

Soundscapes and Virtual Reality:

A portfolio of Soundscape Composition, Field Recording, Soundwalk and Interactivity

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Declaration

I declare that this thesis is a presentation of original work, and I am the sole author. Part of the research presented in this thesis has been published in the following peer-reviewed journal article:

Bai, B. (2026). From schizophonia to mediated auditory dislocation: Mediated tension in interactive VR soundscape composition. *Organised Sound*, 1–9. https://doi.org/10.1017/S1355771826101319

This publication forms part of the doctoral research undertaken for this thesis. Material relating to the theoretical discussion of mediation, mediated auditory dislocation, and the VR work *Shifting Horizons* has been incorporated into the thesis and contextualised within the broader framework of the portfolio and accompanying critical commentary.

The published work is solely authored by the candidate.

Abstract

This practice-based research investigates the operation of soundscape composition within constantly evolving media landscapes, focusing specifically on the reconstruction and expression of soundscape meaning across stereo and virtual reality (VR) work presentations. The portfolio comprises eight works, including four fixed-media stereo compositions and four interactive VR soundscape pieces. Together, these works map a shift in my compositional orientation. This shift departs from an initial focus on nature-centred frameworks and the hi-fi soundscape ideal, evolving into a more critical compositional stance that embraces diverse sonic environments, highlights the malleability of soundscapes, and frames the separation of sound from its original source via technological mediation as a valuable and constructive creative condition.

The research addresses three interrelated questions: how composers might move beyond the opposition between natural and urban soundscapes; how the relationship between field recordings and place can be sustained or reshaped through mediation strategies; and how VR interaction can render the effects of mediation accessible for comparison and critical reflection. Methodologically, this research adopts iterative compositional practice and transmedial work presentation as the core enquiry approaches, grounding all analysis and exploration in practical creative output. All the works listed in this thesis are described; Appendix A provides information on presentations, performances, awards and funding associated with the portfolio.

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Chapter 1: Introduction

1.1 Research Background and Motivation

Soundscape composition has long been closely linked to environment, place, and the ethics of listening. Field recording is not just a way to capture sound. By choosing locations, editing recordings, and presenting the work, field recording helps us explore what makes sound meaningful, how to organise it, and what forms of listening a work can encourage.

Since the emergence of soundscape studies, some influential ideas have tended to link hi-fi soundscapes with environments that are clearly legible and boast a favourable signal-to-noise ratio, while describing lo-fi soundscapes in terms of excessive sonic saturation, masking among sonic elements, and degradation. Historically, this difference used to help people care more about the environment and notice noise problems. However, this idea can also harden into a standard. Such a norm may turn the seemingly hi-fi “rural soundscape” into an aesthetic and ethical ideal, while regarding the “urban soundscape” as defective. For soundscape composers, this standard can subtly influence not only what they record, but also which sounds are considered worth recording and which sonic environments are given a voice.

At the same time, soundscape practice is unavoidably shaped by the conditions of recording and reproduction. When sound is recorded, edited, and played back in different spaces and at different times, it becomes detached from its original source and context. Schafer (1994) coined the term “schizophonia” to describe this separation of sound from its source, brought about by recording and reproduction.

This study takes this tension as its starting point and traces how my doctoral research has explored it through an evolving series of creative practices. I moved from focusing on nature-centred ideas and a hi-fi ideal to a critical approach that values diverse sound environments, explores the malleability of field recordings, and embraces “mediation”[1] as part of the creative process. This latter view becomes especially important when environmental recordings are shared through modern media. In these systems, sounds are often separated from their original places and placed into new contexts, gaining new meanings for listening.

[1] *Mediation* refers to the constructive process of recording, transmitting, transforming and recontextualising sound through technologies and media. It regards the separation of sound from its original environment as positive, since this separation enables the technological reconfiguration of sound and actively facilitates the emergence of new meanings and perceptual relations during playback and listening.

1.2 Portfolio Overview and Journey of Practice

This study aims to explore the impacts of diverse "mediated conditions"[2] on the ontological development of soundscape works through a reflective analysis. While preserving the essence of soundscapes, the study explores how different mediated conditions can expand the expressive and perceptual possibilities of soundscapes. To carry out this research, the study sees traditional stereo soundscape composition and VR soundscape work as two different forms within the same practice, with the portfolio organised as a comparative and complementary sequence.

This portfolio comprises eight works that together chart a shift in my compositional concepts and aesthetic orientation. The works begin with natural soundscapes, then gradually shift towards urban soundscapes and electroacoustic reworking. In the later stages, VR scene switching, layered control, and non-linear access are employed to examine more closely how environmental cues, storytelling, and mediated conditions jointly shape listening experiences.

Phase 1: Environmentally oriented works in soundscape conservation

The three early works begin with a concern for the audibility of environmental sounds and with my initial attraction to the hi-fi soundscape. Through field recording and composition, they aim to heighten listeners' awareness of the fragility of environmental sound, to recognise signs of environmental change and to encourage active listening and care for the environment.

Echoes of National Parks (2023) developed from the project *What does a National Park sound like?* It consists of a series of field recordings captured in national parks. The project seeks to encourage public engagement through attentive listening to national park soundscapes, while the work itself functions as an invitation to listen carefully and care for the environment.

Exploring Silence – Japan (2024) originated as a commissioned field-recording project that set out to explore a sense of adventure as a mode of listening experience. Rather than pursuing dramatic effects, the work treats faint auditory presences in the urban environment as an "adventure" within the urban soundscape and invites listeners to engage with the silent moments of everyday acoustic experience.

[2] *Mediated conditions* refer to the material, technical and formal factors that structure the mediation process. These include playback platforms, modes of access and interaction, the qualities of sound materials, and compositional strategies.

Western River Rye Soundscape Project (2024) is not a music work, but a VR sound installation documenting seasonal soundscape changes across the River Rye catchment over the course of a year. The work translates the concept of the soundwalk into an interactive documentary structure. Through interactive hotspots, visitors can quickly switch between seasons and locations for comparative listening and access background information.

Phase 2: The Malleability of Soundscape and Its Narrative Potential

As the research deepened, the earlier nature-centred compositional stance grew increasingly hard to maintain. The hi-fi soundscape ideal can easily become an unreflective idealisation of nature, while a critical examination of source separation in recording media opens up a new creative approach. Through editing, spatialisation, and electroacoustic transformation, a work can show both the cultural and social meanings of sound and how much recorded sound can be shaped. At the same time, soundscape recordings are not passive compositional material. As sounding materials with their own expressive force, they can also influence the composer's creative direction.

Fractured Ceremonies (2025) embodies this compositional shift. Rooted in field recordings of a drum-and-gong ensemble in Beijing's Forbidden City, the work treats ceremonial and urban sounds as materials with cultural resonance and compositional potential, rather than as inferior forms of noise. Through techniques including granular synthesis and the retention of characteristic rhythmic figures, it explores how electroacoustic transformation can draw out latent malleability while preserving a discernible connection to its source.

Take Me Back to Indonesia (2025) develops this shift by foregrounding memory and personal narrative evoked by field recordings. Here, the recording is conceptualised as a force that shapes the compositional process, drawing the composer into sonic memories that bridge recollection with present-day life. Soundscape composition no longer tends towards the static preservation of a single sonic environment but becomes an ongoing negotiation between place, memory, and reconfiguration.

Phase 3: Virtual Reality as a Research Tool for Ethnographically Informed Practice, Storytelling, and Mediated Listening

The final three works utilise virtual reality to reframe the understanding of soundscapes. Virtual reality (VR) is not treated as a trendy delivery format or a simplistic upgrade of immersive experience. As one of the forms of mediation in contemporary listening, it is used to draw attention to mediated conditions and offer opportunities to compare them. In the VR

environment, listeners can engage in comparative listening by switching scenes, separating sound layers, and exploring the relationship between environmental cues and narrative structures.

What Sheffield Sounds Like VR (2024) originated as a commissioned stereo work designed to create an immersive opening atmosphere for a University of Sheffield alumni event. The work used community-informed material selection, drawing on a limited online discussion about sounds associated with Sheffield and materials supplied by the University of Sheffield. The work was subsequently presented in various settings—including playbacks for alumni audiences in London and residents in Sheffield—before it developed into a VR version. In VR, listeners can revisit the sites where the sounds were recorded or switch to the locations where the piece was previously presented, providing an opportunity to explore how listening environments and modes of presentation may affect the perception of an urban soundscape.

Missing Person VR (2025) explores how storytelling can function as an auditory frame that guides listening. It integrates a fictional disappearance with field recordings and minimal electroacoustic processing. The project is delivered in two modes: a linear, structured YouTube VR version and an interactive Wonda VR mode. In Wonda VR mode, listeners can take apart the work. They can listen to the soundscape alone or with the storytelling. This lets them compare how storytelling and soundscape material work together.

Shifting Horizons VR (2025) develops the concept of “mediated auditory dislocation” through a critical analysis of early soundscape theory. It aims to draw attention to the common separation between sound and its source when soundscapes are played back in contemporary media. This work uses VR interaction to create a parametric sound environment. Listeners can adjust the balance between original field recordings and electroacoustic transformation, as well as the degree of audio-visual coupling.

1.3 Research Questions and Objectives

Guided by the journey of the portfolio outlined above, this thesis addresses three interrelated questions:

1. How do I shift from a nature-centred understanding of soundscapes to recognising the value of urban and everyday sounds? How is this shift shown in the structures of my works?

2. Within the context of electroacoustic transformation, narrative, and processes of mediation, how can the connection between field recordings and their original places be either sustained or reworked? This question explores how a soundscape can remain a reference to an environment and serve as compositional material, even as it is detached from its source and reshaped by mediating tools.

3. How may the presentation of soundscape works in virtual reality reconfigure the perceptual relationship between space and sound, and how can VR interaction make these mediated shifts accessible for comparison and reflection?

1.4 Methodology

This thesis adopts a practice-based research approach in which composition and critical reflection develop together (Nelson, 2013). The portfolio works are treated as sites of enquiry through which ideas about soundscape, mediation and listening are explored in practice. The process was iterative rather than a fixed sequence in which theory was established and then applied. Reading and listening informed decisions about materials and form. Composing and presenting the works, in turn, exposed questions and limitations that prompted further reflection and changes in approach. The commentary examines this development across the eight works rather than presenting them as tests of a single predetermined hypothesis.

Across the portfolio, field recording and, in some works, soundwalking provide ways of encountering and selecting environmental sounds. Recording is followed by choices about what to retain, omit, and foreground. Editing, layering, transformation and spatialisation then reshape the recorded materials, while narrative framing and the use of drones, pulses and other electroacoustic materials help organise them into musical form and provide a framework for presenting the soundscape. These mediating methods shape how a recorded environment is represented and how its sounds may be encountered in a new context.

Presentation forms a further part of this process. Stereo playback, audiovisual juxtaposition, re-recording in different playback spaces, VR scene switching, and interactive parameter control establish different relationships between recorded sound, place and the conditions of listening. These methods are used in different combinations across the works, as the individual chapters explain. Reflecting on their compositional and presentational consequences informed the movement from my earlier nature-centred approach towards the comparative exploration of mediation in the later VR works. The claims made here concern compositional decisions and designed possibilities for listening; they do not presume a particular response from every listener.

Chapter 2: Rethinking Soundscape

Discussions of soundscape composition often commence with a seemingly simple question: which sounds are worthy of being heard, recorded, and organised into works, and in what sense are they worth preserving or reproducing? At the start of my doctoral practice, this question was almost always shaped by a clearly defined value framework—hi-fi and lo-fi soundscapes. This framework enables ecological concerns to inform sonic aesthetics, thereby informing recording and compositional decisions.

As my practice developed, however, I gradually came to recognise that when this framework is interpreted to mean that nature should be protected while the city should be criticised, it no longer serves only as a descriptive tool for environmental distinctions. Instead, it constructs a value system that sets limits on what topics my works can cover and restricts what kinds of expression are seen as acceptable.

At the same time, soundscape composition also rests on another equally important premise: recording and playback technologies separate sounds from their original sources so that the meanings of soundscapes are reshaped and perceived within new mediated conditions. My research is situated precisely at the intersection of these two strands. On the one hand, it examines how the hi-fi and lo-fi distinction informs my soundscape practice as a value framework; on the other hand, it explores how mediation reshapes soundscape contexts, their meaning-making processes, and their aesthetic potential.

2.1 Soundscape Value Frameworks as Departure

The Tuning of the World, first published in 1977 by the Canadian composer R. Murray Schafer, is regarded by many as something of a “bible” of soundscape studies (López, 1997). One of its core concepts is the distinction between hi-fi and lo-fi soundscapes. The distinction concerns relative conditions of acoustic resolution, masking and the audibility of individual sounds. In hi-fi conditions, sonic details can be distinguished more readily, whereas in lo-fi conditions, sounds mask one another and become harder to identify (Schafer, 1994, p. 43). Natural environments may exhibit lo-fi conditions, while urban environments may contain hi-fi conditions. These terms therefore describe acoustic conditions rather than categories of place.

This concept is almost like a practical method. It points attention toward places where sonic details can actually be heard, rather than drowned out by noise. At this stage, my own compositional motivation was largely shaped by a desire to frame listening as a form of environmental care. Through field recording and composition, I sought to draw attention to the

fragility of environmental sounds and how certain sonic details slowly get crowded out or disappear under the pressure of urban noise.

However, the problem with placing too much emphasis on the hi-fi and lo-fi distinction is that compositional decision-making can easily slip from revealing acoustic differences into reproducing a preset value system. When hi-fi is consistently aligned with the rural, the natural, and the pure, while lo-fi is equated with the urban and the noisy, the framework no longer merely helps us understand environments. It often, implicitly, begins to shape what composers consider worth recording and working with. As a result, the value of a work is easily reduced to the preservation or rescue of endangered soundscapes, obscuring the cultural meanings and aesthetic potential embedded in urban and everyday sonic environments.

Critics within acoustic ecology have pointed out that Schafer's soundscape concept is not a neutral description. It tends to frame soundscape history as a decline from nature and harmony toward mechanisation and noise, revealing a bias against urban soundscapes and binding ecological value to a normative imagination of the natural environment (Kelman, 2010, p. 214).

Schafer's development of these ideas was shaped by a particular historical context. Early soundscape awareness can be traced back to the late 1960s, when Schafer initiated the World Soundscape Project (WSP) at Simon Fraser University. The project originated from Schafer's initial attempt to draw attention to the sound environment through a course on noise pollution, as well as his personal aversion to the noisier aspects of Vancouver's rapidly changing soundscape. The WSP combined research and education on soundscapes and noise pollution with the recording, cataloguing, and preservation of soundscapes from across the globe. Its aim was to identify ecologically balanced soundscape solutions, fostering a more harmonious relationship between human communities and their sonic environments (Truax, 2012).

In recent years, the framework of acoustic ecology developed by Schafer and the WSP has been increasingly questioned and re-examined. Marie Thompson (2017) argues that Schafer tended to treat natural soundscapes as pure, while framing urban soundscapes as noise or pollution. This oversimplifies the issue. She suggests that this amounts to a mythologisation of the natural soundscape, one that overlooks the complexity of sonic environments and their social and cultural contexts (pp. 132–140). Schafer's theory also fails to account for the fact that in certain situations, silence can feel oppressive. Excessively quiet environments may provoke anxiety and can even become distressing for human listeners. Andra McCartney (2016) notes that many forms of urban noise, such as the comforting hum of a busy restaurant, can be experienced as reassuring or pleasurable. She also cites experiments conducted in

prisons that attempted to maintain extreme quiet. In the end, these experiments had to be stopped because long periods of silence caused serious psychological distress for prisoners.

Schafer (1994) observed that the rapid industrialisation of the 1960s marked one of the noisiest periods in Western societies. This was largely due to the widespread commercial adoption of internal combustion engines, whose noise levels far exceeded those of earlier technologies (pp. 83–84). The recent shift toward electric vehicles has sometimes been seen as a response to this concern. However, recent studies suggest a more complex picture. Although electric vehicles are quieter than petrol or diesel cars, their reduced audibility makes it harder for pedestrians to detect their presence, speed, and direction, resulting in collision rates reported to be roughly twice those of conventional vehicles (Edwards, Moore, & Higgins, 2024).

Schafer was also aware of the subjective nature of the term “noise”. He pointed out that some noise regulations define noise purely in terms of loudness, which he thought was too simple. In electronics and engineering, “noise” usually refers to unwanted components that interfere with a useful signal. Schafer similarly preferred to define noise as “unwanted sound”, since what counts as noise depends on who is listening. Music enjoyed by one listener, for instance, may be experienced as noise by another (Schafer, 1994, p. 183). Barry Truax (2012) pushes this further, arguing that the real problem in any acoustic environment is not noise itself but anything that makes people less willing to listen. From this perspective, noise produces an impoverished sonic world where people stop paying attention because there is nothing meaningful left to hear.

Although Schafer and Truax attempted to refine the definition of noise, they did not fully resolve the problem of subjectivity. John Cage (2011) adopted a far more open position by not categorically dividing sound into “desired sound” and “unwanted sound”. In his view, wherever we are, most of what we hear is noise. When we ignore it, noise may disturb us; when we listen to it attentively, we may discover it fascinating.

