

On mediating space, sound and experience: interviews with situated sound art practitioners

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Abstract: This article reports on an interview-based study with ten sound artists and composers, all engaged in situated sonic practices. We propose that these artists engage the ear and shape possible interactions with the artwork by altering the relationship between sound, the space in which it is heard and the people who hear it. Our interviews probe the creative process and explore how a sound artist's methods and tools might influence the reception of their work. A thematic analysis of interview transcriptions leads us to characterise artist processes as mediatory, in the sense that they act in-between site and audience experience and are guided by the nonhuman agencies of settings and material things. We propose that artists transfer their own situated and embodied listening to that of the audience and develop sonic and staging devices to direct perceptual activity and listening attention. Our findings also highlight a number of engagement challenges, in particular the difficulty artists face in understanding their audience's experience and the specificity of an artwork's effect to not just its location, but to the disposition, abilities and prior experiences of listeners.

1. SITUATED SONIC PRACTICES

This article reports on an interview-based study with ten sound artists and composers, all engaged in situated sonic practices. The study is designed to address the practical question of *how* the process of artists working with site might shape audience behaviour and experience. Our focus on the activity of making and the practicalities of methods and tools resonates with recent trends in music sociology (Krogh 2018) and anthropology (Born 2005) that highlight the influence of material circumstances and technologies on creativity. Borrowing methodology from the social sciences, we conducted interviews to elicit a level of detail regarding the practicalities of making that would otherwise be hard to obtain. The transcripts were submitted to a thematic analysis to find patterns of shared meaning among the interviewees, all of whom are renowned contemporary sound artists whose practices explore spatial and site-oriented listening.

We adopt the term 'situated sonic practices' (Ouzonian 2006) in this article to refer to a broad field of artistic forms that emphasise the place-based aspects of sonic experience. These include installations, sound walks, some spatial performances and workshop practices that are often described as site-specific, site-responsive, site-sound, or contextual, in the sense that the artist draws upon aspects of place as inspiration. 'Situated' implies a subtle shift of emphasis, acknowledging the specificity of a listener's experience, contingent on their circumstance, location, bodily orientation and attentional behaviour as they orient their ears to the environment (Gibson 1966; Lahlou 2011). The extent to which the audience participates in constructing the listening experience has led authors to describe interaction with these kinds

of works in musical terms, as ‘performing’, ‘composing’ or ‘soundmaking *within* one’s listening’ (Harries 2013; Keylin 2020).

As an art material, sound is uniquely immersive and collapses the distance between the art object and its audience. The spaces of acoustic sound wrap the experience around the listener (Brewster 1999) to be immersed in sound but also complicit with its production since their footsteps and bodily sounds contribute to the auditory environment (Voegelin 2010). Situated sonic practices work explicitly with the in-between space of sound. They encourage a shift of attention from the sound sources ‘out there’ toward our listening experience ‘in’ sound. For Voegelin, this imbues sonic experience with political possibility:

The invisible embrace of sound highlights the co-being and interbeing of things and makes thinkable, at least, a plural participation in the production of a situation or circumstance, and it reminds us also of... our ethical position... as communicating agents in an interrelated sphere. (Voegelin 2019)

Situated sonic practices have the power to remind listeners of their connectedness and agency in the world. The artwork manifests in the listener’s experience, over which the artist has little control and yet their practice of making of the work, makes this experience possible. This article explores the relationship of artist activities to listener reception and experience from the perspective of situated sound art practitioners.

2. PROBING PROCESS, FROM METHOD TO RECEPTION

Following the definition proposed by sound artist Tansy Spinks (2013), we take the word ‘process’ to include all aspects of method, such as the thinking, making, use of tools and materials, as well as the reception of the artwork and how it comes to be experienced by an audience. Thus, reception is the final stage of process, it follows on from and is determined by the practical stages of making. Garrelfs (2015) notes that there is little critical consideration of process in sound art discourse, a shortcoming that the online journal *Reflections on Process in Sound* seeks to address by highlighting approaches and providing a platform for practitioner voices.

The relationship of a situated sound art practitioner to site during the early stages of process is documented but often with minimal detail and no reference to reception of the work. Artists have described their work as developing from an investigation of the site in question, through repeated visits or extended periods working in situ. Some artists focus on the associative qualities of a place, such as its social and historical context, its purpose or use (Klein 2009; Spinks 2013). Others describe the process of working with site as entering into a dialogue with its materiality via site-responsive improvisation or analysis of acoustic properties (Hayes 2017; Flø 2018).

