

THE SHAPE OF SOUND: AN EXPLORATION OF OUR MOVING, FELT, EMBODIED HEARING TECHNOLOGIES

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Petra Johnson, and Karen Wood

'The Shape of Sound' project seeks to build a visceral bridge to an understanding of internally crafted technologies, in this instance the hair cells inside the cochlea. It combines explorations of human movement with a reverse scale artistic interpretation of the hair cells that mirror the inner workings of our bodies, materialised as an installation made of wool and silk threads, suspended from above that both capture and respond to vibration, breath, and bodily movement (see Figure 1). Sound enters our ears in the form of a travelling wave of movement, in which the hair cells respond, and yet the artist installation (made by hand by Petra Johnson) – sometimes referred to as “warps” – both responds and synergistically influences movement from the dance artists.

The installation engages artists and researchers alike, reminding them of and inviting each participant to re-engage with a part of the human body, connecting them to the roots of their ecological communality through forms of sound, light and touch. These processes are all significant in the making, unmaking, and remaking of our worlds (Nünning and Nünning 2010: 1). Ecological communities are participant-dependent, determined by the memories and relationships that individuals embody and of which they are a part (Manning 2009). Thus, the emphasis on listening with the entire body aims to disrupt the common perception that sound is only about hearing.



Figure 1. © The Shape of Sound Collective. Installation by Petra Johnson. Performers Lily Hayward-Smith and Louisa Petts. Photograph by ReelMasterProduction 2022

The project incorporates diverse perspectives through a practice research methodology, to explore what it means to encounter the complex and multifaceted living world of which the human story is but one part. The dancers explore shapes of sound through their movement practice, collaborating with the threads as the scaled-up replication of the hair cells within our inner ears. Both the audience and the buildings are distinct listeners, engaged through their different experiences of sound and silence, in that whilst we are all exploring the same entity, it finds its way through and to our human bodies in multiple intersensory, expressed ways.

Seeking out the edges

(the inner walls, the passages).

These labyrinths come down

Silence is widely discussed by Brown in their doctoral thesis, whereby they acknowledge silence can be seen as an issue of separation, Otherness, isolation, dehumanisation, alienation or acts as a barrier to communication (2012: 182). They argue, however, that '...in the form of listening, silence begins to function as a bridge' meaning that '...in listening, silence becomes an act, not of separation, but of reciprocity, being with an Other by creating a mutual space' (ibid: 182). Brown situates the Other in silence as being 'beyond', or 'outside of the self' as a space (ibid: 37), with silence opening a space in which we can explore nature, sound, spirituality, buildings, history, and the soma through the mediums of movement and textiles, rather than creating a symbolic boundary. Imperatively, silence is bound up with what it means to be human (ibid: 183), and thus silence has the potential to connect, whereby listening to sound or silence requires an attentiveness that begs to be heard and requires focus.

In this project, the types of listening we have engaged with are twofold, firstly, and perhaps conventionally, listening to sound, and secondly, listening to our internal bodily experiences. We invite the audience to witness and listen in those two ways, whilst also listening and witnessing the human histories of the buildings where the installation is housed. As noted by Brown (2012) who draws from Voeglin (2010), where noise and sound demand attention and are difficult to ignore, '...silence requires the listener to pause, to actively listen for it, and also to quieten themselves; since the listener themselves also can create sound, silence requires a complicity from the listener in order to be' (Brown 2012: 191). Voeglin (2010) notes that the sensorial involvement between listener and sound challenges the idea of subjectivity and objectivity, where our own experiences impact what we hear and how we experience sound:

The aesthetic subject in sound is defined by this fact of interaction with the auditory world. He is placed in the midst of its materiality, complicit with its production. The sounds of his footsteps are part of the auditory city he produces in his movements through it. His subject position is different from the viewing self, whose body is at a distance from the seen. The listener is entwined with the heard. His sense of the world and of himself is constituted in this bond. (Voeglin 2010: 5).

