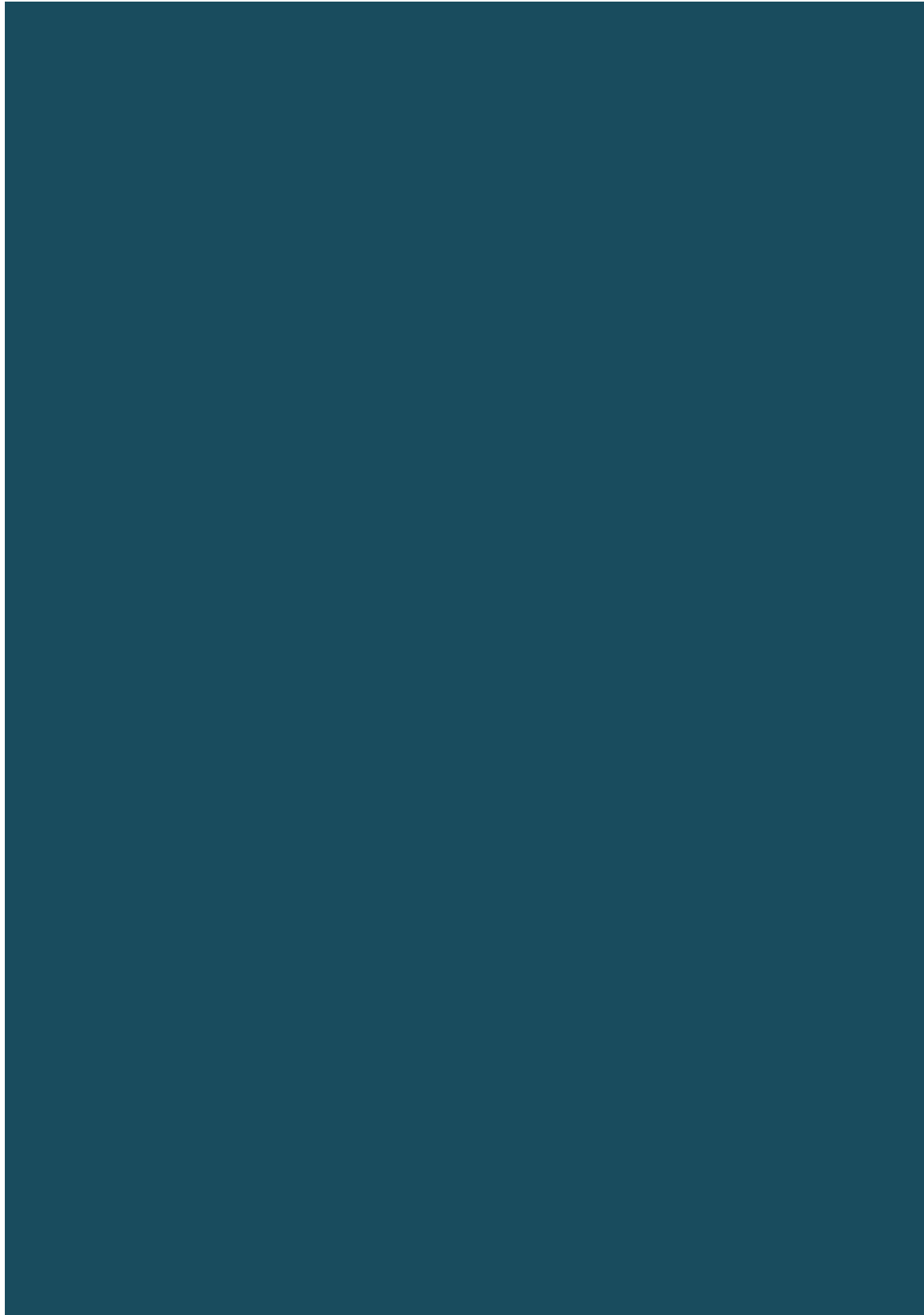


Listening to Places

exercises towards environmental composition



Robin Parmar



Listening to Places

exercises towards environmental composition

Robin Parmar

Void Gallery, Derry, Northern Ireland

2022

Listening to Places: exercises towards environmental composition
© 2022 Robin Parmar

Dedicated to the memory of R. Murray Schafer, 1933–2021.

CATALOGUE

Commissioner: Void Gallery.

Designed by Robin Parmar. Set in Crimson Pro and Noah Grottesque.

Photograph of the Abbey River, Limerick by Robin Parmar.

Printed by Northside Printing, Belfast in an edition of 250.

First edition, June 2022.

ISBN: 978-1-9160623-2-0

Void



An Roinn Gnóthaí
Eachtracha agus Trádála
Department of
Foreign Affairs and Trade

The world is not what I think, but what I live through.

