SONIC IMMERSION: REACHING NEW AUDIENCES THROUGH SOUND
A PORTFOLIO OF ACOUSMATIC COMPOSITIONS

by

EMMA MAY MARGETSON

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Department of Music
School of Languages, Cultures, Art History and Music
College of Arts and Law
University of Birmingham
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ABSTRACT

This PhD thesis is a practice-based effort to respond to the homogenisation of acousmatic audiences to niche cliques of practitioners. It consists of a portfolio of nine acousmatic compositions in stereophonic and multichannel formats and a written commentary. Two of the compositions form part of a larger collaborative work/project (*Sound Sculptures* (section 4.4) and *Ancestor 1* (section 4.5)). The commentary discusses the creative and compositional processes behind the acousmatic works, building upon a variety of approaches to engaging wider audiences with the medium of sound. Through exploring various approaches to audience engagement, audience development and collaboration (with other artists, art forms and organisations), this practice-based research explores how an electroacoustic composer may reach new and existing audiences. This has led to a variety of dissemination outcomes including performances, site-specific works, installations and workshops.

All compositions have been composed in the electroacoustic studios at the University of Birmingham using Reaper, GRM Tools, Ableton Live, The Ambisonic Toolkit, IEM Plug-in Suite, O3A Core (Blue Ripple Sound), SoundMagic Spectral (Michael Norris), SoundHack and RX 8 (Izotope). The multichannel works (8[1] and 16 channels) have been decoded using ATK plugins for binaural listening purposes.

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[1] Follows the 'French' configuration (Wilson and Harrison, 2010)

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I would also like to thank my family and partner Matt for their continued guidance and support.

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CONTENTS

     Appendix 1: Ikon Workshop
     Appendix 2: BEAST Sonic Paintings Workshops
     Appendix 3: Sound Sculptures

PORTFOLIO: SUMMARY OF MUSICAL WORKS

The portfolio consists of nine fixed multichannel acousmatic compositions. These are listed in chronological order below.

Water Waves

Fixed stereo composition.

Year of composition: 2017

Format: Stereo

Duration: 00:08:53

Dreaming Waves

Fixed multichannel composition.

Year of composition: 2017

Format: 8-channel

Duration: 00:08:08

A Flavour of Tears

Fixed stereo composition.

Year of composition: 2018

Format: Stereo

Duration: 00:02:22

Sound Sculptures

Fixed stereo composition.

Year of composition: 2018

Format: Stereo

Duration: 00:10:36

>   Mermaid Fountain: 00:02:50

>   Woman for Heidelberg: 00:02:45

>   Beethoven, Virgil, Michelangelo, Plato, Shakespeare, Newton, Watt, Faraday and Darwin: 00:03:12

>   Girl in a Hat: 00:01:49

Distorted Illusions

Fixed stereo composition.

Year of composition: 2018

Format: Stereo

Duration: 00:08:22

Abstracted Objects

Fixed multichannel composition.

Year of composition: 2019

Format: 8-channel

Duration: 00:08:31

Ancestor I

Fixed stereo composition.

Year of composition: 2019

Format: Stereo

Duration: 00:12:13

>   Head: 00:07:34

>   Hips: 00:04:39

Sketching Froanna

Fixed multichannel composition.

Year of composition: 2019

Format: 8-channel

Duration: 00:09:39

Isochrone

Fixed multichannel composition.

Year of composition: 2020

Format: 16-channel

Duration: 00:11:56

APPENDIX

Dancing Bubbles

Fixed stereo composition.

Year of composition: 2018

Format: Stereo

Duration: 00:12:24

      Video: 00:01:24

      Extract 1: 00:04:48

      Extract 2: 00:02:08

      Extract 3: 00:04:04

I want to tell you a story…

Fixed stereo composition.

Year of composition: 2018

Format: Stereo

Duration: 00:09:23

Ikon Seascape

Fixed stereo composition.

Year of composition: 2017

Format: Stereo

Duration: 00:02:03

MEDIA CONTENTS

Attached to this commentary is a Bear DataShare folder that contains the compositions that are submitted in this portfolio and also supporting compositions included in the appendix.

There are two main folders (1) Portfolio of Compositions, stereophonic, 8-channel and 16-channel files. The multichannel compositions are submitted as interleaved files and as stereo reductions. (2) Supporting compositions found within the appendices. All compositions are in full quality versions (48kHz, 24bit).

📁 Emma Margetson PhD Thesis

    📎 Commentary.pdf

    📁 **Portfolio of Compositions**

        🔊 1. Water Waves

        📁 2. Dreaming Waves

            🔊 Dreaming Waves (8-channel)

            🔊 Dreaming Waves (stereo reduction)

        🔊 3. A Flavour of Tears

        📁 4. Sound Sculptures

            🔊 Beethoven, Virgil, Michelangelo, Plato, Shakespeare, Newton, Watt, Faraday and Darwin

            🔊 Girl in a Hat

            🔊 Mermaid Fountain

            🔊 Woman for Heidelberg

        🔊 5. Distorted Illusions

        📁 6. Abstracted Objects

            🔊 Abstracted Objects (8-channel)

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[1] mp4 video (48kHz audio).

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1. INTRODUCTION

The audiences of acousmatic music today tend to consist of people who are actively involved with this genre of music as specialists or practitioners (academics, artists etc.); the presence of the general public, external and potential new audiences is the exception rather than the norm. Thus, as Katharine Norman states, 'entire audiences for electroacoustic music can sometimes fade into a collective entity of like-minded peers' of 'esoteric cliques' (Norman, 2010, p.117).

As Darren Copeland has argued, 'artists in this field (electroacoustic/ sound), and the organisations that support this work cannot continue to 'survive' if they do not reach out to wider audiences' (Copeland, 2003). Many express that there needs to be a shift in trajectory or additional outreach elements in addition to performances. 'Well, people may have shoes, but that doesn't mean that they know where to go'; creators need to show audiences where to go, where to look and where to learn (Chadabe, 2004, p.316). Inevitably through reaching out to new audiences, artists can share experiences, challenge perceptions and provide a space for others to share and learn in order to raise awareness and understanding of this genre of music. This is enforced by a seismic shift towards participatory arts culture within the Arts (Brown and Novak-Leonard, 2011), adapting creative ways for audiences to experience culture differently, enabling immersive and interactive experiences: '[we] want to meet the people who make our products, share in the work of the makers, and make things ourselves (Brown, Novak-Leonard and Gilbride, 2011, p.7). Diversifying those who participate in arts activities would enable not only further audiences to be reached, but could also establish greater bonds between the individual and the institution/artist/organisation to help create communities engaged with acousmatic music.

This portfolio employs techniques and strategies of audience engagement and development in artistic contexts with the intention of reaching wider (and existing) audiences through this genre, and how I as a composer can consider and incorporate these techniques and approaches within my own work without sacrificing aesthetic credibility. Audience development and engagement, both marketing strategy terms, consider how to deepen relationships with stakeholders – the key stakeholder here being the audience. This will, over time, 'improve retention, increase frequency, and expand reach through stakeholder networks' (Johnson, 2019). Audience development, audience engagement, and community engagement must be critical elements of any plan when considering how to connect with audiences and as an artist, promote and share your own work. Whilst 'audiences' expectations may change over the next ten years, there is little evidence that the desire for collective experiences of culture will wane' (Arts Council England, 2018, p.17). If concerts and the sharing of acousmatic music (and electroacoustic music more generally) continue in a similar format of presentation, what arts development and engagement strategies may help transport this music to new and wider audiences? As Natasha Barrett states, 'the novelty of the early decades – of listening to strange sounds emanating from loudspeakers – has passed' (Barrett, 2017, p.232).

Three primary concerns of this project will therefore be:

1. The broadening of the acousmatic audience through exploring strategies to introduce acousmatic music to new places, platforms and consequently people.

2. Audience engagement with acousmatic aesthetics (through considering how approaches to listening, categories of sounds, spatial immersion etc. can be embedded within compositional approach) and how arts marketing approaches may inform such composers' decisions.

3. Addressing levels of participation from listening to actively participating in acousmatic works.

Following an outline of the research into audience characteristics that will be outlined in chapter two, chapter three will explain my approaches towards responding to the identified participatory situation, before chapter four provides a commentary upon how this was applied throughout my portfolio. My approach throughout emerges from an effort to expand engagement with acousmatic compositional aesthetics and spatialisation practices, and thus I will now explain two key facets of such musical production.

1.1 SONIC IMMERSION

When we go into the world of a sound, it is new. When we prepare to leave the world of a sound, we expect to return to the world we previously left. We find, however, that when the sound stops, or we leave the area in which the sound is being made, or we just plain leave the world of the sound to some degree, that the world into which we enter is not the old world we left but another new one. This is partly because we experienced what was the old world with the added ingredient of the world of the sound… Once you enter a new world, of a sound, or any other world, you will never really leave it. (Young and Zazeela, 2004, p.73-75)

Many of the musical concerns of acousmatic composers can be understood with reference to the term 'spatiosonic', which was recently employed to describe space (spatio) and sound (sonic) as equal, interactive partners (Matthews, 2019). This term is used with reference to the perceived immersive nature of sound and space, both of them surrounding us in our everyday life (Matthews, 2019). In music that emphasises spatiosonic properties, sound and

space are related to one another as part of a heightened sensory experience, expanding our hearing beyond a particular event, experience or expectation.

Grasping these parameters can enable creators to give the listener an 'immersive' experience, to elicit 'the perception of being in one place when you are actually in another... the suspension of reality, even if just for a few moments' (Hearn, 2019). Spatial music is here a 'physically immersive medium in which the audience is implicated as an active component in the execution of its performance' (Matthews, 2019, p.1). This is the principal aim of acousmatic music which, as Dennis Smalley writes, grasps 'space and spatial experience as aesthetically central' (Smalley, 2007, p.35). Space is an integral component of acousmatic music, as spatial information is inseparable from sound identity, whether this be within the composition (composed space) or in the projection of music to the listener (listening space) (Smalley, 2007); with spatial contexts concerning spatial situations (environments), spatial gestures (motions) and object-space connections (Smalley, 2007). In the performance and reception of acousmatic music (and electroacoustic music more widely) there is a continual dialogue between space and sound which 'reminds the listening audience that they are implicit in the act of listening' (Matthews, 2019, p.299). As the audience is occupying the space, they are also occupying the sound. The act of listening here is different to a conventional concert, where the action takes place in front on a stage/platform with a fixed longitudinal distance. Our usual experience of live music is conventionally frontal and static: we sit, or stand face to face with the performers, who are usually on the stage. In a diffusion concert, instead of the performer being 'on stage', they are more often diffusing from within the audience at a diffusion/mixing desk. However, the key difference between the two is that during spatially immersive works, such as multichannel and three-dimensional sound fields, listeners experience the sound to come from all angles within a room (with seating position

affecting the overall experience[1]), and are absorbed within this space, physically and mentally – they are required to be inside it rather than facing it.

Likewise, within my portfolio, sonic immersion is realised within my compositions in two broad senses: through the use and transformation of space e.g. spatial location, and allusion of space through stereo and multichannel spatialisation techniques so as to embody the listener in the sound, within 'composed' and 'listening' spaces.

1.2 LISTENING TO ACOUSMATIC MUSIC

Crucial for enabling audiences to engage with these aesthetic tendencies is an understanding of how they appreciate, or listen to, acousmatic music. Whilst hearing is the act of perceiving sound by the ear, listening is an act you actively choose to do. Listeners may also choose how to engage with a work and be 'active' or 'passive' in their involvement (consciously and subconsciously). Active listening (Rogers and Farson, 1987), is where a listener 'is curious and engages fully with the experience of the music by seeking to understand' (Hugill, 2012, p.63), and is described by Michel Chion as a way of 'giving oneself over entirely and exclusively to listening', to enable the listener to disconcert in order to discover the route from the 'sonorous' to the 'musical' (Chion, 1983, p.12). Traditionally, acousmatic music is conceived for a listening environment structured through loudspeakers surrounding the listener, and usually in a dark room to help prioritise aural stimulation. Sight and hearing are dissociated, encouraging listening to sound forms for themselves (and hence to the sound object).

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[1] Listeners at the extreme left or right, front or back row will receive a very unbalanced image; with 'close' and 'distant' perspectives based upon distance to the loudspeaker/s (Harrison, 1999)

In acousmatic music, one may recognize the sound sources, but one also notices that they are out of their usual context. In the acousmatic approach, the listener is expected to reconstruct an explanation for a series of sound events, even if this explanation is provisional. Like reading a detective story, one invents a scenario to find the chain of causality that explains the situation. (François Bayle, 1997[2])

The importance of listening spatially in acousmatic music is vital, and is typically associated with the notion of reduced listening: experiencing 'the sound object at its own level' by suspending habitual ways of perceiving or listening, including the obscuring of original sound sources (Chion, 1983, p.29). However, we may face the challenge that audiences simply do not know how to listen in this novel way, especially new audiences who are unfamiliar with this genre (Landy, 1994, p.50). Several authors identify reasons why reduced listening from an aesthetic perspective is challenging, or nigh on impossible (e.g. Emmerson, 1986; Smalley, 1992; Windsor, 2000; Wishart, 1996). At any rate, this approach may only usually be achieved by listeners to composers who engage in repetitive listening of a work(s) (Smalley, 1996; Barrett, 2007). We have a natural tendency to find and locate sounds within our own environment, and the 'acousmatic curtain' may escalate this further (Windsor, 2000, p.31).

Yet all is not lost. Many suggest that audiences can be helped to listen, engage and comprehend acousmatic music through providing different listening contexts that encourage novel listening strategies, which as a result may provide a completely different experience. There have been numerous projects which have attempted to address the reception of electroacoustic music in order to help aid and guide the listener. Significant projects have included Smalley's 'Spectromorphology' which largely focuses on intrinsic qualities, of how

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[2] Acousmatic Morphology: An Interview with Francois Bayle by Sanesantos, Roads and Bayle in 1997

spectral features of sound are shaped over time, rather than ignoring the sound's source (reduced listening), can mean the range of usual musical experience is also reduced (Smalley, 1986, p.64), and the 'Intention/Reception' project by Rob Weale which aimed to provide frameworks to guide the listener, proposing a series of categories composers may be able to offer the listener a path into the music and offer them a 'helping hand' in order to strive for a greater level of musical appreciation (Landy, 1994, p.49). In addition, within the Intention/Reception project (Weale, 2006, p.198) concepts of dramaturgy such as 'what' and 'how' were explored. Noteworthy also is David Holland's 'Listening to the inner soundscape', which researched how notions of narrative and creative writing could be used to help people engage with electroacoustic music (Holland, 2013).

In addition, the 'soundscape' tradition has expanded levels of perception by exploring imagined sources beyond the listening space, to stories and narratives. The term 'referential listening' by Katharine Norman is used to describe the ways in which we understand sounds as referring to events and objects (Norman, 1996, p.2) and how we use memory to do this. Through utilising a more 'reflective' listening 'we use our ears and minds to create, or reinterpret, imagined meanings for the sound' (Norman, 1996, p.6). By internalising the initial listening experience, a listener can explore how this might resonate with their personal feelings and experiences. This is explored in the research of Anderson's 'inner voice' (Anderson, 2012) and Katerina Tzedaki, who refers to the 'inner soundscape' (Tzedaki, 2011) to form a 'narrative of experience' (Norman, 2010, p.117). Furthermore, such composers have utilised narrative and recognisable sounds within their compositions, to trigger more relatable and engaging experience for participants, who may find somehow comparable stories within their own experiences and everyday lives. The World Soundscape Project (WSP) helped to develop 'soundscape composition' and the work of WSP in education has been a major influence on the teaching of listening skills, as soundscape pieces can encourage

listeners to explore and concentrate on sounds in more depth, helping them to hear differently than in everyday life (Truax, 2002). Other projects include, '100 Exercises in Listening and Sound-Making', a series of ear cleaning exercises to help learn how to listen - a training exercise to do alone or as part of a group, which may be a useful tool when considering strategies as we guide our listeners (Schafer, 1992).

To summarise, these are the broad listening strategies which could be explored to introduce listeners to acousmatic composition via different arts engagement approaches.

Considering our audience, and understanding how we listen as a composer too, we may discover which strategies may be most appropriate for different audiences and different acousmatic works – especially as no one will listen and interpret an acousmatic composition in the same way.

2. APPROACHES TO ENGAGING WITH WIDER AUDIENCES

This chapter addresses key research in relation to developing and reaching new and wider audiences within the arts, and establishes how these insights may be applied in electroacoustic contexts.

2.1 ELECTROACOUSTIC AUDIENCE DEVELOPMENT

Research on electroacoustic music and audiences has been limited, though it has been included in broader projects, most notably the Creative Europe-funded 'Interfaces' project (Dorin, 2020). This is an interdisciplinary project which focuses on bringing 'New Music' to a range of new audiences through a variety of methods, from considering new performance formats in innovative spaces to multimedia exhibitions and educational activities. Electroacoustic music is here one of many musical strands within a trans-sectoral approach. The final project report, 'Researching the frontiers of new music audiences', a survey summarising the research on morphological aspects of contemporary classical or new music concert audiences, outlines, through analysing a representative selection of Interfaces events from 2016-2020, the results of the projects (Dorin, 2020). A few notable observations are: 1) New Music has a highly educated audience overall (with 77.4% being educated over bachelor's degree level), emphasising a very elitist segment of culturally engaged audiences; 2) New Music continually tends to have the highest levels of musical capital (with 50.3% having had some form of music education, and 33% of younger audiences having a formal classical music education); and 3) age is a structuring factor of the social space of new music

audiences, with younger audience segments attending with friends, middle-aged with partners, and older segments on their own. The project explored how different kinds of musical events (including but not limited to concerts) can provide different ways to attract new audiences, opposing the traditional concerts with non-traditional concerts (different setting and/or format) and site-specific or open-air events. It emerged that venue and location can play a significant role in attracting different kinds of audience: concert venues, whether traditional or non-traditional in format, tended to attract a similar audience profile, whilst the open air and site-specific formats in fact appeal to more diverse audiences in terms of education levels.

Overall the report, finding age and musical capital were found to be the structuring factors of this project, identifies the following audience segments attending associated projects:

1) 34% 'Educated, but not music-loving' - a relative indifference to musical tastes, and no music education, but with a high level of education.

2) 12.3% 'Young Classicists' - relative aversion to popular music, attend non-traditional concert formats, under 50 years old.

3) 8.7% 'Not so young classicists'- same as 'Young Classicists', have the same musical profile but with a higher level of music education and are older (over 50 years old).

4) 25% 'New music experts' - attend traditional concerts, older (over 50 years old), are inclined to prefer classical music and new music and are indifferent to popular

genres. A greater proportion of men with the highest levels of cultural capital (doctoral education level) and the highest levels of musical capital.

5) 20% 'Music omnivores' - slightly younger (20 to 40 years old), lovers of classical, jazz, or popular; they tend to have music education and practice music. They tend to regularly attend concerts with a group of friends.

This research has been useful to segment the new music audience across Europe and provide a benchmark for future research comparisons, along with highlighting a few different formats to reach new audiences. However, only 12% of audiences reached by this project were unfamiliar with New Music. This begs the question of how effective these methods of increasing engagement were, especially considering that the audience remained so highly educated. Indeed, the research testifies to the deep sedimentation of what Bourdieu observed over thirty years ago on music consumption in relation to class, with New Music being a 'highbrow' form, which is listened to by highly educated, elite individuals (Bourdieu, 1984); that such high volumes of musical capital are required to appreciate Contemporary Art Music has been recognised in 'Contemporary Art Music and its audiences: Age, gender, and social class profile' (Grebosz-Haring and Weichboldin, 2018).

With such longstanding issues, it is not sufficient to rely on one factor above others; a more nuanced approach to audience development is required. This can be observed in the 'New Music:New Audiences' project (2012-2014), which involved six international partners working with seventeen European countries and thirty-one ensembles (New Music:New Audiences, 2014). This had a similar approach to 'Interfaces', aiming to develop new concert formats but more narrowly for contemporary classical music. The project focused on

audience engagement, exploring different way that new music can reach a new audience through drawing on five themes: 'Ditching the Concert Hall'; 'Engaging Young People'; 'Online with your audience'; 'How music and audience meet'; and 'Mixing the art forms'. Key findings from this research include: 1) the venue matters and you can reach larger audiences by leaving the concert hall; 2) audiences prefer informal, social concerts; 3) younger people don't want to be passive listeners and enjoy challenging music; 4) different demographics have contrasting relations to music depending on socio-cultural factors; and 5) marketing is important – what we say about concerts matter. The research highlighted that so many factors influenced the research and each ensemble must find its own form for effective audience engagement and development – 'Audience development can be seen as a sort of journey, where musicians learn to conceive their concerts in tune with their audience' (New Music:New Audiences, n.d.(b)). In other words, practitioners must develop a holistic experience within a niche that is presentable to specific audience sections.

This stress on targeted audience engagement has similarly been underlined by 'Understanding Audiences for the Contemporary Arts Project (Insight and recommendations from the largest qualitative study of contemporary arts audiences in the UK)' by SPARC (Sheffield Performer and Audience Research Centre) (Pitts and Price, 2019). This was a collaborative research project which worked with organisations across four UK cities (Birmingham, Bristol, Liverpool and London) from 2017-19. The project adopted a qualitative approach: interviews with audiences (135 members) and staff at contemporary arts organisations in the city, as well as ethnographic observations at contemporary arts events. From this, the summary report identified consistent markers of event success and key thematic observations across the four cities (including locally Birmingham). Reaching new audiences, it concluded, depended on

factors like creating hospitable environments for audiences to feel part of a social community for engaging with unfamiliar artworks without necessarily 'liking' them; targeted marketing that encouraged new audiences to have new experiences; working to ensure inclusion and access; and building partnerships across mediums so as to 'share' assets and audience penetration resources (Pitts and Price, 2019).

There has been research into audience consideration from acousmatic perspectives, but this has principally not been undertaken from an audience development perspective. Instead, since the late 1990s, much work has focused on the communication of composers' intentions with the audience. Delalande in 1998 describes listening to music as involving several behaviours, providing a series of behaviours which composers can skilfully consider use as compositional strategies to engage with the listener; such themes were further explored by Elizabeth Anderson (2011), who tested Delalande's strategies, learning from listeners' responses in order to apply them to compositional practice, prompting the conception of a new, integrated reception behaviour framework for electroacoustic music. Another example is by Pascal Terrien who explored how non-expert listeners used perceptive strategies drawn from other listening situations, in order to understand the existing relationships between the auditory experiences of listeners familiar with musical listening, but not of electroacoustic works, and their perception of an electroacoustic work (Terrien 2006; Terrien 2012).

Similar considerations have informed the research of 'The Intention/Reception project' undertaken by Rob Weale and Leigh Landy, which is more orientated towards questions of engagement. This project investigates the responses of audiences to works of acousmatic music, drawing on Landy's previous SHFs (Something to Hold on to Factor) in 1994–a list of

factors that a listener uses to make sense of and appreciate a particular work. 'Today's listener, especially those who have had little experience with timbral composition, can profit by having something to hold on to in works in which many traditional elements are not prominent' (Landy, 1994, p.49). Within 'The Intention/Reception project' this research involved introducing unknown works to people and evaluating their experience through repeated listening and introduction of composer's intentions to monitor to what extent familiarity contributed to appreciation and access, and where intention and reception meet within EA music, leading to Weale adding to the list of SHFs (Weale, 2006). This project considered how composers can develop and change compositions to strengthen their communication and intentions, whilst not needing to necessarily change their aesthetic or style. The project highlighted two key discoveries: 1) people with less listening experience in general favour works in which there is a clear intention involved and where they are able to discover what the dramaturgy of the works are; and 2) access for the chosen works in inexperienced groups ranged from just under 60% to just under 80%; with effective SHFs communication including the title, dramaturgic information, recognisable sounds and the imagery established through sounds. SHFs can be used by practitioners to understand general strategies used by a potential new audience to access and appreciate certain types of electroacoustic music. The project demonstrated that potential appreciation was much higher for electroacoustic music within inexperienced groups than previously imagined (Landy, 2006), and that abstract works were the most difficult to interpret, identify and appreciate for inexperienced audiences. Furthermore, it is also important to note that 'these projects have generally presented works within controlled testing conditions and therefore, their results do not reflect the role that concert presentation and multichannel loudspeaker systems might play

in the interpretation process' (Knight-Hill, 2015, p.1), questioning how the use of space and presentation may alter an audience's perception of a work, and as a result consider how a more holistic experience of an electroacoustic concert might help to inform future practice (Knight-Hill, 2015).

However, as highlighted by Weale, it is not enough to simply hope that listeners outside of the electroacoustic community will find their way to this genre of work, and highlights that an active approach towards broader dissemination requires 'finding the means of making the listeners aware that such music exists in the first instance, i.e. *marketing',* and touched upon the issue of categorisation of salient features (Weale, 2006, p.18). This is also mirrored in research, seemingly unique, relating to the marketing of electroacoustic composition by Rosemary Mountain in 2004 (Mountain, 2004). Here Mountain highlights the potential for specific aesthetics and characteristics, such as form, timbral palette, mood etc. being more salient features for groupings of CDs, or for concert programmes, rather than the common practice of focusing on geography, chronology and specific schools, as the latter is becoming less relevant due to the internet and home studios. It is from such a vantage of enabling audibility through targeted measures towards the audience that my approach, aesthetically and practically, proceeded.

Finally, there has been some research into the engagement of young people and electroacoustic music, but primarily focused within pedagogy. EARS: Electroacoustic Resource Site (Landy et al., 2002), EARS 2 (Landy et al., 2014) and Compose with Sounds (Landy and Pearse, 2019) are resources for learning and education, to introduce people of all ages (in particular secondary education aged and teachers) to learn, listen and create with

electroacoustic music, in order to assist learning and subsequently gain interest in composing 'sound-based music'[3] (with the free creative software package Compose with Sounds); with all projects aiming to address making innovative music accessible to inexperienced audiences, and aiming towards enhancing learning through technology. The EARS 2 project, where learners complete a 'language course' in listening training, and acquire a 'map' (concepts of electroacoustic music), revealed that the concept-based teaching approach was successful and that listening training was found to be much more important than anticipated, and that the curriculum proved to be successful in helping inexperienced listeners to understand 'sound-based' music (Landy et al., 2014). Other supporting school-based research includes a study in which high school students display a growing ability to engage in 'high-order critical thinking skills' in relation to electroacoustic music, who used a Digital Audio Workstation to manipulate and structure sounds (Higgins and Jennings, 2006); and introducing sound-based music ideas and concepts into the classroom with pupils aged between 11 and 16 (Savage, 2005). Furthermore, the research projects in one form or another consider that music appreciation cannot be fostered by pure listening alone, and that individual exploration and participation foster music appreciation (Barrett, 2007). Through considering different methods to enhance listener's knowledge, providing teaching resources that will enable easy access to materials, and also opportunities for younger people to actively participate and compose with sound; this research is focused around the aim of learning to subsequently gain interest in composing 'sound-based' music.

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[3] A term coined by Leigh Landy (2011).

2.2 THE AUDIENCE DEVELOPMENT PERSPECTIVE

It is in this context that it will be productive to turn to contemporary approaches to 'audience development'. These perspectives are underpinned by a desire to change the present, deploying anticipatory actions to alter the dynamics of potential and current audiences. The definition offered by the European Commission emphasises the social aspect, stating, 'audience development is a strategic, dynamic and interactive process of making the arts widely accessible. It aims at engaging individuals and communities in experiencing, enjoying, participating in and valuing the arts through various means available today for cultural operators, from digital tools to volunteering, from co-creation to partnerships' (European Commission, 2012, p.1). It is a key area of policy at both a national and European level. For instance, the European Commission has a dedicated Audience Development fund to 'stimulate interest in, and improve access to, European audio-visual works, in particular through promotion, events …and festivals' (European Commission, n.d.).

An audience development plan may aim to (1) reach more people; (2) increase range/social diversity; (3) attract the less engaged; and/or (4) increase depth and quality of experience (Audience Agency, 2017). The intention here is to build upon creative, social (increasing engagement with less engaged audiences, overcoming barriers) and/or educational/experiential elements (quality of experience, learning opportunities), in order to develop an approach to identify goals for reaching particular audiences. As a result the strategy may: (1) **maintain** existing audiences; (2) **deepen/ extend** relationships with existing audiences; (3) **engage new** audiences **similar** to existing ones; and/or (4) **reach new and different** kinds of audiences (Audience Agency, 2017).

The 'Study on Audience Development - How to place audiences at the centre of cultural organisations' (Gariboldi et al., 2017) highlights two main aims for addressing audiences: (1)

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widening already active audiences and deepening their experiences, with (2) simultaneously diversifying the present audience to target new audiences. From this, the study provides three main audience categories (Gariboldi et al., 2017), and considers Kwashima's approach (2000) to audience development sections as strategies to reach these categories (see *figure 1*).

Audience by habit

People who participate in cultural activities already, and for whom barriers to access can be more easily overcome through strategies such as audience education and taste cultivation (see *figure 1*). This is where audiences are familiar with the same idea of being an audience, and that cultural experiences are part of their identity.

Audience by choice

There are multiple reasons why this audience doesn't participate e.g., lifestyle, financial resources, lack of opportunities; and for this audience participating is not a habit. Extended marketing, along with education and participatory approaches, may reach this audience.

Audience by surprise

Hard to reach audiences who do not participate in cultural experiences for various complex reasons, such as education, accessibility or social exclusion factors. Long-term and specific targeted approaches (such as community programmes) are required for participation with this audience.

Figure 2 provides a visual diagram combining all three strategies proposed within 'Study on Audience Development - How to place audiences at the centre of cultural organisations' (Gariboldi et al., 2017, p. 12), and *Figure 3* places these strategies within an Ansoff Matrix (Ansoff, 1957) (Gariboldi et al., 2017, p. 13), a strategic planning tool which can be used as a framework for devising strategies. Here the x axis places the culture offer (existing

programmes/products) from existing to new, and the y axis, the audience from existing to new, to help position and devise strategies for future work and highlights how each of the strategies interact. For instance, to deepen the engagement of a current audience, the matrix indicates that this strategy would target more existing/current audiences, in which this audience attends/participates by habit and can be reached through forms of 'audience education' and 'taste cultivation'. This framework will be used as a strategic approach to devising audience development strategies within this compositional portfolio.

	Target	Form	Purpose[1]
Cultural Inclusion	People least likely to attend, eg low-income	Outreach	Social
Extended Marketing	Potential attender, Lapsed attender	The same product offered, but with improvement to cater for the target	Financial, Artistic
Taste Cultivation	Existing audience	Introduction to different art forms and genres	Artistic, Financial (and educational)
Audience Education	Existing audience	The same product offered with extensive education	Educational (and financial)

Note: (1) only refers to the main one(s), but not excluding the others.

Figure 1. Kwashima's approach - Four different types of audience development (Kawashima, 2000, p.8)[4]
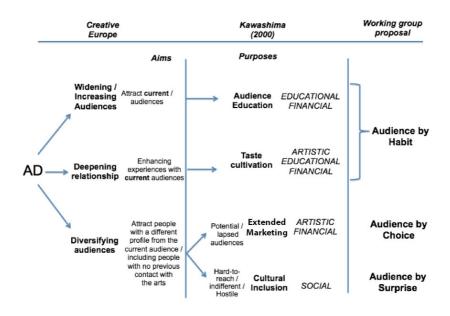
Figure 2. Three main audience categories (Gariboldi, et al., 2017, p.12)

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[4] Referenced from Kawashima, Nobuko (2000) *Beyond the division of attenders vs. non-attenders : a study into audience development in policy and practice.*
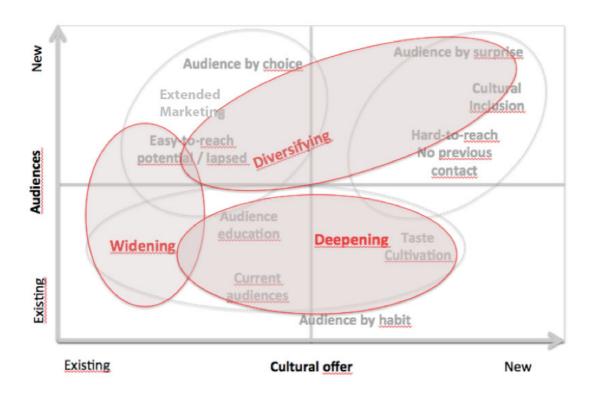
Figure 3: Re-framing Audience Development objectives in an Ansoff Matrix (Gariboldi, et al., 2017, p.14)

2.3 AUDIENCE DEVELOPMENT PLAN

Implementing such a perspective requires strategic, audience engagement planning. A recent European Commission report 'Study on audience development: How to place audiences at the centre of cultural organisations' provides a key set of strategies to find a balance between audience and artistic objectives (Gariboldi et al., 2017, p.9). The key points to be considered as organisations and/or artists are:

1. **Balancing priorities:** The audience's needs and your own. Are they coherent with your values and artistic vision?