Listening is something more than hearing sound, and leads to cognitive, psychological, and social understandings of meaning as noted by Purdy, listening is referred to as a '...multi-active (as opposed to inter-active) process of human relationship' (2000: 48). Our approach to conscious communication is learned through ingrained communities, in facial expressions, touch, body

movement as language in addition to sound waves, vibrations and changes in pressure, making listening inclusive of community, social, cultural, language, human expression and physical environments (ibid: 48).

Thus, whilst experiences of sound and silence may connect us all as humans, we all have subjective, idiosyncratic experiences of listening, of sound and silence. It is through the artist installations, the movement, and the buildings, we find ways to illuminate and communicate our different silences.

The ear

The ear itself offers insight into how kinetic energies help us adapt to changes in our environment, informed by the precursors of the inner ear that reach far back in time to pre-human life. In our explorations we query; what is sound? What does sound do? Does silence exist? How do we experience sound differently?

Whilst the ear is complete with various systems such as the vestibular and the otoliths, our focus is on the cochlea, which harbours the hair cells. The cochlea is a coil contained in the fluid space of the inner ear. The 'door' to the cochlea is a membrane which is 'tapped' by the stapes, the smallest bones in our body. The cochlea is approximately 10mm wide, 5mm high and 31.5mm long when stretched out. Through the cochlea's centre runs the basilar membrane. It is here where the hair cells nestle (Scholz n.d.).

The basilar membrane supports the bases of hair cells and their nerve fibres. The young healthy ear has 3,500 inner hair cells and 12,000 outer hair cells (ibid).

They are so close and so closed off they should stand independently.

The hair cells vibrate with the incoming waves, pulling and stimulating the hairs (Scholz n.d.). To produce nerve impulses, there is another membrane, the tectorial membrane, which sits upon the inner hair cells. It touches their tips and opens their mouths, and thus sound-activated pores are released. Does the collision of movements cause the hair cells to release the electrical energy that is translated into sound?

Current research suggests, the hair cells within the cochlea, transform the sound vibrations into electrical signals relayed to our auditory systems. This technology is directly related to our experience of sound, of listening, of hearing and of silence. The shape of the cochlea informs and influences our movement and improvisatory score, where we have used the words...

spiral

fluid

journey

...that all echo the anatomical image of the cochlea.

Such invisible dynamics of communication set in motion by our moving bodies in relation to the various ecological systems of which we are part is the focus of our research (see Figures 2 and 3).



Figure 2. © The Shape of Sound Collective. Installation by Petra Johnson. Performer Louisa Petts. Photograph by ReelMasterProduction 2022

The Movement

We frame our project as practice research, utilising this process as a methodology to explore research questions through movement and public engagement. The art, our practice of weaving, of visual exhibition, of dance scores, of dance sharing and witnessing, is the substantial evidence of our research inquiry (Nelson 2013: 9). More so, these artistic practices as research magnify the inherent knowledge we hold in ourselves.

In our movement practice specifically, we engage in deep listening and movement processes, drawn from practices such as Body-Mind Centering® (BMCsm)[1], Authentic Movement practice[2] and Skinner Releasing Technique™ (SRT)[3]. As noted by Cohen, this practice of Body-Mind Centering is an 'ongoing, experiential journey into the alive and changing territory of the body. The Explorer is their mind- our thoughts, feelings, energy, soul, and spirit. Through this journey we are led to an understanding of how the mind is expressed through the body in movement' (2008: 1). By engaging with these movement practices and processes, we reconnect with our own embodied technologies, working to amplify the internal process of hearing and listening through moving with the thread installation warps.

We also find inspiration from Experiential Anatomy, whereby we draw on connecting to our internal focus to project something to inner and outer landscapes. Here, we explore the parallels between experiential anatomy and Body-Mind Centering by experiencing our anatomies in an exploratory, improvised way through movement. Our:

...attention is given to what is already there, such as the movement of the breath, various body parts and their anatomical/ functional characteristics, and the pouring of weight and mass that comes with rolling, shifting, falling and travelling across the floor and space. (Glaser 2015: 45).

