

The Haptic in Soundscape Composition

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This article presents the concept of a ‘haptic aurality’ in soundscape composition, an aesthetic and perceptual model derived from visual art theory, media studies and phenomenology that extends the haptic beyond its common association to vibroacoustic phenomena in the sonic arts. Included in this framework are both the standard haptic arguments, from psychology and engineering, including notions of kinaesthesia and proprioception, and varied definitions of the haptic as a not necessarily tactile mode of knowing touch that involves synaesthesia, transmodal perception and philosophical notions of sensory dedifferentiation. In adapting this survey of sometimes contradictory accounts of the haptic as parameters for compositional analysis and application, the article simultaneously creates novel engagements between soundscape composition and acousmatic practice.

1. INTRODUCTION

Percussionist Evelyn Glennie calls hearing ‘a form of touch’ when describing the unique practice of bodily listening that she has developed as a result of being a deaf musician (Riedelsheimer 2004). Accounts like these of heightened sensitivity and new senses emerging, such as the ‘facial vision’ described by the blind, are common from those who experience sensory impairment, bringing into question basic notions of sensation. In the sonic arts, the *haptic* is often exclusively focused on vibroacoustic phenomena, negating the full potential of the paradigm. Alois Riegl ([1901] 1985) defines a haptic aesthetic, extended by Gilles Deleuze (2005), as the haptic function of the eye. In film studies, Laura Marks describes a haptic visuality that draws the viewer ‘close, too close to see properly’ (Marks 2002: 16). Contrasting physical vibroacoustic phenomena, haptic imagery provokes synaesthetic responses from visual sense data that emerge from the ‘chiasm’ between sense modalities (Merleau-Ponty 1968, 2002).

This article is written at the onset of a research-creation (practice-based research) project that asks how a haptic aurality can be defined, and once defined, how it can be applied to creative practices in the sonic arts. To address this question, the conceptual frameworks outlined in the following sections will be employed.

1.1. Haptics

David Parisi suggests a genealogical bifurcation in the account of the term ‘haptic’, leading to distinct and even contradictory usages in media theory compared with those found in perceptual psychology and engineering (Parisi 2018: 34–7). This work assumes the latter models for tactual experience and related bodily sensations, wherein haptics is viewed as a perceptual system deriving information from both cutaneous (skin) and kinesthetic (muscles, tendons, joints) inputs (receptors) and does not argue for or define them in detail (Lederman and Klatzky 2009). This somewhat objective understanding of haptics is complicated by notions of intersensoriality and synaesthesia that are increasingly difficult to ignore within sensory studies. Furthermore, limited study into these areas has largely overlooked the relationship between hearing and haptic sensation, though some research does exist (see the ‘parchment-skin illusion’ (Jousmäki and Hari 1998)).

When this article speaks of a ‘haptic aurality’, it includes these perceptual and biological frameworks. However, given the standardisation of the materialist definition within technical electroacoustic terminology, it will focus on concepts relating to Riegl’s definition of the haptic as a ‘non-oppositional mode of touch’ (Parisi 2018: 35) as reiterated by Deleuze and Guattari, and Marks. In this understanding, ‘the haptic’ does not delineate a specific sensory mode or organ but instead functions as a strategy of ‘sensory dedifferentiation’. Since this concept is primarily focused on visual media and ‘how touch can be active as an agent in the process of seeing’, it will be adapted for the process of listening. A more useful model for haptics as it pertains to either viewpoint will necessarily involve both categorisations in its epistemic framework, which is how this article approaches the subject.

1.2. (Post)Phenomenology

The arguments presented in this article are grounded in phenomenology, a philosophical discipline focused on the structures of first-person experience and consciousness that emerged around the turn of the twentieth century in works by Kant, Husserl,

Merleau-Ponty and others. For the phenomenologist, sensation is ‘a relationship between subject and the world preceding rationality and knowledge, perception and intellection’ (Grosz 2008: 8). More than the analysis of subjective experience or the rejection of objective reality, phenomenology speaks to Husserl’s paradox of subjectivity that stems from ‘being a subject for the world and at the same time being an object in the world’ (Husserl 1970: 178). Since this article focuses on the relationship between haptics and soundscape *composition*, which, as explained later, necessarily involves technology, arguments may be better described as stemming from a *post-phenomenology* that distances itself from phenomenology’s naturalism to consider the ‘translational capacity’ of technologies that allow humans to relate to aspects of their environment beyond the limits of their perceptual field and develop new philosophies from these augmented experiences (Ihde 2017).

1.3. Acoustic ecology, soundscape composition and acousmatic theory

Critically, this work is rooted in the conceptual framework of the acoustic ecology movement, an interdisciplinary field that considers the relationship between humans and the sonic environment or soundscape. R. Murray Schafer, inspired by the composer John Cage, defined the soundscape as a living composition for which all participants become both audience and composer. Soundscape composition, the primary compositional form discussed in this article, emerged from Schafer’s teachings at Simon Fraser University. This subgenre of electroacoustic music, developed by composers such as Barry Truax and Hildegard Westerkamp, is typified by the inclusion of environmental sounds and contexts that reference the soundscape.