Maurice Merleau-Ponty

Contents

Foreword by David Beattie	1
Introduction	
In that place.....	3
Platial listening	4
Developing this book.....	5
Who is this book for?	7
Useful tips	9
Part A: Listening Exercises	
Exercise 1: Categories.....	11
Exercise 2: Distance	12
Exercise 3: Amplitude	13
Exercise 4: Frequency	14
Exercise 5: Repetition	15
Exercise 6: Motion	16
Exercise 7: Localisation	17
Exercise 8: Language	18
Exercise 9: Tone.....	19
Exercise 10: Body sounds	20
Exercise 11: Silent places	21
Exercise 12: Silent chairs.....	22
Exercise 13: Silent speech	23
Exercise 14: Silent piece	24
Exercise 15: Silent forest	25
Exercise 16: Blindfold walk	26
Exercise 17: Sensorium	27
Exercise 18: Extended sensorium	28
Exercise 19: Multimodal hearing.....	29
Exercise 20: Seeing sounds	30

Contents

Part A: Listening Exercises (continued)	
Exercise 21: Echo	31
Exercise 22: Speed of sound	32
Exercise 23: Haas effect	33
Exercise 24: Sound museum	34
Exercise 25: Sound cradle.....	35
Exercise 26: Music.....	36
Exercise 27: Instant instrument	37
Exercise 28: Recreating a place.....	38
Exercise 29: Noise and music.....	39
Exercise 30: Noise and politics	40
Part B: Recording Exercises	
Introduction	43
Exercise 1: Comparing recordings	44
Exercise 2: Unwanted sound	45
Exercise 3: Gathering sound	46
Exercise 4: Composing with sound.....	47
Exercise 5: Changing sounds	48
Exercise 6: Form a band	49
References	51
About the Contributors.....	53

Foreword

By David Beattie

During a period of research and reading for the project *Slowtime*, I discovered a wonderful piece of writing by artist and researcher Robin Parmar. Based in Limerick, Robin has an extensive body of sound-based research that materialises in non-narrative film, sound installations, field recordings, and written text. Among the many interesting essays he has written, “Sounding Place: Towards a Practice of Field Recording” resonated with my intentions for *Slowtime*. In this text, Parmar discusses the idea of spatial phenomenology, a practice of *sounding place*. A *sounding* is a reflexive engagement with a location through sound, a process of active listening that prioritises *being-in-the-world*. It was this mutual interest in an active construction of place that led me to invite Robin to lead a sound-walk around the City Walls in Derry. As the conversations developed during the walk and back and forth in-between, the idea for this publication emerged as an extension of his engagement with *Slowtime*.

Over a period of eighteen months, *Slowtime* evolved as a series of sound walks, public talks, and field recording exercises that invited the local community in Derry to consider the ebb and flow of the River Foyle, encouraging participants to rethink their relationship with the river and their natural environment. The exercises gathered together in this book offer an opportunity to engage with the unfamiliar through sound, or more accurately through listening. It encourages you to develop a practice of listening, to develop a multi-sensory connection to your surroundings and discover new ways of *being-in-the-world* that address our ever-changing role in the formation of place.

Introduction

In that place

You are in a particular place. It's somewhere you know well, that you've visited often. Or it's a brand new experience, virgin territory. Perhaps you appreciate this place for its unique vista, the river that sweeps through it, the birds that play in the hedgerows. Or perhaps this place is a means to an end, a road to the nearest shop, a railway line that transports you from home to work. Certain quotidian places you might prefer to ignore as you make your way through the day. But these too have their unique attributes and sonic riches.

Every path starts with one person pushing through overgrown grasses. Then comes another individual through the same field. They naturally tend to take the path most trodden, since there are fewer thorns to step on, fewer bushes to push aside. Eventually the path is worn bare, a common route through the landscape, a "desire line" as it's poetically known.

Later, stones will be laid to provide traction for wheels. If the track is popular enough, it becomes a road. Stones will then be arranged in interlocking patterns, forming a smooth, hard surface. Soon there will be tarmac and pavement, hedges and walls, lamp-posts and buildings.

Every place is a social construct, which is why travel to another country can be so invigorating. We discover people who are similar to ourselves, so we can relate to their lives. But also there are intriguing differences. Perhaps their society has decided that a veranda should front each home, so that visitors can be greeted on the verge. Or perhaps these citizens hang laundry on second-floor lines between houses, in order to create a convivial semi-private place for conversation. Or perhaps each evening the residents bring tables to the centre of the road, to play cards and drink red wine in the warm evenings of summer.

Every place is an accumulation of the experiences and choices of others. As we walk through a place, we walk through its particular history. We make a place, as that place makes us. This book is a result of *topophilia*, a love of places.

Platial listening

For centuries European culture has been dominated by a mode of spatial thinking that considers the visual sense as superior to others. This hierarchy is deeply embedded in our language. “I see what you mean” is a phrase linking vision to understanding. A “seer” is a wise person. In the seventeenth century this thinking was codified by René Descartes, who defined the world as built on a quantified, universal, rational space. Places, if considered at all, were relegated to secondary aggregations of qualities.

Yet this is not how we experience the world as individuals within its embrace. There is an alternative history of philosophy that recognises embodied subjectivity. This history can be traced from the ancient thinker Archytas; through the phenomenology of Edmund Husserl, Martin Heidegger, and Maurice Merleau-Ponty; finally to Gaston Bachelard, Tim Ingold, and Edward Casey.

To describe this arc of thought, we need a new term. It’s notable that we have an adjective “spatial” meaning “of or relating to space,” but there is no word meaning “of or relating to place.” The term “patial” can be used to assert the importance of places as responsive contexts that shape, and are shaped by, our *being-in-the-world*. This ties an ontology of being together with a phenomenology of perception, both literally *grounded* in the place we occupy.

As a field recordist and composer, I’ve extended patial thinking to an understanding of the auditory world. Listening cannot be separated from the *listener*. As you develop skills in attentive listening, you learn more about the place you inhabit.

Fascinating auditory patterns surround us at all times, yet few of us are trained to listen. The exercises compiled herein are designed to address this omission. They will help you develop an appreciation of places through their sonic properties. While this is assuredly not the *only* way to encounter a place, it is an under-developed modality that is worth exploring. Patial listening can enrich your artistic practice, enhance your composition skills, or simply help you appreciate our fragile and ephemeral world.

