The Harmonic Oscillator

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I base a lot of my arts practice in non-arts settings, and

always question myself about the ethics of what I am doing.

Sometimes this questioning comes from the intellect,

sometimes from the heart, and

sometimes it shoots straight from the gut.[1]

Figure 1 – Security badge which gives access to all wards of the hospital. Image: Vic McEwan

Introduction

Reimagining twenty-first-century health environments with an artist-led process, *The Harmonic Oscillator* project places a contemporary artist within a functioning hospital ward, relocating the traditional creative working space of the studio into the living space of the health-care setting, amongst the fear of intensive care, the deafening sonic bombardment of

[1] Vic McEwan, Diary of author written during initial research residency and published online at http://cadfactory.wixsite.com/fellowship/health (accessed 19th Dec 2017).

the MRI scanner and the daily drudgery of dialysis. This project considers how the artist-as-researcher might engage with the lived experience of patients, families and staff to generate outcomes that enable a better understanding of the human experience of treatment and recovery.

The Harmonic Oscillator is a term used in classical mechanics to describe a system that when displaced from its equilibrium position, experiences a restoring force proportional to displacement.[2] As a project of artistic research, this title examines many forms of displacements including that of patients experiencing illness and that caused by excess noise as well as the restoring force potential from embedding an artist's practice in this environment.

This project has been closely informed by fourteen international research papers[3] that tell us that the soundscapes of our hospital spaces are having adverse effects on recovery—the very purpose of the hospital itself.

The World Health Organization (WHO) recommends that average noise levels should be lower than 35 decibels in hospital treatment rooms and 30 in wards.[4] Despite the perceived expectation for hospitals to be places of quiet rehabilitation and recovery, the documented negative effects of noise include increases in medication, increased stress levels, extended length of stay, issues relating to the cardiovascular system and a decrease in undisturbed

[2] *Wikipedia*, https://en.wikipedia.org/wiki/Harmonic_oscillator (accessed 18th December 2017).
[3] Attached as Appendix 1 - A review of fourteen international research studies into sound level issues in hospital space reviewed by Vic McEwan and acoustic consultant Shane Fahey.
[4] Frank Theakston, Burden of Disease from Environmental Noise, *World Health Organisation Europe,* 2011. http://www.euro.who.int/__data/assets/pdf_file/0008/136466/e94888.pdf (accessed 11 Dec 2017).

sleep.[5] I am asking through this research process: what role might an artist play in considering the outcomes of this international research?

This paper introduces and locates *The Harmonic Oscillator* in terms of these research findings before placing it within the context of institutional hierarchy as well as considerations of sound art and acoustic ecology. I examine the differences between this project and other contemporary hospital based sound projects before explaining the forms of research methodology used. I then consider the affect from this process and its impact on the creation of a body of artworks. Descriptions of each work and details of public outcomes as well as consideration of the ongoing potential for new work are all explored with links to relevant documentation material. This paper concludes by reflecting on the areas of impact generated throughout the project.

Overview

If we understand sound in terms of vibration, something that is actively and physically resonating on a molecular level, then we can consider sound in terms of its materiality. As an artist, I am interested in this materiality, of sound as something physical rather than just something that is 'heard'. It is my contention that through this materiality, we are able to perceive and form new knowledges. Scholars such as Steven Feld, who developed the term Acoustemology[6]—a conjoining of acoustic and epistemology—proposes that sound is a way of knowing, of gathering new information. This form of knowledge gathering is at the heart of *The Harmonic Oscillator* project.

[5] Appendix 1: A review of fourteen international research studies into sound level issues in hospital space reviewed by Vic McEwan and acoustic consultant Shane Fahey.
[6] Steven Feld, 'Introduction' in *Keywords in Sound,* ed. David Novak and Matt Sakakeeny (North Carolina: Duke University Press, 2015), 4.

Our hospitals are filled with complex forms of sound, listening and perception, all of which have different purposes and affects on the humans immersed in this soundscape. Central to this is the transmission of medical information via the electronic and mechanical noise of machines essential to the care of patients. This is one of the primary considerations in examining the sound space of the hospital: how to acknowledge the importance of, and continue to be able to decipher, the sound of machinery that is transmitting information to medical staff about the condition of patients. This sonification of medical data is essential in the care of patients and cannot simply be removed.

Tom Rice, senior lecturer in Anthropology at the University of Exeter, conducted an in-depth study on the types of sound that exist within hospitals and noted the following:

> The hospital is a space where several modes of listening are simultaneously in play and where multiple layers of auditory knowledge and experience may be found. In addition to patients' experiences of the sound environments that characterize hospital wards, there is also monitory listening practiced by nurses as they manage those patients, and diagnostic listening conducted by medical students and doctors.[7]

My intention in this project is to consider these findings and past research in relation to the impact that arts practice might have in navigating some of these complex issues about sound and the human experience of illness.

Background

French Philosopher Michel Foucault coined the term 'the medical gaze'[8] to highlight the institutional separation that occurs in the pursuit of health and healing. Specifically, where

[7] Tom Rice, 'listening', in *Keywords in Sound,* ed. David Novak and Matt Sakakeeny (North Carolina: Duke University Press, 2015), 104.
[8] Michel Foucault, *The Birth of the Clinic* (Oxon: Routledge Classics, 2003), 9.

the patient's physical condition, their body and their illness, is viewed in isolation from other aspects that make us human, such as the mind, the spirit and our emotions.

> In order to be able to offer each of our patients a course of treatment perfectly adapted to his illness and to himself, we try to obtain a complete, objective idea of his case we gather together in a file of his own, all the information we have about him. We 'observe' him in the same way that we observe the stars or a laboratory experiment.[9]

The Harmonic Oscillator project explores this clinical separation in order to foreground the lived experience of illness by focusing on the sonic, an often-overlooked aspect of any built environment.

In 1977, Composer R. Murray Schafer, responsible for coining the term 'soundscape', developed the idea of Acoustic Ecology which used sound to understand the relationship between people and their environment.[10] This was a landmark work in terms of considering the sonic lived environment, and was my first introduction to understanding 'place' through listening. Over the years, this has formed an ongoing area of investigation within my practice; leading me to develop a much richer knowledge of 'place' as a complex network of communities, ideas, histories and experiences that are working together, rather than a single homogenised reality.

In the introduction to the recently published *Routledge Companion to Sounding Arts*, its Editors reflect on this idea in a way that supports these explorations within my practice.

> This bias is detectable in the work of sound studies' de facto founder, R. Murray Schafer (1977), who did not explicitly recognize the constitutive differences that participate in the "soundscape" as a multivalent field of sounds with divergent social

[9] Jean Charles Sournia, *Logique et moreal e du diagnostic* (Paris: Galimard, 1962), 19.
[10] R. Murray Schafer, *The Soundscape: Our Sonic Environment and The Tuning of the World* (Vermont: Destiny Books, 1993)

> identities, individual creativities and affordances, biodiversities and differing abilities.[11]

The Harmonic Oscillator project is exploring sound as the material outcome of lived experience through which we can generate ideas to not only understand but to reimagine these places.

Emily Thompson, an historian of technology at Princeton, redefines soundscape as "simultaneously a physical environment and a way of perceiving that environment".[12] This consideration of perception is central to *The Harmonic Oscillator* which proposes that, by altering our perception of noise through the active process of listening rather than the passive process of hearing, we can empower users of the hospital to have some control over how their sound space is perceived. Similarly, the linguist Roland Barthes discussed the distinction between hearing and listening thus: "Hearing is a physiological phenomenon; listening is a psychological act."[13]

The bombardment of sound since the industrial age has been well documented: ranging from overall increases in noise levels, to urban birds modifying their call by raising their pitch in order to be heard over competing frequencies generated by the modern world.[14] Even when

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[11] Marcel Cobbusen, Vincent Meelberg and Barry Truax, ed, *The Routledge Companion to Sounding Arts* (New York: Routledge, 2017), 7.
[12] Andrew J Eisenberg, 'space', in *Keywords in Sound, ed.* David Novak and Matt Sakakeeny (North Carolina: Duke University Press, 2015), 198
[13] Roland Barthes, 'Listening', in *The Responsibility of Forms*, trans Richard Howard (New York: Hill and Wang, 1991), 245.
[14] Chris Watson, 'Interview', *On the Nature of Things,* January 2012 https://onthenatureofthings.com/2012/01/18/chris-watson-on-noise/ (accessed 11 Dec 2017).

we look to the sea, baleen whales have modified the amplitude of their voice in order to rise above noises generated by shipping.[15]

The Harmonic Oscillator project takes as its premise that sound has deep effects upon the listener. English sound lecturer Barry Truax describes how "sound as a physical, acoustic phenomenon always affects the entire body, not just the auditory apparatus".[16] This, along with discoveries in neuroscience that also support these claims, provides a legitimate framework for *The Harmonic Oscillator* project's research within these places of physical healing. In his book *This is Your Brain on Music,* neurologist Daniel Levitin notes that neuroscience reveals "Music listening, performance, and composition engage nearly every area of the brain that we have so far identified, and involves nearly every neural subsystem".[17] This is a claim supported by recent findings within Alzheimer's and dementia care, which show that the effects of engaging with music can be accessed by people with damaged neural areas of the brain. This is because the traces of music experience can be located across all neural subsystems—meaning the undamaged areas can access them.

The Harmonic Oscillator project also acknowledges that sound is related to power, hierarchy and expression of the human experience. Associate Professors of Music, David Novak and Matt Sakakeeny, argue that:

> To "hear" a person is to recognize their subjectivity, just as to "have a voice" suggests more than the ability to speak or sing, but also a manifestation of internal character, even essential human consciousness. Sound, then, is a substance of the world as well as a basic part of how people frame their knowledge about the world.[18]

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[15] Trevor Cox, *Sonic Wonderland* (London: Random House, 2014), 196.
[16] Marcel Cobbusen, Vincent Meelberg and Barry Truax, ed, *The Routledge Companion to Sounding Art* (New York: Routledge, 2017), 6.
[17] Daniel Levitin, *This is Your Brain on Music* (London: Atlantic Books, 2007), 9.
[18] David Novak and Matt Sakakeeny, ed., *Keywords in Sound* (North Carolina: Duke University Press, 2015), 1.

The Harmonic Oscillator project is about this voice. Within a complex and overpowering sonic environment, how do we make space for the voice of those within the space? During this project, my discussion with the building manager within the hospital was very clear: "We do not have and have never had any issue to do with sound in this hospital". Which, despite consideration of sound being taken into account in the design of new hospitals, could be seen as an example of the dominant authoritarian position that Focoult refers to in terms of inability to acknowledge other aspects of the health care experience, such as the sonic impact.

The artistic research undertook nearly one hundred hours of discussions and interviews with patients, families and staff about their negative experience of noise, which stand in contrast to the perception stated by the building manager. Once people were given the space to consider their sonic environment, they had a lot of negative things to say about it. From patients feeling compelled to throw out items in their home, such as microwaves (because they make similar noises to hospital equipment), to staff having negative experiences such as being startled by noise, similar in frequency to a piece of medical equipment, coming from the PA system at a Toys R Us store while Christmas shopping. The result is that the staff member leaves the shop experiencing an episode of panic.