2. Focusing, listening and understanding: What audiences do you plan to work with? Through segmenting and focusing on segments of audiences this is an effective and measurable way to engage with the audience through recognising their different needs. What methods will be put in place to listen and understand?

3. Am I/are we able to do that? This must be feasible and realistic - facing an audience challenge might be beyond current capabilities

To operate such a strategic framework, audience development plans should, where possible, be based on real evidence, rather than assumptions (Audience Agency, 2020). In order to analyse the current situation, a situational analysis - SWOT[5] (Nyarku and Agyapong, 2011) may be used. This is a method of planning a project through identifying internal strengths and weaknesses, and external opportunities and threats. SWOT analysis helps identify key facts, provide focus on what needs to be tackled and also helps the planner to maximise opportunities and reduce threats. Here this can be used to help identify my current situation as a composer, and highlight more general observations for acousmatic music, in order to situate and highlight key opportunities within this research, and also the local environment/situation within the West Midlands region (*see Table 1*).

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[5] The origin is credited to Albert Humphrey in the 1960s.

Table 1: A SWOT analysis of my current situation as a composer (Source: Personal collection).

STRENGTHS	WEAKNESSES
- Part of the BEAST (Birmingham ElectroAcoustic Sound Theatre)[6] community and team. - Access to facilities and use of equipment at the BEAST. - Emerging national and international recognition as a composer within the electroacoustic music field. - Over eight years' experience composing acousmatic compositions, in stereo and multichannel formats. - Experience in creating acousmatic compositions, sound installations and sound walks. - Specialism in composing 2D and 3D space, with experience in spatialisation, diffusion, ambisonics and binaural formats. - Interested in developing more knowledge and research in outreach, participation and working with communities. - Experience in arts marketing and coordination of music concerts, workshops and festivals. - Previous collaborations with other departments at the University and local organisations. - Knowledge and experience of working with younger people. **Acousmatic Music:** - Sound is an easily accessible medium. - Various listening strategies to introduce and engage with listeners. - The opportunity for different formats of presentation, such as via loudspeakers within a concert setting, or installation-based works. - A strong research community of composers, performers and researchers.	- Acousmatic composition is fixed in medium. - Difficult to transport and set-up acousmatic loudspeaker arrangements (for multichannel works or diffusion) as a freelance artist. - Environmental factors which have impacted research e.g. COVID-19 pandemic. - BEAST is located within a university setting. - Little recognition as a composer locally. - Limited funding for arts projects and initiatives. **Acousmatic music:** - Little awareness of electroacoustic music, locally and nationally, with audiences may not be aware that this genre event exists. - Lack of support for composers by local arts initiatives, organisations and programmes. - The genre may be too challenging for a listener to understand within a typical concert setting. - Terminology and language used. - Acousmatic music may be perceived as academic due to it tending to be practiced within academic institutions. - The electroacoustic community can leave some feeling excluded.

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[6] BEAST (Birmingham ElectroAcoustic Sound Theatre) is the concert sound system of the University of Birmingham's Electroacoustic Music Studios.

OPPORTUNITIES	THREATS
- Potential for local collaborations with arts venues, arts organisations and artists. - Potential for collaborations/fusions with different art forms. - Promotion via BEAST of compositions and research. - Satellite events locally, nationally and internationally. - Potential opportunity to work within communities and education. - Considerations with participation and how audiences may engage with compositions in different ways. - Establishing a wider network of composers and artists. - Partnership for new grants and/or research projects related to the research. - Artist development opportunities to further my practice as a composer. - Using digital platforms and social media to market beyond in person activities. **Acousmatic Music:** - Further research and insights within the field of electroacoustic music regarding engagement and audience development.	- Competition against other local composers/sound artists, arts organisations and electroacoustic institutions. - Other genres of music. - Competition of funding for grants, commissions and research projects. - Limitations of working within the timescale and research aims of the PhD. - Potential lack of ideas and limitations as a composer. - Cost of music equipment if required to be purchased. - The current political and economic environment.

The SWOT analysis importantly highlights my strengths as a composer and potential

opportunities for consideration, and indicates the general barriers that I may face, including:

little recognition as a composer in the broader local community; and that the compositions

may potentially be found to be too challenging for a general audience, in particular if the

'fixed medium' compositions are presented within the traditional concert hall setting.

However, drawing on the opportunities, such as potential collaborations (with arts

organisations and artists) and considering levels of participation (whether through passive or

active listening, to more participatory sound installations) within my compositions may help

to widen and deepen audiences' relationships with my work. These factors will be further considered situationally within the Ansoff Matrix and when considering the effectiveness of audience engagement strategies for particular audience segments.

Having identified these internal and external factors, research and data (e.g., box office data, web data, surveys, focus groups) including audience segmentation can provide key insights into current audiences, but also identify potential new audiences that are within the ambit of the assets identified by the SWOT analysis. However, as a composer, there are limitations on data accessibility compared to an arts organisation: crucially, I do not have access to databases from arts venues, nor from specific performances. As a result, whilst the audience segmentation from the 'Interfaces' project may be considered in relation to New Music audiences specifically, as the segments explore the current New Music audience, this segmentation does not provide any data nor insights into potential new and different segments of audiences which could be reached. Consequently, considering my affiliation with BEAST and being based within Birmingham, I decided it would be most appropriate to use audience segmentation of the arts sector more widely with respect to the B15 postcode (the postcode for BEAST located at the University of Birmingham), and also the wider West Midlands region. This would enable me to address audiences within the arts sector more widely, rather than New Music audiences alone, as this audience is already an 'existing audience'.

Audience segmentation identifies audiences which share distinctive needs, preferences and/or behaviours, drawing upon geographic, demographic and psychographic factors[7]. From understanding segments of a particular geographic area and art form, this may identify new audience segments to reach with a composition portfolio. And as a result, through

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[7] There is currently no specific data for acousmatic music, furthermore highlighting the need to consider such approaches.

understanding their behaviours and motivations as audiences, various audience development and engagement strategies can be deployed in response. Thus, using data from the Audience Finder by Audience Agency (The Audience Agency, 2020),[8] the top three Audience Spectrum segments of the B15 postcode and for the West Midlands (WM) region are:[9]

B15 postcode:

1. 44% *Experience Seekers*

Highly active, social, singles, couples and younger people, often students or recent graduates, who enjoy regularly engaging with the arts. Often live close to the city centre and attend a wide variety of arts.

2. 17% *Kaleidoscope Creativity*

A mix of ages, living circumstances, resources and cultural backgrounds with a low level of engagement. Two thirds annually engage with more popular and accessible culture.

3. 9% *Commuterland Culturebuffs*

Affluent, well educated, mature families or retirees, eager consumers of culture.

West Midlands region:

1. 20% *Trips and Treats*

Reasonably culturally active, with a preference for mainstream arts like musicals, along with days out to museums and heritage sights.

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[8] Audience Spectrum segments the whole UK population by audiences attitudes towards culture, and by what they like to see and do (The Audience Agency, n.d.).
[9] Adult population of 4,765,767 people.

2. 16% *Facebook Families*

A younger, less well-off group living in urban areas, with high unemployment and less interested in culture.

3. 14% *Dormitory Dependables*

Mature well off couples of busy older families, who attend arts as an occasional treat or family/social outings, and often attend popular/mainstream events.

As can be seen, both areas highlight different Audience Spectrum segments, and as a result will have different behaviours and motivations. Below compares the B15 postcode and West Midlands region segments (e.g. #1. WM being Trips and Treats) against audiences for the Music sector of across the whole of the UK (Audience Agency):[10]

- 21% *Dormitory Dependables*   #3. WM
- 21% *Commuterland Culturebuffs*[11]   #3. B15
- 13% *Trips and Treats*   #1. WM
- 10% *Home and Heritage*
- 10% *Metroculturals*
- 8% *Experience Seekers*   #1. B15
- 6% *Up Our Street*
- 4% *Kaleidoscope Creativity*   #2. B15
- 4 % *Facebook Families*   #2. WM
- 2% *Heydays*

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[10] Figures based upon total bookers of ticketed events, professional and amateur activities.

[11] *Metroculturals* and *Commuterland Culturebuff*s – these two segments resonate the most with acousmatic /new music audiences.

From this data, three segments within the B15 and West Midlands area correlate with high participation/attendance of music nationally: **1. Dormitory Dependables (#3. WM), 2. Commuterland Culturebuffs (#3. B15),** and **3. Trips and Treats (#1. WM)**. Considering the Creative Europe audience development framework mentioned previously, these segments may be strategically approached through considering strategies to widen already active audiences in order to reach these segments and also deepen their engagement, as these segments are most likely to attend other musical events but not necessarily acousmatic/electroacoustic events specifically. In contrast, some of the highest segments in the B15 and West Midlands are audience groups that have fairly low participation in music, and will be approached with the aim of diversifying such audiences, in order to reach new and different kinds of audiences, which may be hard to reach: **1. Experience Seekers (#1. B15), 2. Kaleidoscope Creativity (#2. B15)** and **3. Facebook Families (#2. WM)**.

Considering this, these segments can be placed within the Ansoff Matrix (Ansoff, 1957), in which each segment is positioned within a framework, from existing to new audiences, and from existing to new programmes/products, to as a result position each segment strategically, in order to consider best approaches for engaging with each segment (see *Figure 4*). As a result, the segments with high participation/attendance of music nationally (Dormitory Dependables, Commuterland Culturebuffs and Trips and Treats) have been placed within the existing audience area of the matrix (with each segment's motivations, behaviours, preferences and attitudes for engagement deciding upon where they are placed horizontally; these are discussed further within *Table 2*), whilst the segments with fairly low participation in music, (Experience Seekers, Kaleidoscope Creativity and Facebook Families) have been placed within the new audience area of the matrix, as these audiences are least likely to engage with musical activities. Placing the segments within the Ansoff Matrix, highlights different audience habits, but also indicates different audience strategy approaches to engage

with these segments. For instance, Commuterland Culturebuffs is a segment which is affluent, well educated, often mature families or retirees and eager consumers of culture. This segment tends to lean towards more traditional and classical offerings, and will be most familiar with the concert hall setting. They tend to be highly educated, older in age and resemble more the average New Music audience; they are an audience of habit, and their experience may be deepened through audience education. The segment is continually looking for further ways to get involved and participate in new ways, with artist talks and further dialogues and discussions with composers and performers 'deepening' their experience. Meanwhile, with the Facebook Families segment, this is a younger and financially less well-off group often living in urban areas, with high unemployment and are less interested in participating in culture; the matrix indicated that this audience is more likely to be reached through surprise, with cultural inclusion through the form of outreach needing to be considered in order to engage with this segment. This also resonates with this segment's preferences and *Table 2* highlights that ways in which to engage with this audience include activities such as free family friendly offers, to activities involving community engagement, and outreach programmes and workshops.

Table 2 draws upon the Audience Spectrum Pen Portraits (The Audience Agency, n.d.) and highlights the key characteristics, behaviours, preferences and attitudes of each segment, along with considerations and suggestions in relation to acousmatic music, in order to consider different engagement strategies and approaches within this composition portfolio and to reach the different segments distinguished and considered within the larger audience development framework.
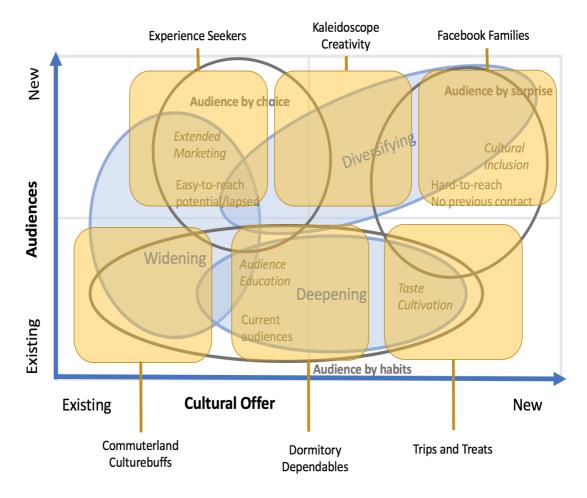
Figure 4. A revised Ansoff Matrix with Audience Spectrum segments (Source: Personal collection).

Table 2: A revised SWOT analysis with Audience Spectrum Pen Portraits (Source: Personal collection).

1. **Market Development**	2. **Diversification**
Aim: To attract new audiences for the first time. **Strategies:** **Experience Seekers:** ● This segment is mostly in search of new things. Highlighting the immersive and challenging nature of acousmatic music through marketing and taking acousmatic music to unusual spaces may be ways to reach this segment. ● This segment is very digital and shares experiences via social media. Events, social media channels and online live-streams/performances may be ways to reach this segment - in particular as this is the main method for this segment finding new activities to participate in. **Kaleidoscope Creativity:** ● Potential for partnering concerts with other local community programmes and groups. ● Consider financial and accessibility constraints - a need to provide cheaper or free concerts/ events. ● High profile 'treat' events such as a famous musician attracts this segment. Consider programming of artists which engage with their interests. **Facebook Families:** ● Free family concerts and drop-in activities, in particular within a relaxed environment involving participation, rather than in a concert setting.	**Aim:** A new cultural offer for a new audience. **Strategies:** **Experience Seekers:** ● Unusual combinations e.g. cross-genres and mixed art forms may grab this segment's attention. ● Consider how the use of 3D space through spatialisation and multichannel acousmatic compositions may provide new experiences, in particular with other immersive technologies. ● Creating opportunities for the segment to participate in social activities. **Kaleidoscope Creativity:** ● Free outdoor, local events and activities. ● Events and/or activities involving creative participation are appealing to this segment. ● This segment is more interested in mainstream culture, may consider collaborations and/or compositional fusions with such genres for this segment. **Facebook Families:** ● Free family friendly offers e.g. festivals or drop-in activities as this group often socialise and go out as a family. ● Engaging this group with more contemporary products will involve community engagement, outreach programmes and workshops over a long period of time. ● Activities which involve children may be most effective at reaching this segment e.g. local partnerships with schools or community groups. ● Participation involving children.

3. **Market Penetration**	4. **Product Development**
Aim: Increase frequency of attendance of current audiences and encourage lapsed ones to return.	**Aim:** Extend range of cultural offering to current audience and trial.
Strategies:	**Strategies:**
Dormitory Dependables: ● This segment usually attends arts events to find opportunities to socialise, relax and be entertained. Informal concerts and relaxed educational talks and Q&A's may resonate with this segment. ● A high digital presence and are most responsive to email communication and other direct communication channels such as phone and SMS messaging. ● More online resources and information is vital as this segment requires a lot of information and background information.	**Dormitory Dependables:** ● Potential for fusions with other popular genres. ● Considerations for taking acousmatic music outside of the concert hall settings as this segment is interesting in visiting installations and arts exhibitions.
Commuterland Culturebuffs: ● The traditional acousmatic concert/s offering is most likely to appeal to this segment and be familiar with the concert hall setting due to its leaning towards more traditional and classical offerings. ● High quality art is important to this segment and are most likely to attend well-established performances and productions. Through including well-known artists/composers will attract this audience. ● Create a mailing list to maintain regular contact.	**Commuterland Culturebuffs:** ● Exclusive access events such as artist talks and encouraging dialogue and discussions at concerts. ● Consider more participatory events as this segment is always looking for further ways to get involved and participate in new ways.
Trips and Treats: ● Targeted family orientated activities such as family concerts may appeal. ● Websites and social media should be clear and effective to reach this group, along with local newspapers and radio being key sources for marketing. Local promotion via third party organisations at a community level may be effective to spread the word also.	**Trips and Treats:** ● Fun days and workshops will appeal to this segment as they enjoy participating in fun, family friendly, educational activities. ● Events which focus specifically around children's participation should be considered. ● Potential collaborations with museums and other outdoor sights to reach this segment out of the traditional concert hall setting.

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2.4 ARTS ENGAGEMENT

It is at this stage that we enter the orbit of 'arts engagement', a term which refers to the more practical means by which organisations and artists reach and engage with audiences. The approach (a more operative side of audience development) explores the ways in which the public are involved with cultural content via activities and mediation devices, from going to events or exhibitions, browsing content online, doing participatory activities, volunteering and so on. Literature focusing on audience engagement in the Arts sector include the histories and theories of audience reception and behaviour (e.g. Bennett, 1997; Blau, 1990); psychology of audience experience (e.g. Burland and Pitts, 2014; Radbourne et. al, 2013); and engaging and educating young audiences (e.g. O'Toole et al., 2014), amongst other research.

'Motivations for and experiences of attending arts events have been shown to involve an intertwining of practical decisions on the one hand, relating to availability, accessibility and artistic preferences, and philosophical perspectives on the other, concerning the place and value of the arts in individual lives, local community and wider society' (Pitts, 2016, p.1189). Motivations for attendance may also be due to social reasons, such as supporting a friend or family member, and was a key observation within the Interfaces project, as it was highlighted that only 27% of the New Music audience attended by themselves; with other motivations for attendance including 46.4% for the music, 18.9% for the location, and 15.6% because it was free, amongst other factors including the composer, orchestra/performers and the work(s) (Dorin, 2020).

In addition, there are 'continuums of participation' with audiences attending occasionally to frequently, from casually/passively to fully immersed/engaged audiences; with levels of engagement sometimes being determined by interaction; (1) navigation, (2) participation, (3)

conversation and (4) collaboration, with the latter providing the highest level of engagement (Smith and Dixon, 2007, p.563-98). The Engagement Mix (The Audience Agency, 2017) (the traditional four P's of marketing (McCarthy, 1960) with C's of community engagement) can help to plan how to reach certain strategies and audience segments: (1) Programme/ product, (2) Place, (3) Price, (4) Promotion, (5) Community involvement, (6) Content and (7) Co-creation (Audience Agency, 2020). These elements can help an artist/arts organisation to consider how to most effectively reach audiences but also stand out from competition, whether this be creating a new experience or programme, or developing more opportunities for people to get more involved, or creating new platforms or channels of dissemination.

Drawing upon the specific electroacoustic audience development research, and the audience spectrum segmentation (specifically motivations and preferences as seen in *Table 2*), I developed key strategies of audience engagement, which were further supported by the strategies found within both 'Understanding Audiences for the Contemporary Arts Project' (Pitts and Price, 2019) and the 'New Music:New Audiences' project (New Music:New Audiences, 2014):

Understanding Audiences for the Contemporary Arts Project

- Creating cities for the arts (#1. Place)
- Venues and spaces (#1.Place)
- Art form differences (#4. Mixing Art Forms)
- Birmingham's Culture Feast (#6. Collaboration)
- Building partnerships (#6. Collaboration)

New Music:New Audiences

- Mixing art forms (#4.Mixing Art Forms)
- Exploring venues and concert formats (#1. Place, #5. Formats and Participation)
- Experiencing music (#5. Formats and Participation)
- How music and audience meet (#5. Formats and Participation)
- Online with your audience (#3. Digital and Online)
- Engaging young people (#2. Engaging Younger People)

Thus my exploration of the following six themes/strategies will be discussed further in the next chapter, specifically targeting the insights of audience development research in relation to acousmatic music:

1. **Place**

   To reach Experience Seekers, Kaleidoscope Creativity, Dormitory Dependables. Engagement strategies may include taking acousmatic music outside of the concert hall to unique venues, to performing compositions at festivals or other outdoor community events.

2. **Engaging Younger People**

   To reach Facebook Families, Trips and Treats.
   Engagement strategies may include devising a series of workshops or participatory events, or family concerts in order to reach this demographic.

3. **Digital and Online**

   To reach Commuterland Culturebuffs, Experience Seekers, Dormitory Dependables. Engagement strategies may consider the use of online platforms to share and promote work online, along with the potential for acousmatic music to utilise other immersive technologies such as AR, IR, MR and VR.

4. **Mixing Art Forms**

   To reach Experience Seekers, Dormitory Dependables.
   Engagement strategies to explore acousmatic compositions with other art forms, in particular with visual image.

5. **Different Formats and Participation**

    To reach Facebook Families, Commuterland Culturebuffs.

    Engagement strategies to explore how acousmatic compositions may be presented

    differently and may provide different levels of participation during and beyond

    listening.

6. **Collaborations**

    To reach Experience Seekers, Kaleidoscope Creativity, Dormitory Dependables.

    Engagement strategies may consider the potential for collaboration with arts

    organisations and artists in order to connect with harder to reach segments.

Each theme has been placed within the Ansoff Matrix in *Figure 5* in order to highlight which

segment's of the matrix may be impacted by each theme/strategy, with collaboration having

the potential to supplement all strategies.
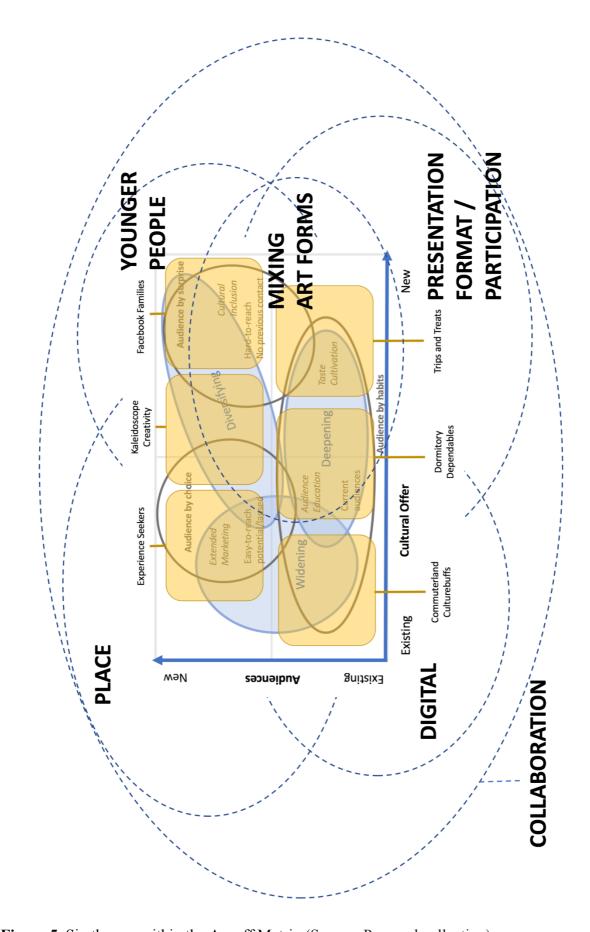
Figure 5. Six themes within the Ansoff Matrix (Source: Personal collection).

As can be demonstrated, considerations with regards to place and digital may be more so considered for 'existing' audiences, whilst engaging with younger people and mixing art forms will be considered to reach 'new' audiences, and presentation formats and levels of participation may 'deepen' and 'diversify' audiences. In the following chapter, each theme considers a variety of engagement approaches in relation to the arts sector more broadly, and also acousmatic specifically, drawing upon compositions from the portfolio as explorations of each theme, with the aim of primarily:

1. **Reaching new audiences**

   Whether this be through widening, deepening and/or diversifying audiences beyond the current audience, and considering the best ways as a composer to approach this.

2. **Reaching younger people**

   To consider and develop how other additional activities may engage with this hard-to-reach audience.

3. **Accessibility**

   To consider the barriers to acousmatic music e.g., terminology, venue, online, format etc. and the ways in which my research may accommodate this.

3. COMPOSITIONAL EXPLORATIONS

This chapter explains how I employed the audience development and audience engagement strategies outlined in chapter 2. Similar themes have been identified in projects, 'Understanding Audiences for the Contemporary Arts Project' (Pitts and Price, 2019) and the 'New Music:New Audiences' project (New Music:New Audiences, 2014); the aim in my work was to employ these strategies with reference to electroacoustic music more specifically. In each section works from my composition portfolio are referenced and discussed, highlighting how I have been influenced by such research, supported by audience and personal observations.

Chapter 4 provides a short breakdown of each composition within the composition portfolio, including compositional approaches, dates of events etc.

3.1 DITCHING THE CONCERT HALL:
If you are struggling to get audiences to come to you… why not go to them?

Venues can significantly affect an audience's experience. They may enhance, disrupt, or even blend to form part of a performance/artwork (Pitts and Price, 2019). For varying musical formats, from a traditional performance within a concert hall to a site-specific composition presented outdoors or within a gallery or larger space, each space may provide different and even new experiences for the audience. As highlighted in 'Understanding Audiences for the Contemporary Arts' (Pitts and Price, 2019), the venue affects its audience from the moment they arrive, with aspects such as a welcoming environment from staff, amenities (e.g., toilets, refreshments), accessibility, and the comfort of the experience affecting the overall level of engagement; with audiences of contemporary arts preferring smaller venues, to provide more

intimate experiences, whilst younger audiences (18-35 years) require performances in places and venues they are already familiar with and enjoy (New Music:New Audiences, 2014). Safe spaces along with audiences' expectations of what to hear within such environments can play a significant part in engagement. How audiences are introduced to a space, and in hand the music, may encourage or discourage audiences to take risks in the future, in particular with more challenging works such as electroacoustic composition.

As mentioned previously in chapter 1, acousmatic music is traditionally presented in a concert hall setting, in which the listener is surrounded by multiple loudspeaker arrays, seated in rows, typically within a dark/dimmed room. To those who are familiar with this presentation format, this may appear appropriate and fitting, perhaps even providing an ideal listening experience. But, to others, this may seem extremely alienating – why is it dark, why do we sit in rows, why do we sit in the centre of a series of loudspeakers? It is important to consider how each space/venue will add to the audience's experience - if audiences are unfamiliar with a venue, and in particular a 'dark setting' of challenging, contemporary works, it may be possible to ensure their fuller engagement with the material through audience engagement strategies, such as marketing.

In addition, as a wide variety of electroacoustic loudspeaker systems in the UK are based within academic institutions, it is important to question if many of these offer similar experiences such as a welcoming environment from staff, amenities, links to transport etc. to those of other local arts venues, and which, as was acknowledged earlier, have an important role to play in audience engagement. The institutional setting within 'high-art' or 'highly-educated' spaces is generally heavily tied within a western music tradition, and therefore as we sit facing forwards within a silent room, what role does this play? Some audiences may be expecting to see instruments, and other traditional musical features such as tonality and

performers - parameters which are sometimes not present at all within an electroacoustic concert, and more specifically acousmatic compositions. There are also social/political barriers between audiences and whether they feel comfortable and welcome attending events held at such institutions.

Previously such loudspeakers systems would often tour and adapt to existing concert venues, but over time more and more specialised purpose-built spaces for electroacoustic music have been built, with examples including the BEASTdome at Birmingham (BEAST), Sonic Lab at Belfast (SARC), Klangdome (ZKM) to name a few, meaning that institutions have increasingly remained within their purpose-built spaces, rather than taking the touring systems out to other spaces. It is worth noting, however, that considering such spaces are often conceived as 'ideal' spaces[12] for the presentation of this genre of music, the 'experience' may offer a route in for particular audiences; the presence of visual stimulation of loudspeakers and technical equipment and the fact that these spaces are designed to hear fully immersed spatialised sound could offer a new, different, and/or challenging experience. It is here that marketing strategies may be used to entice specific audiences, especially audience segments such as Experience Seekers who are always on the search for new experiences and to be challenged.

Recently, there has been some effort from educational institutions to move festivals and events outside of the concert hall. These include MANTIS (University of Manchester), who regularly holds off-site live improvisations at small local bars at the end of the MANTIS festivals (and have performed at venues across the North West including the Whitworth Gallery and the John Rylands Library) and BEAST's annual festival, BEAST FEaST which has in more recent years held an after-party/closing event at Birmingham Open Media, again

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[12] – 'the function of the concert loudspeaker system is to present the listener a soundfield as near as possible to that which the composer heard in the studio during composition'. (Emmerson 2007: 147-148).

with live improvisations (and have in previous years performed weekend concerts and festivals at other local venues such as the CBSO Centre and the IKON gallery in Birmingham), with both programming more improvisatory electronic performances over acousmatic music for these contexts for closing events.[13] Meanwhile, Sound Junction (University of Sheffield) transports a 8-channel loudspeaker set-up to different cultural venues across the area to give performances with acousmatic, live electronics, and video elements. Whilst such institutions are considering spaces outside of the concert hall, the question remains, is this enough? As highlighted by the composer Robert Normandeau, within 'The ritual of the electroacoustic concert' (2014),

> 'electroacoustic music has become an institution whose main center of activity is in educational centres and more specifically in the music conservatory and university. These productions seem to want to emulate professional concerts with international guest artists, high quality sound and a captive audience, but they are rather almost always held internally, often without ticket sales and benefitting from little or no advertising, especially towards the general public, who is increasingly difficult to reach';

and highlights that this type of concert is 'suffocating' the genre, with the only exception being in small towns where the university is the only creator of music. Consequently, through exploring additional ways to move outside of the concert hall or creatively invite audiences to such spaces may be required in order to diversity and reach new audiences. Composer Françoise Barrière states,

> 'Should we not rethink the ritual of the concert so as to stimulate curiosity and listening appetite, to overcome resistance and prejudice? We need to find [...] ways

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[13] This may be due to logistical considerations over speaker configurations in such venues.

and means of creating an atmosphere [conducive] to 'sympathetic' listening, the only

sort that can set up a complicity with the listener, a complicity he needs to be

receptive' (≈, 1998, p.208).

Andrew Knight-Hill attempted to respond to these issues in the project *Hear This Space*,

which 'aimed to explore the space and context of presentation as a primary element in

contextualising electroacoustic music for new audiences' (Knight-Hill, 2015, p.7). Here, the

project delivered site-sensitive events, utilising loudspeaker orchestra systems curated

specifically around themes/ideas of the context and installation within spaces, such as

galleries, churches and factories; and the curated works composed specifically inspired by the

space or location and for the different contexts of presentation (Hear This Space, 2015). The

intention was to 'construct site sensitive events, engaging experiences in which concert and

space became entwined' (Knight-Hill, 2015, p.7). The study also demonstrated how more

mobile, small-scale and non-traditional systems for performances and through exploring non-

traditional venues and contexts may produce greater possibilities for engagement and

audience exchanges, drawing upon the possibilities of what 'reduced, causal and semantic

interpretations of sound can provide' (Knight-Hill, 2015, p.7).

This study follows from the recognition, in 'New Music:New Audiences', that 'most

audiences want welcoming and cosy venues where they can sit near the musicians, not in

rows' (New Music:New Audiences, 2014, p.14). Considering this in relation to my

composition portfolio, I adopted a similar approach with the composition, *Sketching Froanna*

(see section 4.7). This 8-channel composition was presented as a sound installation at The

Barber Institute of Fine Art Gallery, as the composition remained on loop throughout the

event, and enabled audiences to come and go as they please, with many asking questions and

having discussions with me as a composer. The fluidity of the event provided in-depth

discussions, with some listeners then choosing to sit and listen for multiple times afterwards to the full length of the composition. Another work, *I want to tell you a story...* (see section 4.9), a sound installation formed in collaboration with the Birmingham Hippodrome for the Summer in Southside Festival, was held in the foyer of the theatre and engaged with just under 2000 people over the course of the week, reaching audiences of those who were familiar with Birmingham Hippodrome's work and/or comfortable with exploring family events within the city centre (this installation may have especially resonated with Facebook Families and Kaleidoscope Creativity audience segments).

It has been shown that large scale outdoor free events can increase engagement numbers, and when integrated into other strategies may build longer-term connections and reach wider communities, with open-door events in cities encouraging audiences to explore unfamiliar places and venues and try new arts experiences (Pitts and Price, 2019, p.7). The role of community events and venues 'in supporting regional venues provides a mechanism for delivering arts engagement to socially, economically and culturally isolated communities' (Adamson et al., 2008, p.2), and may in hand reach audience segments, Facebook Families and Trips and Treats. Public sound art at such spaces may reach out to and invite audiences by chance rather than imposing engagement, enabling audiences to encounter works unintentionally and informally (Batchelor, 2013) and in hand encourage the public to attend other events in the future.