We first focus our attention on the anatomy of the ear, journeying our way through to the cochlea, to the hair cells, gradually integrating these individuated body parts into our whole-body dance movement. Through playing with the threads, we orientate our kinaesthetic awareness in relation to our bodily selves in action (Batson 2007: 48). Practice research through a meditation on visual analogies in sound and movement can facilitate new meanings for that which is unheard. The combination of the threads and movement artists provide visual, kinaesthetic, material representations of sound that are engaged with using the body. Whilst the movement artists initiate the engagement, the threads move in response thus forming a symbiotically dynamic movement relationship.

The movement artist experience

By continually recalibrating with our embodied technologies facilitated in part by Body-Mind Centering and Experiential Anatomy, we have 'greater levels of self-awareness and creative choice-making within any given dance and improvisational structures they might encounter' (Glaser 2015: 46). To bring the project to life through language in the mind's eye, and indeed, the ear, for the reader we now aim to bring our dance practice as movement artists into focus. The following are reflections from movement artists and co-authors Lily Hayward-Smith and Louisa Petts about their interactions with the threads:

The threads hang lightly in mid-air. We rest in the silence witnessing the subtle flutters of movement as the air moves through the threads.

We are entering a process of witnessing and listening with all our senses, including the intangible sense of imagining the delicate hairs inside the cochlea and how they continuously move in response to the airwaves of sound entering through the space. As their physical and mental attention tunes into the warp, we begin to embody the hanging threads and what we reflect from within the internal body.

We begin to move whilst continuing to witness the threads, their presence, touch, and the waves of air we produce with our shifting bodies in space, which in turn creates new movement in the warp. As a hand, foot or face moves past or through the threads, the threads in turn react by dispersing and rippling through the space, sometimes flowing away and at times pulling back towards the bodies in motion. In response, we allow the unpredictable movement of the threads to influence how we continue the dance.

As movement artists, we continually take the time and space to reflect on our practice with the aim of connecting to a deeper bodily awareness.

The trio of improvised movement between dancer, threads and air continues for approximately 15 minutes allowing an interdependency of movements to become visible. Whilst this practice is somatically informed, which often involves turning inwards to our own individual listening technologies, we hear each other's movement and bodies in the space, we witness the path and impression left by another on the threads in the way they move, and we respond. This is done through visually, kinaesthetically, and somatically being with shapes and sound. In our movement practice, we are continuously in dynamic collaboration, as Brown notes that, 'to become silent in the presence of another is to open a space into which they might utter' (2012, p. 185), whether these utterances be in sound, in breath, in movement.

Thus, the work shifts the focus from,

sounds that can be heard

to

sounds we do not hear because we can hear.

We acknowledge the chosen silence in our dance movement practice. As we continue to develop our work, we will explore adding sound to the movement, experiencing what effect this has on the listening of the audience, the space and us as performers. Might the music distract or add to the movement? Where will the audience's attention go? How will this affect or influence our connection to our felt bodily connection?



Figure 3. © The Shape of Sound Collective. Installation by Petra Johnson. Performer Lily Hayward-Smith. Photograph by ReelMasterProduction 2022

The location as the curator

In each instance the different sites – the dance studio, the Anglican Mortuary Chapel and the remnants of the Carthusian Monastery in Coventry – that host our work pose new questions to our understanding of sound, including singing and silence. Each space highlights different perspectives around the role of these elements and our individual corporeality. The interactive installation becomes tied to the space it is in, where a balance is struck between shared sensation and one's own sensory-oriented movement.

The specificity of the site allows different layers of exploration and presentation to take place. According to Hunter, site specific dance holds a

'...promise of the unknown and the potential realisation and revelation of new-found realities in familiar and unfamiliar places' which allows '...work to be moving and evocative in an experiential sense, but also to the opportunity for it to reveal the site in which it occurs in a new light' (2015: 1).

Thus, the role and the meaning of the space plays a part in how our movement is constructed, witnessed, felt. Sara and Sara note that in architecture and buildings, there is a limiting reliance on the visual, which in turn objectifies the space and inhibits our other senses where,

An over-emphasis on the eye denies the rest of the body, it denies the role of the user of the building in constructing its meaning; it denies the physical experiential understanding of a place and denies the potential for the building to change over time. (Sara and Sara 2015: 64).

