemary Porter and Brian Johnson for allowing me to record our conversation about listening and using it in the piece.

### **Performances**

- ISSTC (Irish Sound Science and Technology Convocation), Dún Laoghaire Institute of Art and Design, 28th August 2013.
- Music Since the 1900 Conference, Liverpool Hope University, 12th September 2013.
- Symposium on Acoustic Ecology, Kent, 8-9 November 2013.
- SI13 NTU/ADM Symposium on Sound and Interactivity, Singapore, 14<sup>th</sup> November 2013.



## ***A bit closer to home (2013)***

### **Programme Notes**

This piece explores the idea of sound romances (1) and aural memories that connect us to a specific time and place in our lives. Changing soundscapes can tell us a lot about the history of a place and how it has changed over time. The sounds may have changed due to industrial engineering and economic developments. As composers we can create virtual soundscapes that can document the sounds of the past and recreate it. We can use the medium of Electroacoustic music to express the importance of changing soundscapes through the creative use of field recordings and spoken word. It is interesting to see what sounds people remember from their past. Why do they remember certain sounds more than others? Is it because they are disturbing? Is it because certain sounds are associated with a particular feeling from a specific time and place?

This composition brings together elements of soundscape composition, spoken word and electroacoustic techniques within an 8-channel speaker set-up.

Spoken Word: Tiernan Martin

(1) Sound Romances: Any past or disappearing sound remembered nostalgically, particularly when idealized or otherwise given special importance. Whereas new sounds are often experienced as sound phobias, old or past sounds are often elevated to the category of sound romances in memory.

### **Performances**

- MANTIS Concert, De Montfort University, Leicester, 15 January, 2014.
- New Adventures in Sound Art, Undo/Redo, Deep Wireless 10 Compilation Launch, May 10<sup>th</sup> 2014.
- Invisible Places, Sounding Cities, 18-20 July 2014.