At this juncture, distinctions between soundscape composition and acousmatic composition should be addressed, while noting that outside these differences the two genres can be similarly characterised. For instance, both involve mainly acoustic sources and their manipulation and diffusion through loudspeaker arrays. When considering differences, soundscape listening’s commitment to *context* is particularly relevant. Where electroacoustic composers tend to employ environmental sound materials as arbitrary signs, the signals of soundscape or *context-based composition* fundamentally require contextual relationships to their semantic origin (Truax 2018). And where soundscape studies concern the perception of one’s environment as music, *soundscape composition* assumes the difficult role of both environment and music but may struggle to communicate either.

By contrast, acousmatic hearing aims to reduce the contextual experience of sound, specifically the recognition of its source. Having introduced *musique concrète*, where recorded and manipulated sounds were used as musical material, Pierre Schaeffer developed a practice of *écoute réduite* (reduced listening), centring the direct perceptual experience of sound rather than the modes of its production (Schaeffer 2017). A frequently cited influence on this work is the *akousmatikoi*, an outer circle of the Greek philosopher Pythagoras’s disciples who are said to have listened to his teachings from behind a veil, seeking transcendent meaning. Another influence was the philosopher Edmund Husserl and his concept of the *epoché* – a methodology of phenomenological reduction that isolates perceptual objects while suspending all objective judgment (Husserl 1980). In his *Traité des objets musicaux*, Schaeffer offers a framework for the suspended analysis of *l’objet sonore* (sound object), defined as a primary unit for musical analysis, that avoids association to the means of production. Today, these theories are foundational in the creation and appreciation of acousmatic composition.

Inversely, soundscape composition relies on contextual listening that acousmatic composers fear as anecdotal, considering the soundscape ecologically (World Soundscape Project), systemically (Acoustic Niche Hypothesis), and more generally looking out upon the world instead of just looking in (Truax 1974, 2020; Krause 1993). But if these two subgenres (soundscape and acousmatic) of electroacoustic composition are often considered dichotomous, this article examines their convergence.

1.4. Towards a haptic aurality

These frameworks will be used to develop a preliminary inquiry into the concept of a ‘haptic aurality’. Since the soundscape is fundamentally embodied, this article focuses on the electroacoustic practice of soundscape composition where the haptic experience of the soundscape might appear as a representation without necessarily physically engaging the somatosensory system. First, intersensoriality and synaesthesia are introduced to define the haptic as an opportunity for the reunion of the sensing body. Next, perceptual examples of felt sound are detailed to broaden the paradigm, including the diffuse sound field offered as an example of how sound can act as a physical, haptic phenomenon beyond the traditional range of vibroacoustics. Then, the relationships between language, context and soundscape composition will be examined, reframing the genre as the expression of first-person experience of the soundscape, rather than that of a post-human environment.

Here metaphor and poetry are established as the optimal linguistic modes for the description of sensory experience. This perspective is critical in the final section, where the ‘haptic aurality’ concept is more thoroughly (and somewhat reluctantly) analysed. The focus shifts from felt sound to a relational closeness between the listener and the environment, delivered aurally.

Central to this argument is the ubiquity of *transformation* within soundscape composition practices, beginning simply with the transduction of the acoustic signal of the soundscape into an electroacoustic composition. In acknowledging this, soundscape composition is both a limited representation of the soundscape and an expression of the composer’s perspective. The soundscape composer alters the soundscape to create new musical affordances, a primary objective in all animal alterations of the ‘shapes and substances’ of their habitats (Gibson 2015: 122). This article is specifically focused on these transformations – when the composer transforms the soundscape, what is it that they wish to express?

Haptic experience is positioned in the following text as a justification, extending across a broader scope of *emplacement theory* that extends the embodiment paradigm to include ‘the sensuous interrelationship of mind-body-environment’ (Howes 2005: 7). Today, both soundscape and acousmatic compositions tend to include contextual *and* pure-aesthetic aspects, making distinctions between the genres increasingly arbitrary. This work concerns those forms that occupy a liminal categorisation and attempts to explain how a composition might occupy both genres.