Thus, through listening to the silence and sound in the space, we are acknowledging the past histories the architecture holds, whilst asking who has listened in the space before?

The dance studio

The rehearsal and performance space of a dance studio holds a certain expectation, with the lighting rigs, the sprung flooring, the white walls, and audiences. Is the audience expecting to be entertained by a dance movement piece with music and lights? Does the space suggest this? Yet, when the installation begins it evokes a sensory, improvised experience, whereby a meditative state of being with the threads is entered. The dance artists arrive in darkness, where gaze, attention and light are controlled through using handheld torches.

The movement encompasses stillness, breath, touch, and silence in its own experimental realm. The threads are resistant and resilient which feeds the artist's ability to move collaboratively with them. The warps and the dancers become the focus, the space around them the blank canvas on which they work.

The dance studio space lends itself to being performative, with the installation of the hair cells becoming an exhibit, an observed piece of performance art. Might this mean that audiences in the dance studio space are intently listening and receiving the installation performance?

Whilst the dance studio provided a performative, almost blank space where dance and movement are expected and routinely explored, the soundscape this space provided felt disrupted

due to the air conditioning unit, that moved the air and thus the threads, which, as noted by Atkinson who cites Truax (1984), ‘...air conditioners, creates a “masking effect, blotting out other low frequency sounds and reducing the distance at which sounds of all kinds can be heard.” The result is a shrunken “acoustic horizon” that not only produces a constricted sense of space— isolating individuals from the acoustic communities in which they live—but also distances us aurally from the past’ (2015: 12). Consequently, the work moved to a soundscape that has an aural, historical rooting.

The Anglican Mortuary Chapel

Before working on the site of the Carthusians, we were invited to work in the Anglican Mortuary Chapel built in the 1850s (see Figure 4). First explorations were directed toward understanding which rituals, fixtures, paraphernalia were discarded during the reformation. What distinguishes an Anglican Chapel from a Catholic one? There were many, the one most relevant to our work was the removal of roods, screen, or veils that used to create both a visual and auditory border between the ritualists and priests and the worshipper. According to Duffy, the high altars could be physically barriered from the congregation marking a boundary which meant ‘... parishioners would have been well out of earshot’ (2005: 111). We began to question what might this have done to the aural dynamic of the space? And what effect might this have on how we listen?

The exploration of touch, sound and light in the Anglican Mortuary Chapel also amplifies the idea of *who* or *what* is listening to sounds, since our movement was now present in a religious, Christian space of prayer and mourning. What might sharing or performing movement with the threads in silence in this religious space mean for our work? Silence in a place of religious worship, otherwise referred to as ‘liturgical silence’ (Dauenhauer 1980: 19) is not an indication of inaction since, ‘...here also response is not an utterance, but the authentication of being listened to’ (Brown 2012: 185).

The idea of being listened to also lends itself to our explorations of who are the witnesses of the work, further speaking to the location being the curator.

The Carthusian Monastery

An invitation to perform at the remnants of the Carthusian Monastery in Coventry prompted us to think about silence. The Carthusian monks gave a vow of silence before joining the order. They did, however, use their voice to sing at the canonical hours



Figure 4. © The Shape of Sound Collective. Installation by Petra Johnson. Photograph by ReelMasterProduction 2022

throughout the course of the day. Another intriguing aspect of their order was that each monk had his own garden. So far, we found in the vows of the order an established understanding of transcending conventional relationships to sound. The vow of silence suggests an opening up of hearing to the non-human world.

The project will develop its inquisitive path through the relationship of sound and nature, with reference to the Carthusians and gardening, in its future research explorations. Robin Bruce Lockhart writes that 'The monastic tradition calls silence the Language of the World to come,' (1985: 17). Whilst our approach to research is to make and to move, we are not averse to dreams, as aptly stated by Derrida and Cixous,

You are dreaming of taking on a braid, or a weave, a warp, or a woof, but without being sure of the textile to come. (Derrida and Cixous 2001: 24).

The audience and workshop participants

The experiences of audiences (see Figure 5) and workshop participants' movement interactions with the threads in different locations are key to exploring this project's research aims further.