Developing this book

These exercises developed from a longstanding commitment to sound. As a child I learned classical music. In high school I was recording synthesiser and noise experiments. At university I began a long-term commitment to radio production, before taking a year to formally train as an audio engineer. Field recording and composition became important parts of my life. They remain prominent in my contemporary teaching and arts practice.

Back in the 1980s, it was rare for the subject of listening, as a dedicated practice, to be discussed. So I set out to explore my auditory world with few guides. Over time I realised that certain repeated practices helped me to hone my listening skills. This, in turn, helped me be a more responsive recordist, a better composer, a more adventurous producer. Techniques were taught to me in workshops in Toronto, Vancouver, and Montréal; through work with friends in London, Ontario; at radio conferences, and so on. The exercises are hence a product of a complex social environment. But one distinctive debt deserves special attention.

Years ago I read R. Murray Schafer’s famous book *The Soundscape*, but I’d not explored his other pedagogical writings until more recently. I was amazed to discover that he had already created a comprehensive series of listening exercises in his books *Ear Cleaning* (1967) and *A Sound Education* (1992). I realised that much of my listening work followed a path that Schafer had already forged. No doubt some of my tutors had learned directly from him. Or perhaps some of the exercises are only coincidentally similar: the result of people in Canada approaching listening in similar ways. In any case, I am happy to highlight Schafer’s methods, revived from books long out of print.

The music and sonic practices of another Canadian composer, Hildegard Westerkamp, has long been an inspiration. She was presenting environmental sounds on Vancouver Co-Op Radio before I became involved in similar activities in the province of Ontario. We shared a country for decades, but only met in The Azores five years ago. There I was finally able to accompany her on one of her soundwalks. That ex-

perience of shared listening clarified for me the need for this book. So I started writing.

The catalyst for sharing this work came when Dublin artist David Beattie asked me to work on his *Slowtime* project. This was organised by Void Gallery in Derry, generously funded by the Department of Foreign Affairs and Trade. In August 2021 I led a soundwalk around the Derry city walls, one of several activities Beattie had organised. This book is the fruit of that project. I thank Maeve Butler at Void Gallery for her hospitality and generosity, along with everyone else, past or present, who has aided this project.

Who is this book for?

In the same way that you need to read closely and carefully before becoming a good writer, you need to listen intently and self-reflexively before you can productively manipulate sounds. This book will particularly help musicians, composers, sound designers, field recordists, producers... anyone who works with sound. The exercises can be used in a workshop scenario, in which case participants will have the benefit of guidance and resources. But the exercises also suit individual study.

My own focus is environmental composition, a practice that uses field recordings as raw musical material. This is also known as *soundscape composition*, a practice embedded within the field of *acoustic ecology*. If those terms mean anything to you, you will be particularly disposed to the material within. If not, you should read Schafer's book *The Soundscape* (see the reference list).

When you first try an exercise from this book, it might seem strange or artificial. But, if you are willing to trust, to repeat the task, it will eventually become an internalised part of your behaviour. Over time, your listening will become more discriminating. The sonic qualities of a place will be more enjoyable.

An example from my own experience highlights this transformation. I once made a recording of my back garden that I could enjoy for its everyday simplicity, its evocation of a typical evening in the suburbs. Listening to the same tape, my dear friend was disturbed by a barking dog. But this repeated call no longer irritated me. I could hear the different inflections, how the dog's mood changed over time from desperation to something like resignation. I heard how that sound varied in tone, depending on where the dog was in his garden. I didn't perceive the barking as an interruption to an otherwise placid scene, but rather as an integral part of the auditory field.

Similarly, I can now hear an aircraft overhead as a wondrous arc through the sky. I've refashioned the sound of construction machinery into music. These possibilities only exist due to many years of attention to listening as a self-reflexive activity.

This book is for doers and dreamers, the practical and the philosophical. It's for those who understand that the conventional ways of approaching our environment — both the built and natural environments — have failed. It's for readers who recognise that our current path through the thickets is not leading us to Utopia.

This guidebook is for everyone who cares about the one all-encompassing place that we share and hold in trust, this planet we call home.

—

If you have comments or contributions for future editions, please email robin@robinparmar.com.

Useful tips

This book has two main sections. For the Listening Exercises, I recommend keeping a sound diary for ongoing notes. Some of the exercises might ask you to write down observations; others might not. But in all cases it helps to supplement your experiential process with observations and reflections.

For the Recording Exercises you will need some way of recording and editing sound. A mobile phone and mainstream computer are sufficient. No specialised equipment is required at first, though as you become more proficient you'll appreciate the benefits of better microphones and audio recorders.

Readers who are local to Derry can avail of the lending library of recording equipment at Void Gallery. You can borrow equipment free of charge. Please drop into the gallery to make arrangements.

Many of the exercises ask questions. These are not always meant to have one correct or definitive answer, but are included to spark thought and conversation. In some cases, text is set aside in blue boxes as sample answers and responses. Try not to read these before exploring the exercise yourself.

Most exercises don't specify that they should take place in a specific environment. Indeed, it can be especially enriching to perform the same task in different places, or even in the same place at different times. Choose a variety of locations: a busy street corner, the woods, a seashore, your bedroom, a shopping mall. I should emphasise the value in getting to know places you once thought familiar. Explore your local neighbourhood before venturing to more "exotic" locations. (I spent five years composing with only those recordings made within a short walk of my home. This constraint was fruitful.)