This insight addresses the issue of the signal-to-noise ratio in soundscape studies. What counts as signal or noise is not decided by acoustic measurements but by how and why a listener is paying attention. Cage not only rejected the negative labelling of noise but also argued that noise would play an increasingly significant role in musical composition and performance. Marie Thompson (2017, p. 130) made a similar point, arguing that noise can be creative and even necessary in certain contexts and pushed back against the assumption in traditional soundscape theory that noise is a purely negative element.

These discussions show that the value of urban and everyday sounds is already recognised in soundscape and sound-studies scholarship. The contribution of this portfolio does not lie in establishing that value for the first time. Rather, it lies in showing how my movement beyond an initially nature-centred approach changed the sounds I selected and the ways I organised, transformed and presented them across the works.

2.2 Schizophonia and Mediation[3]

If hi-fi and lo-fi describe acoustic conditions that may also inform value judgements, schizophonia points to the structural premise of soundscape composition. As one of the influential concepts in Schafer's (1994) soundscape theory, schizophonia was originally used to describe the separation of sound from its source caused by recording and amplification technologies (p. 88). This term occupies a critical position in soundscape research. On the one hand, it is conceptually illuminating and helped early sonic ecology characterise the acoustic crisis within the modern media environment. On the other hand, it has become increasingly difficult to sustain in contemporary contexts.

Within its historical context, the concept has a clear ethical stance. It treats technological reproduction as a potential threat to the ecological and contextual wholeness of the soundscape and holds the unmediated natural soundscape as a normative reference. That judgement may have made sense within early soundscape ethics, but it now requires rethinking in today's media ecology. Modern auditory experience, ranging from radio and cinema to headphone listening and sound on digital platforms, is largely grounded in technological mediation. The meaning of sound is produced, circulated and reshaped precisely within these mediating structures (Sterne, 2003, pp. 25–27).

Contemporary sound studies have suggested that the theory of schizophonia fails to provide a sufficient account of the widespread mediated experiences in modern auditory culture (Bai, 2026). The core issue is not whether a separation between sound and its source exists. It is that the theory assumes an unmediated natural state as the ideal standard for listening and treats recording technologies as a departure from that standard (Thompson, 2004, p. 321; Sterne, 2003, p. 20). Yet listening to recordings has been inherently mediated from the outset. As Marinos Koutsomichalis (2013) pointed out, whether artists employ creative processing or

[3] An earlier version of parts of this discussion was published as: Bai, B. (2026). From schizophonia to mediated auditory dislocation: Mediated tension in interactive VR soundscape composition. *Organised Sound*, 1–9. https://doi.org/10.1017/S1355771826101319

attempt to reproduce environmental sounds as accurately and directly as possible, they still transform the sounds into something entirely different from their original state. Recordings cannot retain the original semantics and subconscious associations of the encounter between humans and the acoustic environment. For these reasons, field recordings can also be regarded as a form of artistic expression, as they involve the artist's intervention—the decision that a specific location is worth recording, listening to, and distributing. Due to this, the meaning and experience of sound do not stop at the moment of separation. They are continuously reshaped through the interplay of technology, cultural contexts, and modes of listening (LaBelle, 2006; Chion, 1994).

The notion of “listener’s listening” put forward by Lawrence English (2017) offers important support for interpreting the mediated condition of recorded listening and the reconfiguration of the meaning of sound. It emphasises that listeners, including composers and audiences, do not receive sound passively. They take an active part in listening and meaning-making. They invest sound with new significance and emotion through the intersection of recordings, cultural contexts and personal experience. This echoes precisely the core quality of continuous meaning reconfiguration within recorded listening. Such listening is far from a passive reception relying merely on the ears. It is an integrated experience that engages the whole body and senses. This also indicates that recordings, as a medium, can only capture acoustic information. They cannot carry the creative interpretations situated within the listener’s stance.

On this basis, English (2017) developed the framework of “relational listening”. This theory closely links listening to the creativity of the listener. It argues that the listener’s ear is not simply a tool for taking in information but also an instrument for creation. This form of listening is shaped through the interplay between the “subjective organic human ear” and the “prosthetic ear of the microphone”. The former performs psychological and affective filtering and carries the listener’s inner experience and creative intentions. The latter, as a technological medium, captures external sounds in an unfiltered and indiscriminate way. Together, they form a bridge between the technologically mediated listening and the inner subjective listening.

Acousmatic listening within the electroacoustic music tradition also shows that the detachment of sound from its original source associations can serve as a positive aesthetic resource. The historical origin of this concept can be traced to Pythagoras’ students, who listened to his teachings from behind a curtain to focus their attention solely on his voice. Pierre Schaeffer’s theory of “reduced listening” frees sound from referential ties to its source, allowing it to be

analysed and experienced according to its qualities of texture, energy and morphology (Kane, 2014).

In the critique of Schafer's theory, Francisco López (2017) argues that the framing of schizophonia as an anomalous phenomenon fundamentally ignores the artistic potential of working with recorded sound as an independent material. His work *La Selva* (1998) is an example. He argues that listening should not strive for "realism" but instead immerse listeners in the inner world of sound through "profound listening". This is a deep listening approach that transcends superficial sound characteristics, disregarding the source, context, and intent of the sounds. This form of listening is not about identifying or analysing the origins of sounds but focuses on the sounds themselves, delving into their intrinsic textures and complex sonic relationships. *La Selva* (1998) is not a reproduction of the rainforest, but a musical creation aimed at allowing listeners to experience the complexity and beauty of the sounds themselves, rather than merely serving as background music or a documentary record of the natural environment (López, 2017).

Katharine Norman (1996) also criticises the tendency to insist on the faithful reproduction of specific sonic environments when using real-world sound materials in musical composition. She argues that the creative expansion of listeners' experiences of familiar sounds can deepen their understanding of sound in the real world.

Denis Smalley's (1997) theory of spectromorphology shows that auditory meaning can be generated through the growth, behavioural trajectories and spatial projection of sound morphology, independent of identifiable sound sources. It is therefore clear that the separation of sound from its source does not necessarily undermine the integrity of soundscape experience. On the contrary, it offers a vital resource for modern soundscape composition, allowing environmental sound to hold a tension between reshaping and context.

Furthermore, drawing on discussions in disability studies, Mara Mills and Jonathan Sterne (2017) note that Schafer explicitly describes schizophonia as a disturbing term linked to schizophrenia. Through this association, he constructs an image of a whole, idealised "human body" that is threatened by media technologies. The tying of recorded sound to the metaphor of mental illness (schizophrenia) is regarded as an ableist position. It relies on cultural ideas about mental illness rather than the actual experiences of the people it involves and frames technological media as a kind of impairment or deficiency (Hall, 2019).

In the context of this study, I seek to break free from the negatively charged framework of schizophonia and replace it with a more positive understanding framed through the concept of mediation (Bai, 2026). Rather than interpreting the separation of sound from its source as a loss, mediation emphasises the creative and aesthetic potential inherent in technological separation. It regards mediated sound as an independent structure open to aesthetic and perceptual exploration, rather than a copy of the original, enabling the emergence of new meanings and sensory experiences. In this way, mediation offers a positive vocabulary for understanding how recording, transmission, and recontextualisation actively shape modern listening.

As mediation has become an inescapable part of modern auditory experience, technological separation has increasingly become a prerequisite for recordings to enter new contexts and generate new aesthetic values. Yet its creative approach is still shaped by constraints. Hildegard Westerkamp (2002) objected to the tendency among some composers to categorise soundscape composition simply as a branch of Musique Concrète. While original recorded materials hold an important place in both Musique Concrète and soundscape composition, Musique Concrète places little emphasis on the contextual origins of sound. It focuses instead on the abstract qualities of sound and the intentions of the composer.

The key to soundscape composition lies in the way that sound materials themselves guide the development of the work through their inherent contextual meanings. Regardless of the composer's initial intentions, such sound materials inevitably speak in their own terms. Their deeper meanings only emerge through repeated listening and sonic manipulation. Put simply, the fundamental creative logic of soundscape composition is that original recordings steer the direction of the work. The recorded materials can prompt the composer to reconsider and revise an initial compositional vision. This also implies a gradual shift in the composer's role from that of a "controller" of the sound to a "listener and responder". What makes a work distinctive often comes from the composer's sharp attention to specific places, cultures, or ecological phenomena and from how they shape sound to create resonance in the listener.

Barry Truax summarises the principles of soundscape composition as follows:

1. "Listener recognisability of the source material is maintained."
2. "Listener's knowledge of the environmental and psychological context is invoked."
3. "Composer's knowledge of the environmental and psychological context influences the shape of the composition at every level."

4. “The work enhances our understanding of the world, and its influence carries over into everyday perceptual habits.” (Truax, 2008, p. 106)

A number of contemporary soundscape works accept the reality of technological mediation while seeking to rebuild connections between listener, recording and original context through specific compositional strategies. Works such as Chris Watson’s *A Journey South* (2010) and *Alcedo Volcano* (2006), Hildegard Westerkamp’s *Kits Beach Soundwalk* (1996), and Mark Gwynne Jones’ *Voices from the Peak* (2022) created for the Peak District all serve as examples. In these pieces, composers use verbal narration to describe locations, impressions, and the technical methods and considerations involved in recording.

This practice of combining verbal narrative with field recordings is known as “storytelling”. The narratives and verbal explanations of sound in these works direct the listener’s attention. They draw focus to specific elements within the soundscape. By sharing both specific and general information about a place, composers provide a backdrop that would otherwise remain invisible to the listener. As Koutsomichalis (2013) observes, recording is in effect an act of decontextualisation. It separates physical sounds from their intellectual, perceptual, socio-cultural and psychophysical tokens. Watson deliberately reconstructs these connections through storytelling, achieving a meaningful representation of the environment.

Following a critical reflection on early soundscape theory, my soundscape composition practice has come to view this separation between sound and its source as part of the mediated conditions. Mediation is no longer an exception in contemporary listening. Headphones, streaming media, spatial audio and interactive interfaces continually place environmental recordings into new presentational contexts and transform the relationship between listener and sonic material. This also forms the fundamental rationale for my use of VR as a platform for expanded soundscape practice. By leveraging the unique interactive advantages of VR, this separation can be perceived and aesthetically experienced in a more explicit manner.

This chapter has clarified the two core starting points of this doctoral research. The first is how the value framework of hi-fi and lo-fi soundscapes has shaped my creative decisions. The second is the inevitable decontextualisation and re-presentation inherent in soundscape composition. My body of creative work has unfolded gradually in response to these two concerns. The next chapter will take three early works as case studies. It will detail how I entered soundscape composition with the practical logic of protecting natural sonic environments and how I gradually identified the limitations of this value framework through

practice. This will lay both theoretical and practical groundwork for the subsequent shift toward the malleability of urban soundscapes and the comparative listening approach employed in VR.

Chapter 3: Early Practices – Oriented Toward Soundscape Conservation

This chapter comprises a continuous sequence of three works. *Echoes of National Parks* demonstrates how I approached environmental protection through compositional contrasts between clearly audible environmental details and mechanical sounds that mask them; *Exploring Silence – Japan* examines changes in the audibility of individual sounds within urban recordings, extending my attention beyond my earlier nature-centred approach; the *VR Western River Rye Soundscape Project* discusses how the interactive functions of VR transform temporal and spatial differences into accessible comparative listening.

3.1 *Echoes of National Parks* (2023)

3.1.1 Work Background and Creative Intent

Echoes of National Parks is a fixed-media stereo soundscape work. It originates from my early doctoral involvement in the project *What does a national park sound like* (2022), led by Professor Pete Stollery and developed by a research team from University College London, the University of Aberdeen, and the University of Sheffield. The project aimed to create an online sound map of UK national parks, helping visitors and residents engage more deeply with the intangible yet audible world of sound. It encouraged more attentive listening and invited the public to reflect on how these sounds express or shape human life, health, and well-being.

Against this background, I contributed nine field recordings from two national parks and further structured them into a composition. The work reflects my early nature-centred approach through a compositional contrast between recognisable environmental details and intense human-made sonic events. By preserving the detail of the national park recordings and then introducing mechanical sounds that mask them, the piece deliberately emphasises the contrast between natural soundscapes and intense human-made sonic events. This contrast invites listeners to attend to how quieter environmental sounds are masked by louder events, thereby transforming an orientation toward environmental protection into a perceptible structure.

3.1.2 Recording Positions and Selection

In this work, I understand recording as a situated act of sampling. It is not only a documentation of place but also a judgement about which sounds are worthy of being heard and which sounds demand critical reflection. The work prioritises materials that reveal the layered internal

relations of natural soundscapes, such as the activity of birds and variations in stream flow. I pay particular attention to soundscapes formed entirely by the natural environment, free from human interference. Near the footpath at Ladybower Reservoir, I discovered a small, enclosed area with distinctive sounds (Figure 1). It is surrounded by stones, and its floor is covered with fallen leaves. Rainwater seeps down the hillside through gaps in the rocks and falls irregularly onto the leaves, forming a small listening space that I named the “nature concert hall”.

The work also incorporates intrusive mechanical and human-made sonic events within the national parks as counterpoints to the natural soundscapes. For instance, during a soundwalk in Goathland (North York Moors National Park), I encountered an engine exhibition taking place at the edge of a forest (Figure 2). The engines were running, and their intense noise pervaded the natural environment. For me, such material is not included to create a dramatic effect. Instead, I use this material to invite attention to the contrast between two acoustic orders within a single work. The powerful mechanical sounds disrupt the original auditory balance of the natural soundscape, overpowering subtle sounds such as bird calls and flowing water. They also rapidly restructure the listening order of the environment. At this moment, mechanical noise forcibly dominates the auditory field, and the natural sounds are masked.



Figure 1 “Nature concert hall”



Figure 2 Goathland Engine Exhibition

3.1.3 Work Organisation and Strategy

Compositionally, I arranged the field recordings from the national parks to move from sustained natural soundscapes to the intrusion of disruptive events. This structure is intended to interrupt sustained attention to the natural soundscape through the sudden arrival of disruptive sounds. Through this contrast, I invite listeners to consider the value conflict underlying my concern for environmental protection. When the mechanical sounds recede, and the natural soundscape re-emerges, listeners may more clearly perceive the pronounced fragility of natural soundscapes under the pressure of human-made sound.

The work opens with a field recording from All Saints Church in Bakewell, with only time-stretching applied to the original material using granular synthesis. When recording this segment, I had intended only to capture the church's hourly bells. At the moment the bells struck, however, they were accompanied by a sharp burst of birdsong, which came as both a surprise and a delight. Although I cannot interpret the precise meaning of the birds' response, their calls sounded as though they had been startled by the bells.

For Schafer (1994), church bells are rarely a neutral presence. Under certain conditions, they act as a centripetal force, socially drawing and gathering a community, while also marking events such as festivals, births, deaths, and marriages. Yet it cannot be denied that when bells are unregulated, they may also embody a relation of power. Those who produce such sounds hold the authority to create them without reproach, a phenomenon Schafer terms "Sacred Noise" (p. 77). Within acoustic ecology, a central concern of soundscape research is the relationship and interaction between humans and the sounds of their environment (Truax, 1999). From this perspective, church bells may appear as a positive sonic presence within human contexts.

Soundscape ecology, by contrast, takes a broader socio-ecological and landscape-based approach, focusing on the causes and consequences of biological (biophony), geophysical (geophony) and human-produced (anthrophony) sounds (Pijanowski et al., 2011). From this viewpoint, bells carry distinct meanings for humans and birds. In this work, I choose to present the bells as an intrusion into the lives of birds. I processed the birdsong using a vocoder to alter its quality and applied auto-pan to adjust its stereo position, rendering it agitated and reinforcing the opposition between natural and human-made sound. The final sharp bird call, paired with the sound of a passing car (1:42–1:45), functions as a climax of "sonic protest".

The work then moves to its second section, where the authentic sound of a waterfall (1:56) from Mallyan Spout Waterfall is introduced. I aim to lead the listener into an imagined water environment. Although this section consists of abstract electroacoustic processing, it is not entirely fictional. Its sound design is informed by the "nature concert hall" I described earlier. From 2:26 onwards, the work enters a more abstract phase. I first add reverb to the sound of water droplets to create a heightened sense of space. I then use electroacoustic processing to reconstruct the environment that I heard but could not fully record. The sound of flowing water is transformed and panned to create a more animated quality, as an evocation of the tiny insects and microorganisms active on the water's surface.

The third section of the work (3:25–6:50) presents strong contrasts between sonic environments. Following the sound of a passing train, the work moves to the natural soundscape near Ladybower Reservoir. This is an unprocessed field recording, to which I add subtle layers of flowing water. The passage presents the natural soundscape while also preparing the listener for the conflict that follows. The sounds of water gradually converge and intensify, and bird calls reappear, rendered more abstract through equalisation and time-stretching. This distorted birdsong serves to foreshadow the engine noise that follows, symbolising the intrusive disruption of the natural soundscape by human-made sound.