Both *Sound Sculpture*s (see section 4.4) and *Ancestor I* (see section 4.5) were created for and presented outdoors. *Ancestor I*, an outdoor site-specific and site-responsive sound installation was commissioned for the Green Heart Festival, connected with communities from the Birmingham region, along with other attendees of the festival and events happening over the weekend across campus, leading to a vast number of listeners varying from the passive to the active. As the sound installation was fixed to a bench, this enabled audiences to also sit and

listen to the work, exploring how the work interacted with its environment and the sculpture, *Ancestor I.*

Meanwhile, *Sound Sculptures,* an augmented reality sound trail accompanied sculptures across the University of Birmingham campus through miniature acousmatic compositions via the SOUNDwalker app (Mahtani and Armstrong, 2018) and Soundcloud. This project engaged with participants of the Arts & Science Festival 2018. Both projects' consideration of place and relationship with the environment, was influenced by the soundscape composition tradition, 'a form of electroacoustic music [...] characterised by the presence of recognisable environmental sounds and contexts, the purpose being to invoke the listener's associations, memories, and imagination, related to the soundscape' (Truax, n.d.). Ancillary projects such as soundwalks, soundmarks, sound maps and mobile music have the potential to take audiences to different places beyond the fixed sound installation through the use of technology. Sound walks were promoted as part of the *Sound Sculptures* project to offer a guided experience of the trail and enable listeners to come together to listen collectively, rather than as an isolated encounter, in order to turn the experience into a social event, where the audience could ask questions as they wish.

Younger audiences (18-35) require performances in places and venues they are already familiar with and enjoy (New Music:New Audiences evaluation report, 2014). Considering this, the supporting workshops for the compositions, *Water Waves* (see section 4.1), *A Flavour of Tears (*see section 4.3*)* and *Abstracted Objects* (see section 4.8) were held at other arts organsiation's venues which I had collaborated with: the Ikon gallery and The Barber Institute of Fine Arts. This was chosen specifically to bring acousmatic music to their safe space, and formed part of the organisations regular activity of events engaging with the specific groups in order to draw upon introducing challenging works within a space that they are comfortable and unfamiliar with, rather than inviting the group to attend a workshop at

the University, which may have provided a barrier and in hand have resulted in less participants. The results of the workshop are discussed in section 3.2.

Finally, it is also important to note that throughout my research I have also performed my compositions at other local venues and arts spaces such as Artefact (an artist-led, community-focused arts space, in Stirchley, Birmingham), in addition to festivals such as Ideas of Noise (festival of experimental sound based in Birmingham), along with performances in traditional concert halls. Whilst presenting my compositions within the traditional loudspeaker settings (and the diffusion) of such works is an integral part of my development and compositional output, as these compositions have been written specifically with such settings in mind (in particular for 8 and 16 channel formats), it is the discussions and connections made at smaller local and sometimes 'untraditional' venues which have often had the most impact on audiences. Here conversations have been initiated on how audiences want to know and learn more – and where they can listen to the works with the full spatial experience of loudspeakers, within environments such as BEAST. This furthermore supports the importance of touring loudspeaker systems, sound installations, and smaller satellite events locally, with the aim of not only finding new audiences but providing different experiences for current audiences, as 'different venues made concerts feel like a new experience, they heightened audience perceptions, inspired them and encouraged them to try the unfamiliar' (New Music:New Audiences, 2014, p.13). And, as a result, these strategies may widen, deepen and also diversify audiences beyond the current audience, in particular audiences by choice and by surprise.

3.2 ENGAGING YOUNG PEOPLE:

Opening the door to the next generations of acousmatic talent...

> 'Involvement with arts and culture is crucial to imagination, self-expression
> and creativity in young people. It also develops the skills that fuel the success
> of the UK's creative industries, and that will result in the next generation of
> creative talent across the country.' (Arts Council England, n.d. (a))

This section will elaborate on my approaches to engaging with younger people[14], a core segment/demographic, continually targeted within the Arts sector: in particular, this demographic is recognised as the future audience, as 'getting people engaged in the arts when they are young can mean that they have a lifelong relationship with the arts' (Tait et al., 2019, p.2). Research shows that children at schools with a higher cultural offer are significantly more likely to consume a range of arts, cultural and creative activities (Tait et al., 2019); indeed, 'arts education was found to be the strongest predictor of arts creation and consumption', stronger even than socioeconomic status, race/ethnicity and gender (Bergonzi and Smith, 1996, p.15). Yet whilst education within schools can broaden perceptions of arts and culture, this provision is often inconsistent (Tait et al., 2019). Thus, as Deborah Bull questions, "...if they don't get it in the education system, where are they going to get it?" (Amstrong et al., 2018, p.13).

There is potential for artists, arts organisations, charities and other music services to fill this void, offering alternative experience outside of educational contexts and in hand provide different forms of engagement, from one off events or programmes, to art collectives, or courses and learning activities; with more practical/ participatory opportunities (ART 31,

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[14] Further findings from the workshops are discussed in Chapter 4.

2018). Consequently, when considering how to approach the younger people segment for this composition portfolio, I chose to collaborate with other local arts organisations in the region rather than exploring school settings, in order to reach younger people in non-educational contexts and provide an alternative learning experience. This led to workshops and events with the IKON (*Water Waves),* The Barber Institute of Fine Arts *(A Flavour of Tears* and *Abstracted Objects),* Birmingham Hippodrome *(I want to tell you a story...)* and Sampad (*Lori Lullabies)*, where all four organisations have an established series of events with younger people and/or early years groups, consequently giving my work a pathway of access to this demographic.

Considering that 'young people are more likely to engage with something recognisable' (Tait et al., 2019, p.26), it was important to draw on the familiarity of using venues with recognised young person activities in the region (Tait et al., 2019). As a result, the workshop at the Ikon entailed working with the Ikon's Youth Programme (a group of young people aged between 16-21 years), whilst at The Barber Institute, the BEAST: Sonic Paintings workshops[15] *(A Flavour of Tears)* formed part of their 'Families First' series (family days and art workshops for early years) and the Found Noise workshop (*Abstracted Objects)* engaged with the Barber Collective (a youth programme for 16–21-year-olds). The sound installation *I want to tell you a story...* was part of the Summer in Southside programme, forming part of their annual family festival held in the Hippodrome square and Arcadian in the city centre of Birmingham. All activities formed part of each organisation's engagement and outreach strategies, reaching regular attendees but also new participants who had never attended events with the organisations before; this was most noticeable with the IKON, as 66% of the participants at the workshop had never attended an event at the gallery before - this may be because the

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[15] The workshop feedback questionnaire highlighted that 41.6% of the participants regularly attend events at this organisation.

workshop took place in the city centre, because the gallery has a sound art following, or perhaps because the participants were looking to participate in something new and different (The Audience Agency, 2013). Such activities are thus ideally suited to reach the Facebook Families and Trips and Treats segments.

Considering this demographic, 'progression and sustained engagement comes from opportunities to participate', with active participation being more effective and having longer lasting impact to passive engagement (Sound Connections, 2018, p.3). Emile-Jacques Dalcroze and Shinseki Suzuki highlight that music learning is most beneficial when leaders/educators create musical communities of practice that allow children to learn through participation. Consequently, all activities targeting younger people involve some form of active participation. For instance, each workshop was structured around a variety of different activities; 1) discovering the medium of sound - whether in a gallery, or through the introduction with different art forms, 2) listening (to acousmatic compositions) and finally 3) creating (performing with sound objects), moving from personal to group activities, as effective group activities can provide different levels of participation, and accommodate different developmental levels and learning styles, structured in particular from the community of practice perspective (Lave and Wenger, 1991; 1998).

Whilst the following chapter delves into each workshop setting in more detail, specifically in relation to each acousmatic composition presented, it is important to note that each workshop was tailored to factor the ages and needs of each group and that the compositions were a focal point and theme for each workshop, with often compositions being presented in their entirety, and accompanied with other acousmatic compositions. Often referential and heightened listening techniques were employed in order for participants to discuss and also creatively respond through drawing to the compositions, with the older age groups often drawing upon

how the compositions made them feel, and their own experiences to better understand what they were hearing, and how being immersed within a multichannel environment drew them further into the work. The early years children in particular, commonly employed referential listening, with multiple participants getting rather excited when they heard a sound which they recognised. For instance, with the sound installation, *I want to tell you a story...* the younger people shouted out 'listen to this, it's twinkling , 'woah... racing cars', 'the beach!', 'lots of bubbles!'.

Outside of the workshop settings, the sound installation, *I want to tell you a story...* (see section 4.9) entailed children (and their parents) not only listening to the sound installation, but also creating 'sonic postcards' in response to the acousmatic composition (see Appendix 5), with audiences drawing their own childhood stories and memories. The sound installation was inspired by the *Sonic Postcards* project[16] (Sonic Arts Network, n.d.), but due to the context of the work (within an outdoor festival), here this project was reinterpreted, in which the sound inspired the drawings. Over the course of the weekend, 87 children and adults created 'sonic postcards'. Other early years activity included the *Lori Lullabies* workshops with Sampad, a series of workshops for early years exploring dance and movement (see Appendix 6); and children workshops to accompany the *Dancing Bubbles* exhibition (see Appendix 7).

In the context of sound installations and events at outdoor festivals, in particular community festivals (such as the workshops with *Dancing Bubbles* (see Appendix 7), such strategies may help to reach particularly hard to reach segments, and in hand younger people, as younger people have highlighted that 'not engaging with their communities risked further stigmatising

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[16] An educational sound art recording project with primary schools, where children recorded sounds of their environment and composed short 'sonic postcards' in response.

the arts as "not for them"' (Tait et al., 2019, p.10). In addition, the importance of engaging with family is vital, as this remains of influential importance for early years to experience sound. 'Young people are four times more likely to consume culture with family members than through school [and] … half of young people see family as their main inspiration to engage in cultural activities and this remains important as they grow up' (Tait et al., 2019, p.39). With for instance the early years BEAST: Sonic Paintings workshops families were actively involved in participating in the experience with the participants, and with the *Lori Lullabies* events too, whilst numerous parents discouraged children from participating in the '*I want to tell you a story…*' installation, others participated alongside their children, highlighting the importance of families and also the levels of engagement and participation in question, as the parents had actively chosen to attend the workshops, whilst with the sound installation, families may have been simply passing and/or being curious.

There are other engagement barriers which need to be considered also, including language, time, money and transport. For instance, the workshops with the 16-21-year olds groups were both free and held at venues easily accessible, and I generally approached the workshops using the term 'sounds' and 'sound-based music' (Landy, 2011), as I have found using the terms 'acousmatic' and 'electroacoustic' fairly alienating at times, as these terms don't always matter to the audience, in particular with younger audiences. This is enforced by the Arts Connect claim: 'the disconnect between the definitions of arts and culture used by organisations and those used by young people, adding that hard definitions may prove problematic for an age range where there is a huge variety of activities that may not be seen to need categorisation' (Tait et al., 2019, p.27).

In addition, 'young people need to be listened to and have their voices heard' (ART31, 2018, p.6), creating relaxed environments for sharings and discussions; and consequently the Ikon

workshop highlighted the need through discussion for us to facilitate and provide younger people with further paths and resources for listening to and creating acousmatic music – and electroacoustic/electronic music more widely, as participants wanted to know where they could go to learn how to record and compose with sound using Digital Audio Workstations[17]. Furthermore, highlighting that within the arts sector more widely, 'young people want to get involved with the arts but often do not know how to. Many young people feel they lack resources, knowledge and opportunities' (ART31, 2018, p.4).

Consequently, through acting as signposts, delivering events and activities such as the above, and providing resources to help younger people engage and learn are vital ways to reach this demographic. In particular as 'music is young people's favourite pastime, equal to gaming and ahead of sport, drama, dancing, and arts & craft' with 97% of young people having listened to music in the last week and 67% young people currently making music (Youth Music and Ipsos MORI, 2019, p.6).

3.3 DIGITAL / ONLINE PLATFORMS:
Using online platforms to encourage an audience in person... buzzzz

> 'Music could now be completely free from any live context, or, more properly, the
> context in which it was heard became the living room and the jukebox – parallel
> alternatives to still-popular ballrooms and concert halls…' (Byrne, 2012, p.21)

Digital engagement has the potential to reach bigger, more diverse, and international audiences, whether this be through communicating with audiences online, to methods of distributing and presenting acousmatic compositions, to developing project-specific digital

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[17] With 100% of participants at the IKON workshop being inspired to explore sound further, and 100% wanting to start composing more with sound.

platforms/apps: computing and communications technologies are continually redefining traditional roles between composers, performers, and audiences. The 'public's appetite for discovering, consuming and sharing cultural content and experiences through the internet, and on social and mobile media, appears to have no end' (Arts Council England, n.d. (b), p.4), in particular 'music is the genre showing the highest level of online engagement' (Arts Council England, 2010, p.5).

Often there appears to be a misconception that engaging with audiences online will detract or discourage audiences to attend live events in person, but generally arts organisations use digital means to compliment rather than substitute a live experience, as audiences perceive 'the live offline experience as being superior to the online' (Arts Council England, 2010, p.5). Liveness is seen as a vital component for all genres of music, and visceral, social experiences and contexts cannot currently be replicated online; moreover heightened with acousmatic music, where typically audiences are immersed by sound within a space, physically and mentally. Considering this complementary approach, extending the current offering to online platforms may enrich an audience's cultural experience, deepening, widening and diversifying audiences, particularly attracting Experience Seekers, Dormitory Dependables and Trips and Treats segments, and potentially enticing these segments to enter the concert hall.

Within the arts sector, almost 'three-quarters of organisations now regard digital as essential to their marketing, and almost 60% view it as essential for preserving and archiving their work, and for their operations' (Arts Council England, n.d. (b), p.5). Strategies include behind the scenes interviews, online Q&A's, online blogs, educational content or online events. Hence, within this composition portfolio, the composition *Dreaming Waves* (see section 4.2) was included as part of the Delia Derbyshire Day 2018 online event (the first online edition of

the annual event celebrating Delia Derbyshire), and was accompanied by a Q&A/interview,[18] which discussed how Delia Derbyshire had influenced my work as a composer, and was supported by videos and images, along with a binaural version of the composition. The binaural version was embedded into the organisation's website via Soundcloud and reached 176 listeners over the course of the day, and has since received over 1000 listens to date. The online edition provided a platform which reached a much larger audience than a particular concert hall setting would have achieved for acousmatic music, and also engaged with audiences such as (1) those who cannot attend due to distance and (2) those who were not aware of the event at the time.

Social media[19] is a particularly important digital output for marketing with 60% of arts organisations encouraging users to share content and 51% regularly comment and start conversations with audiences (Arts Council England, n.d.(b), p.25). Such methods can grow audience sizes, reach new audiences and extend engagement, and can have a positive impact on the audiences 'anticipation and ultimate enjoyment of a live artistic event' (Walmsley, 2016, p.1) if marketing is constructed in a way for audiences to know what to expect e.g., taster videos. As a composer it is vital to have an online presence. Such methods of promotion are important to communicate opportunities to engage. During my research, my compositions online have received over 2500 listens via the platform Soundcloud alone, with posts on my social media channels organically reaching over 158,000* people[20]: again a much larger audience to the select few performances within the acousmatic concert hall settings (see appendix 8), and it is important to note that these figures do not include cross-promotional marketing by collaborators. Using such channels and creating marketing

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[18] https://deliaderbyshireday.com/interview-with-composer-emma-margetson-in-full/
[19] Popular social media platforms include Facebook, Twitter, YouTube, Linkedin, Vimeo, Soundcloud and Instagram; with platforms such as Snapchat, TikTok and YouTube being mostly used with younger people
[20] Figures for Twitter, Instagram and YouTube.

campaigns specific to particular projects and events can reach an undeniably large audiences, and specific content can be curated to target particular segments within such campaigns.

Drawing upon targeted content further, Arts Council England defines in their digital policy and plan guidelines a distinction between three main categories of digital content; (1) **creative content** (digital works of art e.g. immersive cultural experiences, online-only exhibitions, incorporating digital elements such as AR, VR, and IR into events), (2) **captured content** (performances produced and distributed digitally, on-demand recordings, live-streams) and (3) **cultural learning content** (to increase cultural knowledge and participation through podcasts, online resources, curated archive collections with supporting digital material) (Arts Council England, 2016). All of the compositions in this portfolio are digital 'creative content' due to the composition being composed within a digital medium, but various methods may be employed in relation to 'captured content'. For instance, multiple works have been released on CDs and are also downloadable via Bandcamp: 1) *Water Waves* in Experimental Sound art [CD-ROM] with Urban Arts Berlin, 2018, 2) *Water Waves* and *Dreaming Waves* in Loudspeaker music for Headphones, Volume One (Digital Album), Sonos Localia, 2018; and 3) *Distorted Illusions* in *Awakenings* [CD-ROM] with OBS, 2018. With the second album being a binaural album of compositions captured through an 8-channel loudspeaker array, in order to 'capture the full width, depth, movement, and subtle localisation in the music' (Sonis Localia, n.d.) to enable the audience listening from home, with a consideration that the majority of new music listeners not potentially listening via headphones, alone at home. Furthermore, CD and digital download is slowly becoming a thing of the past (Savage, 2019), and as streaming continues to grow, more and more artists are turning to platforms such as Bandcamp, Soundcloud and YouTube to provide audiences with on-demand listening. All compositions have been uploaded as 'tasters' to the platform Soundcloud, with multichannel compositions being decoded binaural using the ATK

plugins[21]. Through working in multichannel formats and ambisonics more specifically, we can compose to any given format (such as stereo, binaural or other loudspeaker configurations) to give more flexibility as to whether compositions can be listened to at home or in completely different settings - outside of the concert hall.

Another 'captured content' is live-streamed and online events, which have the potential to increase accessibility and inclusion for the larger population, breaking down geographic, transport, cost, age and disability barriers amongst other factors. As audiences no longer need to come together geographically or temporally to share a musical experience, this has consequently introduced new ways of listening, playing, composing and experiencing music, and has been heightened due to the Covid-19 pandemic, with many arts organisations and electroacoustic institutions such as BEAST, MANTIS etc. delivering virtual festivals, online binaural concerts, and other digital outputs to connect with their audiences and maintain a connection with their communities of listeners. Various compositions within the portfolio have been streamed within such online events (including *Abstracted Objects* for BEAST FEaST 2020 and *Distorted Illusions* for Rummage Radio Episode 55), but only as extra dissemination outputs and not as planned outcomes for my research.

The projects *Sound Sculptures* and *Ancestor I* have incorporated other immersive technologies for dissemination. Augmented Reality, Virtual Reality, Immersive Reality and Mixed Reality are enabling audiences to experience digital spaces through completely new 'VR-specific sound scene/s' to the simulation and/or augmentation of spaces, venues and locations, without the listener needing to set foot within a concert hall setting. The distribution of live music, such as with Berlin Philharmonic's Digital Concert Hall, captured

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[21] Electrothèque is the only on demand online streaming service of electroacoustic music to the best of my knowledge, and this platform is of compositions from the empreintes DIGITALes catalogue solely.

in 360-degree audio-visual, uses real-time room stimulation to create VR experiences for remote listeners, in order for audiences to enjoy live music experiences from their own homes. Such technologies can draw on particular experiences of the past and present, including historical music performances (replicating specific room acoustics to simulate how music in a particular space would have been heard) to headphone theatre, interactive installations and audio/sound walks, in order to heighten site-specific experiences or transport audiences to completely new digital spaces. With examples including Björk's ventures into VR with the album Vulnicura (2015), and more relevant to the electroacoustic genre, the reconstruction of Edgard Varèse, Iannis Xenakis, and Le Corbusier's work, *Poème Électronique* in virtual reality,, using a VR head-mounted display (Lombardo et al., 2005). In relation to this portfolio, the *Sound Sculptures* project (see section 4.4) used augmented reality to explore sound trails through the GPS-triggered augmented reality app 'SOUNDwalker' created by SOUNDkitchen (Mahtani and Armstrong, 2018), a geo-locative map which enabled the audience to participate on the sound trails, in which the compositions were triggered automatically when within a certain proximity of each sculpture, with each of the sculptures being indicated on the map - augmented listening points in which the compositions overlap on top of its environment. Furthermore, the app provides an extra layer of interactivity in which the user can click on the sculpture for further details and to stop/start/repeat each composition as they wish during the sound trail. The sound trail could also be streamed/downloaded from a playlist on Soundcloud to accommodate for certain audiences who may have not downloaded the app. The variety of listening formats provided a greater level of flexibility and accommodation for the listener, and in hand a greater level of engagement with the project. Over the course of the festival, the sound trail received 345 listens on the Soundcloud platform alone, and since then a further 429 listens and 26 downloads, as audiences continue to participate on the Sound Sculptures trail.

3.4 MIXING ART FORMS:

Mixing everything up...

'...Crossing art forms can make the entire concert flow a work in itself, in which the programming, the performance and the effects melts together' (New Music:New Audiences, n.d.(a))

The 'New Music:New Audiences' project states 'combining music and film, music and visuals or music and dance in a contemporary music event can attract a wider audience, and bring new perspectives to everyone involved' (New Music:New Audiences, n.d.(a))', whether this is through 'mixing art forms in a concert to bridge musical works' or 'multi-art events and festivals [that] may encourage audiences to see and participate in work they may otherwise avoid' (New Music:New Audiences, n.d. (a)). This strategy may in particular reach 'new' audiences (Experience seekers, Kaleidoscope Creativity, Dormitory Dependables), but may also offer new and varying experiences to deepen and/or extend relationships with existing audiences (Commuterland Culturebuffs and Trips and Treats). In particular, 'arts audiences' who 'go to the arts see all kinds of artforms – dance, music, theatre, exhibitions etc.', quite often not having any extensive knowledge (Maitland, n.d. (b), p.9). As a result, the following compositions respond to, collaborate or are presented with a variety of different art forms: *A Flavour of Tears* and *Sketching Froanna* with still image, *Sound Sculptures* and *Ancestor I* with sculpture, *Distorted Illusions* with poetry, *I want to tell you a story...* with narrative and *Lori Lullabies* with dance.

Acousmatic music and its immersive sensory auditory experience is typically accentuated by lacking visuals, with composer Andrew Lewis highlighting that 'having disconnected the sound from its original source, context or meaning, we are free to re-connect it with other sources, contexts and meanings; and these may be real, implied or imaginary' (Lewis, 2014).

However, generally audiences are less attuned with auditory content to visual, and when we consider 'art', this tends to be more focused on visual elements. Music with physical objects (such as image or dance with performers), may be considered by some to be a subversion or rejection of the acousmatic tradition (Hill, 2013, p.8), but such works may provide an alternative experience for audiences; as highlighted by Peter Batchelor, it may be the experience of 'having something to see' which provides a 'something to hold onto factor'[22] (Peter Batchelor, 2015, p.11). As abstract works within any art form can be challenging for new attendees to access (Pitts and Price, 2019), using a factor of familiarity (such as a different art form) may provide a pathway into engaging with acousmatic compositions. Acousmatic music has the potential to suggest visual imagery to the listener, as Emmerson describes,

> 'The acousmatic condition deliberately reduces information on source and cause which we (products of evolution) attempt to 'fill in'. For me – and I believe many others – that process has a visual component. The imagination constructs a quasi-visual mindscape with many of the characteristics of 'real' vision' (Emmerson, 2007, p.169).

Furthermore, it is important to consider through composition this complex relationship, how acousmatic music intrinsically possesses its own visual component, and how this will interact with other art forms, in order to enhance the experience rather than distort or provide further confusion for the audience, and how using two art forms as a compositional tool may create new methods of engagement. Whilst this approach may be contentious to some, considering such strategies may provide a route into exposing new audiences to acousmatic compositions, and later entice this audience into the concert hall.

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[22] Landy, 1994

Fine Art

The works *Sketching Froanna* and *A Flavour of Tears* responds to different artworks within The Barber Institute of Fine Arts collection. *Sketching Froanna* (see section 4.7), was created in response to the sketch *Froanna* by Wyndham Lewis, with the artwork being projected as part of the sound installation. This 8-channel composition interpreted the artwork on multiple levels – from the context, colour content, to the materials used to create the artwork. Through using recorded sounds of chalk on paper, the spatialisation was sculpted to take the listener within the artwork, and to explore how the sounds may lead the listener around different parts of the sketch. Within discussions at the event, audiences described how the 'experience' enabled them to see the artwork from a different perspective – either they were drawn into different elements of the sketch, or they were influenced by the composition to perceive the work alternatively, when listening to the sound installation. Whilst both the artwork and the acousmatic composition could be experienced separately, it was the bringing of the two together simultaneously which brought out a different level of engagement with both mediums – it provided the audience with the opportunity to reconnect and perceive the source in different ways, and not only encouraged the audience to sit and observe the sketch for longer than they may possibly would in the gallery, but may have also encouraged heightened or expanded listening, as a few audience members shared discussions afterwards on how the accompaniment of the sound and it's immersion drew their attention to different sections of the artwork – in particular to the hands and eyes. In addition, the variety of different activities across the evening (talks and creative stalls), along with the fine art focus (with it being within an art gallery and about a specific art work) may have also encouraged audiences to participate who were from a fine art background/ interest.

Another composition, *A Flavour of Tears* (see section 4.3)*,* is a short miniature work, which formed part of the *Reimagined: The Barber Collection* project, a commission for the

CrossCurrents festival 2018, where composers responded through instrumental and electroacoustic works to paintings and sculptures found in The Barber Institute of Fine Arts galleries, presented in the form of a concert. This concert was inspired by the Mussorgsky's *Pictures at an Exhibition*, through musical responses to paintings in the gallery, and also its structure, with a piece, '*Promenade*'[23], recurring to reference walking around the gallery. My contribution was composed in response to *A Flavour of Tears* by Rene Magritte. Before the performance and during the interval, audiences were invited to explore the gallery and see the art works in person, providing contextual and environmental musical meaning to the work, and referential resonances with their relationship not only with the artwork but also the space. Following Peter Batchelor's claim that 'some sounds included in the sonic narrative are likely to become associated with their context even if they have no source-based connection at all with the building' (Batchelor, 2015, p.10), would suggest that the compositions being performed within the location of the art works may provide further connections, and through providing images to accompany the works within the concert and or within an installation may provide further context for each work, enabling audiences to overcome the aural unfamiliarity of such a work.

I approached both workshops within the gallery settings (BEAST Sonic: Paintings (see section 4.3) and Found Noise (see section 4.8)) using arts techniques to express musical forms within acousmatic music. For instance, within the Found Noise workshop with the Barber Collective (*Abstracted Objects*) I decided to use arts techniques such as mark-making and gestural painting (see section 4.8) as a 'something to hold onto factor' as the participants may be more familiar with the fine art/sound art medium. As a result, within the workshop acousmatic music and its relationship with sound art were discussed, with activities

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[23] Promenade theme composed by Annie Mahtani

expanding upon this through the use of participatory activities such as mark-making (see section 4.8 for further details) and may have acted as a point of familiarity to introduce acousmatic composition, and how this medium could be incorporated/embedded within their own arts practices. One of the participants of the workshop shared online:

> '... instead of consciously illustrating an image, our drawings were created as a product of the sounds we heard, they were an illustrated emotional reaction to what we heard. It was fantastic! I had never felt so free, all inhibitions seemed to evaporate, and I was just drawing what I felt. It made me think about what Kandinsky might have been feeling whilst he was painting. Was the black a reflection of a particularly awful and mind-numbing part of the song or was it an emotional response to something else?...' (sakinanomanbhoy, 2019)

The combination of using art to explore sound and vice versa enabled a creative response to listening and interpreting acousmatic music; it created an environment in which the music and art took place simultaneously, and in hand affected the creative process - highlighting Higgins' comment that when 'music and painting take place in the same environment, the result of the painting will be distinct' (Higgins, 2020). In addition, using drawing and painting in response to music has the potential to 'challenge some of the traditional creative hierarchies by perpetuating more democratic, inclusive forms of music making and appreciation' (British Music Collection, n.d.). Images of the final collaborative work for the Found Noise workshop can be seen in Appendix 4.

Sculpture

The project *Sound Sculptures* (see section 4.4) used sound and sculpture from a more acousmatic soundscape idiom. As the term sound sculpture in sound art generally translates to sculpture (or an object) which produces sound, or the contrary, here the compositions are

influenced by the sculpture, in which the sound is sculpted in space (composed) and considered in its relationship with the real world (the sculpture's environment) - the physical positioning of the sound materials. For the compositions, *Sound Sculptures* and *Ancestor I* (see section 4.5)*,* the combination of exploring the physicality and location of each composition and how this interacted with its environment (outdoors across the University of Birmingham campus) provided an alternative experience of engaging with the acousmatic composition, and also with the University of Birmingham sculpture trail, through listening to the sculptures with sound. Listening to each 'sound sculpture' at its location provided a level of 'closeness' and tangibility which resonated well with its audiences; they reported that knowing that they are at the location it was recorded and also witnessing the sculptures in person - they can see the shape, form, texture and materials of the sculpture and form their own interpretations and links with the acousmatic compositions, which in hand provides a pathway into engaging with the acousmatic compositions from a more physical perspective.

When approaching the compositions, we (myself and composer Nikki Sheth) considered how the outdoor/ambient noise of the environment of campus (when walking between each sculpture and at the location of each sculpture) bled into each 'sound sculpture' composition when listening through headphones, and in hand how this interacted and changed the experience of the work, whilst, also considering listening to the compositions at home or within a concert setting. Each setting provides different perspectives and listening experiences with the compositions, especially without being able to physically see the sculpture in person if listening from home. But we thought it was important to enable audiences to listen to the project at home and after the festival, especially for those who couldn't attend in person at the time.

In contrast, as *Ancestor I* was presented as an outdoor loudspeaker sound installation, consequently the composition blurred within its environment further, enabling the

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composition to directly interact with the space surrounding and including the sculpture, allowing audiences to move within the space of the sculpture and listen to the composition from all angles, and explore and engage with the physical medium of sculpture and sound in a different way.

Narrative / Storytelling

The notion of telling a story is considered in all of my compositions in one form or another - through taking the listener on a journey, with the composed sound world being an autonomous agent of storytelling (Amelidis, 2016). The effect of telling a story, through recorded sound (whether environmental, sound objects, the voice e.g., narration etc.) and drawing on intrinsic and/or extrinsic aspects of a sound/sound world-can resonate with a person in varying ways to produce one's own sonic image – 'a concept… understood as mental representations motivated by sonic stimuli' (Barreiro, 2010, p.1). The inclusion of historical recordings, to narration, to musical quotations, with transformed and abstract sounds to referential sounds, may possibly encourage active imagination of the listeners, in particular if produced in a holistic way, in which 'the listener participates in the creation of the 'final version' of the story, thereby becoming, in a sense, its co-creator' (Amelidis, 2016, p.22). In particular, as studies in human psychology have found, if we are 'told something through narrative, we are more likely to relate to the message, absorbing it further and remaining engaged from start to finish' (Robertson, n.d.).

John Young describes the 'capacity for sound recording to function as a mirror held up to lived experience' (Young, 2009, p.1), with Panos Amelidis highlighting the use of the recording medium as a 'thought-capturer' through the use of archival, referential, and community-specific sound facilitating the reinvention of a sense or serve as a trigger of memory and experience for listeners (Amelidis, 2016). *Distorted Illusions* responded to the

anonymously authored poem titled '*Awakenings*'[24]. Here the composition uses a high selection of referential sounds, all in some form or another associated with awakening. Through introducing the compositions with a poem - the inspiration behind the composition, provides further insights into the narrative and form of the work; this also provides a SHF (Landy, 1994), as through introducing the composition with text may provide a factor for audiences to engage with otherwise challenging works.

Another composition, *Dreaming Waves,* not only includes archival material by the composer Delia Derbyshire but is heavily inspired by Derbyshire's work, *Invention for Radio No. 1: The Dreams* (1964), a radiophonic work comprised of restructured and edited interviews of people describing dreams. Here Derbyshire attempts to recreate sensations of dreaming, e.g., falling, new landscapes; with the stories of dream experiences being in first-person. With this in mind, *Dreaming Waves,* draws upon the composed world of the work, using abstracted sounds to portray this sensation but also references through the use of spoken word, the word 'Dreams' at 00:04:13 within the composition. In addition, using archival material adds a further narrative to this composition, and a reconnection with the past and with Delia Derbyshire.

