WILDERMUSIC

Composing With, From, and About the Natural World

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This dissertation is submitted alongside a
portfolio of compositions for the qualification of

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for Christopher

"your love will be safe with me"[1]

[1] Bon Iver. 2008. *Re: Stacks*. Streamed. Justin Vernon.

https://open.spotify.com/track/20AC70RUlVz6A6dCcQ5tRS?si=15f8f3f893e542cd.

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Fig. 1 & 2: Myself and Nandi, January 2022.

DECLARATION

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ABSTRACT

Wildermusic: Composing With, From, and About the Natural World examines musicalisations of the natural world through the mechanism of notated instrumental composition for the purposes of a live concert setting. The research output comprises two components: a portfolio of musical compositions and this dissertation. This textual writing is used in a supportive role: to rationalise – and at times help refine – elements of the composition practice and wider creative process.

I have undertaken creative investigations into naturally-occurring materials, landscapes, environments and phenomena, and five new compositions have materialised out of this practice-based research. These five compositions, and my discussions of them, demonstrate specific ways of exploring relationship with the natural world through composition, namely through musicalisations of direct experiences and interactions with materials and places.

My research brings new knowledge to the field of contemporary music and ecomusicology, straddling various ways of bringing experiences of materiality into music. The particularities of this work lie in the emphasis on embodiment and sensoria as a means to better understand nonhuman materialities and vitalities, over other composition methods such as practices of sonification, transcription, field recording, mimesis, or purely programmatic music.

This research demonstrates how experiential cognition, in the forms of both embodied knowledge and real-time interactions with materials, is essential to my practice because it enables me to explore physical interactions with the natural world.

While each of my five pieces is somewhat particular to itself – each exploring a different kind and degree of experience with the natural world – there are certain compositional tools, musical and emotional qualities, and philosophical reflections that have emerged throughout the duration of this research project and across the portfolio. Therefore, this dissertation presents four essays in which I consider certain subjects across multiple compositions. I consider my work from creative and philosophical angles. I explore how embodied knowledge and experiential cognition shape my creative process (essay 1); I examine the musicalisation of personal sensory experiences of materials and places (essay 2); I investigate tactility in my music (essay 3); and I reflect on how emotional aspects of my connection to the natural world inform my work (essay 4).

The river has a single song.
Which is itself.
The tree has a song.
The bird also.
The heart knows all
These songs
And a million of its own.

Neither the river
Nor the bird can write.
The tree moves
Its branches against
The sky all day
As if it's thinking
About inventing
Its own alphabet,
But nothing comes of it.

So it's still up to us.
We're supposed to bring
Them into the Book,
Make a place for them in our poems.[2]

[2] Orr, Gregory. 2005. *Concerning the Book That Is the Body of the Beloved*. Washington: Copper Canyon Press. 28.

INTRODUCTION

1. BACKGROUND

I am curious about the murky, knotty web of relationships between myself and more-than-human vitalities,[3] and the seemingly boundless ways in which this might be musicalised. These interests have been a lifelong bewilderment for me. Much of my understanding of the natural world has been shaped by experiences in my childhood. I grew up in Gqeberha, South Africa, with a big, rugged back garden that prickled my skin with its dry patches and grassy tufts, that vanished at its corners into cool beds of ferns and mosses, that perfumed the air with its camphorous – though invasive – blue gum trees and pungent guavas squelching between my toes, all while stealthily dipping down into a slither of the Baakens Valley at the far perimeter.[4] I had the fortune of being enrolled into my local Scout group at the age of eleven and, until the age of seventeen, I spent many weekends – sometimes longer – hiking and camping in various parts of the Eastern Cape and Western Cape. In my early university years in Cape Town, I was drawn to long distance running and I have consequently spent countless hours running on roads and trails in diverse places on earth.

This research engages with experiences that are born out of a multidimensional relationship ("with, from, and about") concerning myself and the natural world. Some of these experiences are moments that arise spontaneously during, or because of, my creative processes, in a spirit of collaboration *with* the natural world; some experiences have been created purposefully by drawing inspiration *from* a particular place, material, or memory; others are embodied experiences *about* which I feel compelled to create something. To compose in relation to the natural world is to enter into a creative dialogue

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[3] By 'vitalities' I mean any thing, biological or not, organic or inorganic, which might elicit a sense of liveliness, dynamism, or emergence in the person or entity encountering the thing. This reflects Holly Watkins' discussion of vitality in *Musical Vitalities: Ventures in a Biotic Aesthetics of Music*. See: Watkins, Holly. 2018. *Musical Vitalities: Ventures in a Biotic Aesthetics of Music*. Chicago: University of Chicago Press.

[4] Gqeberha is a relatively new name for the city of Port Elizabeth. *BBC News*. 2021. "South African City of Port Elizabeth Becomes Gqeberha," February 24, 2021. http://www.bbc.co.uk/news/world-africa-56182349.

with the more-than-human, which is always in motion. It is both exchange and entanglement between listening (to materials, sensations, movements, memories, feelings) and, when the time is right, responding with music.

Wildermusic (*noun*) is a new word that I have created for this research. It is pronounced 'wilder-' as in 'wilderness'[5] (and as in one of my favourite movies: *Hunt for the Wilderpeople*)[6]. As a separate word, 'wilder' is pronounced and interpreted in its standard, comparative form of the adjective 'wild': wilder things, wilder places, and so, wilder music (two words). Wildermusic also resonates with the notion of 'rewilding' my own musical creativity and thought and, by extension, the world around me. First appearing in the dictionary in 2011, the year that Rewilding Europe was founded,[7] rewilding is the large-scale, human-led effort to restore nature's ecosystems "to the point where it can take care of itself – and us – again".[8] And so, *Wildermusic: Composing With, From and About The Natural World* is my musical contribution to the current dialogues around the complex, emotional, immeasurable and enduring enmeshments between nature, music and culture.

It should be noted that 'practice-based research' emerges here as a particularly appropriate mode of enquiry: it enables wilder research approaches, in which knowledge and cognition that exist outside of conscious human logic can take root, permeating the creative investigations with and without reason.

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5 The Dictionary of Human Geography defines 'wilderness' as "an area devoid of human habitation, cultivation, or significant use. […] Before the 18th century, wilderness was regarded as inhospitable, even dangerous, the abode of wild beasts, and the antithesis of cultivated and civilized land. In more modern times, wilderness describes an area designated as free from human exploitation." For the sake of simplicity I will define it as a place that is ecologically relatively undisturbed by human civilisation.

See: Rogers, Alisdair, Noel Castree, and Rob Kitchin. 2013. "Wilderness." In *A Dictionary of Human Geography*. Oxford: Oxford University Press. https://www.oxfordreference.com/display/10.1093/acref/9780199599868.001.0001/acref-9780199599868-e-2049.

6 Waititi, Taika, dir. 2016. *Hunt for the Wilderpeople*. Streamed. Netflix.

7 George Monbiot's 2013 book *Feral*, which "advocated the concept of letting nature manage itself and embracing natural change in the landscape" has further popularised rewilding globally.

See: Monbiot, George. 2013. *Feral: Rewilding the Land, the Sea, and Human Life*. Chicago: The University of Chicago Press.

See: Rewilding Europe. n.d. "The Rewilding Movement: From Marginal to Mainstream." Rewilding Europe. Accessed January 27, 2025. https://rewildingeurope.com/impact-stories/rewilding-movement/.

8 Rewilding Britain. n.d. "What Is Rewilding?" Rewilding Britain. Accessed January 27, 2025. https://www.rewildingbritain.org.uk/why-rewild/what-is-rewilding.

The compositions herein are varied musicalisations of personal experiences: the remembered vertigo and relief felt once summiting Ten Stop Hill as a 16-year-old (*Notes from a Wilderness*); the conflicting moods of serenity and dread brought on by the sun as it begins its setting (*Golden Hour*); the embodied, generations-old emotional yearnings for water amidst the drought in the Karoo (*Like Clay*); the mind-numbing tang that hits the tastebuds when biting into a sour grapefruit (*End of Season*). These are personal experiences with, from, and about naturally-occurring materials, landscapes and processes, which offer unique and nuanced creative milieus for composition. In turn, musicalising experiences of the natural world fosters careful thinking about our connections with its haecceities[9], thus providing fertile grounds for ecological empathy to flourish.

Importantly, the aesthetic outcome of each composition is a product of creative experimentation and does not imply any assignment of ethical value to the natural materials, landscapes, environments or phenomena under investigation.

Although I have always engaged in eco-minded creative work to varying degrees, it is in recent years that my creative practice has evolved to deal with the natural world with greater specificity and direct intentionality. In some senses, this creative direction is a result of some of the primary earth-related concerns of my generation within the global context of environmentalism.[10] Additionally, it is due to the objective reality of the environmental crisis we are currently facing. For example, as we push earth's natural habitats closer towards their demise, the number of species that have become extinct,

[9] Haecceity refers to the "thisness" of something; i.e. what makes a thing that particular thing.

[10] For example, the United Nations established their UN Environmental Programme in 1972. Perhaps it is through such establishments and the rise of technology that, by the early 90s, children of my generation were raised with an awareness of humanity's environmental impact. The destruction of the ozone layer was a big global topic when I was a child; I remember my parents taking about CFC and discussing their fridge and freezer options (CFCs were banned in 1996 in developed countries – and developing countries followed in the years after). The National Geographic channel launched in 2001 and soon spread across the world. Movies about climate crises began to populate cinema in the 2000s (*The Day After Tomorrow* (2004), *An Inconvenient Truth* (2006), *Avatar* (2009)).

See also: Cardiff University. 2023. "Millennials and Gen-Z Have Higher Rates of Climate Worry." Cardiff University. Cardiff University. July 5, 2023. https://www.cardiff.ac.uk/news/view/2730843-millennials-and-gen-z-have-higher-rates-of-climate-worry.

endangered, or extinct-in-the-wild continues to grow at an alarming rate[11] – not to mention the painful reality of disappearing habitats and environments, disallowing the restoration or rewilding of indigenous ecosystems. I am troubled and inspired by this reality.

Another aspect of this direction in my work is due to my personal need for deeper connections with 'place' and the earth – a need undoubtedly created by myriad biological, primal and personal factors, not least having uprooted and re-rooted life from and to different cities across the world: from Gqeberha to Cape Town in 2010, and from Cape Town to London in 2015.

There are some philosophical challenges that I have encountered inside this research, and which I shall address briefly here, as the scope of this dissertation does not allow for more intricate observations. I believe I speak as a responsible citizen of my generation, when I say that it is easy to find oneself in muddy philosophical waters when working with projects that are related to socio-political issues (i.e. the environmental crisis). In today's Western society, where the slightest ethical impurity is often weaponised and used against fellow well-meaning humans, it is far too easy – even lazy – to fall into the trap of reducing creative choices into moralistic endeavours, especially when an artistic project concerns, by extension, issues of an urgent political, social, or ethical nature. Note that I use the term "moralistic endeavours", not "ethical considerations" – because there is a great distinction to be made between creating music ethically, and creating music as a moralistic tool. This is not to say that my creative project does not or cannot participate in such discussions. On the contrary, the creative arts can challenge, play and experiment with philosophical and moral thought like nothing else can.

Sometimes I have questioned and wondered, to the point of overwhelm and unfeasibility, how my practice is relevant in the context of today's chaotic, confusing society that finds itself living recklessly on a damaged planet. Why am I not writing this dissertation on recycled paper, for example? A more urgent question might be: *why am I writing music and words about my own niche earth experiences,*

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[11] United Nations. 2019. "UN Report: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating.'" United Nations Sustainable Development. United Nations. May 6, 2019. https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/.

when there is so much work to be done to help and understand the natural world in a more pragmatic manner? It has been both helpful and unnerving to keep this question as a presence in the room of my research.

In other words, this practice-based research, and my composition process, is supported (not led) by my need to respond *creatively* to the environmental crisis, which is also an urgent societal issue. It is not intended to provide answers to socio-political matters, even though it carries an intrinsic scent of environmental activism. This research is fuelled by a primal love for the natural world, and is led by my creative intuition, musical interests, lived experience, embodied knowledge, and curiosity.

It is not my intention that this music conveys my experience to listeners so that they may comprehend my individual understanding. I have not composed these works as a form of storytelling. Rather, my compositions draw from personal experiences to explore *relationship* with the natural world authentically. What is heard and how it is interpreted is perhaps less important to me than the creative approaches I've taken in the investigative composition research. Of course, I hope that listeners might enjoy the music and its aesthetic qualities. Lastly, I do not necessarily wish for my music to be deeply understood, but deeply felt. At best, in the words of musicologist Denise von Glahn, I hope that this music might "sensitize listeners to ideas close to (my) heart".[12]

[12] Von Glahn, Denise. 2013. *Music and the Skillful Listener: American Women Compose the Natural World*. Indiana University Press. 266–67.

2. RESEARCH QUESTIONS

My research asks:

(1) How might the composer relate to aspects of the natural world within an artistic context?

(2) What might human-nonhuman dialogues look like in music composition?

(3) How might certain sensations and interactions experienced by the composer within natural environments be explored in musical material?

More broadly, my research also ponders the question: "What role might music play in mending our seemingly broken ties to the natural world?"[13]

These questions are probed throughout the four essays to varying degrees. The first question is addressed particularly in essay 1 (*Ways of Thinking and Knowing*). Here, I discuss different kinds of knowledge and understanding and how they are relevant to human-nonhuman relationships, and therefore to this research. The second research question led me to examine and assess my composition methods while developing my methodological framework. These methods are implemented throughout my research as they have informed the composition process behind each individual piece and are therefore discussed across all four essays. I address the third question by describing how I have created music out of nature-informed sensory experiences (essay 2: *Musicalising Sensation: an embodied approach to composition*). Furthermore, I address this question by discussing ways in which I have composed specific physical or bodily experiences (essay 3: *Topography, Temperature, Toil: tactile tools for wilder composition practices*). The third question is also investigated in essay 4, *Tending to Loss: fostering ecological care*, which looks at emotional sensibilities that often pervade my physical experiences of the natural world.

[13] Guy, Nancy. 2009. "Flowing down Taiwan's Tamsui River: Towards an Ecomusicology of the Environmental Imagination." *Ethnomusicology* 53 (2): 219. https://doi.org/10.2307/25653067.

3. TERMINOLOGY

Musicalise:

Borrowed from Von Glahn, I have chosen this word because it describes my practice better than words such as 'express', 'translate', 'simulate', 'reproduce', 'represent', etc.[14] To musicalise experiences of place, material, sensation or phenomenon can include as many different creative approaches as there are composers. In composition, 'musicalisation' can refer simply to writing music with, from, or about something subjective or objective. It is a broad term that has room for any creative approach but is especially appropriate for eco-focussed music in that it decentres, without discarding, traditional impressions of 'nature music' as something purely symbolic, illustrative, or programmatic. For me, to 'musicalise' something is to *make music of it*.

[14] Von Glahn, 2.

LITERATURE REVIEW

The well-established tradition of nature composition speaks to the far-reaching influence of natural environments on composition practices. However, with our growing awareness of current threats to biodiversity in the modern world, discussions around human-environment relationships have become more and more urgent, spurring an array of ideas around alternative ways of being, knowing, and creating.

1. SITUATING WILDERMUSIC IN THE FIELD OF NATURE-BASED COMPOSITION

Perhaps what differentiates my work most obviously from that of nature-based music of established Western classical traditions, is that I am composing music at a time of ecological crisis. The reality of the Anthropocene[15] brings with it a strong sense of grief and contemplation, as well as fear and urgency, which permeate my creative practice as I try to navigate the question of how to compose music in relation to the natural world, today.

My pieces focus on personal experience and relationship with the natural world – what it *feels like to interact* with naturally-occurring materials, phenomena and environments. My work is not so concerned with telling stories that are situated in the natural world (something that is perhaps more prevalent in purely programmatic music) as it is with musicalising personal sensory experiences of the natural world. My orchestral piece *Notes from a Wilderness* is one exception to this, specifically because the form of the piece follows the same trajectory as the physical hiking trail that inspired the work. Still, the musical material was generated predominantly out of layers of embodied knowledge of

[15] The Anthropocene is "the period of time during which human activities have had an environmental impact on the Earth regarded as constituting a distinct geological time interval". See: "Anthropocene." n.d. In *Merriam-Webster Dictionary*. Accessed October 3, 2025. https://www.merriam-webster.com/dictionary/anthropocene.

sensoria, with an emphasis on tactual sensation and other somatosensory experiences I have had in that place.[16]

This sensorial, emotional, and even spiritual approach to musicalising experiences of the natural world is different to certain ideals rooted in the Enlightenment period, in which nature is often dealt with as separate from and inferior to humanity – an irrational entity, existing 'out'side, to be tamed and controlled by human intelligence.[17] Such an approach to nature composition reinforces the very problem that environmentalists are trying to remedy: the ontological estrangement between humans and the natural world.

Given that nature-inspired music is a characteristic trait of Romanticism,[18] my research reflects some Romantic aesthetics to varying degrees. These include looking to nature for sublime inspiration, and a general inclination towards "emotion over reason" and "the senses over intellect".[19]

However, while Romanticism embraces a deep appreciation of nature's beauty and mystery, it also emphasises:

> "a heightened examination of human personality and its moods and mental potentialities; a preoccupation with the genius, the hero and the exceptional figure in general, and a focus on his or her passions and inner struggles; a new view of the artist as a supremely individual creator…".[20]

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[16] For an in-depth discussion of this piece please refer to section 3.3.: "Notes from a Wilderness".

[17] For example, Haydn's oratorio *The Creation* (1797-1798) represents humanity and nature as two juxtaposed entities. The work assigns vague harmony, hyperactive textures, and rhythmic instability to the natural world (dark, uncultivated, chaotic). This is contrasted with clear tonality, orderly textures, and transparent phrasing that symbolise the presence of light, humanity, and civilisation. This disparity highlights Enlightenment concepts of human exclusivity, and human control over nature, by way of logic and reason.

[18] Such pieces include, for example, Beethoven's *Pastoral Symphony*, Strauss' *Alpine Symphony,* and Smetana's *The Moldau,* among others.

[19] Britannica. 2024. "Romanticism." In *Encyclopedia Britannica*, edited by René Ostberg. https://www.britannica.com/art/Romanticism.

[20] Ibid.

As such, my practice differentiates from Romantic aesthetics in the following ways:

My composition methods are set up to bring aspects of the more-than-human into the creative process in tangible and intangible ways, with the aim of making room for the 'voice' and agency of the natural world at an intimate, sensory, and relational level. This *decentres* the humanness of the work and cultivates a spirit of human-nature collaboration. Please refer to my methodological framework in the following section for a more detailed description of these research methods. Additionally, and because of the above approach, my work has drawn its strongest emotional elements from empathising *with* more-than-human materialities, rather than having human emotion as a leading factor. Therefore, my practice emphasises some different creative approaches to that of typically Romantic nature-music.[21]

Lastly, while Romantic aesthetics include reaching towards nature for sublime inspiration, I do not think we can do this in contemporary practice with the same disposition, knowing what we know now: that humans are intrinsically part of nature, and that human-nature relationships are reciprocally linked to the health of the entire planet.

As such, this research employs methods to approach naturally-occurring materialities as creative collaborators as well as embodied parts of who I am, *while also* finding inspiration in them. Sometimes my practice does include explicit technical or 'rational' data from the outside world (i.e. not embodied knowledge nor intrinsic nonhuman knowledge, which are discussed in my first essay, *Ways of Thinking and Knowing*). Such explicit data is woven into my creative process as a supplementary thread, alongside my more predominant, intuitive methods.[22] This plurality of method further situates my work in a contemporary context.

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[21] I allude to emotional aspects of composing with the other-than-human throughout this dissertation, but in my fourth essay, *Tending to Loss: fostering ecological care*, I go into greater detail on the matter.

[22] *Like Clay* is possibly my most 'scientific' piece at surface level. Still, I disrupted the strict molecular structures by redrawing them in freehand sketches – introducing intuition and tactile sensation early on in the composition process. In *November moon readings* I used the human construct of moon phases as a starting point for shaping the piece into five distinct sections, after which I composed the material through methods of physical experimentation with foliage and percussion instruments.

2. SITUATING WILDERMUSIC IN CONTEMPORARY CREATIVE PRACTICE

Some composers whose works engage in similar discourse to mine include Libby Larsen, Liza Lim, and James Weeks.

Libby Larsen's *Downwind of Roses in Maine* (2009), for flute, clarinet and percussion, is a musical expression of the composer's experience of being unexpectedly entranced by the scent of a hidden hedge of wild roses amid an otherwise urban environment. Larsen translates the sensorial experience into musical material using orchestration and dynamics to embody its ephemeral movement through air. Some of my work also addresses scent, though slightly differently: in *Museum of Citrus* (the fifth song in *End of Season*), citrussy smells are musicalised through text settings, harmonic choices, instrumentation, and the handling of different registers. In *November moon readings*, it is the performance space that is infused directly with fragrance. What is striking about Larsen's piece is its ability to blur the lines between sound and smell, probing the boundaries of our senses.[23]

Larsen's *Missa Gaia: Mass for the Earth* (1992), for chorus and mixed ensemble, which is "a credo for those of us who wish to take care of the planet" is another example. Here she combines multiple texts by various authors who have written about the earth in ways that challenge anthropocentricism, including American writer and environmental activist Wendell Berry, medieval mystic Meister Eckhart, Native American poet Maurice Kenny, and others. Her choice of multiple diverse texts reflects her interests in current discourses in ecological thought, including the grief-stricken reality of the environmental crisis.

Liza Lim writes that the "bewildering 'effects' of the Anthropocene entangle us just as we are entangled in them", that "their doom-laden, freakish power has crept into the aesthetic repertoire of artists in a

[23] For a comprehensive discussion on this piece in relation to some of Larsen's other works, see Von Glahn (2013), 266-273.

myriad of responses".[24] Lim's works are concerned with human-nature collaboration, and how processes and events occurring in the natural world can inform composition approaches.

Lim's *Extinction Events and Dawn Chorus* (2018), for twelve musicians, is concerned with human-nonhuman connections in reference to ecological time. Musical temporality is central to the work, while the piece incorporates a variety of creative means, including: alterations to standard performance techniques of certain instruments; extensive use of repetition and variation; found objects (including a large sheet of crackly plastic that is passed over the ensemble); vague references to historical Western classical music; and mimesis in the form of "a direct transcription of the drumming and low popping sounds of a number of reef fish".[25] This mixture of creative methods feels similar to the ways I have come to compose my portfolio: combining a variety of creative approaches that include various forms of knowledge, as well as pre-planned approaches, and methods that are discovered through collaborative interaction with other-than-human elements.[26]

In *Multispecies Knots of Ethical Time* (2023), for fifteen musicians and film, Lim makes room for the voice of the Eigenthal-Rümlig river through the mediums of video and audio recordings, combining this with live performance. Here, Lim sets up tactile experiments between the river and violinist and explores the concept of nonhuman entities as beings that deserve moral and political consideration. She describes the work as "a meditation on the possibility of a radical imagination of otherness and an expanded sense of personhood and something that should be treated as such, both morally and politically."[27] This kind of experimental collaborative approach with the more-than-human connects

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[24] Lim, Liza. 2020. "An Ecology of Time Traces in Extinction Events and Dawn Chorus." Contemporary Music Review 39 (5): 1–20. https://doi.org/10.1080/07494467.2020.1852800.

[25] Lim (2020).

[26] For example, in *End of Season*, a piece about a place I do not know very well, I tried to navigate ways to avoid a sort of cultural appropriation (of human and other-than-human cultures) while musicalising my experiences in that place. Accordingly, I sought to make space for the voice of the place in my music in a literal way. I incorporated naturally-occurring plant and earth materials found on a mountain near the same village that the piece is written about (and in which the premiere was held), to create shakers for the performance. We returned the materials to their original environment after the performance. This creative approach came about because of the fact that I was not familiar with the place to begin with, and because of my intention to navigate a collaborative relationship with it. See more in 1.3.5.: "Composing with an unfamiliar place: *End of Season*."

[27] Lim, Liza. 2023. "Multispecies Knots of Ethical Time - Who Are We and Who Else Is Here?" Liza Lim. December 11, 2023. https://lizalimcomposer.com/2023/12/11/multispecies-knots-of-ethical-time-who-are-we-and-who-else-is-here/.

with my discussion of new materialism in section 1.3.1., in which I also discuss the work of Nell Catchpole and Bennett Hogg.

James Weeks' *Weligwic* (2019) for orchestra explores "the theme of our indwelling within the natural world" through musicalising experiences of a dimly lit woodland environment. He does this with gentle, subdued dynamics, and transient melodic gestures that are difficult to grasp – akin to the glistening and dappling of light among tree leaves.[28] The middle section introduces a muffled flow of variegated musical textures, embodying a sense of forest wandering – perhaps a consequence of the curiosity created by the opening section's flickering objects.[29] This composition approach feels similar to the 'amalgamation' of knowledges to which I referred earlier: the composer has encountered willow trees, and has come to know the phenomenon of light on and through their leaves through lived experience. The piece also incorporates observations of nonhuman intrinsic knowledge: the dynamic relationship between sunlight and leaves and the phenomenon of dappled light.

Musicalising the effects of sunlight on material objects resonates with my own compositional approach in my piece *Golden Hour,* which I discuss in section 3.2. I have found that *Golden Hour* seems to resonate with many other works inspired by experiences of sunlight.[30] Tristan Murail's *Thirteen Colours of the Setting Sun* (1978) is of particular interest: like *Golden Hour,* it addresses a similar time of day, and it is composed for an almost identical instrumentation.[31] However, the Murail is primarily concerned with musicalising the colours of a vast sky as the sun sets, while my piece, like Weeks' *Weligwic,* focusses on how materials on the surface of the earth are affected by light. Peter Davidson's *The Last of the Light: About Twilight* is an invigorating study into art and poetry that deals with

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[28] Weeks, James. 2019. "Weligwic – James Weeks." Jamesweeks.org. 2019. https://jamesweeks.org/music/weligwic/.

[29] Weeks, James. 2019. Weligwic. University of York Music Press. https://www.uymp.co.uk/publications/james-weeks-weligwic.

[30] Examples include Peter Sculthorpe's *Sun Music* for orchestra, which embodies the weight and dynamic energy of the sun scorching Australian landscapes, and George Haas' *Solstices,* which tells a story of sunlight overcoming darkness.

See: Sculthorpe, Peter. 1965. *Sun Music I.* 3rd ed. London: Faber Music. https://www.fabermusic.com/music/sun-music-i-943

See also: Haas, George. 2018. *Solstices.* Berlin: Ricordi. https://www.ricordi.com/en-US/Catalogue.aspx/details/443149.

[31] Murail, Tristan. 1978. *13 Couleurs Du Soleil Couchant*. Editions Musicales Transatlantiques. https://www.wisemusicclassical.com/work/43914/13-couleurs-du-soleil-couchant--Tristan-Murail/.

twilight in all its variations. Although it draws only from European sources, it is an informative study on the influence of sunlight on the human experience.[32]

James Weeks also uses plant materials in his works, as in *weedweaver* (2021) for violin, double bass, guitar and bass clarinet. In addition to playing the acoustic instruments in a conventional fashion, picked weeds are used as musical devices. This includes using weeds to play string instruments, whereas the clarinettist blows air through fine-leafed foliage, creating discreet white noise.[33] Similarly, in *November moon readings,* I combine foliage with ordinary acoustic instrumental playing: rosemary sprigs, lime leaves, and eucalyptus are used as percussion beaters.[34] This is a further development of the use of plant matter in live concert settings.