The fourth section (5:41–6:47) carries the highest dynamic level in the work, using material recorded at the engine exhibition in Goathland. The engine is a key source of noise discussed by Schafer (1994) and also a major factor identified by Gordon Hempton (2010) in his critique of noise affecting quiet in national parks. Placing the engine exhibition within a natural environment directly reflects critiques of human-generated noise, which often overlooks impacts on residents, natural soundscapes, and non-human organisms. In this work, I do not treat engine noise as mere background sound but as a structural turning point, placed to create a sharp contrast with the comparatively delicate natural passages. Through phaser effects and automated equalisation, the engine sound gradually grows and dominates, with increasingly prominent high frequencies and modulated panning that render it forceful and unsettling. This may compel the listener to reflect on how the audibility of natural environments is redistributed when human events encroach upon their space under the guise of exhibition or entertainment.

The final section (7:00–8:11) brings back many familiar sounds as a recapitulation of the overall material. The engine sound rises and transitions smoothly into the historic steam train of Goathland. Accompanied by the rhythmic clatter of wheels on rails, the work gradually fades to silence.

3.1.4 Work Reflection

As an early work, *Echoes of National Parks* translates the value language of hi-fi and lo-fi soundscapes into a practicable compositional approach. Through selective recording choices and structural contrast, it frames the call for soundscape conservation as a perceptible listening process. It also led me to recognise that soundscape works do not offer fully objective records of environments. Composition carries a positional stance in creation and presentation, which may influence listeners' attitudes and interpretations.

At the same time, the work reveals the limitations of my method at this stage. Expressing the hi-fi and lo-fi distinction through strong oppositions between nature and human-made sound risks fixing value judgement within a critical structure. This framework proves insufficient to account for the equally culturally and socially significant acoustic experiences found within urban soundscapes.

3.2 *Exploring Silence – Japan* (2024)

3.2.1 Work Background and Creative Intent

Exploring Silence – Japan is a fixed-media stereo soundscape work. It originated from the commissioned project Sound of Adventure, co-curated by Cities and Memory and Exodus Adventure Travels, to mark the 50th anniversary of Exodus Adventure Travels. The project invited twelve field recordists from around the world to take “adventure” as their starting point, aiming to showcase the sense of adventure people feel when experiencing a place for the first time through sound. However, “adventure” is not primarily an adjective used to describe sound; it usually refers to an experience marked by uncertainty, excitement, or risk. After careful consideration, I decided to take “silence amid noise” as my recording theme. I believe that the busyness of cities is often accompanied by complex soundscapes, which usually give people the impression of noise. Yet, within this hustle and bustle, are there elements and spaces of silence? How do these sounds “survive” in such noisy environments? This is precisely the adventure they undergo.

Within my soundscape value framework at that time, a hi-fi soundscape signified recognisability. In the more heavily masked passages of the urban recordings used in this work, individual sonic details become distinguishable during brief gaps or changes in the surrounding sound. These moments informed my interest in the changing audibility of sounds within the same environment. When these details remain audible or re-emerge amid competing sounds, I interpret their presence as a form of “adventure”.

3.2.2 Recording Position and Selection

Since the core of the project lies in the sense of adventure felt when experiencing a place for the first time, I made no advance plans during the recording phase of this work. I positioned myself truly as a first-time wanderer, exploring these faint sonic presences in Japan. I conducted multiple soundwalks in busy urban areas and tourist hotspots, collecting seven field recordings covering subway stations, crossroads, dining spaces, and tourist sites such as Ueno Park and Fushimi Inari Taisha. During this process, I noticed that some subtle sonic events that would otherwise remain in the background were not continuously masked by urban

noise. Instead, triggered by specific institutional or behavioural conditions, they gained greater audibility and temporarily altered the dominant acoustic relationship.

As I wandered the streets of Japan, I often heard clear, sustained bird calls. Strangely, however, there were few trees nearby, and no birds were visible. Following the sound, I discovered that these calls originated from sound devices installed at crossroad traffic lights. When the green light turned on, these devices played clear bird calls to guide visually impaired individuals to cross the road. Similar devices were also present in Japanese subway stations; when a train arrived, devices installed at subway exits played bird calls to help visually impaired individuals locate the exits. I spent approximately 30 minutes listening at both locations and made an interesting observation: in such environments, these relatively faint sounds seemed to exchange their dominant position with the powerful urban noise. When the bird calls at the crossroads sounded, they signified that motor vehicles needed to stop to yield to pedestrians. The urban soundscape in this area quietened down as the motor vehicles stopped, and at that moment, the bird calls seemed to be endowed with the power to halt the vehicles and grant the urban soundscape a moment of temporary silence.

Such a reversal of sonic power also occurred at Fushimi Inari Taisha. This is an open site, and particularly in front of the first shrine hall upon entering the Taisha, many tourists gather to take photos. Surrounding this building are numerous souvenir shops, creating a very noisy sonic environment. A row of wooden offering boxes is placed in front of the shrine hall, and people are required to clap twice before dropping coins into the boxes. During this process, a subtle change took place in the soundscape. Even though the surrounding environment was very noisy, when people approached the shrine hall, everyone had to remain quiet and bow their heads in silent prayer. At that moment, only the clear sounds of clapping and coins dropping could be heard. These sounds of clapping and coins symbolise people's reverence for the gods, and it is through this cultural connotation that they gained dominance in the complex soundscape at that moment.

In addition, I recorded the insect chirps in Ueno Park and the subtle sonic textures in the dining environments of two representative Japanese cuisines: Yakiniku and Omakase. These materials were ultimately organised into the work *Exploring Silence – Japan*. By exploring the soundscapes in Japanese cities, I sought to capture those fleeting moments of silence that exist quietly amidst busyness, showcasing the delicate relationship between sound and environment, as well as the spirit of adventure they embody.

3.2.3 Work Organisation and Strategy

Exploring Silence – Japan is a work with minimal electroacoustic processing. It uses a continuous drone as a background framework, integrating multiple expressive soundscapes harmoniously. At the beginning, the work does not adopt the common fade-in technique at the opening but instead directly introduces the soundscape of Tenjinbashi Subway Station, presenting the subway environment without a gradual introduction. At the same time, the drone gradually emerges as a background sound, filling the mid-low frequency range to create a dreamlike atmosphere.

At 0:40, the bird calls from the crossroad traffic lights begin to emerge. Two distinct bird calls are clearly audible here; one louder and one softer, panned left and right. This effect stems from the stereo microphone capturing the sounds of the traffic lights at my location and those across the road at the same time. Furthermore, the sounds of passing bicycles and pedestrians exhibit distinct panning variations in the stereo recording, further enhancing the sense of space. At this point, the subway station sounds gradually recede into the background. The combination of the two different bird calls—from the traffic lights and the subway station—and the drone is intended to give the opening section an immersive, dreamlike quality.

At 1:57, the sound of a subway train starting up and a shift in the drone's pitch together drive the work forward. Unlike many common soundscape processing methods, however, the work does not transition directly to the next scene through the sounds of cars or trains but remains in the first scene. The sudden emergence of the subway sound is intended to briefly interrupt the listening pattern established by the preceding passage, creating a contrast between the noise of the moving subway and the cultivated quiet atmosphere. After the subway sound fades, the volume of the drone decreases, leaving the subway station recording more exposed for attentive listening. As the work progresses, the positions of the drone and the subway station soundscape gradually reverse. After 3:05, the volume of the drone rises steadily, eventually almost completely replacing the subway station sounds, with only a few high-frequency bird calls faintly audible. This section aims to provide a more open auditory imagination space for the subsequent scene transition. I then introduce a rhythmic pulse with panning variations, ensuring the section retains a sense of space and transitions smoothly to the next scene, even after the disappearance of the authentic soundscape.

To ensure a natural transition between scenes, the drone from the first section does not disappear immediately at the start of the second section. Instead, it acts as a bridge connecting the spaces of the two scenes. The drone fades slowly and finally disappears only when the cricket chirps gradually take dominance. The appearance of the crickets marks the transition of the work's scene, a section composed of rich sonic textures, including recordings I made in

the dining environments of Omakase and Yakiniku restaurants. At 4:40, the sound of drums signals the entry into a new space. At this point, the drone rises gradually once more while the cricket chirps begin to fade. From 5:10 onwards, accompanied by the chanting of monks, the listener is brought into the environment of Fushimi Inari Taisha. Subtle textural sounds also appear in the work; these actually originate from the crackling of charcoal stoves during Yakiniku meals. Here, I use them to depict the rustling sounds made by each tourist entering the temple. Three bell chimes at 5:43 mark the intended return from the dreamlike passage to the recorded environment, interrupting the subtle textural sounds and cricket chirps, signifying the arrival of a quiet environment and the start of prayer. Immediately following the third bell chime are two claps and the sound of a coin dropping.

From 6:05 onward, a high-frequency drone is introduced, initiating the imaginative section of this part. I processed the sound of the coin dropping using a granular synthesiser to create an ascending effect, as if each wish is being delivered to the Buddha. The new texture introduced at 6:50 can be interpreted as the inner struggles each person reveals during their prayers. The sound resembling the vibration of metal sheets that appears at 7:27 represents the acceptance of each wish one by one as each coin is inserted. The sounds grow increasingly dense until reaching a climax at 8:29. I used a reverb effect and a low-frequency drone to create a profound space, making the coin sound as if it is being dropped into a bottomless pit, symbolising the peak of people's desires. At 9:30, the familiar pulse reappears quietly, followed by the re-emergence of bird calls, subway sounds, and multiple previous soundscapes. The work thus enters its final phase. Through this cyclical structure, I bring together moments of relative quiet from different urban locations, inviting listeners to follow the movement between recorded environments and transformed passages.

3.2.4 Work Reflection

This work begins and ends with the bird calls of a subway station. It invites listeners on a journey through Japanese soundscapes as if travelling by underground rail. The work draws on the compositional approach of Barry Truax's *Pendlerdrøm* (1997). Truax's piece documents the sonic experience of a passenger during a train journey in Copenhagen. It moves from the real into the dreamlike before returning to reality, using abstract sound processing to recreate sonic sensations that cannot be fully conveyed by field recording alone.

Exploring Silence – Japan aims to challenge traditional understandings of urban soundscapes by revealing the subtle and profound interplay between noise and silence. It still takes the language of hi-fi and lo-fi as its starting point. It also leads me to acknowledge that recognisable sonic detail is not exclusive to natural spaces. The work begins to unsettle my

unexamined acceptance of the opposition between hi-fi and lo-fi soundscapes. It lays the ground for a shift in my practice towards attention to urban soundscapes.

In Schafer's theory, the city is often linked to unrelenting noise. This work reveals that moments of silence worthy of close attention still exist within busy urban sound environments. In the end, this work is both an exploration of the distinctive acoustic environments of Japanese urban soundscapes and a critical reflection on how silence persists, adapts and coexists within the constantly changing soundscapes of modern life.

3.3 *Western River Rye Soundscape Project* (2024)

3.3.1 Work Background and Theory

The *Western River Rye Soundscape Project* is a VR sound installation. It forms part of the Ryevitalise Project and has received support from the National Lottery Heritage Fund, the North York Moors National Park Authority and other partner organisations. The River Rye was once a vital resource for the local community. It provided clean water and power and supported a wide variety of wildlife. Over time, however, residents have gradually lost their connection with the River Rye. Ryevitalise aims to rebuild links between local people and the heritage, wildlife and landscapes of the River Rye and its tributaries. It also encourages communities, visitors and volunteers to take part in the protection, enhancement and restoration of the area's natural and cultural heritage. Following an open call and a proposal review process, my proposal application was successfully selected. It became one of four projects to receive a bursary award.

Several public presentation projects based on field recordings have provided helpful guidance for the present project. For instance, sound recordist Chris Watson's installation *Inside the Circle of Fire* (2013) at Sheffield's Millennium Gallery vividly reconstructs the transition of Sheffield's soundscape from rural to urban through field recordings. This immersive sonic experience not only allows listeners to appreciate the richness of sound but also provokes deeper reflections on the relationship between urban environments and sound. The development of online technology has also given rise to sound mapping projects such as *Global Sound Map* (Cities and Memory, 2015), *Gordon Soundscape* (Stollery, 2005), and the highly research-worthy *Covid-19 Sound Map* (Stollery, 2021). These platforms allow users to upload and share field recordings, creating a global sound archive. Through these maps, users can explore soundscapes from different parts of the world and experience the diversity of sounds across various cultures and environments. This sharing model not only facilitates the dissemination of sound art but also provides valuable resources for academic research.

The methodology for the *Western River Rye Soundscape Project* draws mainly on environmental monitoring through sound developed by the soundscape ecologist Bernie Krause. To examine the environmental impact of new logging techniques at Lincoln Meadow, east of San Francisco, Krause (2015) made 15 environmental recordings in the area over a 25-year period. Photographs of the site taken before and after logging showed no obvious visual changes. The audio recordings, by contrast, revealed a steady decline in biological activity and a loss of overall acoustic richness. This practice demonstrated that sound can, under certain conditions, convey information that is difficult to perceive through vision alone.

The practice of soundwalking also provides a theoretical foundation for the work. It was first introduced by Westerkamp in 1974. She defined soundwalking as any journey whose primary purpose is listening to the environment. It is a practice of conscious engagement with environmental sound. Soundwalking involves training the ear and exploring a range of sounds. It encourages participants to immerse themselves fully and interact with their surroundings (Westerkamp, 1974). Soundwalking connects with environmental protection not by generating direct conservation. It reshapes the ways in which people recognise and engage with environmental issues. When attention is directed towards listening rather than seeing alone, the intrusion of noise, the reduction of biophony and the acoustic impacts of human activity on habitats enter the experiencer's understanding more directly. Soundwalking can also be adapted as a tool for governance and planning. It allows professionals involved in urban design and development, as well as residents, to discuss the quality of the sonic environment on site. It also enables the integration of subjective experience into environmental understanding and decision-making (Adams et al., 2008).

My choice of VR as the medium for this work is not driven by a desire for realistic, natural representation. It comes from the intention to use the medial qualities of VR to turn ecological listening into an accessible and comparative experiential mechanism. VR technology is defined by three core characteristics: immersion, interactivity and imagination. It uses 360° imagery and spatial audio to immerse users within a virtual environment. Users can then interact with this environment through sensory equipment. Beyond perceptual engagement with a virtual setting, the imaginative dimension allows users to gain new knowledge, deepen concepts and form new associations. Through interactive hotspots, VR can fully support human exploratory capacity and stimulate users' curiosity to investigate further (Li, 2021, p. 5).

VR fulfils the aims of traditional soundwalking by supporting immersive listening and reflective interaction with the environment. In addition, it also offers the strength of transcending the

limits of time and location. Users can quickly move across different times and spaces to experience and explore varied contexts and engage in comparative listening.

3.3.2 Data Collection and VR Scene Design

The *Western River Rye Soundscape Project* employed an Insta360 X3 360° camera and a Zoom H3-VR portable Ambisonics recorder to capture visual environments and soundscapes over a one-year period. All recordings took place between 11:00 and 14:00. Recorded material included riverbank vegetation, wetland ecosystems and biological activity such as bird movements and variations in stream flow.

Video data was processed using fisheye lens correction and stitching algorithms to produce high-quality 360° panoramic footage. The footage has a resolution of 5.7K and a frame rate of 30 fps. To optimise the user experience, a tripod was used to stabilise the camera during recording. Natural lighting conditions were retained to reflect as accurately as possible the ecological character of the River Rye catchment.

Audio data was encoded in Ambisonics B format using the ambiX convention, with a sample rate of 48 kHz and a bit depth of 24 bits. Only minor volume adjustment and noise reduction were applied in post-production. The recordings were then decoded into fixed binaural audio for headphone playback. Although users can change their viewing direction, the audio does not update with head rotation. The spatial presentation therefore remains fixed relative to the listener's head.

For scene design, I drew on soundwalking practice to build interactive elements using the Wonda VR platform. Hotspots allow users to move between recorded locations across the catchment, while seasonal switch buttons make recordings from different seasons available for direct comparison. Embedded ecological interpretation videos provide contextual information about local environmental protection and the challenges facing the River Rye catchment (Figure 3). Users can look around each panoramic scene, but movement between locations takes place through scene selection, with each recording retaining a fixed viewpoint. These features are intended to encourage exploration and attentive listening, while offering a different form of access from physically walking through the recorded environments.