Dance

The *Lori Lullabies* workshops (see Appendix 6) were interactive workshops for early years, exploring dance and movement. Here recorded sounds were processed and spatialised live in response to dance movement, and in collaboration with a dancer. The use of sound within these workshops (which usually used a couple of sounds from the Lori Lullabies CD) provided a greater level of interactivity and freedom to currently how the workshops are run - using tracks from a CD. Whilst the focus was more so on the movement, it was the sounds

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[24] This poem was shared with me for the purpose of the *Awakenings* [CD-ROM] with OBS, 2018 and no date or author can be provided.

which enabled a greater level of immersion within the workshops, adding to the overall enjoyment of the workshop.

3.5 DIFFERENT PRESENTATION FORMATS:
… considering different levels of participation

Often arts participation may be considered to be a measure of arts engagement 'where engagement is synonymous with involvement' (Stallings, 2016, p.6). There are different strategies and measures for participation, from presentational, 'passive' art as we experience in an acousmatic concert, to where there is little to no distinction between the performer and the audience, sometimes with the aim of turning audience members into active participants and/or co-creators (Brown et.al, 2011; Sidford et. al, 2014). Participation is also usually defined as being involved in the act of creativity, usually guided by a practitioner, artist or performer (The Arts Council of Wales, 2018). Considering the difference between 'attendance' and 'participation', different models define different modes of participation and can be measured using frameworks such as the Audience Involvement Spectrum (Brown and Ratzkin, 2011), and the ladder of citizen participation (Arnstein, 1969) amongst others.

Informative in this context is how various theorists and practitioners including Paolo Freire, John Dewey, Raymond Williams, Donna Haraway have provided philosophical resources for thinking in the Arts. Christopher Small's book, *Musicking: The Meanings of Performing and Listening*, defines the term Musicking as: 'to take part, in any capacity, in a musical performance, whether by performing, by listening, by rehearsing, or practicing, by providing material for performance (what is called composing), or by dancing' (Small, 1998, p.9). Considering music as a social activity, the verb Musicking:

'covers all participation in a musical performance, whether it takes place actively or passively, whether we like the way it happens or whether we do not, whether we consider it interesting or boring, constructive or destructive, sympathetic or antipathetic'. (Small, 1998, p.10)

This is a descriptive, not prescriptive word, which shifts the focus from objects and musical works to the actions of people. Small suggests that the challenge for music educators is 'to provide that kind of social context for informal as well as formal musical interaction that leads to real development and to the musicalizing of the society as a whole' (Small, 1998, p.208). In addition, Claire Bishops highlights the importance of activation, authorship and community in relation to participation. She claims that drawing upon the social dimensions of participation in 'interactive' art and installation-based works will produce more positive and less hierarchical social models. Creative collaboration in particular will enable participants to be 'empowered by the experience of physical or symbolic participation' (Bishop, 2006, p.12) and will enable a 'social bond through a collective elaboration of meaning' (Bishop, 2006, p.12).

Such critical perspectives on musical participation has guided the traditional sharing of acousmatic compositions as a fixed media performance (whether diffused or not) to be challenged within this composition portfolio through the compositions being presented in a variety of strategic ways.

Workshops

Within the portfolio, I have delivered eight workshops: one on *Water Waves,* two on *A Flavour of Tears,* one on *Abstracted Objects,* two on *Lori Lullabies* and two on *Dancing Bubbles.* The workshops enabled me to consider different approaches to introducing acousmatic compositions to participants through: (1) **listening** (discussion, guided listening

activities, listening responses) and (2) **composing / performing** (whether through compositions being created from scratch and/or recycling stems from acousmatic compositions, in particular as collaborative, collective sound explorations).

The workshops approached the use of sound material in varying ways; for instance, within the *Water Waves* workshop, the participants used a variety of sound objects (from textural objects such as paper, water, balloons, foil etc.) in the room to create a water soundscape. Here the form of this composition (which can be continued to be looped) provided the lower level of the improvisation (acting as a drone), with other sampled sounds of water as well as sounds produced from the participants being processed live on top via Ableton Live and controlled using korg controllers. Here sound effects typical of acousmatic music has been reappropriated to enable the participants to be co-creators of what was originally a fixed acousmatic composition. Considering materials to 'play', found sound objects provided a relatable set of accessible sounds, and provided the opportunity to collectively have authorship over their individual sounds and also consider how this added to the larger work, consequently enabling participants to connect via this medium and produce a collective work. This demonstrated how providing less informal and social methods to 'music' (Small) could create open and free ways in which participants can connect. Exemplary here are the workshops such as those at Ikon, where attending the event functioned as an engaging social event - one participant stated, 'I liked the chill vibe. The cushions were great and cosy.' Within the Found Noise workshop (*Abstracted Object*s), the workshop used found sound objects again but with participants interchanging between gestural painting and creating sounds with found sound objects. I used Ableton Live and korg controllers to process and transform these sounds live, along with stems from the composition *Abstracted Objects* being interjected throughout the performance using the same found sound objects within the workshop as those used within the composition. The workshops approached using acousmatic

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composition in various ways to consider engagement: (1) the act of listening but more importantly (2) how to enable participants to perform collectively, with sometimes the workshops developing existing acousmatic compositions, whether through acousmatic music as a basis to improvise or re-sampling and recycling sounds to be processed live as part of a performance.

Installations

Robert Normandeau highlights that 'today's listeners, and certainly those interested in electroacoustic music, have stood up from their (un)comfortable chairs in order to move around in space, or even to continue living their lives — talking, discussing, answering phones' (Normandeau, 2014, p.2). The installation format provides more informal ways in which acousmatic music can be presented, and due to it being often presented in different places reaches wider audiences, as often audiences are more likely to come across such installations by chance rather than planned, especially within outdoor and/or community settings. Within this portfolio, the compositions presented as an installation are: *Ancestor I, I want to tell you a story… (Isochrone), Sketching Froanna* and *Dancing Bubbles.* Three of the installations remained passive in participation. Though audiences were still entitled to casually listen at their own pace, they could choose where to listen and how long they wanted to listen for, and also walk around within the space. '*Community Musicking as Families*' by Lisa Huisman Koops highlights the importance of mutuality to encourage participation (Huisman Koops, 2020, p.86), which was a core notion considered for the installation, *I want to tell you a story…* where children (and families) were able to share their experiences through drawing sonic postcards. Approximately 9% who engaged with the installation completed a sonic postcard, with the majority being children. Whilst the installation was designed for headphone listening, over the weekend of the festival, the composition was also played via loudspeakers too, which in hand drew more audiences to engage with the

installation (see Appendix 5). Mutuality was ensured here by encouraging families to come together to actively listen, discuss and share, in addition to the postcards being collected as part of the installation (if they wanted to add them to this) providing and evidencing a strong sense of community - they participated in something much bigger. The installations produced as part of this portfolio, in particular *Ancestor I* and *I want to tell you a story…* were able to reach audience segments Facebook Families and Kaleidoscope Creativity, due to the installations being presented outside as part of larger festivals, with a higher level of accessibility and audiences can casually listen, by being framed as a 'social' activity.

Sound Walks / Trails

The sound walk, an exploration of the sounds in a certain area using a map or a written score as a guide may also place an emphasis on the listener's own sounds (e.g., the voice or footsteps) (Truax, 1984). Within the composition portfolio, sound walks were provided for the *Sound Sculptures* project using locative technology via the SOUNDwalker app (Mahtani and Armstrong, 2018). Whilst the sound trail can be undertaken at any time, we offered three guided listening walks to encourage the audience in active listening of the environment and to bring audiences together to listen collectively. The sound trail encouraged audiences to experience acousmatic compositions in a different format and also sonically explore their environment, with the experience encouraging 100% of the audience to be inspired to explore other events which work with sound and 75% of the audience who had never worked or composed with sounds before.[25] The discussion led to participants being interested in hearing more about BEAST and attending other electroacoustic concerts in the future.

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[25] Statistics provided reflect a proportion of those who attended the sound trails.

Other Observations

A range of additional engagement elements employed are important to be considered. For instance, **informal discussions** and **Q&A's,** whether post-performance or during, in which audiences have the opportunity to reflect and talk with others (Dobson and Sloboda, 2014). Particularly productive would be informal rather than formal formats as providing opportunities for the audience to encourage reflective discussions which can enable audiences to draw on their own experiences and knowledge, rather than highlighting further the unknown for new audiences. In addition, Q&A's such as the artist talk for *Ancestor I* provided audiences with the opportunity to meaningfully ask questions, as 'wanting to know more about the artists, their processes and their opinions was often a feature of engaging with an exhibition or event' (Pitts and Price, 2019, p.10), with one audience member highlighting that it was 'very valuable to have the composers talk you through the thought process itself'[26]. Ancillary outputs such as **screenings, workshops or performative activities** before, during or after a concert may help to break down the barrier that 'audiences feel that they are required to know more about the music in order to fully enjoy the work' (Pitts, 2016). For instance, as part of the BEASTdome: Delian Dome concert (*Dreaming Waves),* a free pre-screening of *The Delian Mode* by Kara Blake, an award-winning creative documentary about Delia Derbyshire, provided further information about Delia Derbyshire and also context for the concert, with 75-80% of the concert audience attending the pre-screening.

3.6 COLLABORATIONS:

…to share audiences

'New audiences can be reached through collaboration and partnerships', whether this be a one-off event or long-term strategy (Tait et al., 2019, p.29). Where 'the situation of two or

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[26] See Appendix 3 for feedback from the Sound Sculptures sound walks.

more people/organisations working together to create or achieve the same thing', the aim is to draw on a shared goal/vision to combine resources and engagement capabilities (Tait et al., 2019, p.29). From single events to large festivals, interdisciplinary and complimentary crossovers with other art forms may be strategised for the collaborators to reach different audience segments.

'Audience members appreciated hearing about connections between venues, and they trusted recommendations from their regular venue when it came to trying out something new. One arts organisation can become a gateway or signpost to a wide range of new cultural experiences.' (Pitts and Price, 2019). Initiatives such as the Birmingham Art Pass have encouraged the 'sharing' of audiences across different organisations, highlighting the need to view collaborations as creative solutions rather than seeing other organisations or artists as competitors.

Throughout this composition portfolio, all compositions have been involved in some form of collaboration, whether with arts organisations, charities, artists, and/or venues. It is important to clarify the definition of this term more specifically as this was often multi-faceted. It could involve:

1) Developing co-curated and/or co-designed project(s) with arts organisations, charities or venues to produce compositional materials which are embedded within larger strategies and activities.

2) A composition created in partnership with an arts organisation, charity or venue for a specific event/project.

3) A composition produced in collaboration with an artist/s or other professionals e.g. scientist.

4) Active inclusion of non-professional participants/audiences to produce a collaborative performance (in a composition or workshop).

For instance, the composition *Water Waves* was composed for the workshop at the Ikon Gallery (section 4.1) and was used as the basis of a larger collaborative participatory work with the participants (4) in addition to the activities of the workshop being co-designed with the learning team at the Ikon (1). Meanwhile, *Sound Sculptures* (section 4.4*.)* was co-produced and composed with sound artist Nikki Sheth (3) and was also in partnership with the wider Arts & Science Festival curated by Research and Cultural Collections (2). See *Table 3* for this breakdown which stipulates the varying levels of collaboration.

Table 3: A table showing the breakdown of each composition and collaboration (Source: Personal collection).

Composition	Collaboration
Water Waves	The Ikon (1) (4)
Dreaming Waves	Delia Derbyshire Day (2)
A Flavour of Tears	CrossCurrents Festival, The Barber Institute of Fine Arts (2) (4)
Sound Sculptures	Arts & Science Festival, Research and Cultural Collections (& Nikki Sheth) (2) (3)
Ancestor I	Green Heart Festival, Research and Cultural Collections (& Nikki Sheth) (2) (3)
Distorted Illusions	OBS Audior (2)
Sketching Froanna	The Barber Institute of Fine Arts (1) (2)
Abstracted Objects	The Barber Institute of Fine Arts (2) (4)
Isochrone / I want to tell you a story…	Birmingham Hippodrome (2)
Lori Lullabies (see Appendix 6)	Sampad (1) (3) (4)
Dancing Bubbles (see Appendix 7)	Birmingham Dental Hospital (2) (3)

As an artist, collaborations are vital to create dialogues for future work and opportunities in the future. As particular projects evolved this led to more collaborative events, such as with The Barber Institute of Fine Arts, in which the initial BEAST: Sonic Paintings workshops later led to the Found Noise workshop (*Abstracted Objects*) and the *Sketching Froanna* sound installation, the *Dreaming Waves* commission later led to the composition being included in the online event DD Day 2018 Online Event on 23 November 2018, and other workshops for Delia Derbyshire Day 2019.

Considering concerts and events specifically through collaborating with other arts organisations, artists and festivals has inevitably brought new and wider audiences from these groups. For instance, the *Dreaming Waves* concert included audiences who were interested in musique concrète, the Delia Derbyshire Day organisation, and also those who were inspired and enjoy listening to the work of Delia Derbyshire - in particular as there had been an abundance of events across the West Midlands and beyond over 2017 to celebrate Delia's 80th year, including Delia@80 (a 3-day event at the Coventry Music Museum). Such collaborations also help with promotional reach (print and digital), and the opportunity to present compositions in alternative settings to the traditional concert hall.

4. COMPOSITIONS

This chapter provides a short breakdown of each composition within the composition portfolio, including compositional approaches, dates of events, how the six strategies for audience engagement in chapters 2 and 3 are approached within the composition portfolio, and also summarising how each composition and accompanying events/project has targeted the various audience segments outlined in chapter 2. The traditional 4 P's of marketing (previously discussed in section 2.4) have been used to briefly summarise each composition and accompanying events/project at the start of each section so as to frame their arts marketing orientation.

To briefly note, for compositions in response to fine artworks or sculptures, my approach has differed depending on its context. With compositions in response to Fine Art for presentation in gallery spaces, contextual information and artists intentions are considered, whilst for compositions in response to sculptures, the focus is more so on space and place. In addition, as highlighted in **Collaborations** (section 3.6), all compositions have been involved in some form of collaboration, and consequently for the purpose of this section are only expanded upon where necessary in relation to specifically the compositional process.

4.1 WATER WAVES

Place
- Concert: BEASTdome: Kelp Road, part of Arts & Science Festival held at the University of Birmingham on 19 March 2019
- A workshop at the IKON Gallery, Birmingham on 13 May 2017

People
- Concert: Regular BEAST concert attendees and attendees of the Arts & Science Festival
- Workshop: Ikon Youth Group

Price
- Concert: Regular BEAST concert prices: £10 on the door / £7 adv. / £3 students & under 18s
- Workshop: Free

Product
- Stereo acousmatic work commissioned for the BEASTdome: Kelp Road concert inspired by the sea and water
- An interactive participatory workshop exploring sounds of water with the IKON Youth Group
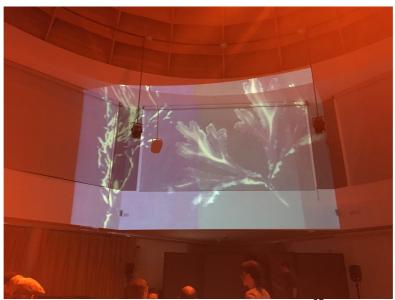

Figure 6. Photograph from the BEASTdome: Kelp Road concert[27] (Source: Personal collection).

The Composition

Considering **Different Presentation Formats** (section 3.5), I approached this composition

with two different settings and audiences in mind (1) a workshop with the Ikon Youth

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[27] Featuring projections by artist Anne Parouty.

Programme at the Ikon Gallery (an art gallery in the city centre of Birmingham)[28] and (2) an Arts & Science Festival event held at the University of Birmingham titled BEASTdome: Kelp Road, a concert which featured a series of compositions utilising and inspired by recordings of the sea and water (as kelp refers to a large brown seaweed). The Ikon workshop similarly focused on the theme of the sea and water, as the gallery was holding an exhibition by French photographer and filmmaker Jean Painlevé (1902–1989), which consisted of imagery of marine life, including early portraits and close-ups of marine animals, the iconic film *The Seahorse,* and also printed fabrics and silk scarves using stylised motifs of the sea creature.

The BEASTdome concert attracted regular BEAST concert attendees (maintaining the existing audience) whilst the Arts & Science Festival engaged with new audiences similar to existing ones (Commuterland Culturebuffs) who are familiar with attending high-quality art events in traditional concert hall settings. The workshop with the Ikon Youth Group reached a new and different kind of audience (Experience Seekers, Dormitory Dependables and Trips and Treats), due to being held at an art gallery in the city centre and for younger people. Furthermore, due to the various settings, I prepared this work as a multi-purpose composition in which it could be presented as (1) a stand-alone acousmatic composition, (2) a sound installation and (3) a work that can be part of a larger participatory composition, thus ensuring flexibility as a composer that this work can be used and presented in a variety of different ways outside of the concert hall - **Ditching the Concert Hall** (section 3.1) - in order to reach the varying audience segments required.

The composition focused on the theme of the sea, and the source material for this composition was captured on a series of recording trips in North Wales, in particular off the

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[28] A small group artist collective of ages 16-21 years, who regularly meet to 'make artwork, work with professional artists, host events and develop their own projects' (Ikon, n.d.)

coast of Anglesey and Y Felinheli near Bangor, Gwynedd. The recordings were made using conventional microphones (standard stereophonic recording techniques) and also hydrophones, in order to capture sea sounds both above and below water, in addition to other recordings of streams and water. Here the sound sources are relatively recognisable/referential and then come to be manipulated until they are transformed to be abstract and unrecognisable. The contrast between the natural, referential sounds and the more completely abstract sounds realises a movement away from the known 'water' to the unknown, referencing the vast unknown areas of the sea. The composition also provides different levels of proximity for the listener, from expanse e.g., 00:02.:24, to more intricate trickles of water e.g., 00:05:38, referencing paths and passages found above and below water. The morphology between the natural and abstract was an important factor in composing the work, providing the listener with sections and material that more immediately relate to the sea before moving to more challenging 'abstract' areas, in hand considering the categories of SHFs (Weale, 2006). For instance, the composition begins with a large fade-in of material from 00:00:00 - 00:01:50, providing a slow and gradual introduction to the pacing of the work, with swells of pitched material at 00:01:01 - 00:01:11, which become more prominent later on in the composition, all while the sound world slowly morphs between various textures of water sounds.

The layers and gestural changes within the composition mirror the form of waves, whether of the waves breaking or refracting, with each wave shifting the perspective of the sound world. For instance, at 00:01:53, the build-up in sound is followed by a decay and the entrance of hydrophone recordings, creating a wave-like profile of build-up and release (as seen in *Figure*

7), a profile which then returns to introduce higher-pitched material at approximately

00:02:40. Each wave, whether small or large, continues to follow this cyclic pattern.

Table 4: Structure of *Water Waves* (Source: Personal collection).

Section 1 00:00:00 - 00:01:50	A gradual fade-in of pitched material processed using GRM Tools Evolution is introduced. The various layers of textural water sounds enter e.g. 00:00:24, first with sounds of a stream trickling and then denser material of the sea following. Resonant pitched material at 00:01:02 is introduced as a prelude to Section 5. The layering of this builds to form a wall of smeared sound, with full noise and crashing waves engulfing the material.
Section 2 00:01:52 - 00:02:33	The material decays with the lower sounds cross-fading into higher-pitched, more synthetic sound, revealing mid-frequency hydrophone recordings in the forefront from 00:02:03. The hydrophone recordings are filtered to create a bubble-like effect, with sounds of seagulls echoing in the background. Another full sound wave enters at 00:02:14. The changes in perspectives are intended to highlight the various spectral qualities of water, in hand transporting the listener through crashing waves, and ebbing and flowing through the various textures.
Section 3 00:02:34 - 00:04:08	The full-wave decays through filtering to reveal higher frequencies, creating a reverberant sound world in which seagulls and other birds can be heard as if from a distance (with added GRM Tools Reson and GRM Tools Delays).The additional pitch material diminuendos to 00:03:30 where a shift in perspective shifts into an untreated field recording of the sea. Additional reverb and decay are added to this sound simultaneously with pitched material, to lead into section 4.
Section 4 00:04:09 - 00:05:35	Low pitched GRM Tools Evolution sounds, with filtered and gradually emerging pitches follow. A crescendo to 00:04:56 before another build with higher pitches and dense full wave-like material at 00:05:13.
Section 5 00:05:36 - 00:08:53	This section draws on material from section 2 (00:02:14). 'Throbbing material' sounding as if underwater emerges and transitions to a new perspective 00:06:09, with high-pitched time-stretched running water of streams transforming into running water, and building in tension to reveal the source of the original pitched sound of submarine radars and boat horns. At 00:07:25 the sculpted wave engulfs all material, decaying in layers and diminuendo to end.

As can be seen from *Table 4* and *Figure 7* the cyclic form of the work mirrors the natural ebbing and flowing, wave-like structures of the sea. The larger evolving, slow textural developments within the work was intended to account for how the work could form the basis of a more participatory experience, thus attempting to mirror the dense natural textures and energy of the sea as a means for listeners to engage with the acousmatic sound techniques in a structured and familiar manner. This structure enabled the composition to be presented within a traditional acousmatic concert setting for the BEASTdome: Kelp Road concert but also be presented as an installation, with the composition continuing to be repeated on loop. As well, the format also enabled me to have the flexibility to tailor the work within the workshop, providing a base for an interactive collective live-set with the workshop participants in which found sound objects and recordings were added to the mix, as it was vital for younger people to become an active participant in the composition, as highlighted in **Engaging Young People** (section 3.2).
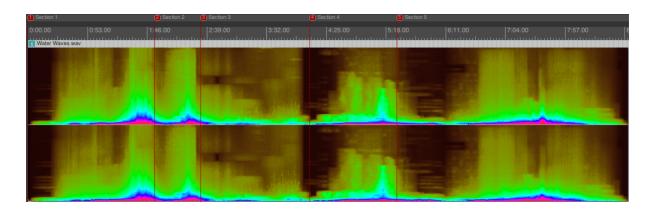
Figure 7. Spectrogram of *Water Waves* (Source: Personal collection).

Drawing upon further the various contexts for where this composition will be presented (**Different Presentation Formats**), it was also an active decision (as it is through the majority of compositions in this portfolio) to use a fade-in and fade-out at the start and end of each composition. This ensured that the composition could seamlessly become part of the

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space in which it is presented, consequently unifying the sound with its context rather to ensure the collaborative connections were best appreciated by audiences.

The Workshop

This interactive, participatory workshop was curated for the Ikon Youth Group and provided an introduction to acousmatic music/electroacoustic music for a group of young people who are actively involved in creating visual arts (fine art, photography, literature, animation etc.) with none having any prior experience of working with sound.

Considering **Engaging with Young People**, within this workshop, a selection of water-themed acousmatic compositions including *Water Waves* were used as an introduction to different listening modes (reduced, referential and heightened listening) so as to encourage active listening and discussion. Afterwards, the group explored the exhibitions following a sound trail – the IKON soundscape (see appendix 1). Here they followed a series of self-led tasks aimed at engaging with the exhibition and gallery in varying ways in relation to sound (in hand drawing on **Mixing Art Forms**). The final section of the workshop culminated in creating a seascape collectively. Found sound objects (paper, water, balloons, foil etc.) were performed by the group and recorded via three microphones placed around the room, and transformed using Ableton Live. Samples of *Water Waves* and other recordings of water provided a layer for the group to improvise upon, and also provided a structure/direction for the work, encouraging participants to consider texture and dynamics. In total, the improvisation took approximately 20 minutes and was followed by a final discussion. *The IKON Seascape*, is an extract of the recording from the collective performance (see Music Appendix 3).

See Appendix 1 for (1) Layout of room, (2) Workshop Structure, (3) IKON Soundscape activity sheet and (4) Feedback[29].

As previously discussed in **Different Presentation Formats**, active participation is key, and on evaluating the most effective part of the workshop was the act of playing and improvising with the found sound objects, which was essential to the compositional thinking on this project. Comments from the workshops included that participants enjoyed "recording and editing the sounds with filters" and "composing a piece out of objects". The emphasis on the enjoyment of playing informed all subsequent workshops within this portfolio. It was also intriguing that 66% of the participants at the workshop had never attended an event at the gallery before (in hand appealing to new audiences for electroacoustic music and the gallery also too) and the participants reflected a real desire to learn more - but they had limited knowledge of how to do so (previously mentioned in **Engaging with Young People**).

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[29] An evaluation questionnaire at the end of the workshop.

4.2 DREAMING WAVES

Place
- Concert: BEASTdome: Delian Dome concert in collaboration with Delia Derbyshire Day at the University of Birmingham on 1 December 2017
- Online: DD Day 2018 Online Event on 23 November 2018: www.deliaderbyshireday.com/delia-derbyshire-day-2018

   People
- Concert: Regular BEAST concert attendees in addition to followers of Delia Derbyshire Day organisation and fans of Delia Derbyshire
- Online: Followers of the Delia Derbyshire Day arts organisations

   Price
- Concert: Regular BEAST concert prices: £10 on the door / £7 advance / £3 students & under 18s
- Online: Free

   Product
- 8-channel acousmatic composition commissioned for the concert, BEASTdome: The Delian Dome, featuring archival material by Delia Derbyshire.
- Binaural version of the composition and Q&A article for the online edition of Delia Derbyshire Day 2018

The Composition

This 8-channel composition was a commission for a collaboration with BEAST and Delia Delia Derbyshire Day, an event celebrating the pioneering electronic artist in what would have been her 80th year, held at the University of Birmingham titled BEASTdome: The Delian Dome, in addition to the work being included in the online Delia Derbyshire Day 2018 event. Considering audiences, the BEASTdome concert attracted the regular BEAST concert attendees (in hand deepening/extending relationships with existing audiences due to the partnership and format) whilst the collaboration with Delia Derbyshire Day also engaged new audiences similar to existing ones (Commuterland Culturebuffs amongst others) who had interests in electronic music and Delia Derbyshire. In addition, the online event had the potential to reach many segments (due to its ease of accessibility) but in particular Experience Seekers, Dormitory Dependables and Trips and Treats segments (as discussed in **Digital /**

Online Platforms (section 3.3)), and consequently the online shift to present the work on an online platform provided access to a much larger audience.

Space was an integral focal point of this composition as 1) it was my first attempt at composing a multichannel composition and 2) I was considering how this spatial composition would translate over headphones for home listening. In particular, as mentioned in **Digital / Online Platforms**, all compositions were uploaded to Soundcloud as 'tasters' or as full version works to ensure greater reach, and this was my first approach at considering how listening via loudspeakers to headphones may alter the experience.

For the creation of the work, myself and other BEAST composers attended Delia Derbyshire Archive at the John Rylands Library, the University of Manchester, and spent a full day listening to and reading Derbyshire's work. This included a variety of extracts, notes, samples, providing us with an insight into not only her work but her process of working. Here I gathered notes and ideas, absorbing and engaging with Delia's process and work. From the archival material, I was particularly inspired by Delia's sketch (see *Figure 8*).
The sketch acted as a starting point for the work with the image providing inspiration for the use of space, frequency content within the work as well as larger gestural structures. The elements of the sketch in particular which I drew upon include:

1) The smaller returning triangular gestures

2) The larger embodying hollow, circular gestures with the three sections moving from C to Db and later returning to C. These motives also inspired the use of space with smaller gestures being placed within larger circular motions.

3) The lower rough, wriggly lines, to create a homogeneous sound world, with sounds developing, morphing and returning beneath the surface.
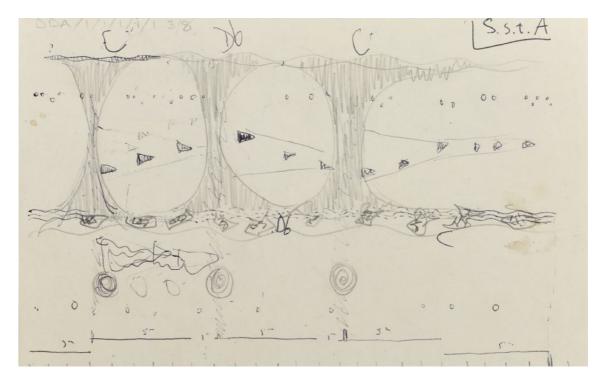
Figure 8. Sketch by Delia Derbyshire (Source: © Delia Derbyshire Archive at The John Rylands Library, University of Manchester).

Dreaming Waves was created using electronically generated material, close-up microphone recordings of the voice (e.g., the word 'dreams' at 00:04:13), field recordings (e.g., such as church bells at 00:04:38) and archival material of two short extracts (DD110) from the Delia Derbyshire Archive. The two extracts from DD110 were work in progress make-up material of various whole-tone loops, including '*Delia's Psychedelian Waltz*' motif (see *Figure 9*) which formed part of the electronic music for the 1968 film, *Work is a Four Letter Word*, starring Cilla Black and David Warner, directed by Peter Hall.

Figure 9. Score of *Delia's Psychedelian Waltz'* motif (Source: Personal collection)

From here I considered how to utilise the DD110 extracts within this sketch, sonically manipulating references to the psychedelic nature and abstract sound worlds of other works by Derbyshire including *Inventions for Radio: The Dreams* (which references different sensations of dreaming). These sensations and notions of dreaming further were considered within the work through the use of motion and space, as I decided to compose this work in 8-channel format. With regards to the multichannel spatialisation, I focused on creating an immersive and diffused space, where the archival material and other short, synthesised gestures float around the ring of the eight speakers (such as small pockets of memories), enveloped within larger abstracted motions; with most never quite resolving to anything. The gestures travel across the speakers smoothly, with the aim of creating a calm 'dream-like' yet slightly unnerving state, whilst at other times shift perspective to draw the listener in to focus on spaces within the ring of eight speakers e.g. at 00:04:13 where the synthesised gesture leads into a shift in space to the spoken word 'dreams' in the main pair of speakers (channels 1 and 2). This was an important consideration for how the work would be presented online over headphones, as many audiences still may not be familiar with listening to binaural works (unless for gaming and other immersive technologies e.g., VR). I wanted to ensure smooth seamless spatial movements within the music, carefully sculpting to ensure the spatialisation complimented the composition, rather than distracting from it due to the spatialisation acquiring an intrusive character. *Table 5* is a breakdown of the overall structure of the work where specific references to the varying material used within the work can be seen:

Table 5: Structure of *Dreaming Waves* (Source: Personal collection).

Section 1 00:00:00 - 00:01:50	A slow fade-in of low pitched material. DD110 extracts enter from 00:00:31 in the distance and move to the foreground before decaying around 00:00:45. Higher pitches follow, and further entries of DD110 material in various pitches and often with GRM Tools Delays. The spatialisation moves in a circular motion around the space to create a dream-like state of interweaving layers with calm-slow morphing changes.

Section 2 00:01:51 - 00:03:52	A build in density and texture of developed DD110 material swaying to the left (channel 1 and 3) at 00:02:10, and further time-stretched synthesised pitches circle to the right (channel 2) at 00:02:19 with time-stretched pockets of sounds introduced DD110 material (with added reverb, and transformations via GRM Tools Shift, GRM Tools Pitch Accum, GRM Tools Warp and SoundHack +bubbler). The layers spatially diffuse at 00:03:26 and transition again spatially to the right channels before further DD110 material returns.
Section 3 00:03:53 - 00:05:24	This section begins with the main pair of speakers (channels 1 and 2) for a focused/centralised moment of listening, with real-world, unprocessed sounds appearing for the first time during the work (00:03:53 - ambient sounds within a foyer, 00:04:09 - spoken word of "dreams"). This is followed by a synthesized sound gesture to the left channels which introduces time-stretched material of bells, in hand producing ethereal high-pitched resonances at 00:04:43, and decaying to recognisable sounds of birds, which gradually decay into the distance using reverb and filters.
Section 4 00:05:25 – 00:08:08	Material from Section 1 is re-introduced, but with further circular spatialisation and development, gradually gaining momentum and building in textural density. At 00:06:11 the DD110 material appears higher-pitched due to filtering and is accompanied by a spectrally dense layer of sound, intersected with motifs, delays and filtering. The wall of sound builds to 00:07:35 and is followed by the DD110 material to end with a final circular sweep.

As can be seen in the table, the DD110 material returns throughout the composition, often developed, at different tempi and pitches, through time stretching and other transformational techniques. The archival material influenced all aspects of the composition (use of pitch, timbral qualities, form etc.) as I wanted to ensure that this remained the focal point and inspiration behind the composition. In addition, I found the experience of having the opportunity of using sounds by Derbyshire herself extremely enlightening, and providing a more meaningful and personal connection with Delia's work. This also provides a continued reason for archives such as Delia's to remain active and accessible, providing current

composers with new avenues for art and a justification for archives such as this to be a continued source of education and inspiration for the future.