In *Walking,* the fourth song in my song cycle *End of Season,* I employ naturally-occurring materials collected from the local environment in the shakers that the audience play. In *Museum of Citrus,* the fifth song, I had different citrus fruits physically present with me during the composition process, and I used their fragrances and tastes to influence harmony, instrumentation, and my choice of registers for the musical material. This is discussed in section 2.1.: "Taste and smell: *Museum of Citrus".*

Considering my physical, direct interactions with naturally-occurring materials and environments, my work echoes some of the methods often used by electronic sound artists. For example, David Dunn creates sound art works that investigate human-nonhuman relationship through "real-time performance interactions in wilderness spaces where the resulting events reflect a larger system of mind, inclusive of myself and these other living systems".[35] His site-specific work *Entrainments 2* (1985) engages with California's Cuyamaca Mountains. Here, Dunn knits together several creative strands: pre-recordings, made in situ, of performers verbalising their experiences of the landscape; drone sounds generated from astrological configurations; and live audio recording and playback of the

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[32] Davidson, Peter. 2015. *The Last of the Light*. London: Reaktion Books.

[33] Weeks, James. 2021. "Weedweaver – James Weeks." Jamesweeks.org. 2021. https://jamesweeks.org/music/weedweaver/.

[34] This is discussed further in section 1.3.4.: "Incorporating the nonhuman: *November moon readings*."

[35] Dunn, David. 1997. "Nature, Sound Art and the Sacred." https://www.davidddunn.com/~david/writings/terrnova.pdf.

environment's soundscape.[36] Similarly, Hildegard Westerkamp's *Kits Beach Soundwalk* (1989) is a recording of a beach environment over which the composer speaks. Talking over and between recorded beach sounds, she describes her multi-sensory experience of walking on the beach, the emotional connotations of certain sounds, and some fragmented stories – even dreams – that arise from the materials she encounters in the landscape.[37]

There are some similar objectives here: a mixture of creative processes that include collaborative participation with places and materials (intrinsic material knowledge); experiential cognition of physical materials (embodiment); and music-making as a vehicle for exploring human-environment relationships (memory, emotion, sensation, vitality). However, within this research, I am working in a different medium to Hildegard and Dunn: my practice is that of notated instrumental composition rather than electronic sound art. Furthermore, my research portfolio does not incorporate soundscape music, field recordings, or methods of transcriptions.[38]

Carola Bauckholt's *Doppelbelichtung* (2016) uses transcription as a basis for instrumental composition. Here, a solo violin imitates recorded bird song, while the recorded birdsong is manipulated digitally and played through small speakers secured inside of multiple violins that are spread out around the performance space. Her composition method bends both its human and nonhuman elements towards each other, revealing limitations and possibilities of both the violin and the birdsong recordings.[39]

Composer-zoomusicologist Emily Doolittle employs a similar approach in much of her work (sampling natural world sounds). In *Social sounds from whales at night* (2007), Doolittle uses sound recordings

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[36] "Soundscape" is a term coined by R. Murray Schafer. See: Schafer, R Murray. 1994. *The Soundscape: The Tuning of the World*. Rochester, Vt.: Destiny Books ; United States.

[37] Westerkamp, Hildegard. 2015. "Hildegard Westerkamp - Kits Beach Soundwalk (1989)." YouTube Video. *YouTube*. https://www.youtube.com/watch?v=hg96nU6ltLk.

[38] Although I find such methods valuable in their own ways, my creative tendency towards writing instrumental material for live performance is possibly due to my strong interest in physicality and tangibility, and so the option to work with musicians directly seems somehow more appealing.

[39] Bauckholt, Carola. 2016. *Doppelbelichtung*. Edition Peters. https://www.wisemusicclassical.com/work/64319/Doppelbelichtung--Carola-Bauckholt/. See also: Score Follower. 2020. "Carola Bauckholt — Doppelbelichtung [W/ Score]." YouTube Video. YouTube. https://www.youtube.com/watch?v=B_UcXMeoQpA.

of whales socialising as its own musical line from which to compose material for a human soloist to perform.[40] Although both Bauckholt's and Doolittle's works are written for electronics (the recordings of wildlife) and a human soloist, their handling of the relationship between the two elements is different: in *Social sounds from whales at night*, the human part can be performed by any melodic instrument (including voice), and includes forms of improvisation in which the musician is asked to mimic the whale sounds (without notation). This presents a different relationship between the human and nonhuman elements than in *Doppelbelichtung,* in which the soloist's musical material is completely prescribed.

Although technically outside the Western classical tradition, I would like to mention Cosmo Sheldrake's album *Wake Up Calls* which utilises birdsong recordings from species that are on the UK's red and amber lists of endangered birds, underscoring the troubling reality of the loss of British bird species. Sheldrake takes recordings and processes them – perhaps most obviously through a vocoder technique – in order to create a sense of tonal harmony and regulated rhythm, from which he creates pop-folk songs, often with a childlike feel.[41]

A different but perhaps more direct form of imitation – via the method of sonification – is used in John Luther Adams' sound and light installation *The Place Where You Go to Listen*. Working within eco-minded contemporary music, this is one of the composer's many creative responses to his close relationship with Alaskan landscapes and environments.[42] Adams has set up this ever-changing installation piece at the Museum of the North, which reacts to changes in geophysical forces of Interior Alaska in real time.[43] *The Place Where You Go to Listen* translates collected data into sound, in an effort to better understand that place through listening. It asks, "how can this place or phenomenon

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[40] Doolittle, Emily. 2007. *Social Sounds from Whales at Night*. Edition Peters. https://composersedition.com/emily-doolittle-social-sounds-from-whales-at-night/.

[41] Sheldrake, Cosmo. 2000. *Wake up Calls (Album).* Streamed. Cosmo Sheldrake. https://open.spotify.com/album/74ExKX0TXhIQE30UrTiPlD?si=m3WeUhM0RkCZgRuwFAnM_g.

[42] Adams, John L. 2021. "John Luther Adams - Works." John Luther Adams. 2021. https://www.johnlutheradams.net/works/electronic-and-installations.

[43] University of Alaska. n.d. "The Place Where You Go to Listen | Museum | Museum of the North." University of Alaska. https://www.uaf.edu/museum/exhibits/galleries/the-place-where-you-go-to/.

be better understood through sound?". My works also aim for a deeper understanding of place and phenomena, but through a rather different method, asking "what does it feel like to be in this place or experience this phenomenon?".

Adams' *Three High Places,* for solo violin, is another of his Alaska-inspired pieces, this one more aligned with my composition practice.[44] Here, Adams musicalises aspects of cold, icy, remote Alaskan landscapes and phenomena by fully saturating the material with natural harmonics and open strings. The entire piece is therefore played without the musician ever pressing a string down fully. This feels appropriate given the stark inaccessibility of Alaskan landscapes to human hands. I appreciate the tactile implications of this choice: it resonates with my approach to the use of violins in musicalising tactility in *Like Clay* (see 3.1.2.: "Violins and tactility"), as well as my broader research on tangibility and somatosensory musicalisations, as discussed in my third essay, *Topography, Temperature, Toil: tactile tools for wilder composition practices*. Lastly, the piece was written in memory of the composer's friend Gordon Wright, and I touch on this in section 4.2.: "Rituals of grieving: *Golden Hour"*.

This sensitivity to human-nonhuman relationships in a time of environmental crisis has permeated my composition process in various ways, which are detailed in the ensuing essays.

3. WILDERMUSIC AND ECOMUSICOLOGY

My doctoral research is positioned primarily as composition practice, and so inevitably this chapter leads with practice-centred examples. However, the research also exists within the context and purview of ecomusicology because it investigates relationships with, and experiences of, naturally-occurring materials and environments. Aaron S. Allen, a leader in ecomusicology, defines the field as "the study of music, culture, and nature in all the complexities of those terms." It considers "musical and sonic issues, both textual and performative, related to ecology and the natural environment."[45]

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[44] Adams, John L. 2007. *Three High Places (in Memory of Gordon Wright)*. Taiga Press.

[45] Allen, Aaron S. 2013. "Ecomusicology." *Grove Music Online*, July. https://www.oxfordmusiconline.com/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-1002240765.

Ecomusicology, as a recognised academic field, is a relatively young and dynamic area of research.[46] Perhaps its age emphasises once again the fairly recent societal shifts that have occurred in our human understanding of, and relationship to, the natural world.[47] Over the last ten to fifteen years, the field has gained momentum, with researchers such as Denise Von Glahn, Jeff Todd Titon, and Aaron S. Allen making substantial contributions. This varied field of scholarship continues to be influenced by diverse ranges of interest, including but not limited to environmental studies; practices of aural biophilia;[48] eco-ethics in music research and practice; musical responses to the climate crisis; cultural geography; gender and sexuality studies; and the contextualisation of climate change.[49]

Environmentally-themed music symposia and meetings have emerged internationally across music institutions. Some examples include *Hearing Landscape Critically: Music, Place, and the Spaces of Sound,* a collection of meetings hosted by the Hearing Landscape Critically network at the universities of Stellenbosch, Oxford, and Harvard (2012-2016); *Music Studies on a Damaged Planet: Sound Responses to Environmental Breakdown,* a symposium held by the Institute of Musical Research, UK (2020); and *Rethinking Landscape: Environment, Place, and Heritage in British Music Studies*, hosted by the North American British Music Studies Association (2025).

In her book *Music and the Skillful Listener: American Women Compose the Natural World,* Denise Von Glahn analyses the works of nine composers and explores the explicit and implicit roles of the natural world in each composer's lives and compositions. She sorts their distinct creative approaches into three

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[46] The first ever international ecomusicology meeting took place in 2012 in New Orleans.

[47] Von Glahn writes, from a North American context: "the range and reach of economic, political and social transformations that occurred during that time upended traditional assumptions and attitudes regarding sexual behaviour, racial (in)equality, religious beliefs, gender roles, and the relationship of humans and an ever-expanding environment to a degree unmatched in recent history. The number of government agencies, acts, and initiatives that were created between the 1940s and the 1970s and dedicated to some aspect of national and/or environmental health speaks to one aspect of a paradigm shift in public thinking".
See: Von Glahn (2013). 207.

[48] Biophilia is "a hypothetical human tendency to interact or be closely associated with other forms of life in nature: a desire or tendency to commune with nature".
See: "Biophilia." n.d. In *Merriam-Webster Dictionary*. Accessed November 8, 2020. https://www.merriam-webster.com/dictionary/biophilia.

[49] Pedelty, Mark. 2013. "Ecomusicology, Music Studies, and the IASPM: Beyond 'Epistemic Inertia.'" *IASPM Journal* 3 (2): 33–47. https://doi.org/10.5429/2079-3871(2013)v3i2.3en.

categories: “Nature as a Summer House”; “Nature All Around Us”; and “Beyond the EPA and Earth Day”. This study played a key role in the initial formation of my research and has led me to carefully consider my own relationship to the natural world and what its role is, and could be, in my compositions.[50]

Originally published in 2015, *Current Directions in Ecomusicology: Music, Culture, Nature* is a collection of nineteen essays that contribute to the field of ecomusicology. It brings together varied perspectives from twenty-two authors and a range of specialisms, exemplifying the “multi-perspectival field” that is ecomusicology.[51] Perhaps most relevant to my research are the essays by Sabine Feisst and Denise Von Glahn. Feisst’s *Negotiating Nature and Music through Technology: Ecological Reflections in the Works of Maggi Payne and Laurie Spiegel* investigates ways in which two different composers create ecologically-conscious sound art, situating their work within ecofeminist studies.[52] Von Glahn’s *Musical Actions, Political Sounds: Libby Larsen and Composerly Consciousness* looks at Libby Larsen’s work *Deep Summer* and analyses ways in which the composition reflects Larsen’s personal relationship with landscapes of the Upper Midwest, USA, as well as how her practice reflects environmentalist and ecofeminist thought.[53] Although my work does not engage directly in ecofeminist theory, its themes are connected to my research through common interests: recognising oppression in human-nature relationships and critiquing human superiority over the environment.[54]

As my research methods rely heavily on embodied knowledge and experiential cognition, Tim Ingold’s work has helped me to refine parts of my methodological framework, particularly his notion of

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[50] Von Glahn (2013).

[51] Allen, Aaron S, and Kevin Dawe. (2015) 2017. *Current Directions in Ecomusicology : Music, Culture, Nature*. 1st ed. New York: Routledge.

[52] Feisst, Sabine. 2017. “Negotiating Nature and Music through Technology: Ecological Reflections in the Works of Maggi Payne and Laurie Spiegel.” In *Current Directions in Ecomusicology : Music, Culture, Nature*, edited by Aaron S Allen and Kevin Dawe, 245–57. New York: Routledge.

[53] Von Glahn, Denise. 2017. “Musical Actions, Political Sounds: Libby Larsen and Composerly Consciousness.” In *Current Directions in Ecomusicology : Music, Culture, Nature*, edited by Aaron S Allen and Kevin Dawe, 258–72. New York: Routledge.

[54] See: Miles, Kathryn. 2018. “Ecofeminism: Sociology and Environmentalism.” In *Encyclopædia Britannica*. https://www.britannica.com/topic/ecofeminism.

'meshwork' (which conceptualises human-environment connections and the complexities of embodied knowledges) in *The Life of Lines.*[55] Additionally, his discussions around experiential cognition – specifically, learning through touching, doing, and moving – in *Being Alive: Essays on Movement, Knowledge and Description*[56] have inspired my considerations of musicalising tangibility and proprioception, which I unfold throughout my third essay, *Topography, Temperature, Toil: tactile tools for wilder composition practices*.

Zvominir Nagy's *Embodiment of Musical Creativity: The Cognitive and Performative Causality of Musical Composition* offers deep insights into multimodal aspects of creativity.[57] Nagy, who is both a composer and academic, investigates mind-body interconnections involved in creativity, through the method of composition. This study offers a psychological perspective on composition practice through the framework of embodiment, and it has helped me reflect on my creative process in terms of cognitive processes and the physical activities involved in my composition practice, as discussed in my first essay, *Ways of Thinking and Knowing.*

Jane Bennett's *Vibrant Matter: A Political Ecology of Things* is a foundational and comprehensive text in new materialism.[58] Here, Bennett investigates and conceptualises material agency and interrelationships between animate and inanimate objects in our world. This is relevant to ecomusicological discourse because she challenges the human-nonhuman divide, reframing the politics and power of materials and, by extension, our environment. This echoes Liza Lim's consideration of nonhuman politics in *Multispecies Knots of Ethical Time*, mentioned earlier in this section.

My reflections of the sensory and embodied aspects of my portfolio have been nourished by Margit Brünner's *Constructing Atmospheres: Test Sites for an Aesthetics of Joy,* which is an inspiring account

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[55] Ingold, Tim. 2015. *The Life of Lines*. Abingdon; New York: Routledge.

[56] Ingold, Tim. 2011. Being Alive: Essays on Movement, Knowledge and Description. Abingdon; New York: Routledge.

[57] Nagy, Zvonimir. 2017. Embodiment of Musical Creativity: The Cognitive and Performative Causality of Musical Composition. London: Routledge.

[58] Bennett, Jane. 2010. *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press.

of her place-informed arts practice based in the South Australian outback.[59] Her work combines visual-arts practices and architecture as mediums for exploring human-environment relationship, and it is underpinned by philosophical theories from Spinoza and Deleuze. In a similar spirit to Brünner, I refer to Deleuze in my writing about sensoria and becoming, referencing the "zone of indiscernibility or undecidability" in his analytical text *The Logic of Sensation*[60] (see 2.3.: "Becoming other: the sensory and the sensuous").

My research is situated near Soosan Lolavar's *Embodied Research Through Music and Evocative Life-Writing: Disrupting Diaspora,* in that both studies use specific personal experiences as a basis for composing notated instrumental music. Additionally, as Lolavar writes from a composer's perspective, her practice-based writing has helped me to navigate my own writing of this dissertation.[61]

For a wide range of discussions around environment studies and their current social and cultural interminglings, the *Routledge Companion to Landscape Studies* should be consulted.[62] Pertinent entries include George Revill's *Landscape, Music and Sonic Environments*, which evaluates landscape-based sound art and how its developments have challenged established conceptions of landscapes.[63] Also notable is Emma Waterton's *More-than-representational landscapes,* which takes a 'more-than-representational' or 'non-representational' theoretical lens and applies it to landscape studies – describing this lens as "a way of *thinking about thinking* that brings together cognition with impulse, intuition and habit, with no easy way of cleaving them apart".[64,65] Robin Parmer's *Listening to Places:*

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[59] Bru̇nner, Margit. 2015. Constructing Atmospheres: Test-Sites for an Aesthetics of Joy. Baunach: Spurbuchverlag.

[60] Deleuze, Gilles, and Daniel W Smith. 2017. *Francis Bacon: The Logic of Sensation*. London: Bloomsbury Academic.

[61] Lolavar, Soosan. 2024. Embodied Research through Music Composition and Evocative Life-Writing. Taylor & Francis.

[62] Howard, Peter, Ian H Thompson, and Emma Waterton. (2013) 2019. *The Routledge Companion to Landscape Studies*. 2nd ed. Abingdon; New York: Routledge.

[63] Revill, George. 2019. "Landscape, Music and Sonic Environments." In *The Routledge Companion to Landscape Studies*, edited by Peter Howard, Ian Thompson, Emma Waterton, and Mick Atha, 264–73. Abingdon; New York: Routledge.

[64] Waterton, Emma. 2019. "More-Than-Representational Landscapes." In *The Routledge Companion to Landscape Studies*, edited by Peter Howard, Ian Thompson, Emma Waterton, and Mick Atha, 92. Abingdon; New York: Routledge.

[65] This kind of 'lens' is an important part of my methodological framework and it is applied in various shades throughout this research. It is discussed more specifically in essay 1, *Ways of Thinking and Knowing.*

exercises towards environmental composition is a helpful tool for composers, teachers, and musicians who are interested in bringing place-based thought into their work.[66]

Emotional aspects surrounding the climate crisis, which I have found to be pertinent to eco-minded musical endeavours, are explored and labelled in Glenn Albrecht's *Earth Emotions: New Words for a New World,*[67] while Paul Bogard's *Solastalgia: An Anthology of Emotion in a Disappearing World* addresses similar aspects in a collection of diverse essays from thirty-four writers.[68]

Broader, more extensive investigations and provocations around ecological thought, and relationships between humanity and the earth, can be found in Donna Haraway's *Staying with the Trouble: Making Kin in the Chthulucene* [69] and James Bridle's *Ways of Being: Animals, Plants, Machines: The Search for a Planetary Intelligence.*[70]

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[66] Parmar, Robin. 2022. Listening to Places: Exercises towards Environmental Composition. Belfast: Northside Printing.

[67] Albrecht, Glenn. 2019. *Earth Emotions: New Words for a New World*. Ithaca London Cornell University Press.

[68] Bogard, Paul. 2023. *Solastalgia*. University of Virginia Press.

[69] Haraway, Donna. 2016. *Staying with the Trouble: Making Kin in the Chthulucene*. Durham: Duke University Press.

[70] Bridle, James. 2022. *Ways of Being*. Farrar, Straus and Giroux.

METHODOLOGICAL FRAMEWORK

Composition is the driving method with which I have been able to stir my curiosity about my experiences of earth's vast material and phenomenological haecceities.

Within this practice-based research, I have worked with various natural environments and materialities that have saturated my 'human becoming'.[71] Using composition as the fundamental method of research, each individual piece is made up of tailor-made combinations of knowledge and source materials, including: knowledge gained through lived experiences with naturally-occurring vitalities; intentional engagement with naturally-occurring vitalities; creative intuition; and of course, my own musical interests and skills. Where appropriate, I draw on technical and scientific data (explicit knowledge), which can help to better understand aspects of my lived experiences.

As such, the pieces are different to each other in terms of instrumentation, performance contexts, collaborative components, and composition processes. They have also taken on different shapes according to the project brief and other practical constraints.

For each composition, the making process presents different opportunities to make space for, and listen to, the nonhuman 'other', with intentionality. This could take place in the form of spending time listening in a particular landscape, in person; exploring tangible materials and their sound-making possibilities; remembering experiences of a material or place in detail; or simply trying to experience the sun on my face at a certain time of day to feel its effects on my skin.

If a pebble could speak, what might it say to me?

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[71] See Tim Ingold's discussion on 'human being' as 'human *becoming*' in his chapter "to human is a verb" in *The Life of Lines* (Ingold, 2015).

By bringing naturally-occurring vitalities (tangible or imagined) into a collaborative position within the creative space, preconceived hierarchical structures within the composition process begin to dissolve, at least in part.[72]

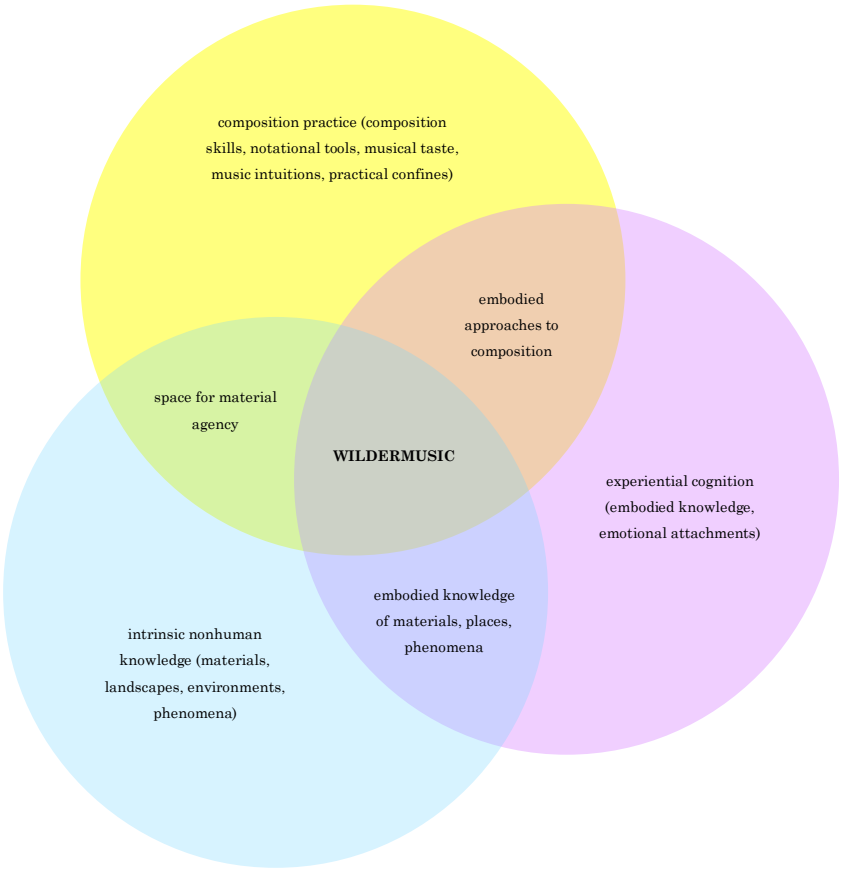

Fig. 3: A diagram describing the merging and overlapping of different forms of knowledge and source materials that frame my *Wildermusic* research.

For me, this approach spawns a unique creative environment in which possibilities for musical gesture, timing, form and direction can be freshly conceived. Of course, there are inescapable rational musical decisions that a composer must make in order to construct a 'piece of music' that is somewhat satisfying and complete. What, then, is the purpose of striving to decentre purely human logic in this process? It is to allow creative and philosophical space for nonhuman vitalities to have a presence in the music. It is the *posture* of the composer towards less logical forms of knowledge, such as material agency and embodied knowledge, which is an exciting and useful method within the creative process.

[72] For example, the favouring of pre-determined musical structures over structures or materials that emerge organically through encounters with others – human or nonhuman.

Additionally, it is necessary that I do not disregard the importance of human emotion in the interconnected process of my composition practice, and that I allow my emotional instincts to be part of the procedure. To completely remove emotional sensibilities from the creative process would be to oversimplify the concepts described above. As Brünner states:

> "A purely materialistic understanding of space [or, in my case, natural environments, phenomena, and materials] may lead to an emotional distancing from the environment, contributing to the social and ecological problems that currently prevail on a global scale".[73]

I aim to empathise and relate with certain materials and places; to try and hold in my mind and body a little of what they might feel; and to allow these vitalities to inform certain aspects of the musical material. What emerges out of these methods is a continuous intra-active[74] dialogue that is in constant flux within the creative process. It is a shifting, unpredictable part of this research. In making space for the 'other' and recognising the inherent knowledge and value in naturally-occurring materials, landscapes, environments and phenomena, a wider scope of possibilities for the creative process begins to develop, infusing my practice with opportunities for adopting new perspectives and connections. With this approach I am therefore able to address my research questions with greater vigour.

At this point I would like to acknowledge the role of the musicians in creating a new piece of music. The musical intentions of the performers, and their investment in the realisation of the score contributes to the outcome of the piece. However, for the sake of this research, I will be focussing on how I have come to compose the musical material, rather than aspects of the rehearsal process.

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[73] Brünner, 12.

[74] Whitney Stark describes intra-action (first coined by Karen Barad) as "a dynamism of forces in which all designated 'things' are constantly exchanging and diffracting, influencing and working inseparably".

See: Stark, Whitney. 2016. "Intra-Action." New Materialism. August 15, 2016. https://newmaterialism.eu/almanac/i/intra-action.html. Accessed 5 October 2025.

For a comprehensive understanding of intra-action, see: Barad, Karen. 2007. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham; London: Duke University Press.

See also: Juelskjær, Malou, and Nete Schwennesen. 2012. "Intra-Active Entanglements – an Interview with Karen Barad." *Kvinder, Køn & Forskning*, no. 1-2 (March). https://doi.org/10.7146/kkf.v0i1-2.28068.

OUTLINE OF COMPOSITIONS

I invite you to navigate the next few chapters by taking a pause here to become familiar with the five scores and recordings in the portfolio presented with this dissertation

1. LIKE CLAY

Duration: 8.5 minutes

Link to recording: https://on.soundcloud.com/ZKgE3THd1CvciQoPA

Instrumentation: two violins

Introduction to the piece:

Like Clay explores the physical vitalities present in clay mineral. Here I experimented with sound texture, timbre, and violin techniques to explore tangible aspects of clay, particularly in relation to the ground with which we move.

2. GOLDEN HOUR

Instrumentation: Mixed chamber ensemble

Duration: 15 minutes

Link to recording: https://on.soundcloud.com/5SGgRU5ucerYMSAE6

Introduction to the piece:

Golden Hour musicalises the effects of sunlight on the earth's surface just before the sun starts to set. Landscapes glimmer gently as objects are illuminated by soft, hazy hues of filtered light. Mosses and lichens glow with deep fluorescence; leaves and grasses twinkle as they catch the golden rays.

3. NOVEMBER MOON READINGS

Duration: 21 minutes

Link to recording: https://youtu.be/93qEM4Aeaoc?si=sz6Jg7oOY1hhjjw6

Instrumentation: Large percussion instruments, for three percussionists

Introduction to the piece: *November moon readings* was initially inspired by my sighting of the moon from my neighbourhood (Sutton, UK) in late November 2023, when air temperatures were so cold that the water vapour in the upper atmosphere froze into tiny ice crystals. This caused the moonlight to refract and disperse to create a spectacle that is commonly known as a moon halo. The light of the halo glowed with rainbow colours. It was the first time I had seen this phenomenon. In this piece I intermingle sounds, scents, lighting and choreography to explore my relationship with different phases of the moon in a multisensorial context. The musical material and the choreography came about through experimentation with the musicians in the workshops. I explored musical, tactile, and olfactory characteristics and limitations of plant materials (rosemary sprigs, lime leaves, and eucalyptus sprigs) and percussion instruments, as well as that of the performance space.