What happens to this "voice", this impact, when patients are undergoing treatment? Where is it located within the hierarchy of the hospital? The 'medical gaze' considers the voice of patients an intrusion, an unwanted interruption hindering the task at hand. By understanding the sonic space within hospitals, I propose that we can assist this voice in being heard. As ethnomusicologist Veit Erlmann reminds us: *"*We should hold onto the idea that the ways

people can hear, the limits of that hearing, and the conditions of possibility for hearing all provide points of entry into what it means to be a person at a given time or place."[19]

Arts Practice in Hospitals

We live in a world that privileges the visual over the sonic; within arts programs in hospitals, it's no different. Murals, sculptures, two dimensional and three-dimensional works are regularly commissioned for these spaces globally. Ground breaking arts and health projects around the world, such as the one that exists at Alder Hey Children's Hospital, have all delivered high quality artistic, social and health outcomes, but have rarely focused on sound as artistic enquiry, beyond developing successful and highly effective music programs.

To demonstrate and perhaps suggest reasons for a reversal of this dominance of the visual over the aural, Jonathon Sterne from the University of Pittsburgh has created a "litany" of hearing versus vision. Sterne's litany reads in part:

- hearing is spherical, vision is directional
- hearing immerses its subject, vision offers a perspective
- sounds come to us, but vision travels to its object
- hearing is concerned with interiors, vision is concerned with surfaces
- hearing involves physical contact with the outside world, vision requires distance from it
- hearing places you inside an event, seeing gives you a perspective on the event
- hearing tends toward subjectivity, vision tends toward objectivity.[20]

[19] Veit Erlmann, *Reason and Resonance: A History of Modern Aurality* (Cambridge: Zone Books, 2010), 17.

[20] Jonathan Stern, 'hearing', in *Keywords in Sound,* ed. David Novak and Matt Sakakeeny (North Carolina: Duke University Press, 2015), 66.

Sterne's work proposes the possibility for sound to be a far reaching and exploratory form of enquiry in the creation of new knowledge. This supports the aims of *The Harmonic Oscillator* project to explore sound as a method to aide this navigation into new ways of knowing.

Despite this ingrained preference for the visual, contemporary examples of international projects that consider sound in our healing spaces do exist. Chris Watson's *Dawn Chorus (2011)*, The RMIT and St Vincent Hospital's project *Designing Sound for Health and Wellbeing* (2012) and Brian Eno's *Quiet Room for Montefiore* (2013) are all contemporary examples of professional artistic exploration that consider sound within our hospitals.

Watson, a world leading environmental sound recordist, created *Dawn Chorus* installed at Alder Hey Children's Hospital. His creative process included patients and staff who worked with him to record the dawn chorus of birds in a large park adjacent to the hospital. These recordings were then installed in the corridor of Alder Hey Children's hospital with the intention of masking the cacophony of the hospital with a pleasurable sound for the user of the space. This process included successful components of community participation; patients and staff were active in visiting a park and capturing the recordings together. As Chris Watson reflects, the works' intention was to deal with "the dreadful acoustics which I think have a bad effect on your health anyway, so the idea was to bring the sounds of the park into the hospital."[21]

Likewise, the project *Designing Sound for Health and Wellbeing* explored the effect of specifically composed music on the anxiety levels of patients within hospital emergency

[21] Chris Watson, 'Interview', *On The Nature of Things,* January 2012 https://onthenatureofthings.com/2012/01/18/chris-watson-on-noise/ (accessed 11 Dec 2017).

departments. The aim was to see whether "sound and music compositions can ease the stress and anxiety of patients located in a hospital emergency department".[22] The three-phase process explored electro acoustic and soundscape compositions: Phase one process trialled short compositions, seeking feedback from research partners; phase two surveyed 100 patients for feedback on their preferred compositions from a series of different types of electro acoustic and soundscape compositions; phase three involved surveying 170 patients about their sense of their anxiety before and after listening to the final composed tracks. The findings based on the response of 170 surveys concluded that listening to music in Emergency Departments had a calming effect.

Eno's work *Quiet Room for Montefiore* is different again. In this work he creates a separate space for hospital users to visit for a period of time to have a relaxing experience with his self-generating noise and light installation, before they are delivered back to their loud and buzzing hospital ward.

So where does *The Harmonic Oscillator* project sit in relation to these examples? Each share a similar starting point: attempting to address the negatives of noise in our hospital spaces. Watson's *Dawn Chorus* engaged patients and staff in a process of capturing sounds perceived to be more appealing and relaxing in an attempt to mask the more unpleasant sound of the hospital space. Likewise, the RMIT project resulted in the layering of more "pleasant" sound over the negative noises prevalent in the emergency department.

If we consider the WHO's findings that point to the adverse effects of the volume of noise in our hospitals and the interest that these artists had in addressing these issues, layering even

[22] David Brown *et al., ed., Designing Sound for Health and Wellbeing* (North Melbourne: Australian Scholarly, 2012), 7.

more sound, albeit "pleasant sound", nonetheless contributes to increasing the volume in the space.

Eno's project created an 'other space', a chapel of quiet reflection. Patients can visit this space before returning to the day to day existence of the hospital ward. In contrast, *The Harmonic Oscillator* project attempts to work with the lived experience of the hospital user; whether that is at 3am in a noisy hospital ward, or during intimate moments with family and loved ones. It is in these moments of lived experience that *The Harmonic Oscillator* project outcomes are attempting to contribute.

Methods and Field Research

The process for undertaking *The Harmonic Oscillator* project was initiated after receiving the Create NSW Regional Fellowship in 2015 which allowed me to travel to the UK to work with Clive Parkinson[23], Director of Arts and Health at Manchester Metropolitan University. Clive and I had met when we both spoke at the Arts and Health Conference in Sydney and had started discussions about working together. Upon receiving the fellowship, I travelled from Australia to the UK for an initial visit where Clive suggested I meet Vicky Charnock[24], Arts Co-ordinator at Alder Hey Children's Hospital. From this visit we devised a plan where I would travel to the UK twice a year for three years to conduct practice-led research residencies at Alder Hey Children's Hospital. This allowed us to develop a timeframe that would allow deep periods of research followed by longer periods of reflection. It also satisfied practical concerns of being based in Australia while working in England and being able to work back in Australia on other projects during this time, taking into consideration

[23] Clive Parkinson, Manchester School of Art, http://www.art.mmu.ac.uk/profile/cparkinson (accessed December 18th 2017).
[24] Vicky Charnock, *Arts for Health, http://www.alderhey.nhs.uk/departments/arts-for-health/ (*accessed December 18th 2017).

other obligations. During these residencies, I explored various ideas using a combination of methods such as autoethnography[25], active listening[26], workshops with patients and families[27], onsite creative experimentation[28], scientific measurement[29], a review of past research[30], and external observation of my process.[31] These methods helped generate many practical, personal and artistic outcomes.

Research Methodology

1. Autoethnography

Autoethnography is a qualitative research method that combines an autobiographic approach with an ethnographic approach. For this project, the process entailed me keeping an ongoing diary to aide reflection on the emotional journey; it enabled me to consider my experience in relation to those within the hospital space, as well as in relation to the history of arts and health related practice and human experiences of illness. It also allowed me to share my journey with other arts practitioners to generate conversations about this type of work and to identify further extant published research evidence. Below are sample diary entries:

[25] Autoethnography is a form of qualitative research in which an author uses self-reflection and writing to explore their personal experience and connect this autobiographical story to wider cultural, political, and social meanings and understandings.
[26] Active listening is a process of listening that requires the listener to concentrate, understand, respond and remember the sound active within a location.
[27] These workshops took the form of formal and casual workshops that led participants, both in groups and individually, through processes of active listening and documentation of information gathered through listening, as well as technical workshops in sound recording and reproduction.
[28] Placing the artist's studio in the working hospital space, allowing creative experimentation to take on forms discovered through the research process.
[29] Technical, calibrated sound measurements that are certified as being accurate.
[30] As discussed in the introduction this process commenced with a review of research in the field.
[31] Clive Parkinson, *Critical Care* (Narrandera: The Cad Factory, 2017).

First day diary entry: 17th March 2015

9am - The cries of kids, the everyday ones, not the type associated with pain, but the general cries of frustration, tantrums, tiredness and just wanting to get your own way, these take on a much deeper, heavier meaning in the corridors of a children's hospital.

I've been here before to visit and have a look around but walking in to start exploring in terms of my work is a much more overwhelming feeling. What do I think I am doing? Who do I think I am? Surrounded by professionals who dedicate their life to the welfare of children, parents with faces etched in worry, their forced grins not fooling anyone except hopefully the kids themselves.

Some families walk in with nonchalance, regular visitors, they know the drill. Then there's the heavy tread of families that are weighed down by recent news, pending decisions or ongoing treatments and fear.

There's a part of me that feels like a fraud for being here. Why do I feel like I have anything to offer a place like this? This is a good thing, it will keep me honest and always in check with the ethics of working in an environment such as a children's hospital. So, as I sit in the hospital corridors waiting for my first day to begin, I may question what I will be able to give but one thing is for sure, there is a lot that I'm going to learn.

2pm - My time here is set somewhat to a schedule, each day there are meetings organised with various departments of the hospital, tours of different sections, opportunities to meet different people (staff and patients), explore different medical equipment and procedures with the hope that over the next two weeks, we will develop a clear plan of how I can continue working. Already the elements are nearly there. Research, practical outcomes, evidence based artistic outcomes, learning and exchange.

After 30 minutes to chat and prepare, I was taken for a brief visit to see a Nightingale Ward. I've never seen a Nightingale Ward[32] in Australia.

[32] A Nightingale Ward is a hospital ward that is one large room with between 24-34 beds.

[…]
I was expecting a day of meetings, orientation, seeing how willing people were going to be to let me explore, record and experiment. I was taken into a meeting with key people from the hospital who were all very interested in what I want to do. They took me straight into the intensive care ward, straight into the heavy stuff, to look at the range of machinery that the kids are connected to and the various noises that they make.

To begin with I was thinking that I would ease my way into the confronting aspect of working in a children's hospital, but instead I was taken directly to a young baby, hooked up to a ventilator. These machines, apart from being noisy, actually shake the child quite a lot, like there was a jackhammer beside it. This vibrating of the child is a necessary function of the machine/treatment. It is quite a loud machine, sitting less than a meter from a baby's ear. Listen to my recordings of the oscillator here.

Today continued with some recordings of the general sound ambience in the Intensive Care Unit (listen here) and then sitting down to talk with hospital staff about their current interest in research.

Already, one day in, we have lined up some significant time to research and devise experiments to try over the next two weeks. Far beyond my expectations of what the first day might bring.

I was surprised that once my "work" began today, my fears disappeared and it was straight into working with health and arts professions to start to collaborate towards some meaningful work together.

Tomorrow I will work with the Senior Radiologist and visit the X-ray Machine and MRI Scanners then spend the afternoon with the hospital's resident dancer.