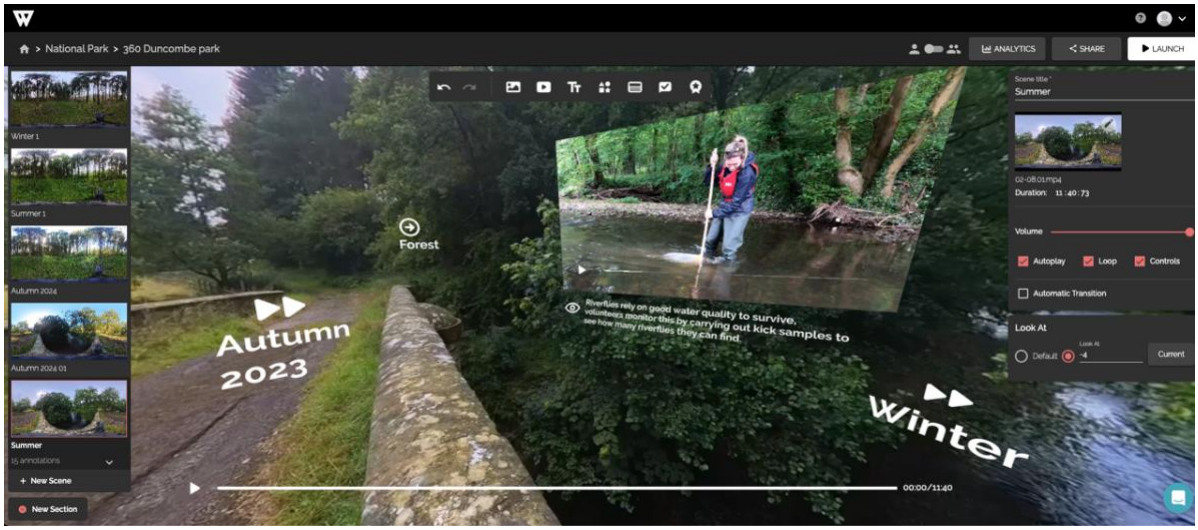


Figure 3 Wonda VR Editing interface

3.3.3 The Experiential Mechanism of Audio-Visual Dislocation

To reveal the detailed ecological changes across the River Rye catchment, this project uses differences created by temporal and spatial comparison to invite the public to recognise ecological shifts in the area. The work specifically adopts VR environments and recordings from October 2023 and October 2024 as comparative sets. These materials come from the same season, with recording times and weather conditions matched as closely as possible. This matching was intended to reduce differences associated with season, time of day and weather, although it could not eliminate their influence on the recorded soundscapes.

Panoramic videos from October 2023 and October 2024 show almost no visual change in the ecological setting. Tree distribution, lighting and landform remain largely identical (Figure 4). The soundscapes, however, display clear auditory contrasts. Sound spectral analysis shows that recordings from October 2023 contain rich and sustained bird calls around the 2.4 kHz frequency band. This indicates active avian behaviour. Recordings from October 2024 are dominated by the sound of water flow from the River Rye, with a marked drop in bird activity (Figure 5).

In addition, recordings from October 2024 capture frequent fighter jet noise in the local sound environment. However, this is not supported by any corresponding visual evidence in the panoramic footage. It suggests that noise has been present within the ecosystem in ways that remain invisible to the eye.



Figure 4 10/2023-10/2024 Autumn Environments

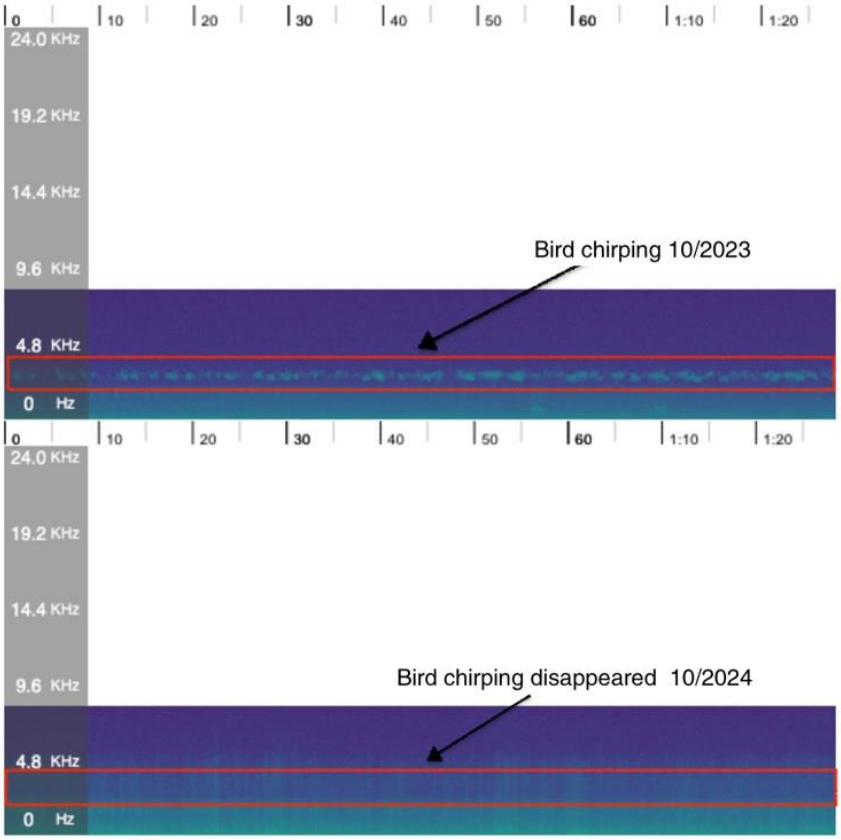


Figure 5 10/2023-10/2024 Spectrogram of the soundscape

Intermediality serves as a core concept for investigating interactions between different media. It provides a significant theoretical perspective for understanding the audio-visual relationship in this work. It does not only concern the juxtaposition or fusion of media. It places greater emphasis on the process through which media constructs meaning by mutual interaction, interference and collaboration (Grishakova, 2024).

In this work, users are presented with a relatively stable visual landscape. The visual environments of October 2023 and October 2024 show no obvious change. The auditory experience, however, reveals sharply contrasting acoustic conditions. This “audio-visual dislocation” embodies the central mechanism of “intermedial interference” (Chiaramonte, 2024). It refers to the dynamic interactive effect generated by differences or conflicts in information communication between distinct media, such as sound and image. I use this contrast to invite users to reconsider the relationship between visual and auditory information. Such interference is not negative in nature. It functions as a strategy to stimulate perceptual tension and critical thinking. It reveals the unique value of sound in capturing ecological change. Within the VR environment, the interaction between sound and image is not a matter of simple superimposition. It forms a symbiotic relationship within the perceptual process. Their juxtaposition offers users an opportunity to consider what each medium conveys about the recorded environment.

3.3.4 Work Reflection

The *Western River Rye Soundscape Projec*t marked a key shift in my practice during the first phase. While the work still seeks to promote active community engagement in listening and environmental protection, I no longer present natural soundscapes as aesthetic objects of higher value. I employ VR to frame soundscapes as environmental clues that one can read and compare. This allows for discussion of the potential value of soundscapes in monitoring ecological change.

The most direct inspiration drawn from Krause’s recording and monitoring case at Lincoln Meadow is the potential difference that may exist between “what is visible” and “what is audible” in conveying information. This project draws on the capacity of VR for temporal and spatial compression and rapid switching. It turns this difference from a researcher’s observation into one that the public can experience directly. Meanwhile, this work has made me more aware of the potential of “audio-visual dislocation”. This juxtaposition is intended to create perceptual tension and invite reflection on how visual and auditory cues contribute to interpretations of the environment.

This work also responds to the ecological responsibility in soundscape creation emphasised by Westerkamp (2002). She believes that soundscape composition is not only an art form but should also promote people's attention to and protection of the sound environment. However, it is important to note that this work does not function as an empirical case study of ecological change. Although I matched the season, time of day and weather conditions as closely as possible, fluctuations in bird activity may still result from multiple factors. These include migration, breeding cycles and micro-changes in local habitats. The absence of bird activity in October 2024 cannot, therefore, be taken as direct proof of environmental degradation. The work maintains a cautious stance in its argumentation. It emphasises that sonic differences can stimulate community experience and discussion of local ecological change, but acoustic data alone cannot provide definitive conclusions.

This work provides a clear bridge for my subsequent practice. When soundscapes are situated within a strongly mediated medium such as VR, the focus is no longer on achieving a more realistic representation. It lies instead in how interaction and structure can turn listening into a comparative and reflective cognitive activity. This also forms the theoretical starting point for my use of VR as a method of comparative listening in later chapters and works.

Chapter 4: *Fractured Ceremonies* (2025) – Malleability of Urban Soundscapes

In the practice of the previous phase, my soundscape composition relied heavily on the value framework of hi-fi and lo-fi. Moving into this chapter, a pivotal shift has occurred in my creative focus. I have begun to move beyond my earlier tendency to judge urban sounds primarily in terms of noise and masking, using their rhythmic structures and cultural connotations to guide my selection and transformation of the recorded materials. In turn, the direction of my soundscape composition no longer primarily aims at the preservation or reproduction of an ideal environmental object. Instead, it turns to exploring how recorded materials, while retaining their contextual references, can undergo deconstruction, recombination and electroacoustic transformation to generate new listening pathways and modes of meaning perception.

4.1 Work Background and Creative Intent

Fractured Ceremonies is a work created for the Sonic Heritage project by Cities and Memory. The project presents sounds from 270 UNESCO World Heritage Sites and Intangible Cultural

Heritage elements. Through recording and reimagining, it invites listeners on a sonic journey to explore the role of sound in these spaces regarded as some of the world's most culturally significant. It also emphasises that sound holds undeniable cultural and social significance in the process of understanding and inheriting cultural heritage.

As one of the artists involved in the project, my main task was to reimagine sounds from World Cultural Heritage sites, allowing listeners to experience these sounds and spaces in an entirely new way. The recording I selected is a live performance of a drum and gong ensemble, captured at the Palace Museum in Beijing by field recordist Colin Hunter. Within a Chinese cultural context, such drum and gong performances are often associated with ritual activities. Examples include weddings, funerals, housewarmings, Spring Festival celebrations, and dragon and lion dances. They often appear as pitchless, high sound pressure level, and continuously repetitive rhythmic patterns. For this reason, in many daily experiences, such sounds are more likely to be perceived as background to rituals rather than as objects of primary appreciation and listening. People's attention usually focuses on the ritual event itself rather than the internal details of these sounds. Precisely because of this, when these sounds are separated from their original context and presented alone in a listening situation, they may be misread as monotonous, noisy, or even near-noise material.

For me, this recording also has contextual limitations. I was not the collector of the recording, and the recording itself presents little more than continuous drum and gong sounds. It lacks supplementary clues about the specific content of the event or the on-site situation. From another perspective, however, these contextual limitations have precisely opened up space for an alternative creative pathway. As Simon Emmerson (1986) notes in his discussion of the "abstracted syntax" of electroacoustic music, when a composer selects and organises material based on the perceptual characteristics of the sound itself rather than preconceived conceptual frameworks, the internal structure of sound becomes the primary basis for formal generation. This means the organisation of the work no longer relies on external narratives to explain the sound. Instead, through more detailed listening and transformation, the inherent structure and potential of the material gradually emerge.

Based on this position, my aim in this work is to bring these ritual sounds—often backgrounded in daily life—back to the forefront of listeners' attention through electroacoustic transformation and structural organisation. On the one hand, I retain some iconic rhythmic and timbral cues, ensuring they still point to their cultural origin and ritual associations. On the other hand, through the deconstruction and recombination of the recorded material, I invite listeners to

shift their focus to the often-overlooked malleability and creative potential of the sounds themselves.

4.2 Material Analysis

At the level of sonic material, the original recording consists almost entirely of a continuous, repetitive drum and gong ensemble. To transform it into organisable compositional resources, I first carried out a structural division of the recording (Figure 6). The areas highlighted in red represent sections with stable, long-sustained rhythmic cycles. Those marked in green are progressive rhythms often characterised by a sustained increase in intensity, gradual acceleration in tempo, or tighter percussion; these serve to drive section transitions. The yellow sections contain easily recognisable, typical rhythmic patterns that are also common in drum and gong performance vocabulary. The central section highlighted in white is a contrastive passage, featuring a marked reduction in repetition and density. It provides breathing space and structural contrast for the subsequent return to dense sections.

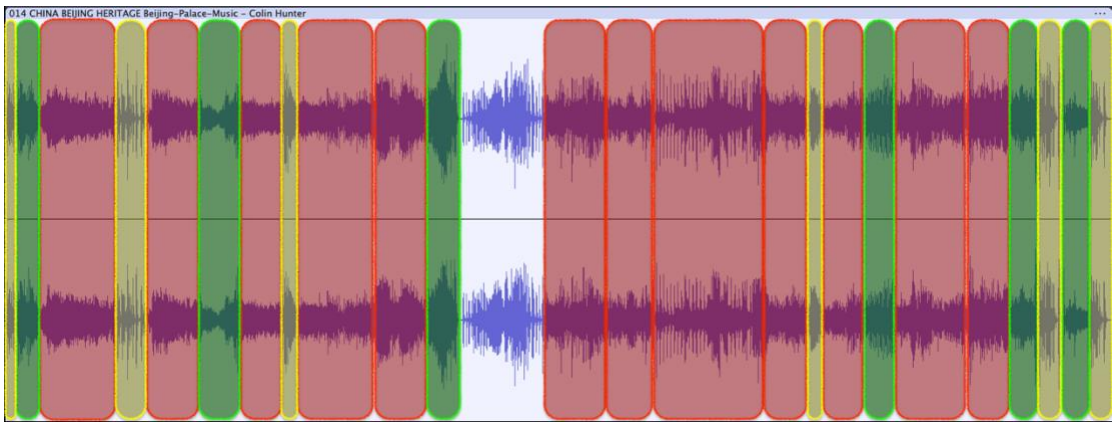


Figure 6 The field recording structure of *Fractured Ceremonies*

After completing the division and selection, I mapped the four types of sections to different compositional roles and processing intensities. Materials that bear greater cultural and ritual significance tend to retain their recognisable cues. Those more capable of demonstrating malleability, by contrast, allow for stronger reshaping.

For this reason, I deliberately retained the representative rhythmic sections (yellow) relatively intact in the work, making only minor adjustments to loudness and equalisation to maintain the stability of their rhythm and timbre as contextual references. The sustained rhythmic sections (red) were used for granular processing. By controlling grain length, density, envelope and randomness, the originally monotonous continuous percussion was reconstructed into textural layers of varying depths, serving as a background atmosphere to support the work's

low frequencies and spatial depth. The transitional rhythmic patterns (green), through appropriate electroacoustic processing, were used to connect different sections. This creates a gradual transition in sound energy between material states, intended to guide attention through the change. The central contrasting section (white) fulfils a key gestural function. Due to its reduced density and clearer transients, I extracted and reorganised different percussion events from it, then transformed them through electroacoustic processing into gestures with a distinct sense of movement—such as approaching, stacking, withdrawing and sudden disruption.

4.3 Work Organisation and Strategy

Fractured Ceremonies begins with recognisable drum-and-gong patterns intended to retain their ritual associations, before introducing transformations that foreground the malleability of the material. Overall, the work presents two distinct cycles of departure and return. It first establishes contextual and origin cues before moving into more intensive electroacoustic transformation. Halfway through, the original rhythm briefly returns to the foreground as a contextual reference. The work then moves into more thorough gestural and textural processing, concluding with a typical terminative rhythm that echoes the conventional closing pattern of drum and gong performances.

The work opens with the most iconic rhythm from the original recording, emerging over a bed of low-frequency pad. This approach retains sonic cues to the cultural context of the original recording. Subsequently (0:12–0:31), the progressive transitional rhythm accelerates gradually and undergoes granular processing, eventually stretching into a continuous, dense textural plane. This treatment is intended to redirect attention from the original rhythm to the texture and movement of the sound. A terminative rhythm follows (0:36–0:38), acting as a clear section marker. It not only corresponds to the common concluding style of drum and gong performances but also signals the entry of the work into its main development phase.

After 0:40, the work progresses with a drone derived from the decomposition of the sustained rhythmic sections. This background layer retains the energy and timbral fingerprint of the drums and gongs. It no longer dominates attention with its original repetitive rhythm but functions instead as an elongated backdrop. The section from 1:20 to 2:07 marks the only point in the work where a continuous dotted percussion rhythm is transformed into dynamic sound gestures. Each cymbal strike in the original recording is treated as a trigger point. Every trigger generates a new electroacoustically processed and spatialised sound gesture. In terms of the relationship, the newly emerging rhythm maintains a correspondence with the original percussion rhythm. At the same time, each triggered sound, through spatialisation, creates a

bouncing movement in auditory perception. The arrangement is intended to draw attention to the differences, trajectories and spatial behaviours of each new event. Material that might otherwise be perceived as monotonous and repetitive is here converted into a driving force that continuously generates variation.

As the trigger rhythm gradually thins out, the work enters a brief recontextualisation section (2:15–2:50). Parts of the original recording's rhythm are retained relatively clearly in the foreground, while the electroacoustic sustained background drone persists. The layered effect resembles placing the original drum and gong performance in a new performance space. The passage retains cues to the sound's origin while placing them within a new spatial and structural arrangement. This provides a comparable reference for the more thorough electroacoustic development that follows.