The online strategies for presenting the work are assessed within **Digital / Online Platforms**, and the accompaniment of the Q&A/interview (for the DD Day 2018 Online Event) provided an effective way of enabling audiences to engage and understand the intentions behind the composition. As highlighted previously, the composition has to date received over 1000 listens, a much larger audience than the max. capacity of the BEASTdome concert (up to 90 people in the Dome Room). This positive response in hand has encouraged me to post and utilise online platforms to promote my work further, and when the COVID-19 outbreak occurred this was the only effective means of reaching audiences.

4.3 A FLAVOUR OF TEARS

Place
- Concert: Barber Concert Hall, The Barber Institute of Fine Arts on 17 February
- Workshops: Workshop Room at The Barber Institute of Fine Arts on 20 February 2018 (11am-12.30pm: 4-8 years, 1.30-3pm: 8-12 years)

People
- Concert: Regular attendees for the separate audiences (1) Department of Music, (2) Barber Concerts, (3) BEAST audience, (4) Crosscurrents Festival audience and (5) other attendees interested in contemporary music
- Workshops: Families, and regular attendees of the Barber Families First programme

Price
- Concert: £10, £7 concessions, £3 students/u18s
- Workshops: £6 per child

Product
- A miniature stereo acousmatic work, commissioned for the concert, *Reimagined: The Barber Collection,* part of the CrossCurrents 2018 Festival
- Two early years workshops titled, BEAST: Sonic Paintings, which delved into sound and visual image, exploring and crafting sounds to create sonic paintings

Compositional Approach

This stereo acousmatic composition was created as a movement for the larger body of work, *Reimagined: The Barber Collection*, which included a variety of movements of instrumental and electroacoustic works inspired by paintings and sculptures found in The Barber Institute of Fine Arts Gallery, and later incorporated into two early years workshops, BEAST: Sonic Paintings. The concert as part of the CrossCurrents 2018 Festival, was able to attract regular BEAST concert attendees (maintaining the existing audience) whilst also engaging with new audiences similar to existing ones (Commuterland Culturebuffs) who are familiar with attending high-quality art events in traditional concert hall settings (such as the concerts held in the Barber Concert Hall and of 'contemporary' mixed music, in addition to attendees of the wider festival). Meanwhile, the workshops reached regular attendees of the Barber Families

First programme and also audience segments Kaleidoscope Creativity and Facebook Families, with only 16.8% of participants never attending an event at Barber before[30].

Drawing upon the painting (**Mixed Art Forms**), this composition was in response to the painting *The Flavour of Tears* by the surrealist artist, Rene Magritte. The surrealistic painting, also known as *The taste of sorrow*, provides a poetic image of a tobacco plant, in which the leaves transform and morph into birds. The focal point of the artwork, the bird morphing plant is a recurring image throughout Magritte's work (such as within 'The natural graces' and 'Prince Charming'), highlighting Magritte's focus on repetition, not only repeating motifs within works but producing multiple copies of particular paintings: there is a nearly identical replica of this painting located in the Musée d'Art Moderne in Brussels. This may have referred to his interest in Freudian psychoanalysis[31], for which repetition is a sign of trauma (Viederman, 1987). Consequently, within the composition, sounds of birds were repeated, some distorted and transformed, and some identical, in hand alluding to this e.g., the bird 'shriek' can be heard at 00:00:27, 00:00:33, 00:00:37, 00:00:42, 00:00:50, 00:01:15, 00:01:18 - 00:01:52 and 00:01:58.

'Surrealism was a means of reuniting conscious and unconscious realms of experience so completely that the world of dream and fantasy would be joined to the everyday rational world in "an absolute reality, a surreality' (Britannica, n.d.). Considering this, there are three different perspectives to this painting, (1) the background which reference to dream-like irrationality, with the sky more 'storm-like' in nature contrasting the calmness of the sea, (2) the tobacco plant transforming and morphing into a bird whilst being consumed by a caterpillar and (3) the curtain, a surrealistic technique often employed to draw the viewer into

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[30] See key survey results in Appendix 2.

[31] Freud believed that people could be cured through gaining 'insight' by making conscious their unconscious thoughts and motivations.

the composition, pointing to the artifice of the scene (no author, no date). The title also, *The Flavour of Tears*, provides a sorrowful undertone, in particular as no tears are present in the painting.

Figure 10. *The Flavour of Tears* (Source: © The Barber Institute of Fine Arts, 2016)

As discussed in **Mixing Art Forms**, it is important to consider how a visual component may enhance the experience, and how using two art forms as a compositional tool may create new methods of engagement. Using the artwork as a narrative for the composition, I chose to create a melancholic, yet erratic, abstract sound world interjected with sounds of birds and insects to draw on the main focus of the work: the 'bird-leaf', to reflect not only the surrealist nature of the work but also the sorrow and tension highlighted within the painting. Sounds of birds repeat, sometimes the same and sometimes different, with insects jittering spatially to create a sonic image of the caterpillar surrounding and consuming the leaf-bird (an example

of this can be heard at 00:00:00 - 00:00:07). Abstracted 'squawks' provide a sorrowful

undertone, and blend into the uneasy dream-like background. Different gestures bring

different elements to the foreground implying changes of perspective similar to the vast play

on layers and perspectives found within the painting; metamorphosis and dissonance reflect

the decay of the bird. Beyond the source material used and the transformations as described

above/below, I actively limited presenting all of the various layers in the painting - the sole

focus of this composition was on the bird. As sound has the potential to infer constructs of a

quasi-visual mindscape via imagination (Emmerson, 2007, p.169), the sound of the bird

provided the door in to the painting, jointly leaving the other layers to audience interpretation.

In addition, through presenting the work as part of the workshops, focusing upon the bird

deemed more fitting (in particular for early years) as too many sounds may have become too

ambiguous and overwhelming. The structure of the composition is as follows in *Table 6*.

Table 6: Structure of *A Flavour of Tears* (Source: Personal collection).

Section 1 00:00:00 - 00:00:41	A gradual textural build of jittering leaves and 'insect-like' sounds highlight the struggle and decay of the bird, with the 'jittering' processing created using plugins such as GRM Tools Shuffling and GRM Tools Delays. The 'hawk' sounds of the bird emerge from 00:00:26, along with sustained pitched material, jittering spatially between the channels.
Section 2 00:00:42 - 00:01:17	This section is initiated with a loud 'shriek' at 00:00:42, changing the perspective of the composition, then moving into a more dream-like state with field recordings of birds chirping in the background, yet still slightly distorted and fragmented.
Section 3 00:01:18 - 00:01:56	Reflecting the metamorphosis of the leaf-bird, the sound of the bird at 00:01:18 continues to develop through fragmentation and augmentation, the sounds being time-stretched and layers smeared to blur between the different layers of the painting, increasing in pitch and density to increase intensity (as can be seen in the spectrogram (*Figure 11*)).
Section 4 00:01:57 - 00:02:21	The 'shriek/cry' at 00:01:58 is now more processed and distorted, returns to the first section of the composition, yet developed with the addition of other bird sounds (field recordings) from 00:02:02, implying other leaf-birds are present, and furthermore augmenting

	the perspective of the painting.
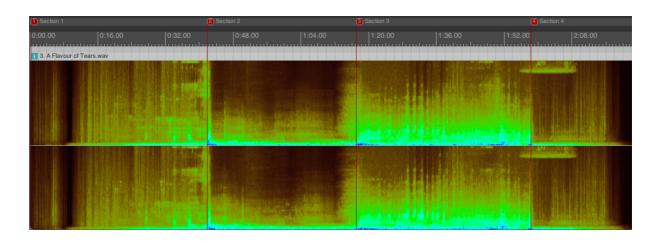
Figure 11. Spectrogram of *A Flavour of Tears* (Source: Personal collection)

The Workshops

BEAST: Sonic Paintings, was a series of workshops for early years exploring artworks in the Barber's galleries, delving into sound and visual image, using a selection of commissioned new works by BEAST composers created for the CrossCurrents 2018 Festival, *Reimagined: The Barber Collection*. This workshop was a collaboration between myself, CrossCurrents Festival 2018, BEAST, and The Barber Institute of Fine Arts Learning and Engagement team.

The workshops were separated into two groups, (1) 11am-12.30pm for 4-8 years and (2) 1.30-3pm for 8 -12 years[32], and tailored to meet the needs of both groups. The workshops were part of CrossCurrents Festival activities and also coincidentally fell within the February half term when children were off from school, and formed part of the Barber Institute's regular Creative Sunday Workshops with their Barber Families First programme which ran throughout the year.

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[32] 16 participants attended the 4-8 years workshop and 9 participants attended the 8-12 years workshop, indicating a drop in the level of attendance with the older age group.

Figure 12. Photograph from the BEAST: Sonic Paintings workshop in the Gallery (Source: © The Barber Institute of Fine Arts, 2018).

Considering the various approaches discussed in **Engaging with Young People**, the workshop was separated into three sections:

1. A sonic exploration of the art gallery, using a **guided listening sheet** and activities, including listening exercises and tasks considering sound in relation to different art works in the gallery (see *Figure 12* and Appendix 2).

Figure 13. Mark-making activities from the BEAST: Sonic Paintings workshop (Source: © The Barber Institute of Fine Arts, 2018).

2. **Listening to acousmatic compositions** such as *A Flavour of Tears* and other

   Reimagined: The Barber Collection compositions, with discussions and mark-making

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activities (see *Figure 13*). Other compositions included: A *Mother and Child by the Sea* by Nikki Sheth and *A Pastoral Landscape* by Olli Smith.

Figure 14. Collective improvisation with found sound objects from the BEAST: Sonic Paintings workshop (Source: © The Barber Institute of Fine Arts, 2018).

3. A **collective participatory improvisation** in response to different art works in the gallery: *Primrose Hill – Winter* by Frank Auerbach, *A Beach near Trouville* by Eugène Boudin and *Homme vu par une Fleur* by Jean (Hans) Arp. The participants used found sound objects to create their own sonic interpretations, and performed into the microphones located within the corners of the workshop room. This then fed into an Ableton Live session, with the sounds being assigned to different loudspeakers within the room.

As discussed in **Mixing Art Forms**, the workshops used arts techniques (mark-making) to enable a creative response to listening and interpreting acousmatic music, and enable children to undertake an activity (drawing) which they were more familiar with doing (due to regularly attending fine art events). For this reason, the active decision to first undertake a sonic exploration of the art gallery, before encouraging listening and response to this, was deemed a more suitable approach for this age range. Indeed, the change in space was extremely fitting for the workshop with one parent commenting, "excellent - particularly as part gallery based,

part workshop. No time for boredom!" and another commented that "I particularly liked the part where the children responded to the music with their own images." Though, considering the feedback further, more continuous workshops may need establishing as 56.9% expressed that the workshop had maybe inspired them to explore sounds further and 36% said they definitely had. It is important to note that the feedback was collected from the parents and not recorded by the children - all children in both workshops provided 100% smiley sticky notes for their feedback (see Appendix 2).

See Appendix 2 for (1) Layout of room, (2) Workshop Structure, (3) Activity Sheets and (4) Feedback, including sticky notes feedback by the children.

4.4 SOUND SCULPTURES

Place
- Augmented reality sound trail across the University of Birmingham main campus
- Online: SOUNDwalker App (Mahtani and Armstrong, 2018) and Soundcloud platforms

People
- Students, staff and attendees of the Arts & Science Festival 2018

Price
- Free

Product
- An augmented reality sound trail consisting of nine miniature stereo acousmatic works in response to sculptures
- Three guided listening walks following the GPS triggered SOUNDwalker app (Mahtani and Armstrong, 2018)

The Composition

This project was a collaboration between myself and the composer Nikki Sheth, and was commissioned for Arts & Science Festival 2018 which took place from 12-18 March 2018, curated by the Cultural Engagement team at the University of Birmingham. The aim of the project, *Sound Sculptures* was to explore the relationship between sound and sculpture through the creation of distinctive soundscapes inspired by individual sculptures found across the University campus. The outcome of the project was (1) an augmented reality sound trail consisting of nine miniature stereo acousmatic works in response to sculptures, and (2) three guided listening walks following the GPS triggered SOUNDwalker app (Mahtani and Armstrong, 2018). This project had the potential to reach new and different kinds of audiences, in particular Experience seekers, Kaleidoscope Creativity and Dormitory Dependables segments, due to the installation being presented outside as part of a larger festival for which access was free. In addition, through the festival taking place at the University, there was also the potential to engage new audiences similar to existing ones, such as Commuterland Culturebuffs and Trips and Treats, via the staff and student

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community on campus who may have a desire to learn and engage with works which intersect between the arts and science.

The University Sculpture Trail Map (see *Figure 15*) was used as a guide/structure for audiences to follow when listening to the works, with an aim of providing an alternative experience of the trail to explore and celebrate the variety of sculptures located across the university campus. It was both site-specific and site-responsive, and also explored the physical properties (form, materials) and context (history) of each sculpture:

1. 'site-specific': work made specifically for a site (Hayes, 2017, p.84)

2. 'site-responsive': work made in response to and encounter with, a site (Hayes, 2017, p.86)
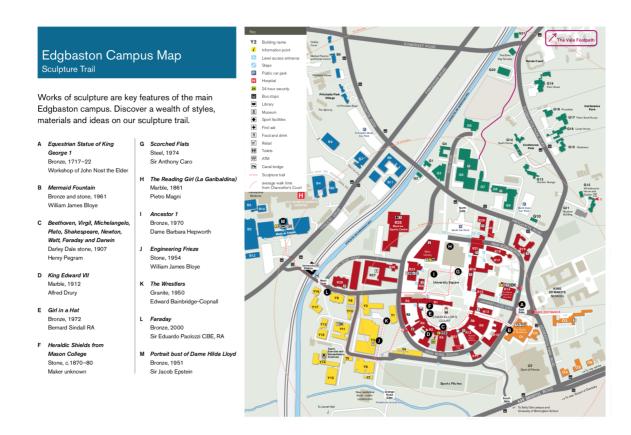

Figure 15. Map of the University of Birmingham Sculpture Trail (Source: University of Birmingham, n.d.).

Drawing on the theme of the festival, stop/start, we aimed to explore the natural and abstract

sound worlds constructed through studio composition and traditional electroacoustic techniques. Initially, we collected a variety of location-based recordings; hydrophone, contact microphone recordings, and stereo recordings using DPA's at each sculpture, in addition to close-up microphone recordings in the studio of brass, tea pots, leaves and plastic sheeting etc. The sculptures were divided between myself and Nikki Sheth, and though the compositional approach for each composition was co-designed and later composed individually, we came together for listening sessions and to share recordings for cohesiveness. We aimed for the listening trail to take one hour to complete, so each miniature composition ranged from 1-3 minutes each in duration. Another compositional factor was to consider how listening with headphones also interacted with the environment, and how background noise bled into and fused with each work. Therefore certain acousmatic traits such as large dynamic ranges had to be reduced due to audibility, whilst creatively considering how particular sounds on campus may play a part within the compositions.

Ditching the Concert Hall was a key strategy for this compositional project. The act of following the trail provided participants with the option to choose where they stood, how long to listen for, and how loud to listen to their own device - all factors which will affect how the environmental sounds will impact the composition, including sounds of the participants themselves (e.g. footsteps, breathing) too. Furthermore, the compositions were carefully sculpted to consider the use of pitch, timbre, texture, and how this will interact with the outdoor/ambient noise of the environment of campus, along with the varying view/listening points of the listener. As discussed in **Mixing Art Forms**, listening to each 'sound sculpture' at its location provided a level of 'closeness' and tangibility, and consequently, a number of the compositions were approached considering its physical form, texture and material e.g., using contact microphones to capture the internal resonances of metallic structures, and most importantly its location to provide various perspectives of the sculptures.

Each composition within this project approached the sculpture differently; a selection of the compositions, included as part of this portfolio are:

1. Mermaid Fountain

Figure 16. The Mermaid Fountain (Source: © Research and Cultural Collections, 2012).

The Mermaid Fountain by William James Bloye is the only sculpture on campus which features water, with the composition intertwining hydrophone recordings (within the water of the fountain) (e.g., 00:00:05), ambient recordings from around the sculpture (e.g., 00:01:22) and its environment when listening at the sculpture (e.g., 00:01:38) during the augmented sound trail. These different layers interact within the composition, to not only change perspectives when listening but also produce imagery of the mermaid being within and splashing around in the water of the fountain. In hand, there is an interplay between these different layers, with more subtle sounds of storms and also recordings of hydrophones emerging and developing within the different layers of the composition; for instance at 00:01:03 the hydrophone recordings are filtered in order to hear the higher frequencies, along

with splashes on the surface of the water to create imagery of the mermaid splashing within

and around the fountain, but as these sounds are quieter and more subtle, will blend into the

ambient noise around the Guild of Students where the sculpture is located. Another example

is at 00:01:22 where the ambient field recordings of the Guild of Students are incorporated

within the composition, so when listened to at the sculpture will provide two different

perspectives: an augmented experience of being in the past but simultaneously being in the

present. Furthermore, the narrative within the composition highlights two contrasting images

(1) the joyful sculpture offering a warm, welcoming reception to all with it arms wide open,

and (2) the figures association with perilous events such as floods, storms, shipwrecks and

drownings, through the use of recordings of storms and floods. *Table 7* and *Figure 17*

outline the structure of the work and some additional analytical features - two overarching

gestures with an area of calmer sounds in between.

Table 7: Structure of *The Mermaid Fountain* (Source: Personal collection).

Section 1 00:00:00 - 00:01:02	An abstract swell from 00:00:00 - 00:00:05 introduces low 'rumbling' filtered hydrophone recordings captured in the fountain. From 00:00:10 time-stretched, sustained layers of dense recordings of the sea crescendo and gain momentum. From 00:00:24 splashing sounds of water (at a higher frequency) emerge from the mermaid splashing around in the fountain. The layers continue to build in density through the layering of water recordings processed through GRM Tools Delays and GRM Tools Shuffling, in particular the build in tension from 00:00:50 - 00:01:03 through sound transformations of time-stretching and GRM Tools Warp to produce a heavily processed version of the initial opening gesture.
Section 2 00:01:03 - 00:01:51	This section begins in a relaxed and calm register, with layers of hydrophone recordings filtered at various frequencies. At 00:01:06 the splashing sound of water returns (from 00:00:24) and provides an area of stasis until the sample repeats over and over again (created using GRM Tools Freeze). The gradual high-pass filtered water material morphs alongside the initial abstract swell gesture to introduce DPA field recordings of students talking by the fountain from 00:01:22 - 00:01:46.

Section 3 00:01:52 - 00:02:51	The layers are engulfed again by the overpowering sounds of storm-like material (similar to Section 1) though the initial opening gestures trigger various layers and build in tension to a moment of collision at 00:02:01, followed by time-stretched versions of various layers/samples from what precedes using GRM Tools Shift and GRM Tools Pitch Accum. The sounds decay and diminuendo, leading again to the key motif in the work - the abstract swell at the opening of the composition.

Figure 17. Waveform of *The Mermaid Fountain* (Source: Personal collection).

2. Woman for Heidelberg

Woman for Heidelberg is a sculpture by Michael Sandle. In relation to this sculpture, Michael Sandle, stated 'I want a sculpture that will disturb people…' (Wikimedia, 2018). Considering the appearance of the sculpture and its transformed classical appearance of the ancient Greek statue of Athena, the composition explores the metallic resonant qualities of the sculpture with the sounds distorting and transforming to reflect its threatening nature and form, and also reflecting on the visual disjunct and distorted shapes and angles of its form. This

Figure 18. Woman for Heidelberg (Source: © Research and Cultural Collections, 2012).

composition is more gestural in approach in comparison to other compositions within the *Sound Sculptures* project. Responding to its form using field recordings at the site of the sculpture in addition to contact microphone recordings of tapping, brushing and knocking of its surface highlights the sculptures metallic hollow structure and provides a level of tactility for the listener. The composition begins with a dense, low metallic resonances setting the disturbing tone of the composition before leading to a pitched metallic ring of G-natural at 00:00:26 which introduces field recordings from the sculpture, with the sounds of sirens providing an allusion to the original setting of its commission - a hospital in Heidelberg. The composition builds and decays, through the development of hits and resonances of metallic pitched material (see *Figure 19* for a breakdown of the pitches within the composition); for instance, the metallic strike of E-natural at 00:01:12 instigates further dissonant metallic resonances, leading to a final larger chord of G-natural and A-flat metallic strike resolution at 00:02:00. Here, this gesture then dissolves to highlight the key material at 00:02:22 - 00:02:32, the source material which has formed the basis of the composition (sounds of

metallic knocking). *Table 8* details the use of pitches within the composition.

Figure 19. Pitches in *Woman for Heidelberg* (Source: Personal collection).

Table 8: Structure of *Woman for Heidelberg* (Source: Personal collection).

Section 1 00:00:00 - 00:00:25	A dense, low metallic resonant 'strike' initiates the compositions pitch of E-flat, intended to alarm the listener and set the disturbing tone of the composition. The initial strike repeats with added time-stretched layers and as this decays, other siren-like high pitched sustained sounds emerge at various octaves of E-flat with quiet contact microphone sounds starting at 00:00:15 being nearly inaudible in the distance. The sustained gesture continues to build and leads into section 2.
Section 2 00:00:26 - 00:01:11	The resonant pitched metallic ring of G-natural provides an area for environmental sounds to appear, and a siren-like sound of an ambulance is carefully moulded into the soundscape. Another successive gestural build with E-flat pitch and F-natural to 00:00:41 brings the siren sound into the foreground and is accompanied by a lower D-flat drone, with accompanying high-pitched E-natural filtered sounds of the environment around the sculpture. This gradually morphs at 00:00:54 and continues to grow and build with additional more agitated textural sounds, to lead into section 3.
Section 3 00:01:12 - 00:02:46	00:01:12 instigates further metallic resonances pitch E-natural, with field recordings (sounds of birds) appearing in the distance. Successive pitched sounds of metallic rings follow, adding in density and resonant rings/decays introduce sharp, dissonant metallic pitches from 00:01:44 (E-natural, D-flat). The tensions and dissonance continue to build, leading into a final large metallic strike at 00:02:00 - G-natural and A-flat. Further time-stretched sounds and pitched rings B-flat appear and decay, and morph into further field recordings by the sculpture (with the siren sounding). The decay enables a seamless transition from the end of the work, to simply listening at the sculpture.

3. Girl in a Hat
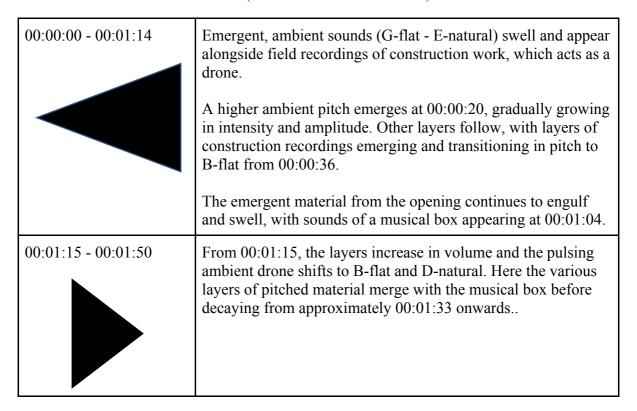
Figure 20. Girl in a Hat (Source: © Research and Cultural Collections, 2012)

Girl in a Hat is a sculpture by Bernard Sindall RA. The posture of this sculpture, standing casually, smiling and wearing nothing but her hat has formed the inspiration for this composition. I wanted to create a composition which reflects the calm, relaxed nature, in which the figure coolly watches those that walk past her, consequently drawing upon more ambient techniques for this composition. The composition has limited development, which consists of one large crescendo and diminuendo, and involves (1) synthesised swells created using a synthesised ambient pad of pitches (G-flat, E-natural, D-natural, B-flat), (2) field recordings of campus, in particular highlighting the building work taking place on campus at the time, and (3) sound recordings of a music box, referencing to the work by Edgar Degas, the '*Little Dancer Aged Fourteen*', which holds a similar pose in the artwork. The different elements of the composition gradually interact, with the music box sounds entering at 00:01:05, and other higher pitched material succeeding and decaying. Whilst the composition is under two minutes in duration in length, the form and pacing are more static in approach to

other compositions as part of the sound trail, and alludes to the possibility of the composition continuing to loop over and over again, in hand reflecting the relaxed form and nature of the sculpture - as is also reflected in *Figure 21*, which illustrates the overarching form of this composition, and how the contorted shape alludes to the possible tilting/suggestion for further looping and development.

Table 9: Structure of *Girl in a Hat* (Source: Personal collection).

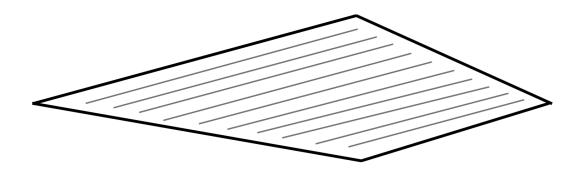| 00:00:00 - 00:01:14	Emergent, ambient sounds (G-flat - E-natural) swell and appear alongside field recordings of construction work, which acts as a drone. A higher ambient pitch emerges at 00:00:20, gradually growing in intensity and amplitude. Other layers follow, with layers of construction recordings emerging and transitioning in pitch to B-flat from 00:00:36. The emergent material from the opening continues to engulf and swell, with sounds of a musical box appearing at 00:01:04.
00:01:15 - 00:01:50	From 00:01:15, the layers increase in volume and the pulsing ambient drone shifts to B-flat and D-natural. Here the various layers of pitched material merge with the musical box before decaying from approximately 00:01:33 onwards..

Figure 21. Illustration of the form of *Girl in a Hat* (Source: Personal collection).

4. Beethoven, Virgil, Michelangelo, Plato, Shakespeare, Newton, Watt, Faraday and Darwin

Figure 22. Pantheon of the Immortals (Source: © Research and Cultural Collections, 2012).

Travelling through the 'Pantheon of the Immortals', by Henry Pegram, this composition sonically reflects the achievements of the nine 'life-size statues... [of] great men from the worlds of art, philosophy, science and industry' (Research and Cultural Collections, 2012), situated above the doors to the entrance of the Aston Webb Building. The composition references the figures by associating different sounds with their achievements: musical extracts by Beethoven, spoken word of plays/writings by Virgil and Shakespeare, recordings of train sounds for Watt and electric hums for Faraday. Compositionally I approached this work using the recognisable sound sources mentioned arranged in a more montage-based approach, with the areas of more processed sounds/transformations being used to shift between the various perspectives of field recordings of Aston Webb and referential sounds to the pantheons. This was an active decision, as the sounds identifiable to each sculpture/pantheon were intended to provide an easily identifiable link to the various sounds

of the different figures. The composition begins with the gradual entry of ambient field recordings from the Aston Webb reception before introducing the other referential sound material, with recordings of electricity starting at 00:00:13, followed by the introduction of other source material before leading to a train whistle at 00:00:44. Here the ambient recordings now in the foreground gradually decay with the referential sounds by 00:01:20 transporting the listener to a completely separate sound world, with sounds of a play by Shakespeare at 00:01:46, amongst others. Sounds of the clock tower crescendo from 00:02:02, and later reverse back to the original material from the beginning, with the doors swinging at the main entrance to the Aston Webb building, conveying the notion of entering the Aston Webb Building to experience such sounds and then leaving, with the composition exploring the scale and reverberance of within the building and outside in Chancellor's Court – representing the grandness and scale of campus and the university. *Table 10* is a breakdown of the overall structure of the work.

Table 10: Structure of *Beethoven, Virgil, Michelangelo, Plato, Shakespeare, Newton, Watt, Faraday and Darwin* (Source: Personal collection).

Section 1 (Intro) 00:00:00 - 00:00:44	Opening with an ambient field recording of the door swinging open to the Aston Webb Reception, various sound material emerges in response to the figures: (1) electricity hums at 00:00:13, (2) 00:00:30 music of Beethoven, (3) 00:00:31 steam engine, (4) 00:00:35 spoken word and applause. The pitch of the applause merges into the pitch of the train, with various layers interweaving to lead into the middle section.
Section 2 (Middle) 00:00:45 - 00:02:46	Here the train whistle instigates a new space resembling the reverberant Aston Webb reception and further doors swinging doors can be heard from a different proximity. The sound of an electric hum acts as a drone underneath. From 00:00:55, the sound of the steam train crescendos, with time-stretched processing, using GRM Tools Shift and GRM Tools Pitch Accum fusing the various layers whilst remaining texturally

	dense. Sounds of bells become more prominent from 00:01:23, in addition to the sound of string instruments from 00:01:31. The steam train continues to build, providing a quickening tempo and interplay between various spoken words samples at 00:01:40, string material at 00:02:00 and chimes from the clock tower. The other layers merge and dissipate.
Section 3 (End) 00:02:47 - 00:03:13	Returning to the initial material of the composition (recordings of the Aston Webb reception) footsteps lead through the swinging doors and fade out to end.

Dissemination

This project ran from 12-18 March 2018 with guided listening walks being scheduled on Monday 12, Wednesday 14, Friday 16 from 12.30-1.30pm each day. Alternatively people could listen at their leisure throughout the festival with both options available for streaming and/or download via the platforms: (1) SOUNDwalker, an augmented reality app (Mahtani and Armstrong, 2018) and (2) Soundcloud, the music and podcast streaming platform. Through ensuring **Different Presentation Formats** on two different platforms using **Digital / Online Platforms**, this provided the audience with the choice of how they choose to listen, whether to download the sounds or livestream and which platform to use. Each of the works could then be listened to via stereo headphone listening on site and at home using Soundcloud. Three guided listening walks were also delivered as part of the event. The guided listening walks consisted of approaching each sculpture as the app triggered the sounds and having dedicated listening time to each work. This was followed by a brief explanation and further discussion. As a result, the various options provided audiences with the opportunity to listen together, turning the experience into a social event. It gave people a chance to freely explore works, using technology as a means to do so. Over the course of the festival, the sound trail received 345 listens on the Soundcloud platform alone, and since then a further 429 listens and 26 downloads, as audiences continue to participate on the Sound

Sculptures trail. Through providing various options provided a greater level of flexibility and accommodation for the listener, and in hand a greater level of engagement with the project. In hand, 100% of participants on the guided listening trails stated that the event has inspired them to explore other events which work with sound.

See appendix 3 for feedback.

4.5 ANCESTOR I

Place
- Sound Installation: *Ancestor 1* sculpture located within the Green Heart on the University of Birmingham campus from 7-9 June 2019
- Online: SOUNDwalker App and Soundcloud

People
- Students, staff and general public who attended the opening of the Green Heart Festival

Price
- Free

Product
- A site-specific and site-responsive sound installation in response to Barbara Hepworth's *Ancestor I* sculpture, and supported by an artist talk
- Sound installation is also presented on the SOUNDwalker app and Soundcloud platforms
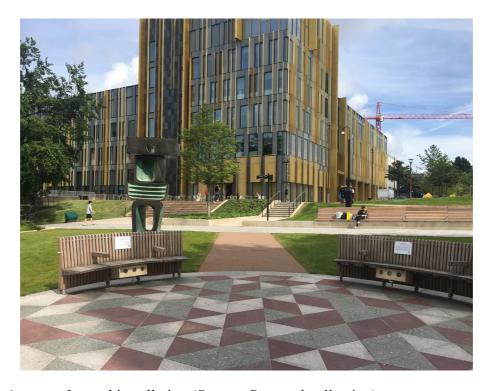

Figure 23. *Ancestor I* sound installation (Source: Personal collection)

The Composition

Ancestor I is a stereo sound installation inspired by the sculpture *Ancestor I* by Barbara

Hepworth, and is a collaboration between myself and composer Nikki Sheth, commissioned

by the Cultural Engagement Team at the University of Birmingham for the Green Heart

Festival in 2019. This is an extension/addition to the *Sound Sculptures* project discussed in section 4.4, and similarly draws upon the strategic concerns outlined in **Mixing Art Forms**. The sound installation had the potential to reach new and different kinds of audiences, in particular segments Facebook Families and Kaleidoscope Creativity, due to the installation being presented outside as part of a larger family-fun festival, and access was also free. In addition, as with *Sound Sculptures*, the festival taking place at the University positioned the work to engage with audiences like Commuterland Culturebuffs via the staff and student community on campus.