4. NOTES FROM A WILDERNESS

Duration: 6.5 minutes

Link to recording: https://www.youtube.com/watch?v=m3yPSA2MlUg

Instrumentation: Symphony orchestra, including saxophone quartet

Introduction to the piece: *Notes from a Wilderness* is inspired by my detailed account of a hike I did along the Emerald Pool route in the Groendal Wilderness Area (South Africa) many years ago, as a 15-year-old scout. At the time, I documented the adventure in my hiking logbook, which I still possess today, and which played an integral part in shaping the musical material of the piece. Much of my creative process involved finding ways to musicalise my multi-sensory, visceral experiences of the geological features, climate, and vegetation as recorded in my logbook. Additionally, I drew from my embodied memory of the wider area, having hiked through that wilderness many times.

5. END OF SEASON

Duration: 30 minutes

Link to recording: https://on.soundcloud.com/pjLzpudpCahwCybo8

Instrumentation: Voice and mixed ensemble

Introduction to the piece: *End of Season* is a song cycle of six songs, with text by Clare Best. I chose six out of the fourteen poems in Clare's *End of Season* collection. The poems describe her experiences in Cannero Riviera, Italy (which sits on the west side of Lake Maggiore) and her relationship with its landscapes and seasons. Clare's love for and familiarity with the place is articulated through multisensorial detail in her text. My composition process included visiting Cannero with Clare, walking the hills together and individually, and talking about the poems and her experiences there. The premiere took place in Cannero.

A list of performers in each recording is available in Appendix A.
A list of instrumentation for each piece is available in Appendix B.

Fig. 4: Karoo landscape, near Graaff-Reinet, October 2024.
Fig. 5: Tree stump in Loveland, CA, June 2023.
Fig. 6: Exploring mud along the Dollis Valley Greenwalk, North Finchley, 2021.
Fig. 7: Big rock in the Cederberg Wilderness Area, March 2023.

PRELUDE

WILDERMUSIC ESSAYS

1. WAYS OF THINKING AND KNOWING

2. MUSICALISING SENSORIA:

AN EMBODIED APPROACH TO COMPOSITION

3. TOPOGRAPHY, TEMPERATURE, TOIL:

TACTILE TOOLS FOR WILDER COMPOSITION PRACTICES

4. TENDING TO LOSS:

FOSTERING ECOLOGICAL CARE

1. WAYS OF THINKING AND KNOWING

In this essay, I will discuss different kinds of understanding and illustrate how they have formed an integral foundation for my creative research.

> "(ethno)musicological studies of place have focused predominantly on social perception and musical construction, with far less attention being paid to environmental materiality, to the affective bonds with nonhuman elements (sentient or otherwise), or to the perception and experience of the physical environment."[75]

1.1. Overview

I would like to highlight three kinds of understanding that ground my composition practice. As described in the methodology section, these kinds of understanding include experiential cognition, embodied knowledge, and intrinsic nonhuman knowledge. These kinds of understanding interact with my composition process in different ways, and I will discuss them within this chapter. It is firstly important to delineate the differences between them:

Experiential cognition:

Thinking and knowing that occurs by way of doing things and being alive (i.e. interactions with the world).

Embodied knowledge:

Knowledge that results from repeated experiential cognitions (as described above). This includes ways of knowing that form out of sensory experiences, as well as visceral emotional occurrences.

[75] Guy, 219.

Intrinsic nonhuman knowledge:

I have chosen this phrase for specific knowledge that is inherently held within a material, landscape, environment or phenomenon – in other words, instinctual or natural behaviours and understandings of nonhuman entities, which we as humans may or may not know or understand.

During this research it has become clear that there is a particular relationship that exists between experiential cognition (and by extension, embodied knowledge) and intrinsic material knowledge (in/of the natural world) in my composition practice. Both ways of thinking feed into each other and it is not clear which is predominant:

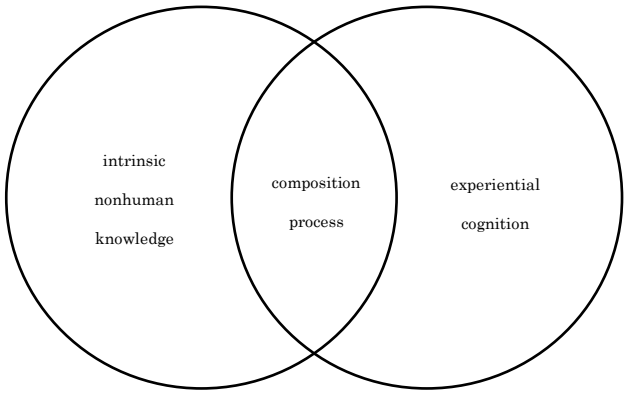

Fig. 8: A diagram describing the relationship between intrinsic nonhuman knowledge, experiential cognition, and the resulting composition process.

My creative process and its corresponding musical material arise out of this blend of intrinsic nonhuman knowledge and personal experiential cognition. However, it is a reciprocal relationship, and it is also true that experiential cognition occurs during and *because of* creative interactions with nonhuman entities like naturally-occurring materials and phenomena:

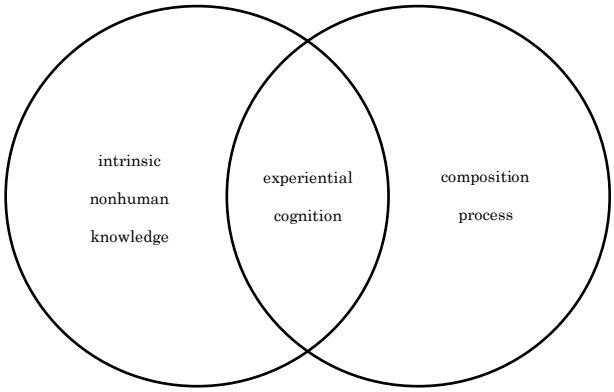

Fig. 9: A diagram describing the relationship between intrinsic nonhuman knowledge, composition process, and resulting experiential cognition.

Thus, the composition process itself is also a way of thinking and knowing – another example of experiential cognition, perhaps. Soosan Lolavar describes her composition practice as "not just an escape or an expression of life experience [but] an epistemology for understanding the world in new ways with potential to *create* knowledge, challenge theories and change perceptions."[76]

As a mode of enquiry, composition practice enables creativity from a philosophical standpoint. This is because the practice offers ways of thinking in which knowledge that exists outside of traditional academic reasoning can be investigated and utilised. It allows emotion, nonverbal logic, and nonhuman insights to inhabit the work. Composition is therefore an exciting vehicle of exploration into these more-than-human forms of understanding.

The ways of thinking and knowing discussed here qualify under what eco sound-artist and researcher Nell Catchpole describes as "traditionally neglected or marginalized" forms of understanding. It is important to observe these various ways of thinking and knowing particularly in my research because they can "reveal unexpected modes of engagement in the living world and their potential to unsettle and challenge habits of interpretation and understanding".[77]

Furthermore, musicologist Holly Watkins suggests that the complexities of more-than-human knowledge can be explored through music analysis (and by extension, music composition) in that "analogies between musical and natural processes [...] encourage us to develop modes of thinking that challenge presumed divisions between cultural artefacts and natural entities." [78]

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[76] Lolavar, 17.

[77] Catchpole, Nell. n.d. "Sonic Stories from East Suffolk." Nell Catchpole. Accessed December 3, 2020. https://www.nellcatchpole.com/projects/sonic-stories-from-east-suffolk.

[78] Watkins, 11.

This might then contribute an offering to Nancy Guy's question "what role might music play in mending our seemingly broken ties to the natural world?"[79] By changing our ways of understanding in relation to the natural world, we might be more inclined to change our *ways of being*.

1.2. Experiential cognition, embodied knowledge

Our personal contact with the world around us is primarily mediated by our bodies, our physical forms, before being grasped and understood rationally. [80] It is physical experiences with, from, and about the natural world that shape my understanding of its materials, landscapes, environments, and phenomena. Emotional responses to the natural world incorporate visceral experiences too, due to complex body-mind processes. It is therefore appropriate that, for my *Wildermusic* research, my composition process explores various physical, experiential, body-centric, ways of thinking and knowing.

1.2.1. What is embodied knowledge?

With all its complexities, embodied knowledge has oozed into my creative process throughout this research, not least because of sensory memory that is a deeply embedded source material in my work. Embodied knowledge is "knowledge that resides in the capacities of individuals, learnt and refined through practice and training. This is somatic tacit knowledge, related to the nature of the human body and brain".[81]

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[79] Guy, 219.

[80] Zvonimir Nagy examines in depth the causal relationships between body and mind that come into play during the compositional process, making a case for embodiment as inherent in compositional processes: "our bodily or physical actions in large part determine our cognitive or mental ones."

See: Nagy, 100-101.

[81] Lonergan, Hamish, Eric Crevels, and Mara Trübenbach. 2023. "What Is Tacit Knowledge?" Tacit Knowledge in Architecture. March 1, 2023. https://tacit-knowledge-architecture.com/object/what-is-tacit-knowledge/.

Simply put, embodied knowledge can be understood as what we have come to know by *doing* or experiencing life – including nonhuman vitalities mentioned before – through our physical bodies. Embodied knowledge is a type of enduring knowledge and resulting intelligence of the unconscious, which we gain through lived experiences in relation to individual places and materials. The way in which this knowledge is gained is called experiential cognition. Each experience and sensation is processed through, developed within, and integrated into, a person's ways of being and understanding. This knowledge is usually difficult to describe, categorise, quantify, represent, or even notice in oneself. These obscure 'knowings' can fuel fresh ways of thinking and new potential routes for the composition process.

1.2.2. Embodied composition

Composers have the power to create musical material and choose the way in which it develops. By adopting embodied approaches into the composition process, we enable a sense of intuitive play with the muscle of music: the weight, density and texture of the sound itself; the malleability of its musical tensions; the varying speeds of all the musical procedures; its vast emotional implications; the gut feelings of suspecting and anticipating its next move. This way, we begin to huddle closer to the effervescent vitalities of the music and of the subject matter (i.e. specific aspects of the natural world). This kind of intuitive playfulness helps me to become more curious and helps to quieten the ego; decentre the humanness; lean more closely towards the 'other'.

The utilisation of embodied knowledge in the process of composition does not necessarily need to be a conscious decision. On the contrary, drawing from embodied knowledge is largely an involuntary, *embodied* cognitive process. In order to employ embodied knowledge consciously, we rely on unconscious embodied knowledge and intuition as a driver. In other words, it can be an intuitive choice to use our intuition. We habitually reach that unexplored cave of creativity without knowing how we got there, or which path we took – or perhaps we swam through cold, shadowy waterways under the rocks?

Zvominir Nagy, in his examination of the causal relationships between body and mind that come into play during the compositional process, makes a case for embodiment as inherent in compositional processes:

> "In fact, composing or performing a new musical work often results in a relationship between physical activity and perception: the performative activity influences the perception and conception of a new work, which in turn influences new performance activity, which then determines new perceptions, and so on."[82]

Watkins calls for a greater awareness of the complexities of non-traditional knowledges that exist beyond human cognition, that are wrapped up in human activity:

> "Diminishing the importance granted to conscious thought in conceptions of the human not only sets the embodied nature of critical endeavours in clearer relief but also helps us conceptualize aesthetic experience itself as something much more complicated than mind-to-mind transactions between creators and receivers."[83]

This approach is also resonant with Lakoff and Johnson's description of the "embodied mind" – the notion that even concepts and ideas are not disembodied concepts of the mind, but embodied occurrences that are both subjective and objective:

> "The body is not merely somehow involved in conceptualization but is shaping its very nature."[84]

Therefore, even in strictly ordered music composition practices, embodied thinking, and embodied composing, are at play. However, taking an *intentionally* embodied approach to composition is perhaps a way of harvesting these inherently embodied creative processes. It is a way to allow oneself to be soaked up, over and over again, by impulsive creative urges, in an ever-evolving composition process that essentially allows the material to take hold (at least in part) of its own evolution. A weird, exciting, irrational process develops. Although it's up to the composer to choose which track – and which cave – to explore, they might take a certain path instinctively, and without reason.

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[82] Nagy, 101.

[83] Watkins, 5-6.

[84] Lakoff, George, and Mark Johnson. 1999. *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*. New York: Basic Books. 37.

How different would our understandings of the art of composition be, as a field of study, research and practice, if we paid more attention to its inherent embodied nature? How much richer would our appreciation for new music be?

1.2.3. Embodied composition of a material: *Like Clay*

Looking at *Like Clay,* embodied knowledge of kinesthesis and tactility were present in the making of the piece.[85] I was able to make some space for a sense of intrinsic material knowledge embedded within the kinds of clay mineral that had come to know through experience, even though I did not have the material in the room while I composed the piece. By drawing from experiential, embodied knowledge, I was able to push deeper into the concept of becoming *like* clay (see further discussion on 'becoming' in 2.3.: "Becoming other: the sensory and the sensuous" in my second essay, *Musicalising Sensation: an embodied approach to composition*.

Like Clay is a process piece made up of repetitions of the same material, cycling through a procedure of 'musical chemical reactions' that essentially affect the musical textures in terms of the material's moisture and its resulting viscosity and pliability. How many cycles of 'drying' and 'chemical reactions' does it take to get to its dry, brittle state? I did not plan or know this before writing the piece. Rather, the process of drying out took its toll on the musical material and I decided, when it *felt* right, that it should stop repeating and simply end. This process is again similar to what Nagy discusses, in that cognitive processes and embodied knowledges involved in composing music are in an ongoing reciprocal relationship.

1.2.4. Composing as thinking: *Like Clay*

The composition process applied ways of thinking about clay and its material knowledge differently to how I originally surmised. My approach to writing the piece was not informed by any experiences with pottery, but by my familiarity with varying clay-soaked terrains. My understanding of clay mineral has developed over years of activities on foot, such as hiking and running in different climates.

[85] Tactility is discussed in essay 3: *Topography, Temperature, Toil: tactile tools for wilder composition practices*.

Although I did not work physically with clay during the composition process, there were times when I realised that I was approaching the musical material similarly to how a potter might approach a chunk of clay: pushing, pulling, dragging, moulding, and handling the material in terms of its size, density, pliability, weight, and so on. Composing music specifically for two violins reinforced a hands-on approach to the material, in that the violin has the obvious capacity to exert certain physical forces onto the strings through different bow pressures and bow placements. This became clearer as the composition process unfolded. Therefore, although the piece is grounded in a terrain-themed, foot-centric understanding of clay, the composition process – as experiential cognition – provoked hand-centric ways of thinking about the naturally-occurring material.

1.2.5. Embodiment, memory, and personal records of place: *Notes from a Wilderness*

Notes from a Wilderness musicalises parts of my experience hiking the Emerald Pool Route. The musical material came about as a result of ever-morphing, fluctuating relationships between my personal historical record (a hike logbook), my embodied knowledge of the place (gained over years of visiting and hiking there), and memory – a kind of embodied knowledge (both clear and vague).

I hiked the Emerald Pool route many times as a teenager, as well as similar routes though the same wilderness area. It was important that the piece was titled *Notes from 'a' Wilderness,* implying a specific place – nudging myself closer to the specificity of that route in the Groendal Wilderness Area. The piece follows the general narrative arc of the route itself but is by no means mathematically conceived. I chose a pre-determined overarching structure that came out of the route: the ascent up Ten Stop Hill is the first section; traversing the plateau atop the hill forms the second section; and the approach and descent to the pool make up the final section. Three geographical sections between the start of the hike and the pool, and so, three musical sections in the piece. The musical durations of these different sections in *Notes from a Wilderness* are irrationally dispersed: they are not proportionate to the distances travelled; nor to how long it took to hike those parts of the trail. Disregarding those measurements allowed space for a greater sense of embodiment in composing the flow and direction of the music through the three parts of the piece: it was my musical intuition and my embodied knowledge of the route that guided the durations of the different sections.

Fig. 10: Taking a rest at a small waterfall along the Emerald Pool route, July 2007. In my hiking logbook.

1.3. Intrinsic nonhuman knowledge

1.3.1. New materialism

Knowledges that are embedded in the natural world – those ways of being that exist outside of human experience – are vital to eco-minded composition. I have tried, in various ways, to make space for the 'agency'[86] of naturally-occurring materialities in my composition process.[87] I have found that my practice contains traits of 'new materialism', which "endeavours to account for […] intra-actions between meaning and matter, which leave neither materiality nor ideality intact."[88]

Adopting a posture of openness to knowledge that is inherent in nonhuman vitalities can be a captivating mode with which to compose new music and can offer ways to strengthen relationships and familiarity with the materials, places or phenomena in question.

For example, Nell Catchpole's practice includes turning towards material agency: in her composition *Movements in Soil,* she invites listeners to *"...occasionally, or continuously – find ways to allow the ball to participate in the sound piece."*[89] In encouraging interactions between a human and a ball of clay, Catchpole allows a nonhuman other to have voice in the sound piece. The contributions made by the ball of clay have the potential to challenge an audience's usual ways of hearing music, of making music, and of thinking about nonhuman others in terms of their vitalities and haecceities.

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[86] For a discussion around agency in regards to materialistic views, see Coleman, Felicity J. 2018. "Agency." New Materialism. May 17, 2018. https://newmaterialism.eu/almanac/a/agency.html.

[87] Topics of material agency and human-nonhuman interrelationships are explored in Samuel Wilson's *New Music and the Crises of Materiality: Sounding Bodies and Objects in Late Modernity.*

See: Wilson, Samuel. 2021. *New Music and the Crises of Materiality*. Routledge.

[88] Fox, Nick J., and Pam Alldred. 2022. "New Materialism." In *SAGE Research Methods Foundations*, edited by Paul Atkinson, Sara Delamont, Alexandru Cernat, Joseph W. Sakshaug, and Richard A. Williams. London: SAGE Publications Ltd. https://doi.org/10.4135/9781526421036768465.

[89] Catchpole, Nell. 2019. "Movements in Soil." Nell Catchpole. September 14, 2019. https://www.nellcatchpole.com/projects/movements-in-soil.

Bennett Hogg's *The Violin, The River, and Me* is another example of enabling material agency in music. Hogg places a violin in a river, and moves it around, allowing the river to bow the strings while tiny microphones (placed inside the body of the violin) record the resulting sounds.[90]

1.3.2. Haecceity

Haecceity, sometimes referred to as 'primitive thisness', refers to the uniqueness that defines the intricate individuality of a thing (object, phenomenon or concept), distinguishing it from all other things. It is a sort of opposite term to 'essence' (the universal qualities of a thing). Haecceity is of interest to me because, on a philosophical level, it assists the posture of the creative process: the more attention paid to the haecceity of a material, landscape, phenomenon, or environment, the closer I feel to it, and the more I'm able to connect with it dynamically. What makes clay what it is? It is all its physical properties and natural processes, *as well as* its characteristic vitality, its innate intelligence, its relationships to the things around it, and my subjective experience of it.

> "Thus the properties of materials, regarded as constituents of an environment, cannot be identified as fixed, essential attributes of things, but are rather processual and relational. They are neither objectively determined nor subjectively imagined but practically experienced. In that sense, every property is a condensed story. To describe the properties of materials is to tell the stories of what happens to them as they flow, mix and mutate. [91]

This approach challenges the humanness of the composition process because it encourages stronger engagement with the specificity of materials or places in question, fostering a spirit of curious human-nonhuman collaboration, and disrupting the power relationship between the 'us' and the 'it'.

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[90] Hogg, Bennett. n.d. "The Violin, the River, and Me." HZ Journal. Accessed October 28, 2023. https://www.hz-journal.org/n18/hogg.html.

[91] Ingold (2011), 37.

1.3.3. Personification of the nonhuman

Regarding new materialism in ecological contexts, topics of animism and other spiritual perspectives come to mind, particularly Franciscan mysticism.[92] New materialism has resonances with the legacy of St. Francis of Assisi (1181-1226 AC), Catholic friar and mystic; patron saint of ecology and of animals. "St. Francis [...] became one with [creatures] in a fraternal relationship that resisted domination."[93] This is reflected in what Jane Bennett calls "thing-power materialism", which "emphasises those occasions in ordinary life when the us and the it slip-slide into each other, for one moral of this materialist tale is that we are also nonhuman and that things too are vital players in the world"[94] (see also 2.5.: "Duality and becoming: *Golden Hour*" in my second essay, *Musicalising Sensation: an embodied approach to composition*.

St. Francis "granted other beings and things mutuality, subjectivity, 'personhood', and dignity".[95] He considered the sun his brother and the moon his sister, acknowledging their innate vitality, or life force.[96] Again, this resonates with Bennett's view that "so-called 'inanimate' things convey specific degrees of animacy even if not all of them qualify under the biological definition of life."[97] This resonates with my research in its intention to grant the 'other' subjectivity and voice; decentre humanness; and acknowledge the inherent value in nonhuman, naturally-occurring things.

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[92] Franciscan Catholicism played a role in my upbringing. As I investigate aspects of new materialism through this research, I am rediscovering certain Franciscan values, particularly those associated with Franciscan mysticism, which have given new and unexpected layers of meaning to this research.

[93] Bodo, Murray in A. Singarayar. 2021. "Eco-Spirituality of St. Francis of Assisi." Medium. March 18, 2021. https://cenkantal.medium.com/eco-spirituality-of-st-francis-of-assisi-6d0a087e4284.

[94] Bennett, Jane. 2004. "The Force of Things: Steps toward an Ecology of Matter." *Political Theory* 32 (3): 349. https://doi.org/10.1177/0090591703260853.

[95] Rohr, Richard. (2014) 2015. *Eager to Love the Alternative Way of Francis of Assisi*. London: Hodder & Stoughton. 8.

[96] See also: Saint Francis of Assisi, *Canticle of the Sun.*

[97] Bennett, Jane. 2015. "Encounters with an Art-Thing." *Evental Aesthetics* 3 (3): 91.

1.3.4. Incorporating the nonhuman: *November moon readings*

Perhaps the most direct and palpable use of intrinsic material knowledge in this research is in *November moon readings,* for which I used plant materials as sound-making devices. *November moon readings,* which is structured according to different moon phases, employs plants that are traditionally associated with different parts of the lunar cycle. [98]

I used rosemary and lime leaf for the end of the new moon section as well as the waxing crescent section. The cleansing characteristics of rosemary made it suitable for the intention of 'renewal' that are traditionally associated with new moon phase, while the bright, tangy aroma of citrus plants paired well with a feel of 'sensory awakening', traditionally associated with the waxing crescent. Eucalyptus was my choice for the waxing gibbous section (refinement, preparation, endurance). It might be interesting, for future performances, to experiment further with different florae, as there are many different plants and herbs that are traditionally connected to the lunar cycle.

It is important to note the specificity of sound made as a result of the chosen plant materials – the physical qualities and resulting sounds embedded within. Through experimentation, I was able to discover new sounds that were possible on the instruments and determine what would be suitable for a live concert setting. Therefore, along with traditional lunar associations, I also considered plant materials in regard to their inherent textures and durabilities. As mentioned in my literature review, James Weeks' *weedweaver* also combines plant materials with acoustic instrumental playing.[99] Weeks employs plant materials for the purposes of gently bowing, strumming or rubbing the instrument strings (as well as asking the clarinettist to blow air through a piece of foliage), while I have worked with plants as beaters for the actions of rustling, scraping, striking and whacking percussion instruments, and have also utilised disintegrated forms of the plants to affect the attack and reverberations made by the drums.

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[98] John Luther Adam's *Three Nocturnes* also takes its general structure from moon-inspired phenomena. While the sections of *November moon readings* are assembled according to the changing light during near-monthly lunar cycles, Adams' work uses the moon's (almost) daily ritual of rising and setting as its structural basis. See: Adams, John L. 2022. *Three Nocturnes.* Taiga Press.

[99] Weeks (2021).

The rosemary and lime leaf produced gentle sounds on the timpani skin, whether rubbed, rustled, or dropped onto it from a height. Eucalyptus, being a tougher plant, gave more resistance and therefore produced relatively louder sound responses when whacked against the suspended cymbals. The resulting use of the plant materials is as follows:

Dried rosemary sprigs and dried lime leaves with timpani:

Each player had their own timpani, and each drum frame was fitted with a paper cup containing a few handfuls of dried lime leaves and a dried rosemary sprig. With the left hand, the lime leaves were crunched, dropped onto, and swished across all three timpani skins at the same time. The drums amplified the delicate rustling sounds of the foliage. With the right hand, the rosemary sprigs were tapped and scraped along the outer area of the timpani skin in a clockwise direction and only on the right-hand side of the circular area. This reflected the shape of the light that we know in the Northern Hemisphere as the waxing crescent moon.

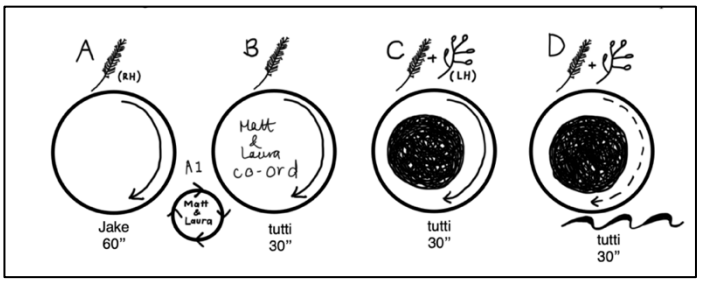

Fig. 11: Extract from the 'waxing crescent' section of the *November moon readings* graphic score, showing the use of rosemary sprigs and lime leaves on timpani.

Large semi-dried eucalyptus sprigs with thunder sheet:

Here the eucalyptus sprigs created rubbery and metallic textural sounds when brushed and rustled against the thunder sheet. The resulting sounds were varied and unpredictable. It was therefore suitable that I gave the performers directions that were largely open to interpretation, so that they could create the desired effect in whatever way they deemed appropriate, adapting to whatever circumstances arose during the performance. The performance notes (page 5 in the full score) read:

> "When making sounds at the [thunder sheet], try to fully immerse yourself in the sound-making process, communicating a sense of curiosity in the sound, and trust in the instrument."

Large semi-dried eucalyptus sprigs with suspended cymbals for waxing gibbous:

Eucalyptus sprigs were also used as beaters to play the suspended cymbals. During the time of creating this piece, I experimented with different varieties of eucalyptus sprigs – some dry and some fresh, some big and some small, some greener and some more silvery. They are strong and supple plants, even the thinner variants. They become more rigid and brittle the drier they get. Upon contact with the cymbal, the leaves begin to fall off the stem, and the sound made with the cymbal changes as a result of the destructive process.

This destructive process affected not only the quality of sound, but also dictated the extremities for durational possibilities. Too long spent hitting the cymbal, and there would be no beater left to work with. Too short a time hitting the cymbal, and there would be a lack of detail in timbral change. Therefore, the specific durability of eucalyptus sprigs dictated the possibilities for timbre, as well as the length of time and the rhythmic density assigned to playing the cymbals.

Disintegrated foliage with bass drum:

At the end of the waxing gibbous section, and into the start of the full moon section, final preparations are made for a sort of celebratory harvest, in line with certain meanings associated with full moon. At this point in the piece, the last of the eucalyptus is collected from the thunder sheet. The musicians tear apart these last sprigs and drop them onto the bass drum while it is bowed.

The bass drum is then played (bowed and struck) by different players as the section unfolds. Towards the end, all three performers play the bass drum to create a very loud sound, such that the amplitude of the vibrating membrane is large enough to cause an obvious visual displacement of the foliage on top of it. The boomy strikes of the bass drum, combined with the scattered smacking of the foliage create a sound world that feels both ritualistic and celebratory; the harvest time is materialised in the musical material as well as the staged performance. To view this section from the performance, see timecode 14:12 to the end in this video: https://youtu.be/93qEM4Aeaoc?si=Z5H5JcCtUzCPDnSl&t=852

In all these ways, these plants played collaborative roles in the realisation of musical material. Lastly, it should be noted that by using plants associated with specific moon phases to make interesting sounds, the foliage provokes the exploration of eco-emotions associated with environmental destruction as well as celebratory harvest time.