A lot to take in, so in between, it will be a still night of reflection

Day 7 Diary Entry. 25th March 2015

"What artists and scientists have in common is the ability to live in an open-ended state of interpretation and reinterpretation of the products of our work. (Daniel J Levitin, *Your Brain on Music*, London: Atlantic Books, 2007

At approximately midnight, I took a one hour long sound walk through the corridors of the Intensive Care Unit. It was very busy "We are normally this full, but usually the patients are mostly stable, tonight, there are many who are not well".

A sound walk is an opportunity to have focused time listening to your environment, understanding the range of sounds that exist and how they change from place to place. This walk took one hour and was less than 80 meters long. To take an hour to walk that short distance is quite a task. I was recording the walk with two omnidirectional microphones attached to me, so as well as walking incredibly slowly, with headphones on, listening to an amplified version of the environment, I was also having to control my breathing to some extent so as not to have an effect on the recording.

This is quite a meditative process, an intense experience. During the walk, I was able to closely watch all the goings on around me, to observe the flotilla of machinery that arced around some of the beds, flashing information:

Administering Morphine
Administering Dopomine
Administering Fentanyl
Administering Atracurium
Administering Midazolam
Administering Adrenalin

(The list goes on.)

The range of beeping machines, rhythmic machines, sometimes playing together, sometimes off doing their own thing.

Overheard conversations, the heavy burden of decision making on the head doctor. Big decisions having to be made in the blink of an eye, and the soundtrack is a sigh, released heavily between each sentence.

The hospital is different at night. Less people walk the corridors, a little bit of reprieve from the relentless din. Family members who remain for an all-night vigil by the bedside are hunched over in a state of uncomfortable half sleep or just sitting staring into the distance. Late night visits to the snack machine, then hunched over their child, soft strokes of the hair or holding hands for (their own) reassurance.

During the daytime, the never ending sound of machinery, beeps and alarms seem almost lost in a huge dominating and suffocating soundscape. Despite the fact that each beep is transmitting information, they are still part of an acoustic overload. At night they emerge more as a language, a code. Sometimes soothing, sometimes annoying.

In amongst such focused, intense, practical activity, I question my place in it all. Tonight I intended to spend a couple of hours photographing and videoing the goings on in ICU but when it came to it, although I had permission, I didn't think it was appropriate. I was unraveled by my hour long sound walk which led me to questioning my place in all of this.

"I should be a nurse or a doctor, not an artist", I thought.
"Engaging in direct practical help for people", I told myself.
"I have known a few artists who have stopped practicing art to go into helping professions", I remembered.
"What if something happened now and instead of holding a tool of assistance, I was holding an audio recorder and two omnidirectional microphones?" I feared.

When I was leaving in the early hours of the morning, some of the staff seemed surprised, hoping I would stay all night. And I realised that I wasn't being a burden by being in a place such as this, but in some way hopefully giving it another type of voice, another way to be understood and that hopefully the depth of struggle and questioning involved is a sign of the depth of integrity and impact that can be

achieved.

> To be up in the middle of the night, when most of the country is asleep, and to be entrenched in a secret place such as this, a protected place of intense care and healing is a very magical thing full of very magical people.

Research Methodology 2.

Active Listening.

Listening provides an opportunity to decipher information about our environment and the effect sonic space can have on us—whether through its role in crafting an emotional state, a connection to the past, a representation of new ideas, or even just as fire for the imagination, a story.

Through listening we can determine how close or far an object is—the reverb of a room will tell us information about the size of that room. The act of listening enables people to find their place in relation to their sonic environment and to become an active observer. It can enable connections between the outer world and the inner self. The rhythm of a truck engine might compliment that of the heart that beats at a certain rate following physical activity; as such, we can create a connection between physical activity, its physiological result and the sonic environment being created by the actively unfolding lived experience.

My process of active listening within the hospital took a number of forms. Periods of active listening on my own were used to examine the acoustic environment and to understand what information exists within the clutter of noise. I would categorize the sounds and decipher the relationship between the human activity and the sonic environment and well as considering the sound in terms of musicality. Could I listen to the sonic environment in the way that I might listen to a musical recording? I would also explore methods of active listening together

with patients, families and staff, to investigate the often-ignored sonic space. Another form of active listening, essential to the project, was providing opportunity for those in the hospital to have a 'voice', as Sakakeeny proposes, thus honouring the lived experience through active listening. This might take the form of conversations, workshop process or art making workshops exploring the lived experience.

Research Methodology 3.

Workshops with patients and families

Giving workshops enabled me to have direct personal contact with the hospital community. Some wards in Children's Hospitals have classrooms for long-term patients to maintain their education between treatment. In addition to the human connection, leading more structured workshop processes allowed me to gather further information from group discussion and activities. This included hour long process where we would undertake various activities such as getting students to make a list of all the different types of noise that impact them in the hospital, and then facilitating a patient led exploration of methods to help remedy them.

Figure 2 The Author with patients from Alder Hey after conducting a workshops exploring sound. Image: Vicky Charnock.

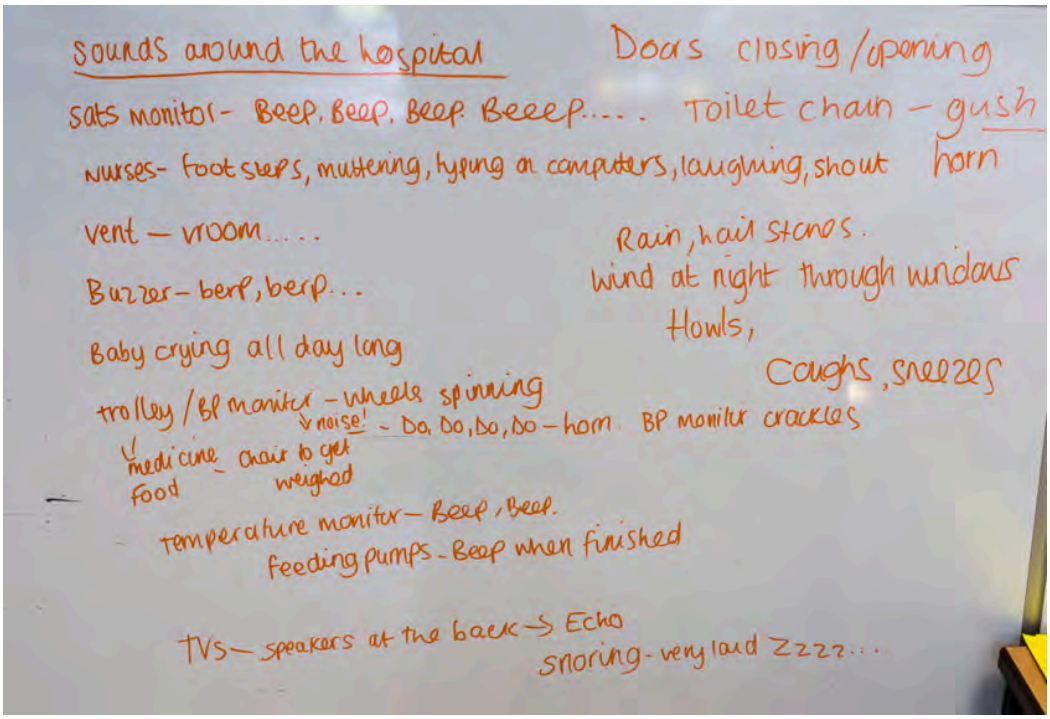

Figure 3 Workshop outcomes, identifying different sounds heard in the hospital. Image: Vic McEwan

There were also opportunities for individual workshops, conducting sound walks together with patients, and talking about the hospital experience. Sometimes these encounters were pursued for the purpose of research, and other times the hospital prompted them to improve a patient's mood. For example, requesting that I conduct a workshop with a patient who was highly anxious about a pending operation that day. I would work with the patient, diverting their focus, whilst sharing and gathering information. I consider the hospital's use of me in this way as one of the successful outcomes of the project.

Research Methodology 4.

Onsite creative experimentation.

This process was established to allow maximum flexibility for creative experimentation. From designing discreet microphone techniques to allow unhindered movement throughout

the space, to creating compositions, photographic work, mobile projections and installations within and around the space, either individually or in collaboration.

I was given access to hospital processes such as MRI Scans and Intensive Care and was allowed to inhabit these spaces in the name of an experimental contemporary arts practice—unprecedented for a hospital. The access granted enabled a unique experience of onsite artistic exploration and research.

Figure 4 Discreet microphone techniques, high quality microphone attached to clothes and glasses. Image: Vic McEwan.

Research Methodology 4.

Sound Measurements.

To place the sound levels within Alder Hey Children's Hospital in an international context, I undertook two types of sound measurement processes. Firstly, I conducted casual non-calibrated level assessments. These allowed me to gather some initial findings which suggested that the hospital was consistently many times louder than the proposed WHO guidelines. For example, a sound measurement reading taken on a peak hour bus illustrated that this noisy form of transport—at peak hour in the middle of a big city—was in fact quieter than some hospital wards.

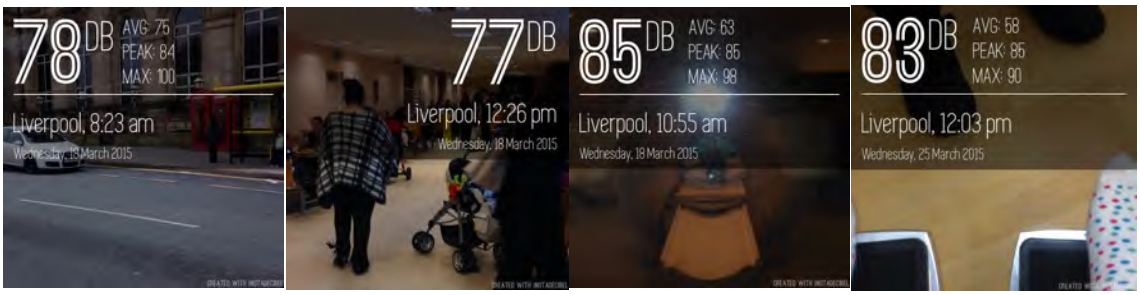

Figure 5 Sound level readings 1) On a peak hour bus in Liverpool, 2) in the corridors of the hospital, 3) outside an MRI scanning room, 3) in a general ward. Images: Vic McEwan.

These results confirmed the need for me to undertake more scientific calibrated tests. This would involve a series of 24 hour calibrated sound level measurements, producing 86400 sound measurement readings during each 24-hour period. These readings accurately corroborate the initial assessments that the intensive care ward at its quietest is still 150% louder than the World Health Organisation recommended levels in hospital wards, sometimes reaching peaks of over 300%.

Consequently, I was able to provide a detailed report to the hospital to assist in a practical consideration of noise abatement programs within the space—from design, to engagement of more suitable equipment, and behavioural change. These demonstrable practical outcomes were tangible for the hospital administration, and were helpful in receiving the permission to undertake the artistic, emotional and other practical outcomes.

Research Methodology 5.

Review of past research

I worked with acoustic consultant Shane Fahey to create a survey of literature in the field, focussing on the adverse effects of noise within hospitals. Working with Fahey allowed me to consider the findings with the foresight of his advanced acoustic knowledge.