From 2:50 to 3:50, the work moves into its malleability demonstration section. The background retains the evolving drone developed from the sustained rhythm, while the foreground is dominated by a set of electroacoustic gestures generated through decomposition and recombination. These gestures form multi-layered textures and movement patterns through spatialisation, granular synthesis and stretching, directing the listener's attention to the material with internal structures and morphological behaviours. Around 3:50, an ascending pad line and a relatively clear, unabstracted real rhythm briefly return. This marks a return from the highly abstract section to a more distinct rhythmic vocabulary, creating a sharper contrast for the next entry into the electroacoustic section. Subsequently (4:52), the transitional rhythm drives the work into another cycle of development. Electroacoustic gestures reassert dominance, while the drone continues to sustain continuous energy, allowing the transformed sound material to persist and intensify.

After 5:50, the work approaches its conclusion. The sound gradually converges through transitional elements, and the background drone fades and diminishes. The work ends at 6:00 with a typical terminative rhythm of a drum and gong ensemble, settling on a single cymbal strike. This treatment is crucial. It not only retains the typical concluding style of a drum and gong performance but also processes the final note with granular synthesis and stretching. This rewrites the concluding action on a temporal scale, resembling both the authentic landing point of ritual sounds and an elongated, slowly dissolving acoustic residue. In this way, it unites original context and material malleability in a single gesture, with simplicity.

4.4 Work Reflection

Fractured Ceremonies marks a pivotal shift in this body of work. My focus has expanded to explore how sounds are heard, interpreted, and recontextualised in mediated environments. Urban sounds carry collective behaviours, ritual order and spatial relationships. Rather than dismissing urban soundscapes entirely as noise or degradation, we should adjust our own attention and listening practices to consider how they are perceived and reimagined in specific contexts. In Cage's 1937 lecture *The Future of Music*: Credo (first published 1958, reprinted 2011), he pointed out that when we ignore the sounds in our environment, most of what we hear becomes noise; when we listen, we may find it fascinating. For me, the significance of this work lies precisely in structuring this redirection of attention into a listening experience.

Furthermore, this work utilises materials recorded by others. This is not a weakness in composition but rather strengthens my reflections on compositional strategies within this research. Without complete on-site contextual cues, I have had to bring the sounds into a new narrative structure through repeated listening and analysis. In this regard, the theory of reduced listening provides an effective methodological entry point, pointing out that sounds can be analysed and experienced through their texture, energy and form, freed from their original contexts (Kane, 2014). I did not, therefore, invent or supplement the sonic context. Instead, I took the rhythmic patterns, density variations and transient characteristics within the recording as the basis for structure. I first classified the material according to its rhythmic and energetic qualities. I then applied varying degrees of electroacoustic transformation and spatial organisation to different materials, revealing the sounds' inherent potential and malleability through contrast, generating meaning within the work.

This strategy corresponds to a compositional balance. It seeks to preserve the sounds' original form to maintain contextual connections while allowing them to maximise their expressiveness and impact through new organisational rules. I retained some recognisable rhythmic patterns and a composed conclusion to preserve cues to the source material. I applied granular and spatial processing to sustained sections. This foregrounded textural and gestural movements and directed attention towards subtle timbral variations, density shifts and spatial behaviours.

Chapter 5: *Take Me Back to Indonesia* (2025) – How Soundscapes "Speak for Themselves"

Take Me Back to Indonesia represents another stage in the shift of creative values across this portfolio of work. It centres explicitly on the formation of personal memory and narrative evoked by field recordings. Where *Fractured Ceremonies* examines how sonic materials generate meaning through their internal structure when full contextual information is lacking, *Take Me Back to Indonesia* goes further to ask how a composer should respond when soundscapes actively "speak for themselves" and evoke the composer's personal memories.

In this piece, soundscapes are no longer treated as discrete materials available for selection and casual editing. They are instead approached as holistic entities carrying inherent significance. They act as a guiding force that directs the composer's creative strategies and forges new contextual frameworks. This compositional approach relocates the focus of soundscape work from the environment as such to the ways in which the environment is experienced and reimagined through listening. Field recording thus ceases to be only a form of reference to the external world. It also becomes an access point for inner emotion and narrative.

5.1 Work Background and Creative Intent

Take Me Back to Indonesia is a work created for Cities and Memory's Autumn Project 2025. It originates from a soundscape recorded by the Indonesian field recordist F. Boy Sinaga, which captures a group of children playing carefree by an ancient well in Madobag Village, Mentawai Islands, Indonesia. Although I do not understand their language, the constant laughter, playful shouts and spatial reverberation in the recording affect me with an immediate emotional charge. It is not merely a piece of sonic documentation but rather a form of sonic memory.

Iain Findlay-Walsh (2018) emphasises in the theory of sonic autoethnographies that the recordist is first and foremost a listener, and their recording stands as an audible trace of the listener's presence. Later listeners, when engaging with these recordings, take the place of the original listener and form a connection between their own first-person perspective and the listening perspective preserved in the recording. In this work, I am neither the recordist of the material nor do I have any direct lived connection with Madobag Village. Yet the recording still crosses cultural and geographical boundaries to trigger my own personal memories and

associations. This precisely reveals the potential of field recordings to evoke an emotional resonance beyond specific contexts.

For this reason, *Take Me Back to Indonesia* does not attempt to present the location in its full authenticity to the listener. It aims to show the composer's personal listening and perceptual experience as stimulated by the original soundscape through the reimagining of sound. This also aligns with the values of Cities and Memory, where "Cities" refers to the real environments documented by field recordings, and "Memory" represents the imagination and reworking by artists based on listening to those sounds. As Michael Gallagher (2015) observes, the function of field recording cannot be confined to the representation of environments. Through performativity and spatial layering, playback enables a shift from events taking place here and now to expressions in another time and place. The acoustic traces of the recorded moment blend into the present listening environment, forming an entirely new hybrid space.

Within this new space, the composer sets up a contrast between two acoustic worlds: memory and reality. The world of memory, extended from the field recording of Madobag Village, carries calm and relaxation, pointing to awakened fond memories and longing. The world of reality consists of alarm sounds, telephone tones and everyday noises taken from the composer's sound library, representing the rhythm of daily work and the pressures of contemporary life. The relationship between the two is not one of simple opposition. Instead, they shape the emotional trajectory of the work together through alternation, infiltration and mutual interruption. Moments of tranquillity are suddenly broken by realistic sounds, and memories grow fragile and difficult to sustain amid disturbance.

To me, this reflects a more authentic condition of living. We may indeed be carried away briefly by beautiful memories and imaginings, yet life does not stop for them. As Hollis Taylor (2024) states, field recordings allow us to enter and experience spaces of intense emotional focus. They can lift us out of daily trivialities and transport us to another time and place, offering us the chance to lose ourselves and to find ourselves again. While presenting the fleeting and fragile nature of such reveries, the work also reminds us that the busier and more pressured we become, the more we need to learn to notice and cherish the goodness that still exists around us.

5.2 Material Analysis and Reshaping Logic

In the sound material treatment of *Take Me Back to Indonesia*, the original recording was regarded as a holistic entity with inherent integrity, which foreshadows and sustains the serene atmosphere of the world of memory. Most sound elements in the original recording were

preserved, and only minor sections received appropriate electroacoustic processing. For instance, reverb and spatialisation were applied to extend the spatial depth of the sound, and subtle granular effects were used to suggest the blurred edges of memory.

This choice of treatment stems from my understanding of my own creative role in this work. As I did not experience the scene documented in the recording firsthand, I cannot depict it in detail or render emotional colour based on personal memory. Under such situations, excessive intervention could amount to a presumptive form of representation, imposing my imagination upon a place and community I do not truly know, thereby falling into the ethical dilemma of "sonic fetishism" (Drever, 2002). I position myself more as a "responder" to the soundscape, responding to the memories, emotional impulses and imaginative spaces it evokes within me. For this reason, I chose to preserve the recognisability of the recording to the greatest extent, allowing the sound to convey meaning through its own texture and atmosphere.

In contrast stands the world of reality, which largely embodies my personal response to this soundscape. This acoustic layer consists mainly of alarm clocks, telephone rings, traffic noise and everyday sounds. These do not originate from the original recording but draw from my own life experience and emotional associations. As I listened to the soundscape full of innocence and tranquillity, the opposing pressures and rhythms of daily life arose involuntarily in my mind. These sounds assume the narrative role of interruption and oppression, marking the intended interruption of the remembered world by present-day sounds, while also embodying the inner tension I experienced as a listener engaging with this soundscape. These sounds derive from diverse sources. Most were taken from my personal archive of field recordings, accumulated consciously in daily life. A small number of telephone and alarm sounds came from publicly available online sound resources and paid sample packs, such as Freesound and the All-in-One Bundle by Free To Use Sounds, used within their permitted terms.

Throughout the sound reshaping process, I was conscious of the recognisability of sound. Materials created a narrative with their inherent real-world references. The alarm clock remained recognisable as an alarm clock, retaining its sharp, repetitive and unignorable character to act directly as a "disruptor" in the narrative. The telephone beeps remained as telephone beeps, intended to suggest waiting, anxiety or unfinished business. Traffic noise likewise preserved its everyday sense of oppression and spatial intrusion. For me, the soundscape and my "other materials" intertwine and mirror each other in the work, forming a sonic dialogue between memory and reality.

5.3 Work Organisation and Strategy

The work unfolds in a five-part structure, inviting the listener to follow shifts between dreamlike memory and tangible everyday reality, and it completes a narrative cycle through layered sonic progression.

Part One (0:00–2:16) opens with the world of memory. Rainfall gradually introduces the ambient atmosphere, and the sound of children playing and laughing appears for the first time, establishing the setting and activity. At 1:05, I used the sound of a child blowing from the original recording as a transition to propel the narrative forward. Afterwards, the children's voices are gradually processed electronically and become increasingly unstable. With the gradual emergence of drone and reverb effects, the human voices that originally occupied the foreground are pushed back, becoming more blurred through granular and spatialised processing. This symbolises memory fading from clarity into ambiguity, revealing its inherent fragility. This section concludes as the drone fades out, with the volume dropping to an extremely low level, foreshadowing the emotional turn to follow.

Part Two (2:17–3:34) breaks the tranquillity and relaxation of the previous section with a bright and abrupt electroacoustic gesture, intended to introduce an abrupt sense of tension. The children's playful sounds are transformed into highly charged textural material through granular processing, further intensifying the sense of unease. The sound of rolling waves introduced at 2:30 amplifies emotional pressure with sustained low-frequency pulses. At 3:05, a deep hum accompanied by underwater bubbling sounds enters the work, intended to suggest drowning and anxiety before the narrative return from the dream.

Part Three (3:35–4:35) serves as the climax of the piece, with far greater sonic density and rhythmic activity than the previous two sections. Following the fade-out of the female voice in Part Two, alarm clock and vibration sounds cut in abruptly, marking an abrupt narrative return from the dream to everyday reality. Immediately afterwards, everyday noises such as telephone rings, dialling tones, electronic pulses, traffic noise, keyboard tapping and a baby crying create a dense environment, moving rapidly across the auditory field through spatialisation, creating an extreme contrast with the tranquillity of the first two sections. The volume in this section is noticeably amplified: noises in the surroundings always feel particularly harsh when woken abruptly by an alarm clock, reproducing the discomfort of being forced out of pleasant memories. At 4:27, after an explosion sound, the section settles into rapid breathing, symbolising a gradual return to consciousness. However, as the ticking of a clock's second hand emerges, the breathing fades, implying a desire to hold onto the warmth of the memory and continue the dream.

Part Four (4:36–6:27) rebuilds a harmonious atmosphere with long-string and synthesiser timbres, returning to a tranquillity similar to that of Part One, as if one is attempting to re-enter the dream of memory amid reality. At 5:15, the sound of waves reappears, mixed with faint traces of children's laughter. This symbolises that dreams and precious memories cannot be fully recreated, only captured as fragmented traces. At 6:05, the sound becomes abstract once more: a rising sound effect accompanies rapid dialling tones, finally settling on the beeping of an unanswered call, disconnecting us again from the world of memory.

Part Five (6:28–7:27) begins with a faint sound and suggests the action of getting up, tidying up and preparing for the daily routine. Immediately afterwards, everyday soundscapes such as a zipper, electric toothbrush and suitcase wheels emerge in succession, symbolising a gradual acceptance of reality and readiness to face ordinary life. The work ends with a rising sound effect resembling a vehicle or plane starting, leaving an open-ended association that raises the question of whether we are setting off for the beautiful place in memory or continuing mundane life on a daily commute. The children's laughter that flashes back quickly within the rising effect acts as the final afterglow of memory, eventually dissolving into an empty space constructed by granular textures. The piece concludes with unresolved narrative tension, constantly pulling at the boundary between memory and reality, and leaving the listener to complete the unfinished story.

5.4 Work Reflection

The core of the creation of *Take Me Back to Indonesia* is to demonstrate the fact that soundscapes "speak for themselves", exploring how sounds trigger, guide and organise new narratives through listening. Soundscapes are not merely reconstructible material tools; they rely on their own stories to induce the composer's memory associations and emotional projections, thereby guiding the direction of creation. This creative stance echoes the core view put forward by Westerkamp (2002) when discussing soundscape composition. Using environmental sounds for creation means there is a dialogical relationship between the composer and the recorded materials. No matter what the composer's original intention is, the materials inevitably speak in their own language, and their deeper meaning can only emerge through repeated listening and sound processing—this has the power to change the composer's intention. During the creation of the work, I deeply experienced the tension of this dialogical relationship. Truax (1996) once noted that the mission of soundscape composition lies in evoking the listener's associations, memories and imaginations related to the soundscape. In this work, however, this evocation first occurred to me as a listener myself. It

was the recording that touched me first, and only then did I begin to think about how to organise these touches.

However, acknowledging the agency of materials does not mean the composer's role is abolished. On the contrary, it is precisely within this dialogue that the composer's unique perspective, experience and judgement are manifested. When discussing "self-reflexive narrative" in field recording, Isobel Anderson and Tullis Rennie (2016) noted that field recording is not an objective documentation. It leaves unique auditory cues through the recordist's personal listening, selection and organisation. Similarly, in the composition process, the insights gained by the composer through listening should also be preserved and reflected. The significance of the work's narrative lies in the way the recording enters the composer's life experience from its own auditory perspective, thereby prompting the composer to respond to it.

Ultimately, what the work attempts to present is neither a soundscape environment of Indonesia nor a purely personal memory, but a practice that transforms the dialogue between the recording and the composer. Soundscapes "speak for themselves", and the composer's task is to learn to listen to what they say, then decide how to paraphrase and respond. We do not passively receive sounds in this process but actively participate in listening and meaning making. Through the interweaving of recordings, cultural contexts and personal experiences, we can endow soundscapes with new meanings and emotions (English, 2017).

Chapter 6: *What Sheffield Sounds Like* (2024) – Ethnographically Informed Practice and Recontextualisation

The work *What Sheffield Sounds Like* marks the first use of a community-informed material selection approach in this portfolio, while focusing on the discussion of sound recontextualisation caused by mediation. Recontextualisation refers to the process through which soundscapes with community significance enter new spaces through playback, then interact with the new context to generate new meanings. While the works in the previous two chapters explored the malleability of sound materials and the narrative generation induced by soundscapes, this work focuses more on two core points: one being the decision-maker of recording location selection when soundscape composition involves specific cities and communities, and the other being the path through which community sounds achieve extension of meaning through recontextualisation after being separated from their original context.

6.1 Work Background and Creative Intent

What Sheffield Sounds Like was initially a commissioned stereo soundscape work. It was commissioned by the Communications, Events, Campaigns and Alumni Relations department of the University of Sheffield, as part of the "Forged in Sheffield, Shaping the Future" fundraising and outreach campaign. The original design goal of the work was to be played before the opening of an alumni conference in London, serving as background music for guests as they entered the venue to create an immersive atmosphere and stimulate their emotional resonance and memories of Sheffield. All the guests were former alumni of the University of Sheffield, and this audience context prompted me to consider how the selected sounds might relate to alumni memories of Sheffield. Meanwhile, playing sounds belonging to Sheffield to alumni who once lived there, in the geographical space of London, created a meaningful disjunction between the physical location of the sounds and the memory location of the listeners. This disjunction also laid the foundation for the recontextualisation of the sounds.

This context presents a question regarding what sounds can represent a city. This question arises from a criticism within the field of soundscapes. When discussing the intersection of soundscape composition and ethnography, John Levack Drever (2002) noted that while soundscape composition is rooted in acoustic ecology and soundscape studies, its practice and research are often classified within or have grown out of the acousmatic music tradition.

This positioning not only influences the way soundscape compositions are listened to but also the way they are created. As a result, many soundscape works reflect more the composer's cultural circle and listening habits than the soundscape field being studied. Drever (2002) further proposed the concept of "sonic tourism" to warn soundscape composers of the risks of collecting sounds from a place through brief encounters, a method that lacks in-depth understanding of the social, cultural and historical contexts of that place. Another related criticism is the "sonic fetishism" mentioned in the previous chapter—that is, composers attach an irrational reverence to recorded and reproduced sounds and their organisational forms without considering the significance of these sounds to the local community.

What Sheffield Sounds Like is a potential practical response to this criticism. By taking contributors' comments as cues for material selection, the work draws on their descriptions of sounds associated with Sheffield. The work does not claim to represent the entire city but rather returns the question of Sheffield's representative sounds to the public's narratives and memories. Meanwhile, through multiple remote playbacks and VR transformations, the work also explores the way meaning is generated when urban sounds carrying community memories are separated from their original context and presented in new environments.