Fig. 12 (above): Laura playing the thunder sheet using eucalyptus sprigs during the performance of *November moon readings*, May 2024.
Fig. 13 (below): Full stage view during the performance of the 'waxing gibbous' section of *November moon readings*, May 2024.

Fig 14 (above): Jacob playing the suspended cymbal using eucalyptus sprigs during the performance of *November moon readings*, May 2024.
Fig. 15 (below): Full ensemble during the performance of the 'full moon' section of *November moon readings*, May 2024.
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1.3.5. Composing with an unfamiliar place: *End of Season*

In writing *End of Season* I was tasked with musicalising someone else's experience of place – namely, Clare Best, poet, librettist, and my friend. Clare entrusted me with setting songs from her collection *End of Season* to create the song cycle of the same name. As Cannero was not a place I had ever visited before, I had to consider how I would approach the creative process to avoid the risk of cultural appropriation (human cultures or other).

It felt vital that I visited the place before writing the music, so Clare and I spent some time together in Cannero, and she shared this special place and her experiences of it with me. Our visit helped me to start befriending the place and I created my own experiences in it by going for runs and walks on the mountains. However, I could not rely on embodied knowledge for the project as I was not familiar enough with the place for that mode of creativity, and my experiential cognition was limited to the short time that I spent there with Clare.

Instead, I focussed firstly on Clare's words, which are rich with meaning about the materials and landscapes of Cannero, and her deeply developed relationship to them. Secondly, I made some room for material agency: here, found materials helped to bring an authenticity of place to the music.

The premiere performance of the piece took place in Cannero itself, in the place where the poems were written. Before the concert, and together with the musicians in the ensemble, Clare and I walked up the mountain and collected materials that could be used to make shakers: acorns, twigs, seed pods, etc. We filled some vine-leaf bowls with the materials from the mountain, making shakers which the audience played in the fourth song, *Walking*.

In this way, the materials of the place came directly into the musical material and contributed to the sound of the piece. It felt special to tell the audience how we had made the shakers, because many of them had also hiked the mountain in recent days and they could relate to the excitement of noticing,

touching, and collecting things in the mountain.[100] We returned the found materials to the same mountain path the following morning.

Fig 16: Making shakers from materials collected along the mountain path in Cannero, October 2022.

[100] Cannero is a small village town on the foot of the hills, and most people who visit will spend their time walking along the hiking paths between villages and old settlements.

Fig 17: Making shakers from materials collected along the mountain path in Cannero, October 2022.

2. MUSICALISING SENSATION: an embodied approach to composition

The ways of thinking and knowing described in the preceding essay introduced the concepts of experiential cognition, embodied knowledge, and knowledge that is inherent in materials, all of which are key elements of my research framework.

It would be reductive to suggest that my music is informed by two *separate* entities: the natural world, and my experience of it. Although this is true in a general sense, it is the coinciding points of connection between human and nonhuman vitalities which describe my approach to composition more vividly. Therefore, I would like to turn towards the human senses, which are at the confluences between myself and the natural world, and which are central to my embodied thinking and knowing.

Throughout this research I have investigated various ways to musicalise my experiences of the natural world and in doing so, I have discovered that composing *sensation* is a linchpin at the foundation of my composition process. These findings have emerged across my portfolio, and in this essay, I will discuss my practice and findings in relation to the physical senses. Our physical sensations enable us to experience, and relate to, surrounding environments. This is why composing music with, from, and about the natural world demands attention to the 'sensory'. This aligns with composer Liza Lim's observations regarding her sensory-informed composition, *Sex Magic*, in which she notes that "true intimacy involves an intertwining cross-modal sensory exchange."[101]

To compose music in terms of sensation, one must consider multisensory experiences, intuitive impulses, and haecceities of the subject matter (the natural word) being musicalised. It is one thing to be able to conceptualise a place or material, but to be in it and *feel* it through the body brings an

[101] Lim, Liza. 2020. "On 'Sex Magic' (2020) for Contrabass Flute, Electronics & Kinetic Percussion." Liza Lim. August 14, 2020. https://lizalimcomposer.com/2020/08/14/on-sex-magic-2020-for-contrabass-flute-electronics-kinetic-percussion/.

entirely different understanding of it, provoking a genuine relationship between the human and the world outside the body.

A sensory approach demands heightened attention towards both the subject matter and the complex visceral effects of a physical experience. Therefore, musicalising sensations of experiences enables me to foster musical connections with the physical world that come from embodied understandings of those experiences.

A sensory approach has a twofold effect on the composition process. Firstly, it enables one to bypass symbolic, representational, or formulaic composition, by allowing for a vivid input of specific experiential cognition and embodied knowledge. Secondly, it facilitates new layers of empathy with the nonhuman by building connections that are nurtured through curiosity, deep listening, contemplation, and heightened awareness of the specific energies within nonhuman materials.

2.1. Taste and smell: *Museum of Citrus*

In *Museum of Citrus,* the fifth song in *End of Season,* I attempted to incorporate a sensation-infused composition process by bringing citrus fruits into the room while composing the piece. To address both materiality and sensoria (primarily taste and smell) in this song, I conducted an impulsive search for citrus fruits in my local area and collected as many as possible that are mentioned in the poem. I used their vibrant fragrances as a sensory guide to harmony, instrumentation, and arrangement of registers. I wanted to bask the almost psychedelic aromas of these bold fruits while composing the piece (see figure 18).

This process of collecting and trying to grapple with scent as part of the composition process resonates with Brian Eno's talk on scent and music, which he delivered during the time he wrote his fragrance-inspired piece *Neroli.*[102] Furthermore, *Neroli* has been performed with the essential oil of neroli

[102] See: Eno, Brian. 1992. "Details Magazine: Scents and Sensibility." Hyperreal.org. Details Magazine. 1992. http://music.hyperreal.org/artists/brian_eno/interviews/detail92.html.

(extracted from orange blossoms) infused into the performance space – a similar effect to that of the rosemary, lime leaves, and eucalyptus in *November moon readings.*[103]

I composed the harmony for *Museum of Citrus* through a process of playing different chords and clusters on the piano, exploring which ones sounded mostly sweet, sour, or bitter. The various citrus fruits assisted me, through their distinct smells and tastes, in matching different harmonies with certain sections of the poem. However, after profuse amounts of experimentation with harmonic flavours, I settled on a single chord function, an A dominant 9th chord, which helped to sprout the use of a mixolydian scale on A. The 9th chord is sometimes simplified to a dominant 7th, and sometimes altered by adding an F sharp, to form a subtly tangier cluster chord. Using the same fundamental harmonic flavour throughout the piece (besides bar 30 – "Pomelo") felt appropriate because prolonged, sustained, insistent harmony characterises that persistent fragrance that seeps into the air and the nostrils when in the presence of sour lemon, sweet satsuma, or bitter grapefruit.

Fig 18: Citrus fruits with the piano during the composition process of *Museum of Citrus,* August 2022.

[103] See: Porter, Christopher. 2020. "Pulp | Arts around Ann Arbor." Aadl.org. February 13, 2020. https://pulp.aadl.org/node/371763.

Following my experiments with chords, the established harmonic landscape provided a context in which the melodic setting of the words could develop. The melody and pacing of the song were composed through a process of singing improvisations within the A mixolydian scale, recording them with my phone, and then transcribing them. In an effort to further embody a musical experience of citrus-inspired tastes and fragrances, I used vocal decorations such as the contented humming at bar 8; the sound of saccharine yumminess "Mmm -nca!" at bar 21; and the indulgent rolled "rrr" of 'rangpur' at bar 31:

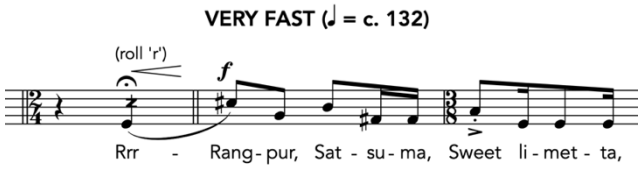

Fig. 19: *Museum of Citrus.*, bars 31–33.

In summary, I was able to musicalise the intense sensations experienced when eating or smelling citrus fruits through vocal decorations, sharp-sounding finger cymbals, subtle shifts in orchestration, and sustained harmonic tensions. These choices were supported by my experiences of the citrus fruits while in Cannero, and direct interactions with other citrus fruits during the composition process at home.

Fig 20: A picture of a citrus fruit in Cannero. Courtesy of Clare Best.

2.2. Fragrance, visual effects, and quietude: *November moon readings*

In the previous essay, I examined the plant materials in *November moon readings* in terms of material agency and musical parameters. Here, I will look at olfactory and visual aspects of the work, as this is a multisensory piece. While aromatic qualities of the citrussy subject matter in *Museum of Citrus* are musicalised in harmony, instrumentation and orchestration, in *November moon readings*, the strong aromas of the foliage saturate the air in the performance space, affecting the audience's olfactory experience.[104] For the night of the performance, I placed some of the leftover small sprigs and leaves in labelled baskets and these were left at the entrance corridor, inviting the audience to take a sprig or two on their way in. I wanted to offer the listeners a point of entry into the world of the piece a little more, through the sense of smell, before they heard the performance.[105]

As the piece was inspired by a moon sighting – a purely visual experience of the natural world that takes place only at night – I wrote out most of the initial material on black paper, using white, gold and silver pens to notate the music. I found this approach to be helpful in my creative process, as it reinforced a sense of nighttime darkness during the composing time. Writing freely on black paper as opposed to ordinary manuscript paper helped to shake up the creative process slightly and create a graphic score for the piece. It also brought a kind of playfulness to the process, as I had last used this kind of stationery when I was a child.

To further explore visual aspects of the subject matter, I threaded theatrical elements into the performance, including staging and choreography. I designed the stage lighting to take its cues from the different phases of the moon, progressively lighting up the circular stage area from right to left

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[104] This kind of audience participation through shared scent echoes some liturgical music, which is often played in churches that are scented with incense.

[105] J.S. Bach's *Schweigt stille, plaudert nicht* (or 'Coffee Cantata') also comes to mind, because it is believed to have premiered in a coffeehouse (Café Zimmerman) which would have smelled of coffee.

See: Appold, Juliette. 2019. "Bach and the Coffee Cantata | NLS Music Notes." The Library of Congress. March 28, 2019. https://blogs.loc.gov/nls-music-notes/2019/03/bach-and-the-coffee-cantata/.

throughout the work, just as we see the moon lighting up from right to left in the Northern Hemisphere throughout a cycle.

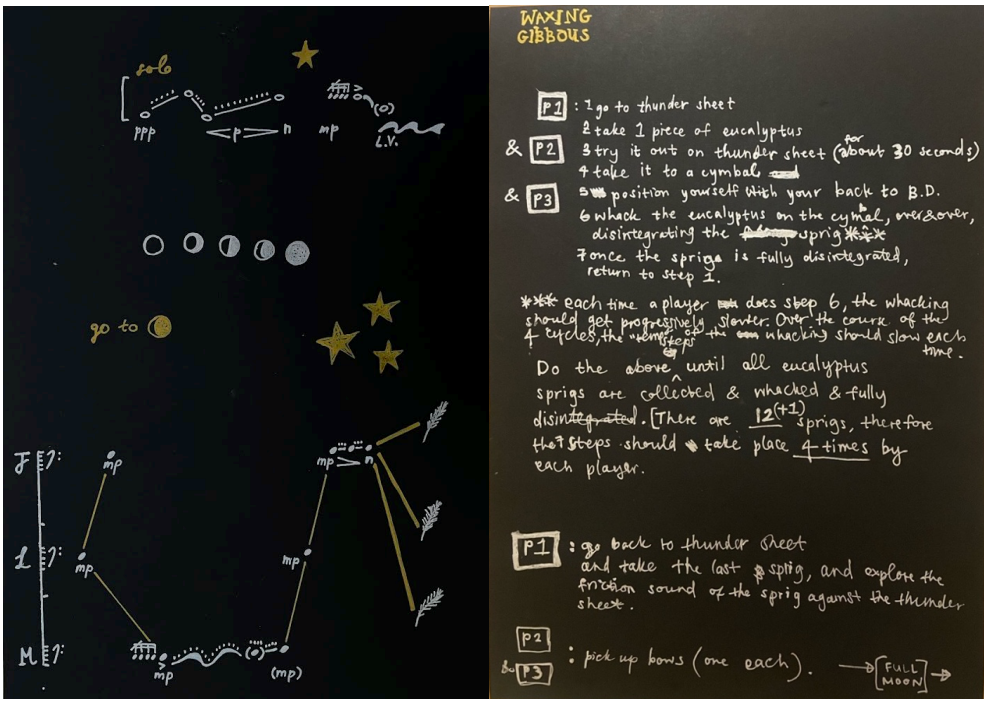
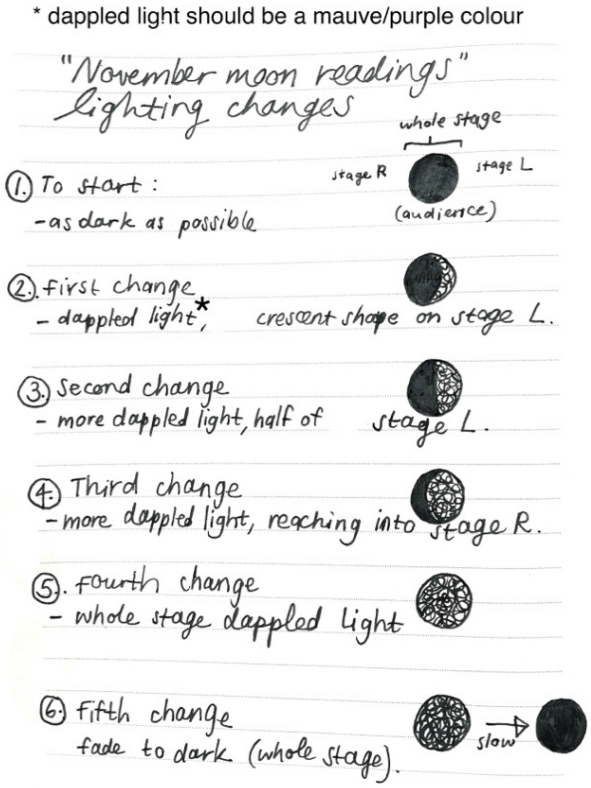


Fig 21 (above): Two pages of initial materials created during the composition process of *November moon readings*.
Fig 22 (below): My initial sketches for the lighting design of *November moon readings*.



Another visual effect that I composed into the work was the stage setup, which changes throughout the piece: cymbals are set up only in 'first quarter', and the timpani are rotated several times throughout the piece to mark a crossing over into the next moon phase. The choreography of the musicians' movements is built on obvious circular, clockwise motion. The image below is presented in the front matter of the score to summarise the rotations of the timpani in each section (moon phase) of the piece:

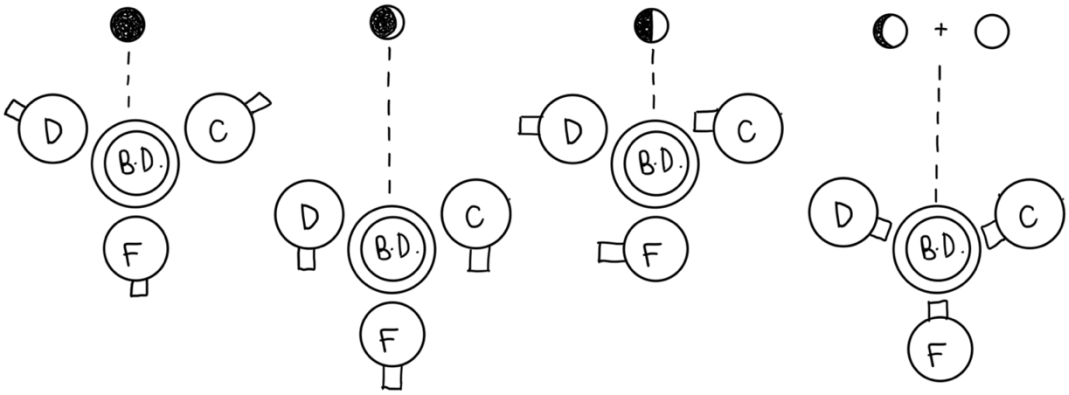


Fig 23: Summary of timpani rotations relative to the bass drum (in aerial view), across different sections of *November moon readings*.

The large and strong body movements required by the percussionists to make some of the sounds created visual tension on the stage. These movements are far greater than the corresponding sounds made, creating an interesting dichotomy. This can be seen in the waxing gibbous section of the piece where the eucalyptus is whacked against the cymbals with large motions. To view a snippet of this section from the performance, see timecode 12:30-14:40 in the following video: https://youtu.be/93qEM4Aeaoc?si=eu1sWi3HPZoq_1Pp&t=750

I also enjoyed the visual contrast of seeing bulky instruments on stage coexisting with fragile sounds. It felt appropriately connected to the powerful yet delicate qualities that are traditionally associated with the moon.

This emotional sensibility of gentle, soft sounds played on large instruments speaks to a kind of sensuality, where quietude is used as a form of expression. In *Music and the Skillful Listener: American Women Compose the Natural World,* composer Libby Larsen discusses her music's quietude with Denise von Glahn. Much of her softest music also happens to be her most fragrant. In *downwind*

of roses in Maine, Larsen 'conjures and evokes the memory of fragrance through sound',[106] musicalising her olfactory experience through composed material that is low in volume, but high in energy.

> "Combining the most transitory sense, smell, with the most abstract art form, music, frees Larsen from the yoke of traditional forms and expectations. Her sounds, like the remembered fragrance of roses, can waft in the air and in a listener's imaginings. Linearity dissolves as musicians and listeners douse themselves in Larsen's 'gentle,' 'always delicate and fluid music' ".[107]

2.3. Becoming other: the sensory and the sensuous

Exploring ways to musicalise sensations has led me toward the concept of *becoming other*, a sensuous realisation of sensory entanglements.[108] John Luther Adams seems to share similar sentiments, using his practice to continually reach towards, and connect with, the other-than-human:

> "My music is going inexorably from being about place to becoming place."[109, 110]

In the sections that follow, I will discuss how the concept of *becoming other* might be musicalised.

In many parts of my portfolio I have explored dualistic relationships within musical material. What I have found is that setting up a musical framework of duality in my compositions helps me experiment with the concepts described in the opening of this essay: the reciprocal, coinciding points of connection

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[106] Von Glahn, 265.

[107] Von Glahn, 268.

[108] See also the discussion of 'meshwork' in Ingold (2015), 9-11.

[109] Ross, Alex. 2008. "John Luther Adams's Arctic Songs." The New Yorker. May 5, 2008. https://www.newyorker.com/magazine/2008/05/12/song-of-the-earth.

[110] Here Adams is referring to his sound and light installation *The Place Where You Go to Listen,* which uses composition practice to try to connect with a place (Alaska). Although he uses methods and tools here that are different to my own (he employs sonification to interpret geological and other earth-related data), I appreciate his statement about using his practice as a vehicle for exploring relationship between composer and place, and convergence of the human and other-than-human.

between human and nonhuman vitalities; the points where you can no longer differentiate between the two. This is similar to what Deleuze calls a 'zone of indiscernibility or undecidability' – a concept he applies in his deep analysis of Francis Bacon's paintings of man and animal:

> "This is not an arrangement of man and beast, nor a resemblance; it is a deep identity, a zone of indiscernibility more profound than any sentimental identification: the man who suffers is a beast, the beast that suffers is a man."[111]

2.4. Becoming place: *Postcard from Cannero*

This poem oozes with a sense of biophilic magnetism between the human (the poet or speaker) and the nonhuman (the lake outside the window – Lake Maggiore). Here, I experimented with ways to musicalise a seemingly dualistic relationship; a process of *becoming other* – or in this instance, becoming place; and the ambiguity present in the 'zone of indiscernibility or undecidability' between the human and the natural world. I explored this alluring relationship through oscillating harmonies and hazy musical textures, using long notes on the alto flute and fragile bowing techniques on the violins.

I also employed 'breath sounds' across the ensemble to muster up a sense of something that is alive and breathing while also ambiguously out of focus. I used slow-paced repetition throughout the musical material as a device for de-stabilising a sense of time, as surely *becoming* is not a time-sensitive process. This is especially apparent in the repetition of the word 'hazy', which causes the singer and the music to seemingly morph into a trance-like state. I often treated the vocal part as though it was an instrument part, exploring and resisting the engrained duality between voice and instruments (human

[111] Deleuze, 25.

and nonhuman), and in the flute part I employed singing towards the end of the piece for the same reason.

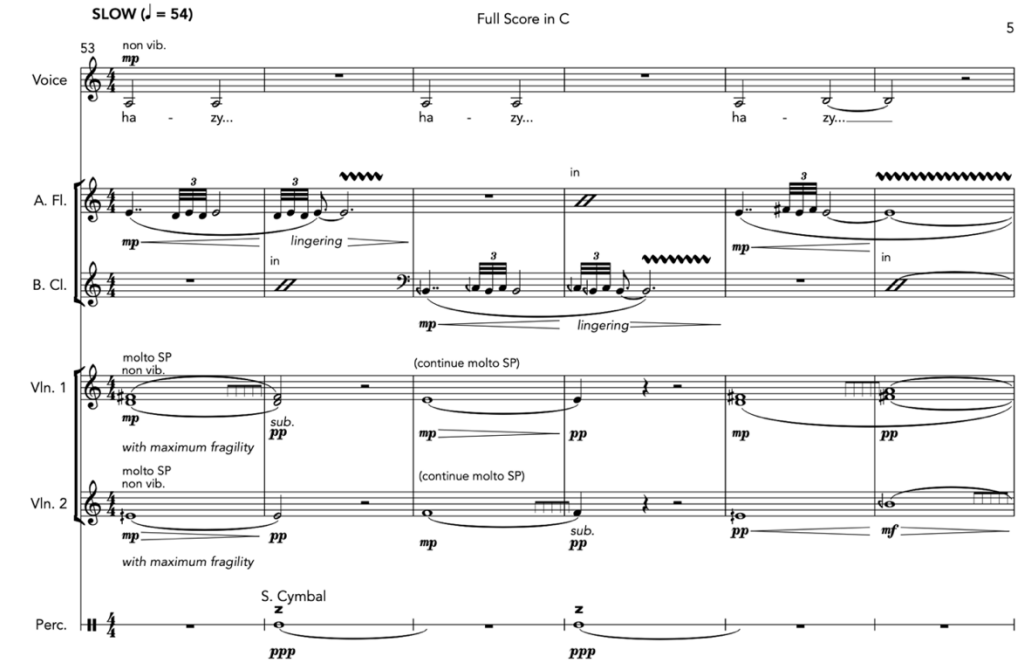

Fig 24: *Postcard from Cannero*, bars 53-58.

Fig. 25: Sunrise over Lake Maggiore, Cannero. Courtesy of Clare Best.

2.5. Duality and becoming: *Golden Hour*

Golden Hour musicalises the effects of sunlight on the earth's surface just before the sun starts to set.[112] I find that the golden hour always brings with it a heightened awareness of the sensory and of emotion. It is a daily occurrence and, having experienced over 12000 days at this point in my life, my experiences of the golden hour feel deeply embodied.

Tactile sensation is embedded within this piece, and I will discuss that in section 3.2. Here, I will discuss other sensory and sensuous qualities that I sought to musicalise. I wanted to conjure up sensations of *becoming imbued*; each musical gesture an inhalation and release of the last of the daylight. Accordingly, I employed homophony to enable the instruments to sound as a singular entity or object breathing within a landscape, pointing towards a kind of togetherness.[113]

The core material comprises short ephemeral gestures, separated by gaps of silence. The silence helps to highlight the details within the sounds and to induce a sense of present, visceral immediacy in each gesture. With short, reciprocal gestures in mind, a two-chord gesture emerged. I was drawn by its simplicity; its obvious enabling of 'relationship' explorations; and its ability to embed a feel of slow-moving, religious/hymnal music into the material. This two-chord gesture enabled a sense of 'breathing in' as one body in the first chord, and 'breathing out' on the second, or vice versa.

The continuous process of breathing in and out felt close to the dualistic nature of the solar cycle: up and down, day and night, warm and cool, joy and sadness. These contrasting concepts seem most palpable during the golden hour. The most beautiful time of day is also the saddest, because it is signalling the first step towards darkness.

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[112] "The golden hour" is technically defined as the time when the centre of the sun is angled between 6 degrees above and 6 degrees below the horizon. Therefore, this type of light is present just before sunset and just after sunrise. In this piece however, I approach the golden hour as a sunset phenomenon. The golden hour in nature is not necessarily an hour long.

[113] See essay 3: *Topography, Temperature, Toil: tactile tools for wilder composition practices*, where I discuss the use of homophony as a compositional method for composing tactility.

With these polarities in mind, I employed the two-chord gesture as the core motivic material for the piece. The sense of contrast between two chords is reinforced through quick changes in the dynamics and registers of the chords occurring in conjunction with a chord change. [114]

Duality also filtered into the orchestration, in that the piano and percussion are used to create spaces of rest and contemplation, contrasting with the instrumental activity in adjacent sections. Another dualistic feature is the use of tutti silences, which contrast and emphasise the instrumental homophony. As the piece progresses, the clear-cut duality of the two-chord gesture unfolds and evolves as follows:

- The two-chord gesture is augmented into phrases of three (letter C), four (letter D) and more (letter H) chords. This serves as a way to (1) relate to the lengthening of the angle of the sun to the horizon, and (2) explore visual, kaleidoscopic transformation of objects when they are saturated with this particular soft, golden light.
- The anticipated motion of this evolving chordal gesture is disrupted by quick changes in register and/or dynamics.
- The clear-cut nature of the homophony becomes a little more ambiguous, as vertical parameters of the material are explored through 'smudging' individual part durations at the ends of gestures (see ends of phrases in bars 19, 26, 35, 39-40, 46, 48, 53, as well as the bowed vibraphone part throughout).
- The development of the original gesture is reframed in a stripped-back, non-harmonic form by the suspended cymbals at rehearsal letter E (its dualistic nature present in the use of two suspended cymbals, contrasting in pitch: high-low, high-low, high-low-high, etc.).
- At letter F, the original forces revisit the two-chord gesture, this time with changes in harmony and texture.

Overall, the material becomes hazier and more ambiguous, and reciprocal relationships between seemingly dualistic elements become more apparent. Contrasting characteristics are no longer as

[114] I elaborate on these quick changes as a compositional tool (which I call musical 'refractions') in sections 3.2.1.: "Polyphony & timbre as tactile tools" and 3.2.2.: "Musical refractions as kinetic play".

essential as they once were, causing the music to lose its sense of original duality and begin to move toward a sense of enmeshment.

Fig. 26: Sunrise over Lake Maggiore, Cannero, October 2022.

The world comes into the poem
The poem comes into the world.
Reciprocity – it all comes down
To that.
As with lovers:
When it's right you can't say
Who is kissing whom.[115]

[115] Orr, 29.

3. TOPOGRAPHY, TEMPERATURE, TOIL: tactile tools for wilder composition practices

"When a human strokes your skin;

that is when you let them in"[116]

Perhaps our tactile senses are the gatekeepers of our secrets: the clandestine feelings, the silent sensations, those potent primal forces that affect how we think, how we know, how we remember. Impassioned and inaudible, vast and nuanced. Our somatosensory systems are our connectors to the external world: stroking a butterfly; walking barefoot on a pebble beach; sensing the earth's atmospheres; embracing and resisting the hug of gravity.[117]

Tactility is a powerful, emotionally charged condition of humanity and is intricately enmeshed with our fuller life experience. Yet as our human lives become more reliant on a digital world, and we gain faster access to infinite visual and auditory information and communication, we surely 'lose touch' with our precious somatosensory connections, such as proprioception (speed, balance, movement), kinesthesis, pressure (elasticity, density, weight), pain, texture, friction, temperature, humidity, and their related fundamental 'forcedynamic schemas' (pushing, pulling, propelling, supporting, and balance) [118].