Minimise distractions before listening. Give yourself time to adjust your senses. Be attentive. Close listening can be a meditative activity, but it's based on perceptions of the physical world... and that world can be a busy and rambunctious place.

Part A: Listening Exercises

Exercise 1: Categories

Write down all the sounds you can hear, in a vertical list on your page. Categorise each sound by adding symbols beside the label. These will help you develop a “sonic shorthand” for quick documentation.

First, note the temporal quality of the sound, using symbols such as these:

~ = continuous

» = repetitive or occurring at intervals

! = singular or occurring only once

Then, add one or more arrows to indicate motion. Point the arrow in the direction the sound travels. Make each arrow as long as you think appropriate.

Finally, categorise each sound according to origin:

E = Earth sounds (e.g. water, wind, rock)

H = human sounds (e.g. voice, whistle, baby crying)

A = animal sounds (e.g. birdsong)

T = technological sounds (e.g. alarm beep)

Is a technological sound and a human sound the same thing? Consider automotive traffic, FM radio, a chiming alarm.

Is the sound of wind in trees also the sound of plants? What sound does wind make on its own?

Which sounds did you write down first? Is there any pattern to the order you wrote sounds? Is this a matter of attention or familiarity?

What other criteria might you use to categorise sounds?

Exercise 2: Distance

On a fresh page, draw a dot in the centre representing your listening position. Place the sounds that are closer to you near this dot, sounds far away close to the edge of the page.

What is the closest and farthest sound you can hear?

How do you know a sound is farther away? What characteristics of the sound are indicators of distance?

Is there a certain distance past which you cannot hear? How does this vary?

For vision we speak of a horizon. Is there a similar auditory concept?

We know that sounds that are further away become quieter; that is, they have lower amplitude. But they are also less impulsive. Lacking a sharp initial onset to their volume envelope, they can sound smoother. A distant sound has relatively fewer high frequencies, as these are dissipated by the atmosphere. We might also hear a larger proportion of reverberation relative to the original sound. Finally, such sounds might be less directional, appearing to come from different sides more equally, instead of from a defined position.

Exercise 3: Amplitude

On a fresh page, order the sounds you've heard from loudest at the top to quietest at the bottom.

What are the quietest and loudest sounds you can hear?

How does the linear and hierarchical ordering affect your interpretation of the sounds?

Can you tell that a sound was originally very loud, even though it's faint by the time it reaches you?

We sometimes know that a sound is loud to those who might be proximal, even if it's quiet to us when situated at a great distance. Take the case of a cannon sounding. From experience we know how loud this is. The characteristic impulse (amplitude envelope) and timbre (noise components) are clues that this is likely a very loud sound, coming from far away.

Exercise 4: Frequency

On a fresh page, order the sounds you've heard from lowest to highest frequency.

Is there any correspondence between pitch and the categories used in the earlier exercises?

Sounds that are lower in pitch, especially those down in the bass register, have more energy and can hence travel much further through the air. The rumble of thunder is a good example.

Sounds that are higher in pitch tend to be attenuated by distance. An insect buzz can only be clearly heard when it is very close to your ear.

Exercise 5: Repetition

Focus on one particular sound that is repetitive (marked with »). This might be a car horn, a dog barking, a bird chirping, footsteps...

Count the number of times this sound occurs in ten minutes. Compare across locations.

Describe how the repetitive sounds make you feel? Irritated? Comforted?

How does time pass when you are counting, slower or faster than usual?

Some people are reassured by the ticking of a clock, but for others this same sound is an irritant.

Exercise 6: Motion

Focus on one particular sound that is in motion. What can you determine about movement from the sound?

Is it the sound that is in motion, or is the sound source in motion? What's the difference?

There is no easy answer, for this is a question of deep philosophical importance. Sometimes we associate a sound with the sound source. These can be termed *distal* impressions, because we perceive the sound as being further from us.

At other times we associate a sound with our *hearing* of that sound. This subjective experience, decoupled from the source, is a *proximal* impression, because we perceive the sound as being closely related to us.

Exercise 7: Localisation

Pay attention to how well you can localise sounds. First, consider an arc about your body with zero degrees (12 o'clock) in front and 180 degrees (6 o'clock) directly behind you.

Next, consider elevation above and below your ears.

What types of sounds are easier for you to localise? Describe these in terms of frequency, amplitude, and other characteristics.

We are relatively poor at locating sounds in elevation. Likewise, our acuity is less for sounds that are behind us than for sounds that are in front, although we are immediately aware that a sound *is* behind us. This protective mechanism likely manifested early in our evolution. It's important to know if a potential threat is sneaking up on us, since our visual field is of no help.

Indeed, we use our vision to localise sounds, looking for clues as to the sound source. We move our head to relocate our ears, in order to gather additional localisation clues. Often these physical actions are performed without thinking. Listening can be a whole body phenomenon.

Exercise 8: Language

Languages have their own distinct ways of describing sounds. Make a list of adjectives you can use, providing an example and brief description for each.

Examples: blasting, beeping, booming, bubbling, clattering, buzzing, clanking, clinking, creaking, crumbling, fizzing, growling, grunting, gurgling, honking, hooting, howling, lilted, pulsating, roaring, rumbling, scraping, screaming, snapping, thumping, thudding, thumping, tinkling, wailing, wheezing, whining, whirring, whispering, yelping.