6.2 Selection and Reorganisation of Sounds

In my view, the genuine sounds of a city must resonate with and gain recognition from the local community. This position echoes Truax's (2001) definition of the soundscape. The soundscape is not simply the sound environment as such. It refers to an acoustic environment that can be perceived and understood by individuals or society. Truax further developed the concept of the "acoustic community". When an acoustic message plays an important role in the lives of residents, the sound conveys more than physical information. It also carries cultural meaning, collective memory and forms of identity.

Guided by this understanding, I explored sounds associated with Sheffield through online community discussions. One public thread on Reddit entitled *What Is Your Unique Sound of Sheffield?* (2023) drew my particular attention. The original poster asked for a sound that listeners would connect uniquely to Sheffield and encouraged contributions that were unusual. The poster gave a personal example of the automated voice at the Fitzalan Square tram stop. The announcement carries the phrase "Caution, two-way traffic. Look both ways." They perceived this sound as uniquely Sheffield, with no connection to any other location.

This thread struck a chord with many respondents. Most commenters referred to sounds connected with the Sheffield tram system. These included automated announcements,

warning chimes and the sound of wheels against tracks. Some contributors also shared personal stories connected with these sounds. Although online discussion of this kind cannot be taken as fully representative of the whole city, the thread nevertheless offered a practical and workable starting point. Close reading of the comments showed that for several contributors to this thread, tram sounds represent more than mechanical noise from public transport. They operate as a soundmark that receives special attention from community members on account of its distinctive qualities.

Soundmarks represent the unique acoustic features of a place, which should be preserved (Schafer, 1994, p. 10). I therefore placed the Sheffield tram at the centre of the work. I also integrated relevant materials provided by the University of Sheffield community. These covered important sonic sites on campus and soundscapes seen as representative of Sheffield. Locations included the Moor Market, the Diamond Library, Uni Arms, iForge and Soundhouse. These sonic materials together form the core content of the piece.

Truax (2008) observed in his discussion of globalisation in soundscape composition that deeply resonant soundscape works usually grow from sustained engagement with particular social, cultural and environmental contexts. They do not emerge from the random collection and manipulation of sound materials. Peter Cusack's *Your Favourite London Sounds* (2001) provides a strong example of this approach. Sounds in the project were nominated entirely by members of the London public rather than being chosen subjectively by the creator. Cusack not only recorded the sounds but also invited participants to describe their personal connections to them via telephone messages or field recordings.

Drever (2002) stressed that the core of ethnographic soundscape composition lies in challenging the hegemonic perspective of the creator. It involves returning authority over the selection of sounds to the community. This kind of grassroots community participation is what gives soundscape work genuine depth. The present work avoids excessive electroacoustic processing of the sounds. It tries to preserve an original context and emotion. The contributors' suggestions informed my aesthetic decisions about which sounds to include and how to organise them. It brings together the auditory memories of ordinary people and allows the soundscape to act as a medium for collective culture and local belonging.

What Sheffield Sounds Like did not directly invite Sheffield residents to take part in the recording process. Its approach is best described as community-informed material selection, based on a limited online discussion and materials supplied by the University of Sheffield. The contributors' suggestions guided my selection of sounds associated with Sheffield, while I

retained responsibility for the final choice and organisation of materials. The process also provides a foundation for later recontextualisation. The contributors' descriptions of what these sounds meant to them provide a starting point for exploring how the recordings might acquire further meanings in different listening contexts.

6.3 Work Playback and Recontextualisation

After the completion of this work, its presentation has gone through several stages of iteration. Each playback forms a new set of mediated conditions and a new relationship with the listener. The work was first played as background music for an alumni event in London for those who had once lived in Sheffield. Subsequently, it was also presented as a sound installation for many residents of Sheffield at Sound Junction, a series of electroacoustic music concerts organised by the University of Sheffield Sound Studios. The work was also shortlisted for the Sound of the Year Awards 2024. The awards were jointly presented by The Museum of Sound and The Radiophonic Institute. Through this opportunity, the work was broadcast to listeners across the UK on BBC Radio 6.

These different playback settings place the soundscape of Sheffield within a typical situation of mediation. Yet the separation of the sounds from Sheffield and their playback in various spaces has not made the original context disappear. The different playback settings offer opportunities for listeners to relate the recorded sounds to Sheffield in new ways. The concept of "transphonia", as discussed by Heikki Uimonen (2015) and Marcus Leadley (2015), offers a more neutral theoretical framework for understanding this kind of recontextualisation. Transphonia refers to the mechanical, electroacoustic or digital recording, reproduction and repositioning of sound. It emphasises the process by which sound is moved from one place to another, and field recordings are combined with the existing environmental sounds. This kind of transfer is always accompanied by changes in the meaning of the sound.

In this work, the transfer of sound forms the structural core of the piece. It is precisely because the sounds have been taken away from Sheffield that they can evoke the memories and imaginations of alumni in relation to the place where they once lived. When alumni heard the sound of the tram in the conference space in London, a spatial disjunction arose between the physical source of the sound and the listeners' current location, yet the sound may also form an emotional resonance with their memories at the same time.

The work was subsequently played for audiences in Sheffield in Firth Court at the University of Sheffield. It was presented as a sound installation in the corridor, and many listeners expressed curiosity as they passed through the concert hall corridor. They questioned why

the sound of the tram could be heard in this location. This response can be interpreted through the research by Neil S Bruce and William J Davies (2014) on soundscape expectations. People hold predetermined sonic expectations for particular spaces. Such expectations are founded on what Truax (2001) calls soundscape competence. This describes the tacit knowledge people acquire through daily experience about the sounds that ought to be present in specific spaces. The tram recording in the concert hall corridor may challenge listeners' expectations about the sounds associated with that setting. This sense of perceptual dislocation may encourage them to think actively about the relationship between sound and space.

This situation differs from the mechanism of "audio-visual dislocation" explored in the *Western River Rye Soundscape Project* discussed in Chapter Three. In the River Rye project, dislocation takes place between vision and audition within the same VR space. In the presentation at Firth Court in Sheffield, dislocation occurs between the original source location of the sound and its playback position. Both cases examine how listeners renegotiate their understanding of soundscapes when the expected relationship between sound and spatial environment is disrupted. Research by Bruce and Davies (2014) shows that this renegotiation involves listeners comparing their actual perception with internalised spatial sound expectations. This comparison marks the start of critical listening. It allows the production of meaning through recontextualisation to become a more active process.

6.4 Comparative Listening in VR

To enrich and systematise this experience, I finally converted the work into an interactive VR version to explore how sound, place and playback environment shape our perception of soundscapes. The VR version is designed around a core principle that enables listeners to engage in comparative listening across different presentation conditions so that the effects of mediation become perceptible. The VR environment incorporates two listening modes, namely the "source location mode" and the remote "playback mode". Listeners can adjust their situated environment in real time through a preset button within the VR space.

In the source location mode, users can listen to the recordings while viewing panoramic footage of their source locations. I used a 360° camera to capture authentic footage of all sound source locations, with the audio drawn from genuine field recordings. This mode provides a baseline reference that allows listeners to experience how sounds appear in their original context.

Meanwhile, users may also switch to locations where the work has previously been played back. These locations include the concert hall corridor, theatre, recording studio and my own home. Radio playback is used in my home setting to replicate the work's broadcast on BBC Radio. In producing the audio and visual materials for these sites, the imagery is authentically recorded with a 360° camera. The audio is created through a method of re-recording. I play back the original recordings through the native sound system of each space and capture the playback version with an ambisonic microphone. The captured audio is ultimately transcoded into binaural format. This method captures not only the original soundscape but also the reverberant characteristics of each space and the tonal colouration imposed by different sound systems.

As users navigate virtual environments, they can make separate adjustments to audio and visual scenes. While the content of the soundscape remains consistent, significant differences emerge in spatial reverberation and the tonal colouration from sound systems. Combined with the dislocation between visual settings and sonic expectations, users can compare recordings made under different playback conditions. Comparative listening in VR essentially systematises and visualises recontextualisation. The direct comparison between simulated original contexts and recontextualised scenes is intended to help listeners grasp that recontextualisation is a dynamic process in which meaning is co-constructed by mediated conditions, spatial acoustics and the listener's sense of identity.

These recordings capture aspects of each venue's acoustics without recreating its full listening conditions. The binaural audio does not update with head rotation, and each panoramic scene retains a fixed recording viewpoint. Compared with the earlier stereo presentations, the VR version adds control over the available combinations of recorded settings, while remaining limited to the perspectives captured during recording.

6.5 Work Reflection

What Sheffield Sounds Like occupies a unique position in this portfolio. It is not only a soundscape work but also an experiment on the methodology of soundscape composition. By drawing on online comments and institutionally supplied materials, the work incorporates perspectives beyond my own while retaining my responsibility for compositional decisions. Through multiple instances of remote playback and VR transformation, the work turns the process of recontextualisation into a perceptual structure that can be experienced and reflected upon.

Truax (2008) proposes in his discussion of the characteristics of soundscape composition that soundscape works should enhance our understanding of the world and that their influence can extend into everyday perceptual habits. This work seeks to advance this goal through the comparative listening mechanism of VR. After users experience the differences of the same soundscape under varied presentation conditions, they may develop new reflections on listening conditions and mediated listening in daily life. These include room reverberation, loudspeaker quality and listening position.

For the overall context of this research, the significance of this work lies in its explicit introduction of ethnographically informed practice into VR soundscape creation. It considers how composers should position their roles when soundscape composition relates to specific communities and particular forms of identity. The answer may lie not in speaking on behalf of communities, but in providing a platform where the voices of communities can be heard, compared and reflected upon.

The practice of recontextualisation suggests that the significance of community-informed material selection extends beyond the initial choice of sounds. It further lies in enabling the selected sounds to enter new contexts and acquire new meanings. Through presentations across multiple settings, sounds associated with Sheffield may evoke connections with the city beyond their original locations. The possibility of such multiple meanings constitutes the value of combining recontextualisation with community-informed material selection. This position also echoes the outlook put forward by Drever (2002) in the conclusion of his paper. Many theoretical frameworks proposed for soundscape composition and ethnography can only realise their value through the integration of theory and practice. The most critical test for composers is how to avoid placing their art above the voices of communities. This work attempts to integrate theory and practice.

Chapter 7: *Missing Person* (2025) – Storytelling as a Listening Framework

In the previous two VR works, I have explored how soundscape composition establishes perceptual connections with listeners through spatial and temporal dimensions. This work shifts attention to another key theme in soundscape composition – storytelling. *Missing Person* is a VR interactive soundscape work. It aims to examine how storytelling can alter the listener's attention distribution towards soundscapes and reshape their perception of sound within such works.

The significance of this question rests in its engagement with a long-standing tension in the practice of soundscape composition. The tradition of soundscape composition emphasises allowing sounds to "speak for themselves," as noted by Westerkamp (2002). Many significant soundscape works nevertheless incorporate constructed linguistic storytelling. These works include *Kits Beach Soundwalk* (1996) by Hildegard Westerkamp and *The Missing Voice (Case Study B)* (1999) by Janet Cardiff. Such works suggest that the relationship between storytelling and soundscape is far more complex than simple addition. Storytelling is not merely a layer of information overlaid onto a soundscape. It can fundamentally transform the way in which listeners engage with and listen to soundscapes.

7.1 Work Background and Theoretical Foundation

Missing Person centres on a fictional story about the disappearance of a young woman. The work invites the listener to retrace her final route before she went missing and to experience the soundscapes she once heard. The spoken words are presented from a third-person perspective and follow a fragmented structure with considerable silences and gaps. These gaps are not left blank but are filled with soundscapes that gain space for independent expression within the work. A breath-like rhythm is formed between storytelling and soundscape. The storytelling delivers certain information before stepping aside to let the soundscapes "speak for themselves". The fictional story in this work does not seek to focus attention on missing persons as a topic. It instead uses this fictional story to direct attention towards the way storytelling reshapes the perception of soundscapes. It also encourages reflection on how storytelling alters our ways of listening.

The "framing effect" in cognitive psychology reveals a profound insight. Identical information may lead to distinctly different judgements and decisions when it is presented in different ways (Tversky & Kahneman, 1981). This principle applies not only to verbal information but also to

the level of perception. As Robert M. Entman (1993) points out, framing essentially involves selection and salience. Framing means selecting certain aspects of perceived reality and making them more salient in communication. When this theory is applied to soundscape perception, the storytelling in this work can be understood as a perceptual frame. It selectively foregrounds certain sounds and provides causal explanations for them. It turns originally neutral acoustic events into storytelling events and endows sounds with emotional colouration.

The listening modes proposed by Chion (1994) also offer a useful analytical framework for understanding how storytelling shapes soundscape perception. The introduction of storytelling into a soundscape work directly strengthens the practice of “semantic listening”. This refers to a mode of auditory perception that focuses on interpreting the meaning, coding or message behind sounds. Storytelling provides an interpretive frame for the soundscape and encourages listeners to understand sounds along the lines of the storytelling. A more subtle influence is that storytelling also reshapes “causal listening” by altering the original reference of sounds. It not only indicates what a sound is, but it also communicates whose sound it is and the context in which the sound occurs. In *Missing Person*, an ordinary footstep is transformed under the frame of storytelling into the footsteps of the missing young woman. This example shows how causal listening can be restructured by spoken words.

7.2 Work Structure and VR Design Strategy

The soundscape of the work is based on field recordings conducted in the Cromford area. The recording locations include Cromford Railway Station, park paths and urban streets, among others. During the creative process, I first collected field recordings, and the storytelling was developed subsequently based on these soundscapes. Its main purpose is to direct the listener’s attention to specific sound elements within the soundscapes. This creative sequence means the soundscapes themselves are not tailored to the storytelling but exist as relatively autonomous acoustic materials.

The final presentation of the work consists of three main sound layers. The real soundscape serves as the base layer and is continuously presented as background. Electroacoustic atmospheres and sound effects are overlaid, providing emotional colour and imaginative space for the work while assisting in driving the narrative forward. The storytelling layer uses spoken words to direct attention towards selected details. This layered structure positions storytelling as a guiding listening reference within the work. It does not alter the soundscape itself but offers a narrative perspective through which it may be interpreted.

As Truax (2002) points out, recordings in soundscape composition are never neutral documents but interpretive frameworks of the environment constructed by the composer. In *Missing Person*, however, this interpretation occurs mainly at the level of storytelling rather than through electroacoustic processing of the soundscapes. The soundscapes still retain their original form as environmental recordings, and the interpretive guidance is provided by the storytelling.

This work draws inspiration from four significant pieces. Janet Cardiff's *The Missing Voice (Case Study B)* (1999) is an audio work that unfolds around a third-person narrative. It combines a fictional story and sound effects with on-site soundscapes providing inspiration for the creative strategy of this work. Westerkamp's *Kits Beach Soundwalk* (1996) guides the listener's attention through storytelling, offering a reference for the storytelling design of this work. Marshmallow Laser Feast's works *In the Eyes of the Animal* (2015) and *Treehugger: Wawona* (2016) detach audiences from human perspectives and perceptions, allowing them to experience the sensory behaviours of animals and plants. *Missing Person* applies this kind of perspectival shift to the relationship between the audience and the missing person. Building on these existing works, *Missing Person* introduces VR as a medium, integrating the method of comparative listening into the creation through its interactive functions.

The work is presented in two main formats, a linear version for YouTube VR and an interactive version for Wonda VR. In YouTube VR, listeners can only experience the complete composed version along the path preset by the composer. Spoken words and soundscapes are intertwined, and the two layers are presented together as a single composed sequence. This version does not offer a soundscape-only option for comparison with the narrated sequence.

The interactive version on Wonda VR offers a solution to this problem. It breaks down the originally linear work into separate sections. Listeners can freely choose to listen to scenes and engage with selective listening through interactive hotspots. They may choose to listen only to the real soundscape or to the full combination of soundscape and storytelling. This design creates a comparative experiential platform. Listeners can switch between different listening conditions, providing an opportunity to compare the soundscape with and without storytelling and to consider how narrative framing may affect soundscape perception.

It is worth noting that many sound effects in *Missing Person* are driven by storytelling to match the spoken words. When the narration refers to a passing train, for example, listeners can hear the sound of a passing train. Only railway tracks are visible in the VR scene; there is no train in sight. This audiovisual mismatch is intended to suggest that the storytelling recounts

events from the past. The VR environment presents the location in the present moment. The sounds remain in the storytelling as traces of memory. These mismatched sounds can be understood as acoustic projections of the missing person's subjective experience. What listeners hear is not an objective environmental soundscape but the soundscape experienced subjectively by the missing person. Such sounds are true to the subjective experience reconstructed by the storytelling and drive the development of the story.

In the Wonda VR version, listeners can explore and perceive the location and soundscape on their own when they choose to listen only to the soundscape layer. This mode leaves greater scope for listeners to form interpretations through their own experience and associations. When storytelling is introduced, listeners are invited to imagine the soundscape from the missing person's perspective. Her narrated memories provide a frame through which they may interpret the recorded sounds.