The perspectives of artists engaged in situated sonic practices are well documented in collections such as the *Site of Sound* series (LaBelle and Roden 1999; LaBelle and Martinho 2011), but these writings tend to focus on artists’ conceptual concerns and descriptions of completed work rather than the practicalities of method, tools and reception. For example, Christina Kubisch introduces *Über die Stille* by contemplating the notion of silence before describing the material things that comprise the installation, the choice of sound materials and its site of installation (Kubisch 1999). By contrast, Barrett and Sevaldson’s account of the *Barely* installation (2014) makes a clear link between method and reception. The use of quiet sound materials pitched on the cusp of audibility at the ‘experienced threshold’ are designed to sensitise and engage the hearing of audience members. Their article reports on the creative processes that led to the final installation and the observed impact of different sound materials on audience attention. Attentive listening of audiences correlated with the level of complexity and change in the sound materials, noting that ‘a sine tone did little to change the state of the listener whereas a soundscape of tiny details resulted in an attentive, lengthy stay.’

The idea that artists have a role to play in engaging audiences and particularly those who may be unfamiliar with experimental mediums finds voice in Landy’s suggestion that electroacoustic composers might provide new listeners with ‘something to hold on to’ (Landy 1994). Extending this idea to the design of ‘acousmatic’ sound installations, Batchelor (2019) proposes intimacy as a quality that could be fostered in works as a means of connecting with an audience. Use of close microphone techniques, the human voice as material and proximate listening setups (e.g. headphones) implies he suggests, a ‘close relationship between the visitor and the materials of the installation’ and might aid the engagement of new audiences, by offering them a ‘helping hand’.

The relationship between method and reception is more thoroughly explored in the technology-oriented fields of interactive art and sonic interaction design, where user studies are conducted to understand how aspects of design impact reception. Researchers have explored audience interaction with sound installations via observation, video recordings and interviews with participants (Franinovic and Visell 2007; Fritsch, Breinbjerg and Jenson 2014). Studies in these fields seek to articulate aspects of

design that support active engagement with an artwork, for example to understand how an ‘unwitting’ bystander might become a ‘witting’ participant (Sheridan and Bryan-Kinns 2008).

3. THE INTERVIEW STUDY

Research that addresses the practical question of what artists do, and how that might impact the experience of audiences is largely absent from sonic arts discourse. We propose that situated sound art practitioners work to engage the ear and shape possible listener interactions by altering the relationship between sound, the space in which it is heard and the people who hear it. The following interview study was designed to examine how that alteration is achieved by probing the creative process and exploring how a sound artist’s methods and tools¹ might influence the reception of their work.

3.1 Recruitment

We aimed to recruit well-established sound artists and composers with a shared commitment to situated sonic practices. A key criterion for recruitment was reference to spatial interaction and/ or site-specificity in the artist’s biography, artwork descriptions or published writing. Within this narrow aperture of practice, we sought to include a breadth of individual perspectives and aimed to recruit artists at various points in their careers and with diverse backgrounds. Twelve artists were contacted via email, all of whom responded, and nine interviews were agreed to take place within the necessary time period. Table 1 introduces the artists and provides a way of navigating the interviews.

Code	Interviewee Details	Practice summary	Example works
JB	James Bulley Artist and composer London, UK	Live composition, outdoor installation work, engaging with ecologies and the spatiality of sound.	<i>Living Symphonies</i> (2014-), <i>Tactus</i> (2011-)
ADL	Alex De Little Sound artist Leeds, UK	Sounding and listening as a way of interrogating, understanding and engaging with architectural spaces.	<i>Spatial Listening</i> (2017-), <i>Spatial Drone</i> (2017), <i>Auricula Alium/ Auricula Suum</i> (2018)
DD	Roswitha von den Driesch and Jens-Uwe Dyffort Sound artists Berlin, Germany	Working collaboratively to make site-specific sound installations in public and gallery spaces.	<i>Kupferdraht mit Lautsprechen - Copper Wire with Loudspeakers</i> (1996), <i>Punktierte Umgebung - Dotted Surroundings</i> (2001/2002), <i>Geordnete Verhältnisse - Orderly Conditions</i> (2019)
LH	Lisa Hall Sound-based artist London, UK	Performative, installation or intervention-based sound works that explore urban environments.	<i>Virtual Voices</i> (2018), <i>Sound Map</i> (2017), <i>Walking With Crickets</i> (2016), <i>Audio Roulette</i> (2014)
SK	Sebastian Kite Installation artist London, UK	Immersive installation artworks employing light, sound and material elements. Engaging with perceptions of time and space.	<i>Inner, Outer, Other</i> (2020), <i>We will meet in the place where there is no darkness</i> (2017), <i>Enclosure</i> (2011-12).
EKM	Emma-Kate Matthews Architect and composer London, UK	Spatialised compositions which exploit an acoustic condition or make conceptual parallels between ideas of space in architecture and ideas of space in music.	<i>Construction 002: Tracing</i> (2017), <i>Construction 003: Axial/ Regional</i> (2019-20)