Research Methodology 6.

External Observation of my process.

This project was initiated with the assistance of Clive Parkinson, Director of Arts for Health at Manchester Metropolitan University. When I initially had the idea to explore the sound space within hospitals, Clive advised on and helped facilitate the project happening at Alder Hey with their Arts and Health Co-ordinator Vicky Charnock. During the first half of the project whilst in residence, I would meet with Clive to give him updates on my progress, and receive advice and share knowledge and strategies. In the second half of the project, Clive became more active as a participant-observer which resulted in him writing an in-depth 124-page reflection of the process for his published monograph *Critical Care*. Clive's book, reflects on the nature of artists working in places of trauma, and is an "unfolding story of some of the more profound moments in arts and health".[33]

Creative Works

The Harmonic Oscillator project produced a series of artworks which explored different aspects of sound in hospitals.

1. *The Longest Heartbeat*: An exploration of intimate sounds from inside the human body, the human heartbeat.
2. *EMF ICU*: A video/sound work exploring the EMF frequencies emitting from intensive care machinery, the unheard sounds that still affect us physically despite existing outside the human hearing range.
3. *EP*: The sounds present in hospital wards, recorded and edited into an EP of compositions in order to alter perception of the sounds around us.

[33] Description by Clive on book launch publicity material.

4. *Textures of Absence*: Ideas of presence and absence in a video work made in collaboration with a patient. Features video projection of memories of home onto the stark white sheets of a clinical hospital bed.
5. *Hospital Bed Cello*: The extraction of tone from hospital infrastructure via a live performance playing a hospital bed with a cello bow.
6. *Imagined Instruments*: Direct interaction with human uttered sounds to create musical and visual composition.
7. *Orchestra of Tears*: an interactive personal response from me as the artist.

In addition to the artworks, we must consider the importance of the process undertaken. In a 2005 essay, art historian Grant Kester discusses the idea of dialogical aesthetics as an approach to making art that focusses on the creation of dialogue within context rather than the deity of the art object.

> In this way, we are led to see ourselves from the other's point of view, and are thus, at least potentially, able to be more critical and self-aware about our own opinions. This self-critical awareness can lead, in turn, to a capacity to see our views, and our identities, as contingent, processual, and subject to creative transformation.[34]

The dialogical enquiry undertaken at Alder Hey generated artistic outcomes that honoured these experiences. Firstly, I had to negotiate an entrenched hierarchy to position myself as an artist within the business of life and death. This included negotiations of whether I should or shouldn't be allowed into these delicate locations and situations. I was met with active enthusiasm and support during this process, with only the occasional encounter with staff in

[34] Grant Kester, '*Conversation Pieces: The Role of Dialogue in Socially Engaged Art*'. In *Theory in Contemporary Art Since 1985,* eds. Zoya Kocur and Simon Leung (Oxford: Blackwell, 2005), 76-100.

disagreement that an artist, with his vague ideas, should be allowed to wander a measured and controlled environment such as a hospital. My process needed to navigate these expectations and prejudices.

One of the aspects that allowed this whole experience to be undertaken with care was the length of time that the project was allowed to unfold. I wasn't in a rush to force relationships and the making of work. I often positioned myself by foregrounding the task of recording sounds, but remained open to the possibilities that could unfold.

Further to this I had to negotiate the delicate balance between 'art therapist' and 'artist'. In direct conversation with art therapists at Alder Hey, some relayed concerns that I wasn't trained to talk to patients. Clive and I viewed it that I was there to share human experience, I was therefore suitably qualified, by default. My role was not to provide therapy, and bearing this in mind, I was careful in how I navigated conversations and encounters with people.

My process also involved engaging with the affects or impacts of trauma and death. For example, I had to navigate my practice with collaborators who died whilst we were working together. This had the effect of forcing me to confront questions of my place within that experience, and how to allow myself to have the 'correct response', in terms of understanding my position within the unfolding experience. Was I allowed to feel grief? Was it wrong to feel "too much" sadness? These questions were generated from within myself, rather than anything that was conveyed to me by staff or patients. These questions formed part of an ongoing issue for me: What is the correct response? What am I allowed to feel? These were frequently considered questions, which I will continue to grapple with in future research.

This work also placed me within the field of arts and health, a rapidly expanding area of practice in Australia and one which has a more established history in the UK. My aim with undertaking this project in the UK was to learn from the experiences had there and to engage deeply with partners such as Parkinson and Charnock and then to share these learnings back in Australia.

In Australia, we have developed a National Framework for Arts and Health[35] and State based Leadership groups, I hold a position on the NSW/ACT group[36]. Some Australian states have also developed Arts and Health Frameworks that name the benefits of arts and health partnerships in an attempt to create procedure and process around the development of such programs. The newly established NSW Health and the Arts framework proposes that every health district must develop "local governance arrangements for health and The Arts partnerships" on the understanding that "exposure to The Arts has a profoundly beneficial impact, improving patient health and wellbeing and through its use in health promotion and messaging, improve health literacy for individuals and the wider community."[37]

Within the context of these research methodologies and the national and international development of Arts and Health as a field of practice, the following artworks were made.

Artwork 1.

The Longest Heartbeat

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[35] The National Arts and Health Framework, https://www.arts.gov.au/sites/g/files/net1761/f/National%20Arts%20and%20Health%20Framework%20May%202014.pdf (accessed 18th December 2017).

[36] This group meets quarterly to develop and advocate arts and health within the political, health and arts sectors.

[37] NSW Health and The Arts Framework, http://www.health.nsw.gov.au/arts/Documents/nsw-health-and-the-arts-framework-report.pdf (accessed on 18th December 2017).

The heartbeat can be described as the most intimate of sounds—an internal rhythm and sonic vibration. It is only discernible to its owner, unless shared with a doctor engaging in auscultation - the medical practice of listening to assist with diagnosis - or through the sonification provided by medical equipment.

Working with a patient's internal body sounds became essential to my consideration of the varied ways sound exists within a hospital space. The heartbeat is both a practical and an emotional sound. Practical in that, like brain function, it is one of the most important aspects of the patients' vital signs that medical professionals are trying to manage and sustain to ensure the patients' survival. But the heartbeat is also an emotional sound, a signifier of life, of love, of experience. Working with the heartbeat enabled me to touch on the emotional as well as practical aspects of sound.

During this project, I was researching acoustic phenomena within built and natural environments around the world in order to consider how space and its acoustic qualities can impact upon our perception. I discovered research about a location in the North of Scotland, just past Inverness, where in between WWI and WWII, a series of giant inter-connecting oil tanks were built, buried deep inside the highlands. The tanks were intended to store enough fuel for the British war effort if other oil supplies were destroyed. Recently the interior space of the tanks were discovered to have the longest reverb time of anywhere else on earth, meaning that sound lasts longer there than anywhere else[38].

I had met a patient, Elisha Carter, who was a young 17-year-old budding artist who brought her art journals into the hospital. We decided to work together in an ongoing way as

[38] Trevor Cox, *Sonic Wonderland* (London: Random House, 2014), 53-57.

collaborators, allowing her to explore her arts practice within and as part of her experience in the hospital. Elisha's illness, with multiple cancers, had advanced aggressively. She was now confined to her bed, with the disease having eaten part of her spine. Treatment wasn't working and the conversations were around Palliative care.

What would it mean to work with Elisha, whose heart didn't have long left to beat in this world, to make a recording of her heartbeat and to travel to the place where sound lasts longer than anywhere else? What would it mean to play it and rerecord it in this space so that we are left with the sound of a heart that beats for two minutes per beat? I made this fourteen-minute video[39] which outlines the process, the rationale and the journey.

Elisha passed away before hearing the final artwork.

This experiment resulted in a powerful sonic object, a single heartbeat that lasted two minutes and a range of emotionally-charged complications about the ethics of the work: How to share the work? Why share the work? Is it appropriate to share the work? It became more than simply an artwork; it became a memorial for someone who had passed, a legacy for family and friends to engage with. The opportunity to take arts practice deep into the ethics and complications of death and dying also rendered the work a major responsibility.

After the experience of creating the work, considering it for exhibition seemed inconsequential in some ways, but later proved to be a moving and powerful experience for those who engaged with it. The complex navigating of these questions around how to exhibit, also seemed restricted by issues of access to space and resources. The idea of a large

[39] The Longest Heartbeat, https://vimeo.com/222247032 (accessed 19th Dec 2017).

monumental installation in a series of dark cavernous spaces seemed fitting, but ultimately abandoned, initially due to resources. But upon reflection, the act of "large and monumental" had already been explored deep within the belly of the Scottish Highlands. I believed that the power of the work resided in the sharing of it in an intimate way. To allow the context and the intimate sharing to lead to suggestions of the monumental. The heartbeat started off as a small and intimate sound within the body of an individual, it was then played in an immense way as an embodiment (literally) within the highlands of Scotland, and finally I returned the two-minute heartbeat to a small and intimate shared experience, placing it back within the personal and intimate. I didn't want to recreate the feelings of an oil tank buried in the Scottish Highlands, instead I wanted the audience to hold the monumental within their hands.

The final artwork took the form of an invigilated experience, visitors watched the fourteen-minute video and then picked up a small wooden box which had a heart shaped button and a speaker. By holding the box in both hands and pressing the button, the two-minute heartbeat sounds through the speaker and the box vibrates in a way that is remarkably similar to the way the heartbeat had vibrated in the interior space of the oil tank.

Figure 6 Handheld box with button and speaker which played The Longest Heartbeat. Image: Vic McEwan.

The intimate sharing provided an opportunity to experience the artwork in a deeply personal way. Viewers watched the fourteen-minute video wearing headphones attached to a small screen which had the effect of pulling their focus inwards from the large gallery space. The work was installed in two different ways: as a single experience with one pair of headphones and as a shared encounter with two pairs of headphones so people could watch with another person at the same time.

Responses to this work are documented later in this paper, however one experience stands out as the pinnacle for me. This was when Emma, the mother of Elisha, held the box in her hands and with a smile filled with memory and love, listened to the single two-minute heartbeat of her daughter who had since passed away. In many ways I feel that I settled on this intimate sharing in order to hopefully facilitate a moment like this.

Artwork 2.

EMF ICU

This is a video work that explores sounds that exist outside of the range of human hearing but which still have a physical and psychological effect on us. It was created by recording the 'unheard' or imperceptible sounds emitted from the flotilla of life-supporting machinery that surround patients in intensive care. Clive Parkinson describes the installation of this work at The Tate thus:

> [This] is one of the more challenging pieces McEwan has produced and seeing it shared here in an exhibition space doesn't rob it of its potency. This piece of work offers a long-shot of McEwan moving slowly around a neonatal intensive care bed where an infant, I'd guess a month old, is connected to an array of medical devices via its mouth and nose and tubes which disappear disconcertingly under its blanket. Its hair is dark and damp, face invisible to the camera. It is quite motionless and for the time that he moves around the bed, the EMF microphone hovering just above all surfaces, the camera only sees the artist, who appears to conduct this wild garage of electrical sound.
> […]
> The only other entry into the frame is a nurse whose hand, adjusting some unknown dial, unwittingly contributes to this spontaneous improvised work. But what you see in this 7-minute film is quite different to the original footage which, now cropped, has removed the anonymous infant because of clear ethical sensitivities. In his notes for the exhibition, McEwan provides us with an oblique reference to the invisible trauma that infant might experience through his listing of the chemicals being delivered through the tangles of wires and tubes:
>
> Administering Morphine
> Administering Dopomine
> Administering Fentanyl
> Administering Atracurium
> Administering Midazolam
> Administering Adrenalin[40]

[40] Clive Parkinson, *Critical Care* (Narrandera: Cad Factory, 2017).