Exercise 9: Tone

Focus on one particular sound that is continuous (marked with ~). Sing or hum this tone. Now, move away from the sound so that you can no longer hear it, but sustain the tone yourself. (If outside, you might walk around the block. If inside, go to another room and return.) Return to the sound and compare your pitch. If it's now different from the original, consider why.

Sustain a tone for a long time, without changing the pitch or timbre, until you tire of it. How can that tone be made more interesting?

Try these same exercises in a group.

A tone can be made more interesting, even if the pitch doesn't change significantly, by varying characteristics such as rhythm, amplitude, and spatial distribution. Especially in a group, you can accomplish some interesting effects! Different people can be placed around a room, issuing the tone at different times, or moving up and down in volume.

This brings us to *the drone*, a mode common to many religious musics. What are the emotive and physical affects of a drone?

Exercise 10: Body sounds

Make a list of all the sounds that are made by your own body. Which of these are sources you *can* see, which are sources you *can't* see?

Which of these sounds can be heard by other people? How does this make you feel?

Some sounds: breathing, snoring, joint cracking, skin rubbing, stomach growling, lips smacking, heart beating, chewing.

As a rule, we are embarrassed by body sounds, since these expose our private domain to the ears of others.

Exercise 11: Silent places

What is the quietest environment you have found? What sounds were present in the quiet?

As a rule, what types of places are the quietest? How can you make a place quieter?

Exercise 12: Silent chairs

This exercise assumes that you are sitting in a chair. Stand up and sit down again without making a sound. At first you might fail, but pay attention to what caused the sound and try again.

This exercise can be particularly amusing in groups!

Exercise 13: Silent speech

Go through an entire day without speaking. Keep notes on your impressions. The reactions of other people might be particularly interesting.

Why is this act called a “vow of silence” when only speech is forbidden?

Why is this act associated with religion?

I found it prudent to have a little note that I could show to inquisitive friends that I met. This avoids social embarrassment.

“Today I am not speaking, in order to rest my voice.”

Exercise 14: Silent piece

In John Cage's famous piece 4'33", a musician reads from sheet music that specifies three movements of exact lengths. But they never play a note. This is commonly described as a silent piece.

But is this accurate? What do you hear when musicians are not playing?

Why is sheet music required for this piece? Why are there three movements?

Cage's piece is not about silence, but about the sounds that are always present, even in a quiet recital hall. He is attempting to call attention to extra-musical sounds, in order to expand the range of material available to composers.

The sheet music ensures that this work might still be considered to be a correct and proper piece of chamber music. When musicians change from one movement to the next, they must turn pages. This inevitably makes a sound, ensuring that the piece is not silent.

Exercise 15: Silent forest

If a tree falls in the forest, does it make a sound?

Is sound a distal phenomenon that occurs "over there" at the source of the sound waves? Or is it a proximal phenomenon that occurs "just here" at our sensory organs. Does sound exist if there is no one to hear it? These questions in philosophy are still very much debated.

It's also worth considering this question from another perspective. Even if there are no humans present to hear the tree fall, its impact is felt by worms in the earth, insects in the tree bark, birds who might be nesting nearby, along with an enormous variety of other animal and plant life in the vicinity. The sound, as an integral component of the act of that tree falling, is surely an event of importance to this biome.

This question highlights the anthropocentric position that constrains our conception of listening.

Exercise 16: Blindfold walk

Conduct a blindfold walk, with a companion on hand for safety. This way you can take turns and each experience a world without vision. A duration of fifteen minutes might be enough at first, until you become acclimatised to the experience.

Where possible, make your path through different environments (small room, large room, corridor, outside) with different materials in proximity (glass, brick, grass). Ideally, you should be taken to an environment you are unfamiliar with.

Make your usual notes afterwards. Did your acoustic perception change in any notable way?

Could you tell what environment you were in?

Did your senses alert you to the presence of obstacles?

This exercise does not suit everyone, so please be careful. Some people can be disturbed by even a temporary loss of sight.

Keep talking in pairs. Monitor your partner for adverse reactions.

Guard against accidents like tripping or stumbling by taking the arm of the blindfolded listener where necessary.

Exercise 17: Sensorium

Answer this question quickly: how many senses do you have?

Now, take longer to consider. Write down everything you can perceive, with examples. For example: "I can hear a bird." "I can taste bitter lemon." "I feel pressure on my foot."

The traditional answer, which comes from the Ancient Greeks, is that we have five senses: sight, smell, touch, taste, hearing.

But touch consists of several distinct senses: pressure, vibration, itch, temperature, non-discriminative touch, and fine touch. Taste consists of sweet, salty, sour, bitter, umami, and (possibly) fatty.

We also have senses of balance/dizziness, spatial orientation, proprioception/kinesthesia, nociception/pain, thirst, hunger/satiety, suffocation/asphyxia, nausea, etc.

It's clear that we have a rich sensorium. This realisation can lead us to an integrated phenomenology, rather than one that partitions up the world based on sensory register.

Exercise 18: Extended sensorium

Some animal species have extended sensory ranges, beyond what a human can perceive. Can you list some?

Other animals have additional senses that we humans lack entirely. Can you think of any?

And what about plants? As of yet we know little about their senses.

Birds and insects can detect additional colours that we cannot see, since they have an additional type of cell in their retinas. Birds that look drab to us are in fact vivid to each other.

Dogs can hear supersonic frequencies, above our top limit of 20 thousand cycles per second. Elephants make infrasonic sounds, below our frequency limit of 20 cycles per second.