2. SEEING IS BELIEVING, BUT FEELING IS TRUTH

Much is made of the visions of mystics as though vision is the penultimate sign in the pursuit of truth. But at the height of immersion we close our eyes altogether, in meditation, prayer, a passionate kiss. Truth, in all its vagary and contradiction, emerges from an integrated system that forms a ‘coherent totality of a living thing capable of sensing the external world’ (Dunn 2001: 95). While vision is locatable independent of hearing or touching, we ‘do not commonly experience the visible appearance of the world as in any way separable from its audible aspect, or from the myriad textures that offer themselves to ... touch’ (Abram 2017: 23). Even supposedly independent senses should be understood as essentially synaesthetic; the two eyes, the two ears, or the somatosensory system as convergences of perspective. Merleau-Ponty proposes a definition of synaesthesia where the perception of an object through one sense modality creates a ‘quasi-sensory’ impression in other

modalities (Merleau-Ponty 2002). But in the Western world our dissected sensorium tends towards visual dominance, ‘the Platonic and Aristotelian privileging of sight as the noblest of senses’ (Kambaskovic-Sawers and Wolfe 2014: 107). Western ocularcentrism is reflected in the perversion of the proverb ‘seeing is believing’. Today, the prevailing interpretation suggests that seeing something confirms it as true. However, a clear distinction must be made between belief and truth; belief presupposes an insufficiency whereas truth suggests a complete and irrefutable dataset.¹ Some sources trace the origin of the proverb to a clergyman, Thomas Fuller, whose full quote was recorded as ‘seeing is believing, *but feeling is truth*’. Completing the proverb changes its meaning; to see raises a question that must be answered. To approach the truth, one must move beyond the merely seen.

Beyond the seen is the heard, sight and hearing constituting the so-called ‘higher senses’ by way of a cultural relation to empirical reasoning. The higher senses enable a dissociated perception through the rationalist’s assertion that no physical interaction is required from the subject, allowing for ‘contemplation at a distance’ from the perceptual object (ibid.: 108). In the language of Cartesian dualism, hearing and vision are related to the mind and rent from the body. Aquinas theorises a relationship between ‘apprehension’, an intellectual process of abstracting an object’s essence from its empirical data, and beauty, ‘For we speak of beautiful sights and sounds but do not give the name of beauty to the objects of other senses, such as tastes or smells’ (Aquinas 1225–74: II-1 xxvii quoted in ibid.: 111). Perhaps this perceived role the higher senses play in identifying and valuing beauty contributes to a persistent cultural reluctance to accept hearing and sight as bodily processes while fortifying relations to consciousness, subjectivity, or the soul. Today this distinction has outlived its utility, and hearing and sight should be resituated as bodily functions. This is the objective of embodiment: the reunion of body and mind. However, in this appeal I do not intend to deny the possibility of a soul or transcendental aspect of being, nor fixate on the physical body. Instead, I suggest hearing and sight as entwined in a body that from the Husserlian perspective is more than its psychophysical entity and includes the embodied *experience* (Husserl 1980).

The embodied experience is also made up of feelings, smells and tastes accessed through the so-called *lower* or *common* senses. This categorisation reflects colonial and patriarchal biases, highlighting cultural conditioning in defining sense and sensory experience (Barria Bignotti 2022; Classen 2005). By

¹To believe in God is different from having seen God, and having seen God is insufficient to *prove* this vision as true.

contrast, a ‘common sense’ suggests a fundamental truth. For Aristotle, it describes the soul’s ability to process sensual information. For Michel Serres, it is the ‘second mouth’ that provides us with our taste (Serres 2016: 154). From this common sense, it is intuitive to define taste and smell empirically, attaching them to specific organs, mediums and objects (Mazzio 2005: 88). Touch, and broader still *haptics*, complicates this classical notion of sensation by eluding direct relation to all three categories. This might explain Western hesitation towards the putative, lustful and animalistic sense. Consequently, this allows haptics to largely evade cultural conditioning. Therefore, if we can approach a truly shared human experience, I suggest it can be found in the haptic.

Kant considers touch ‘the most fundamental sense’ (Kant 1978: 63–4, quoted in Kambaskovic-Sawers and Wolfe 2014), the only *required* sense relied upon for an irreducible proprioception, fundamental to ‘our successful functioning as agents in a potentially threatening natural world’ (Kambaskovic-Sawers and Wolfe 2014: 123). Aiding to complexify notions of divided sensation, the somatosensory system is not uniquely concerned with touch, being also involved, for instance, in the perception of temperature, movement, force and pain. When combined, these sensations make up haptics as they are understood in the language of perceptual psychology; a complex and abstract sense, feared by Western philosophy for its materiality and implications of corporeal aspects of the mind and soul (ibid.: 112). When extended to include not necessarily tactile notions of haptics, like those found in media studies or phenomenology, the haptic experience broadly describes a relational closeness to the external world. This point is central to this article’s argument for the expansion of the term and its usage in the sonic arts. If ‘the experience of sound’ reminds us of ‘the profound physical interconnectedness that is our true environment’ (Dunn 2001: 99) haptics pull us closer still to remind us of our own connectedness to our environment.

2.1. Felt sound

At this point, it is interesting to note the intersection of haptic and aural perception. Tactile and aural qualia simultaneously emerge from low-frequency waveforms at the appropriate amplitude and proximity to the subject, further strengthening the material bond between hearing and touch. A trajectory from feeling (infrasound) to hearing and feeling (lower threshold) to hearing (upper threshold) and beyond (ultrasound) can be experienced. Vibroacoustic phenomena (generally 20–200Hz) are accessed at the threshold of these modes, where one sense bleeds into the next.