¹ Methods are understood as the thinking, making and use of tools and materials, employed during the period of creating an artwork (Spinks 2013). ‘Tools’ refers both to the material things of process, such as microphones, musical instruments or soldering irons, but also to digital tools and software such as DAWs, programming languages, or software for the visualisation and analysis of sound.

GS	Gerriet K. Sharma Composer and sound artist Berlin, Germany	Site-specific sound installations and multichannel compositions exploring spatiality and the sculptural qualities of sound.	<i>Oblivious to Gravity</i> (2010-2015), <i>Loose Ends</i> (2010-12), <i>Staircase</i> (2008)
JV	Jeroen Vandesande Sound artist Ghent, Belgium	Sound installations and performances, working with analogue sounds and feedback.	<i>Circuit03</i> (2015- 16), <i>Circuit04- Feedback Studies</i> (2015)
JW	John Wynne Sound artist London, UK	Site-specific installations and sound sculptures, socially engaged art practice working with e.g. organ transplant patients.	<i>Installations for high & low frequencies</i> (2011-14), <i>Installation for 300 speakers,</i> <i>Pianola and vacuum cleaner</i> (2009-10) <i>The Sound of Sirens</i> (1997)

Table 1. Interviewee details

Participation in the study was not anonymous so as to credit the intellectual contributions of artists and support their viewpoints with examples of their work. All interviews were conducted in English and with individuals, except in the case of Jens-Uwe Dyffort and Roswitha von den Driesch who have worked collaboratively since the 1990s.

3.2 Study design

This study was designed to explore how the methods and tools of artists engaged in situated sonic practices might influence the reception of their work. The interviews were semi-structured around a set of twelve questions decided upon in advance (see Appendix) to probe the following two key and related areas of interest:

1. Artist process: how artists conceive their role and practice in relation to site and audience; how site is addressed in their process via the methods, tools and technologies used.
2. Audience role and experience: how artists conceive the audience's role in their work; how artworks are received; how artists come to understand the reception of their work.

Each interview began by asking the artist(s) to provide an overview of their practice and to describe the process of making a piece in practical detail. They were then asked questions about audience demographics and audience experience, such as 'who is your audience? And do they require any specialist knowledge or training?' and 'what kinds of audience behaviour have you observed?', 'have you asked audience members about their experience of the work?'. Two questions invited artists to reflect on language use and meaning in relation to audience role and their process of making: 'I've been using the word "audience" to describe those who experience your work. Would you use an alternative term?' and 'What verb would you use to describe the act of creating your works? For example, I might say you are 'designing', would you use an alternative?'

In most cases the questions were asked sequentially, diverging from the list as necessary to document the artists' complete views on a topic, or to follow a trail of thought that might lead to interesting new insights. Artists responded to all questions, with two exceptions where time was short. Interviews lasted between 60 and 90 minutes. Five were conducted in person and four over video conferencing with artists who were not based in London. All interviews were audio recorded and then transcribed by hand.

3.3 Analysis

In order to organise and describe our interview data in rich detail, we chose to do a thematic analysis (TA) of the interview transcriptions. TA is a flexible method for coding qualitative data and organising those codes in order to find themes: patterns of shared meaning that cut across the interviews and capture something important about the data that has relevance for the study's research aims. TA is widely used in the social sciences, for example to analyse interview data relating to creative process in different artistic disciplines (Glaveanu et al. 2013) and in interactive art research to analyse video capture and interview data of audience experiences (Bilda, Costello and Amitani 2006).

We followed the steps for TA outlined by Braun and Clarke (2006), taking an inductive approach whereby the analysis was guided by the data itself rather than a predetermined coding scheme. The process involved coding all interesting data items in two initial sweeps through the transcriptions before iteratively re-evaluating the code system and grouping related codes to find themes. A reflective journal was kept during the analysis to document decision making and a draft write-up of the results was sent to artists for their feedback to check the fit between their views and our representation of them, which were confirmed

as accurate (Nowell, Morris, White and Moules 2017). Not all themes relate to the work of all artists but reflect the most prominent patterns of shared meaning across the data set as a whole. The result of the analysis is four high level themes: (1) The artist acts as mediator of site and experience, (2) The audience has an active relationship to the work (3) The artwork shapes behaviour and perceptual experience (4) Engagement challenges.