Additional senses include magnetoreception, or the detection of magnetic fields (molluscs and perhaps birds); electroreception for electrical fields (shark, bee, platypus); hygrometry for moisture (insects), and echolocation for object detection (bat, dolphin, shrew). Other species can detect polarised light (fish), water currents (also fish), and infrared spectra (pit vipers, salmon, mosquito).

Exercise 19: Multimodal hearing

While hearing is commonly described as a function of the ear, that is an over-simplification. How many senses do you use to hear?

Fingernails on a blackboard can prompt a “skin crawling” sensation. Loud bass sounds at a concert create resonances in the stomach. Sounds can also raise the hairs on your arms. It’s clear from these examples that hearing involves more than just our ears.

It’s also true that our ear does more than just hear. The semicircular canals of the inner ear are essential for our sense of balance. Disturbances to this organ can cause vertigo.

What we see affects how we hear language. Ventriloquism works in part because we tend to localise speech to moving lips, even if these belong to a dummy. A 1976 paper by Harry McGurk and John MacDonald described what is now called the McGurk effect. If we hear one syllable and watch lips that are voicing a second syllable, we can sometimes hear an entirely different, third sound!

For these reasons it’s useful to consider hearing as multimodal. Our senses operate in concert to bring us an integrated phenomenal world.

Exercise 20: Seeing sounds

Make a list of all the ways in which technologies allow you to see a sound. What do we learn from seeing a sound that we might not know by hearing it?

Examples of technologies that allow us to see sound include the ultrasound, a sonogram, and an oscilloscope. The grooves of a vinyl record are a visual representation of the embedded sound.

Exercise 21: Echo

Find a location with distinct echoes. A good way to test is to clap your hands and listen for the response. When you can hear a clear repetition of the clap, you've found a good place for listening.

If you see a person walking slowly, clapping their hands periodically, and looking at walls... you know you've found a fellow listener!

What characteristics of a space make for a good echo? Consider dimensions, material, and size. Consider also the air quality, since temperature and humidity make a difference.

A good echo can be found when there is a flat, vertical surface directly opposite the sound source. Materials like brick, concrete, and glass are all good reflectors. A hard surface underfoot is preferable to grass or carpeting.

When the air is dry and cool, echoes can be heard more clearly. This is because water droplets (humidity) in the air diffuse sound.

Exercise 22: Speed of sound

When you find a place with a nice distinct echo from a wall, conduct the following exercise. Stand a good distance from the wall and clap slowly, perhaps once per second. Every echo you hear is the sound of the clap you are making, returning from the surface.

From this, we know that sound takes a certain amount of time to travel through the air, a time we can easily perceive. But our senses do not give us the same information about light, even though it too has a finite velocity.

How much slower does sound travel, compared with light?

The speed of sound in air is about 343 metres per second (at 20°C).

The speed of light in air is about 299,702,547 metres per second.

Light is therefore more than 870 thousand times faster than sound. This explains why we don't experience "light echoes."

Exercise 23: Haas effect

At your favourite echo place, again stand a good distance from the wall and clap. Move slowly towards the wall, until you find the point at which you can no longer hear the echo. (You will need a location where you can get within five metres of the wall).

Understand that the reflected sound is still present, but you can no longer hear it. The second sound (the echo) has fused perceptually with the original clap. We have a limited ability to discriminate between sounds arriving at our ears at different times, especially if the sounds are similar.

If you wish to do some simple arithmetic, measure how far you are from the wall. Double this length for the total distance the sound travelled. From the speed of sound you can now calculate a duration (velocity equals distance over time). You will then know the Haas effect delay time.

This effect is named after Helmut Haas, who described it in 1949. It is a specific example of a precedence effect.

Depending on the qualities of the original sound and the listening conditions, the delay time can vary from 1 to 40 ms (milliseconds).

Exercise 24: Sound museum

On a page titled “Sound Museum,” make a list of sounds that are disappearing. Think back across your experience.

What is the earliest sound you remember hearing from your childhood? What made it special?

When I was very young, living in England, my parents took me to an air show at Biggin Hill Airport. There I heard a fly-over by a formation of Supermarine Spitfires, a combat aircraft built for the Second World War. The sound of the Merlin engine is distinctive. While a number of airworthy units are still extant, it is now exceedingly rare to hear a group such as this.

I credit this event with my lifelong interest in drones.

Exercise 25: Sound cradle

On a page titled “Sound Cradle,” list sounds that you have heard that did not exist in an earlier time.

Examples include electric vehicles, distinctive sounds from mobile phones, electronic or manipulated music, and other sounds created by new technologies.

Exercise 26: Music

In which environments have you heard music being reproduced? And by which means (radio, loudspeaker, etc.)?

In which environments have you heard live music being played?

How prevalent is reproduced music, as opposed to live music?

In many urban environments reproduced music can be heard from public address systems, pumped through retail shops, etc. Outside of deliberate stagings (concerts and theatre), live music might only be heard from street performers. Here in Ireland there is a tradition of spontaneous music in pubs, but such communal activities have diminished over time. It is perhaps the case that live music is more readily associated with rural and agrarian societies.

Exercise 27: Instant instrument

Use a sheet of paper to make as many different sounds as possible, one at a time. Describe these sounds.

Do the same with a tin can, a ruler, or any other common item.

Examples of paper sounds: crumple, slice, slap, tear, cut, rub, etc.