Figure 7 Installation shot, visitors (children) watching the EMF ICU installation. Image: Vic McEwan.

As Clive mentions, this work was challenging for some audience members. The original video had the back of the child's head in shot, but turned away from the camera. Despite the fact that the work met all the guidelines from the hospital in terms of obscuring the identities of patients, the hospital wouldn't give permission to exhibit the work in its original form, in public in any country. This was a difficult outcome, just several months out from a planned showing of the work at The Tate, Liverpool, a major international arts institution. It brought into high relief the specific conflict of interest that can emerge in the pursuit of such work.

Creating this video required delicate negotiation with parents who were holding a bedside vigil. The idea of me filming and recording was agreed to, in fact the parents even allowed themselves the opportunity to leave the room and go to a café together while I remained in the room. The fact that the parents felt comfortable enough to allow themselves just a small

moment of ‘outside’ during this ordeal was an extraordinary sign of the potential for contemporary arts practice to open up new terrain exploring the human experience of illness.

Nonetheless, even while I negotiated with the hospital about the work, the issue couldn’t be resolved. I was reluctant to crop the image to remove the back of the child’s head, feeling that it diluted the potency of the work. I was more inclined to not show it rather than show a version that I felt didn’t convey what the original video conveyed.

In the studio, I tried different methods of obscuring the child’s head. I darkened the image, blacking it out in obvious ways, all of which ended up seeming to make more of a statement about censorship. After several weeks of working with the material, I tried a specific crop which changed the image to a 4:3 ratio, like televisions were originally, so the proportions of the image alone was steeped in nostalgia. This new version had the child’s head just cropped out but still seemed to maintain the potency. I sent the work to the hospital and was delighted when it was immediately approved. This process of negotiation, despite the identifying features of the patient being indistinguishable in the original version, are an area of ongoing research exploring the complexities of making work in these environments. The psychological codes that are embedded within the visual form and in presentation methods which enable the transmission of “more difficult” material, and how competing perceptions of what is and isn’t acceptable, are negotiated.

Ethical parameters required frequent on-going and careful negotiation during the project. Despite thorough planning and adherence to guidelines, the sheer impact of the work and the exploratory nature of it, had the potential to generate uncomfortable feelings about sharing it in public, for myself and for the hospital.

For the first showing, I experimented with the sound as an intimate experience on headphones. For the second showing, the sound was made ambient within the space. From my subjective analysis, this ambient sharing of the sound was more successful, creating an interaction between other works that were also sounding acoustically in the space. Allowing the work to exist on its own but also as part of the other works depending on your location within the room[41].

Artwork 3.

E.P – Compositions

While exploring the sonic environment of the hospital landscape for composition purposes, my active listening process revealed to me many melodious moments within the cacophony. The deconstruction of the sonic space suggested that the cacophony of the hospital ward contained the potential to be perceived as being made up of many satisfying musical moments. By ignoring them, they tune into a clamour, like a petulant child screaming for attention. The act of listening has a soothing capacity to turn unwanted sounds into moments that could be perceived as musical. John Cage aptly reflects "What we hear is mostly noise. When we ignore it, it disturbs us. When we listen to it, we find it fascinating."[42]

The original intention of this EP was to create a series of compositions that only used sounds recorded in the hospital environment. This idea was forged with the intention that by limiting myself to the sounds available in that space, I would be achieving several things.

[41] *EMF ICU*, https://vimeo.com/222252468 (accessed 19th Dec 2017).
[42] John Cage, *Silence: Lectures and Writings by John Cage* (Middletown: Wesleyan University Press, 1961), 3.

Firstly, it would act as a declaration of the musicality evident in the sounds around us, the sounds of industry, of human activity, and in this case the sounds of illness, treatment and care. An exercise such as composing music only from these sounds, would go some way towards sharing the world in the manner I hear it, with musicality embedded into the soundscapes of the everyday places that humans inhabit. A car crash isn't just a collision of metal and a moment of anxiety; when experienced through the ears, it is aurally complex: A long rising tone created by tyre rubber on tar, a tone that rises from one pitch to the next, a swerve of the wheel by the panicked driver modulates the tone momentarily as it reaches a crescendo of crushed metal and the car chassis collides into a roadside barrier or another car, before it is subdued by a decaying outro of scattering debris which completes the composition; it is both percussive and melodic.

Secondly, by working only with sounds that exist within the space, the hospital becomes an instrument with which I can compose, drawing from the lived experience of patients, families and staff, whilst honouring the sonic materiality of the experiences had in that place.

Over three years I recorded various spaces within the hospital. MRI Scanners, medical equipment, trolleys, conversations, ambient noise. After compiling this palette of sounds, I embarked on a period of studio work to explore these sounds in terms of composition.

I originally placed restrictions on what I could use to compose music, in deference to the fact that these sounds were the sonic materiality of the emotional and physical experience within the hospital. Therefore, to add other sounds not borne of the hospital space, felt like it would diminish the potential for these compositions to deliver me towards genuine unknown

discovery. However, my subsequent experience whilst in the studio editing these compositions made me completely reconsider my approach.

Having late night emails with Clive Parkinson and Vicky Charnock back in the UK, talking about entering the studio to start the process of composition with these sounds, Clive was relating how at that very moment Manchester was shut down due to a bombing. When I emailed Vicky at Alder Hey Hospital, she told me that there were helicopters overhead bringing in injured children as a result of the bombings. Here I was on the other side of the world, and for some reason, the Manchester bombings made me question everything about this project. Why did I feel such immediate and raw devastation? And again, what am I allowed to feel? Who am I stealing these feelings from?

Mary Zournazi, Senor Lecturer of Sociology at UNSW states "When we navigate our way through the world, there are different pulls, constraints and freedoms that move us forward and propel us into life"[43]. It was these types of experiences and their subsequent affect which made these changes inevitable.

Unsure how to proceed, I re-considered the type of questioning I explored in my diary. What right do I have to be an artist in a hospital environment, concerned about ideas of composition while collaborators were telling me they can't talk for long because helicopters are landing at their place of work bringing in injured children?

[43] Mary Zournazi, *Hope: New Philosophies for Change* (Annandale: Pluto Press 2002), 210.

So instead of continuing studio work, I spent several days focussing my research on trying to understand why the current bombings in Manchester had ricocheted deep into the last three years of this project. I often go through periods of this type of questioning, reconsidering my place in these non-arts settings. What I have learnt from this project specifically, is that I always conclude these periods of doubt with a deep realisation that these moments of trauma must have another voice. Just as essential to the physical healing that happens, we must enable methods for people to explore their experience emotionally. Not separately in the office of a psychologist after the event, but while the process is unfolding. We must devise ways that people experiencing and working in these settings, are able to navigate themselves to a point of accessing their lived experiences, of placing themselves at the heart of that experience. My bigger journey is in refining ways that contemporary arts practice can assist this process.

Eventually it dawned on me that the only way forward in creating these compositions was to embed something of myself within the composition as a way to honour the entwined nature of my experience within the hospital space. I did this by recording an immediate and improvised response to each work. For example, on track one, I prepared underlying sounds of EMF Frequencies and sounds recorded in the oil tank and then recorded four takes of piano improvisations whilst listening. I then followed the same process on various instruments with each composition, all raw and immediate improvisations. Three days spent editing these takes and refining the sound quality, saw the compositions emerge—a process that was as much cathartic as it was productive. Opening up a new way for me to work, deviating from varied methods of composition that I have used previously.

Appendix Two is a boxed EP which includes the compositions and an information booklet explaining each composition.

Artwork 4.

Textures of Absence

Figure 8 Studio documentation, preparing Textures of Absence for exhibition. Image: Vic McEwan.

A series of video projections onto a hospital bed. Created by working with patient, Elisha Carter, who had an interest in art and photography and had brought cyanotype images into hospital. We rephotographed these images together and then projected them onto the bed—to which she was now bound by her illness. The projections transformed the white stark and impersonal hospital ward into a place of the imagination, fuelled by the images of familiar textures from home and projected onto the white sheets which covered her body.[44] Following

[44] Textures of Absence, https://vimeo.com/172310123 (accessed 19th Dec 2017).

the making of this short film, my collaborator died. This prompted lengthy discussion and deep consideration of what it means to use an artwork that was made in collaboration with someone who has passed away, particularly when their illness was central to the making of the work. With the permission of her parents and hospital staff, I created a later work that projected these images onto an empty hospital bed, accompanied by text, paraphrased from the words of acoustemologist Steven Feld[45] which read:

> The Bosavi people of Papua New Guinea believe that upon death, people become birds. The call of the bird in the jungles of Papua New Guinea is considered to be the sound of an absence turned into a presence, a presence that makes absence audible.

This work unfolded out of the process of engaging with people and place. Immediate, intuitive and productive processes, created onsite and in collaboration. Elisha showed me her photographs; I asked if we could rephotograph them then project them onto her bed and rephotograph them again. The impact of this collaboration continues to unfold before us despite the fact that just as quickly as this work was created, Elisha was gone.

Staff related their observations to me about this process "Every night we have to battle with Elisha to make her eat, it can take two staff a couple of hours to actually get her to eat any food. Whenever you work with her during the day, she happily eats by herself that night." Agency and self-determination are two things that are commonly stripped from the individual during medical treatment. Yet here we have a process of human connection afforded by an arts project that seems to give this agency and self-determination back to the patient, allowing her to make the decision to eat, on her own terms. This outcome is central to ongoing

[45] Steven Feld, 'acoustemology', in *Keywords in Sound,* ed. David Novak and Matt Sakakeeny (North Carolina: Duke University Press, 2015), 12.

research in the role that creative arts practice can play in effecting agency and self-determination for those experiencing the health care system.

Artwork 5.

Prepared Hospital Bed.

What memories lie within the rubble of a half demolished hospital and how can we extract sound from within the very material structure of place to allow us emotional connections to all that has gone on there? This video and sound piece, filmed over two days in the rubble of the half demolished "old" hospital in which this project began, creates sound by placing contact microphones on hospital beds and playing them with cello bows.

This work was an attempt to consider the hospital bed as a working musical instrument. Proposing that within the bed itself lies tones that can give voice to the experiences contained within. Earlier, exploring this concept, I played a performance at The Tate, Liverpool on a prepared hospital bed. Using a cello bow to activate the material structure of the bed in order to emit tones, I created an improvised performance to an audience of general public, health care professionals, long-term patients and gallery staff and visitors. The success of this artwork is best indicated by the response from Dr Jane Ratcliffe, whose prestigious career includes being the first ever intensive care consultant in the UK, and who has since contributed to writing the UK medical training for intensive care doctors. Nearing retirement, Jane was so moved by the performance, declaring that she could hear the experiences of her career in the tones that were emanating from the bed.