4. THE ARTIST ACTS AS A MEDIATOR OF SITE AND EXPERIENCE (THEME 1)

4.1 Artists work to understand the potential of a site

The coded responses to process-oriented questions suggest that artists have a mediatory role, working ‘in between’ site and audience experience. Specifically, the artists we interviewed seek to understand and then harness the sonic, spatial or experiential potential of a site. Artists therefore try to spend as much time as possible working in situ on a piece, because as JW suggests, ‘the way to make something that really explores and works with a space is to really know the space.’ However, continuous access for a period of weeks or months is rarely possible. Instead, artists might visit often, make field recordings, drawings, 3D models of spaces and written notes before testing ideas either in situ or at similar sites. As an alternative to ‘being there’, EKM uses acoustic modelling software to ‘hypothesise’ or simulate the acoustic response of a particular site to sound sources placed within it. However, she acknowledges the limitations of this approach; the software cannot replicate the true effect of a space upon a musical idea.

JW, JV and GS describe long periods of time spent simply listening to learn about the sounds that exist natively inside a space, such as the sounds of pipework, machinery, of doors opening or floorboards as they shift underfoot. They also listen for characteristic sounds of the outside environment and especially those that occur only periodically during the day. GS describes ‘really listening to bus schedules or church bells or pedestrians... There was a dog, every day at 12 o clock... from behind the building’. These sounds might then become sonic material to be used in the work, leading to situations in which it is not clear where the artwork ends, and the site begins. JW describes bringing the sounds of train wheels on the tracks outside of the gallery, into the installation: ‘the sound sometimes seemed to start outside and then come in and it would suddenly be moving around the space.’

For most artists (ADL, EKM, GS, JW, DD, JV, SK) the acoustic response of a site is an active influence on the development of their work and listening, in itself, may not expose the full acoustic potential of an environment. Artists develop their own routines for understanding by ‘probing’ or putting sound into a site. Some (EKM, JW, ADL) make traditional acoustic analyses, while ADL and GS describe programming their own routines using software such as Max MSP, or Supercollider. EKM describes using spectrograms to ascertain which parts of the frequency spectrum the room is most reflective to. This ‘starts to influence the instrumentation I might use and also the range in which I make that music.’

Many artist routines for probing a site go beyond objective analyses and foreground the importance of an extended embodied experience. As ADL describes, simply clapping, shouting or singing in a reverberant space reveals only so much, a ‘sort of understanding, but not understanding.’ His *Spatial Listening* exercises make the process of understanding a space by sounding and listening the work itself: ‘They’re site-generic sets of instructions. In which the site-specificity emerges through the process of uncovering and then when you’re satisfied with that, the piece is over.’

LH describes her practice as site-specific to a body rather than physical location and as such, her creative process involves immersing herself in the situation of her artwork to understand what it does and how it changes her listening perception. She describes the process of making the piece *Walking With Crickets*:

I then just started putting them in my pocket and walking around, I would wear them anywhere, I would just take them with me. I would walk to work, walk to the shops, walk to whatever it was that I was doing and have them playing all the time. Just through that continuous doing the research started unfolding.

GS describes a meticulous process of ‘surveying’ sites that takes many weeks, starting with walking, talking and recording his verbal impressions to gradually build up a sonic mental image of the place. This process informs the spatial positioning of a loudspeaker array, through which impulses are emitted, causing the building to react with its acoustic properties: ‘as if you were walking around and taking a hammer – tak tak tak, tak tak tak, tak tak – and by this I had a question and answer game with the building.’

4.2 Bringing together and working with

The process of making is characterised by some artists as a ‘bringing together’ of relationships or existing sonic materials. Others describe working in such a way that the final piece is not preconceived but gradually shaped into being. These descriptions provide further evidence for the mediatory role of artists, whose ‘ground-up’ approach to making is actively influenced by site.

Artists were asked to choose a verb that would best describe the process of creating their work and each responded differently. While JB and JW chose the more expected ‘composing’ and ‘sound designing’, other responses suggest a practice that is less about invention or bringing an imagined artwork to fruition. Instead, a number of verbs evoke building practices and manual labour. LH describes her practice as ‘assembling’, as ‘an alignment of things’, SK chooses ‘grafting’ and EKM ‘constructing’. She names her pieces ‘constructions’ in order to define her role as composer, creating relationships between space, sound and experience, explaining that ‘it’s the construction of the score and the construction of the relationships between the musicians and the construction of the relationships between the music and the space.’