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[116] Aurora. 2016. *Through the Eyes of a Child*. Streamed. Decca Glassnote Records. https://open.spotify.com/track/6XFvsdR5sHHNy5dOcbz545?si=8b30898e4c694622.

[117] See also: Gross, Michael. 2019. "Are We Losing Touch with Our World?" *Current Biology* 29 (8): 265.

Gross explains that "neuroscience has traditionally described four kinds of sensory modalities in the skin, responding to temperature, pressure, itch and pain. Only relatively recently the pleasant sensation of a gentle caress was added to the range of phenomena studied. Microneurography studies in the 1990s demonstrated that a group of nerve cells in the skin known as C-fibre tactile afferents (CT afferents) respond preferentially to a gently moving stimulus."

[118] Lakoff & Johnson, 37.

> "The history of technology could equally be described as a history of reducing the importance of touching things. From moving tools manually, humans have progressed first to pushing buttons that start a mechanism, and now to shouting at virtual assistants without touching anything at all."[119]

It is easy to describe tactility in technical terms, reducing it to a single sense that can be neatly filed alongside all our other human senses. However, tactility as a complex visceral experience, with its inescapable emotional and spiritual intersections, is a more mysterious and complicated matter. Furthermore, in our Western society, which often defines materials and objects as either animate or inanimate, it can be difficult to conceptualise materials as having senses, vitalities, personalities, societies, and cultures of their own.

This is why music-making, which produces, and is affected by, both material and immaterial qualities, has unique capacities for creative exploration of tactility, particularly with regards to so-called inanimate objects and their affective entwinements with our human lives. Music has the muscle to fuel profound physical reactions in humans, demonstrating the complicated bonds between sensory and emotional experiences. It can help open our minds and our senses; tickling the grey areas of our (mis)understandings; enabling new perspectives to be formed. It is a tool that we have at our disposal which is well positioned to interpret and explore those numerous points of sensory contact between materials, materialities, and our experiences of them.

On a personal level, because of my enjoyment of endurance (long-distance) running, I have developed a keen awareness of my own body's temperature, hydration levels, heart rate and running-related proprioception such as accurate footing, potential injury, and a strong internal awareness of my running pace. I have consequently become particularly sensitised to environmental temperature, humidity, terrain, and landscape gradient. In my life more generally, I frequently tend to consider choices based on somatosensory and tactile factors. For instance, I select my daily clothing according to my preference for the texture and suppleness of the fabric in that moment; I often feel compelled to dance to music upon hearing it, irrespective of the genre; I prefer making notes on paper rather than

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[119] Gross, 267.

using a digital screen; I enjoy engaging in arts and crafts; and I usually wish to express my care by hugging someone.

My inclination towards the tangibility of materials and feelings might explain why I have tended to avoid using digital tools and pre-recorded sounds in my compositions. With a craving for tactile perspectives in my music-making, I have used acoustic instruments that I can touch and feel, and musicians 'in the flesh' whose physical bodies are inseparable from their instruments when playing.

These physical interests have driven me to experiment with methods for incorporating sensations of the somatosensory system into my compositions. How can I compose what it feels like to experience high humidity? We have musical tools for speeding up, slowing down, ascending and descending, but what makes music sound hotter or colder, wetter or drier, rigid or elasticated? What does exhaustion sound like? Can I musicalise the experience of feeling thirsty?

3.1. Like Clay

With tactility as a central creative impetus, I developed *Like Clay* as a musical study of naturally-occurring clay mineral[120]. I find myself mesmerised by the physical dynamism of clay, despite it being widely understood as an inanimate material. I drew from my personal embodied knowledge of the substance, gained through experiences of hiking, walking and running. Along with embodied knowledge, it was important to me to dive into some technical, scientific understanding of the structures that make up the substance because I wanted to better understand some of the reasons for the extreme physical differences in the material's tactility. With this piece I explore various physical states of clay: wet and slippery; soft and easily shaped underfoot or with hands; dry and cracked; brittle and dusty.

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[120] "The term clay is generally applied to (1) a natural material with plastic properties, (2) particles of very fine size, customarily those defined as particles smaller than two micrometres (7.9 × 10−5 inch), and (3) very fine mineral fragments or particles composed mostly of hydrous-layer silicates of aluminum, though occasionally containing magnesium and iron."

See: Grim, Ralph E., and Hideomi Kodama. n.d. "Clay Mineral." In *Encyclopedia Britannica*. Accessed June 12, 2020.

Fig 27: Clay soils.

Fig 28: Clay soils.

3.1.1. Musicalising physical qualities

Clay comprises very tiny particles. Likewise, the musical gestures are relatively short in duration for the entire piece. The molecular structure of clay is fascinating in that it is composed of layers or 'sheets' of molecules. These sheets demonstrate how the material can hold water so well, compared to other forms of rock and soil. The sheets consist of molecular structures called tetrahedrons and octahedrons. When water is added to clay, the water molecules are stored between the sheets of tetrahedrons and octahedrons, causing the sheets to slip and slide around easily. This is what enables the material's unique plasticity and pliability.

The following diagrams illustrate the molecular structures of clay mineral: [121]

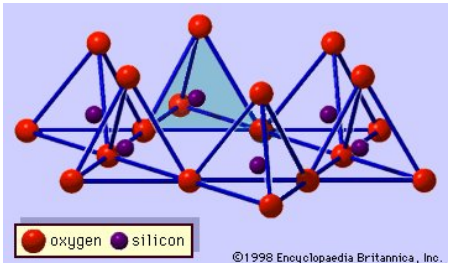

Fig. 29: Molecular sheet of tetrahedrons.

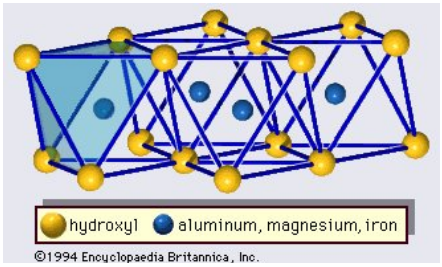

Fig. 30: Molecular sheet of octahedrons.

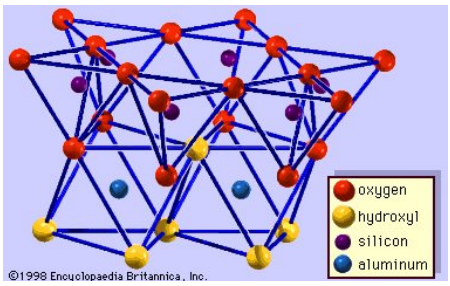

Fig. 31: Sheets of tetrahedrons and octahedrons forming two layers of molecular sheets.

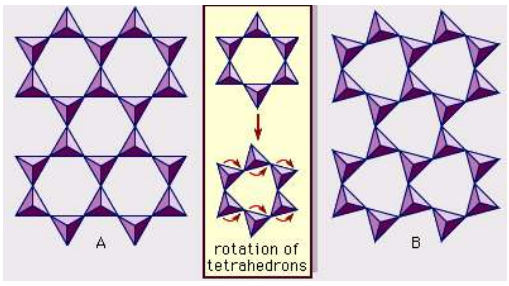

Fig. 32: (A) Ideal hexagonal tetrahedral sheet.
(B) Contracted sheet of ditrigonal symmetry owing to the reduction of mesh size of the tetrahedral
sheet by rotation of the tetrahedrons.

[121] The molecular diagrams above were retrieved from Grim, Ralph E., and Hideomi Kodama. n.d. "Clay Mineral." In *Encyclopedia Britannica*. Accessed June 12, 2020.

In trying to embody a sense of the material substance itself, I constructed musical objects by studying the molecular structures of clay mineral and then re-interpreting them by drawing them, freehand, over a music stave. This process generated the pitches that I used to construct the composition. In the natural world, a sheet of tetrahedrons might rotate and warp its mesh structure, causing a change in its size and shape (see Fig. 32). With this in mind, I felt that my haphazard sketches were appropriate for interpreting these naturally distorted structures. After sketching several versions of tetrahedrons and octahedrons, I mapped the molecules onto a transparent stave, and chose one of my drawings of each molecule, depending on which one provided the most satisfying collection of pitches. In particular, I was interested in those that would generate a combination of open string pitches and fingered pitches.

Musical objects were extracted out of the given pitch material, and these objects form the entire piece: they are repeated over and over again, and on each repeat, the material is affected further by environmental changes.[122] Specific bow pressures, bow placements, music textures, timbres, and technical instructions are utilised to develop the material in a way that might communicate varying degrees of tactility.[123] In this way, I was able to musicalise changes in plasticity according to a process of dehydration.[124]

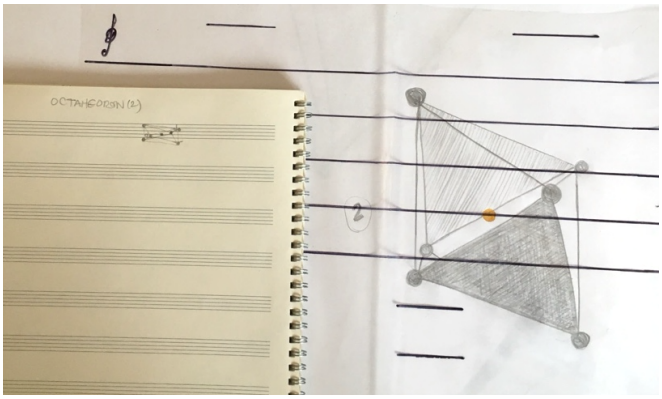

Fig. 33: One of my octahedron drawings. This sketch was chosen for its resulting pitch set.
The seven atoms were mapped to a transparent music stave. These pitches were assigned to violin 1.

[122] This resonates with Liza Lim's composition approach in *Extinction Events and Dawn Chorus*, in which she recruits "forms of repetition and looping" to explore "themes of degradation and loss" in relation to climate change. See: Lim, Liza. 2020. "An Ecology of Time Traces in Extinction Events and Dawn Chorus." Contemporary Music Review 39 (5): 1–20. https://doi.org/10.1080/07494467.2020.1852800.

[123] Please refer to the performance notes in the score for details.

[124] Composer Sylvia Lim also discusses musical processes that relate to physical processes in her compositions. See "sound as a physical object" and "tactility: timbre as surface" in: Lim, Sylvia. 2019. "Exploring Organic Decay through Sound." Ph.D. Dissertation, Guildhall School of Music & Drama.

The octahedron pitch set is therefore made of seven pitches [D, E, F𝄲 G, A, B, C𝄳] and is assigned to the violin 1 part. The tetrahedron pitch set consists of five pitches [B♭, A, F, F𝄲 C♯] and is assigned to violin 2.

The material in each violin part stays true to its original pitches for most of the piece. However, there are various points where a pitch from one set might be shared with the other, alluding to the absorption of cat-ions (eg. aluminium, magnesium or iron) in naturally-occurring clay. In the same way that the absorption of certain metals affects the colours present in clays, so too do the shared pitches slightly affect the colour of the musical material.

For example, in bar 11, the second violin adopts the B natural from the pitch set of violin 1 for the first time. As well as introducing a new colour into the music, the harsh sound produced by the Bartok pizzicato disrupts the atmosphere and signals a new stage of change in the musical material (i.e. further dehydration). This affects the violin 1 part, where col legno battuto, a dry musical texture, is then used for the first time in the piece.

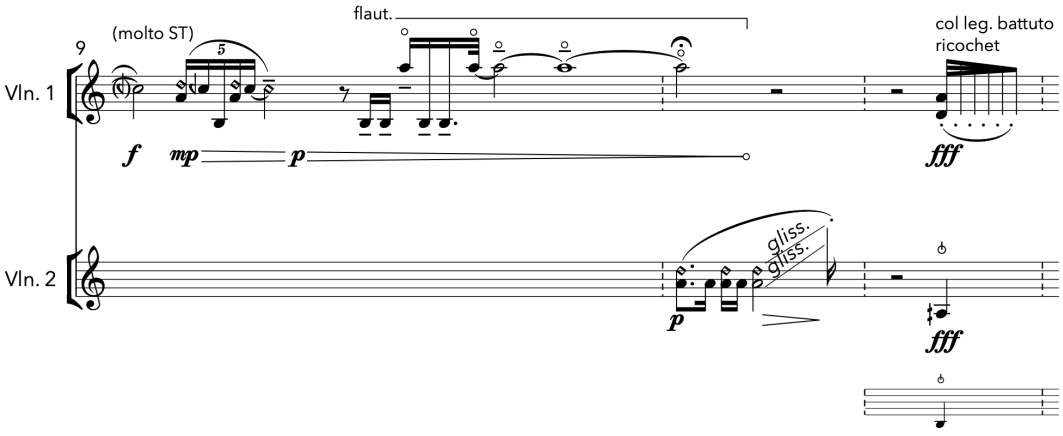

Fig 34: *Like Clay:* bars 9-11.[125]

[125] The ossia stave in the violin 2 part is showing the sounding pitch (B natural) of the note in the main stave (A quarter-sharp) that is played on a detuned G string.

In bar 17, in the second violin, a G natural is borrowed from the octahedron (violin 1) pitch set – however, this is the first time this pitch appears in the piece. Again, by means of a Bartok pizzicato, the G disrupts the musical atmosphere, alters the harmonic colour, and signals a further stage of drying out in the musical material.

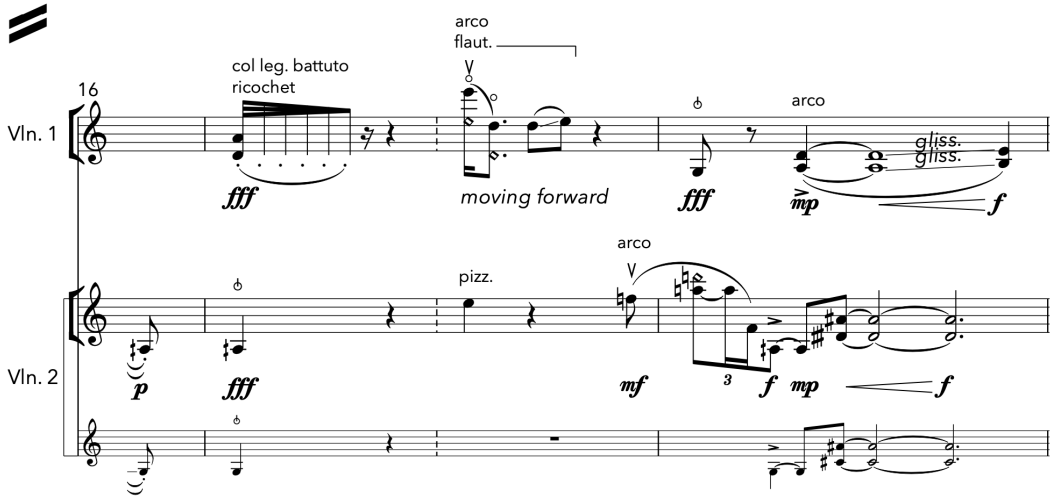

Fig 35: *Like Clay:* bars 16–19.

3.1.2. Violins and tactility

The violin proved to be suitable for this piece because of the inherent tactile nature of playing the instrument. Sounds are made by pushing, pulling, pressing, balancing, and resisting the friction and tension between the bow, strings and fingers. These tactile performance qualities presented unique ways for me to approach the musical material in a tangible, somatic sense.

Further to this, the choice of two violins provided the opportunity to compose material in which the sounds emerge from two different places, directions, or bodies. By engaging in the potential for play *between* two violins, a kind of reciprocal ebb-and-flow arises naturally within the musical material. It is a dualistic musical tension that I harvested to explore how clay changes according to environmental factors, as well as to embody two hands sculpting, or two feet walking.

For me, it was important to convey to the performers the underlying significance within this piece, to help give some context and therefore stimulate a more authentic and personal interpretation. I shared various photographs with the performers during the rehearsal process (some of these photos can be

seen earlier in this chapter). We discussed the material in depth, and I used terrain-inspired 'texture words' in the performance notes in order to convey a sense of earthy tactility.

Glassy, fluid, liquid sound
Brittle, coarse, gravelly sound
Dusty, chalky, fragile sound

3.1.3. Kinetic forces in musical texture

This ebb-and-flow of energy between the two instruments changes throughout the piece. In the opening sections, in which the material is moist, slippery, and malleable, the parts interlock and overlap smoothly. To musicalise the dehydration process, the play between the two violins becomes less stratified and less flexible over time and eventually, even the dry, solid material is dehydrated further, to disintegrate into transient, dusty, haphazardly-spread gestures.

I felt it necessary to begin the piece in a polyphonic orientation. This choice reflects the layering of molecular sheets and, on a holistic musical level, allows each part to push and pull each other through time – strengthening the sense of slippery kinetic interplay as though navigating muddy terrain. The indication of 'free time' reinforces this idea. As the piece progresses to a dry state, the phrase entries begin to occur closer together, and the music develops from layered, almost polyphonic material, towards a more homophonic texture. This is evident, for example, in the textural relationships between the two parts in bars 12-15, compared with the material at bars 36-38 and 47-49:

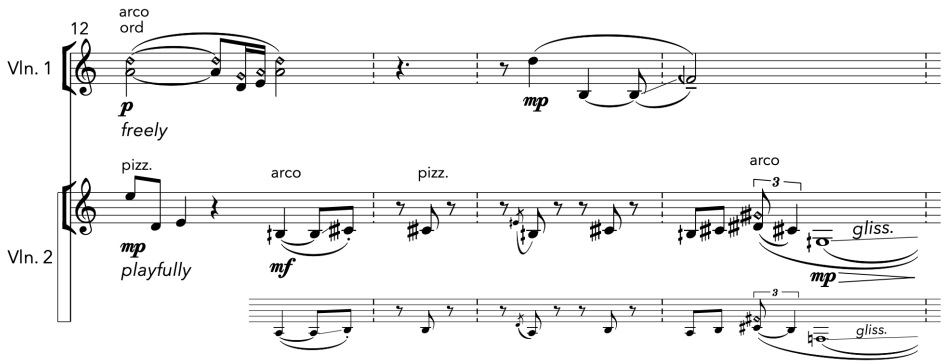

Fig 36: *Like Clay:* bars 12–15.

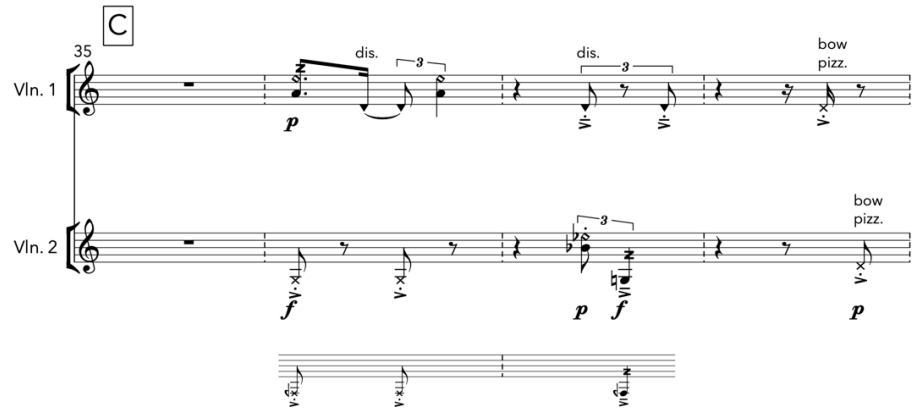

Fig 37: *Like Clay:* bars 35-38.

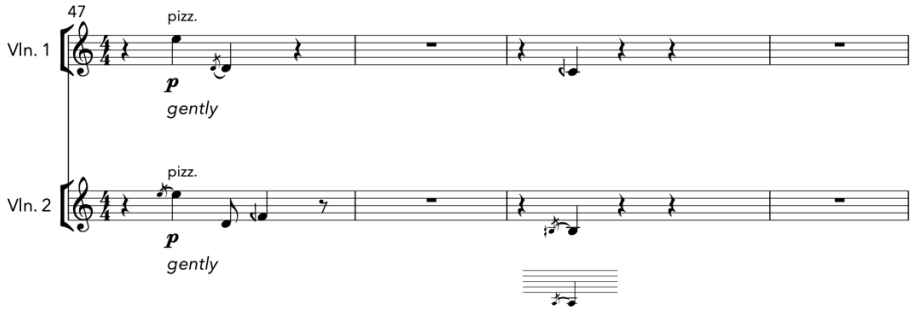

Fig 38: *Like Clay:* bars 47-50.

While the texture shifts towards a kind of static homophony, the tempo and bar lines also become more prescriptive and inflexible (as in Fig. 38 above), reflecting the rigidity of dried clay. Lastly, a final stage of dehydration takes place: the clay crumbles into dust and, likewise, the bar lines crumble away to reveal irregular, unmeasured col legno battuto gestures (as in Fig. 39 below). Here, any sense of pulse created in the preceding bars collapses. This process embodies a sense of extreme dehydration of the clay material, resulting in a formless, sandy substance.

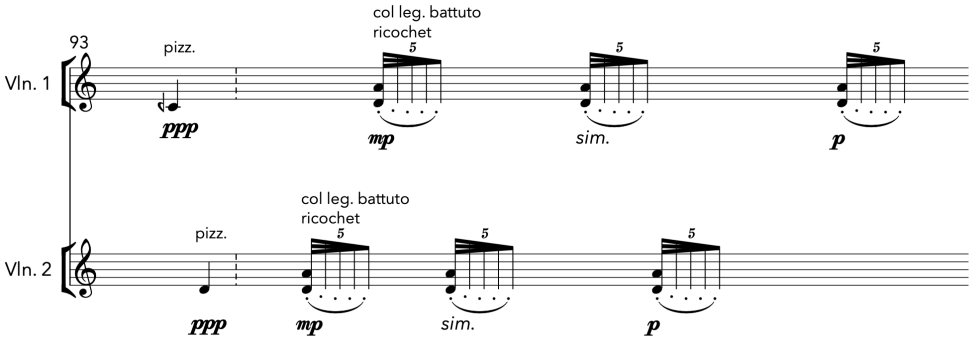

Fig 39: *Like Clay:* bars 93-94.

3.1.4. Moisture & pliability: bow pressure, pitch register, speed

Clay is a malleable substance, and its varying tactility can be musicalised by utilising different modes of bow pressure and bow placement as compositional tools. In this way, the qualities of clay – its vitality, its haecceity, and its own *becoming* – are fundamental in its musicalisation.

The piece starts fluidly and is permeated with slippery glissandi and flautando tones, some sul ponticello playing, and smooth legato phrases (see bars 1-10 specifically). As the piece progresses, and repetitions of the musical material occurs, the drying process takes place as follows: the smoothness and sense of line is lost, giving way to more granular, brittle sounds such as col legno battuto, pizzicato, distortion sounds, and sul tasto playing. At bar 43, for example, the heavy bow pressure and slow bow speed creates a kind of white noise sound that is gritty and earthy – a musicalisation of clay cracking and aching in its dehydrated state. Over the entirety of the piece, the material becomes less fluid and less pitched. The once slippery material gives way to gravelly distortion sounds and percussive effects.

In later parts of the piece, the material is at a point where it is nearly completely dry and inflexible. Accordingly, every bowed note now ends up as an unpitched distortion sound (see bars 62, and 73- 90). This embodies the tough inelasticity of the material when it is dry. At bar 62 specifically, in an effort to recall the memory of (or perhaps revive) the once dynamic and malleable substance, the distorted sounds transition into familiar pitches (E, D and G) within the gesture. It is a strained, momentary attempt, and the pitched notes quickly give way to distortion again, unable to maintain the sense of 'normal' vivacity.

Eventually, towards the end of the piece, once all moisture has been extracted, brittle, chalky sounds are introduced in the form of bow sweeps, longer resting times between notes, and very minimal pitch material. The musical gestures that were once malleable become rigid and static, and eventually turn to dust.

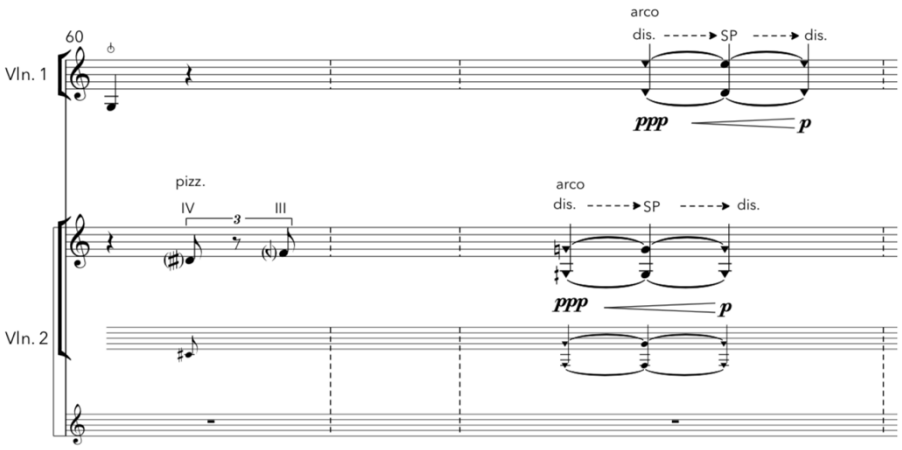

Fig 40: *Like Clay:* bars 60-62.

I also play with parameters of musical pliability in the form of gestural speed, and the rate of change between high and low registers. Faster gestures, more register changes, and heavier bow pressure will affect the material's development more severely than subtle movements or sounds. This composed connection between the performer's physical forces and its effects on the musical material, is another way that I was able to musicalise the variable plasticity and kinaesthetic potential of clay.

Glissandi figures, and the general rate-of-change-of-pitch-over-time, serve as a kinaesthetic 'litmus test' for the pliability of the material as the drying proceeds. The glissandi musicalise the degree to which the clay can be pressed, shaped or moulded. The drier the clay, the more force is required in order to shape or move it. Therefore, the wetter the clay, the quicker the music can move across large intervals. As the clay dries out, rate-of-change-of-pitch-over-time decreases significantly.

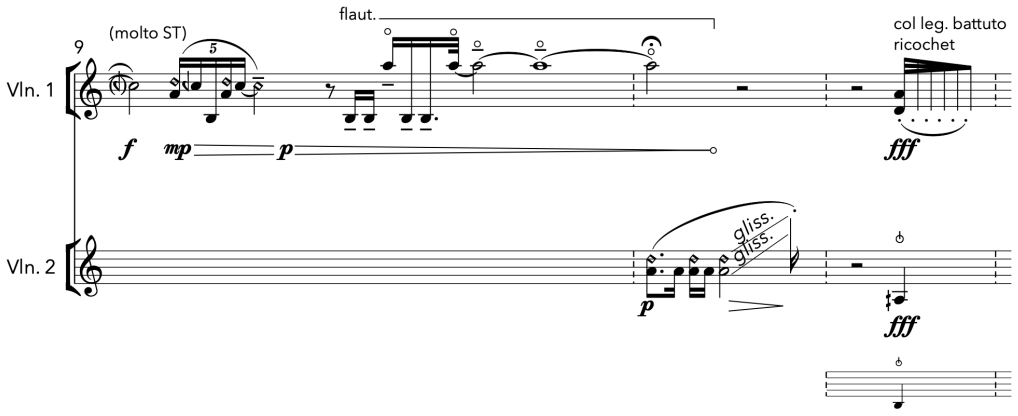

Fig 41: *Like Clay:* bars 9-11.