The day after this performance, while visiting Alder Hey Hospital, I witnessed the old hospital next door in its state of half demolition and wondered what it would mean to play and record a hospital bed in amongst the rubble.

Several months later, after a process of permissions, reports and safe working method statements, it was agreed that we could meet the head of demolition on site and film amongst the rubble.

The process used for the making of this work informs a large part of my practice—the extracting of tone from physical infrastructures, finding the poetic within the hard functional items on which we rely.

The head of demolition became involved, making practical and conceptual offerings towards the project, to the point where in the end I considered him to be a collaborating artist[46].

Artwork 6.

Imagined Instruments

Imagined Instruments is a term used to describe fanciful instruments, experienced as concept only. In *The Harmonic Oscillator* project, I wished to promote and explore the idea that every sound could be imagined as an instrument. To that end, I created two "Imagined Instruments", that go beyond just concept. One was created from the sound of a child's cry and one from the sounds of a sneeze which I have sampled and tuned across the length of a musical keyboard. When the user puts on headphones and plays each instrument, they are able to compose with these modified human sounds. Accompanying the keyboard is a screen

[46] Prepared Hospital Bed, https://vimeo.com/252867286/b9fd69cd37

which allows for visual interaction as images are animated by the sounds created. The intention is for the interaction to go beyond just interaction with technology, by inviting the user into a meditative experience that connects them with a personal sound created from the body—a connection with direct human experience. This work is not simply an opportunity to play with it and create unique variations, but also in which to think about sound and human experience. These two works have been designed as instruments; as such, they can be played by non-musicians for enjoyment as well as facilitate an extended enquiry for musical purposes.

Figure 9 Photograph of a Lizard Intestine specimen from the National Museum of Australia. Image: Vic McEwan.

Figure 10 "Cry" instrument. Image: Vic McEwan.

Figure 11 Visitors to The Tate, Liverpool playing the Sneeze instrument. Image: Vic McEwan.

The work entitled ‘Cry’ featured the image of a lizard intestine from the National Museum of Australia collection. Whenever someone played a key on the keyboard, the corresponding note, manipulated from a child’s cry, would play whilst a child’s manipulated face would appear on one of the spherical structures of the intestines. The reason I used this image was twofold. When I received news of the passing of my collaborator, Elisha Carter, I was on the other side of the world, at The National Museum of Australia, photographing the specimen collection for another project. The news of Elisha’s passing was such a shock that this specimen object became instantly embedded in the project, also triggering critical reflection on the capacity for medical practice to reduce patients to mere specimens.

In contrast, the ‘Sneeze’ instrument was more-light hearted. It was tuned by using the sounds of a sneeze, triggering images on the screen of various puffs of mist or sprays. It would be true to consider that one of my reasons for attempting a lighter hearted outcome with Sneeze was due to a self-consciousness about the body of work’s intensity and darkness, and of my own natural inclination to make work of that nature. Could I coax myself to be a little more light-hearted?

These instruments instigated a completely new working-method for me. Sonic and video manipulations on a small and intimate scale required me to learn new technical processes of software and hardware. It also required a long process for development to make the works act and possess a similar depth and potential for exploration that a musical instrument might have, rather than being just a novelty.

Throughout history, there exists examples of Imagined Instruments, Anatomist Johann Christian Reil (1803), who coined the term "non-injurious torture", believed that people

could be shocked out of their insanities, and to this end, created the idea of an instrument known as a Cat Piano, where live cats would be:

> arranged in a row with their tails stretched behind them. And a keyboard outfitted with sharpened nails would be set over them. The struck cats would provide the sound. A fugue played on this instrument—particularly when the ill person is so placed that he cannot miss the expressions on their faces and the play of these animals—must bring Lot's wife herself from her fixed state into prudential awareness.[47]

It was thought that the very idea of such an instrument would shock people out of whatever psychological malady was inflicting them.

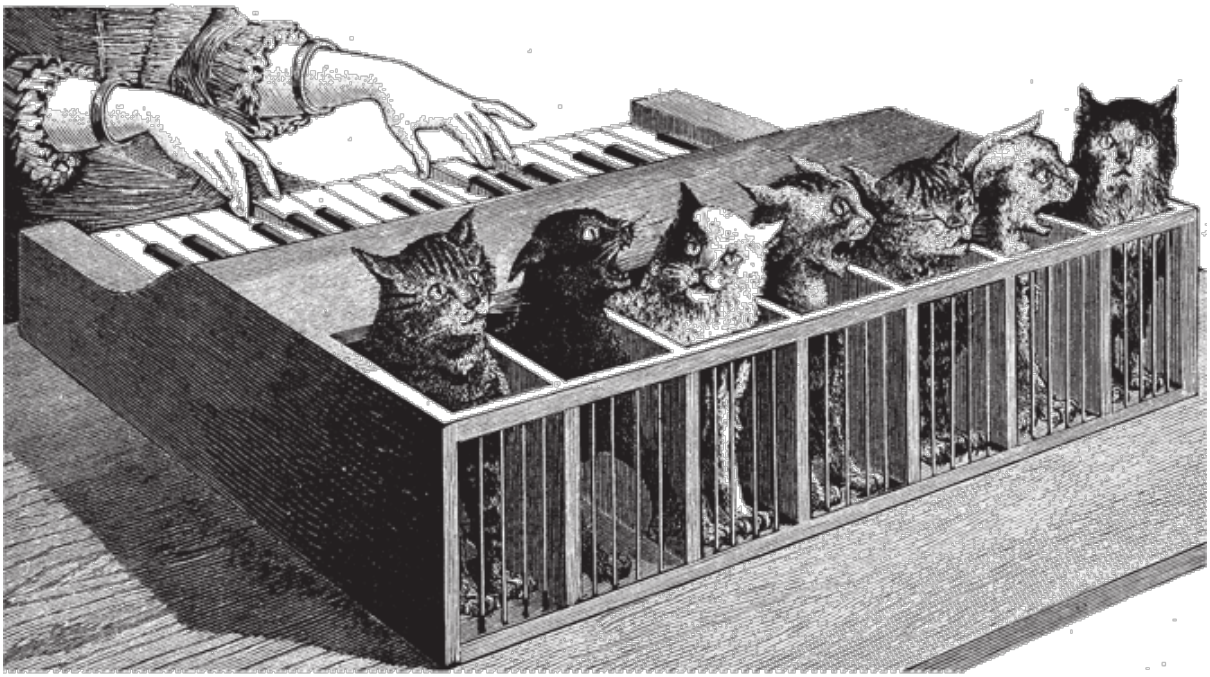

Figure 12 Artist's rendition of The Cat Piano, taken from The Public Domain Review. https://publicdomainreview.org/2015/07/15/cat-pianos-sound-houses-and-other-imaginary-musical-instruments/. Image: Unknown.

[47] Steve Rudd, Rhapsodies in the Application of the Psychological Method of Cure in Mental Alienation, http://www.bible.ca/psychiatry/rhapsodies-in-the-application-of-the-psychological-method-of-cure-in-mental-alienation-johann-christian-reil-1803ad.htm (accessed Dec 12 2017)

Artwork 7.

The Orchestra of Tears

The Orchestra of Tears is an interactive installation, 6 plaster casts of my face are suspended in the air on boards hung by discreet stands. Users are invited to 'play' a series of six illuminated heart shaped buttons. When they press each button, a video is activated and projected onto each corresponding face. Each numbered button correlates with the same numbered face which is illuminated by the projection of a single red tear sliding down the face. Once the red tear reaches the bottom edge of the board, a hidden solenoid valve is triggered and the projected tear is replaced by a real drop of water that continues its downward momentum towards a chime bar placed on the floor. The 'tear' plays the chime bar, creating an interactive instrument of six different tones.

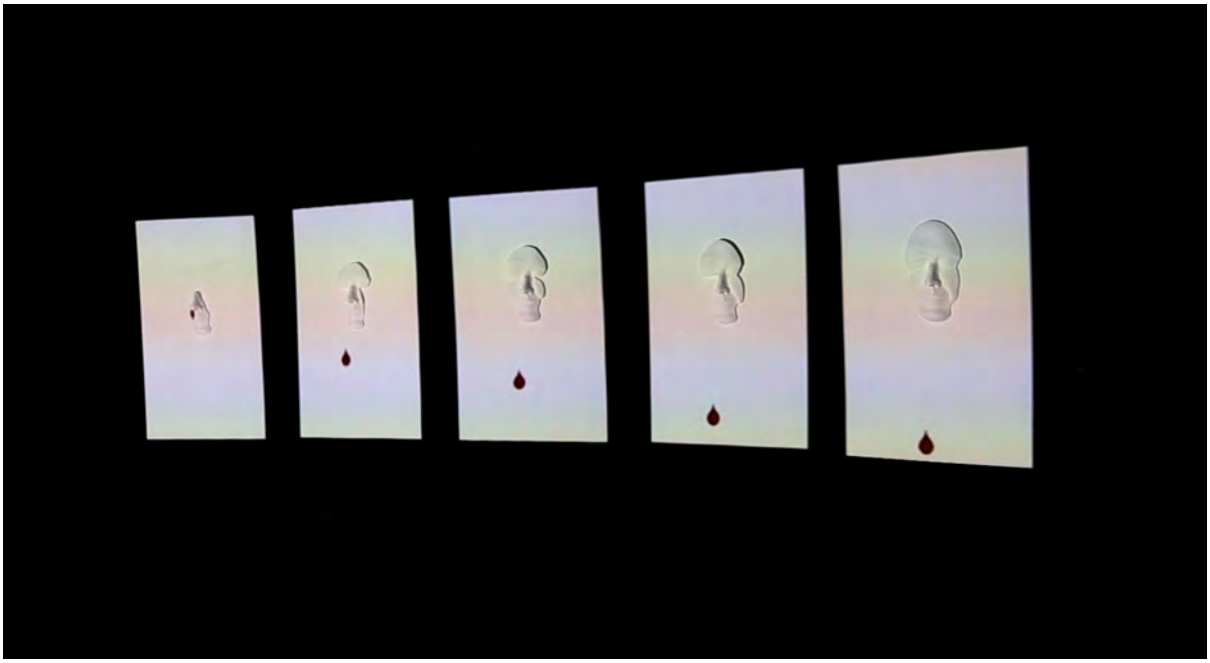

Figure 13 Video still from Orchestra of Tears documentation. Image: Vic McEwan.

In some ways, 'The Orchestra of Tears' stands apart from the other works in 'The Harmonic Oscillator'. Upon initial view, it might be considered that this work contains no material

substance from the hospital environment, doesn't feature any sounds taken from the environment, nor include work made in collaboration with the people or place.