Similarly, ADL’s choice of verb, ‘making emergent’, emphasises that it’s an interaction between people and spaces that his process of making facilitates. Something that lies dormant, such as acoustic phenomena or a participant’s capacity to listen spatially, is made to emerge through an interaction. Other responses suggest a ‘ground-up’ approach to making, in which the final artwork is not preconceived but shaped gradually into being. DD describe their process as ‘developing’ and ‘working towards something’. JV responded instantly with the Dutch verb ‘knutselen’, which translates literally as ‘crafting’, but in Dutch ‘is more like how children do craft or something... putting stuff together, crafting things, following intuition.’

5. THE AUDIENCE HAS AN ACTIVE RELATIONSHIP TO THE WORK (THEME 2)

The artists we interviewed describe audience members as having an active relationship to the artwork, either by virtue of their immersion in the work, by becoming aware of their spatial orientation to it or need to ‘do something’ to uncover the work’s potential. The nuanced variety of artist responses when asked about their chosen term to describe the audience suggest that an ideal word does not exist to describe the role of listeners to spatial works. Artist justifications for preferred terminology reveal different aspects and interpretations of the audience’s active role.

The term ‘audience’ was critiqued by many of the artists as being too tied to the traditional theatre or concert paradigm of audience as a collective, sat in front of a stage where the action itself happens. The separation of the audience from the work motivates JV’s preference for the term ‘visitor’, which for him suggests inclusivity, bringing the audience and artist together. For SK and DD, the word ‘audience’ suggests a passive role, whereby you are rewarded with culture simply by virtue of turning up. A number of artists stressed the active role of the audience member in relation to the artwork. For DD you cannot consume art, especially not sound installations without playing an active role: ‘[Visitors] need to do something to bring the whole installation together, move around and fetch different parts.’ For EKM, it’s the immersive and relational aspect of spatial sound work that makes the term ‘audience’ so problematic and suggests that an entirely new word might be needed:

I’m thinking about a sort of visual analogue... about anamorphic paintings, where if you’re face on to something it might not make sense but if you turn to the side it foreshortens, so you’re implicated in the understanding of the piece depending on your location to it... [Anamorphic] describes the moment when it makes sense because of that spatial relationship between the person and the thing.

The ‘anamorphic receiver’ is active and implicated in making sense of the piece according to their spatial relationship to it. This definition aligns with DD’s call to recognise the active role of the audience, to retrieve and make sense of the work’s spatial dimension. For SK, visitors to his installations are ‘participant’ by virtue of their spatial presence in the work: ‘It’s about participating and that can be even if you stand on the outside of it, even if you’re just stood in the doorway here, you’re already in it.’

6. THE ARTWORK SHAPES BEHAVIOUR AND PERCEPTUAL EXPERIENCE (THEME 3)

Through their practice, the artists we interviewed build a tacit understanding of sonic (such as the choice of sound sources, articulation, volume, spatial position) and staging devices (such as lighting, arrangement of physical objects) to guide audience experience of their work. These might encourage active listening, particular physical behaviours or emphasise the embodied nature of experience and encourage an inward focus on listening and perception. Even the level of freedom given for audiences to explore a work and create their own experience is an artistic choice. JV notes that ‘I decide they are free; I decide the level of freedom’. Aspects of behaviour and experience can be shaped by simple choices relating to the physical layout of the exhibition space, for example placing a cushion on the floor suggests to audiences that they ought to sit.

6.1. Engaging the ear

To foreground the act of listening, some artists described experiments with darkened spaces or blindfolds but acknowledge that it is not practical to deny vision as listeners may need visual reassurance in order to

navigate the space. Artists develop novel methods for engaging the ear and harness the multimodal nature of an installation to enhance or direct the listening experience. JV removes any unnecessary visual elements that might act as a distraction from his installations, obsessively hiding all cabling from view: 'I want to eliminate everything that can be a distraction from the essence of the work.' SK describes 'all these little tactics... to try and isolate your senses or choose to focus on one sense at a time.' For example, sounding moments in his installation *We Will Meet In A Place Where There Is No Darkness* correspond to very hot and bright tungsten lights switching on, forcing visitors to close their eyes. GS emphasises the importance of lighting in sound installations to bring focus to listening and draw listening attention to a particular location in space. In his piece *Loose Ends*, he attempts to fix the eyes in order to 'open' the ears:

I need a spot of yellow light hanging over this island of foils with loudspeakers underneath, so that the whole room is almost pitch black and then all your senses are concentrated on this golden island, and you are fixed by the light... your ears open for what is happening spatially.