Hearing, as a biological process, is commonly understood as disregarding the involvement of frequency spectra that fail to engage the mechanical functions of the ear. However, vibroacoustic phenomena, ultrasound and infrasound observably affect, for instance, human bodily health and mental wellbeing, demonstrating their involvement in the human experience. Furthermore, by including a diversity of individual hearing abilities, a normalised range of human hearing seems at best general and at worst discriminatory (Branco and Alves-Pereira 2004). By recentring listening as a bodily process, deep listening, an activity central to soundscape studies that takes as its objective the exploration and extension of human hearing thresholds, expands to include the emplaced experience of waves that fall outside of this apparently ‘normal’ range, accessing new sounds beyond sound.

Questions surrounding a *true* human hearing range are underscored by Evelyn Glennie’s experience of ‘felt sound’. Glennie discovered that after losing ear function her hearing was improved by turning off her hearing aids, a phenomenon she attributes to all the other senses *becoming* her sense of hearing (quoted in Riedelsheimer 2004). The romanticism of traditional phenomenology fails to address this diversity of human experience, by presupposing universal ability. But the possibility of hearing is enriched by including experiences, such as Glennie’s, that describe bodily listening.

Felt sound is technologically facilitated by devices such as bone conduction headphones and bone anchored hearing aids that vibrate the skull to transmit sound directly to the cochlea, enabling auditory perception while bypassing major components of the auditory system necessary for air conduction hearing. Applications of these technologies as aids for the hearing impaired are traced to at least the fifteenth century and are rumoured to have been used by Beethoven to continue composing as his hearing declined (Mudry and Tjellström 2011; Ellsperman et al. 2021). While our understanding of the sensory experience tends towards sensory differentiation, bone conduction demonstrates a direct relationship between haptic and aural information, converting sound energy into vibrations of the skull which are then perceived as sound.

2.2. Diffuse sound field

Vibroacoustics and felt sound are also reminders that sound is a physical phenomenon in contrast to, for instance, the electromagnetic radiation perceived as visible light. Ecologically, human hearing has developed to detect vibration at a distance, an indication of movement and activity in an auditory world that ‘is entirely dynamic and can never be static’ (Truax 2017: 257). Fundamental to acoustics and the perception of

acoustic spaces, or soundscapes, the interplay of sound wave reflection, resonance and absorption facilitates the subject's orientation of, and interaction with, their environment. In comparison, acoustic spaces favouring one of these phenomena above the rest tend to disorient the subject. In anechoic chambers, created by a maximal degree of acoustic absorption, subjects have reported hallucinations, anxiety and other perceptual disturbances (Mason and Brady 2009; Denys et al. 2022). Inversely, the *diffuse sound field*, where reflections are maximised, creates an equally disorienting acoustic space, if for opposite reasons (Truax 2017: 258–60).

In smaller spaces, room resonances known as eigentones foreground pressure peaks and 'dead spots', another kind of haptic experience, while longer reflections in larger spaces are experienced as a uniform distribution of sound energy. This diffuse sound field is typically created by interior spaces with high ceilings, walled with marble, glass and other reflective surfaces, as exemplified in public bath-houses, tiled spas, temples and churches. It is likely no coincidence that these environments all take as their objective the total immersion of the subject, achieved in the 'womb-like envelopment' (ibid.: 259) of their acoustic design. The resultant aural experience of the listener, overwhelmed by reflected sound, recalls the haptic seeing in film theory that tends 'not to distinguish form so much as discern texture' (Marks 2002: 8). Like haptic visuality, haptic listening streams the textural surfaces of too-close reflected sound. The subject struggles to distinguish between the incident wave and reflections that come from everywhere and nowhere at once, merging in a sonic bath. In the even distribution of sonic reflections, the equal pressure field further immerses the subject by creating internal resonances in the sinuses, chest, stomach and various other bodily cavities, a simultaneous vibration of the interior and exterior of the physical interface that may be experienced as the dissolution of self and space.

2.3. Immersion

Composers and musicians are often drawn to these reverberant spaces where they are invited to improvise in symbiosis with their environment. Long reverberation times not only affect timbral changes in sound but force changes in the performer's approach to sounding. Here the diffuse sound field evokes the haptic in a second way, centring awareness on the performer's body and physical movements. By allowing themselves to be lost in this sonic bath, they partake in the enplaced experience, merged as mind–body–environment. Pauline Oliveros compared the experience of performing in an abandoned cistern with a 45-second reverberation time to 'being inside a hall of audio

mirrors' (Oliveros 2006: 69). In Barry Truax's composition *Temple* (Truax 2002), auto-convolved and time-stretched sound objects are further convolved with impulse responses 'creating a fusion of the internal space within the sound with its external acoustic space' (Truax 2017: 257). In *The Bells of Salzburg* (Truax 2018), cathedral bells are auto-convolved to prolong resonant frequencies in the simulation of the diffuse sound fields of the narrow streets and public squares of old European cities, where the listener is surrounded by reflective surfaces (Truax 2020: 9).