Interaction in the Wonda VR version is limited to selecting prepared scenes and listening combinations. It does not allow users to change the narrative itself. Both versions use fixed binaural audio, so changes in viewing direction are not accompanied by corresponding changes in auditory orientation.

7.3 Storytelling Analysis of the Work

Below is a corresponding explanation of the storytelling section and sound design of this work.

Cromford Train Station	**Have you ever heard the sound of a train?** Not the whirring rush as it speeds past, but the low murmur when it comes to a halt. The rail is still, trembling as if whispering something. I suppose she's heard that sound too. That day, **she was standing there** with a canvas bag on her back, her hair tousled messily by the wind. I didn't ask her where she was going. Maybe I should have.	The soundscape for this section is taken from Cromford Railway Station. The opening storytelling draws the listener's attention to the low hum of a passing train. No train appears in the visual element at this point. The second part of the storytelling uses the phrase "she was standing there" to focus the listener on the presence of the missing person. No clear visual cue in the environment indicates her location. The sound of the ticket vending machine triggered by the storytelling emerges at this point. It indirectly suggests where the missing person is positioned.
Willersley Tunnel	**Listen!** The rain seeps down from the ancient brick walls of Willersley Tunnel. **Drip… drip…**	The opening of this section uses "Listen!" to directly focus the listener's attention on the dripping

	falling onto the gravel between the rails. As if whispering an unsolved secret. They say the girl who always carried a paintbrush was last seen inside this tunnel. **It was a rainy night;** the stone walls of 1849 echoed with her breath, the damp, cold air swallowing her figure. Deep in the tunnel, the raindrops wove a fractured elegy. **The gravel murmured underfoot**, as though still remembering the rhythm of her light steps. The wind slipped through the tunnel, carrying a trace of her scent, yet **no one knew where she had gone.**	sound of water seeping from the walls in Willersley Tunnel. The retrospective description of "It was a rainy night" confirms the situational authenticity of the storytelling through the continuous dripping sound. This is true even though there are no visual elements of rain in the current VR scene, and it is intended to invite an imaginative response. When describing "The gravel murmured underfoot", the work simultaneously adds the corresponding footstep sound effects. These effects cooperate with the progression of the storytelling to enhance the sense of scene immersion. After "no one knew where she had gone", new abstract sound effects are added to render the mysterious atmosphere of the tunnel. The core dripping sound remains clearly distinguishable throughout. It maintains the coherence of the soundscape.
Cromford Mills	March 18th, 2025. This is where I escape to. The sound of the waterwheel is like a heartbeat. Churning the river into white froth. I'm sitting here again with my sketchbook, **I started to trace the shape of the mill, the waterwheel.** It's just… calming. Just the sound of water, rushing and crashing like it's got something to say. And maybe it does. I close my eyes. I feel like I could disappear into the sound. Like I could stay here forever. But the rumble of the **waterwheel** stays with me. It's somehow pushing me forward. And today… I feel like going farther. I don't really know where I'm going. I just know the water's voice is pulling me somewhere. Maybe I'll find answers.	This section adopts the first-person perspective of the missing person's diary and centres on the waterwheel. It does not begin with direct narration but leaves ample space for the sound of the waterwheel in the original soundscape to unfold independently. The lines "the water's voice is pulling me somewhere" and "It's somehow pushing me forward" in the storytelling echo the acoustic characteristics of the waterwheel sound. They are intended to draw attention to the sound of the waterwheel.

	Maybe I just want to hear this noisy song… one more time.	
Cromford Intersection	Yes, it was right here. At that moment, the rain suddenly started pouring down. The intersection was just as busy as usual. I was sitting inside the café on the corner, hiding from the rain. From the window, I couldn't see her clearly. She didn't have an umbrella, and she was completely soaked. She just stared straight ahead like she was waiting for someone. I didn't really think much of it at the time. Then, after a truck passed by, she suddenly stood up, threw on her backpack, and disappeared into the fog. I couldn't see where she went. She didn't leave anything behind. And after that, I never saw her again.	This section adopts a presentation method where storytelling and soundscape are completely integrated, restoring the daily scene at the intersection from the perspective of a witness. Expressions such as "busy" and "truck" in the storytelling form an acoustic echo with the traffic noise and crowd sounds at the intersection, enhancing the authenticity of the scene. The paragraph intentionally reserves a great deal of storytelling gaps, allowing listeners to independently perceive the details of the intersection's soundscape within these gaps and preserving the independence of the soundscape.
Cromford Canal	This was her favorite place by the water sitting on the grass beside the open-air café, resting while the river murmured She often came here, a paintbrush in hand, **murmuring to the water** about her paintings, her dreams, and the secrets she kept hidden deep inside. The ducks seemed to be her only audience, floating on the surface, tilting their heads as if listening intently. Sometimes, as though they truly understood, they would gather around her some even **calling back to her** in loud reply. **Don't believe me? Listen.**	This section is intended to direct attention to the whisper of the stream and the sounds of ducks swimming and responding through intensive storytelling guidance, highlighting the exclusivity and warmth of the scene. At the end of the spoken words, the interactive tone of "Don't believe me? Listen." invites listeners to listen for the ducks' "responding sounds" in the soundscape. It invites listeners to compare the narrative with the sounds they hear, drawing attention to the relationship between storytelling and soundscape.
River Derwent	Following her footsteps, we arrived at the church she visited before she left. She stood quietly by the water, as if waiting for some kind of farewell ritual.	This section features the most intensive electroacoustic processing in the work, yet ample space is still reserved for the original soundscape to be presented. A church is visible in the VR scene, and there is a corresponding statement in the

	The bells no longer rang— **only the water kept striking the riverbank**, again and again, like an old prayer. **You run your hand over the tightly shut door** but feel only the cold moss and damp air. **She had once sung here**, yet now all that remains is a faint trace of her voice, the words too blurred to make out. **Only the water remembers**— remembers the direction she took.	spoken words ("She had once sung here"). On the sound level, church choir sound effects echo this narrative thread, intended to draw attention to the emotional core of the scene. Meanwhile, the work attempts to construct a multi-sensory connection between storytelling, sound and touch. The phrase "You run your hand over the tightly shut door" in the narrative, combined with the sound effect design of high-frequency metallic timbre, attempts to evoke in listeners a tactile association as if they were touching the cold door with their own hands, deepening the sense of immersion. At the end, the spoken words conclude with "Only the water remembers", drawing the listener's attention back to the sound of the river once again and establishing the soundscape as the core carrier of memories and clues.

7.4 Work Reflection

While *Missing Person* centres on the story of a missing person, it also invites listeners to engage with listening as a subjective act. This can be understood in relation to English's (2017) notion of "listener's listening", in which listening is not simply the passive reception of sound but an active process shaped by attention, memory, experience and context. In this work, the listener is encouraged to imaginatively approach another person's auditory position, to consider what might have been noticed, overlooked, or emotionally charged within a particular sonic environment.

In this work, my principal intention in using storytelling is to guide attention towards selected sounds. Research on selective auditory attention shows that humans have the ability to selectively focus on specific sound streams in complex acoustic environments (Cherry, 1953). Without explicit spoken narration, however, the listener's attention is often guided by the physical salience of sounds and personal interests. The narration invites listeners to seek out and consider the sounds it mentions. The storytelling foregrounds the ticket vending machine at the railway station, the passing train and the quacking of ducks by the riverbank to invite shifts in attention towards these sounds.

Studies on children's emotional responses to audio stories have found that the synergistic effect of sound design and narrative endows specific sounds with narrative associative meaning. This meaning can directly influence a listener's perceptual emotions (Cuadrado et al., 2020). This finding is of great significance for *Missing Person*. Many sound effects in the work do not inherently carry strong emotional overtones. Within the missing person story, I use these sounds to suggest a sense of unease. For instance, the sound design for the description of the church door uses the metallic sound of cymbal friction. Combined with the environmental description in the storytelling and the VR visuals, it tries to endow the space with a cold and damp feeling.

Meanwhile, the VR presentation of *Missing Person* provides a dynamic model for understanding the relationship between storytelling and soundscape. This relationship is not a static, simple superposition but a dynamic process that can be coupled and decoupled. Coupling occurs during the integrated reception stages. I attempted to weave storytelling and soundscape together so that they could be encountered as a unified composition. In the coupled state, storytelling and soundscape are intended to support one another. The narrative offers a frame for interpreting the sounds, while the environmental recordings provide a setting for the story.

Decoupling becomes possible in the Wonda VR version, where listeners can actively separate storytelling from the soundscape and observe their independent presentation. From another perspective, however, once listeners have heard the coupled version, the narration may continue to influence subsequent listening. This possibility of incomplete decoupling raises an important question. Once a perceptual frame is established, can it be completely removed? Or will it permanently alter the way we perceive the same things to some extent? This is beyond the scope of this chapter, but merits further exploration and research in the future.

The analysis in this chapter also provides new insights for my own soundscape composition practice, particularly when considered alongside works such as *A Journey South* (2010) and *Alcedo Volcano* (2006) by Chris Watson, where he deliberately encapsulates spoken narrative within environmental sound. He describes the location, his recording process, and the sonic details that attract his attention. Through this narrative, he guides the listener towards the essential features of the soundscape and communicates his situated encounter with the place, producing a more substantial acoustic presentation than a straightforward recording (Koutsomichalis, 2013).

Certain traditions within soundscape composition emphasise allowing soundscapes to “speak for themselves”. This tradition adopts a cautious or even sceptical attitude towards the creator’s subjective expression. Yet, both Watson’s work and *Missing Person* demonstrate that the relationship between storytelling and soundscape is more complex than this opposition. Storytelling may shape how a soundscape is perceived, as it directs the listener’s attention towards particular details, associations, and emotional resonances. In *Missing Person*, this function is extended through interactivity and comparative listening: the listener is not only guided by narrative but also invited to move between different sonic perspectives and interpret the environment. In this sense, storytelling can become a compositional means of recontextualising field recordings and deepening the listener’s engagement with place.

Chapter 8: *Shifting Horizons* (2025) – Mediated Auditory Dislocation[4]

The preceding chapters have examined how soundscape works operate under various mediated conditions. From the nature-centred conservation approach of the early works to the urban soundscape malleability of *Fractured Ceremonies*, from the community-informed material selection and recontextualisation in *What Sheffield Sounds Like* to the storytelling framework of *Missing Person*, each work demonstrates the fundamental condition that environmental sounds, once recorded and played back, are detached from their original contexts and perceived within new settings.

Shifting Horizons is an interactive VR audiovisual soundscape work based on field recordings made at Sheffield railway station. This chapter further conceptualises such mediation within the context of virtual reality as "mediated auditory dislocation".

8.1 Inspiration for parametric sound control

The interactive slider system in *Shifting Horizons* draws direct inspiration from two works that use parametric interface control. Darren Copeland's *Ice Tuner* (2025) is a web-based interactive sound work built from hydrophone recordings of freezing and thawing ice at Deer Lake, Ontario, captured across an unusually warm winter (November 2023–April 2024). Its interface employs a single slider mapped to temperature values, and adjusting it shifts between distinct ice textures shaped by freeze–thaw cycles, snow, rain, and wind.

Knepp Wilding Radio (2023), led by Alice Eldridge, is a solar-powered, quadraphonic live audio system at the Knepp Rewilding Project in West Sussex. It combines hydrophones underwater and microphones in trees, with a web interface allowing continuous mixing between air (birds, mammals, and weather) and water (hydrophone recordings of invertebrates, flow, and beaver activity).

8.2 Definition of Mediated auditory dislocation

"Mediated auditory dislocation" can be understood as a specific form of auditory mediation. Within this research, it refers to the deliberate modulation of relationships between recorded sound, its source context and its audiovisual presentation through interactive VR. Through

[4] Elements of the theoretical framework and discussion presented in this chapter have previously appeared in Bai, B. (2026). From schizophonia to mediated auditory dislocation: Mediated tension in interactive VR soundscape composition. *Organised Sound*, 1–9. https://doi.org/10.1017/S1355771826101319

layered auditory processing, the degree of disjunction between sound and its original context may be either intensified or diminished, allowing for flexible negotiation of the relationship between mediated sound and its source (Bai, 2026).

The concept retains Schafer's core insight that contemporary media can, to a certain extent, separate sound from its source. Nevertheless, it moves this insight away from the moral assertion that such separation ought to be avoided or remedied. The aim is to engage with an already established media structure and reflect on how it might be understood and mobilised.

Within the framework of mediated auditory dislocation, the introduction of VR into soundscape composition may be understood as a medium that renders such dislocation explicit and enables its active manipulation. In *Shifting Horizons*, VR transforms the relationship between sound and its source into a designable and controllable mediated parameter. This allows users to consciously configure and shift the relationship between sound and place.

8.3 VR Scenes and Technical Architecture

Shifting Horizons is based on field recordings made at Sheffield railway station. Its soundscape offers a dense and readily recognisable set of sonic cues, including trains arriving and departing, public-address announcements, crowd movement, and the noise of surrounding urban traffic (Bai, 2026).

The work comprises six scene nodes corresponding to different platforms, tram stops, and the station entrance. Each node is built around a site-specific 360° video viewpoint and uses first-order ambisonic field recordings as the sonic base. Importantly, the audiovisual content within each node is fixed (i.e., it presents a pre-authored recording-based scene), and interaction does not generate new events or alter the recorded actions captured in the footage. With a VR headset, listeners experience the preconfigured scene nodes and actively adjust the balance and parameters of each layer via sliders and effect controls (Figure 7).

The final version was presented on a PICO 4 headset and implemented in Unity (2022.3.50f1), with interaction handled via the default handheld controllers. Users aim at a slider handle, press the trigger to engage it, and drag to update the parameter value continuously. Alongside the two primary strand-balance sliders, additional effect controls are implemented using Unity's built-in audio processors—Param EQ, Compressor, Echo, Flange, Pitch Shifter, Distortion and Chorus—each exposed as a continuous UI slider and applicable to both strands (Bai, 2026).

For headset playback, the Ambisonic recordings were decoded into fixed binaural audio, which does not update its spatial orientation with head rotation. Listeners can therefore adjust the layer balance and audio effects in real time, but turning their heads does not produce a corresponding change in auditory perspective.

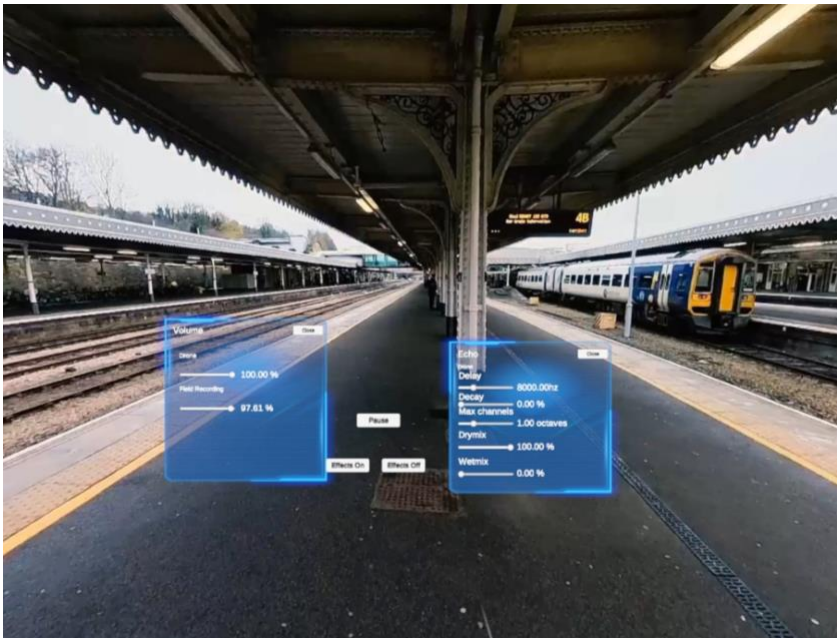


Figure 7 Interactive Sliders in *Shifting Horizons*

8.4 Sound Design and Effect Sliders

Shifting Horizons presents two parallel sound strands. The first is an unprocessed recording grounded in the original environmental capture. The second is a composer-preconfigured electroacoustic sound layer, derived from the original recordings through spectral reconfiguration, time stretching, or spatial redistribution. These two strands are controlled by two independent sliders, allowing listeners to determine the balance between the unprocessed field recording and the electroacoustic sound layer. At the extremes, a listener may retain only the original recording or listen only to the electroacoustically transformed sound. The result is a series of hybrid forms that preserve reference to the site while at the same time revealing clear traces of sonic reshaping. They do not erase the original environmental index nor simply reproduce the actual soundscape, but instead open a space for critical listening to mediated soundscapes.

The significance of this design lies less in fine-grained volume mixing than in the way it renders the original field recording and electroacoustic transformation relation as a continuous, explorable plane. Listeners do not merely engage with the work through the composer's preset effects and parameters. They are free to control the sonic balance between the two according to their own listening habits and bold experimentation. The work thus offers an explorable

media surface in which judgements about realism or abstraction emerge as contingent relations produced by each specific configuration of parameters.