Artists also develop sonic methods for directing the listening attention of audiences to spatial locations or drawing attention to the processes of listening itself. GS finds that short, transient sounds have the effect of attracting listening attention. Quiet sounds are used deliberately by DD so that audiences must listen attentively to hear them and as a result the richness of environmental sound also becomes apparent. LH finds that carrying or wearing sound with a fixed volume 'reveals your changing hearing'. Like a sonic measure or lens for listening through, 'it stays the same and reveals how everything else including me is moving and changing all the time.'

6.2 Inducing a meditative state

SK, ADL, LH and JW all describe creative devices for inducing a meditative state in listeners. The meditative qualities described by artists, such as turning inward and being in the present moment are encouraged to focus attention onto perceptual processes and the visitor's embodied experience. SK describes his practice as 'a way of just trying to slow that sense of time right down and to really focus on being in that environment.' ADL describes his workshops as akin to a meditation class. The *Spatial Listening* pieces work to make participants act in the 'present', they're 'present-making' activities. As an exercise goes on, ADL senses that participants are 'reaching further and further into the sonic realm, and that they're inhabiting it, because the pieces necessarily perpetuate attention.' By straining to hear for acoustic cues, participants become fixed on the present moment.

Artists also encourage the audience to become aware of their spatial and bodily presence in the work. Spatial presence might be enhanced by an awareness of bodily sound, such as the sound of one's own footsteps. GS and EKM note that this may cause some visitors to move more slowly or tentatively, or even to take off their shoes so as not to destroy the auditory scene for others. For SK it is important to emphasise the visitor's presence in the work, because that *is* the interaction: 'the moment you're in it you're already interacting, by physically being present.' Visitor's to SK's installation *Inner, Outer, Other*, were invited to walk through a flooded space, which had the effect of drawing visitor's attention to their physical presence because 'the moment you touch the water you're creating sound'

SK and JW describe deliberate attempts to slow people down and encourage them to dwell in the artwork. For the installation *Enclosure*, SK describes using heat, slow sound and slow light to make audiences feel lethargic as 'basically a trap to keep you there!'. JW describes using slow and time-stretched audio to slow people down, which is apparently effective: gallery invigilators have reported visitors dwelling for 20-30 minutes in his sound installations.

7. ENGAGEMENT CHALLENGES (THEME 4)

All interviewed artists intend for their work to appeal to a broad audience, but some voice concerns that sound art faces engagement challenges due to ocular bias, the inexperience of listening audiences and diversity of cultural associations. Many artists expressed a desire to better understand the experience of their audiences. Unfortunately, written and verbal feedback has proved limited, potentially due to the difficulty of articulating bodily and sonic experience verbally. Observation of audiences reveals little about the inner experience of visitors. A number of artists suggest ways of addressing or meeting potential engagement challenges in the design of the artwork itself.

7.1 Challenges to broad engagement

Some artists (ADL, DD, JB, SK) strongly emphasise that their work is intended for the broadest possible audience. When asked if audiences require any specialist knowledge or skills, SK responded 'none whatsoever, my audience is everyone and anyone.' While other artists (EKM, GS, JW, LH, JV) intend for their work to appeal broadly, they suggest that for a variety of reasons the engagement of audiences with little prior exposure to sound art and spatial audio might be a challenge. LH, JW and GS acknowledge that audiences with a sound art interest might have a different experience or understanding. EKM and JV

propose that audiences simply do not know 'how' to listen, especially to spatial works where sound is coming from all directions.

ADL, JV and GS suggest that sound art faces engagement issues due to ocular bias, the cultural dominance of vision over audition in Western cultures. JV routinely runs listening workshops with people of all ages and finds that 'people just really don't tend to use their ears at all.' Furthermore, JB and ADL note that everybody comes to the experience of listening with different degrees of natural hearing ability and a variety of different cultural relationships to the sounds they are listening to. For JB, it is crucial that artists are aware of the diverse cultural meaning of sounds and is bemused by the idea that sine tones are free of association due to being 'the purest form of sound':

If you ask any person on the street, pretty much bar people who are knowledgeable about electronic music and say what does that sound like? They'd say space, because of the 1960s, because of the way that sine tones in early synthesis were used and their relationship to programmes about space.

Perhaps for this reason, exhibiting sound-based artworks can be problematic and particularly in public spaces. GS and JW reported instances where members of the public have threatened to call the police, or installations have been banned. GS suggests that while visual artists can get away with throwing pretty much anything at an audience's eyes, 'as a sound artist you can't. If you play a high frequency everyone's like 'eugh' ... people react very, very drastically sometimes.'