More broadly, the demonstrated relationship between *immersion* and diffusion is central to multichannel composition, diffusion transduced as the projection of sound in electroacoustic practice. Identifying the haptic in the diffuse sound field positions haptics as an aspect of surround sound's immersivity. Therefore, the use of multichannel systems in soundscape composition practices may fold haptic experience into the phenomenological context of the represented soundscape.

3. CONTEXT AND LANGUAGE

Also involved in this context are those intrusive aspects of soundscape composition that are inseparable from the soundscape itself. When we capture the soundscape, we also participate in the soundscape, 'we are merged into it and its variety' (Serres 2016: 51). Beyond the audible presence of human recording artists, human perspective persists in, for instance, the deliberate placement of microphones. From this gesture, a myriad of questions related to the meaning, intentionality, ethics, or realism of field recording practices can emerge (Drever 2017). Francisco López writes that the 'microphone interface' of environmental recordings like those in his soundscape composition *La Selva* (1998) 'transfigures the spatial and material characteristics of sound' (López 1998). Speaking to David Dunn's assertion that environmental recordings that avoid the intrusion of human-made sounds are a 'false representation of reality' (Dunn 2001: 104), he denies the notion of a central, 'objective' sonic reality entirely in writing, 'Our idea of the sonic reality, even our fantasy about it, is the sonic reality each one of us has.' From this perspective, all soundscape composition begins as a *transformation*. While the soundscape, as concept, may exist beyond human perception, soundscape composition is not the representation of a post-human sonic environment but the representation of a human perception of an environment. Therefore, when organising the soundscape composition, composers should orient themselves towards their own sensory experiences of the soundscape, including haptic experience.

3.1. The soundwalk and its representation

Hildegard Westerkamp acknowledges the participatory aspects of soundscape composition directly in her often-narrated works, including *Kits Beach Soundwalk* (1989):

[00:34] It's absolutely windstill. The ocean is flat, just a bit rippled in places. Ducks are quietly floating on the water. I'm standing among some large rocks full of barnacles and seaweed. The water moves calmly through crevices. The barnacles put out their fingers to feed on the water. The tiny clicking sounds that you hear are the meeting of the water and the barnacles. It trickles and clicks and sucks. (Westerkamp 1996)

'The barnacles' that 'put out their fingers to feed on the water' evoke the haptic. The resulting sounds from their interaction, 'trickles and clicks and sucks', suggest the closeness required for touch. The poetry itself is synaesthetic, the listener hears these sounds in their description, sees and feels the soundscape. Haptic information is encoded in the very notion of the barnacle, just as Merleau-Ponty writes that 'one sees the hardness and brittleness of glass' (2002: 266).

The soundwalk at the foundation of soundscape composition is interactive, non-linear and generative. In practice, it is framed as a rehearsal (deep listening), technique (field recording), or finished composition (the guided soundwalk). Serres notes a linguistic schism resulting in the French verb *randonner* (to hike) and the English *random* (2016: 260). In this insight, etymology bridges soundwalking, soundscape composition and Cagean aleatory, a composer who in turn paved the way for soundscape composition practices with his emancipation of environmental sound. The 'moment of chance' opens onto the haptic when considering the role that the hand and its action play in chance-ness (Ota 2013: 13–14). While in situ listening embraces chance, the walk itself is structured and ordered as the soundwalker moves through chosen environments and towards an intended destination. Schafer emphasises the use of 'a score as a guide' (Schafer 1994: 213), differentiating the practice from 'listening walks' which he defines as 'simply a walk with a concentration on listening' (212). Aided by the score, the soundwalker compares 'the pitches of different cash registers or the duration of different telephone bells' (213) as the audience of the soundscape. But when 'asked to participate with it (the soundwalker) becomes composer-performer'. Schafer suggests singing with the 'harmonics of neon lights' or exploring 'different walking surfaces', noting an environmental awareness emerging from these interactive gestures, and recalls an insight conveyed by one of his students, 'When I can hear my footsteps as I walk, I know I am in an ecological environment' (1994: 213).

Returning to *Kits Beach Soundwalk*, the use of oral narration in Westerkamp's work can also be related to synaesthetic perception and haptic aurality. First, the haptic is directly experienced in Westerkamp's *close*, nearly whispered voice. But beyond this haptic performance, language itself is synaesthetic and tactile, particularly poetic language. Furthermore, considering, as electroacoustic studies have, the form or *language* of 'pure' music (instrumental music) as inherently polysemous, its communicative efforts hindered by cultural biases, the necessity for non-musical explanation to establish a transcultural, intended meaning, or *context*, emerges. Language embedded within music should be considered in this way, as extra-musical content, just as poetry can be framed as more than language by involving musical form.