Exercise 28: Recreating a place

Make a list of all the sounds you might hear in the following locations: an airport lounge, a computerised office, a woodwork shop, a deep forest, a fishing vessel at sea, a space station in orbit.

Write down the specific sounds that you would need to recreate that environment considering all of the characteristics discussed in previous exercises: movement, distance, continuous and repetitive sounds, etc.

How might you recreate these sounds for a radio play, podcast, or film? Beside each sound, list some materials and techniques you might employ, assuming that you don't have any electronic devices to hand.

A professional who creates such sound effects is known as a Foley artist, named after Jack Donovan Foley (1891–1967). If you ever get the chance, take a Foley workshop... it's good fun!

Exercise 29: Noise and music

Which sounds would you characterise as being noise? What makes a sound noisy?

Can noisy sounds be used in music? What were some of the earliest noise instruments?

Noise has been variously defined as non-repetitive or disorganised sound, rapidly changing sound, or sound with inharmonic spectra. Noisy sounds have been integrated into music over the course of the 20th century, so that today almost any sound might be used in a musical context.

Percussion has long been used in music, largely to establish a beat or rhythm. These instruments have very impulsive sounds, with inharmonic spectra and non-repeating envelopes. It might be said that drums were the earliest noise instruments.

Exercise 30: Noise and politics

The topic of *noise abatement* concerns laws and other actions to limit noise, for the benefit of certain people. Are there sounds in your daily life that you wish you could remove?

Do you think that people living in different neighbourhoods or working in different trades have different feelings about noise?

Is there a political context to noise?

Consider a public march or protest. The people on the march might sing or shout to call attention to their important issue. People along their route might object to the noise, even if they are subject to this only once a year. Even a rare disruption can be annoying, precisely because it is out of the ordinary.

Consider a street musician. Visitors to their locale might enjoy their music as a welcome respite from a busy shopping day. But the store owners who must hear the same tunes every day, all day might object to this music as noise. They might also consider that they're losing business as a result of the music.

Consider the hubbub of a crowded party. If it's your party, you might be having fun. But if it's a neighbour's party, it might interfere with your sleep and generate a noise complaint.

Part B: Recording Exercises

Introduction

The art and science of recording sound outside a formal studio environment is known as field recording. The exercises here are not concerned with the technical aspects of this discipline, but instead build an experience of listening. A good many contemporary artists integrate field recording with their practice, without needing a degree in audio engineering.

For these exercises you will need an audio recorder and microphone, or a pair of microphones for stereo sound. Affordable hand-held recorders generally have convenient built-in microphones. But external mics will sound even better, in part because they can be more flexibly positioned. As you will discover, microphone position changes the recorded sounds dramatically.

Makes and models of recorders come and go from the market rapidly. Any information printed here would soon be stale. Try brands such as Zoom, Tascam, and Roland. Purchase advice may be found online or from your peers.

You will soon encounter the age-old debate between tools and technique. Some writers will tell you that tools don't matter, because a professional can work around any limitations. Others will say that you need excellent and expensive tools, so that your work is not arbitrarily constrained.

Both perspectives have merit. You should aim to have a sufficiently good recorder and microphone, so that the sounds you record have a reasonable fidelity to what you can hear. At the same time, there's no need to spend a fortune to get started. Begin with tools that are available to you. As you learn to listen, you might wish to invest further into your growing practice.

To begin with, even your mobile phone may be sufficient. Find an audio recording app and give it a try!

Exercise 1: Comparing recordings

Learning how your device transforms sound is a vital step on the way to being a field recordist. Repeat the first exercises from Part A of this guide, using your sound recorder. Record everything you can hear in one place, or venture out on a sound-gathering walk.

Listen back to the sound files. Categorise the sounds by type, distance, amplitude, frequency, localisation. How does this catalogue differ from the sounds heard with your own ears?

How do the recorder and microphone change the sound spectrum, left-to-right balance (panorama), and other characteristics?

Are there any aspects or qualities that are particularly missing from the recordings? Does the recording enhance any characteristics?

Exercise 2: Unwanted sound

Pay attention to any extraneous or unwanted sounds in your recording. List these noises with descriptions of when they occur.

Handling noise is common. If you are recording in one place, a tripod can help. Recorders often have a screw mount on the underside, while a mobile phone can be adapted to a tripod via a phone clip. For recordings made on the move, it's best to use a small external microphone (called an electret or lavalier) that can be clipped somewhere safe. This way, when you touch the recorder, you are not also touching the microphone.

Wind noise is also common. This is caused by either the motion of the air over the microphone, or the movement of the recorder itself through the air. Mics often come with a foam covering, which does a tiny bit to avoid wind. A better option is a "fake fur" wind shield (sometimes called a "dead cat"). Usually you must purchase this accessory separately, but it's a wise investment.

Friction noise from your clothing happens when you accidentally rub against the microphone or recorder. Proper positioning can help. Clothes can be noisy in themselves, with jangling zippers or crinkling fabric. You will soon learn which outfits are best for field recording.

Distortion is heard as an aggressive overloaded or overdriven quality to the sound. This occurs when the amplitude is too loud for the microphone or recorder. This is alleviated by turning down the input volume, or moving the microphone further from a loud source.

Crackles can be produced by poor cables or cable connection. This is easily checked by replacing with a substitute cable.

Clicks and pops might also be the result of bad connections, so check that all cables are seated properly in their sockets.

It's important to have good headphones, so that you can check for these noises as they happen.