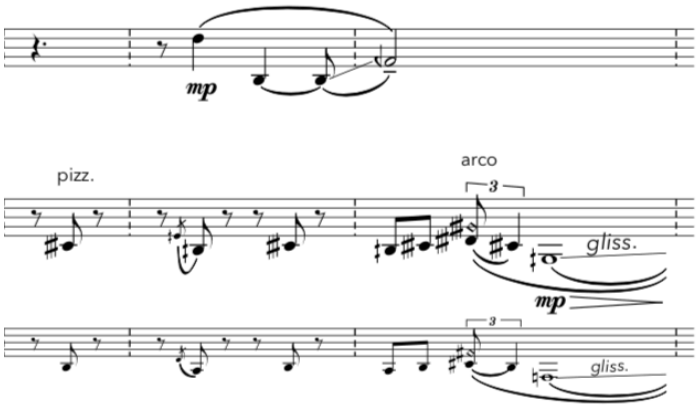

Fig 42: *Like Clay:* bars 13-15.

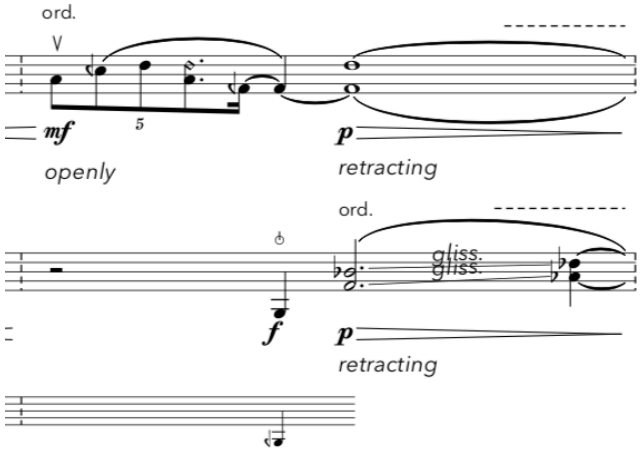

Fig 43: *Like Clay:* bar 56.

A video analysis of the piece can be viewed online:

https://youtu.be/oL1uoVUOg0s?si=xcMqX0qtjAwWTNQS

3.2. Golden Hour

3.2.1. Homophony & timbre as tactile tools

In *Golden Hour*, tactile sensations are explored musically through combinations of timbral, melodic and harmonic choices.[126] Here, the musical sculpting of tactility was twofold. Firstly, I aimed to compose sound textures and colours that might musicalise some of the materiality of sun rays at the golden hour, and their physical effects on landscapes (hazy, gentle, refracting, shimmering, enduring). Secondly, I aimed to musicalise the sensory experience that this late afternoon phenomenon often has on my own body: the lingering warmth of sun-soaked skin finally giving way to the first touch of goose bumps in the late afternoon.

Within the percussion setup, bowed vibraphone felt like a necessary presence, providing a calm musical glow. Friction-based sounds such as 'air sounds' in the winds (bar 63 onwards), and a metal chain drawn across the suspended cymbal (bars 87-92), add extra dimensions to the sense of tactility and physical intimacy in the music. Together with the chosen instrumentation and performance techniques, which provide a timbral palette, *Golden Hour* relies heavily on specific melodic and harmonic compositional factors as tools for musicalising tactility.

During the composition process, I noticed a bit of sunlight sneaking through a window, catching the texture of an old chocolate wrapper which I had stuck to the wall for the purpose of catching the sun. The illuminated texture of the golden paper, and the refractions/reflections through/off the window and onto the white wall demonstrate how light can communicate the texture of objects. This scene inspired me to experiment with 'refracting' harmonic objects (see Fig. 44). Borrowing concepts from the natural phenomenon of light refraction, in which light waves are bent or deflected as a result of coming into contact with a different medium/material, I wanted the musical material to move as one body melodically, treating the sound of the ensemble as a single beam of light that could be refracted

[126] This approach connects with Anna Thorvaldsdottir's *In the Light of Air* (2014), which musicalises tactilities of light, air and environments through slowly evolving musical soundscapes. See: Anna Thorvaldsdottir. 2014. "In the Light of Air - Luminance, Anna Thorvaldsdottir." YouTube Video. *YouTube*. https://www.youtube.com/watch?v=Pid-bOD1ux0&list=RDPid-bOD1ux0.

and reflected through musical changes such as harmony, dynamics and registers (see initial sketches of this approach in Fig. 45).

Fig. 44: Light refracted through a window in my home, April 2021.

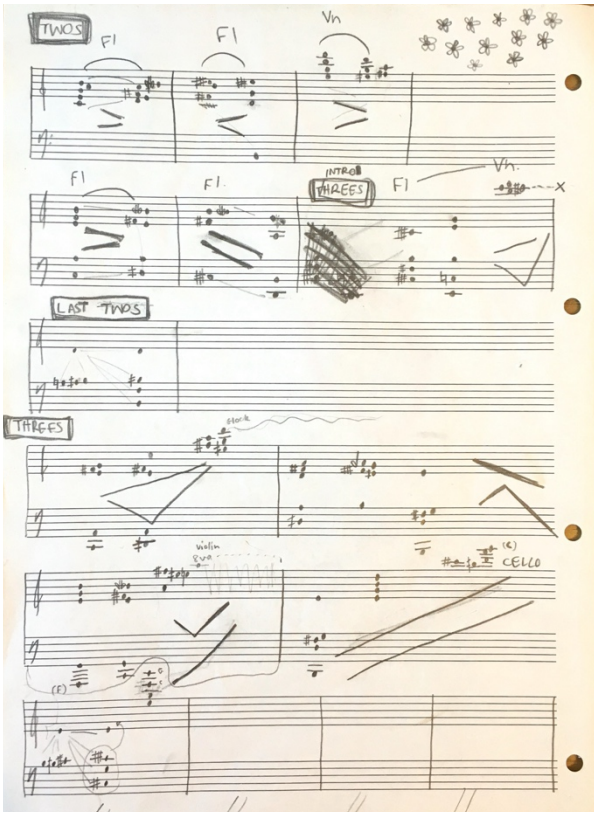

Fig. 45: Initial sketches of 'refracting' musical material for *Golden Hour*

I began to design specifically-arranged harmonic objects that became the foundational material of the piece. I used homophony, with specific pitch combinations, to give depth to the timbral design. The homorhythm within the homophonic texture fuses the ensemble's colours together, causing the sounds to become a single breathing, vibrating, almost palpable force – similar to a beam of light that is made of many frequencies yet appears as a single entity.

This homophonic approach permeates the piece but clear examples can be seen in bars 12-17:

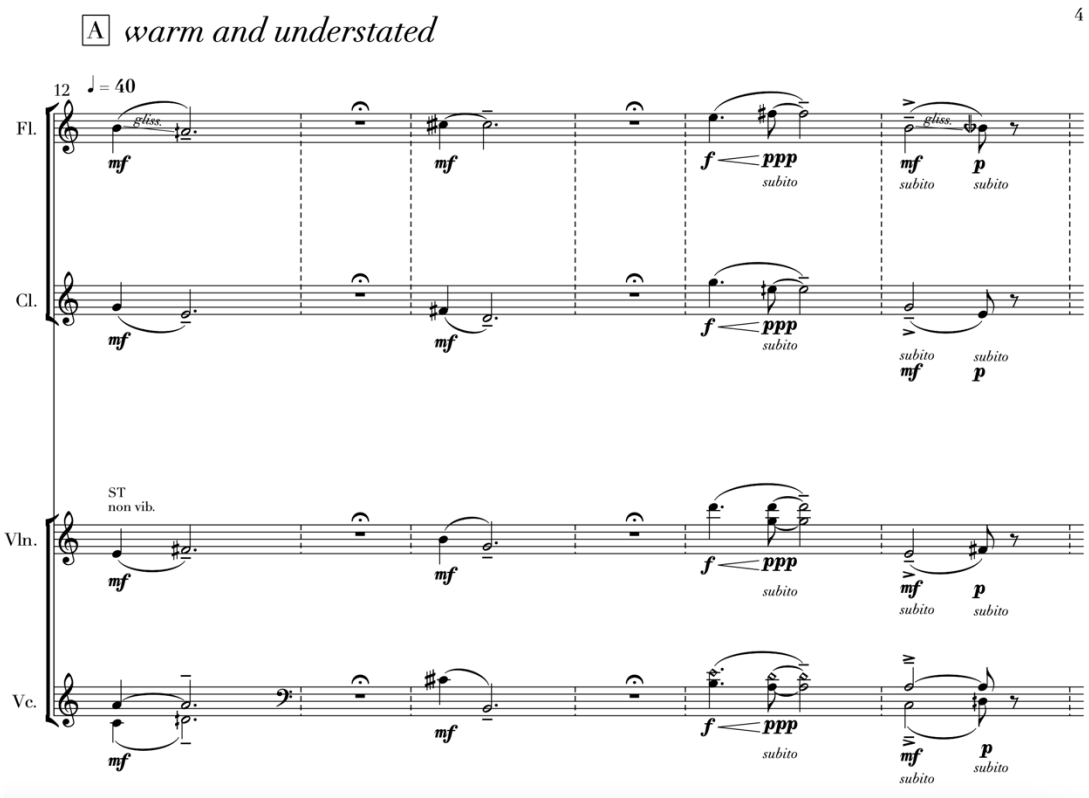

Fig. 46: *Golden Hour*, bars 12-17.

Pitch bends are used to disrupt pitch stability (see, for example, bars 106 and 118) and this influences the tactility of the piece, too: pulling, bending, and pressing the pitch upwards, and then back down again. Additionally, fluctuations of dynamics within held chords (wah-wah effect, or 'volume vibrato')

destabilize the sense of time and musical gravity and to a lesser extent, pitch.[127] These details serve to soak the already moving material with a feel of subtle, undirected motion, much like the glistening and dappling effect of sunlight during the golden hour.[128] This effect is scattered throughout the piece and is notated with a wide vibrato line. The first instance is at bar 21, where it is used across the ensemble.

In *End of Season – Lago Maggiore,* the final song of my song cycle, I employ similar compositional tools of homophony, pitch bends, and wah-wah effects. This song is set quite differently to the others in the cycle, and it is the one that holds a strong sense of nostalgia, quite similar to the emotional sensibilities of *Golden Hour*.[129]

3.2.2. Musical refractions as kinetic play

Another dimension of this homophony is that it enables a highly effective use of dynamics. In *Golden Hour,* the dynamics often change suddenly across the ensemble, similar to a single beam of light that reflects or refracts suddenly as it hits a new surface or enters a new medium. The musical material in *Golden Hour* moves as one body, melodically, and its unity is reinforced by these homogeneously contrasting dynamics.

These sudden changes in volume are musical manifestations of kinetic energy. The contrasting dynamics expose conflicting sounds between adjacent chords: sometimes these are quick changes (bars 16, 17, 26, 36, 101-102, etc.), while at other times, these contrasts are more slowly revealed

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[127] In the performance notes, players are asked to "oscillate between two volume levels, within the general range of the given dynamic. This can be achieved in the winds by adjusting air pressure, and in the strings by adjusting bow pressure. It should create a sort of 'wah-wah' effect."

[128] This sort of gentle, grainy, musical 'hue' is effectively produced in the genre of dream pop music, which does similar things in terms of timbre, and in terms of destabilizing pitch through oscillating dynamics (wah-wah effect). This is especially apparent in the use of instruments such as the mellotron, which often contains wah-wah effects by default. Of course, dream pop makes extensive use of synthetic sounds and reverberations over recorded voices, unlike my go-to compositional mode.

[129] A discussion on the emotional sensibilities of *Golden Hour* is presented in the fourth essay: *Loss and Hope: fostering ecological care*.

(bars 10, 18-19, 34-35, 104, 105, etc.) This dynamic effect is a feature of the piece and is only possible because of homophony.

Refraction can be musicalised both horizontally (using homophony and contrasting dynamics as described above) as well as vertically (by working with pitch arrangements / voicing). During an experimental process of fiddling with chord voicings, it became clear that specific choices of registers were vital elements on which the musical textures and timbral hues depended.

Working with voicings of chord structures, the physicality of the phenomenon of light refraction was developed as follows:

- Voicings are rearranged each time a chord changes.
- Sometimes the voicing changes are subtle (bar 23: Cl/Vcl, and bar 153: Fl/Cl/Vln).
- Other times, refraction is more severe, and the pitches are diverted suddenly across large intervals and into the high registers, landing in densely-compacted clusters (bar 19: Cl/Vln/Vcl).
- At all times, the changes occur together in a homophonic texture, moving together and affected to various degrees simultaneously.

3.3. Notes from a Wilderness

While *Like Clay* and *Golden Hour* musicalise close-up physical dynamisms of single materials and phenomena, *Notes from a Wilderness* addresses somatosensory experiences on a larger scale. By encompassing multiple naturally-occurring materials and physical sensations that resulted from hiking through a specific place, this piece explores tactile connections with whole environments along the route. The composition carries embodied knowledge of multisensory elements, remembered knowledge, archival materials, and topographical information. Hiking through and within a place provides opportunities for understanding and knowledge that are accessible only through direct physical experience. Here, moving becomes a way of thinking.

> For it is surely through our feet, in contact with the ground (albeit mediated by footwear), that we are most fundamentally and continually "in touch" with our surroundings.[130]

The Groendal Wilderness Area, in the Eastern Cape of South Africa, is a remote and rugged nature reserve near my hometown, Gqeberha. As a scout, I hiked through Groendal several times between the years of 2003 and 2009. In 2007, I was required to plan and lead a hike as part of my scouting training, and I chose to hike the Emerald Pool route in Groendal. Part of my responsibility as the hike leader was to document the adventure in a logbook. Today, I still have the logbook of that vibrant adventure. Although I have retained memory and embodied knowledge of those landscapes and of many journeys through them, the tangible logbook helped to jog my memory and refine my work for more nuanced musicalisations of my experiences along the route.

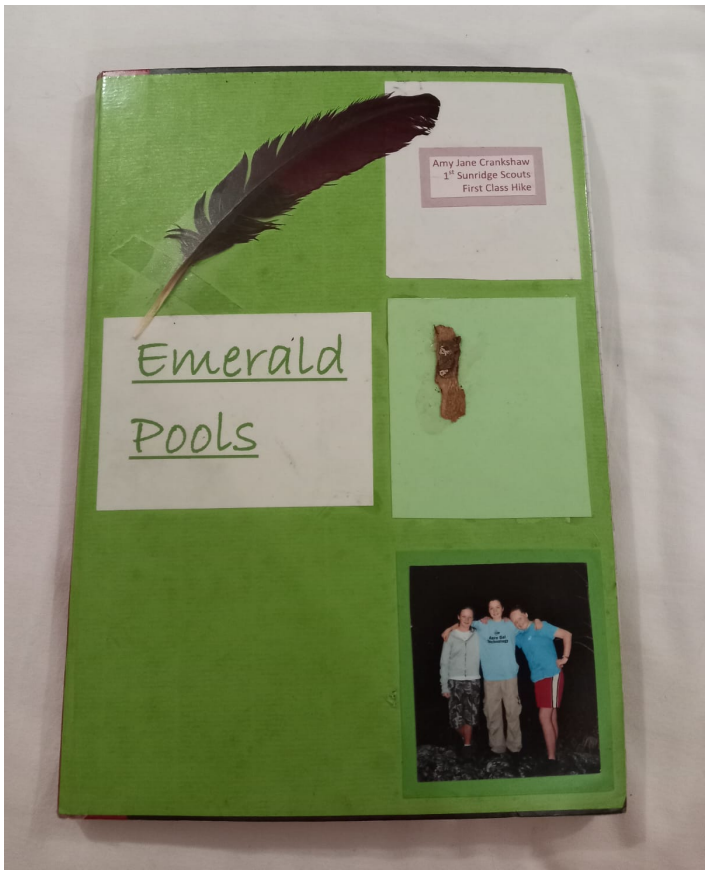

Fig. 47: My hiking logbook.

[130] Ingold (2011), 55-56.

3.3.1. Topographical tools

As mentioned earlier, the structure of the piece follows the structure of the outward part of the hiking route: from the start, up Ten Stop Hill and along the plateau, with a daunting descent down the ravine, to the deeply nestled Emerald Pool.[131]

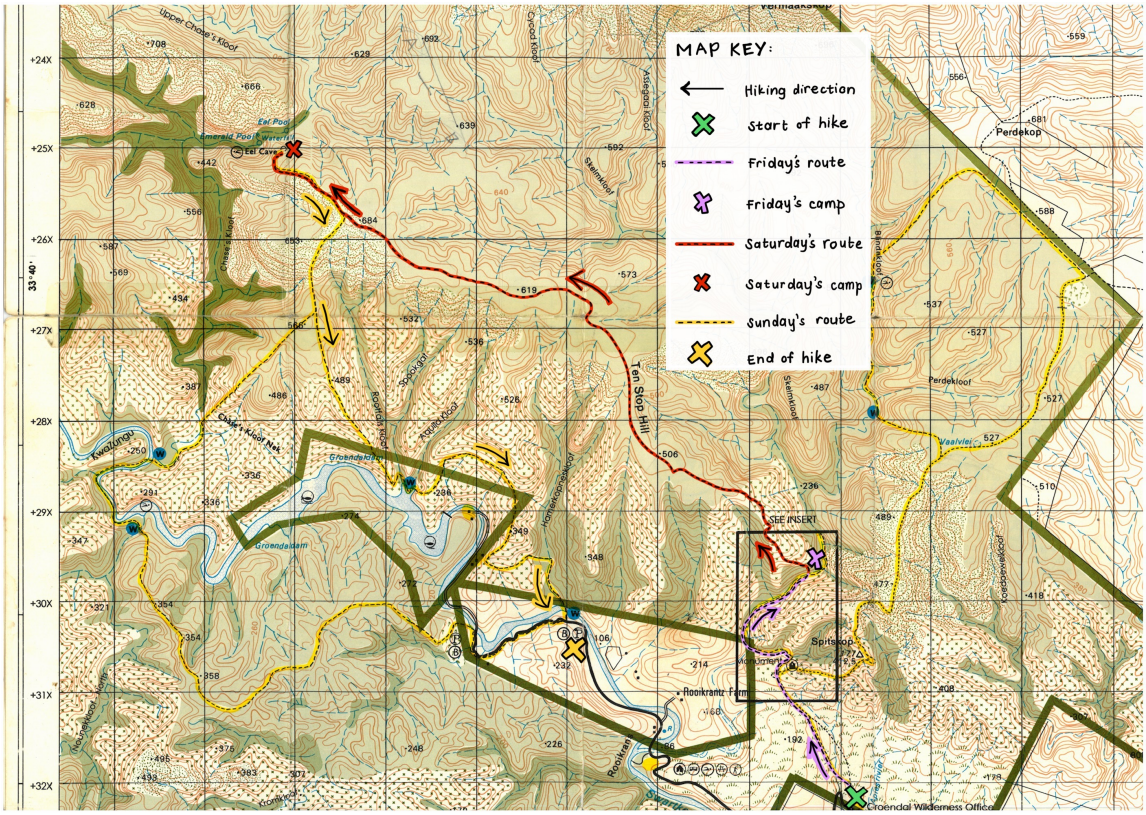

Fig. 48: Extract from the topographical map of Groendal Wilderness Area.

Composing with the topographical map at hand was a stimulating creative experience. However, this piece was not so much about capturing or representing the features of the place, as it was about musically embodying multisensorial memory of *experience in the place*. As such, topographical components are not directly translated or "mapped" onto musical elements. Rather, my tactual understanding and observations of the place and its environmental characteristics (landscapes,

[131] See 1.2.4.: "Embodiment, memory, and personal records of place: *Notes from a Wilderness*".

landforms, terrains, geography, climates, vegetation) is musicalised according to how it *felt* to hike in and with it.

The map was a helpful tool in that it offered myriad ways to think about physical movement in relation to the landform. Therefore, it assisted me in musicalising kinetic movement experienced along the route. For example, consider the proprioceptive sensations that are in continuous flux as a result of movement in a particular place: the specificity of physical exertion of climbing up or down; tactual sensations felt from elevation changes; feeling the ground's camber and adjusting one's balance, speed, and stride accordingly; and sensations underfoot from various terrains. These are all somatosensory experiences that can be channelled into musical material.

3.3.2. Musicalising sensorimotor exertion

The opening section of the piece musicalises sensations of physical exertion felt while climbing Ten Stop Hill; one of the landforms that presents itself early along the trail. I wanted the piece to begin within an atmosphere that musicalised the feeling of being enveloped in the thick vegetation that is present at the bottom of the hill, all while facing the treacherous climb. Plunging straight into the dense, dynamic landscape felt appropriate because it is one of the strongest tactile memories I have of the route. While the foot of the hill appears early in the hike, it is far enough that one is fully immersed within the route and, although it feels chaotic and daunting, momentum through the vegetation and up the hill must be endured as it is too late to turn back at that point.

I used repetition as a composition device to musicalise the feeling of stopping and starting while trying the climb up the steep hill. With every step, the environment, the elevation, and one's experience of it, changes. However, the intended route remains the same and musically, landscape continuity is generated through the reappearance of the same musical material. The opening material returns in different forms at bars 5, 10, and 16. The piece begins at 90 bpm and while the first and second iterations remain in the same tempo, at bar 16 (rehearsal letter C) the tempo changes to 72 bpm. Here, as the previous efforts and struggles of climbing begin to take a toll on the body, so does the musical material become tired. This is highlighted further in bars 22-25, where the saxophones and piano trudge through the final few steps. Each time the material repeats, alterations are made, with the changes in the topographical position and the resulting physical experience of the hiker in mind.

3.3.3. Musicalising proprioception: balance and vertigo

Throughout the piece, glissandi and pitch scoops give a sense of proprioceptive flux and slow alignment with the ever-changing environment. In bar 12, for example, the strings and trombones play glissandi and scoops, composed out of time with each other, sounding out diagonally across the orchestra. Following this in bar 13, the horns and trumpets take over from the trombones with some bendy, wah-wah effects. This is how I musicalised sensations of dizziness experienced at points along the way up the gruelling Ten Stop Hill.

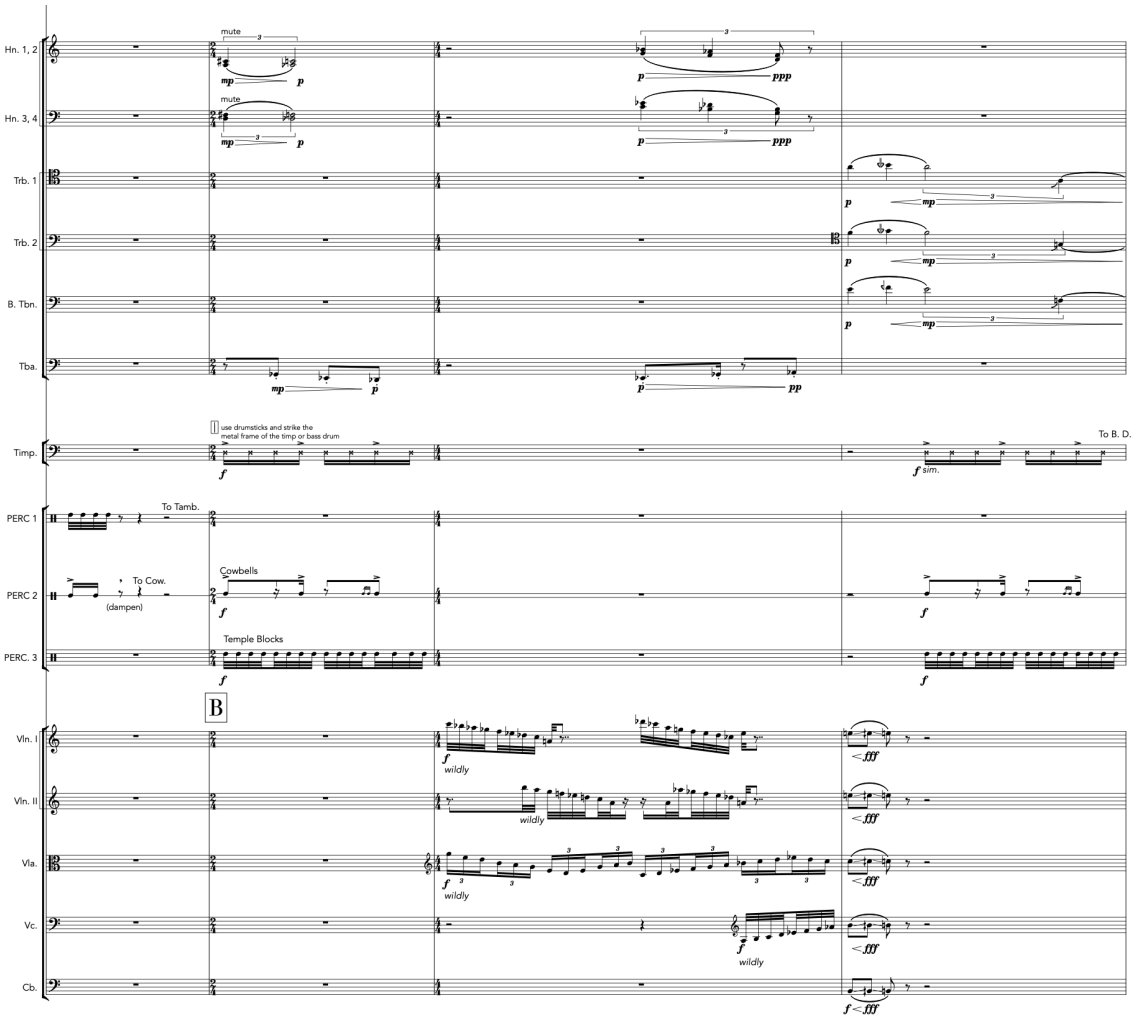

Fig. 49: *Notes from a Wilderness*, bars 9–12.

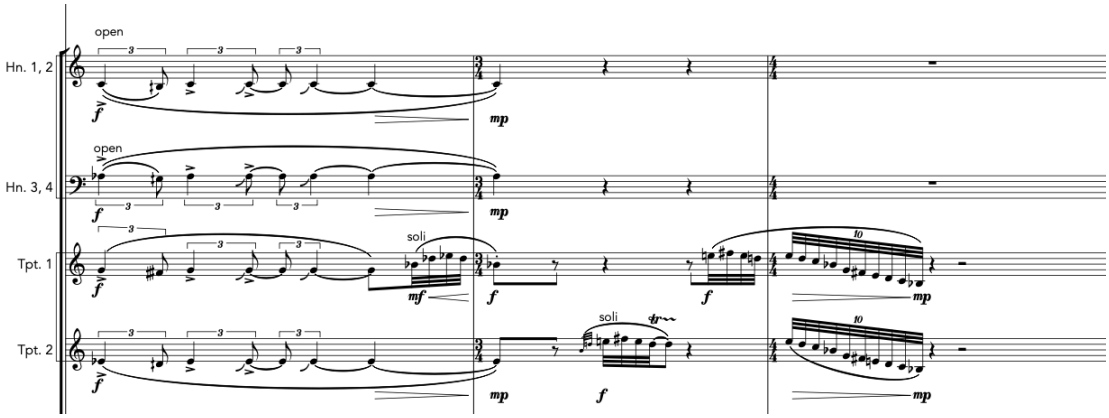

Fig. 50: *Notes from a Wilderness*, bars 13-15, horns and trumpets.

At D, upon reaching the top of the hill, I wanted the music to bear a sense of relief, overwhelm, festivity and disorientation. In a state of exhaustion atop the hill, there is a sense of accomplishment as well as vertigo as the body's vestibular awareness catches up with its new and suddenly fixed position of elevation. The frantic woodwind material contains mixed feelings of joy and overwhelm that can be felt viscerally after accomplishing the climb. This material in the winds also helps to disperse some of the pent-up emotional and physical tension that builds over the course of a challenging endurance event.