3.2. The limits of language

While language provokes sensation it may also, paradoxically, antagonise sensuality, its limits made apparent when used to describe our sensual experiences (Majid and Levinson 2011; Wnuk and Majid 2014). As Howes, subverting Wittgenstein, writes: 'The limits of my language are *not* the limits of my world' (2005: 1). Language 'gives us gentle meaning' but also 'shreds us with its screeching' (Serres 2016: 116), driving us away from the senses towards analysis and categorisation.

Entangled with culture, language directs the sensual experience, evidenced by the non-translatable descriptions of sense in cross-cultural analyses (Majid and Levinson 2011; Shayan et al. 2011; Wnuk and Majid 2014). Psycholinguistic and psychophysical studies highlight these variances in cultural descriptors, suggesting not only a cultural influence on the sensual experience but also the limits of language to describe fundamental sensation (Majid and Levinson 2011). Sensual description always relies on ostension schemes, incorporating the environment and its influence on the qualia defined.

Given this relational nature of sensory experience, metaphor and poetry are the optimal linguistic forms of its expression considering that, like ostension, they gesture towards meaning while avoiding explicit description. For Gaston Bachelard, one can only communicate an 'orientation towards what is secret without ever being able to tell the secret objectively' (Bachelard 2014: 35). By acknowledging the barriers between language and objectivity, we begin to outline modes of thought that engage more directly with the hard world, the environment from which the soundscape is streamed, the world of sound as matter.

4. UNTANGLING THE HAPTIC IN THE UNTANGLED SOUNDSCAPE COMPOSITION

The categorisation and analysis of the haptic in soundscape composition opposes the restorative objective of phenomenology. ‘Analysis’ stems from the Greek word for ‘untie’ (*luain*), it is the process of taking something apart (Serres 2016: 79). Electroacoustic analysis, specifically, is the dissection of complex sound. Phenomenologists reject a Cartesian model that presupposes vivisection as critical in a process of understanding – for Serres the ‘elements of a jigsaw puzzle in a box tell one nothing about the design’ (ibid.: 79). A context-based composition is directly concerned with this macro perspective, not only theoretically but also with the pedagogical and activistic objective of reuniting listener and environment. This is where acoustic ecology resonates with environmentalism and problematises the divorce of sound and meaning. However, while the soundscape composer structures meaning in otherwise *ambient* sound, their compositional process also relies on the sonic *aesthetic* appealing to the acousmatic composer. Rejecting dualism, both context and aesthetic are involved in the composer’s process. A haptic aurality is primarily concerned with these gestures of connection and reunification so as I turn to its analysis, I ask the reader to consider its puzzling pieces as nested, Matryoshka-like components of an inseparable, sensing body.

4.1. Rhythm and movement

Deleuze describes levels of sensation, the various sense organs entwined in an ‘existential communication’ comprising the ‘pathic moment of *the* sensation’ (2005: 37). He broadens the metric notion of *rhythm*, redefined as a ‘vital power’ that all senses refer to in their representation, and relates this power to our cardiac cycle (ibid.). To behold this rhythm that ‘runs through a painting just as it runs through a piece of music’ (ibid.: 37) requires what Bachelard refers to as a ‘de-philosophizing’ (2014: 251). Inayat Khan relates it to *fikr* (a ‘mystical breathing exercise’), reflection and meditation (Khan 1996: 69). Deleuzian rhythm does not distinguish sonic rhythms from these ‘lived rhythms’ that structure life and sense (Gallope 2017: 234). Its relationship to time is reconfigured, rhythm is liberated from sole ‘cadence repetition’ and focused on how accents and intensities disrupt ‘metrically equivalent periods or spaces’ (Deleuze 1994: 21). This repetition is not mechanical but relates instead to an evolving, cosmological flow engaging the body. The *ritournelle* (refrain) that evolves from this dynamic recital is principally involved in the formation of a sense of place (Deleuze and Guattari 1987: 310–50).

The location of rhythm and *ritournelle* in the autopoietic behaviour of swarming species became a primary fixation in the creation of two works I made in collaboration with Mike Cassidy: *Swarmscape* and *Auspex* (Cassidy and North 2023). Focused solely on the emergent behaviours of the soundscape, the subject engages in a cognitive process that involves the somatic recognition of movement and force. It is the body’s acknowledgement of the ebbing and flowing tide, the rising and setting sun, ‘the dice that is thrown and the dice that falls back’ (Deleuze 1986: 25). Rhythm beyond sound and time is the soundscape composition’s communication of meaningful nowness. Like Tim Ingold (2011), I fear the concept of the soundscape in some way divides the embodied experience. However, in locating the *ritournelle*, the soundscape composer aligns their work with the forces that drive all pursuits of creation, an opportunity for the validation of soundscape composition that transcends its medium. Deleuze and Guattari reject ‘Hegel’s dialectical negations of one medium to another’, considering art as entwined in this pursuit of rhythm by way of the senses (Gallope 2017: 233). Thus, rhythm transfigures all art as multimedia, all sense as synaesthesia.