Exercise 3: Gathering sound

Give yourself a week or two to make a collection of the following: urban sounds, country sounds, electronic sounds, sounds of nature (wind, water), very quiet sounds, noisy sounds (tin cans, metal railings, etc.) and sounds off the radio.

Play these sounds back and classify them using the terminology you have learned.

These categories of sound are those specified by John Cage for his *Imaginary Landscape* series (1939-52) and the piece "Williams Mix" (1951-3).

Exercise 4: Composing with sound

Edit your sounds into a composition. For this we use software known as a DAW (Digital Audio Workstation). Reaper is a good example of such a tool that you can try for free.

First, transfer your sounds from your recorder/phone to the computer. Depending on your recorder, you do this using a cable connection, a memory card (usually SD or micro SD format), or WiFi (wireless internet). Learning how to store and back-up your sounds is an essential skill. Take the time to organise your sounds, so that you can easily find them when you need them.

Every DAW is a complex and powerful programme, but you can learn a workflow by mastering one simple task at a time:

1. Set up a new project in your DAW.
2. Import your sounds into the DAW.
3. Sequence sounds on the timeline.
4. Practice trimming portions of a sound.
5. Learn how to make seamless edits.
6. Save your project to a safe place.
7. Export the results of your work to a new audio file.

Your composition is finished!

Exercise 5: Changing sounds

Once you get better at editing sounds on your computer, try the following:

Slow down a sound and stretch it so it lasts longer. Speed up a sound and make it very short. Which sound sources give interesting results?

Take an impulsive sound, one that has a sharp or distinct beginning. Trim off that initial impulse, so that you only retain the continuous and decaying parts of the envelope. Consider again the previous questions.

Reverse a sound, with or without trimming.

Loop a sound to create a tone that lasts indefinitely. Figure out how you can avoid the “click” that occurs at the loop transition.

Layer two files so that it sounds like one integral sound source, rather than two sounds playing together.

Exercise 6: Form a band

Get together with other people who record sounds. Create a live musical piece by playing back the sounds you’ve recorded. You might use a score, something as simple as a set of text instructions. Practice your parts, try different combinations of sounds to see what works. Or simply improvise!

Try setting a theme ahead of time. Then give participants a few days to collect and manipulate sounds that suit the theme. Finally, get together for a playback session.

How are sounds recorded from the field different from the sounds that traditional instruments make?

How would you describe the resulting music? Is it like other artists you know or enjoy?

References

- Carlyle, Angus and Cathy Lane, eds. 2013. *On Listening*. Axminster, Devon: Uniformbooks.
- Lane, Cathy and Angus Carlyle, eds. 2013. *In The Field: The Art of Field Recording*. Axminster, Devon, UK: Uniformbooks.
- Nancy, Jean-Luc. 2007. *Listening*. New York: Fordham UP.
- Nudds, Matthew and Casey O’Callaghan, eds. 2009. *Sounds and Perception: New Philosophical Essays*. Oxford, UK: Oxford University Press.
- Oliveros, Pauline. 2005. *Deep Listening: A Composer’s Sound Practice*. Lincoln, NE: Deep Listening Publications.
- Schafer, R. Murray. 1967. *Ear Cleaning: Notes for an Experimental Music Course*. Toronto, Ontario: Clark & Cruickshank.
- Schafer, R. Murray. 1992. *A Sound Education: 100 Exercises in Listening and Sound-making*. Indian River, Ontario: Arcana Editions.
- Schafer, R. Murray. 1994. *The Soundscape: Our Sonic Environment and the Tuning of the World*. Rochester, Vermont: Destiny Books.
- Tuan, Yi-Fu. 1974. *Topophilia: A Study of Environmental Perception, Attitudes, and Values*. New York: Columbia University Press.

Versions of the exercises in the current book can be found in Schafer’s *A Sound Education* on pages 36, 41, 44-45, 102-3, 105, and 116-17.

About the contributors

Robin Parmar explores the phenomenology of place and the poetics of memory using non-narrative film, generative installations, and environmental composition. Interests include psycho-acoustics, visual music, field recording, radiophonics, and epistemologies of nature. He has released eleven albums of music and curates the label Stolen Mirror. Robin has a doctorate in Sonic Creativity from De Montfort University (Leicester, UK) and is Lecturer in Video, Film, and Visual Communication at the University of Limerick (Ireland). He is Vice-President of the Irish Science, Sound, and Technology Association (ISSTA) and is on the editorial board of *Interference: Journal of Audio Culture*.

www.robinparmar.com

David Beattie is an artist and lecturer based in Dublin, Ireland. Beattie's sculptural practice explores the material world through experiential, physical engagements with objects and non-objects. He was a recipient of the Hennessy Art Fund for IMMA collection in 2016 and his work was recently acquired by the Arts Council for the National Art Collection in 2021. His work has been exhibited nationally and internationally including Void Offsite Commissions, (2021), The Glucksman (2019), Berlin Opticians Gallery (2018, 2019), TULCA Art Festival (2017), CCA Derry-Londonderry (2017), Irish Museum of Modern Art (2017, 2013), and The Mattress Factory Art Museum (2010).

www.slowtime.ie

Void is a contemporary art gallery in Derry, Northern Ireland, that commissions and produces a visual arts programme that aims to challenge our audience and promote the arts. The programme supports a diverse range of artistic practices of national and international artists. The programme focuses on the collaborative nature of art and its ability to add to artistic discourse through exhibitions, events, discussions and partnerships. Through our commissions, we work with a network of arts organisations both nationally and internationally to create specific projects.

www.derryvoid.com