So far, the project has also delivered workshops for an older adult dance company (see Figures 6 and 7), a community group (see Figures 8, 9 and 10) and primary schools, with all activities receiving ethical approval granted by Coventry University Ethics Committee.

The following are testimonies from workshop participants explaining their experiences with silence, the warps and the movement.

Some thoughts on silence, on sound...

'You can almost feel it, feel the silence kind of in your ear...I suppose because you're really focusing on your sense of touch, you're sort of aware...you're actually aware of other bodies especially when your eyes are shut, you can sort of sense when somebody is near you'

'...the quietness allowed us time to experience things...'

'How different are we when we move to silence as to when we move to sound?'



Figure 5. © The Shape of Sound Collective. Installation by Petra Johnson. Photograph by ReelMasterProduction 2022

'It was quite therapeutic...and I was saying whilst we were doing it that this is how it must have felt years ago when you did things in the community, you know, when you've got the harvesting or when you were doing something together...people would sit around chat whilst they did their work...'

'...hearing the silence, that was interesting and that took me to a different place...and that helped me connect'

'...the silence within you, that was quite loud and then silence externally which we're a part of, and the energy felt good, it was positive for me'



Figure 6. © The Shape of Sound Collective. Out of Whack, Warwick Arts Centre workshop participants. Photograph by ReelMasterProductions 2022



Figure 7. © The Shape of Sound Collective. Out of Whack, Warwick Arts Centre workshop participants. Photograph by ReelMasterProductions 2022

Some thoughts on attuning to bodily experiences...

'...there is something just joyous about just moving without anybody judging you or, you know, or like you're not the right age or body shape or you've not had training...it doesn't really matter, I always think of it as like permission to play, so that was nice today to do more of that'

'...and then I noticed I just stood back and watched it, and it seemed like it was untwining itself, it seemed to me that the spiralling... It made me feel like when you take your hands off and you rest and you're still, everything goes back to its own way of being...and then I can think that's the same with humans, the importance of rest and getting back to your own way of being in the world. Sometimes you don't have to always do things you can just be'

'...somehow, I've absorbed that understanding of how my body works and I think having an opportunity to be more in tune with how your body is working and more aware of sound and movement and vibrations...'

'I keep learning new things and I don't associate learning with dance...so it's interesting that you get different experiences'



Figure 8. © The Shape of Sound Collective. Foleshill Community workshop participant with artist Petra Johnson. Photograph by ReelMasterProductions 2022

Some thoughts on emotional (re)connection...

'...it kind of released emotions in me um, especially the threads where we started to untangle them...it showed me something about myself'

'I love the thread because it's so soft and gentle, and I don't know but it calms me for some reason, I don't know why or how'

'It was quite freeing, enabling, it's just nice to be able to join in with things especially after Covid being able to touch people...it's so lovely'

'I felt very relaxed and interestingly I felt I had gone into a reflective mode which was good'

'...different things were happening on different levels for me, the exercise, trusting the other person and then also connecting with the feelings, the layers of feelings and um, it helped me to reconnect to my inner voice, but very silently'

'...the thread experience was very therapeutic again, again I feel so relaxed, it's great. So, I think this could be something you could take to, I don't know people who need that sort of opportunity, I think it could do very well in settings where there's a lot of tension, anger as part of an external exercise to reconnect internally and take yourself from a tense state to a relaxed state'



Figure 9. © The Shape of Sound Collective. Foleshill Community workshop participants. Photograph by ReelMasterProductions 2022

A concluding thought

The Shape of Sound brings together touch, sound and silence in multifaceted ways and continues to explore our relationship with our own embodied technologies. Whilst our experiences with sound, silence and touch are idiosyncratic to the people interacting with the threads and with others, the will to connect to our bodies unites us all.