Rhythm leads to movement, movement always in time and space. In traditional compositional analysis, this relationship between movement and space is not commonly acknowledged. In soundscape composition, representations of movement are manifest in the ‘moving spatial perspective or journey’ (Truax 2002: 8). The soundwalk itself is a journey, an apparent connection between the soundscape and movement. In soundscape composition, the moving spatial perspective can involve representations of the soundwalk or the recordist/composer’s movement, either with binaural recording techniques or with the inclusion of aural cues such as footsteps and vehicular sounds. Movement might also be represented by in-studio processing techniques that simulate real-world motion including crossfades (entering/exiting), panning (lateral motion) and/or transitions from direct to reverberant sounds, and vice versa (distance).

Complexifying the somatic experience are subjective sensations of motion such as the ‘movement in attention from the outer world to the inner world’ (Truax 2002: 10), exemplified by transitions into and out of the ‘daydream’ sequences of Barry Truax’s soundscape compositions. This is typified by a palindromic structure (real world to dream world and return): compositions begin with a relatively unprocessed soundscape, transition to a processed soundscape, and return to the minimally processed soundscape to conclude. This structure recurs throughout Truax’s oeuvre, in works such as *Rainforest Raven* (Truax 2020), *La Sera di*

Benevento (1999; Truax 2001a), and *Pendlerdrom* (1997; Truax 2001b). The use of contextual material to change environmental contexts aligns the form with Ambrose Field's notion of transcontextuality, where sound objects, or 'transcontextual agents', 'change the space within which they are placed' or 'reveal a new meaning for a context over time' (Field 2000: 51–2).

4.2. Closeness

As movement brings the audience closer to the soundmark,² the soundscape composer gestures towards its tactility. Walter Benjamin considered 'the desire to get closer to things' (Benjamin 2008: 23) as a primary goal in our technological reproduction (soundscape composition) of the 'here and now' (soundscape) (*ibid.*: 21). This desire is reflected in acousmatic practice, where the sound object is close-miked to reduce ambient sounds, and the growing ubiquity of headphones as technological mediators of sonic experiences. In soundscape studies, Schafer describes rural environments, in contrast to cities, as 'hi-fi' for their high signal to noise ratio that allows discrete sounds to be clearly identified above 'low ambient noise' (1994: 43–4). This mutual aesthetic longing for closeness unites soundscape composition with acousmatic practice and broader conceptions of electroacoustic practice. However, deliberate close-miking and the objectification of sound can also be framed as an obfuscation of the living soundscape, a central concern for the soundscape composer.

Close-miking recalls Marks's notion of a haptic visuality in film studies, where imagery brings the viewer so close that they lose perspective of the object, to instead engage the tactility of its surface (Marks 2002). This description of haptic visuality closely resembles notions of reduced listening in acousmatic composition, where the timbral aspects of sound are emphasised over contexts. But in field recording environments, over-closeness is not necessarily an intentional act on the part of the recordist and might also include the encroachment of its sentient sound objects. Again, the subject cannot detach from the living soundscape that bites and stings and itches and startles. Regardless of why this closeness is recorded, phenomenal experience of it evokes the haptic. My composition *Remiges* explores this theme by focusing on the tactile sensation of birds' wing sounds passing close to the listener, achieved with the spatialisation and processing of a field recording of a bird flying particularly near a microphone (North 2023).

From this magnified perspective aural phenomena evoke haptic sensations. In soundscape composition signal processing techniques such as granulation and

auto-convolution might tease tactile and textural qualities from the surfaces of sounds. Truax has positioned both techniques as solutions to the problem of processing in soundscape composition that 'tends to suggest a level of abstraction that leads one away from realism' (Truax 2011: 197). In visual art theory, Riegl's formative writings on the haptic aesthetic focus on the Egyptian bas-relief that 'stresses to a maximum degree' the presentation of 'unified, isolated objects adhering to a plane' (Neher 2004: 8) so that the perception of individuation negates the optical space of depth and perspective in favour of a *haptic space*. Ananda Coomaraswamy considers perspective as relating merely to a function of the mind in writing, 'My eye sees flat, but I see in relief' (2016: 79), further highlighting challenges posed by fixations on linear perspective in art to a primary phenomenology in its interpretation.

Translated for the sonic arts, notions of depth and distance in soundscape composition, simulated with reverberation for example, obscure the haptic. A haptic aurality, by contrast, resists linearity and focuses on immediate, sensory experience. Considered as closeness, it concerns the space between the listener and the speaker array, in its disposal of rational perspective that simulates its expansion or erasure. In the flattening of perspective, the tactility of the soundscape emerges. Haptic sound objects begin at the flat plane and physically approach the listener, either in simulated processes (increasing amplitude) or literally with the involvement of wearable haptic technologies. An example of the latter is found in Philippe Lambert's score for *VFC*, where spatial gestures interact with both the standard speaker array of the movie theatre and the open ear bone conduction headphones worn by the audience to create the sensation of sound approaching and physically touching the listener (Lambert 2023).