Instead the work is a meditation on my own personal responses felt during the project. To generate music from my perceptions of this time/space, and render them into a three-dimensional reality, allowing the material nature of my suggested tear, to create sound. This work could be considered the phantom limb of my emotional experience, motived by the affect of my experience, an idea explored by Gregory Seigworth and Melissa Gregg, editors of The Affect Theory Reader:

> … there is no pure or originary state for affect? Affect arises in the midst of in-between-ness: in the capacities to act and be acted upon. Affect is an impingement or extrusion of a momentary or sometimes more sustained state of relations as well as the passages (and the duration of passage) of forces or intensities. That is, affect is found in those intensities that pass body to body (human, non-human, part-body and otherwise), in those resonances that circulate about, between and sometimes stick to bodies and worlds, and in the very passages or variations between these intensities and resonances themselves".[48]

What is the role of the artist in these medicalised/pathologised hospital spaces? As detached observer? A facilitator? An emotionless figure there for a defined purpose with a schedule, a budget, and key performance-indicators to meet?

In order to process my experiences within this project, I must honour, rather than hide, my place within it and the affect that the experience has on me. Vulnerability, meditative reflection and doubt are active participants in the process. A standard day might include emotions of fear, sadness, regret, longing, excitement and reflection, which all have an impact on the relationships created, the personal interactions and the creative outputs.

[48] Gregory J. Seigworth and Melissa Gregg, "An Inventory of Shimmers" in *The Affect Theory Reader*, (Durham: Duke University Press, 2010), 1.

Work that is based in environments of trauma isn't new to me; from January 1999 I spent seven years working for the emergency services, co-ordinating life-threatening situations, responding to the debris of our fractured cities. This was a job that required me to be calm and focussed during moment of immense crisis. A tiny sample of my experience during this time involves co-ordinating responses for events such as murder, bank robberies and rape, to disasters such as the Waterfall Train Disaster and The Cronulla Riots. I take this experience with me now into my arts practice, often basing my projects in situations that involve some type of trauma. I see this more as a compulsion rather than a conscious decision. Not quite an obligation but an appropriate contribution to make given that I feel capable of this type of work.

In an environment where every sight and every sound tells you that hundreds if not thousands of lives are currently affected by the collective of illness, throughout a hospital there are multiple conversations going on simultaneously. Behind one door a candid conversation about the practical choices on offer and the possible outcomes, behind another a seemingly detached conversation about the failure of similar measures and the resulting consequences. As an artist in residence in a hospital environment, I am witnessing real trauma. The deepest outpourings of fear and coping. Although I am not directly experiencing the illness or the pain myself, I am exposed to their suffering nonetheless as I engage daily with the people who are.

Orchestra of Tears acknowledges my place within this work. It is a meditation on the things I bear witness to. An artistic method to navigate the ways that the project acted upon me. For example, a surprising outcome of my research was a belief that it would be somehow unkind of me to 'indulge' in grief and sadness. As if there was only a limited amount of grief and

sadness to go around, and if I took any of it, then I was robbing families and loved ones of their potential to access it. *Orchestra of Tears* provides me an opportunity to reflect on this[49].

Project Outcomes

These works have been presented to the public in three different formats and all with different intentions and outcomes.

The Tate Liverpool – A one-week long residency sharing work in development.

Narrandera Arts Centre – A two-week long exhibition.

The Big Anxiety Festival, Sydney – An exhibition of selected works.

Outcome 1. The Tate Liverpool

The Harmonic Oscillator at the Tate Liverpool, offered a week of interaction with project partners along with a forum that explored the project in itself but also placed it within an international context of both arts and health, and socially engaged artistic practice.

The aim of being in residence at the Tate was to share some of the artistic outcomes which were in development, to offer a space for people to reflect on illness and recovery and to invite visitor feedback and a place for conversation that acknowledges the universal experiences of illness and recovery. Through this project, and through the Tate, we hoped to offer ways to open up conversations about shared humanity.

One of the strengths of *The Harmonic Oscillator* project is its diverse target audience. The project addresses human experiences of illness, trauma, and recovery and as such, can be

[49] Orchestra of Tears, https://vimeo.com/218346740 (accessed 19th Dec 2017).

meaningful across all divisions of socio-economic status, gender, culture, age and ability.

The Harmonic Oscillator project allows space for people to not only consider the human experience of illness and recovery, but of every-day life. It allows for an immersive space to explore, through contemporary arts practice, complex understandings of the emotional and practical issues around illness and treatment.

For the Tate Liverpool, a surprising number of visitors engaged in deep and meaningful conversations about their personal experience. Several visitors expressed that the work had helped them make sense of particular experiences in their life[50].

The forum event we held was very successful. An hour-long presentation, a five-minute performance and an hour of audience questions allowed a very deep and genuine sharing of ideas, and a collective reimagining of the processes of care.

Installed in the space as ambient sounds wafting across all of the works, were the compositions created using sounds recorded in Alder Hey Children's Hospital. These compositions transformed the space into an immersive experience the moment visitors entered.

As well as the artworks mentioned above, The Tate exchange had two additional elements. After watching the EMF ICU video and sound work, visitors were able to use specialised equipment to explore the space in the Tate to uncover 'unheard' sounds. This participatory

[50] Vic McEwan, Face to face conversations with visitors during Tate Liverpool residency, June 2017.

experience encouraged an exploration of place and a consideration of what lies beyond the things we can't perceive.

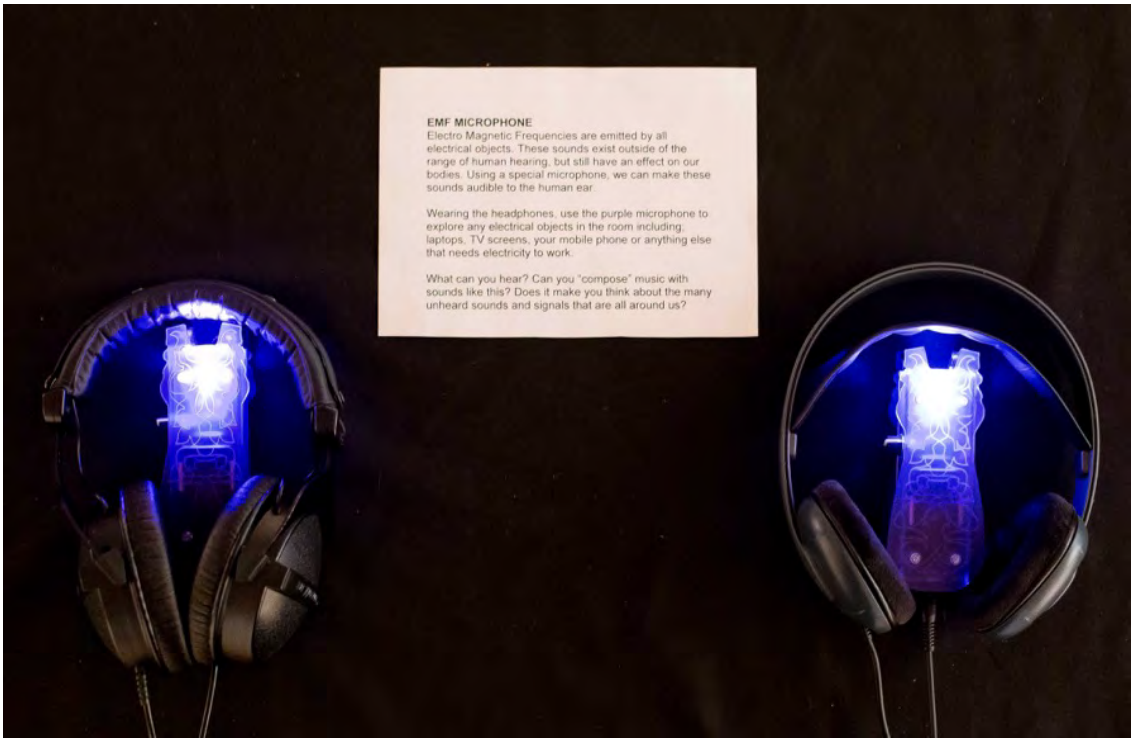

Figure 14 Installation at The Tate, Liverpool, encouraging visitors to explore the "unheard" environment of The Tate. Image: Vic McEwan.

Figure 15 Gallery visitor conducting his own research to see if his brain is emitting Electro Magnetic Frequencies. Image: Vic McEwan.

Secondly, preceeding the launch of Clive Parkinson's book in Australia (November 2017)[51], we had a series of graphically designed fold out postcards which previewed Clive's book[52].

Several interesting exchanges that took place with audiences at The Tate highlight the impact of the work. I will summarise these below.

1. A group of people with disability came into the space with their carers. When they walked in, a visually impaired woman was talking to her carer about how she can hear electricity. They were standing near the door and hadn't come into the space yet, so their conversation was a complete coincidence. I listened in for a while because what she was talking about was one of the things that the Tate residency was exploring (specifically the EMF ICU and EMF Interactive artworks): the sounds that sit outside of the 'normal' hearing range, but are still present and still have an effect on us. Whilst other visitors were using special equipment to explore the space to hear the EMF frequencies, this visitor was able to hear the EMF frequencies without the need for special equipment, presumably due to her lack of sight prompting her hearing to develop beyond standard hearing ranges.

I approached them, and her carers, friends and family explained that she has been trying, for years, to explain to them what she hears, but they had no idea what she was talking about. I replied, "Would you like to hear what your friend can hear?" and gave them the EMF microphones. They were all so excited, teary and overwhelmed to finally get a chance to hear

[51] Critical Conversations event, The Big Anxiety Festival 28th September 2018 (Australian Launch). UK launch took place on January 23rd 2018 in Manchester, UK.
[52] PDF of postcard can be viewed here at http://docs.wixstatic.com/ugd/a2d021_6a27a44fc0304420a96a9a917681b645.pdf

the frequencies that this woman has been hearing for years. She was excited that finally others could hear what she has been trying to explain for years. They were all ecstatic, as was I. It was such a special moment to share in and facilitate within an art gallery space.

Figure 16 Vision impaired visitor to The Tate, sharing with her family and carers the type of "electricity sound" she hears constantly. Image: Vic McEwan.

2. Later, with another group, the carer watched the video about The Longest Heartbeat. After he listened to the heartbeat he walked up to me with tears in his eyes and fell into my arms and quietly sobbed for about a minute. We had a long conversation about the emotional impact of the work; after a period of silence he said, "This is what art galleries should do, move people this much." He said he would go back to the office and have a session where he showed the videos from the project to his group and colleagues, to lead a discussion about the themes explored.

3. A dementia nurse had a long discussion with me about how the work on show in the Tate

Exchange has encouraged her to explore new ideas with her clients.

4. During the week, four separate individuals who had each spent a lot of time in the gallery engaging with the work, shared their experiences with me about the artworks that had helped them process their own experience of working in a hospital environment.

5. One man approached me and said, “Thank you, you have made me realise that all things are connected.”

6. A participant at the forum told us how she had been a long term patient in the old Alder Hey Hospital and had extremely fond memories of it. She talked about the sounds she would regularly hear which, rather than being a negative thing, would give her comfort. Now, as an adult, she had chosen not to go into the new hospital because she wanted to preserve the memories (including sounds) of the old building. She chose to come to the forum to share this story.