7.2 Limitations of audience feedback

Of the 7 artists with experience collecting written or verbal audience feedback, SK, JV, EMK and JB find that it's of limited use. Audiences tend to use general terms to describe their experience and particularly when talking to the artist directly, are likely to politely express that the piece was enjoyable or interesting. ADL, JB and EKM suggest that obtaining useful feedback is problematic because people lack the vocabulary for describing sonic experience. JB describes written feedback as 'quite infuriating... some of the difficulty is that the language around listening is very stunted... I'd say about 80% of responses are one word, such as "beautiful", "peaceful", [or] ... "different"!'. To elicit more detailed descriptions of experience, JB suggests that you have to engage visitors in conversation and 'not give them the language, but... say that it's okay to describe it in their own terms.' The difficulty of describing sonic experience may explain why artists are more likely to act on feedback from peers and curators, rather than audiences (SK, LH, JW, JV).

7.3 Observation of behaviour reveals very little about audience experience

A number of artists expressed the limitations of observing audiences because 'there isn't really a pattern to it' (JB) or they intend to create open situations where the audience is free to act however they are most comfortable (JV, ADL). Artists reported a number of generic behaviours that they consider typical but that reveal very little about audience experience. For example, visitors are observed to settle into a comfortable way of being in the space, they might seek to find the boundaries and if the speakers are visible, they are likely to move between them listening to each. Depending on available space, visitors are likely to stand back and listen to the whole piece from different perspectives. Adults stand still for periods, they walk around, they might sit or lie on the floor. They're likely to be quiet, they might take down their glasses, close their eyes or bow the head. Children are more expressive with their movement.

7.4 Artist suggestions for improving engagement

JV suggests that installations should create a situation that allows the audience to have their own experience, to be in their 'unknowingness'. The work should be supportive and inviting, so that even if audiences feel reticent, they're still happy and willing to step inside and be open to the experience. He suggests that 'you have to take them by the hand in some sort of way, help them out a little bit, fade into the whole thing.' EKM suggests engaging audiences through Q&A sessions prior to a performance, offering listening suggestions and instruction (EKM, LH). JB stresses the importance of communicating with local communities, to strengthen engagement and enable listeners to feel invested in the artwork. To sensitise audiences to sound-based artworks, JV suggests leading listening exercises prior to engaging with an artwork. He suggests that it may only take a few minutes 'to get people to realise what they are actually doing with their ears. And the reactions are amazing, I mean the whole world opens up.' EKM suggests that artists could conduct spatial listening workshops in schools with children from an early age, so that immersive sonic experiences become less strange and novel to the public.

8. DISCUSSION

Many of the artists that we interviewed acknowledge the influence of places and things on their process and this led us to describe the artist's role as mediatory in Theme 1. By referring to mediation, our

intention is to position the artist as acting in-between site and experience, as an intermediary who assembles, aligns or brings together the artwork rather than creating something apart from its context, to be imposed upon it. The notion of mediation is key to Latour's Actor Network Theory, where it is understood as the meeting of agencies between human and nonhuman actors (Latour 1994). The role of material agencies in the activity of music-making has been explored by music sociologist Krogh (2018). Presenting a case study of Danish musician DJ Static, they argue that music-making is a highly situated activity. The layout of the studio and the material things that fill it have an active influence on DJ Static's working practices and compositions: 'the beat is a hybrid', a manifestation of material and social circumstances. We propose that situated sonic artworks represent a coming together of artist, material agencies and social circumstances.

In *Art as Enaction* the philosopher Alva Noe (2002) describes the artist as an 'experience engineer' because the act of making a picture, for example, involves careful observation of the world, and 'an activity of reflection on what you see and what you have to do to see. The painter literally enacts the content of a possible experience.' The artists that we interviewed described carefully listening to particular spaces and environments over long periods of time. We suggest that to some extent the artists' own listening experiences are mediated in the artwork to shape those of their audience. Lisa Hall's process of 'assembling' the piece *Walking with Crickets* involved putting herself in the shoes of an audience member, walking and listening to understand how the piece operates on her own perception in different locations and circumstances. This informed how audiences would be introduced to the soundwalk, how they should carry their sound and how its volume should be calibrated to the environment. Hall's own embodied understanding (attained through listening) guided the artwork's design, which in turn shapes possible listenings by creating the conditions for particular experiences to unfold.