The sculpture, *Ancestor I* is part of the *The Family of Man* series completed in 1970 (Yorkshire Sculpture Park, n.d.), with Hepworth's work being inspired by place and her experience of nature, though concerned with form and abstraction, is primarily about relationships: not merely between two forms presented side-by-side, but between the human figure and the landscape, colour and texture, and most importantly between people at an individual and social level (Tate, n.d.(a)). The extended soundscape consists of four movements, drawing on the four different sections of the sculpture's totemic form (from top to bottom):

    1. *Head* (7 minutes 34 seconds) – cavernous - E Margetson

    2. *Torso* (4 minutes 37 seconds) – dense - N Sheth

    3. *Hips* (4 minutes 39 seconds) – water - E Margetson

    4. *Legs* (7 minutes 32 seconds) – cyclical - N Sheth

The four movements of the composition respond to these sections, creating sonic environments that evoke imagery of four words (cavernous, dense, water and cyclical) and inspired by the sculptures surface textures, form and construction. For the construction of the compositions, the sound installation was approached similarly to the Sound Sculptures project where we each individually worked on different movements (as highlighted above), often

coming together to listen and also share recordings. Here the compositions were again created using field recordings around and on the sculpture using DPA and contact microphones (the same as the Sound Sculptures project) in addition to using field recordings and hydrophone recordings of water.

Movement 1: *Head*

This opening movement considers the abstracted forms of landscape, colour and texture. As Hepworth lived and worked for many years in St Ives, a seaside town, civil parish and port in Cornwall. The form of the sculpture reflects the many ancient stones (menhirs) which surround the area, with the colours and textures of blue-green paint found in its cavities, evoking the sea-filling pools and caves along the Cornish Coast near to this seaside town (Research and Cultural Collections, 2013). As a result, the composition responds to this through abstractness, using field recordings of the sea, with resonant pitches meandering between, around and within the cave (the hole). Considering the 'head's' hollow form, this attribute enables the listener to see through the sculpture to the other side - the sights of campus, and as a result ambient location-based field recordings of campus are intertwined within this composition, with sounds of crackling twigs e.g., 00:00:35 - 00:00:57, people talking on campus e.g., 00:00:30 - 00:00:43, not only providing contrasts to this resonant soundscape but also creating strong links to its current location. With the gradual fade-ins, builds and fade-outs reflecting Hepworth's notion of figures in the landscape, rising out of the ground like geographical formations. In addition, as the composition was projected outdoors, it was also important to consider how the sounds will (1) interact with the environment and (2) how will the projection of sound over a large area impact the composition, as certain details will be lost in this setting. However, as the composition was also being presented on the app and online (**Digital / Online Platforms**), a balance was required to be considered. The structure of the composition is as follows in *Table 11*:

Table 11: Structure of *Head* (Source: Personal collection).

00:00:00 - 00:01:04	A gradual entry of resonant, ambient-like sounds created using filtering and spectral processing of water recordings. From 00:00:12 the textural sound, some being un-processed and others processed (using plugins such as GRM Tools Shuffling, GRM Tools Contrast and SoundHack+bubbler) enter, gradually building in layers and texture.
00:01:05 - 00:02:46	A move to an area of stasis, with processed sounds of talking and 'crackling twigs' continuing before the entry of resonant sounds, in particular at 00:01:30 as field recordings of the sea emerge. At 00:01:56 the previous material of twigs is developed through processing to blend within the more cavernous-like sound world, before other more textural and erratic sounds build.
00:02:47 - 00:05:34	A moment more of stasis, with the addition of the 'crackling twigs'. At 00:03:25, recordings of trickling water enter layered with transformed pitched sea recordings, leading to a more cavernous-like space at 00:03:40. The transformed sounds of waves enter at 00:04:12 to instigate a textural build, with lower-pitched resonances resolving at 00:04:55, followed by higher-pitched material stretching and blending into the next section.
00:05:35 - 00:07:35	The field recordings of the sea gradually dissolve with a final climax at 00:06:17. The cavernous sound world returns to the original sounds of campus, yet slightly more distorted.

Movement 3: *Hips*

The texture of this movement is inspired by Hepworth's technique 'textural calligraphy'; this is where the bronze was cast from plaster and later chipped and rubbed to give the sculpture its weathered yet water-like look (Research and Cultural Collections, 2013), not only reflecting how the sculpture was constructed with the marks of a human carver, but also evoking the rugged coastlines of Cornwall. The *Hips* consist of three linear lines, and consequently the composition interacts between (1) sounds of water, (2) contact microphone recordings of trees and of the sculpture itself (by tapping on the structure and the wind hitting

the metal surfaces) and (3) ambient field recordings of campus; to shift between the varying textural landscapes.
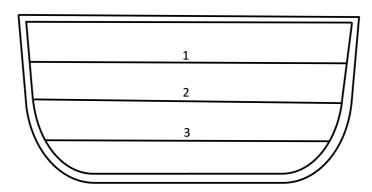

Figure 24. Illustration of *'Hips'* indicating the three inner linear lines

The pitched material first heard at 00:00:26 is of transformed sounds of the sculpture, in which this sound is developed and used as a thematic gestural motif to move between the different linear, horizontal layers of the 'Hips'. For instance, the 'bell-like' pitched motif A is heard at 00:00:44, 00:01:33, 00:02:21, 00:02:32, and the latter following by moving to more recognisable sounds of the sea, before returning to end the composition at 00:04:26. The use of this material was also considered in relation to the following movement, which consists entirely of pitched material. The structure is presented in *Table 12*:

Table 12: Structure of *Hips* (Source: Personal collection).

Section A 00:00:00 - 00:00:25	A gradual fade-in of sounds of water, in addition to ambient field recordings of the trees rustling nearby, with pitched material at various frequencies.
Section B 00:00:26 - 00:00:43	Transformed sounds of the sculpture (contact microphone recordings) are developed and used as a thematic gestural motif to move between the different linear, horizontal layers of the 'Hips'. Textural water sounds move fragmentally in linear motions before the higher-pitched material returns (00:00:43 - 00:00:45 is a repetition and development of 00:00:25 - 00:00:27).
Section A1 (bridge) 00:00:44 - 00:00:57	A return to motif A, though developed using GRM Tools Shuffling and GRM Tools Delays, building in density to

	lead into section C.
Section C 00:00:58 - 00:01:32	An underwater sound world, multiple layers of low-filtered sea recordings diminuendo to introduce hydrophone recordings and other emerging pitches.
Section A2 (bridge) 00:01:33 - 00:01:38	Bell material returns as a signifier of new material with further processing and transformation of motif A.
Section D 00:01:39 - 00:02:20	A full textural area, erratic, creating the motion of being within a rock pool, with varying synthetic gestures shifting and introducing new pitches and/or textures.
Section E 00:02:21 - 00:02:29	Motif A instigates another section of change. Here the texture is sparser, intricate and filtered at a mid-frequency range, with the spatialisation mirroring the crashing of waves.
Section A3 (bridge) 00:02:30 - 00:02:32	A shorter version of motif A with a short swell shifts the pacing.
Section D2 00:02:32 - 00:04:25	Developed material (additional layers and processed motif A incorporated within the mix) from Section D to create an intense passage of sound. Followed by material from section C. Development of A prevents the sound world from completely moving to a different space and restricts movements. At 00:03:22, the sound world transitions to a more recognisable area of less processed/transformed 'water' sounds. At 00:03:55 the sounds transition seamlessly through wind, bells and finally to waves, following the three linear lines of the sculpture.
Section B2 00.04.26 - 00.04.39	Return to B material to end.

Dissemination

The sound installation ran for three days outdoors during the Green Heart Opening Festival, drawing upon strategic concerns outlined pertaining to **Ditching the Concert Hall** and consisted of two sound boxes which were attached to benches by the sculpture (see *Figure 23* and *25*). Each waterproof box consisted of 2 x MiniRig 2 bundles (2 x stereo and 1 x sub speakers) with one box being placed on the left-hand bench and the other on the right. The installation ran all day from 7-9 June 2019. So as to embrace **Different Presentation**

Formats, in addition to the installation, full versions of the pieces were also available on

Soundcloud and the SOUNDwalker app (Mahtani and Armstrong, 2018), with shorter

versions of each movement added to the Sound Sculpture listening trail (2018). Considering

the place of the sculpture, we chose to set up a stereo speaker system attached to a seating

area besides the sculpture. This enabled listeners to either stand and/or sit whilst listening to

the work. Further events over the Green Heart Opening Festival included an artist talk

(Saturday 8 June from 1-1.45pm at the sculpture) and another guided tour of the *Sound

Sculptures* trail which ended at the *Ancestor I* sculpture.

Figure 25. Ancestor I sound installation (Source: Personal collection)

As the work remained on loop over the course of several days for the festival, the projected

sound outdoors in hand drew people in to listen, with sounds being projected across the whole

of the Green Heart on campus. The free, open and easily accessible installation allowed for

people to have the choice of whether to sit, stay for a second or stay for an hour. Over the

course of the weekend many people sat and stood within the space; and the ability to sit and stare at the sculpture provided a route in to the artwork for many. This was thus a successful application of Peter Batchelor's claim that 'having something to see' can provide a 'something to hold onto factor' (Peter Batchelor, 2015, p.11), which was mentioned in **Mixing Art Forms**.

4.6 DISTORTED ILLUSIONS

Place
● Online via Bandcamp and CD publication

People
● Online audience

Price
● 11 Euros (Compact Disc)[33]

Product
● A stereo acousmatic work inspired by and in response to the poem, 'Awakenings' (Anon, n.d). Commissioned and published on *Awakenings,* a digital album and CD by obs акусма AUDIOR 068.

The Composition

This stereo acousmatic composition was commissioned for the digital album, *Awakenings,*

with all compositions on the album responding to the poem 'Awakenings' (Anon, n.d):

<div align="center">

When you wake up and find out

you do not like what you see,

you would

keep dreaming.

When you open your eyes and understand

that a nightmare is over, you look back

once again

and start a new life.

When, just awake, you start listening,

your mind sees the past

and the future

and is without fear.

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[33] https://obsmusic2.bandcamp.com/album/awakenings

The digital album has/had the potential to reach various segments online (due to its ease of accessibility) but especially Experience Seekers, Dormitory Dependables and Trips and Treats segments (as discussed in **Digital / Online Platforms**). Considering that the work was composed for an online platform, the use of space in particular was approached differently. I composed and mixed the work using speakers and also with headphones, similarly to *Dreaming Waves* (section 4.2), since many listeners now use headphones for home listening and it was important to make considerations for this.

As the composition responds to a poem, this also falls within **Mixing Art Forms**, and through introducing the compositions with text may provide a factor for audiences to engage with otherwise challenging works. I approached this poem through considering the states of dreaming, exploring a narrative of different moving sensations within everyday life such as falling, being chased, trapped under water, moving vehicles - often themes found within dreams. Consequently, considering how the use of sounds may conjure particular sensations, thoughts and images, when in conscious and unconscious states, the composition includes a variety of different sound sources, blurring and shifting between abstract and recognisable sound (as highlighted within *Table 13*). Furthermore, the textures highlight the complexity of these states, warping and distorting to provide an insight into our deepest selves. Drawing on the familiar and unfamiliar, the resonances within the work reflect the continuing flow of life and time, highlighting the tangible link between reality and dreaming, questioning whether we are awake, transitioning between different states or simply just dreaming.

The composition consists of familiar, recognisable sounds[34] (subject to only light processing and editing), environmental sounds (field recordings - traffic e.g., 00:02:08, bird call e.g., 00:02:15, train e.g., 00:03:44), instrumental sounds (percussion - triangle e.g., 00:02:08), and

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[34] Pasoulas states that 'recognisable sound events carry extra- musical associations that draw on listeners' experiences' (Pasoulas, 2011, p.63)
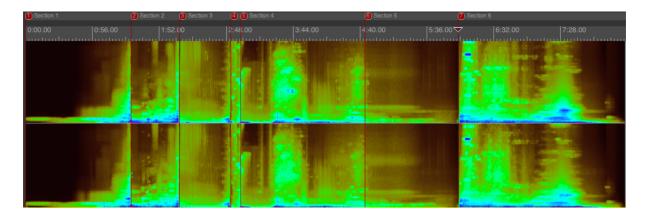
synthesised sounds (processed in real-time and non-real-time). I chose different sounds to signify and provoke different emotions (based on my own personal experiences) whilst providing a level of uncertainty, deliberately misleading the listener in the unexpected structural development of the work. Furthermore, as discussed in **Mixing Art Forms**, the composition draws on the use of the recording medium as a 'thought-capturer', to serve as a trigger of memory and experience for listeners (Amelidis, 2016). *Table 13* and *Figure 26*, highlight the overall form/structure of the work, with the first third of the work consisting of gestural triggers (e.g., at 00:01:28 and 00:02:08) before moving to more gradual transitions, though the composition has a false ending, in which the sounds decay and then 'awaken' with surprise at 00:06:02.

Table 13. Structure of *Distorted Illusions*

Section 1 00:00:00 - 00:01:27	An emergent, high-pitched, abstract tone (created using GRM Tools Evolution) is presented, with other mid-frequency layers appearing and gradually moving between channels left (1) and right (2). From 00:00:57 lower-pitched, fragmented 'rumbling' sounds appear and build in intensity. An additional fade-in of higher-pitched tones (from the beginning) continues to build.
Section 2 00:01:28 - 00.02.07	The onset of a pitched attack with decay, simultaneously with the emergence of a train recording. Layers of ambient/processed develop from the initial material and continue to swell. More granular textures enter from 00:02:01.
Section 3 00:02:08 - 00:02:50	A recording of a triangle introduces sounds of traffic, providing a moment of calm in which sounds of birds appear from 00:02:15. Other pitches gradually enter (of time-stretched trains) and build again in density.
Bridge 00:02:51 - 00:03:00	Pitched material is followed by alarm sounds (as if beginning to awake from a dream) before returning to further abstracted sounds.
Section 4 00:03:00 - 00:04:39	A recording of the bus is accompanied by a field recording of people walking. Abstract pitches (processed from the bicycle bell using GRM Tools Warp and GRM Tools Contrast) align with recordings of the

	bus brakes. Textural layers develop from 00:03:28, with the following sound sources appearing: 00:03:39 - Car horn 00:03:44 - Train 00:03:50 - Car tyres 00:04:19 - Walking
Section 5 00:04:40 - 00:06:00	The various sounds above fuse with pitched, sustained sounds and decay to distant construction at 00:05:42. This is followed by a decay to silence at 00:06:00.
Section 6 00:06:01 - 00:08:22	A large climatic 'awakening' introduces the various materials presented throughout the composition, with the sound sources blurring and shifting between layers of abstract and recognisable sounds, leading to an intense climax/wall of sound from 00:07:27 - 00:07:35. The climax resolves to the material first introduced in Section 1, alluding to whether the composition remains within a dream-like state or has awoken.

Figure 26. Spectrogram of *Distorted Illusions* (Source: Personal collection)

Additionally, having works included on compilation albums with other composers was a great method for gaining wider attraction, and providing audiences with the ability to learn more about other composers and their work too.

4.7 SKETCHING FROANNA

Place
- Sound installation for the Barber Lates – Nocturnes: A Woman Refigured event at The Barber Institute of Fine Arts on 14 May 2019

People
- Barber Lates and The Barber Institute of Fine Arts regular attendees, local emerging artists, members of the public, in particular with a motivation to attend fine arts events

Price
- Free

Product
- 8-channel acousmatic composition commissioned for the #BarberLates series in response to the sketch, *Froanna* by Wyndham Lewis

The Composition

Sketching Froanna is an 8-channel acousmatic composition which was presented as a sound installation in the photography room at The Barber Institute of Fine Arts, commissioned for the Barber Lates series event, 'Barber Lates – Nocturnes: A Woman Refigured' (see *Figure 27*). The installation reached not only regular Barber Lates and The Barber Institute of Fine Arts attendees, but also local emerging artists and members of the public who in particular have an interest in attending fine arts events or simply want to learn/try something new (such as audience segments Experience Seekers, Dormitory Dependables, Commuterland Culturebuffs) in hand reaching new and different kinds of audience.

Drawing on the theme of the event, the approach to the composition in response to the sketch, *Froanna* by Wyndham Lewis (**Mixing Art Forms**) was co-designed with The Barber Learning Team and drew on the knowledge of Dr Nathan Waddell (**Collaborations**). To provide context, the woman in the portrait, *Froanna*, is Gladys Anne Hoskins (1900-79), Wyndham Lewis' wife who he married in 1930; Froanna was the name she was affectionately known by (National Portrait Gallery, n.d.). The couple never had children and within the

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1930s Lewis kept Froanna in the background, with many of Lewis' friends being simply unaware of her existence, and Lewis was supposedly extremely jealous and protective of his wife, in particular her youth and beauty (National Portrait Gallery, n.d.). Froanna was a model of some of Lewis' most intimate portraits, and in contrast to some of his earlier, more impersonal portraits this sketch provides possibly a preoccupation with her inner life (National Portrait Gallery, n.d.). The sketch draws upon the colour palette of an intense blue, with the portrait being drawn in pencil and chalks on blue paper bought from a drugstore in America, from when Lewis' time over there (Art UK, n.d.).

The composition interprets the sketch from three perspectives (1) aesthetics e.g., the use of colour - the blankness of the blue paper, (2) the hidden meanings and emotion within the sketch - the perceptual gaze[35], and (3) the physicality and gestures of sketching the portrait - the gestural strokes of the chalk. As a result, the composition contrasts between soft and sharp lines and angles, to present the tenderness of the portrait but also the hidden characteristic detachment present within Lewis' works (Munton, 1977). The composition uses primarily the following sources; (1) close-up microphone recordings of chalk on paper e.g., 00:00:00 - 00:00:10, (2) blue noise e.g., 00:06:58 - 00:07:22, and (3) a brief reference at 00:05:54 of field recordings of birds. The changes in perspective between the sources was intended for the listener to follow the gestural strokes of chalk, providing a level of physicality and tactility, in order to transport the listener to different areas of the sketch, and draw on a recognisable sound for artists and art enthusiasts (a fitting sound in the gallery).

Blue, a symbol of melancholy and intensity (Robinson, 2017), is reflected within this composition, with the gestural motions of the chalk strokes, transporting and moving the composition between different areas of irritability and also calmness. This is exaggerated

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[35] A stronger contextual understanding of the sketch was required for this composition, in order to 'impress'/reach the fine art audience in attendance.

further within the spatialisation of the sounds, through the use of blue noise, cadences and harmonies throughout the work, but also crucial is the intervals used to lead into the varying sections (see *Table 14*):

Table 14. Pitch intervals in *Sketching Froanna*

Section 1 - Section 2	C-natural - F-sharp	Tritone
Section 2 - Section 3	C-natural - E-flat	Min 3rd
Section 3 - Section 4	G-natural - C-natural	Perfect 5th
Section 4 - Section 5	B-natural - G-natural	Min 6th
Section 5 - Section 6	C-sharp - F-sharp	Perfect 4th

There is a clear transitioning between dissonance and consonance within the composition, resolving to IV - 1 (Perfect 4th) to end the work (though transposed up a semitone, further highlighting play between tonalities). *Table 15* details the composition further, drawing on the use of the pitch in the composition to further heighten tensions.

Table 15: Structure of *Sketching Froanna* (Source: Personal collection).

Section 1 00:00:00 - 00:00:41	Introduction with gestural strokes of chalk. As the strokes develop the material gradually introduces more synthesised sounds, with the gesture at 00:00:22 of C-natural afterwards decaying to 00:00:36 before building again to lead into the next section.
Section 2 00:00:42 - 00:02:06	The gestural chalk stroke of F-sharp introduces an atmospheric melancholic sound world, which shifts in pitch to G-natural, continually returning to the chalk source material e.g., at 00:01:25 - F-natural. Another gradual build of layered material of C-sharp leads into an 'agitated' stroke at 00:01:52. The chalk material which follows is more distorted, with sounds at 00:02:00 referencing the turning of the 'blue paper' - C-natural.
Section 3 00:02:07 - 00:03:29	An atmospheric, reverberant sound world of E-flat is instigated with gradual evolving pitched material leading to a moment of stasis - F-natural - to draw the listener into Froanna's gaze, and the melancholic ambience of

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	this section, with the introduction of A-flat at 00:03:00. The lower-pitched processed sounds generated from blue noise are interrupted at 00:03:19 with the returning sound of the 'chalk stroke' and this material of G-natural again builds to lead into the following section.
Section 4 00:03:30 - 00:05:35	A loud, textural 'agitated chalk' sounds trigger a new section, with gestures introducing sustained drone–like pitched material of C-natural amongst smaller gestural figures: 00:03:40 - B-flat 00:03:53 - C-natural - G-natural 00:04:22 - 00.04.30 - G-natural - F-natural 00:04:40 - D-natural with inflections of E-natural 00:05:12 - F-natural The reverberant sound world which features field recordings of birds highlights a shift to another area of the sketch. From 00:05:28 the material builds in texture and dynamics, again highlighting the shifts between irritability and calmness - B-natural.
Section 5 00:05:36 - 00:08:12	A return to developed chalk material before a transition to 00:05:54 which provides again a moment of tranquillity. From here the pitched material develops - G-natural, with multiple layers transitioning and moving between spaces and pitches e.g., E-natural to E-flat to F-natural. The pitched material of F-natural which enters at 00:06:39 is followed by further development and layering of sounds, as the chalk sounds continue to develop, with 00:07:40 C-natural and 00:07:46 A-flat – (minor third) to highlight the shifts between the blankness of the paper and the physicality of Lewis drawing the sketch. Moving to C-sharp.
Section 6 00:08:13- 00:09:39	A section of stasis and decay of F-sharp.

Dissemination

The sound installation formed part of the Barber Lates series, an after-hours event designed to bring audiences face-to-face with emerging local artists, innovative performances and thought-provoking research:

'Throughout history, women in art have been consistently objectified as subjects and underrepresented as artists. How can we rewrite this history? This evening will explore contemporary and historical issues faced by women – providing a space for dialogue, creativity and sharing ideas.' (Barber Institute of Fine Arts, 2019a)

Figure 27. *Sketching Froanna* sound installation (Source: © The Barber Institute of Fine Arts, 2019c).

The sound installation ran from 6-8.30pm and was a free drop-in so audiences could sit for as long or as little as they wish, with the composition being on loop throughout the evening (**Different Presentation Formats**). The event was sold out and over the course of the evening approximately 60 people engaged with the sound installation. The sound installation formed part of a larger body of events for the evening (**Collaborations**), which included talks and debates on reinterpreting the women in the gallery's collections, including a talk about the sketch and Wyndham Lewis, by Dr Nathan Waddell from the English Literature

Department; artist stalls[36] and the opportunity to create feminist poetry. The whole event focused on women in Fine Art and feminism. In addition, through drawing on an artwork which is not normally on display, may have enticed audiences to attend who were interested to see the sketch in person also. The approach of an informal installation rather than a formal concert was deemed to be most appropriate for this setting and provided fluidity for in-depth discussions, with some listeners then choosing to sit and listen for multiple times afterwards to the full length of the composition. Through being presented with a variety of other activities enabled audiences to briefly visit, even being enabled to walk around the space.

After the event, the composition was added to The Barber Institute of Fine Arts website, accompanied by other art works inspired by the collection[37] (**Digital / Online Platforms**).

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[36] By Shelanu Women's Craft Collective, Love Letters, Maxene Brown, Jane Thakoordin, Maddie Cottam-Allan, The Feminist Library

[37] http://barber.org.uk/sounds-of-nocturnes/

4.8 ABSTRACTED OBJECTS

Place
- Workshop Room at The Barber Institute of Fine Arts on 23 January 2019

People
- The Barber Collective[38]

Price
- Free

Product
- *A*n 8-channel acousmatic work repurposed for a participatory, experimental drawing and painting workshop with found sound objects
- Workshop: An experimental drawing and painting workshop exploring found sound objects

The Composition

Abstracted Objects is an 8-channel composition composed using sources of close-up microphone recordings of found sound objects: coins, foil, a metal pan, sandpaper, metronome, bell, cellophane and bubble wrap. The composition was repurposed for a participatory experimental drawing and painting workshop with found sound objects for regular attendees of the Barber Youth Collective at the gallery (**Different Presentation Formats, Engaging Young People**), enabling it to reach new and different kinds of audiences (Experience Seekers, Dormitory Dependables, Trips and Treat*s*).

The composition explores the physical properties (textural, spatial and timbral) of the different found objects, creating an interplay between the intrinsic and extrinsic sounds of each object and more abstract sound worlds. The sources are used to form gestures and enveloping layers, with the sounds of coins being first introduced at the beginning of the composition, foil at 00:00:15, Tibetan bowl at 00:00:25, cellophane at 00:00:45, bell at 00:02:00, sandpaper at 00:02:37, bubble wrap at 00:03:08 and metronome at 00:04:27. The

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[38] A group of young people aged between 16-21 years old, actively involved and engaged with participating in the arts.

focus on found sound objects was decided upon as the focus of the Found Noise workshop, which aimed to consider sounds' relationship with Fine Art (**Mixing Art Forms**). Found sound objects is an extension of the concept in visual art 'found object' (also expressed in French as objet trouvé), which refers to sounds drawn from common objects that are not normally considered particularly 'musical' (Tate, n.d.(b)). This provided a link to fine art (the setting for the workshop as this was within a gallery), and also acousmatic connections with sound art, with the composition being discussed and experimented further within the workshop. The use of tangible, recognisable sounds was important to use, as the found sound objects within the composition formed the medium for the participatory element of the workshop, whilst also providing a tangible series of objects which the participants could easily identify with. When composing I constantly reflected on how this may be repurposed for the workshop. I actively chose source material of found objects from a selection of accessible everyday objects. For each found sound object I considered the varying ways in which each sound could be processed, whether to create smaller or larger structures, whether to create varying textures and timbres, shapes and colours - in particular as mark-making was a key activity within the workshop. This composition is highly gestural in comparison to others in the portfolio. The various gestural triggers relate to gestural qualities of the various objects, enabling me to easily incorporate sections and/or stems of sounds into the participatory large-scale collaborative work for the workshop. The table below delves into the various found objects incorporated into the composition in more detail:

Table 16: Structure of *Abstracted Objects* (Source: Personal collection).

Section 1 00.00.00 - 00:00:24	To begin, coins swirl in circular motions, building in density and processing using GRM Tools Delays and GRM Tools Shift. From 00:00:10 a larger dynamic gesture reveals metallic sounding high-pitches which gradually morph into the

	sound of a cymbal from 00:00:14 - 00:00:16, and later to foil from 00:00:15, with lower frequency sounds building in intensity also.
Section 2 00:00:25 - 00:01:31	A Tibetan bowl gestural strike initiates further rings of the sound source in addition to the rustling of cellophane (processed using GRM Tools Contrast). A swell of pitches leads into another 'strike' gesture at 00:00:39 and is followed by further granular processed sounds. At 00:00:51 the strike of a triangle introduces slower-paced material of sustained resonances and from 00:01:16 the composition again builds in intensity, transforming to imitate the initial large dynamic gesture of 00:00:10 at 00:01:32.
Section 3 00:01:32 - 00:02:37	Sustained higher pitches decay, introducing time-stretched layers or lower-pitches from 00:01:55 in addition to textural sounds of rustling foil, leading into a percussive bell ringing gesture at 00:02:00 which decays. High filtered material of water, accompanied by birds and further processed, time-stretched abstract material builds to 00:02:37.
Section 4 00:02:38 - 00:05:12	00:02:41 - Strike of a pan, followed by low-pitched sustained sounds. From 00:03:05 foil and rustling of bubble wrap builds into a denser section at 00:03:40. 00:04:08 - Bell ring returns (initially heard at 00:00:51) and other layers decay. A variety of sound sources are introduced via quick-paced gestures at the following timings: 00:04:22 - cooking pans, 00:04:25 - alarm clock and 00:04:27 - metronome. At 00:04:29, a full wall of sound is introduced with sounds of coins layered on top before transitioning to singular sounds of coins, and further bell rings. At 00:04:46, a large wall of sound with other found sound objects continues to layer on top and transitions at 00:05:07 to various pitches and coins rolling around.
Section 5 00:05:13 - 00:07:28	Bell material decays and leads into textural rustling of paper from 00:05:31. This sound source gradually increases in layers and frequency, utilising spatialised rotational gestures, and building to 00:06:14. At 00:06:19, abstract sustained pitches gradually swell around, with bell-like material added on top, and building in momentum and density to a climax from 00:07:08. Here a cascading of all of the objects continues to develop leading to 'click' at 00:07:28.

Section 6 00:07:28 - 00:08:33	Processed rusting of foil is followed with sounds of coins to end.

The Workshop

Drawing on the Barber Institute of Fine Arts gallery's collection, the focus of this workshop was to consider sound and its relationship with art, in particular fine art, and is orientated towards **Engaging with Young People** and **Mixing Art Forms**. The workshop placed an emphasis on sound art, to provide a link between sound and visual art, with examples of works such as (1) *Longplayer* by Jem Finer, 2) *Event, Stream, Object* by Florian Hecker, 3) work by Luigi Russolo and 4) *Erratin Musical* by Marchel Duchamp) before moving on to examples of acousmatic works. A guided worksheet (Appendix 4) followed examples from the Sounding Images module, but as the gallery was unfortunately closed, instead we explored and discussed the compositions within the project room.

The participatory element (**Different Presentation Formats)** first involved 1) mark-making of different mediums whilst listening to sounds, considering gestures, timbres and textures; followed by 2) a participatory, collective audio-visual work in response to the painting *Primrose Hill – Winte*r by Frank Auerbach. The latter provided participants with the opportunity to create a live response through a large-scale, collective painting to sounds produced by the found sound objects. Participants responded through gestural strokes and textures in response to found sound objects, using 'gestural painting', a term originally used to describe the painting technique of abstract expressionists such as Jackson Pollock and Willem de Kooning. The participants interchanged between gestural painting and creating sounds with the found sound objects, with the large-scale collaborative work, involving three inputs of sounds (see *Figure 28*):

    1. Sounds of found sound objects created by the participants, recorded by the

microphones in the room and feeding through to Ableton Live.

2. Samples from the fixed media composition, *Abstracted Objects,* selected accordingly and played back.

3. Samples from the fixed media work, *Abstracted Objects,* processed using Ableton Live and korg controllers with various FX.

Here all three different sound inputs reacted and responded not only to each other but also the painting. The collective improvisation lasted for approximately 35 minutes. This collaborative workshop explored the relationship between sound and art, considering in particular gesture and colour.

Figure 28. Gestural Painting art work (Source: Personal collection).

As discussed in **Mixing Art Forms**, as the participants already had a knowledge of fine art, I found sound art to be an effective way in which to introduce electroacoustic music to this audience. In addition, breaking down a composition as part of a more collective process provided a more autonomous and participatory route into the work, and enabled the attendees to become active participants through using parts of a composition as a way to step inside the

composition and process. This method allowed participants to learn and discover various ways in which sound can also begin to be incorporated within their own creative practices in the future.

Additional Outcome

As part of the Barber Collective's output, the collective curates their own exhibition on work produced within or inspired by the workshops to 'share their interpretative, artistic and inventive making skills through a variety of techniques' (The Barber Institute of Fine Arts, 2019b). Furthermore, the mark-making activities produced within the workshop were curated to be included within the exhibition which ran from 24 May - 2 June 2019 in The Barber Fine Arts Gallery (see *Figure 29*).

Figure 29. Barber Collective Exhibition (Source: Personal collection).

See Appendix 4 for (1) Workshop Structure, (2) Activity Sheets, (3) Layout of the Room and (4) further photographs[39].

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[39] No feedback was obtained from this workshop.

4.9 ISOCHRONE

Place
- Summer in Southside Festival at the Birmingham Hippodrome

People
- General public, in particular early years children and families

Price
- Free

Product
- A participatory sound installation, *I want to tell you a story…*
- 16-channel acousmatic composition, *Isochrone*, the first in a series of compositions responding to 'Sonic Postcards'

The Composition

Isochrone, is a 16-channel acousmatic composition in response to the sonic postcard (see *Figure 30*) and formed part of the larger installation, *I want to tell you a story….* The wider project was created to consider how acousmatic compositions can feed into a larger body of work, and how other visual works or sounds can influence/respond to works produced by others (**Different Presentation Formats**). This was intended to create a further sense of community and participation with acousmatic compositions, and postcards were drawn and created to inspire further compositions (whether by artists, whether by younger people) as a result, furthermore creating a canon of work inspired by narrative and memories, in particular for the Festival aimed at families (**Engaging Young People**). The installation was presented at the Summer in Southside Festival at the Birmingham Hippodrome and would have potentially reached audience segments Facebook Families and Kaleidoscope Creativity in particular, resulting in reaching new and different kinds of audiences.