Glissandi and scoops are used again at rehearsal letter E (bars 34-37), as the top of the hill is reached and a sense of acclimatisation occurs as the hiker adapts, in mind and body, to the new environment.

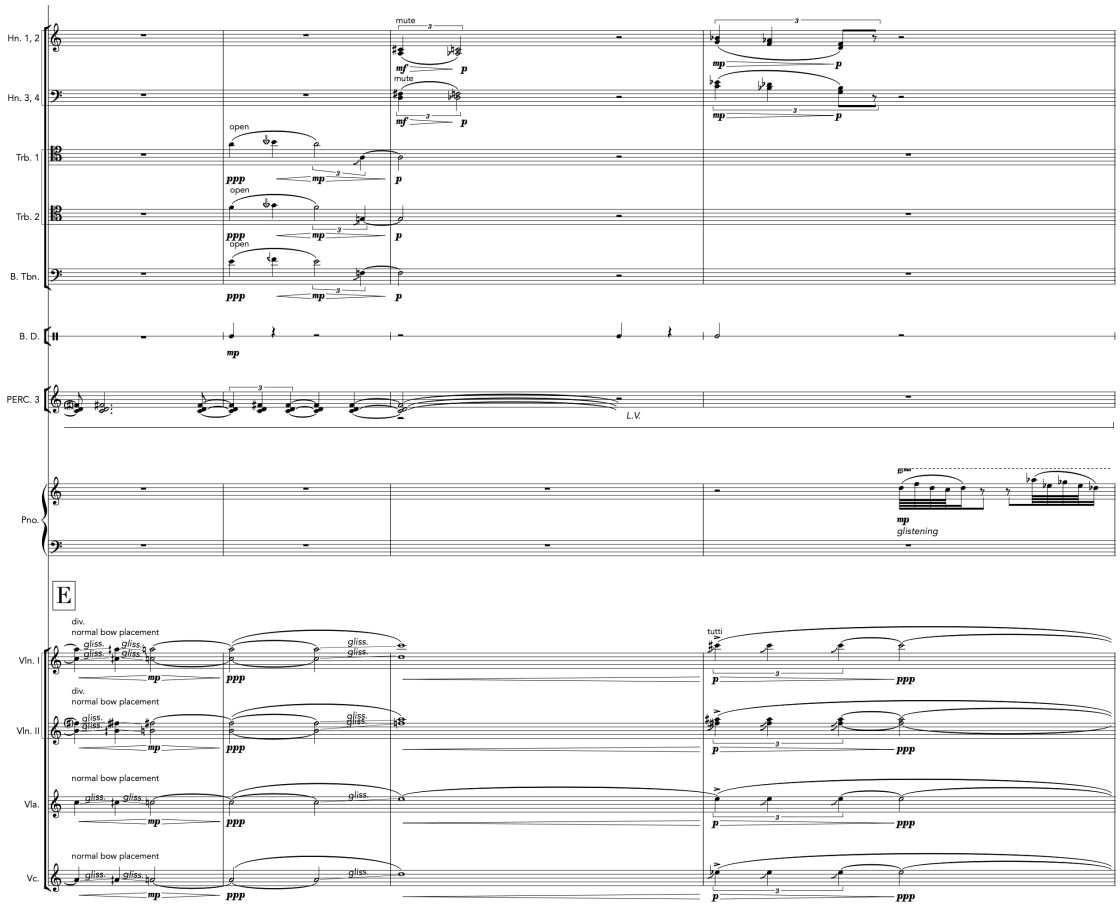

Fig. 51: *Notes from a Wilderness*, bars 34-37.

This acclimatisation process continues in the strings until rehearsal letter F (bar 39), where they finally play sustained chords for relatively long periods in which only the texture of the sounds change:

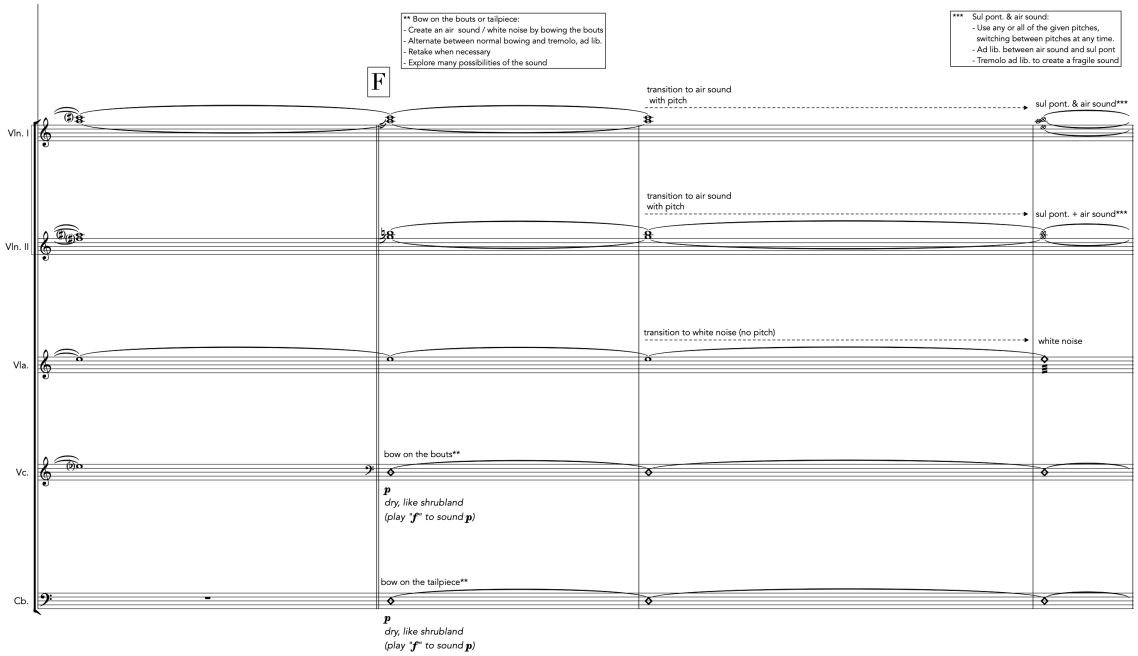

Fig. 52: *Notes from a Wilderness*, bars 38-41.

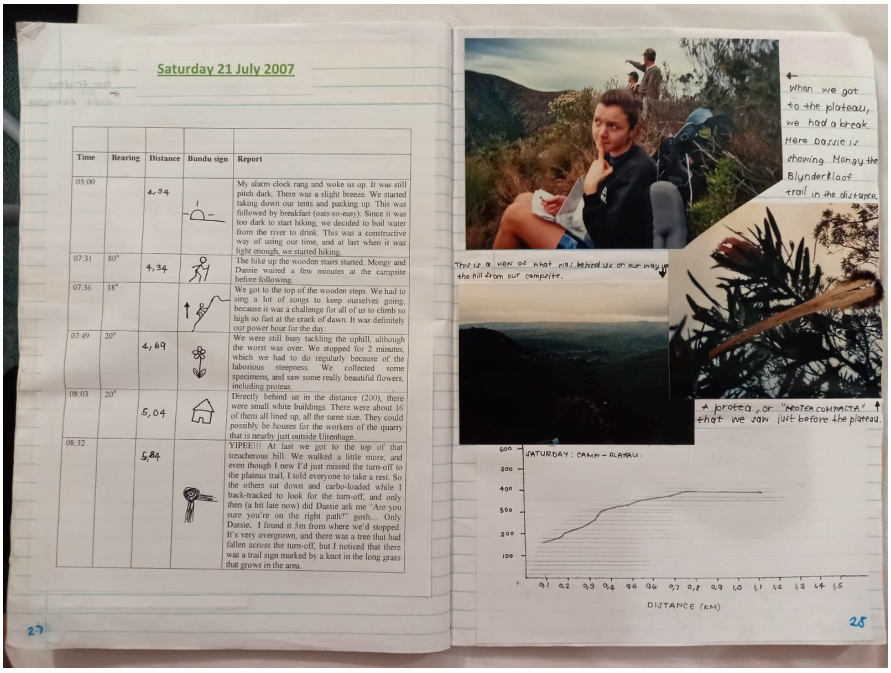

Fig. 53: An extract from my hiking logbook.

3.3.4. The orchestra's layout as a geographical tool

The layout of the orchestra proved to be a useful tool in musicalising the hiker's sense of geographic orientation. For example, at H (bar 54-61), where the brass section plays shakers, the entry of each shaker is scattered in time across the width of the orchestra, creating a geographically informed, orientational effect for the audience. The shakers are played starting with the 3rd and 4th horns on the left. The rest of the brass section follow in turn, with the tuba (on the far right of the brass section) entering last. The process is then reversed: the tuba player stops playing their shaker first, and this continues back along the same route of brass players, ending with 3rd and 4th horns on the far left.

This protraction and retraction of sound was a playful way in which I could musicalise myself being immersed in shrubby, prickly vegetation and overlooking the landscape. The rustling sounds of the vegetation in front of me rotate to the right as my head turns to the left, relatively speaking, and then back again to where the sounds were before I rotated my view. This tool, which I will call 'orchestral geography', reinforces the panoramic landscape that the orchestral setup provides naturally, bringing listeners closer into the multidirectional world of the hiker.

Lastly, I employ call-and-response as an orchestration tool to further stimulate a sense of geography – of physical distance and direction in relation to the landscape – inside the performance space. This can be observed at bar 83 and 87 in the interplay between the solo violin at the front of the orchestra, and the congas at the very back of the stage. A similar approach is evident in bars 34-35, where the trombones echo back the violin's glissandi from diagonally across the orchestra.

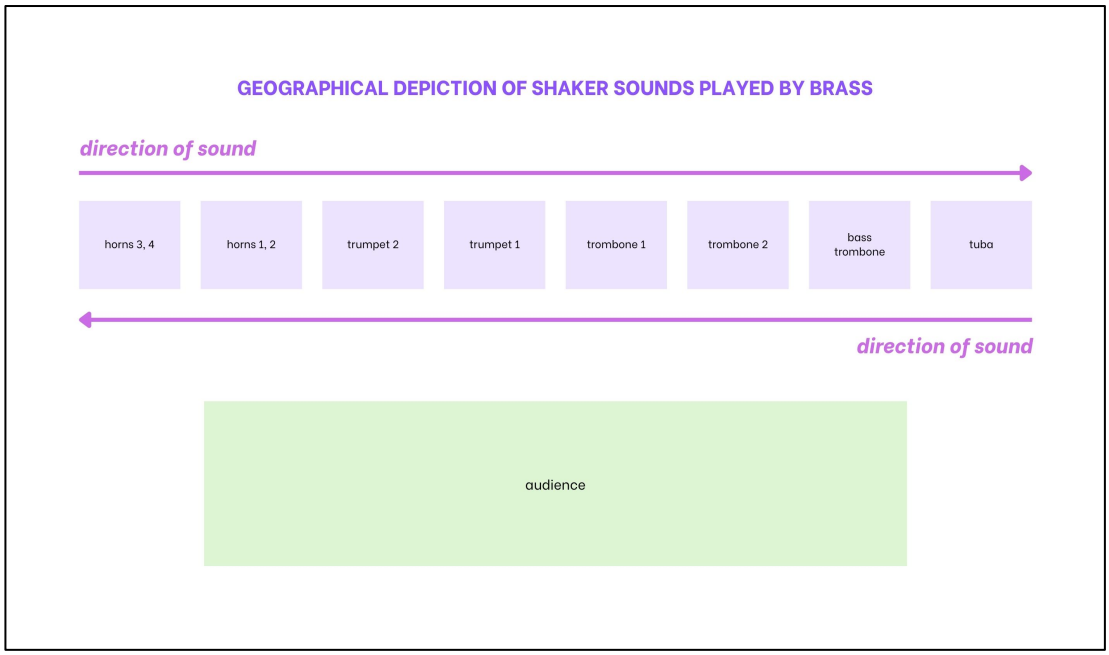

Fig. 54: A depiction of the directions of sound made across the orchestra, by the brass playing shakers.

3.3.5. Vegetation / flora as tools for orchestration

The Groendal Wilderness Area is a rugged ecosystem and is home to a variety of flora, mostly fynbos,[132] with a "great diversity of individual species. Isolated pockets of indigenous forest occur in the ravines, and there are also elements of thorny, semi-succulent Valley Bushveld scrub."[133] The abundance of tactual detail in the vegetation along the route is multifaceted. My love for and knowledge of this vegetation spurred on specific timbral choices, and my creative approach morphed into a process of playful orchestration, given the variety of instruments at my disposal.

[132] Fynbos ('fine bush') is indigenous to South Africa.

[133] South African History Online. n.d. "Groendal Wilderness Area." South African History Online. Accessed February 25, 2025. https://www.sahistory.org.za/place/groenendal-wilderness-area.

As the piece starts within the thick vegetation at the bottom of the Ten Stop Hill, I aimed to musically cultivate the intricate plant life there, by tending to textural density and timbral variety in the orchestration. The vegetation transforms along the route, and it is vastly different in the valley or near water bodies than it is atop the hill or along the plateau. As the climb progresses towards the plateau, the vegetation thins out. Accordingly, the orchestral textures lose their density and intensity, through a process of 'thinning out'. This is most evident where the densely composed material from bars 1-2 and 5-7 thins out at bars 9-10 and 36-37.

Fig. 55: Young protea plants on the plateau.[134]

Fig. 56 (top of following page): More shrubland along the plateau.[135]

Fig. 57 (bottom of following page): Ericas and other fynbos along the plateau.[136]

[134] Row the Viking. 2024. *Groendal Emerald Pool Hike, Eastern Cape, South Africa*. Online image. *Reddit*. https://www.reddit.com/r/hiking/comments/1bd1w73/groendal_emerald_pool_hike_eastern_cape_south/#lightbox.

[135] Ibid.

[136] Ibid.

I remember encountering African proteas along the route, both in the form of young saplings and mature plants, in what seemed to be chattering crowds of protea plantations.[137] As such, I wanted to musicalise the feeling of walking alongside clusters of shoulder-high proteas.

This tactile experience is composed into bars 76-79, following the solo violin's entry. Here, the violins, followed by the violas, play short, prattling *jeté* phrases. The phrases are played without a strict rhythm, and each individual player enters slightly out of time with the next, but all within a certain time frame. These musical effects embody the miniature movements of the thick-skinned proteas within the landscape, as well as my own tactile sensations of them: the fleshy, bristly plants with their coarse-edged tufts and their robust stems jiggling together subtly, quivering in the wind as though gossiping about me. They threaten to poke and tickle my skin, causing me to shiver a little when I brush past them haphazardly.

I have strong, fond memories of hiking amongst diverse fynbos, including the large num-num[138], as well as encounters with a cycad and various cacti. Among these florae we also found evidence of at least one porcupine, observing its faeces and dropped quills along the trail. With these multitudes of tactile information in my memory and my body, I felt it necessary to employ a range of 'prickly' sounds in the orchestra throughout the piece. As well as the *jeté* effects mentioned above, I musicalised the tactility of these shrubby plants by using sharp, spikey, brittle and dry sounds such as:

- Erratic, loud cowbell hits (the specificity of the cowbell sound was extremely important to me. With the help of colleagues, I experimented with and sought out the desired cowbells (bars 47-57 in the percussion section).
- Scratchy-sounding shakers, which I made from tin cans and gravel stones (bars 54-61).
- The choice to play the congas with the hands/palms, not mallets, for a drier sound.

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[137] The protea is a flowering plant native to Southern Africa and is also South Africa's national flower. See more at: Kew Science. 2021. "Protea L." Plants of the World Online. 2021. https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:331879-2.

[138] Also commonly known as the Natal plum, its small fleshy leaves can be used for cleaning teeth. See more at: Kew Science. 2016. "Carissa Macrocarpa (Eckl.) A.DC." Plants of the World Online. 2016. https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:77727-1.

- Demisemiquavers and tremolos/rolls on temple blocks and thunder sheet throughout the piece, using drumsticks.
- Striking the metal frame of the bass drum (bar 10 and bar 50).
- A moment of 'distortion' sound in the solo violin part (bar 50).
- Bowing on the bouts of the celli and the tailpiece of the contrabass (bar 39 onwards).[139]
- 'Brittle bowing' in the violins and viola (bar 46 onwards).[140]

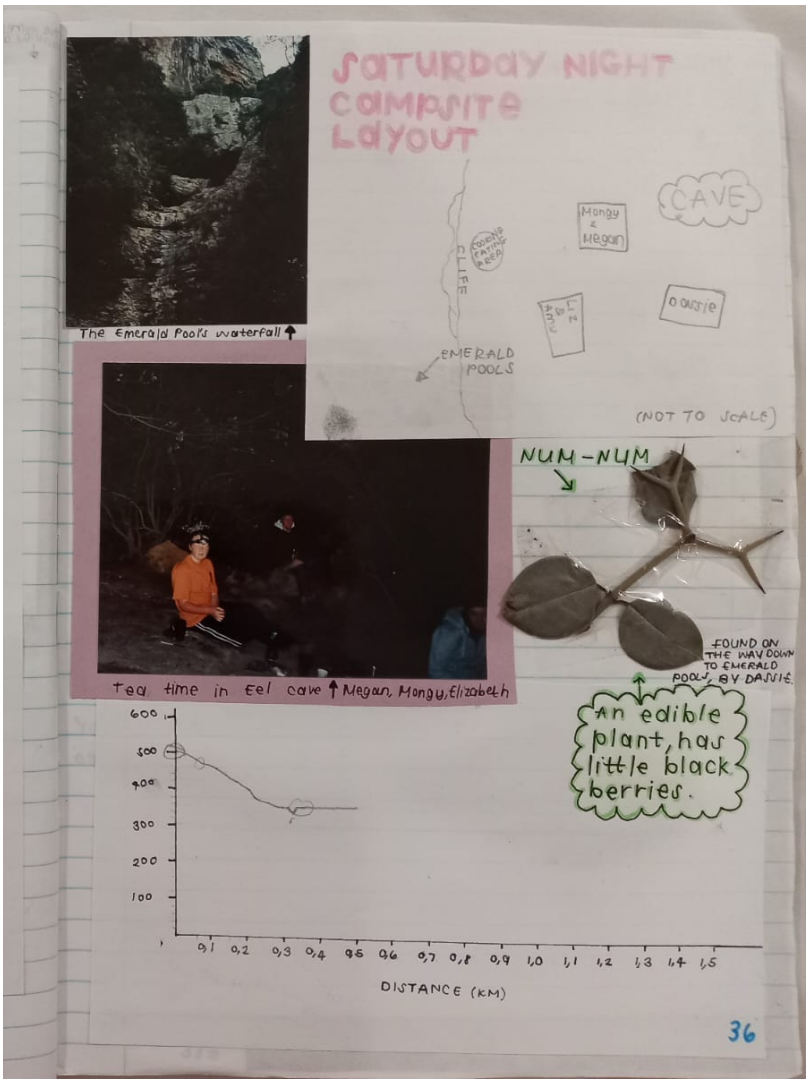

Fig. 58: An extract from my hiking logbook.

139 Please refer to the performance notes in the front matter of the score for details on this technique.

140 Please refer to the performance notes in the front matter of the score for details on this technique.

3.3.6. Musicalising proprioception: descending

The final section of the piece embodies mixed feelings of fatigue and anticipation as I approach the end of the plateau and the descent down the ravine. I wanted to musicalise the sensation of climbing down, lowering into the ravine, and leaving the plateau behind and above me, as well as submerging downwards into the water once at the bottom of the ravine.

This includes new musicalisations of vestibular orientation through the following means:

- The piano plays rising demisemiquavers, into the extreme high register, musicalising the feelings of descending into the ravine, leaving the plateau and its environment up in the sky (bars 61-62).
- The contrabass and cello slowly descend into their low registers, bringing in darker timbres that encapsulate moving down into shadowy bends of the ravine.
- The timpani plays sustained sounds using a superball mallet, along with a wah-wah effect made by oscillating the pedal. This creates a sense of vestibular imbalance in the low registers.
- The basses play a few descending glissandi phrases, reinforcing a feeling of sinking downward (bars 81-83 and 87-89).

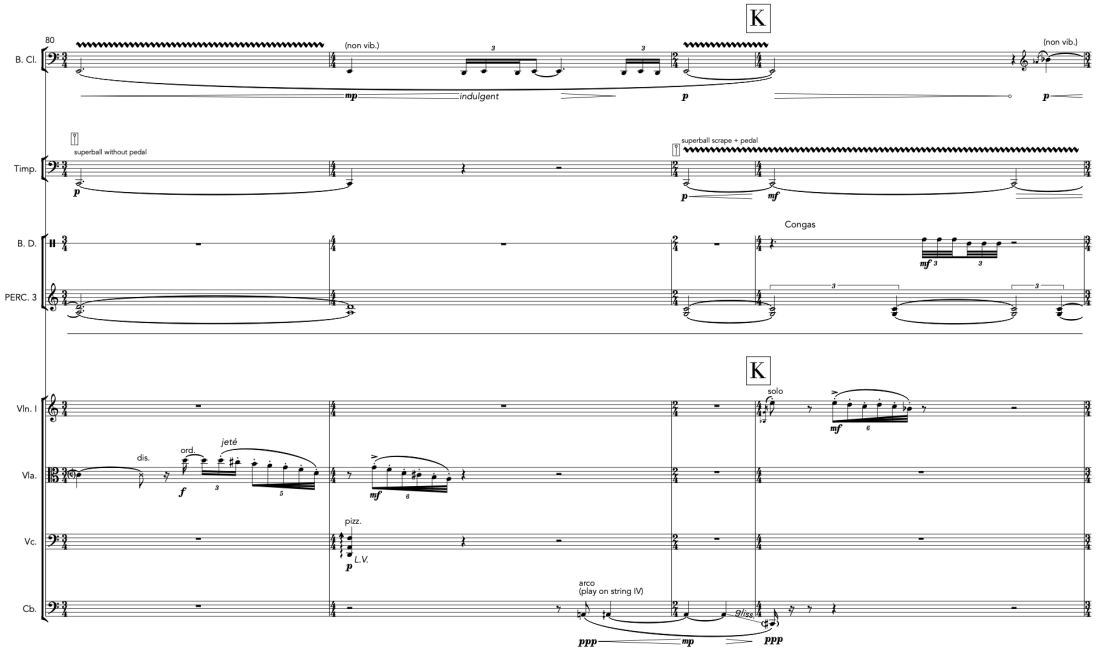

Fig. 59: *Notes from a Wilderness*, bars 80-83.

3.3.7. Sensing water bodies: humidity and terrains

Although I have sought to compose primarily visceral, remembered, and emotional experiences of this journey, there is a particularly symbolic musicalisation in this piece that I would like to highlight. Given that the hike's primary destination is a dimly lit, sparkling green pool of water, I wanted to assign a wateriness to the musical material. The bass clarinet is a prominent feature of the piece and only upon reflection (this was not preplanned), I have come to realise that I used the instrument to signal the presence of a body of water, and that we are getting closer to the Emerald Pool. This includes musicalisations of parts of the KwaZungu river that sometimes peek out and glisten from down below while we hike the plateau, and the stream at the bottom of the ravine that leads us to the Emerald Pool. The bass clarinet serves this purpose with its slippery agility (as with wet materials and running water) and its low range (ominous and opaque, with an ability to inhabit extremely low pitch ranges, just as water always tends towards the lowest areas of a landscape).[141]

[141] Libby Larsen employs metaphor similarly in *downwind of roses in Maine:* she assigns mallet percussion to the music of a rose hedge, while manifesting "the delicate scent of roses" using clarinet and flute. See: Libby Larsen. 2025. "Downwind of Roses in Maine - Libby Larsen." Libby Larsen. 2025. https://libbylarsen.com/works/downwind-of-roses-in-maine.

Fig. 60: (previous page) The KwaZungu river appearing between the hills, visible from the plateau.[142]

Once at the bottom of the ravine, which is damp, cool and quiet, we follow the softly flowing water upstream (see the bass clarinet solo from bar 74). After a long day of hiking, the Emerald Pool and its waterfall appear from behind a large boulder in the path. Finally, the anticipation of this glimmering, eerie destination is relieved when I embrace the cold water and slowly sink into the pool. This feeling is realised in bar 97, with the entry of the mid-register piano chords (a dominant 9 chord on D) accompanied gently by pianissimo strings, and a warbling, skin-tingling vibraphone. Over the course of the last fifteen bars (bar 97 to the end), the strings slowly ascend in pitch; the rising harmonies musicalising a sense of departure from all that I had to experience to arrive at this place.[143] This is a tender feeling that I remember well from being submerged in the pool waters: the dark, lush foliage crouching over the waters; the cliff face of the ravine dissolving into an increasingly faraway sky.

Fig. 61: A photograph taken from the foot of the Emerald Pool.[144]

[142] Row the Viking. 2024. *Groendal Emerald Pool Hike, Eastern Cape, South Africa*. Online image. *Reddit*. https://www.reddit.com/r/hiking/comments/1bd1w73/groendal_emerald_pool_hike_eastern_cape_south/#lightbox.

[143] This is a similar effect to that of the ascending piano upon leaving the plateau (bars 61-62).

[144] Ibid.

INTERLUDE

It is afternoon and I am a little tired. But I continue because I know I will not regret this. My stride lengthens. My pulse quickens. My body throbs. More urgency, more urgency. And then, more heat. And, while my heart reconciles itself to a new rhythm, so do my feet. Underneath my shirt I am a thumping, violent fury held back only by my wild skeleton. And I am scared. My tilted torso is carrying – no, heaving – the absurd mass of all that is conceivably me and mine. My skin feels lucky to be a witness. Inside my lace-ups, my toes are already bothered with the lack of space; helplessly longing to splay out fully and caress the ground underfoot. They wish they were free. More heat. I taste salt and metal. I smell green. The ground responds to every tread. I sense her viscosity, her shape, her softness. Her sacred resistance. She feels my weight and my rhythm. We are playing. We are thinking. We are making kin.

Fig. 62: Part of the Dollis Valley Greenwalk, July 2020.

4. TENDING TO LOSS:

fostering ecological care

The emotional entanglements that exist within our connections to the natural world are so much part of our experience of them, and I have alluded to some of these emotional aspects of my work throughout this dissertation. Here, in this final essay, I will address a few ways in which my work embraces certain emotional sensibilities; particularly those that arise from facing loss.

Sadly, the idea that humans are, or should be, the central force of the universe still permeates much of the Western world. This 'ego-system' values human life far more than nonhuman life or the materials that sustain all life, and it is a fundamental part of the environmental breakdown and climate catastrophe we are facing. It is therefore not surprising that, upon reflection, my music seems to exist within emotional atmospheres of grief: grief with, from, and about the places from which I've departed and the places to which I can no longer return. These contemplations have drawn me to explore ecologically-related emotions, or 'eco-emotions' as coined by Professor of Sustainability Glenn Albrecht.[145]

In *Solastalgia – Layers of caring*, a collaborative music project with composer Carola Bauckholt (inspired in part by Glenn Albrecht's work), violinist Karin Emilia Hellqvist describes how engaging with earth-related emotions through music can help us process our feelings about our damaged planet:

> "By naming Earth-related emotions associated to trauma, grief and mourning, Albrecht creates a new vocabulary connected to the ecological challenges we are facing in the Anthropocene. Finding that there is a term for the feelings Carola and I experience and confirming that others feel the same as we do is

[145] Albrecht, Glenn. 2016. "'Solastalgia': A New Concept in Health and Identity." *PAN: Philosophy Activism Nature* 3 (December). https://doi.org/10.4225/03/584f410704696.

somehow supporting. And as artists, we also feel a similar need to order, process and share our feelings, by using our artistic language to express our care for the ice."[146]

Just as labelling earth emotions helps us to actualise our concerns for the climate and biodiversity crisis, making music of them can help us tend to specific emotional needs amidst uncertainty and sadness. Equally, musicalising eco-emotions can help foster and hold empathy for the nonhuman other because these are feelings that have been born out of ecological loss.