We might say that artists shape the affordances for particular modes of listening, for prolonged or exploratory engagement with their works. The *Barely* installation we described earlier, for example, afforded close attentive listening by use of certain, very detailed sound materials. 'Affordance' is a term established by Gibson (1979) as a central concept in his work on ecological psychology: 'Affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill'. We suggest that many of the artists we interviewed work to foster affordances for *perceptual action*. Rather than physical behaviours, they describe the possibility for particular perceptual activities as a result of the artwork's design, such as a focused and meditative disposition to listening, sensitivity to bodily presence (Theme 3) or an active acknowledgement of one's spatial relationship to the artwork (Theme 2).

It is important to note that affordances are relational and describe possibilities for action, specific to context and the individuals involved. Therefore, affordance delimits the effect of an artwork to its particular situation in which it comes to matter for certain people with certain preconditions (Krogh 2018). This is relevant to the engagement challenges faced by sound artists that were described in Theme 4. Not only does the specificity of affordances account for the 'situatedness' of experience as contingent on circumstance, but also a tension between experiences afforded to the artist, academic or curator and those available to somebody who has not encountered sonic artworks before. Arguably, spatial sonic artworks place a very different participatory demand on audiences than an exhibition of visual artworks. Furthermore, audiences arrive with diverse listening ability (Drever 2019), formative experiences and cultural reference points. As James Bulley highlighted, sounds have different meanings for different people.

A more thorough understanding of affordances and how spatial sound art is experienced by diverse listening audiences might help to pinpoint aspects of an artwork's design that help or hinder engagement. The artists that we interviewed all wish to engage audiences more broadly, but also suggest that audiences should be free to act however they feel most comfortable. The artist cannot control how their work will be experienced and neither do they wish to. Therefore, attempts to encourage greater participation should be done 'without being overly prescriptive about how that participation should occur' (Tanaka and Parkinson 2018). In the context of situated sound art, this might mean supporting audiences to discover the in-between space of sound or to become aware of their agency and spatial relationship to the work. While explicit instruction as to how to listen or what to listen for may be beneficial, the results of our interview study suggest that staging devices (Theme 3) could be employed to implicitly suggest an attentive focus on listening or draw a listener's awareness to their presence in the work. Alternatively, by inviting audiences to engage in listening exercises prior to their experience of an artwork, they might become more sensitive to sound and likely to engage with the work. Taking these kinds of approaches, artists might influence or 'mediate' the experience of audiences without being overly prescriptive as to how exactly they should behave.

9. CONCLUSIONS

In this article, we presented a series of interviews that were conducted with sound artists and composers all engaged with situated sonic practices, including installations, sound walks, workshops and performances.

By focusing on the practicalities of process, we hoped to understand how the activities of artists shape the behaviour and experiences of audiences. A thematic analysis of interview transcriptions led to the formation of four themes, which represent patterns of shared meaning across the data set.

Our findings led us to characterise the process of artists engaged in situated practices as mediatory, in the sense that they act in-between site and audience experience and are guided by the nonhuman agencies of settings and material things. We proposed that artists transfer their own embodied listening to the experience of audiences and develop sonic and staging devices that are intended to direct perceptual activity and listening attention. The possibilities for particular perceptual modes of engagement, such as a sensitivity to bodily presence or a focused disposition to listening were described as affordances of the artwork. Whether or not these are acted upon or experienced by audiences remains an open question, which we hope to return to in future work. The difficulty of eliciting feedback and tapping into the experience of audiences to sound-based artworks was noted by the interviewees. Future work will therefore require novel methods for eliciting the experiences of both expert and non-expert listeners. We hope that this will enable us to understand how particular active modes of perception can be fostered in the design of situated sonic artworks and by extension how we can increase or broaden audience engagement.

APPENDIX

Interview Questions

1. Please introduce yourself and describe your practice
2. Describe the last piece that you made or something that you are working on at the moment.
3. Describe your process of making an installation/performance.
4. Who is your audience, and do they require any specialist knowledge or training?
5. What kinds of behaviour have you observed?
6. Have you asked audience members about their experience of the work? If yes, what did they say?
7. Does audience feedback inform future changes to your work? If yes, what changes have you made?
8. I've been using the word 'audience' to describe those who experience your work. Would you use an alternative term?
9. What verb would you use to describe the act of creating your works? For example, I might say you are 'designing' – would you use an alternative?
10. Describe your experience as an audience member to a site-specific sound installation or performance that you have experienced and admire.
11. What does the term 'site-specific', mean to you?
12. Do you use digital technologies in your work/ process? If not, why not?

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