Responding to the postcard, bicycle recordings are the primary source for this composition, including (1) close-up microphone recordings of a bicycle, with gears pedals and spinning wheels e.g., 00:05:39 - 00:05:46, and (2) field recordings from the Elbe Tunnel in Hamburg, a

426m tunnel for pedestrians, bikes and cars, which features multiple bicycles whizzing past and cycling over potholes e.g., 00:00:00 - 00:00:30. Drawing upon the source object, I approached this composition with a cyclic form in mind, placing the sounds within an evolving, never-ending structure (also referencing the expanse of the tunnel), but also changing perspective to bring the focus to the intricate cyclic movement of the close-up microphone recordings of the bicycle e.g., 00:07:13 - 00:07:22. The spatialisation of the composition also highlights the cyclic movements of the turning wheels further, with sounds circling horizontally, vertically and diagonally within the space; with the work being composed for 16-channel rather than 8-channel, in order to provide a sense of height to the work, evoking the expansive space within the tunnel. Similar to the majority of other compositions within this portfolio, I wanted the composition to remain within a fairly consistent sound world, with the only changes being within the perspective of the sound source, the bicycle, and consequently ensuring that the work is conveying one interpretation of the postcard. The composition can be broadly separated into five sections (see *Table 17*).

Figure 30. Bicycle Sonic Postcard (Source: Personal collection)

Table 17: Structure of *Isochrone* (Source: Personal collection).

Section 1: 00:00:00 - 00:02:46	The gradual emergence of the field recordings and pitched material at 00:00:50, with the background 'pothole' sounds being introduced at 00:00:58. At 00:01:47, there is a reference to the close-up microphone recordings of the bicycle. At 00:02:01 the recording here references the stairs leading down to the tunnel, followed by sounds of potholes, talking within the tunnel, and bicycle sounds leading to a climax at 00:05:36.
Section 2: 00:02:47 - 00:05:36	The 'pothole' sound gestures at the start of a new section and introduces a new perspective. This is followed by two successive gestures at 00:03:35 and 00:04:32.
Section 3: 00:05:37 - 00:06:55	This section begins with close-up microphone recordings of the bicycle, with field recordings being interjected and reintroduced fully at 00:06:08.
Section 4: 00:06:56 - 00:09:10	This is a development of section 3. At 00:07:45 there is a transition to lower pitched material, and references again to the stairs leading down to the tunnel.
Section 5: 00:09:11 - 00:11:56	Gradual filtering, decaying of material, supported by the pitched material originally introduced in section 1.

Considering the form, various sounds return at different sections within the piece, and the term 'isochrone' refers to a line on a diagram or map connecting points relating to the same time or equal times and captures the continuity at the core of the work. Drawing further on my own artistic interpretation of the postcard, the composition was also inspired by and references to other concepts: (1) tunnel vision: metaphorically denoting reluctance to consider alternatives to one's preferred line of thought (Merriam-Webster, n.d.), (2) reality tunnels: in which every individual interprets the same world differently (Timothy Leary, n.d.), and (3) the poem by Atticus (n.d.):

"Life is a tunnel

not a cave

keep walking

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and you will find again

the light

you left behind."

The Sound Installation

The installation, *I want to tell you a story…* was a commission for the Birmingham

Hippodrome's Summer in Southside 2018 Festival, from 14-15 July 2018 (see *Figure 31*).

The festival drew on children's experiences and stories, aligning with the production of

Matilda which was running from 3 July – 8 September 2018 at the theatre. With this in mind,

I wanted to create a participatory, engaging work aimed at early years/children, using sounds

as a reference to stories children may relate to, in particular real-world, recognisable sounds,

with the sonic postcards and the composition employing storytelling to evoke responses

through memories and stories. The sound installation ran the week leading up to the festival

and during, with just under 2000 people engaging with the installation in varying ways, from

passive to active engagement with the installation, with 87 postcards being drawn over the

course of the weekend alone.

The sound installation, aimed at **Engaging Young People**, explored thematic places linked

with childhood memories, such as from the beach, to the playground and to space. Within the

foyer of the Birmingham Hippodrome, audiences could listen to the composition via

headphones with sonic postcards provided, so that the listeners could create their own sonic

postcard in relation to the composition. Furthermore, enabling children and families to

actively respond to the musical composition and participate in the installation (- **Different**

Presentation Format).

The installation was intended to continue to collect sonic postcards as it moves to different

spaces, and over time the composition developed to incorporate stories of the postcards as the

installation evolved. In addition, the compositional responses (such as *Isochrone)* would be

an ancillary online project, and could be later included as part of the installation or be utilised

in workshops or other outreach activities **(Digital / Online Platforms)**.

Figure 31. *I want to tell you a story…* sound installation (Source: Personal collection)

See appendix for (1) examples of the sonic postcards, (2) the composition and (3) images of

the sketch and construction of the installation.

5. CONCLUSIONS

In response to the homogenisation of acousmatic audiences this composition portfolio has attempted to follow on from the insights of audience development perspectives and employed, in an electroacoustic context, a selection of techniques and strategies of audience engagement and development (especially with regards to programming, marketing and participatory methods). I responded to the motivations and preferences highlighted in the audience spectrum segmentation identified in chapter two (*Table 2*) with six strategic considerations in my compositional work (as elaborated in chapter three); the compositions have been placed within the Ansoff Matrix below (*Figure 32*) to situate each composition in response to *Figure 5*.

Each figure correlates with the composition: (1) *Water Waves*, (2) *Dreaming Waves*, (3) *A Flavour of Tears*, (4) *Sound Sculptures* (5) *Ancestor I*, (6) *Distorted Illusions*, (7) *Sketching Froanna*, (8) *Abstracted Objects* and (9) *Isochrone*.

As can be highlighted from *Figure 32*, compositions *Dreaming Waves* and *Distorted Illusions* have been situated within the existing audience area, whilst *Isochrone, Sound Sculptures* and *Ancestor I,* due to being outdoor sound installations, have potentially reached new audiences, supported by the fact that open air and site-specific formats appeal to more diverse audiences in terms of education levels. From taking acousmatic compositions outside of the concert hall, site-specific installations, to repurposing/using parts of a compositions for participatory workshops, this project highlights how through considering audience in varying ways, how acousmatic compositions may reach new and wider audiences whilst retaining its integrity within the acousmatic realm.
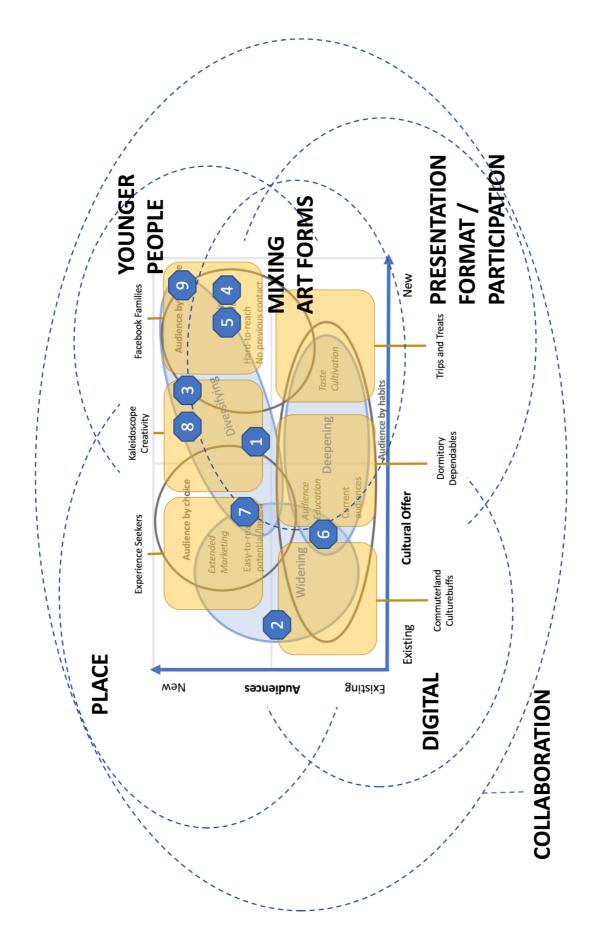
Figure 32. Compositions placed within the Ansoff Matrix (Source: Personal collection)

Throughout this portfolio I have attempted to draw on the notion that 'audiences are motivated by three things in combination: a special event, the uniqueness of the venue and the music' (Maitland, n.d.(a)), with each composition being approached holistically in response to the consideration of different themes and collaborations. Assessing the most effective composition in terms of engagement response is beyond the purview of this project, which was concerned to investigate how audience development perspectives could be applied in an electroacoustic context.

However, the collaborative nature of this portfolio with other artists and arts organisations, has been the most rewarding aspect for me as a composer. It has brought my compositions outside of working in the studio, and the concert hall, and in hand has provided art institutions with the encouragement to work more with sound in the future too. Pivoting marketing and programming strategies of acousmatic compositions in different ways (whether in formal or informal settings) to encourage audiences to give this music a try and know that it's in fact OK not to like it has been effective in opening up pathways to engagement, and continually led me to question the audience on a general scale. But I must note here that there is still so much more I could explore – in particular with demographics of black and ethnic minorities, women, people with disabilities, and people living in areas characterised by high levels of deprivation, and also working directly with communities.

The success of my investigation into how audience development perspectives could be applied in an electroacoustic context may hopefully (1) encourage other electroacoustic artists and academic institutions to consider audience development strategies as an effective approach for reaching audiences, (2) better facilitate conversations with arts institutions and funding bodies who are familiar with this language and way of working (for collaborations and partnerships where sounds could be used as a tool to engage for specific audiences), and

(3) highlight how different targeted strategies and tools such as the Ansoff matrix can help to plan and effectively reach various audience segments with acousmatic compositions. The application of these techniques and perspectives would therefore not only maintain and deepen relationships with current audiences, but also engage and reach new kinds of audiences.

Sound is around us every day, it can unite people in different ways, and our interactions with it whether in a concert hall or outside in the environment can be significant to people's lives, whether for enjoyment in listening, performing, creating or its emotional response. This project has enabled me to make inroads into engaging with audiences who may otherwise never have encountered acousmatic music, and shown how targeting music at reception outcomes can be integrated into the creative process without diminishing aesthetic credibility.

6. BIBLIOGRAPHY

Adamson, D., Byrne, P., Caldwell, N., England, A., Fyfe H. (2008) *Patterns, processes and levers for change.* The Arts Council of Wales.

Amelidis, P. (2016) *Acousmatic Storytelling*. Cambridge: Cambridge University Press. *Organised Sound*, 21 (3), 213 - 221.

Amstrong, H., Ward Dyer, G., Karadimova, S., Bakhshi, H., Gerhardt, P., Mitchell, S., Davies, J., Hannon, C., Sanderson, F. (2018) *Experimental Culture, A horizon scan commissioned by Arts Council England.*

Anderson, E. (2011) *Materials, Meaning and Metaphor: Unveiling Spatio-Temporal Pertinences in Acousmatic Music*. London: London City University.

Anderson, I. (2012) *VOICE, NARRATIVE, PLACE: Listening to Stories*. Journal of Sonic Studies, volume 2. Available at https://www.researchcatalogue.net/view/228635/228636 (Accessed: 15 December 2020)

Arnstein, S. (1969) *A Ladder of Citizen Participation*. Journal of the American Planning Association, 35 (4), 216-224.

Art UK. (No Date) *A Portrait of the Artist's Wife, 'Froanna'.* Available at https://www.artuk.org/discover/artworks/a-portrait-of-the-artists-wife-froanna-236052 (Accessed: 17 December 2020)

ART31. (2018) *Young people and arts engagement: what we need*.

Arts Council England. (no date(a)) *Children and young people.* Available at https://www.artscouncil.org.uk/how-we-make-impact/children-and-young-people (Accessed: 17 December 2020)

Arts Council England. (no date(b)) *Digital Culture.* Available at https://www.artscouncil.org.uk/sites/default/files/download-file/DigitalCulture_FullReport_2013.pdf (Accessed: 17 December 2020)

Arts Council England. (2010) *Digital audiences: Engagement with arts and culture online.* London: MTM London.

Arts Council England. (2015) *Digital Culture 2015: How arts and cultural organisations in England use Technology.* London: NESTA.

Arts Council England. (2016) *Digital Policy and Plan Guidelines*. MTM (Richard Ellis and Ed Corn) and The Space.

Barrière, F. (1998) *La diffusion, stade ultime de la composition* in *Composition / diffusion en Musique Electroacoustique*. Bourges: Editions Mnemosyne.

Barreiro, D. (2010) *Sonic Image and Acousmatic Listening*. Cambridge: Cambridge University Press.

Barrett, N. (2017) '*11 - Trends in Electroacoustic Music*', in *The Cambridge Companion to Electronic Music,* pp. 201-224.

Batchelor, P. (2013) *Lowercase Strategies in Public Sound Art: celebrating the transient audience.* Cambridge: Cambridge University Press. *Organised Sound*, 18 (1), 14 - 21.

Batchelor, P. (2015) *Acousmatic Approaches to the Construction of Image and Space in Sound Art.* Cambridge: Cambridge University Press. *Organised Sound*, 20 (2), 148 - 159.

Bennett, S. (1997) *Theatre audiences: A theory of production and reception*. Psychology Press.

Bergonzi, L., and Smith, J. (1996) *Effects of arts education on participation in the arts*. Santa Ana, Calif: National Endowment for the Arts.

Bishop, C. (2006) *PARTICIPATION*. Cambridge: The MIT Press.

Björk. (2015) *Vulnicura.* CD. 5054196551827. Germany: Embassy Of Music.

Blau, H. (1990) *The Audience*. Baltimore and London: John Hopkins University Press, 1990.

Bollo, A., Da Milano, C., Gariboldi, A.,Torch, C. (2017) *Final Report: Study on Audience Development - How to place audiences at the centre of cultural organisations.*

Bourdieu, P. (1984) *Distinction: A social critique of the judgement of taste.* Cambridge: Harvard University Press.

Britannica. (no date). *Surrealism.* Available at https://www.britannica.com/art/Surrealism (Accessed: 15 December 2020)

British Music Collection. (no date) *Intro & Part 1: Storytelling*. Available at https://britishmusiccollection.org.uk/article/intro-part-1-storytelling (Accessed: 16 December 2020)

Brown, A., and Novak-Leonard, J. (2011) *Getting In On the Act: How arts groups are creating opportunities for active participation.* San Francisco: The James Irvine Foundation.

Brown, A. S., and Ratzkin, R. (2011) *Making sense of audience engagement: a critical assessment of efforts by nonprofit arts organizations to engage audiences and visitors in deeper and more impactful arts experiences.* San Francisco: The San Francisco Foundation.

Burland, K., and Pitts, S. (2014) *Coughing and Clapping: Investigating Audience Experience.* London: Routledge.

Chadabe, J. (2004) *Look around and get engaged.* Cambridge: Cambridge University Press.

Chion, M. (1983) *Guide des Objets Sonores*, trans. John Dack and Christine North. Unpublished.

Copeland, D. (2003) *Survival Strategies for Electroacoustic Music.* Montréal: Les Presses de l'Université de Montréal.

Delalande, F. (1998) *Music Analysis and Reception Behaviours: Sommeil by Pierre Henry*. Abingdon: Journal of New Music Research 27 (1–2): 13.

Desantos, S., Roads, C., Bayle, F. (1997) *Acousmatic Morphology: An Interview with Francois Bayle.* Cambridge: The MIT Press. *Computer Music Journal*, 21 (3), 11-19.

Dobson, M. and Sloboda, J.A. (2014). *Staying behind: Explorations in post-performance musician–audience dialogue* in *Coughing and clapping: Investigating audience experience.* Farnham, UK: Ashgate Publishing Limited, pp. 159–173.

Doran, G. T. (1981) *There's a S.M.A.R.T. Way to Write Management's Goals and Objectives*, Management Review, Vol. 70, Issue 11, 35-36.

Dorin, S. (2020) *Researching the frontiers of new music audiences, INTERFACES New Music and Audience Research – FINAL REPORT.*

Emmerson, S. (1986). *The Language of Electroacoustic Music.* London: Macmillan.

Emmerson, S. (2007) *Living Electronic Music.* Farnham, UK: Ashgate Publishing Limited.

European Commission. (2020) *European audiences: 2020 and beyond.*

European Commission. (no date) *Audience Development.* Available at https://ec.europa.eu/programmes/creative-europe/media/audience-development_en (Accessed: 17 December 2020).

Grebosz-Haring, K., Weichbold, M. (2018). *Contemporary art music and its audiences: Age, gender, and social class profile.*

Harrison, J. (1999) *Diffusion: theories and practices, with particular reference to the BEAST system.* Montréal: Communauté électroacoustique canadienne / Canadian Electroacoustic Community. *eContact!,* 2.4 Multi-Channel Diffusion.

Higgins, A. and Jennings, K. (2006) *From Peering in the Window to Opening the Door: a constructivist approach to making electroacoustic music accessible to young listeners.* Cambridge: Cambridge University Press. *Organised Sound*, 11 (2), 179 – 187.

Higgins, J. (2020) *Music and Arts…Painting From Music.* Available at https://stagemusiccenter.com/music-school-blog-winchester-ma/2019/12/1/music-and-artspainting-from-music (Accessed: 17 December 2020).

Hugill, A. (2012) *The Digital Musician.* Abingdon, UK: Routledge.

Huisman Koops, L. (2020) *Community Musicking as Families*. Oxford Scholarship Online: December 2019.

Ikon. (no date). *Ikon Youth Programme.* Available at *https://www.ikon-gallery.org/event/ikon-youth-programme-2/* (Accessed: 17 December 2020).

Ikon. (2017) *IKON Exhibitions / Events Guide (March - June 2017).* Available from: https://ikon-gallery.org/wp-content/uploads/2017/03/Jean-Painleve-and-Oliver-Beer-Exhibitions-Events-Guide-15-March-4-June-2017.pdf (Accessed: 16 December 2020).

Johnson, C. (2019) *AUDIENCE ENGAGEMENT IS NOT COMMUNITY ENGAGEMENT*. Available at https://namp.americansforthearts.org/2019/03/29/audience-engagement-is-not-community-engagement (Accessed: 17 December 2020).

Kawashima, N. (2000) *Beyond the Division of Attenders vs. Non-attenders: a study into audience development in policy and practice.* Coventry: University of Warwick. Centre for Cultural Policy Studies. Research papers, Vol.6.

Hayes, L. (2017) *From Site-specific to Site-responsive: Sound art performances as participatory milieu.* Cambridge: Cambridge University Press. *Organised Sound*, 22 (1), 83 - 92. https://doi.org/10.1017/S1355771816000364.

Holland, D. (2013) *Listening to the inner soundscape: A pedagogical tool for opening minds to sound-based music in* Proceedings of *Sound, Sight, Space and Play 2013 Postgraduate Symposium for the Creative Sonic Arts*.

Hill, A. (2013) *Interpreting Electroacoustic Audio-visual Music.* http://hdl.handle.net/2086/9898

Knight-Hill, A. (2015) *Theatres of Sounds: the role of context in the presentation of electroacoustic music.*

Kwamena, N., and Agyapong, G. (2011) *Rediscovering SWOT Analysis: The Extended Version. Academic Leadership: The Online Journal*: 9 (2), 28.
Available at: https://scholars.fhsu.edu/alj/vol9/iss2/28 (Accessed: 17 December 2020)

Landy L. (1994) *The "Something to Hold on to Factor" in Timbral Composition*. Contemporary Music Review, 10 (2), 49-60.

Landy, L., Atkinson, A., Farra, R. D., Weale, R., and Couprie, P. (2002) *EARS.* Available at http://www.ears.dmu.ac.uk (Accessed: 18 December 2020).

Landy, L. (2011) *Sound-Based Music 4 All* in *The Oxford Handbook of Computer Music.* Oxford: Oxford university Press. doi: 10.1093/oxfordhb/9780199792030.013.0025.

Landy, L., Hill, A., and Wolf, M. (2014) *The EARS 2 pedagogical projec*t. Available at ears2.dmu.ac.uk (Accessed: 18 December 2020).

Landy, L. and Pearse, S. (2019) *Compose with Sounds. Available at* ears2.dmu.ac.uk/cws (Accessed: 18 December 2020).

Lave, J. (1991). *Situating learning in communities of practice* in Resnick, L, B., Levine, J, M., and Teasley, S, D. Perspectives on socially shared cognition. pp.63-82.

Lave, J., & Wenger, E. (1998) *Communities of practice: Learning, meaning, and identity.*

Leary, T. (n.d.) *Reality tunnel.*

Lewis, A. (2014) *"LEXICON" — Behind the Curtain.* Montréal: Communauté électroacoustique canadienne / Canadian Electroacoustic Community. *eContact!,* 15.4 Videomusic: Overview of an Emerging Art Form.

Lombardo, V., Arghinenti, A., Nunnari, F., Valle, A., Vogel, H., Fitch, J.,Dobson, R., Padget, J., Tazelaar, K., Weinzierl, S., Benser, S., Kersten, S., Starosolski, R., Borczyk, W., Pytlik, W., and & Slawomir, N. (2005). *The Virtual Electronic Poem (VEP) Project. International Computer Music Conference Proceedings,* Volume 2005. doi: http://hdl.handle.net/2027/spo.bbp2372.2005.153

Mahtani, A., and Armstrong, I. (2018) *SOUNDwalker.*

Maitland, H. (n.d.(a)) *How to get bigger audiences by mixing artforms.* Available at https://www.newaud.org/sites/default/files/Getting%20bigger%20audiences%20by%20mixing%20artforms.pdf (Accessed: 17 December 2020).

Maitland, H. (n.d.(b)) *20 tips for getting bigger audiences for uncompromising music.* Available at https://komponistforeningen.dk/sites/default/files/files/20%20top%20tips%20for%20bigger%20audiences_0.pdf (Accessed: 17 December 2020).

Matthews, E. (2019) *Activating Audiences: How spatial music can help us to listen.* Cambridge: Cambridge University Press. *Organised Sound*, 24 (3), 297 – 306.

McCarthy, E. (1960) *Basic Marketing: A Managerial Approach.* Homewood, Illinois: Richard D. Irwin, Inc.

Merriam-Webster. (no date) *Tunnel Vision.* Available at https://www.merriam-webster.com/dictionary/tunnel%20vision (Accessed: 17 December 2020).

Mountain, R. (2004) *Marketing strategies for electroacoustics and computer music.* Cambridge: Cambridge University Press. *Organised Sound,* 9 (3), 305 – 313.

Munton, A. (1977) *The Politics of Wyndham.* Manchester: PN Review 1, 4 (1).

National Portrait Gallery. (no date). *Froanna: Portraits of the Artist's Wife.* Available at https://www.npg.org.uk/wyndhamlewis/froanna/abouttheportrait.html (Accessed: 17 December 2020).

New Music:New Audiences. (no date(a)) *Cross art form collaborations.* Available at https://www.newaud.org/working-communities/mixing-art-forms (Accessed: 17 December 2020).

New Music:New Audiences. (no date(b)) *Presenting the results of our cooperation on audience development*. Available at https://newaud.org/events/presenting-the-results-of-our-cooperation-on-audience-development (Accessed: 17 December 2020).

New Music:New Audiences. (2014) *New Music:New Audiences evaluation report.* Available at https://www.newaud.org/sites/default/files/NewAud%20Evaluation%20Report.pdf (Accessed: 17 December 2020).

No Author. (no date) *The Human Condition, 1933 by Rene Magritte.* Available at https://www.renemagritte.org/the-human-condition.jsp (Accessed: 17 December 2020).

Norman, K. (1996) *Realworld Music as Composed Listening.* Abingdon, UK: Taylor & Francis (Routledge). *Contemporary Music Review,* 15 (1), 1-27.

Norman, K. (2010) *Conkers (listening out for organized* experience). Cambridge: Cambridge University Press. *Organised Sound,* 15 (2), 116-124.

Normandeau, R. (2014) *The ritual of the electroacoustic concert http://www.ems-network.org/ems14/ems14_programbooklet.pdf*

Nyarku, K., and Agyapong, G. (2011) *Rediscovering SWOT Analysis: The Extended Version.* Academic Leadership: *The Online Journal*: 9 (2), 28. Available at: https://scholars.fhsu.edu/alj/vol9/iss2/28

Palmer, J. (2008) *Conversation with Jonty Harrison.* Montréal: Communauté électroacoustique canadienne / Canadian Electroacoustic Community. *eContact!,* 10.2 (1).

Pasoulas, A. (2011). *Temporal Associations, Semantic Content and Source Bonding. .* Cambridge: Cambridge University Press. *Organised Sound*, 16 (1), 63-68.

Pitts, S. (2016) *On the edge of their seats: Comparing first impressions and regular attendance in arts audiences,* Psychology of Music SAGE Journals, 44 (5), 1175-1192. doi.org/10.1177/0305735615615420.

Pitts, S., and Price, S. (2019) *Understanding Audiences for the Contemporary Arts.*

Radbourne, J., Johanson, K., and Glow, H. (2013) *The Audience Experience: A Critical Analysis of Audiences in the Performing Arts.*

Research and Cultural Collections. (2012) *Sculpture Trail.* Available at https://www.birmingham.ac.uk/Documents/culture/Sculpture-Trail-2012.pdf (Accessed: 18 December 2020).

Research and Cultural Collections. (2012) Sculpture images received from Research and Cultural Collections, as can be seen in *https://www.birmingham.ac.uk/Documents/culture/Sculpture-Trail-2012.pdf.* (Accessed: 17 December 2020).

Research and Cultural Collections. (2013) *Ancestor I.* Available at http://mimsy.bham.ac.uk/detail.php?t=objects&type=related&kv=113449 (Accessed: 17 December 2020).

Robertson, D. (no date) Available at https://www.marketingsociety.com/the-library/storytelling-key-engagement (Accessed: 17 December 2020).

Robinson, J. (2017) *COLOUR SEMIOTICS AND WHAT THEY MEAN IN OTHER CULTURES.* Available at: https://www.buzzwordcreative.co.uk/blog/colour-semiotics-and-what-they-mean-in-other-cultures/ (Accessed: 17 December 2020).

Rogers, C., and Farson, R. (1987) *Active Listening* in *Excerpt from Communicating in Business Today.* Lexington, Massachusetts: Heath.

sakinanomanbhoy. (2019). Available at https://notesfrombirmingham.home.blog/2019/01/27/illustrating-sound/ (Accessed: 17 December 2020).

Savage, J. (2005) *Working towards a theory for music technologies in the classroom: how pupils engage with and organise sounds with new technologies.* Cambridge: Cambridge University Press. *British Journal of Music Education*, 22 (2) 167 – 180. doi.org/10.1017/S0265051705006133.

Savage, M. (2019) *Is this the end of owning music?* Available at https://www.bbc.co.uk/news/entertainment-arts-46735093 (Accessed: 17 December 2020).

Schafer, R, M. (1992) *A Sound Education: 100 Exercises in Listening and Sound-making. Lakefield, Canada:* Arcana Editions.

Shawn Hearn, P. (2019) *What Is an Immersive Experience? How do we define experiences that suspend disbelief and absorb us?* Available at https://www.lifewire.com/what-is-an-immersive-experience-4588346 (Accessed: 17 December 2020)

Sidford, H., Frasz, A., and Hinand, M. (2014) *Making Meaningful Connections.*

Small, C. (1998) *Musicking: The Meanings of Performing and Listening.* Hanover: Wesleyan University Press.

Smalley, D. (1986) *Spectro-morphology and Structuring Processes,* in Emmerson, S. (ed.) *The Language of Electroacoustic Music.* London: Macmillan: 61-93.

Smalley, D. (1992). *The listening imagination: Listening in the electroacoustic era.* In Paynter, J., Howell, T., Orton, R. and Seymour, P. (Eds.). *Companion to Contemporary Musical Thought* – Volume 1. London: Routledge.

Smalley, D. (1996) *The listening imagination: Listening in the electroacoustic era.* Contemporary Music Review, 13 (2), 77-107.

Smalley, D. (1997) *Spectromorphology: explaining sound-shapes.* Organised Sound, 2 (2), 107-26.

Smalley, D. (2007) *Space-form and the acousmatic image.* Cambridge: Cambridge University Press. *Organised Sound*, 12 (2) 35 – 58.

Smith, B., and S. Dixon. (2007) *Digital Performance: A History of New Media in Theater, Dance, Performance Art, and Installation*. Cambridge: MIT Press.

Sonic Arts Network. (no date) *Sonic Postcards*, Available at http://www.sonicpostcards.org/project-info/ (Accessed: 17 December 2020).

Sonos Localia. (no date) *About Sonos Localia*. Available at http://sonoslocalia.com/about/ (Accessed: 17 December 2020).

Sound Connections. (2017). *Arts Council England Youth consultation.*

Stallings, N. (2016) *Public Engagement in the Arts, A review of Recent Literature.*

Tait, R., Kail, A., Shea, J., McLeod, R., Pritchard, N., and Asif, F. (2019) *How can we engage more young people in arts and culture?*

Tate. (no date(a)) *Who is Barbara Hepworth?* Available at https://www.tate.org.uk/art/artists/dame-barbara-hepworth-1274/who-is-barbara-hepworth (Accessed: 17 December 2020).

Tate. (no date(b)) *Found Object.* Available at https://www.tate.org.uk/art/art-terms/f/found-object (Accessed: 17 December 2020).

Terrien, P. (2006) *L'écoute musicale au collège, fondements anthropologiques et psychologiques*. Paris: L'Harmattan.

Terrien, P. (2012). *De la composition à la réception, une identité de sens et de signification*. Proceedings of the Electroacoustic Music Studies Network Conference Meaning and Meaningfulness in Electroacoustic Music, Stockholm, June 2012.

The Arts Council of Wales. (2018) *Children's Omnibus 2018, General Attendance and Participation in the Arts once a year or more.* Available at https://arts.wales/sites/default/files/2019-12/Children's%20Omnibus%202018.pdf (Accessed: 17 December 2020).

The Audience Agency. (no date) *Creating an Effective Audience Development Plan.* Available at https://www.theaudienceagency.org/asset/2157 (Accessed: 17 December 2020).

The Audience Agency. (2013) *Engaging young people with the arts.* Available at http://www.culturehive.co.uk/wp-content/uploads/2013/07/Engaging-young-people-with-the-arts.pdf (Accessed: 17 December 2020).

The Audience Agency. (2017) *Creating an Effective Audience Development Plan.*

The Audience Agency. (2020) Available at https://audiencefinder.org (Accessed: 17 December 2020).

The Audience Agency. (2020) *Audience Spectrum Pen Portraits.* Available at www.theaudienceagency.org/off-the-shelf/audience-spectrum/profiles (Accessed: 10 December 2020)

The Barber Institute of Fine Arts. (2016) *The Flavour of Tears.* Available at *http://barber.org.uk/rene-magritte/* Accessed: 10 December 2020).

The Barber Institute of Fine Arts, (2018) *Images captured of BEAST: Sonic Paintings Workshop* by the Learning and Engagement Team.

The Barber Institute of Fine Arts. (2019a) *Barber Lates.* Available at http://barber.org.uk/barber-lates/ (Accessed: 5 December 2019)

The Barber Institute of Fine Arts. (2019b) Barber Collective Exhibition. Available at https://www.facebook.com/events/1032386040286314/ (Accessed: 9 December 2020)

The Barber Institute of Fine Arts, (2019c) *Images captured of the Barber Lates event* by the Learning and Engagement Team.

Truax, B. (no date) *Soundscape Composition.* Available at https://www.sfu.ca/~truax/scomp.html (Accessed: 17 December 2020)

Truax, B. (1984) *Acoustic Communication.* Norwood, New Jersey: Ablex Publishing Corporation.

Truax, B. (2002) *Genres and techniques of soundscape composition as developed at Simon Fraser University.* Cambridge: Cambridge University Press. *Organised Sound*, 7 (1), 5 - 14.

Tzedaki, A. (2011) *Into the sounding environment: A compositional approach*, PhD thesis, De Montfort University, [online] available from https://www.dora.dmu.ac.uk/bitstream/handle/2086/6529/Thesis_Tzedaki_Tzedaki_A ikaterini.pdf?sequence=1 (Accessed: 16 December 2020).