4.3. Colour

Deleuze extends Riegl's haptic aesthetic in his analysis of the works of the artist Francis Bacon, developing a haptic colour theory. He describes Bacon's colour fields as haptic in their 'material, opaque presence' that in assuming a certain density is distanced from the Newtonian optic space, 'with relations based on value (lights and darks)', and moves towards the haptic space, 'with relations based on tone (redness and greenness)' (Craig 2010: 182). This flatness demonstrates colours 'internal complexity' and rejects 'the tendency to reduce the phenomenon ... to ... a nameable hue'. Just as the somatosensory system is involved in a more complex relation to the world than that of mere surface recognition or touch, Deleuze's theory of a haptic colour space extends beyond

²A sound object that helps to characterise a specific soundscape, akin to the visual landmark.

tactility to consider for instance ‘relations of warm and cool, expansion and contraction’ (Deleuze 2005: 111). This preliminary dissection of the haptic aurality will conclude by relating this concept to the concept of timbral listening.

In the Western tradition, associations between colour and timbre can be traced to ancient Greece where *chrōia* (colour) was considered as an independent musical parameter alongside pitch and duration (Gage 1999: 227). Just as Deleuze highlights ‘internal contextual differences’ (Craig 2010: 182) of colour, electroacoustic research-creation has greatly extended the ‘original French’ (Slawson 1981: 132) definition of timbre as ‘likeness’, that considers the timbral qualities of instruments as singular, for example the timbre of a clarinet (ibid.: 132). For Denis Smalley, this is the difference between identifying a ‘crude’ source-cause relationship and ‘penetrating its behavioural detail’ (Smalley 1994: 41), its *colour field*.

Psychoacoustic studies have struggled with a stable definition of timbre, in part due to the complexity and vastness of the parameter. Furthermore, timbre ‘means different things to different people’ (ibid.: 35). Wayne Slawson, for instance, writing on a limited range of timbral phenomena he calls *sound colours*, suggests the Source-Filter Model to understand their production and interpretation, wherein a fixed and constant spectrum envelope directly colours a source sound (1981: 132–4). In this model, derived from speech acoustics, the filter or sound colour is considered a parametric aspect of the sound object independent of temporality, which is attributed to its source (ibid.: 133). Acoustic instruments are poorly described since a primary requirement is the decoupling of sound’s excitation and ‘the sounding object’ (ibid.: 133), but it is quite effective in describing the production of sound in both electronic music and natural environments.

Smalley may describe this process as a dissolution. He writes that above all “‘timbre’” is a signifier that we have identified spectromorphological, physiognomic attributes to which we can ascribe meaning’ (ibid.: 47), and that composing with timbre relates to confronting and enjoying the dissolution of this meaning. As source-cause coherence dissolves, our relationship with timbre becomes personal, we recognise and identify sound qualities but we also identify *with* them. He uses the example of prolonged listening to an active water texture, where the listener immediately identifies that they are listening to water but takes longer to identify inner timbral detail. Relating this concept of haptic listening in soundscape composition, the listener gets too close to the sound and examines its textural aspects, and in the act, the first-person experience is emphasised. Smalley suggests that timbre may not even exist, but if it does exist it exists

temporarily in this process of disintegration from coherence (contextual listening) to incoherence (reduced listening). Using this framework, timbral listening can be related to the haptic aurality that this article has suggested acts as a nexus between soundscape composition and acousmatic practice. Smalley’s notion of isolated timbre embodies this bridging function: a transcontextual object occupying the liminal space between both genres, impossible to define independently within the context of either.

5. CONCLUSIONS

This article presents an opening into a haptic aesthetic in the sonic arts, further specified as a perceptual model for the classification of sound communicating closeness, movement, texture and colour in soundscape composition. The expression of haptic aurality is the soundscape composer’s expression of, their interaction with, and emplaced experience of the soundscape. Once identified, the haptic aurality functions to enhance *immersion*. While music is intrinsically immersive, and, not without difficulty, is employed or even composed as ambience in the modern soundscape, soundscape composition inversely frames recordings of ambient environments as an immersive sonic art. In this paradigm, music as noise pollution involves the listener in a process of tuning out the world, but soundscape composition’s initial questions are how it can engage an audience with otherwise abstract and ambient environmental sound and what this sound can communicate. It strives to tune its audience *in*.

This pursuit of immersivity relates directly to the function of the haptic aurality for the soundscape composer, as a model to translate the many nuanced feelings of being inside the soundscape. Its utility relates to the soundscape composer’s struggle to make their composition interesting. Its perception heightens both the represented environment (present) and communicates the experience of this environment (past) as expressed by the composer. More broadly, soundscape composition connects the listener to a ‘nowness’ at the moment of its creation, inspiring new emplaced, haptic experiences (future) in the lived world.

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