Making and sharing music is a way to make sense of, and to cope with, complicated emotions associated with ecological breakdown and climate grief. Perhaps it can help us to reconcile ourselves with the reality of the climate crisis by addressing the emotional weight of what we have already lost, and that which we know we will inevitably lose because of current ecological trajectories.

4.1. Fear of loss: *Return*

What intrigued me while writing *Return (*as part of the *End of Season* song cycle) was the palpable sense of fear about forgetting a known place written into the text. This emotional atmosphere resonated with me personally, having left my hometown at the age of 17, and then leaving my home country when I was 23 years old. Here, the poet is concerned about losing touch with Cannero Riviera, perhaps as a result of climate change, or memory loss, or perhaps she does not know the next time she will be able to return and as a result, she will become further and further distanced from the time when she last touched it or experienced it.

It felt appropriate that the singer begin the song acapella, with an obviously human perspective of personal worry, and feelings of isolation or disconnect. I repeated some words from the first line of the poem, creating a slow unfolding of the full sentence. This helped to musicalise a sense of fear and insecurity – such feelings are not always fully understood nor ready to be spoken.

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[146] Hellqvist, Karin E. 2022. "Solastalgia - Layers of Caring." *RUUKKU - Studies in Artistic Research*, no. 18 (September). https://doi.org/10.22501/ruu.1369344.

Accordingly, the opening line "If I forget these short days and cool nights" became set in song as:

If I

if I for-

if I forget

if I forget these short days

and

and

cool

nights"

Only once the singer reaches the final word of the phrase, "nights", the instruments enter for the first time, surfacing slowly and gently as a 'presence' more than a particular theme or motif. It's a single chord that simply introduces a sound palette for the piece, just as memory and embodied knowledge of place might begin to appear tenderly through intuition.

The poet's solution to the potential problem of forgetting is that of 'pretending' – pretending that she is in the place, experiencing it, when she is not. To do this, she has to rely on her deeply ingrained embodiment of the place – on multisensory memories of the landscapes. This helps her to visualise and imagine herself in that place which she hopes to never forget. Consequently, in setting the poem to music, I used the instruments as a sort of embodied knowledge inherent to the human, a pool of knowledge that has its own intuitive activity and strength, and that conjures up memory of sensation even when the human is cognitively unsure of herself.

The second half of the poem brings a confrontational aspect to the scene: the human speaker feels called, drawn in, and confronted by the presence and personification of the lake (this poem precedes *Postcard from Cannero,* which I discuss in 2.4.: "*Postcard from Cannero*: becoming place"). I

appreciated this seemingly abrupt change of focus in this opening poem: shifting from the insular, self-aware perspective of the human towards careful listening to, and awareness of, the nonhuman: an awakening of sorts.

The poem explores fear further. Not only is she carrying a worry of forgetting unique experiences of comfort and beauty in this place, but also a fear of forgetting nature's violent power – a power that is often slipped under the rug in our human-centric society, resulting in miserable consequences. I used the bowed cymbal to change the sound palette according to the change in perspective; the unpitched, ghostly sound creating anticipation for the rest of the cycle in this opening song.

But cruel waves come from nowhere
Tipping boats
Slapping harbour walls
The lake speaks to me
And I must listen

4.2. Rituals of grieving: *Golden Hour*

While composing *Golden Hour,* I discovered that my embodied sense of that time of day is entrenched with contrasting, complex emotions. These final, critical moments of daytime seem to carry strong meanings and emotions: for different people it may be a time of despair, mourning, return or renewal. Such a beautiful time of day can also be seen as a sad time, because it is signalling the first step towards darkness. These contrasting concepts seem most palpable during the golden hour. It is *within* the transition from light to dark (and dark to light) that this exquisite solar ritual takes place.

John Luther Adams' *Three High Places,* for solo violin, is inspired by his experiences with phenomena and materialities of Alaskan landscapes.[147] Similarly to *Golden Hour*, it was composed in an atmosphere of grief, having been dedicated to his close friend who had passed away. The material feels intimate, even though the subject matter is expansive. The three movements of the piece all embody a

[147] Adams (2007).

sense of open, vast space through repeated gestures, using only harmonics and open strings (i.e. not touching the fingerboard at any point in the piece). For me, this alludes to the natural cycles of the sun as well as the feeling of something being hard to reach – i.e. the sun high up in the sky; the inhabitable Alaskan wilderness; and a friend who has passed away.

Having lived in both the Southern and Northern Hemispheres, my experience is that skies and sunsets can appear different in the north from the south. However, sunset and sunrise times have always been, arguably, the most beautiful and influential times of day regardless of geographical location. In isiXhosa (a language indigenous to South Africa), the idiom *"*Xa libantu bahle" translates as *"*when people are beautiful*";*[148] referring to the time of day that in English is called the golden hour.

Figure 63 is a photograph of the home in Gqeberha in which I was raised. My grandparents lived next door (to the left in the picture). I have effervescent memories of days ending with the sun setting over my grandparents' house; the broad, almost hallucinogenic rays stretching from their direction to mine, lighting up the trees in our back yard (to the right of the picture in the background). My maternal grandmother, Elizabeth Vieira, has since passed away in a car accident in 2019. The following photographs were taken on the final day that my family lived on this property before moving to a different part of the city. They had lived at 7 Oak Road for twenty-six years. Today, this property is used by a car sales business.

When I think about the sun setting, I am transported back here. This place has shaped parts of my relationship to the natural world and to the solar cycles. In making this piece, the golden hour as a natural phenomenon has become a teacher for the ritual of grieving.

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[148] Kirsch, Beverley, Sylvia Skorge, and Sindiwe Magona. 2001. *Clicking with Xhosa: A Xhosa Phrasebook*. Cape Town: David Philip Publishers.

The Xhosa language uses many idiomatic expressions to describe different times of the day according to the *effects* of the sunlight on the land. For example, the idiom "Xa kumpondo zankomo", translates literally as "when the horns of the cattle are just visible", referring to early morning / the very beginning of the sunrise.

Fig. 63: My family home in Gqeberha (Port Elizabeth), South Africa, September 2015.

Fig. 64: A view of the backyard, stretching past the windmill into a sliver of the Baakens Valley.

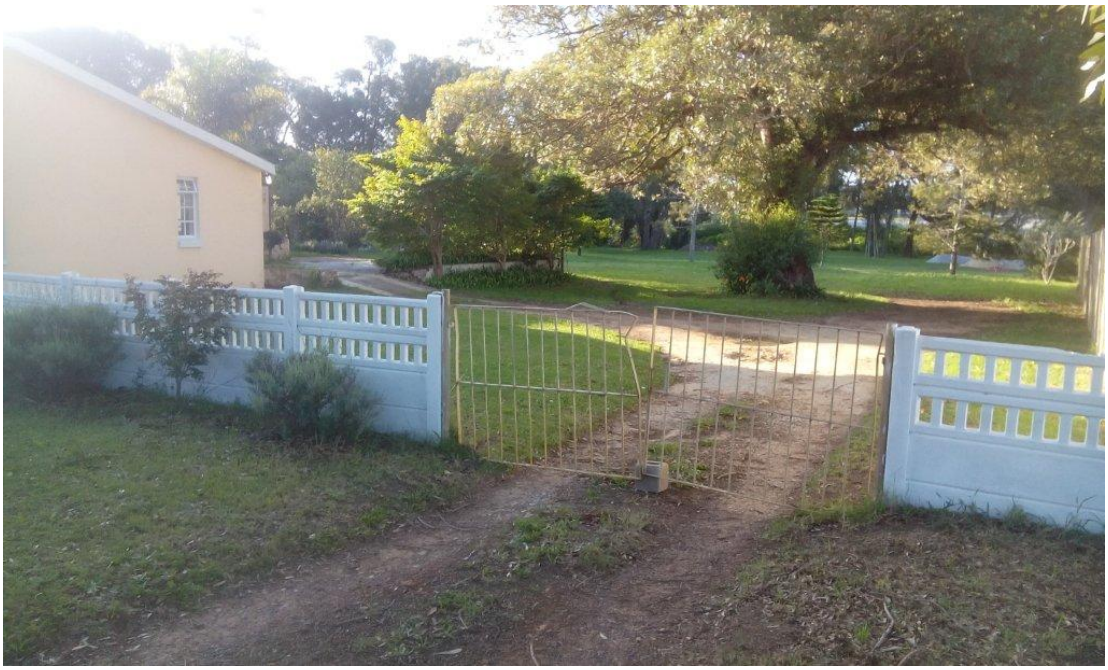

Fig. 65: Another view of the property.

"High grasslands are flooded in gold…
I know that it will fade when the sun goes below the mountains
and the cold flows down with the evening wind.
But, for this one moment,
that last territory of the light seems to draw into itself
every longing for travel that I have ever felt
and every longing for home."[149]

[149] Davidson, Peter. 2015. *The Last of the Light*. Reaktion Books. 8.

4.3. Identity, longing and belonging

Earlier in this dissertation, I discussed my foot-based experiences of clay mineral in *Like Clay*. Experiencing natural terrains kinaesthetically ignites in me a primal sense of belonging with and in the land, a sort of kinship – 'I see me in you' and 'I see you in me'. This is a Solastalgia[150] for the landscapes of the Karoo, and a kind of landscape-based biophilia that feels deep-rooted in my identity. I feel these landscapes beneath my skin, stirring in my bones, calling me back to itself, and to myself.[151]

During the creation process of *Like Clay* I discovered that my embodied sense of material clay was entangled with my emotional connection to parts of South Africa that were suffering from years of drought.[152] I was particularly conscious of the loss suffered in Graaff-Reinet, the small town where my father was born and where many of my cherished childhood memories are set. Since composing the piece in 2021, water has returned to the Nqweba dam outside Graaff-Reinet. However, anxiety around impending droughts remains. I last visited in October 2024, to attend the funeral of Cora Crankshaw, my paternal grandmother.

A loss of biodiversity and of landscapes is in one sense so incredibly painful because in losing parts of the natural world, we lose parts of ourselves – of our identity, and our sense of belonging.

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[150] Collins dictionary defines Solastalgia as "unease and melancholy caused by the destruction of the natural environment; eco-anxiety". See: "SOLASTALGIA | New Word Suggestion." 2024. In *Collins English Dictionary*. https://www.collinsdictionary.com/submission/22090/solastalgia.

[151] One of my earliest compositions, *From the Valley of Desolation*, is inspired by the Valley of Desolation, located just outside Graaff-Reinet. See: Crankshaw, Amy. 2014. *From the Valley of Desolation*. Streamed. Soundcloud. https://on.soundcloud.com/JGFa9ub9pbAyD4PbA.

[152] The 2015-2021 drought is considered a result of both climate change and poor management of resources and development.

See: Bernardo, Carla. 2020. "Eastern Cape Spring Is Getting Drier - Here's Why." *UCT News*, March 6, 2020. www.news.uct.ac.za/article/-2020-03-06-eastern-cape-spring-is-getting-drier-heres-why.

If being alive is a process of becoming, then who will we become without the ancient baobab tree, the dainty turtle dove, the precious coral reefs, or the joy of springtime? [153] As Rachel Carson put it in her shocking and moving book *Silent Spring*, in relation to a meadowlark found dead because of 'needless havoc':

> "by acquiescing in an act that can cause such suffering to a living creature, who among us is not diminished as a human being?"[154]

4.4. Closing

Having lost my husband, Christopher, in January 2024, the journey through this research has been steeped in grief. And yet, as I write these words, spring is appearing once again. It is not yet 'silent', although it does feel contained, and my sense of loss as well as my fear for the planet continues to permeate every pulse, every step, every breath.

Again, I am confronted with Nancy Guy's question: "what role might music play in mending our seemingly broken ties to the natural world?"[155] and again I wonder about ways in which music might be able to challenge our ways of thinking, our ways of being, and perhaps, our ways of ecological care.

How can we better mourn and honour our losses, both human and nonhuman? How can we grant those we have lost the dignity they deserve? How can musical thought help us better tend to another's suffering? What can the natural world teach us about empathy and care – and how might this be explored through music?

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[153] See: Fallah, Amy. 2024. "Catastrophic 73% Decline in the Average Size of Global Wildlife Populations in Just 50 Years Reveals a 'System in Peril' | Press Releases | WWF." World Wildlife Fund. October 9, 2024. https://www.worldwildlife.org/press-releases/catastrophic-73-decline-in-the-average-size-of-global-wildlife-populations-in-just-50-years-reveals-a-system-in-peril..

[154] Carson, Rachel. 1962. *Silent Spring*. London: Penguin Books.

[155] Guy, 219.

CONCLUDING REMARKS

The process of developing the five compositions in this research project has revealed resources and methodologies that may be valuable to others exploring the intersection of composition and ecomusicology. These are distinct in terms of general creative approaches and in terms of crafting and handling compositional material.

I hope that these processes may be investigated, utilised and adapted by other artists to continue and expand our understanding of composition as a mechanism for engaging with the natural world's materials and processes, and as a way to explore the complexities of our human-nonhuman relationships.

In reflecting upon my first research question, '**how might the composer relate to aspects of the natural world within an artistic context?**', it has become clear through this research that when considering knowledge or input from other-than-human entities, a strongly embodied approach allows a spirit of collaboration to ignite and a path towards ecological care to begin. As with *End of Season,* intentionally befriending an unknown place through physical interactions can help to cultivate a deep, personal understanding of it and even foster empathy for it.

Indeed, by musicalising personal embodied connections to the natural world, composers might be able to create music with a deep sense of authenticity. While this does not negate the value of incorporating conceptual or explicit data into ecologically-conscious music, it is evident that prioritising relationship-building and experiential cognition offers an effective approach to the composition process: the open-ended, occasionally risky, and frequently unpredictable qualities of experiential cognition facilitate a compelling and thought-provoking creative environment.

Considering my second research question, '**what might human-nonhuman dialogues look like in music composition?**', this research has explored methods that invite the voice of the 'other' into the creative process, setting up opportunities for human-nonhuman collaboration. This occurred in obvious ways both in the creative process (*Museum of Citrus*) and in performance (*November moon readings*).

An observable method that has revealed new knowledge is my use of plant materials with acoustic instruments, specifically, as percussion beaters. I employed plant materials (rosemary, lime leaves and eucalyptus) in *November moon readings* specifically for the actions of rustling, scraping, striking and whacking drumheads. Additionally, the plant materials were broken up and crumbled onto the timpani and bass drum (performers were asked to crush, throw and drop the leaves onto the timpani dramatically, from high above, as well as disintegrate some of the eucalyptus sprigs onto the bass drum).

Consequently, the plant materials controlled a large measure of the piece's sounds and the performers' movements. This is evidenced as follows:

(1) The size and weight of the **lime leaves** determined the height and force that the musicians needed to use when dropping the leaves onto the timpani heads, in order to produce audible sounds.

(2) The tactile integrity of the **rosemary sprigs** controlled the way in which the musicians could scrape and tap the timpani heads. The plant is characteristically delicate, and drier sprigs disintegrate more quickly than greener sprigs when they make contact with the drum skin. However, drier sprigs give a clearer rustling sound against the timpani skin, which is more sonically effective. Therefore, there were two collaborative aspects to this human-nonhuman dialogue: the physical variables of this plant dictated not only the sounds made in the performance, but also affected deliberations around when to purchase and cut sprigs of rosemary from its main plant, how big the sprigs should be, and which variety of rosemary might work better than others for this purpose.

(3) The waxiness of the **eucalyptus leaves** produced a specifically screechy sound when scraped or rubbed against the thunder sheet.

(4) The **eucalyptus sprigs** dictated the ways musicians could whack the suspended cymbals: there was a fine balance here that needed to be negotiated between the durability of the eucalyptus sprigs, the volume of the sound made by whacking the cymbals, and the desired dramatic/visual effect of the eucalyptus being destroyed on stage.

(5) When placing the **disintegrated eucalyptus sprigs** on the bass drum, some dusty and waxy residue accumulated across the surface of the drum skin. This created a slightly more slippery surface, lowering the drum skin's traction and reducing the potential for effective friction from the superball mallets that were later dragged across the skin. This might be avoided by altering the rubber material of superball mallet heads (softer or stickier rubber heads could be more effective for this purpose), and/or adjusting the dragging techniques appropriately.

As such, each plant material had a powerful effect on the sound possibilities and the dramatic effects of the piece, clearly revealing human-nonhuman cooperation in making and performing music. As outlined above, these plants introduced new practical and musical challenges as well as ways to 'dialogue' with their individual haecceities. These are new ways of using plant materials with acoustic instruments that I have not seen before.

A key insight gained from working with these plant materials is that, despite thorough selection, implementing them effectively still necessitated adaptive approaches. Certain foliage may not be easy to source in different seasons or different locations. For example, originally, I was looking for citrus 'branches' (not leaves alone) that could be tapped onto the timpani skins, similarly to the rustling of the rosemary sprigs. Unfortunately, the time of year (winter) did not allow for many options in this regard. I had to opt for dried lime leaves that were sold for culinary purposes and were easily accessible during the winter season in the UK. The rosemary sprigs were also difficult to find as they too were not in season. The rosemary had to be kept freshly planted in pots until just a few days before the performance to accommodate their physical properties as described in point 2 above. Fortunately, my search for rosemary bushes was facilitated by the assistance of knowledgeable staff at various garden centres. Meanwhile, the eucalyptus sprigs, though easier to find as they are commonly used in bouquets and for decoration, had to be sourced weeks in advance of the performance because I needed to dry them slightly (though not too much) to enable an ideal 'rate of disintegration' throughout the performance, thereby working very carefully according to their durability. It is important to note that most varieties of eucalyptus tend to require an extended period to dry, due to their natural adaptation for resilience in arid environments.

Considering natural materials used in performance contexts, it is also worth noting that in *Walking*, the selection of materials collected from the mountain was left to chance. Even though I had some idea of what we might find, and even though the score does not specify the shaker sounds, the weather

conditions could have affected our foraging. What would we have done if it was raining on the mountain at the time that we needed to collect materials for our shakers? This would pose a challenge directly from the natural world and we would have to find ways to work with the conditions – perhaps we would have to collect soggy materials and dry them out, and therefore require more preparation time. This kind of flexibility of musical materials can be compared to open score notation, in which the ensemble is adapted according to the instruments available.

Using naturally-occurring materials in performance can therefore disrupt the composer's preconceived idea of the sound of the piece, its dramatic appearance, and the way the musicians are required to perform it. Consequently, it is essential to evaluate alternative options to the preferred materials, taking into account the specific purposes of the project and – of course – prioritising environmentally sustainable practices wherever possible.

These practical challenges are precisely the kinds that direct the creative focus away from human individuality, enabling nonhuman elements to play an active role. By extension, this invites new, often unforeseen layers of creative response from the composer, reinforcing the potential for human-nonhuman reciprocity in composition. It demands composerly inventiveness as well as heightened attention to the haecceities of the naturally-occurring subject matter.

Further to the direct use of obviously tangible materials in my work, I have been able to make room for material agency in more abstract ways by investigating and musicalising how places, phenomena and materials have affected my body. *Notes from a Wilderness* musicalises experiences of very specific terrains and plant materials without those materials appearing tangibly in the creative process. Likewise, with *Like Clay,* while there is no physical clay used in the performance or in the composition process, my embodied knowledge of the material informed several aspects of the composition, including instrumentation, timbre, register, and musical gestures. This is why sensation, as an intimate contact point between materials and my experiences of them, has been so important to my work.

Accordingly, I arrive at my third research question, **'how might certain sensations and interactions experienced by the composer within natural environments be explored in musical material?'.** The idea of sensoria as a meeting point between human and nonhuman entities has been reinforced throughout this research. Somatosensory elements of my interactions with the

natural world have been particularly interesting to explore musically, and I have developed some unconventional ways to musicalise bodily movement, as well as other sensory inputs.

I have found that proprioception, movement and exertion can be explored as follows:

(1) To compose a proprioceptive experience such as dizziness or vertigo, a **symphony orchestra's large layout** can be utilised as a tool: stretching or placing musical material onto different instruments *according to where they appear in the ensemble's layout,* rather than according to their sound possibilities, can create a sense of physical misalignment and imbalance (as in *Notes from a Wilderness*).

(2) To create a sense of downwards motion (descent), ascending pitch can be utilised. In composing **rising pitch for musicalising descent**, an immersive audience experience is created (for example. the audience feels they are descending relative to the strings, as in *Notes from a Wilderness*). This is a significantly different tool to the descending melodic lines that might be more obviously associated with musicalising downwards motion.

(3) The embodied, sensory experience of ascending a hill may be musicalised by considering the fatigue it induces on the human body. To this end, I have used slight changes in **tempi** to musicalise the effects of physical exhaustion, and these tempi are applied to **repetitions** of the same (or very similar) musical material. The music features **distinct interruptions** between each repetition, embodying the feeling of pausing and resuming during a climb up a hill.

Therefore, my compositions have been able to realise and reinforce the notion of moving as a way of thinking (as mentioned in section 3.3.: "Notes from a Wilderness") and, more generally, reinforcing the ideas of embodiment and experiential cognition as ways of thinking, knowing, and composing.

Tactility has proven to be another important part of my research in composing sensory experience, and I have found that it can be explored musically in various ways. In *Like Clay,* instrumentation choices and timbral techniques were inspired by tactility, in that the physical act of violin playing communicates tangibility effectively through its bowed actions and variety of performance techniques. Additionally, composing for *two* violins, which push and pull each other through the piece, helped me

engage with a sense of sculpting and shaping, like two hands with clay. In *Golden Hour*, tactility is musicalised through texture, specifically homophony, as well as through timbre (as with the bowed vibraphone that is used for its smooth, glowing sound quality, and the 'air sounds' made by the winds and string instruments).

In *Golden Hour,* the friction-based air sounds made by the winds and strings were initially composed to develop ideas around tactility. However, these sounds created a sense of physical tenderness and sensuality because the sound of a human breath is an intimate sound. Hence, through the process of composing tactility in *Golden Hour*, I became aware of certain sensuous qualities in my music. Such encounters with my musical material affected how I approached some of my subsequent work. For instance, the tactile air sounds in *Golden Hour* were used again in *Postcard from Cannero,* this time with the purpose of engaging with the sense of intimacy in the poem's biophilic relationship between human and lake.

End of Season, Lago Maggiore, the final song of the song cycle, also adopts some musical materials developed in *Golden Hour,* specifically: homophony, instability and bending of pitch alongside tonal harmony, and wah-wah effects. The wah-wah effects are used extensively in *Notes from a Wilderness* too. All three pieces share different degrees of emotional sensibilities: both *Golden Hour* and *End of Season, Lago Maggiore* engage with nostalgia, sadness, and loss experienced in facing the end of the day, the end of the song cycle, the end of the summer season. *Notes from a Wilderness* also incorporates an 'end' destination: the Emerald Pool. The bass clarinet, using wah-wah effects extensively, signals the presence of water, which is also the end of the journey and hiker's place of rest – its own kind of golden hour. What is also notable is that, across the portfolio, these wah-wah effects are most often applied to sensations that are not visual, but that relate to humidity, temperature, and fragrance – invisible materialities that are carried through air, just like music.

The above cross-pollination of materials is interesting because it points to a kind of personal musical language being revealed through this research.

I have demonstrated how notated instrumental composition is relevant to ecomusicological study, and how the inverse is also true. I hope that these findings can encourage other scholars and composers to consider further ecomusicological studies, especially given the urgency of the climate crisis and its human and more-than-human repercussions. Furthermore, this research points to the need for a

stronger presence of ecomusicology in standard music education in this time of anthropogenic turmoil, because of its accessible and relevant focus on nonhuman aspects of the natural world.

As I conclude this dissertation, Earth Day 2025 is here, as it has been every year on the 22nd of April since 1970. It causes me to wonder what music will sound like in the future. If we compose in relation to the natural world, then our music will change as the earth does. How will it feel to live on a warmer planet, and how might this experience be musicalised? What will our new rituals be, and what role will music have within them? What will a dawn chorus sound like in 50 years' time? What music will we no longer be able to hear? What experiences will we no longer be able to have?

When despair for the world grows in me
and I wake in the night at the least sound
in fear of what my life and my children's lives may be,
I go and lie down where the wood drake
rests in his beauty on the water, and the great heron feeds.
I come into the peace of wild things
who do not tax their lives with forethought
of grief. I come into the presence of still water.
And I feel above me the day-blind stars
waiting with their light. For a time
I rest in the grace of the world, and am free.[156]

[156] Berry, Wendell. 2018. *The Peace of Wild Things*. Penguin UK.

Fig. 66: Chris and James at Signal Hill, viewing Table Mountain (to the left) and Lion's Head (to the right). Cape Town, 3 April 2023.

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APPENDIX A: List of performers

End of Season

Voice: Pia Rose Scattergood

Violin 1: Zoe Hodi

Violin 2: Giulia Lussoso

Flutes: Eliza Woodward

Clarinets: Beñat Erro Díez

Percussion: Francisco Negreiros

Golden Hour

Austrian Ensemble for New Music

Like Clay

Violin 1: Doris Kuo

Violin 2: Giulia Lussoso

Notes from a Wilderness

Guildhall Symphony Orchestra

Conductor: Jack Sheen

November moon readings

Laura Bradford

Jacob Brown

Matthew Farthing

APPENDIX B: List of instrumentation

End of Season

1 Voice (mezzo-soprano or alto)

2 Violins

1 Flute (dbl Alto Flute)

1 Clarinet in B flat (dbl Bass Clarinet in B flat) B

1 Percussionist:

- 1 Suspended cymbal (using bow)

- Small percussion (triangle, finger cymbals, sleigh bells, shakers, woodblock)

Golden Hour

1 Flute

1 Clarinet in A

1 Violin

1 Violoncello

1 Percussionist:

- Vibraphone (using 2 bows)

- 2 Suspended cymbals (high and low sound)

- Tam-tam

1 Piano

Like Clay

2 Violins

Notes from a Wilderness

Symphony orchestra, including saxophone quartet:

1 Piccolo

1 Flute

1 Oboe

1 Clarinet in E flat

1 Clarinet in B flat (dbl. Bass Clarinet in B flat)

1 Soprano Saxophone

1 Alto Saxophone

1 Tenor Saxophone

1 Baritone Saxophone

2 Bassoons

4 Horns in F

2 Trumpets in B flat

2 Trombones

1 Bass Trombone

1 Tuba

1 Timpanist:

- 2 Timpani, doubling Bass Drum (using normal beaters and a superball mallet)

3 Percussionists:

- 3 Congas
- Temple blocks
- Suspended tambourine
- Thunder sheet

- 2 Cowbells
- Triangle
- Vibraphone (using mallets and 2 bows)

1 Piano

Violin I

Violin II

Viola

Violoncello

Contrabass

November moon readings

3 Modern timpani (C, D, F) [specifically: 32" (C-C), 30" (D-D), and 28" (F-F), from the "premiere elite" range at Bell percussion]

2 Large suspended cymbals, different sizes

1 Spiral trash cymbal

1 Large thunder sheet

1 Large bass drum

4 Superball mallets

6 Medium-soft timpani mallets

1 Set of drumsticks

3 Contrabass bows

3 Large rosemary sprigs (at least 25 cm long)

3 Cups of dried lime leaf

22 Large (30 cm +) sprigs (or 22 posies of small sprigs) of semi-dry eucalyptus leaves