In addition, the two primary sound sliders are paired with additional effect controls implemented using Unity's built-in audio processors. This pairing gives the parameter space genuine compositional agency. Within this structure, a portion of the composer's decisions is translated into parameters that listeners can manipulate in real time, which is one key respect in which it differs from traditional fixed-media soundscape works. At this point, listeners can turn down the volume of the composer's pre-designed electroacoustic sound layer to a minimum and freely reshape the original soundscape using effects processors based on their own perception. They can also apply effects processors to the pre-designed electroacoustic sound layer for further creation, generating newly processed artistic material. Listening thereby becomes a micro-level practice of re-composition. Each slider combination and effect setting constitutes a provisional stance on how environmental sound and mediating intervention can coexist, and it offers a different configuration through which the soundscape may be interpreted.

8.5 Audiovisual Relations and Perceptual Dislocation

Visually, *Shifting Horizons* largely preserves the spatial structure of the recording site through 360° panoramic footage of the location. Beneath these images, however, the sound may have undergone significant time stretching and sound reconfiguration. Adjusting the sound sliders changes the relationship between the recorded scene and the accompanying sound, creating the possibility of perceived dislocation. Listeners see a realistic train station yet hear a soundscape that is temporally stretched and spectrally exaggerated. This dislocation is a designed aesthetic intervention that challenges the intuitive synchresis between sound and image and embodies the core logic of mediated auditory dislocation in audiovisual contexts (Bai, 2026).

Chion's (1994) concept of "synchresis" refers to the fusion of a sound and an image that generates a unified perceptual experience. This concept helps explain the relevant dynamic. When sound and image are presented simultaneously, listeners associate their auditory impressions with their visual perceptions even if the sound is not entirely accurate or realistic. In some passages of *Shifting Horizons*, the composer deliberately brings sound and image into close temporal and causal alignment. The low-frequency rumble of an arriving train, the metallic impact of doors opening, and the trajectories of movement on screen correspond closely, while announcements broadly match the motion of passengers. This high degree of

matching does not simply return the work to documentary representation. Instead, it may momentarily intensify presence by encouraging listeners to accept the premise of “I am in this station.”

However, as users adjust the sliders and introduce more electroacoustic material, this sense of being there may be disrupted or shift into a different condition. Research on audiovisual synchrony perception indicates that humans have a temporal window of tolerance for audiovisual dislocation, but when dislocations exceed this threshold, the unity of the audiovisual event begins to fragment (Vatakis & Spence, 2006). The same images can be overwritten by a newly configured sound field, and the same sound fields may acquire different interpretations under different images. By continually moving between close alignment and explicit displacement, *Shifting Horizons* becomes an experiential site for exploring how sound, image, and listening expectations shape one another.

8.6 Work Reflection

Shifting Horizons represents a further reflection of this research on soundscape composition within the contemporary mediated context, translating the theoretical and practical insights gleaned from previous works into a perceptible, interactive framework for mediated auditory dislocation. Within this framework, the meaning of a soundscape is not inherent to its original physical space but an emergent product of the interaction between mediation and the listener’s active engagement (Bai, 2026).

The model proposed in this chapter can be read as a practice of “context-based composition”. Truax (2018) states that creative work engages with the real world, not merely anecdotally but through its epistemology and design strategies. The central issue in soundscape composition is how a work mobilises the listener’s experience and imagination of a particular context so that internal sonic organisation can enter a productive tension with knowledge of the external world. More importantly, listeners are encouraged to bring their own understandings of real-world contexts into their experience and engagement with these works. In *Shifting Horizons*, the perception of soundscape meaning is not predetermined. Rather, it exists as a relationship negotiated by listeners, being repeatedly adjusted and reshaped across diverse media configurations.

Furthermore, how to balance creators’ intentions and user freedom in VR interactive experiences is also a key issue. The concept of “Liquid Architectures in Cyberspace” proposed by Marcos Novak (1991) underscores the inherent fluidity and variability of virtual reality

environments. Therefore, how to create VR soundscapes that have artistic integrity yet can dynamically change according to user interactions is a question worthy of attention.

Shifting Horizons offers perspectives on this issue through its practical explorations. This practice transfers creative agency to the audience and transforms the balance between field recordings and electroacoustic transformation into a flexibly adjustable parameter. The deliberately designed dual-slider system and supporting sound effect control not only endow the auditory experience with diverse creative possibilities but also provide opportunities to compare how different parameter settings alter the relationship between mediated sound and its source. Listeners are given control over selected aspects of the sound, with the intention of encouraging them to compare and explore different mediated configurations. Furthermore, the preset sound processing demonstrates my expressive intentions and my attempt to balance these intentions with user freedom.

In sum, *Shifting Horizons* and the analytical framework proposed here treat mediation as a foundational tension in contemporary soundscape practice, a structural condition that must be acknowledged, worked with, and aestheticised. By materialising this tension in VR as a media structure and as adjustable pathways of comparative listening, the soundscape's meaning is no longer imagined as an entity hidden within a source awaiting faithful disclosure. It is treated as an ongoing process of generation and comparison across media configurations, listening strategies, and modes of participation.

Conclusion

This practice-based research has traced a trajectory through distinct phases of my soundscape practice, documenting a gradual shift in my compositional values and methods. The research started from a soundscape conservation approach and moved through an engagement with urban soundscape malleability and narrative-driven composition, culminating in the development of interactive VR works that treat mediation as an object of compositional and perceptual investigation.

Across the creative practice undertaken in this research, mediation runs through the entire process. All sound materials are separated from their original sound sources, placed into entirely new contexts, and transformed into final works through artistic processing and creative reshaping. The conditions that give rise to mediation are diverse, encompassing not only the collection of original field recording materials and the post-production stages of sound editing and electroacoustic processing but also the final presentation through diverse carriers such as stereophonic systems and virtual reality. In addition, traditional soundscape theories, which have long influenced composers' creative thinking and compositional strategies, also serve as a significant mediated condition, collectively shaping the overall compositional trajectory of this research.

At the level of compositional practice, works such as *Echoes of National Parks* and *Western River Rye Soundscape Project* have illustrated the value of soundscape composition in orienting attention towards environmental protection. Meanwhile, this portfolio also shows how I moved beyond the creative boundaries imposed by my initially nature-centred interpretation of hi-fi and lo-fi soundscapes. Works such as *Exploring Silence – Japan* reveal that identifiable sonic detail is not exclusive to natural environments. Within the urban environments explored in this work, individual sonic details become more distinguishable as surrounding sounds recede or attention shifts towards them. *Fractured Ceremonies* extends this insight by treating ceremonial urban sounds as materials with cultural resonance and compositional potential, challenging the tendency to dismiss urban soundscapes as degraded or noisy. *Take Me Back to Indonesia* further develops this trajectory by demonstrating how field recordings can "speak for themselves", actively evoking the composer's personal memories and guiding the direction of creative work, thereby shifting the composer's role from controller to listener and responder.

The community-informed material selection introduced in *What Sheffield Sounds Like* illustrates how community discourse can inform material selection. This approach addresses

criticisms of “sonic tourism” and “sonic fetishism” by positioning the composer as a mediator of community voices rather than the exclusive authority on soundscape value. The VR version of this work further extends this contribution by enabling comparative listening across different presentation conditions. It allows listeners to switch between the original recording sites and diverse playback environments, offering an opportunity to compare how the same sounds are presented under different playback conditions.

The exploration of storytelling as a listening framework in *Missing Person* demonstrates how narrative can reshape perceptions of soundscapes. Rather than simply supplying additional information, narrative is used to invite shifts in attention, suggest causal connections and offer a particular perspective on the recorded environment. The VR implementation supports comparative listening across coupled and decoupled states, allowing the soundscape to be compared with and without its narrative frame.

Within this research, “mediated auditory dislocation” describes the deliberate modulation of relationships between recorded sound, its source context and its audiovisual presentation, developed most explicitly in *Shifting Horizons*. It builds on schizophonia, which describes the separation of a sound from its original source through recording and reproduction. It also draws on transphonia, which concerns the recording, reproduction and relocation of sound through mechanical, electroacoustic or digital means. This includes both moving sound between locations and replaying recordings at their original site alongside the sounds of the prevailing environment (Leadley, 2015). Recontextualisation provides the broader account of how placing a sound in a different setting changes its relationships with surrounding sounds, images or narratives and opens up different possibilities for interpretation. Audiovisual dislocation refers more specifically to differences or tensions between the information conveyed by sound and image. Within my practice, this is one way of exploring mediated auditory dislocation, alongside changes to the recognisability and organisation of the recorded sounds.

The principal contribution lies in bringing these relationships together within a mediating framework and using interactive VR to make aspects of mediation manipulable and available for comparative listening. In *Shifting Horizons*, listeners can adjust the balance between field recordings and electroacoustically transformed layers, as well as their relationship to the visual scene. These controls allow different configurations of the same materials to be compared within a single work. The scope of this contribution is the compositional design of these adjustable relationships and opportunities for comparison. It does not establish how every listener will perceive or interpret them.

Across these works, drones, pulses and other abstract electroacoustic materials form a recurring part of my compositional language. I use them to support and frame environmental recordings, adding colour while organising their progression through time. Sustained textures can maintain continuity as one recorded scene gives way to another, while pulses introduce movement and provide recurring points of reference. Changes in level, density and timbre help shape transitions and distinguish sections. These materials sometimes move into the foreground as recognisable environmental details recede, marking a passage from the recorded setting towards a more abstract or imagined one.

In *Exploring Silence – Japan*, the drone continues across scene changes, while the pulse maintains movement when the environmental recordings fade and returns later in the work. In *Fractured Ceremonies*, sustained textures derived from the drum-and-gong recording retain aspects of its timbre while supporting the return and transformation of recognisable rhythmic figures. In *Take Me Back to Indonesia*, drones and synthesiser textures frame the imagined world of memory, while pulses contribute to its narrative tension. In *Missing Person*, drones and other electroacoustic materials provide atmospheric colour and are intended to guide attention towards details associated with the story. The VR version offers comparative listening between the environmental soundscape alone and its presentation within the composed narrative, providing an opportunity to explore this framing.

In *Shifting Horizons*, drones emerge from my time-stretching of the original recordings and form part of my compositional response to their sonic qualities. The independent layer controls allow listeners to compare the field recordings with these sustained transformations or combine them in different proportions. Across the portfolio, these materials mediate between recognisable recordings and musical form through continuity, contrast, recurrence and, in the interactive works, adjustable relationships between layers. Their use makes my compositional treatment of the recordings available both as musical structure and as material for comparative listening.

The analysis across the thesis is rooted primarily in the practitioner's perspective and theoretical construction. While discussions of listener experience are informed by compositional intent, plausible perceptual mechanisms and the functions of the media systems employed, this research did not include formal audience studies or empirical user testing. Future work that integrates systematic listener research would offer valuable validation and further refinement of the frameworks proposed.

The technological and presentational scope of the VR works also limits the claims made here. All four use fixed binaural audio delivered through headphones. This provides a prepared spatial presentation, but the auditory orientation does not update when the listener turns their head. The works therefore offer different combinations of panoramic viewing, scene selection, layer selection and parameter control within recorded environments. These functions should be distinguished from a fully responsive simulation of movement through a sounding environment.

Presentation was also organised around individual headset use. Access to the works depends on the headset, headphones and the relevant delivery platform, while headset fit, playback level, surrounding noise and familiarity with the controls are conditions that may affect the experience. Stereo presentations provide a further listening context, but do not reproduce the visual and interactive options of the VR versions. Future development could introduce audio rendering that responds to head rotation and examine how different equipment and installation settings affect access to the comparative listening functions.

This creative practice demonstrates that VR is not just a technology for enhancing realism or creating an immersive presence in soundscape composition. It can also serve as a critical tool that renders the influence of mediated conditions on soundscape composition. By equipping mediated reproduction with visual support and interactive control, VR enables forms of comparative listening that are difficult to achieve through traditional fixed-media presentation. This repositioning of VR from delivery format to research instrument opens new possibilities for soundscape practice that engages critically with its own mediated conditions.

Through the iterative development of this portfolio and its accompanying critical reflections, this research aims to contribute both practical strategies and theoretical frameworks for soundscape composition within contemporary conditions of mediation. The works and concepts presented herein are offered not as definitive solutions, but as provisional responses to an ongoing enquiry that will continue to evolve alongside transformations in technologies, listening practices and understandings of sound-environment relations.

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Appendix A: Additional Information on the Portfolio Works

Echoes of National Parks (2023)

- **Performances**

  Premiered at the Sound Junction, Sheffield, 1st Dec 2023.

  Presented at The San Francisco Tape Music Festival 2024, 7th Jan 2024.

  Presented at Sonic Sculptures 3, Nottingham, 14th Sep 2024

Exploring Silence – Japan (2024)

- **Performances**

  Premiered at Sound Junction, Sheffield, 20th Apr 2024.

  Presented at Sonic Sculptures 3, Nottingham, 14th Sep 2024.

  Presented at Suyai TV, Chile, Mar 2025.

  Presented at Radiophrenia, Glasgow, 15th Apr 2025.

  Presented at Sonic Arts Forum, Maynooth, 5th Apr 2025.

  Presented at Sound + Environment Symposium, Newcastle, 4th Sep 2025.

  Presented at PAYSAGES | COMPOSÉS 2025, Grenoble, 14th Sep 2025.

  Presented at IV SOMARUMOR-Encontro Latino Americano De Arte Sonora 2025, Rio de Janeiro, 23rd Sep 2025.

  Presented at Sonic Nomads, Seoul, 16th Oct 2025

  Presented at Sound/Image Festival 2025, Greenwich (UK), 6th Nov 2025.

- **Awards**

  Aug 2023 - Awarded a grant from Cities and Memory and Exodus Adventure Travels as a field recordist for the Sounds of Adventure Japan project

  Mar 2025 - University of Sheffield Research Stimulation Fund for participation in the 2025 Sonic Arts Forum.

Western River Rye Soundscape Project (2024)

- **Performances**

  Premiered at the Sutton Bank National Park Centre, Thirsk (UK), 26th Oct 2024

- **Awards**

  Sep 2023 - Awarded bursaries from the UK National Lottery Heritage Fund and North York Moors National Park for the Western River Rye Soundscape Project.

Fractured Ceremonies (2025)

- **Performances**

  Premiered at MA/IN Festival 2025, Rome (Italy), 16th Jul 2025.

  Presented at Click Fest 2025, Ohio, 3rd Oct 2025.

  Presented at the Queens Tape Music Festival, New York, 18th Oct 2025.

  Presented at the Sound Junction, Sheffield, 28th Nov 2025.

  Presented at the New York City Electroacoustic Music Festival, NYC, 19th Jun 2026.

- **Awards**

  Dec 2025 - International Electronic Music Competition (Shanghai) – Excellent Award in Electronic Music Composition category.

  Aug 2025 - Denny Awards Competition for Electronic Music – Gold Award in Acousmatic Music category.

  Mar 2026 - University of Sheffield Research Stimulation Fund for participation in the New York City Electroacoustic Music Festival 2026.

Take Me Back to Indonesia (2025)

- **Performances**

  Premiered at Dundee Radio Club Listening Festival 2026, Dundee (UK), 26th Feb 2026.

  Presented at EARS HAVE EYES // Episode 48, 11th Mar 2026.

  Presented at the Lá nas Árvores, Évora (Portugal), 11-12th Apr 2026.

  Presented at the TagTEAMS 2026 Festival, Bangkok (Thailand), 17th Apr 2026.

  Presented at the ICMC 2026, Hamburg (Germany), 11th May 2026.

  Presented at the Forum Wallis 2026, Münster (Switzerland), 3rd Jul 2026.

  Presented at the RMA-SMI-EADH annual conference, Belfast (UK), 29th Aug 2026.

  Presented at Radiophrenia, Glasgow (UK), 7th Sep 2026.

  Presented at the CIME/ICEM 2026, Zurich (Switzerland), 11th Sep 2026.

  Presented at the MA/IN Festival 2026, Castrignano de' Greci (Italy), 18th Sep 2026

  Presented at the MA/IN Festival, CASTRIGNANO DE' GRECI (Italy), 17th Sep 2026.

  Presented at the POSVERSO 2026, Buenos Aires (Argentina), 22nd Sep 2026.

  Presented at PAYSAGES | COMPOSÉS 2025, Grenoble (France), 26th Sep 2026.

- **Awards**

  Mar 2026 - University of Sheffield Faculty of Arts and Humanities Doctoral Funding for participation in the International Computer Music Conference 2026.

  Apr 2026 - 1st Aion Digital Art Prize (Japan) - Special Mention

What Sheffield Sounds Like (2024)

- **Performances**

  Premiered at the Royal Institution's theatre, London, 15th Oct 2024.

  Presented at Sound Junction, Sheffield, 28th-29th Nov 2024.

  Presented at BBC Radio 6 (Freak Zone Playlist), 22nd May 2025.

- **Awards**

  May 2025 - Sound of the Year Awards 2024 – Runner-up in "The Sound of the City" category