Viederman, M. (1987). *René Magritte: Coping with Loss—Reality and Illusion.* Journal of the American Psychoanalytic Association, 35(4), 967 - 998. doi: 10.1177/000306518703500408

Walmsley, B. (2016). *From arts marketing to audience enrichment: How digital engagement can deepen and democratize artistic exchange with audiences.* Science Direct, Poetics, 58, 66 - 78. https://doi.org/10.1016/j.poetic.2016.07.001

Weale, R. (2006) *Discovering How Accessible Electroacoustic Music Can Be: The Intention/Reception Project.* Cambridge: Cambridge University Press. *Organised Sound*, 11 (2) 189 – 200. doi.org/10.1017/S1355771806001476.

Wikimedia. (2018) *Woman for Heidelberg.* Available at https://commons.wikimedia.org/wiki/File:Birmingham_Business_School_-_University_of_Birmingham_-_Edgbaston_Park_Road,_Edgbaston_-_Woman_for_Heidelberg_(38739894335).jpg (Accessed: 17 December 2020)

Windsor, W. L. (2000) *Through and around the acousmatic: the interpretation of electroacoustic sounds*. In: Emmerson, S. (Ed.). *Music, Electronic Media and Culture.*
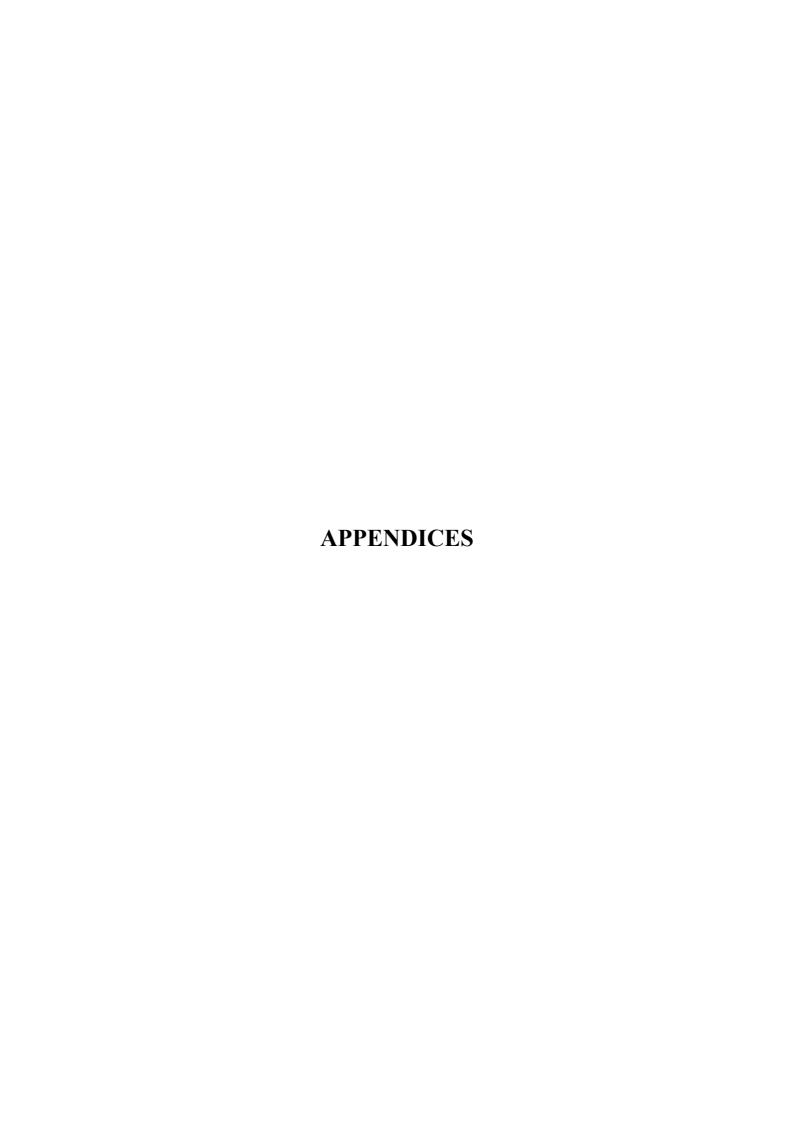
Aldershot: Ashgate).

Wishart, T. (1996) *On Sonic Art*. Amsterdam: Harwood Academic.

Yorkshire Sculpture Park. (no date) *Barbara Hepworth: The Family of Man.* Available at https://ysp.org.uk/openair/barbarahepworth/familyofman (Accessed: 17 December 2020)

Young, J. (2009) *Narrative, Rhetoric and Personal: Storytelling in Acousmatic music*. *Proceedings of the Electroacoustic Music Studies Conference*, Buenos Aires, Argentina.

Young, L., and Zazeela, M. (2004*) On the Concept of Time and Eternity in our Work.* Los Angeles: UCLA Library Special Collections.

Youth Music and Ipsos Mori. (2019) *THE SOUND OF THE NEXT GENERATION.* Available at https://www.ipsos.com/sites/default/files/ct/publication/documents/2019-01/the_sound_of_the_next_generation_-_final_spread.pdf (Accessed: 18 December 2020)

APPENDICES

Appendix 1: Ikon Workshop

Outline of the structure for the workshop

IKON Workshop

STRUCTURE

Introduction - Discussion:
- What is electroacoustic music?
- Have any of you worked with sounds before?
- Approach to working with sounds?
- How do you listen to sounds?

Listening:
- *Water Waves*
- Discuss initial thoughts (5 minutes)
- Discuss listening approaches with examples: *Submerged Objects* by Charlie Lockwood and *Sea Flight* by Jonty Harrison (Reduced Listening, Referential Listening and Heightened Listening)

Activity Sheet:
Complete sheet – drawing what you can hear

Back to the room – Discussion:
- Discuss sound material and recording
- Different categories of sounds – abstract vs. referential

Collective Improvisation:
3 microphones with found sound objects. Create 2/3 sound worlds focusing on images/ sounds of the sea from within the exhibition such as:
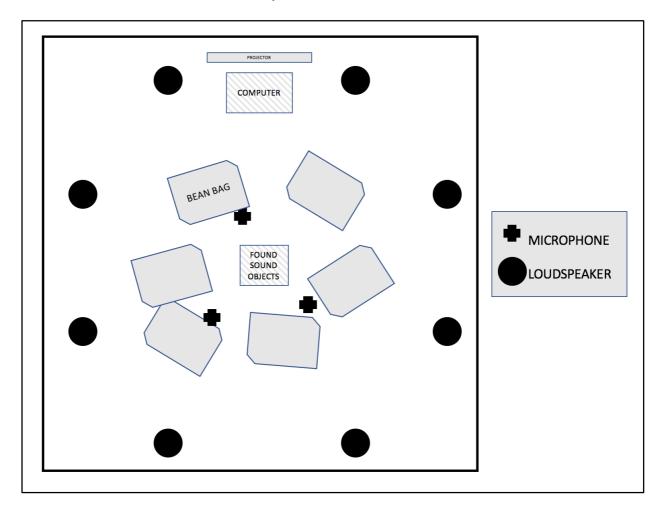

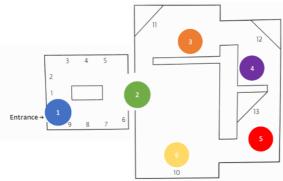**Final Evaluation/ Discussion:**
Overall thoughts and impressions

Layout of the Room

PROJECTOR

COMPUTER

BEAN BAG

FOUND
SOUND
OBJECTS

MICROPHONE

LOUDSPEAKER

The IKON soundscape

Follow the map, walk and observe the sounds that you hear at each number. Closing your eyes may help your ears to focus!

First Floor

1   What sounds can you hear? What are the sources of the different sounds?

2   Are the sounds here typical of an art gallery? Are there any that are atypical? Are there any sounds in the distance? What is the quietest sound that you can hear?

3   Imagine sounds of the sea and seahorses whilst watching the work. In a few words describe what types of sounds you would include if you were to create a piece of music/ soundscape for this film.

4   How do the sounds for this work sound different to the others and in the gallery? More dry? More reverberant? How does the music relate to the film?

5 Listen to the sounds that you can hear. Do sounds merge, collide, change? Try and draw what you can hear. Close your eyes and listen to not only the work but the other sound around you.

6 Look and listen to the film. Do the colours relate to the sounds? How do the sounds make you feel?

Now head up to the second floor. As you are walking listen to your footsteps. Do they change? Do any other sounds change?

Second Floor

Entrance →

1 What sounds can you hear? How is this environment different than what you heard before? Do the sounds reflect the objects of the work (pig, ceramic bowl)?

IKON soundscape Activity Sheet (Page 3)

2 Is the film different listening to the work with sound to silent (-without headphones)? Do the sounds remind you of anything?

3 Do you recognise the music? How does this effect the way that you listen? How does the music may you feel?

4 Stand in the corner of the room. What sounds can you hear? Are there any quiet or distant sounds? Can you describe the pitch, duration and relative loudness of the sounds? What about the quality of the sounds? Do the sounds remind you of a colour or memory?

5 Describe the sound of this work in 3 words.

…………………………………………….   ………………………………………………   ……………………………………………….

Then move around the work, does the sound change? Note down any observations.

Final comments/ notes:

IKON Workshop Key Survey Results[1]

What is your reason for attending the workshop/ project today?

To do something new/ out of the ordinary	16.66%
To be inspired	16.66%
To do something fun	16.66%
To learn something new	50%

How often do you attend events at this organisation?

Frequently	0%
Rarely	33.33%
This is my first visit	66.66%

Have you attended any events/ projects like this before?

Yes	0%
Maybe	0%
No	66.66%
Unsure	33.66%

Has this workshop/ project inspired you to explore sounds further?

Yes	100%

Would you like to start composing more with sounds?

Yes	100%

Did you find the workshop/ project enjoyable?

Yes	100%

---

[1] A selection of results from the evaluation questionnaire completed at the end of the workshop by the participants.

Did you find the workshop/ project informative?

Yes   100%

Additional Comments:

- Enjoyed: "recording and editing the sounds with filters"

- Enjoyed: "Composing a piece out of objects."

- "I liked the chill vibe. The cushions were great and cosy."

- "Fun! :)"

IKON Workshop Advert

IKON Exhibitions / Events Guide: March - June 2017 (Source: IKON, 2017, p.10)

Appendix 2: BEAST: Sonic Paintings Workshops

Outline of the structure for the workshops:

BEAST Sonic Paintings Workshop
Date: 20 February 2018
Times: 11-12.30pm (4-8 years) and 1.30-3pm (8-12 years)
Location: The Barber Institute of Fine Arts

Maximum capacity: 15 children in each workshop (split into 4 groups of 4 in the workshop space)

....

"Come and discover the artworks in the gallery through sound in our children's workshop!

Exploring artworks in the Barber's galleries, this interactive workshop will delve into sound and visual image, exploring and crafting sounds to create a sonic painting! This session will be led by Emma Margetson, a BEAST composer who specialises in sculpting sound."

....

Workshop Structure
- **10 mins:** Introduction (sound works playing – what can you hear? A task sheet for each participant whilst waiting to start)
- **20 mins:** Exploring heightened and active listening: a tour of the Gallery through sound with discussions
  - What can you hear?
  - Sounds of paintings - exploring the different works in the gallery
    (Take a clip board to draw and write what can be heard)
- **20 mins:** Listening to music examples of different paintings (from the NME concert) – drawing what you can hear
  - 4 examples (2 minutes from each – different sound artists interpretations of the paintings)
    - 1. JOHAN CHRISTIAN DAHL - A MOTHER AND CHILD BY THE SEA
    - 2. CLAUDE LORRAIN – A PASTORAL LANDSCAPE
    - 3. RENÉ MAGRITTE - THE FLAVOUR OF TEARS
    - 4. FRANK AUERBACH - PRIMROSE HILL – WINTER
  - Drawing what you can hear
- **30 mins:** Exploring different sound objects to create a sound work:
  - A painting from the Barber (couple of example pieces to base this upon) – background material will be provided (1. Sea material, 2. Abstract material)
    - 1. EUGÈNE BOUDIN - A BEACH NEAR TROUVILLE
    - 2. JEAN (HANS) ARP - HOMME VU PAR UNE FLEUR (MAN SEEN BY A FLOWER)
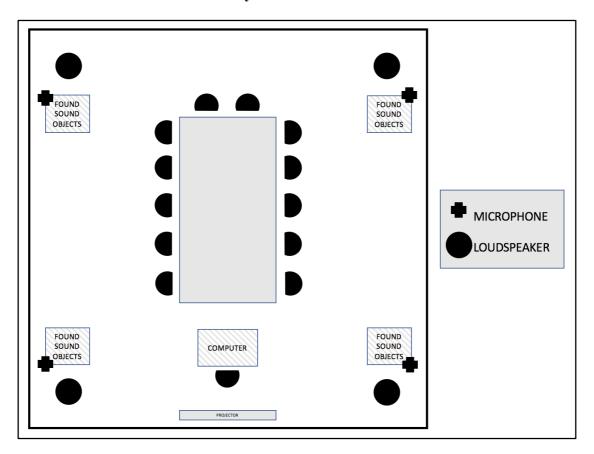
  - To create our own sonic painting – what are the sonic qualities of each object?
- **10 mins:** Closing remarks, discussion/ finishing off

....

Equipment/ format
- Quad format (speaker in each corner)
- 4 hand held mics placed in each corner of the room with sound objects
- Projector/ printed material of the paintings
- Clip boards and worksheets
- Consent forms and evaluation

Layout of the Room:

Photographs of the Room:

(Source: Personal collection)

Name: ....

BEAST: Sonic Paintings Worksheet

Let's go on a sonic journey around the Gallery!

1 Stand still... close your eyes... what sounds can you 👂? Where are the sounds coming from?

2 Look at the painting, A Beach near Trouville

What can you 👀 ?   What can you 👂 ?

3 Stop! Have the sounds in the gallery changed? What can you 👂?

4 Look at the painting, Vesuvius in Eruption

What can you 👁👁?

What can you 👂?

5 Look at the painting, Primrose Hill - Winter

What can you 👁👁?

What can you 👂?

Name: ....

BEAST: Sonic Paintings Worksheet

Let's go on a sonic journey around the Gallery!

1 Stand still... close your eyes... what sounds can you 👂? Where are the sounds coming from?

1.

2.

3.

4.

1.	2.
3.	4.

2 Look at the painting, A Beach near Trouville.

What can you 👀 ?

What can you 👂 ?

3 Stop! Have the sounds in the gallery changed? What can you 👂? How are the sounds different?

4 Look at the painting, Vesuvius in Eruption.

What can you 👀 ? | What can you 👂?

5 Look at the painting, Primrose Hill – Winter.

6

Choose your own painting of choice. Draw what you can 👂 👂.

Title: ……………………………………………………………………………………………………….

Artist: ………………………………………………………………………………………………………

BEAST Sonic Paintings Workshops Key Survey Results[2]

What is your reason for attending the workshop/ project today?

To be entertained	12.5%
To do something new/ out of the ordinary	12.5%
To be inspired	12.5%
To do something fun	6.25%
To learn something new	37.5%
To spend time with family and friends	12.5%
Other:	6.25%

How often do you attend events at this organisation?

Frequently	41.6%
Rarely	41.6%
This is my first visit	16.8%

Have you attended any events/ projects like this before?

Yes	75%
No	25%

Before this workshop/ project had you explored sounds before?

Yes	16.7%
Maybe	25%
No	16.7%
Unsure	41.6%

Has this workshop/ project inspired you to explore sounds further?

---

[2] Survey results from the first workshop only as parents completed the questionnaire for their children. See the sticky notes for the children's responses to the workshops.

Yes	36%
Maybe	56.9%
No	9.1%

Would you like to start composing more with sounds?

Yes	9%
Maybe	64%
No	18%
Unsure	9%

Did you find the workshop/ project enjoyable?

Yes	63.3%
Maybe	27.6%
No	9.1%

Did you find the workshop/ project informative?

Yes	81.8%
Maybe	9.1%
No	9.1%

Additional Comments:

- "Staff running the event were lovely with the children."

- "Excellent - particularly as part gallery based, part workshop. No time for boredom!"

- "I particularly liked the part where the children responded to the music with their own images."

BEAST Sonic Paintings Workshops Sticky Note Feedback

4-8 years workshop:

8-12 years workshop:

Appendix 3: Sound Sculptures

Sound Sculptures Key Survey Results

What is your main reason for attending the event today

To do something fun	25 %
To learn something new	25 %
To do something out of the ordinary	50%

How often do you attend events at this organisation?

Frequently	75%
Rarely	25%

Has this event inspired you to explore other events which work with sound?

Yes	100%

Before this workshop/ project had you explored sounds before?

No	75%
Yes	25%

Did you find the event enjoyable?

Yes	100%

Did you find the event informative?

Yes	100%

Additional Comments:

- "Very valuable to have the composers talk you through the thought process itself."
- "Well structured and put together"
- "Very well explained and meeting the composers"
- "Chance to speak to the musicians"

Appendix 4: Found Noise Workshop

Outline of the structure for the workshop

Lesson Plan for: Found Noise Workshop   Date: 23/01/19

| Time:	Duration:	Description of Activity:
5.00-5.25pm	25 mins	Welcome, introduction to EA music and sound art. A few key examples of sound art. Considering how to explore sound and art.
5.25-5.40pm	15 mins	Explore a few of the works in the gallery, listen to a couple of examples from the Sounding Images module. Discuss.
5.40-5.55pm	15 mins	A series of small drawing and paintings exercises (5 minutes each x3) – 3 contrasting soundscapes/ works influenced by paintings and objects. Considering shape and colour.
5.55-6.05pm	5-10 mins	Share and discuss sketches produced.
6.05-6.50pm	45 mins	Live processing of sounds. Explore the different found sound objects in the room. Explain the workflow of the piece. Interactive (with mics). Larger collective work with painting in response to the sounds.
6.50-7pm	10 mins	Closing remarks and final discussion.

List of materials / equipment needed:
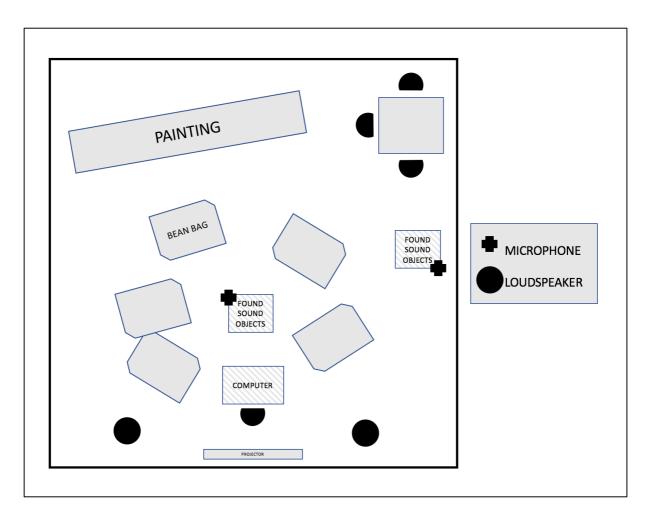
- Access to the gallery and project room (- project room will be needed from 2pm to set up)
- Access to a projector
- Drawing and painting materials (brushes, paints)
- 3 x A3 sheets of paper each – with clipboards.
- Large roll/sheet of paper for a collective / large-scale work.
- BEAST equipment to bring: stereo pair of speakers (power, cables and leads), laptop, power extension cables, 2 x mics, MOTU. Found sound objects.

Found Noise Workshop
The Barber Institute of Fine Arts

Visit:
https://soundingimages.wordpress.com

Choose a work, find the painting and take a listen!

... ...
Title of Work:

... ...
What sounds can you hear? What are the sources of the different sounds?

... ...
What thoughts/ images does the sound/image create to you?

... ...
How does this work make you feel?

... ...
How would you interpret this painting through sound?

... ...
What found sound objects would you use to create your own interpretation of the work?

... ...
Further Notes:

---

[3] The workshop used acousmatic examples composed by students at the University of Birmingham composed for the Sounding Images module.

Layout of the Room:

Photograph of the Room:
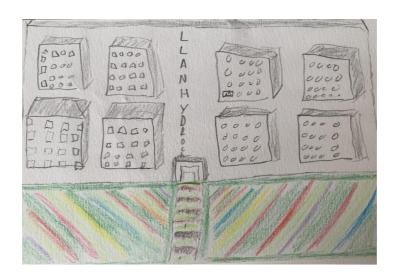
Photographs of the Final Collaborative Work:

Appendix 5: I want to tell you a story…
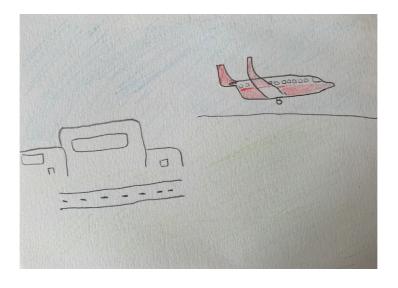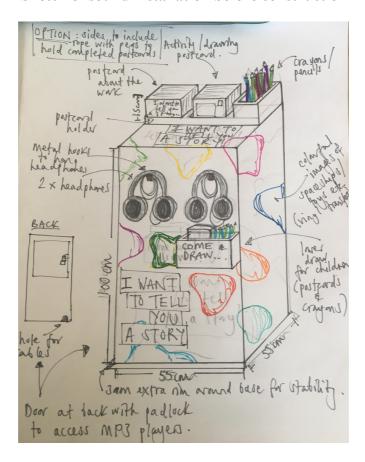
Examples of Sonic Postcards

Sketch of sound installation before construction

Photograph of sound installation with Sonic Postcards

Appendix 6: Lori Lullabies

Place
- The Dome Room, Bramall Music Building on 23 August 2017 (10-10.45am: 0-3 years, 11.15am-12.15pm 3+ years)

People
- Early years and families and Sampad audiences

Price
- £5 per child or £8 for a child and parent. Group booking discounts also available.

Product
- A workshop exploring South Asian lullabies through sound and movement, combining Eastern and Western traditions in a fun and lively environment. Co-delivered by dance artist Magdalen Gorringe and myself (through multichannel sound), an event in collaboration with Sampad[4].

The Workshops

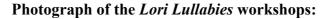*"pitter patter ..... cheep buzz! ..... whoosh ..... we are going on a creative safari!"*

An interactive live-response to dance and movement using Ableton Live and Reaper, in which recorded sounds were processed and spatialised live in response to dance movement. The workshop was in collaboration with the arts organisation Sampad and Bharata natyam dancer, Magdalene Gorringe. The use of sound within these workshops provided a greater level of interactivity and freedom to currently how the workshops are run – using tracks from a CD.

The sounds used within the workshop consisted of (1) pre-recorded sounds of the environment (sea, beach, jungle) in addition to (2) samples from the 'Lori Lullabies' CD. The sounds were processed and spatialised over the BEASTdome system, creating an immersive sound world in response to movement.

The workshop followed the narrative structure:

---

[4] http://sampad.org.uk/event/lori-lullabies-family-sessions-in-august/

1. **A seascape at sunrise**: The beginning of day with actions including building sandcastles, collecting shells, running into waves, showing the flight of seagulls

2. **Rain**: Running in the rain and splashing in puddles.

3. **Sollukattus**: Spoken rhythmic syllables to raindrops: takita, takadimi etc.

4. **Jungle**: A jungle sound world (deer, elephant, monkey, birds, tiger) leading to the 'Instrumental' from the CD for the animal dance. Here participants create masks to wear within the jungle section.

5. **Animals dance**: Creating different animal movements and sounds before then going to sleep with '*Akiyo Eyes*'.

6. **Return to seascape**: The sunset, lie silently listening to waves.

Photograph of the *Lori Lullabies* workshops:

Lori Lullabies **Key Survey Results**

What is your reason for attending the workshop/ project today?

To be entertained	25%
To do something new/ out of the ordinary	25%
To do something fun	37.5%
To learn something new	12.5%

How often do you attend events at this organisation?

Rarely	25%
This is my first visit	75%

Have you attended any events/ projects like this before?

Maybe	25%
No	75%

Has this workshop/ project inspired you to explore sounds further?

Yes	75%
Maybe	25%

Did you find the workshop/ project enjoyable?

Yes	100%

Did you find the workshop/ project informative?

Yes	100%

Additional Comments:
- "Enthusiastic leaders. Beautiful sounds."
- "Thank you. Really different and fun."
- "Imaginative play."

Appendix 7: Dancing Bubbles

Place
- Exhibition: Foyer, Birmingham Dental Hospital from 24th September 2018 – 11th January 2019
- Workshops: 31 October 2018, 10-10.45am: 4-8 years, 11-11.45am: 8-12 years, 12-2pm: a drop-in session open to all

People
- Exhibition: General public
- Workshop: Families, in particular with children 4-12 years of age

Price
- Free

Product
- Exhibition[5]: An audio-visual work as part of the Open Wide exhibition, *Dancing Bubbles*. The exhibition drew upon research led by Dr Nina Vyas on using bubbles to clean teeth, and the exhibition also featured other works including a 3D printed sculpture of cavitation bubbles around an ultrasonic scaler.
- Workshops: Two interactive workshops inspired by the exhibition, exploring the sounds of cavitational bubbles, using sound and painting to create dancing bubbles.

Composition

A short acousmatic work (Music Appendix 1) supporting visuals by scientist Dr Nina Vyas created from high speed images of cavitation bubbles captured during research in the laboratory. The composition was created using close-up microphone recordings of dental equipment recorded in the dental laboratory.

Workshops

The workshops were led by myself and scientist Dr Nina Vyas. Inspired by the exhibition, the workshops explored how bubbles can clean teeth, following the structure:

1. **Blast a biofilm game:** To introduce the concept of bacteria on teeth and biofilms, and how they can be cleaned with bubbles

---

[5] https://bdhopenwide.com/dancing-bubbles/

2. **Demonstration using hydrophone microphones with ultrasonic scaler**: the sounds of bubbles

3. **Bubble art**: Using three extended extracts (Music Appendix 1) children respond to bubble sounds using three different art mediums, (1) bubble blowing art, (2) bubbles wrap and water colours, and (3) brusho techniques.

Festival

As part of the *Dancing Bubbles* output, the workshop activities were also included in the outdoor festival, the CoCoMad Community Festival in Cotteridge Park on 6th July 2019.
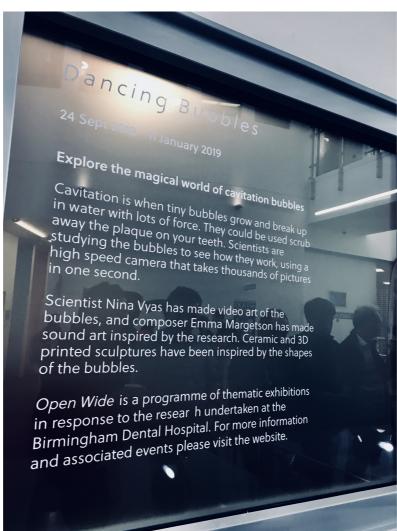
Photographs of the *Dancing Bubbles* workshops

Photographs of the *Dancing Bubbles* Exhibition

Appendix 8: Social Media Figures

Twitter[6]

Date	Impressions	Engagement	Engagement Rate
Jul - Sep 2020	3819	117	
April - Jun 2020	3218	41	0.4
Jan - March 2020	8176	291	1.2
Oct - Dec 2019	7366	368	0.8
Jul - Sep 2019	1640	2	0.5
April - Jun 2019	29219	591	0.7
Jan - March 2019	17111	278	0.8
Oct - Dec 2018	7193	176	0.8
Jul - Sep 2018	12900	400	1
April - Jun 2018	10209	361	1.2
Jan - March 2018	9373	255	1.5
Oct - Dec 2017	7488	235	1.2
Jul - Sep 2017	9537	327	1.8
April - Jun 2017	12432	472	2.1
Jan - March 2017	12348	462	1
Oct - Dec 2016	0	0	0
Sep 2016	860	19	1.6
TOTAL	**152889**	**4395**	

Soundcloud[7]

Top Played Tracks:

Dreaming Waves (946 listens)

Water Waves (390 listens)

Cimbaal (294 listens)

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[6] Recorded on 30/09/2020.

[7] Recorded on 01/10/2020.

Year	Plays
2016	206
2017	653
2018	212
2019	1166
2020	335

TOTAL:

- 2382 Plays
- 92 Likes
- 7 Reposts

Instagram[8]

Impressions	Reach	Likes
157	104	23
456	341	5
385	273	25
237	149	11
265	177	16
204	140	28
440	292	32
277	184	26
233	172	31
369	286	24
237	183	17
926	850	72
194	168	14
222	187	19
196	64	36
4798	**3570**	**379**

TOTAL: 4798 impressions

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[8] From January 2019

Appendix 9: Performance Information

Please see the list below for information regarding performances of the pieces.

Water Waves

Live Electronic Music at Artefact, Birmingham, February 2020; *Kling gut!,* Hamburg, June 2018; *Sounds Like This 2018*, Leeds, March 2018, *SOUND/IMAGE 2017*, Greenwich, November 2017; *Delian Academy of New Music,* Mykonos, June 2017; *M3C Research Festival*, Leicester, June 2017; *Kelp Road*, Birmingham, March 2017

Dreaming Waves

Gwaith Swyn's Sonic Darts Show, Live Broadcast on Resonance FM, July 2020; *SEAMUS 2019,* Boston, March 2019; *CEMI Circles*, North Texas, March 2019; *Delia Derbyshire Day 2019*, online, November 2018; *Festival Ecos Urbanos 2018*, Mexico, November 2018; *NYCEMF (New York City Electroacoustic Music Festival),* New York, July 2018; *BEASTdome: Delian Dome,* University of Birmingham, December 2017   ,

A Flavour of Tears

Reimagined: The Barber Collection, CrossCurrents Festival, Birmingham, February 2018

Sound Sculptures

Arts & Science Festival 2018, Birmingham 2018, March 2018, *M3C Research Festival*, Birmingham, June 2018

Ancestor I

Green Heart Festival, Birmingham, June 2019

Distorted Illusions

Ars Electronica Forum Wallis 2019, Schloss Leuk, June 2019; *Fingerprints + Awakenings*, Milan, January 2019; *BEAST FEaST 2019*, Birmingham, April 2018

Sketching Froanna (Wyndham Lewis & the Froanna Drawing)

BarberLates series - Nocturnes: A Woman Refigured, Birmingham, May 2019

Abstracted Objects

Electric Spring Festival 2020, Huddersfield, February 2020; *Live Electronic Music at Artefact*, Birmingham, February 2020; *Ideas of Noise Festival,* Coventry, January 2020; *BEAST @ Stockholm at KMH*, Stockholm, December 2019; *SOUND/IMAGE 2019*, Greenwich, November 2019; *MANTIS Festival 2019*, Manchester, October 2019; City University London, October 2019; *BEAST FEaST 2019*, Birmingham, May 2019
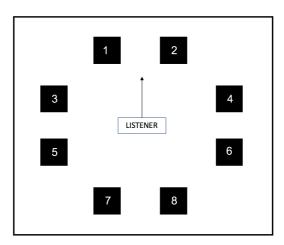

Isochrone

Virtual BEAST FEaST 2020, online, May 2020; *Beneath the Dome Part 1*, Birmingham, February 2020; *Electric Spring Festival 2020*, Huddersfield, February 2020

Appendix 10: Diagrams of 8-channel and 16-channel Surround Arrays

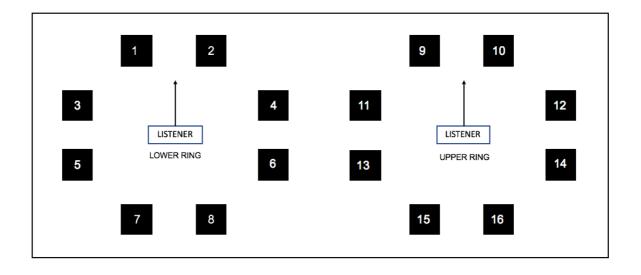The two commonly used 8 and 16-channel formats are as follows:

8-channel[9]:

A configuration of four stereo pairs moving front to back around the listener, as shown in the diagram below. Other possibilities within this format include point source mono trajectories and other combinations.

16-channel:

A configuration of four stereo pairs (lower ring) mirrored above with four stereo pairs (upper ring), as shown in the diagram below. Other possibilities within this format include point source mono trajectories and other combinations.

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[9] Follows the 'French' configuration (Wilson and Harrison, 2010)