Figure 10. © The Shape of Sound Collective. Foleshill Community workshop participant with artist Petra Johnson and dance artist Karen Wood. Photograph by ReelMasterProductions 2022

Louisa Petts is a PhD candidate at the Centre for Dance Research (C-DaRE) at Coventry University. She is the recipient of the Arts and Humanities Research Council studentship award offered by Midlands4Cities Doctoral Training Partnership. Her research interests broadly concern dance for the health and wellbeing of older adults, people living with dementia and their caregivers. Currently, her research advocates for improved access to dance that is meaningful for older populations, whilst querying whether dance genre and style offer entirely unique experiences of belonging for participants. Previously, Louisa studied at Trinity Laban Conservatoire of Music and Dance and was a recipient of the Trinity Laban Dance Award Scholarship, where she graduated with an MSc Dance Science with Distinction in 2019. Prior, Louisa studied at the University of Roehampton, achieving First Class Honours and receiving the prize for Best Dissertation in BA Dance Studies in 2018. Louisa has worked as a community dance artist delivering dance classes to those living with dementia in assisted living homes and people living with Parkinson's. She currently works as a lecturer at De Montfort University and bbodance and is an Editorial Assistant for the *Journal of Dance and Somatic Practices*.

Dr Vipavinee Artpradid is an independent researcher and a former postdoctoral research fellow at the Centre for Dance Research (C-DaRE), Coventry University. Her PhD was entitled 'Dance, disability, and the pluralistic audience: A phenomenographic engagement'. She recently published a short article exploring integration and inclusion in dance in Routledge *Companion to Audiences and the Performing Arts* (Routledge, 2022).

Lily Hayward-Smith is a dance artist and researcher specialising in improvisation, interdisciplinary collaboration, somatic practices and curation. She is currently a part-time research assistant at the Centre for Dance Research, Coventry University, and co-editor for the *Journal of Dance and Somatic Practices*. She is also a member of The Shape of Sound Collective who are exploring questions such as what is sound? what is silence? what is the connection between touch and sound?, through visual art, anthropology and an improvisatory site-responsive movement practice. She completed a Masters in Dance Making and Performance in 2009 at Coventry University. She was co-director for Decoda-UK until 2017. Her other dance and research interests include practice research, somatic practices and philosophy and embodied modes of being.

Dr Petra Johnson is an independent artist. Until recently she was based at Lijiang Studio, Jixiang Village, Yunnan and the Department of Design & Innovation, Tongji University, Shanghai. Petra has exhibited at the German Pavilion at the EXPO 2010, at the Shanghai Biennale in 2012/13, at Art Berlin in 2013

Subsequently Petra initiated several long-term research collectives: The Screen Collective (2016) has held a number of high-profile public panels in Shanghai at Chronos Art Centre, Tongji University and Himalaya Museum; in Singapore at Nanyang Technological University and in Beijing (2018) with Steph DeBoers from Indiana University at the Media Architecture Biennale.

Work by The Movement Research Group, an independent post-doctoral research team with anthropologist and dancer Marceau Chenault (East China Normal University) and animation artist Zhang Yinan (Tongji University) has been shown at the Clore Gallery at SOAS, London.

In 2021 and again 2022, Petra devised a four week intensive course with choreographer Olga Merekina and textile artist Liu Yingchuan for visual art students at China Academy of Art. Other recent work – <https://www.researchcatalogue.net/view/835089/1019931/7835>

Dr Karen Wood is a Birmingham-born dance artist, researcher, educator, maker, and producer. She works as Assistant Professor at the Centre for Dance Research, Coventry University, and as Co-

Director for Birmingham Dance Network. Her practice and research focuses on dance as a cultural practice and what it offers society. Her practice includes projects that have previously been supported by Arts Council England and other funders, and involves collaborating with other art forms, such as drawing, lighting design and music. This work has been shown at venues such as Contact theatre in Manchester, FACT in Liverpool, Five Years gallery in London, Light Moves Festival of Screendance in Ireland and Vivid Projects in Birmingham. Her latest research investigates the working conditions of freelance dance artists.

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Endnotes

1. Body-Mind Centering® - An Embodied Approach to Movement, Body and Consciousness (bodymindcentering.com) - <https://www.bodymindcentering.com> (accessed July 2022)
2. Linda Hartley: Authentic movement - <https://www.lindahartley.co.uk/authentic-movement.html> (accessed July 2022)
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