From ex-patients to complete strangers who unexpectedly came across the work, *The Harmonic Oscillator* at The Tate, Liverpool was a powerful sharing of work and ideas. Furthermore, because it was a showing of work in development, I had the opportunity to change things from day to day, such as observing how participants might engage with the work if I put it on headphones instead of ambient sound in the room; pondering whether I should provide context for certain work before it was viewed or to allow the visitor to experience the work on their own without framing the context for them. These explorations led to decisions which were enacted for the second outcome in Narrandera.

Outcome 2. Narrandera Arts Centre

Upon returning from The Tate I decided to install the work at the Narrandera Arts and CommunityCentre in regional NSW. This decision was based on the desire to share with my small regional community the work that I had been making internationally for the last three years; I also wanted to advertise "From The Tate to Narrandera", a declaration that the small audience of Narrandera are as important as the large audience at a major international institution.

The Narrandera Arts Centre, an ex Masonic lodge recently refurbished by the local council for cultural purposes, comprises two large rooms with lots of natural light. Blacking out the space and partitioning it off with black curtains, we managed to allow discretion between installations, but also strategic sightlines as well as some bleed and combining of sounds between them. The EP of compositions was played on a loop as an atmosphere track over the entire exhibition, and the sound of the EMF ICU and Orchestra of Tears were amplified acoustically in order to blend in different ways, depending on interaction and location. *The Imagined Instruments* were presented on headphones to allow a private, and unabashed musical exploration without the watchful eye of other visitors.

The layout of the venue allowed for 'The Orchestra of Tears' to be partitioned off behind a Perspex wall, providing a separation between the visitor's actions and the outcome. This became an observation chamber of sorts, a medical device. For me personally, because 'Orchestra of Tears' was about my own personal response to my experience during this project, it also became a comment on the observation chamber prevalent in the life of an

artist, as well as the patient. The outcomes of my labour, my offerings to the world, are all open for public viewing and critique.

When working in this socially engaged, process driven way, the whole of the process is on show to be viewed and dissected and commented on. When I create works that are outcomes of my studio practice, my process remains hidden, and the work only becomes manifest once entering the public gaze and placed on exhibition. This is the major difference I find in my studio practice compared to my socially engaged practice. The presence of a constant eye: watching, judging and giving opinion.

The reactions at this location were generally very positive. It is true to say that this type of installation was uncommon for the Narrandera audience. However, there was a deep appreciation of the intent of the project, and also an excitement that an international project was being shown in this small regional NSW town. Again, it provoked audience members into sharing their own personal experiences; the length of time people attended averaged over 30 minutes per visitor, which was a substantial outcome.

Outcome 3. The Big Anxiety Festival

The third outcome for *The Harmonic Oscillator* involved *The Longest Heartbeat*, *Textures of Absence* and the *EP Compositions* being presented as part of The Big Anxiety Festival. This was a mediated experience where invigilators directed audience to watch the 14-minute video about the heartbeat process and then invited audience to engage with a small handheld box which played the single two-minute heartbeat. They were then invited into a dark room to view the hospital bed projections of *Textures of Absence* with the EP compositions playing in the space.

This outcome was complex as it meant presenting only a portion of the works. I hesitated at this breaking up of the work, which was due to the curatorial constraints of the festival and practical considerations such as available space. The invigilated process became key to the success, and was the condition on which I agreed to showing just a small number of works. In reality, the invigilation didn't work as planned and it appeared that people were able to wander as they chose, sometimes missing the heartbeat work completely. This issue wasn't resolved and in some ways, diminished the potency of the work.

The festival and the work received national media for its exploration of art and science with a focus on mental health. It received coverage by major outlets such as the ABC, among others.

In addition to the above mentioned outcomes, *The Harmonic Oscillator* has become an ongoing project. Soon there will be an mobile webpage 'app' that will be delivered in hospitals internationally, the aim of which is for patients, families and staff to undertake self-directed workshops to explore the sonic environment of their hospital space. A radio documentary will also be created that explores the reality of exposure to these relentless noises for patients, families and staff. I am creating an assessment of the soundscape of Alder Hey Hospital compiled with over eighty-six thousand sound measurements which reveal that at no time during the test period were the sound levels of the intensive care ward less than 150% of World Health Organisation recommendations. This information will be used by the hospital to look at changes that can occur to help mitigate these extreme noise levels. And finally, a new video work is being created, filmed in the ruins of the old hospital in Alder Hey which is currently in the process of being demolished.

Figure 17 Filming in the rubble from the half demolished former Alder Hey hospital. Image: Sarah McEwan.

I have received several opportunities to present at conferences about the work. These have included: the ARTLANDS Conference in Dubbo 2016, The NSW Rural Health Congress, The Tate Liverpool, The International Arts and Health Conference (Bristol, UK), The National Gallery of Lithuania, The Big Anxiety Festival (Sydney), to Postgraduate Medical Students at Sydney University, a presentation at Parliament House (Canberra), a launch at Home in Manchester UK, a keynote presentation at The Tate Liverpool, a keynote presentation to an audience of 800 people at the Patient Experience Symposium at The Sydney Hilton, and a series of presentations to Post Graduate Medical Students.

These talks have become an unexpected opportunity to share some of the work in new ways. *The Longest Heartbeat* for example, is shared in an intimate way during these presentations. I explain the process of creating this work and then have the audience sit in silence and listen

to the entire two minutes of a single heartbeat. This becomes a mass listening experience; to date the largest audience has been 800 people sitting in silence as a single heartbeat slowly fades in and out of perception. These presentations at conferences have become a very powerful way to share the work and to initiate very focussed and shared listening together. I have experienced a deep artistic and human satisfaction from these presentations. It means that the artwork is being shared through a communal listening or watching experience, the format of which provides me with immediate reactions.

I have also been surprised at how these experiences have been instrumental in allowing me to navigate the emotional experience I have had during this project. Whilst I am sharing the work and trying to negotiate my own form of grief created during the project, I found that standing and staring at 800 people as they sit in silence and listen to the heartbeat, creates a powerful moment where 800 heartbeats all beat back together in consideration of a single person's heartbeat. Just like the visitor to the Tate reacted, I reflect on the thought that everything is connected and this connection was able to help my processing of the experience.

CONCLUSION

Is a project such as *The Harmonic Oscillator* able to achieve everything it set out to?
Its objectives were ambitious, including:

> To create an artist-led exploration that explores medical research showing the negative effects that noise is having in our hospital spaces.

To have impact in terms of the human experience of health care while honouring the voice of the patients, families and staff of the hospital by creating opportunities for genuine human exchange at vulnerable times of people's lives.

To determine if it could impact on the field of arts and health and within that to understand the role of the artists within these real life settings.

To determine the possibility for it to impact on the medical profession; and

To create a body of artwork from this experience.

Research outcomes, feedback, reviews and self-reflection suggest that we achieved great success with the project. We commenced with an examination of medical research into the adverse effects of noise by summarising fourteen key research papers to give context in which to work. We undertook anecdotal, then scientific sound measurement processes in order to evaluate and place this hospital within the context of research. Together with user-led contributions, we have identified different types of noise, including the ones that are possible to mitigate, and we have proposed suggestions to the hospital in terms of design, equipment and behaviour, creating a practical outcome.

This project impacted the human experience of health care by giving voice to large numbers of patients and staff in response to management who previously declared that there were no sound issues present within the hospital. This process permitted these concerns to be articulated. We created workshops that facilitated a process for perceiving the sound-space

within the hospital by teaching methods for active listening. We also created artwork that is having an ongoing legacy for patients, families, and staff.

We have created impact in the field of arts and health by creating an internationally acknowledged project. From the UK, Lithuania and Australia where this project has been shared, it is having a profound effect on the consideration of arts practices within health settings. Director of the National Institute for Experimental Arts, Jill Bennet, declared *The Harmonic Oscillator* project as "field defining work" and "arguably one of the most adventurous and profound arts-health interventions to date […] both intensely moving and inspirational".[53]

We have been able to generate change in the medical profession beyond the practical outcomes listed above. Within a twelve-month period, I have had requests to present the work at The Patient Experience Symposium, which is the largest gathering of medical professionals to consider the patient experience. I have been invited to the Annual Congress of the Australian Society of Anaesthetists, the Annual Rural Health Congress and I have also been asked to give presentations to post graduate medical students and also a longer term consideration of embedding my arts practice into the medical training of doctors. This addresses what Stella Bolaki discussed in her introduction to "Illness as many Narratives - Arts, Medicine and Culture" as the need for "A more critical or radical pedagogy emerging from different sites and media can reshape and challenge existing practices within Medical education"[54].

[53] UNSW, The Big Anxiety Festival, https://www.thebiganxiety.org/events/intensive-care-artists-healthcare-environments/ (accessed 12 Dec 2017).
[54] Stella Bolaki, *Illness as Many Narratives – Arts, Medicine and Culture* (Edinburgh: University Press, 2016), 8.

We have also been successful in creating a body of work that explored and contributed to all of these stated objectives. The work has had major interest from The Tate Liverpool to The Big Anxiety Festival and I anticipate this will continue into the future.

The Harmonic Oscillator project relied on the ability to be in a constant state of observation, re-evaluation and redefining of the project. The strength of the outcomes lay in their diversity. The approaches undertaken during *The Harmonic Oscillator* project were successful because of their unique, exploratory and experimental nature whilst always having direct human exchange at the core. The uniqueness and the ability to respond in an open manner, whilst being genuine, accepting of unknown outcomes and open to adjusting directions, are the attributes necessary to undertake an open-ended creative research project like *The Harmonic Oscillator.*

I also explored the role of the artists in health care settings and the care needed towards the artist as they are exposed to grief, illness and trauma. The grief of the other becomes their own.

I uncovered new opportunities for my practice, of sharing artwork in conference settings, using presentations to have deep shared experiences that are raw and honest in a communal setting. In some ways, this unexpected outcome has become as rich as the actual exhibition opportunities, providing as it does a direct and honest sharing of experience and outcomes.

These outcomes will all ensure that *The Harmonic Oscillator* project will have an ongoing legacy as well as identifying areas of future creative research within my art practice, as

indicated throughout this paper. The intention was for this project to be completed by this point in time, its outcomes nestled neatly into artistic categorisation of genre. Instead it has activated an ongoing exploration that continues to consider in deep and meaningful ways, the opportunities for deep human connection through considered contemporary arts practice inside our hospital spaces.

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Images

Page 54 - Figure 16 Vision impaired visitor to The Tate, sharing with her family and carers the type of "electricity sound" she hears constantly. Image: Vic McEwan.

Page 59 - Figure 17 Filming in the rubble from the half demolished former Alder Hey Hospital. Image: Sarah McEwan.

Links to documentation material.

The Longest Heartbeat : https://vimeo.com/222247032
EMF ICU : https://vimeo.com/222252468
Prepared Hospital Bed : https://vimeo.com/252867286/b9fd69cd37
Orchestra of Tears : https://vimeo.com/218346740
Critical Care Postcards :
http://docs.wixstatic.com/ugd/a2d021_6a27a44fc0304420a96a9a917681b645.pdf